

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



Monitoring the Illegal Killing of Elephants (MIKE) and
Elephant Trade Information System (ETIS)
Thirteenth meeting of the Technical Advisory Group (TAG)
Nairobi, 21 - 22 March 2016

MINUTES OF THE THIRTEENTH MEETING OF THE TECHNICAL ADVISORY GROUP

In attendance:

- Martha Bechem, MIKE Subregional Support Officer (Acting), West and Central Africa
- Julian Blanc, Coordinator, CITES MIKE Programme (Co-chair)
- Ken Burnham, TAG Member: Global
- Tapera Chimuti, MIKE Subregional Support Officer, Eastern and Southern Africa
- Holly Dublin, TAG Member; Co-opted (Chair, IUCN/SSC African Elephant Specialist Group)
- Emmanuel Hema, TAG Member: Subregional (West Africa)
- Dave Henson, Programme Officer, MIKE Programme
- Mrigesh Kshatriya, Data Scientist, MIKE Programme
- Aster Li Zhang, TAG Member: Subregional (Southeast Asia)
- Leonard Mubalama, TAG Member: Subregional (Central Africa)
- Tom Milliken, ETIS Director (Co-chair)
- Esmond Martin, TAG Member: Global
- Louisa Sangalakula, ETIS Database Officer
- Russell Taylor, TAG Member: Subregional (Southern Africa)
- Chris Thouless, TAG Member: Subregional (Eastern Africa)

Absent with apologies:

- Hugo Jachmann, TAG Member, TAG Member: Global
- Vivek Menon, TAG Member: Co-opted (Chair, IUCN/SSC Asian Elephant Specialist Group)
- Eleanor Jane Milner-Gulland, TAG Member: Global
- Raman Sukumar, TAG member, South Asia
- Fiona Underwood, TAG Member: Co-opted (ETIS statistician)

Strategic and Administrative Matters

Opening of the meeting

The MIKE Coordinator opened the meeting with a round of introductions from all participants. A special welcome was extended to new TAG members. This was followed with a general overview of the agenda. The MIKE Coordinator noted that this was first meeting of joint the MIKE and ETIS TAG under its recently approved Terms of Reference, and that this was the first time the MIKE and ETIS aspects of the work of the TAG were integrated into a single agenda. The meeting would be co-chaired between the MIKE Coordinator and the ETIS Director.

1 Adoption of the agenda.....TAG13 Doc. 1

The Coordinator invited the TAG to comment on the agenda. Louisa Sangalakula noted that the reference to the previous ETIS meeting should be ETIS TAG 6 instead of ETIS TAG 5. The agenda was adopted as with that amendment.

2 Adoption of the working programme.....TAG13 Doc. 2

The Coordinator invited the TAG to comment on the working programme. There were no comments and the working programme was adopted.

3 Minutes of the previous meeting

The MIKE Coordinator noted that, for the present meeting, a single set of minutes would be produced. In the past, separate minutes were prepared for the MIKE and ETIS parts of TAG meetings.

3.1 MIKE TAG13 Meeting MinutesTAG13 Doc. 3.1

The MIKE Coordinator indicated that, as was habitual practice, TAG 12 minutes had been circulated by email for comment and that, as no comments had been received, they were considered approved. Nevertheless, and as was also usual practice, he invited any comments from TAG members present at the meeting. There were none, and the minutes therefore remained approved without amendment.

3.2 ETIS TAG6 Meeting MinutesTAG13 Doc. 3.1

The ETIS Director reviewed the minutes from the sixth meeting of the ETIS TAG. A number of members commented that they had not had a chance to review the minutes. Hard copies were distributed and it was agreed that the minutes would be reviewed at the end of the meeting under any other business (AOB).

A general discussion followed relating to the following points:

- Holly Dublin requested clarification for which documents would be made public on the CITES website. The MIKE Coordinator clarified that all TAG meeting minutes are made public on the CITES website, but not the working documents.
- Holly Dublin also suggested that a concise summary of key outcomes from last meeting would provide a framework to guide decision making moving forwards, and help engage TAG members.
- The MIKE Coordinator highlighted that document TAG13 Doc. 4 relating to the action points from the last meeting would meet this need to some degree by providing an overview of the key decisions and the agreed follow up items.
- Holly Dublin also suggested that more regular updates and engagement between MIKE and ETIS and the TAG would help keep members engaged. The Coordinator responded that intersessional communication in the TAG did take place, and that different methods for keeping track of action items in between meetings had been tried but with limited success.

4 Progress on the action points agreed to at the previous meeting

4.1 Progress on MIKE TAG12 action pointsTAG13 Doc. 4.1

The MIKE Coordinator provided an overview of the status of action points arising from the MIKE TAG12 meeting. These are summarised below:

TAG12 Doc. 4: Revision of MIKE Programme survey standards

- Russell Taylor commented that the MIKE aerial standards are vitally important, and remain very relevant to get buy-in from governments. Some stakeholders lacked awareness of the MIKE survey

standards. There was a general consensus that the MIKE Programme aerial survey standards were appropriate and it could be helpful if all relevant organisations were aware of them.

- Holly Dublin commented that while people seem comfortable with MIKE aerial standards, they are less so with MIKE dung count standards. This now long-standing issue remained and needed attention.
- The MIKE Coordinator explained that the MIKE dung survey standards presented substantial methodological challenges, especially in large forested sites, where it is not practical to conduct decay studies at the time of each survey. While estimates of decay rates were critical to obtaining reliable elephant population estimates, a more practical method was needed. He reminded members of previous TAG discussions about using rainfall-based estimates of dung decay. While that could be a way forward which could result in a reduction of field costs for dung surveys, it would require a significant research effort, but it was not easy to attract the attention of scientists to the problem.
- Chris Thouless pointed out that there appeared to be a degree of confusion over the categories of dung that should be included in the surveys, with different organisations using different approaches in different sites.
- Martha Bechem responded that WCS takes out the final stage of decay as it can remain in place for extremely long periods, and that this is allowed for in the MIKE standards. She further clarified that a common approach is to collect all data and then remove final stage.
- Chris Thouless added that as more studies have been done in recent years, this should give a broader basis for discussion on methods, and that one aspect of this has involved the use of site specific decay rates.
- Holly Dublin raised the concern that the use of subjectively selected decay rate could provide opportunities for researchers to 'tailor' results to meet the individual objectives of the researcher.
- The MIKE Coordinator suggested that MIKE Programme help could assist in the development of a predictive rainfall-based model as basis for informing decay rates, depending on the available time of the data scientist, but that ideally this would be taken up by a research institution or a major donor involved in forest elephant survey work.

ACTION ITEM: Relevant TAG members and the MIKE programme to raise awareness of the MIKE aerial survey standards.

ACTION ITEM: Chris Thouless, Holly Dublin and MIKE CCU to alert organizations funding forest elephant surveys as to the importance of using appropriate estimates of dung decay rates, while highlighting the challenges associated with the current MIKE dung survey standards, as well as to encourage such organizations to develop and test alternative means of estimating dung decay rates in collaboration with the MIKE programme.

TAG12 Doc. 4: Forensic testing of ivory seizures

- There was a general consensus that some form of accreditation was needed for laboratories that undertake forensic ivory testing, according to defined standards. The MIKE Coordinator informed the TAG that the United Nations Office on Drugs and Crime (UNODC) was currently compiling a list of appropriate facilities able to conduct such work.
- The ETIS Director pointed out that the replication and testing of results from labs conducting DNA and isotope analyses of ivory is still an issue that needs to be kept on the agenda. Some verification of the results was needed from laboratories, e.g. through blind testing. This was taken up under agenda item 11 (TAG 13 Doc. 11).

TAG12 Doc. 8: Odds ratios for PIKE

- Ken Burnham explained the gist of the method of calculating the odds of a real change in PIKE between years. The TAG agreed that the odds calculation should again be included in the MIKE report to COP17.

TAG12 Doc. 8: Veblen effect on demand for ivory

- The MIKE Coordinator explained that economists had clarified that what appeared to be a Veblen demand curve for mammoth ivory in China and Hong Kong likely reflected a demand shift instead. Holly Dublin pointed out that public discussion of Veblen effect continues despite the lack of evidence for the case of elephant ivory.

ACTION ITEM: A statement clarifying that there is currently no evidence for a Veblen effect with regard to demand for elephant ivory to be included in the MIKE and ETIS reports to CoP17.

TAG 12 Doc. 13: Sharing of PIKE data

- The MIKE Coordinator highlighted that MIKE Programme monitoring results are now published on 3 March every year to coincide with World Wildlife Day in order to provide regular updates, rather than be tied to the meetings of the Conference of the Parties or the Standing Committee. Summary carcass data were being shared at the same time through a Google Fusion Table, which is accessible from the MIKE Data and Reports page on the CITES website.
- The ETIS Director highlighted that ETIS has come under pressure to release their analyses at the same time but this is problematic as data comes in a variety of formats, and as such this is unlikely to be achieved in the near future.

4.2 Progress on ETIS TAG6 action pointsTAG13 Doc. 4.2

The ETIS Director provided an overview of action points coming out of previous meeting

ETAG 6 Doc. 7: Data access policy

- The ETIS Director described the new ETIS Data Access and Release Policy as approved by the Standing Committee at its 66th meeting (Geneva, January 2016), and indicated that the policy would be incorporated into Resolution Conf. 10.10.
- The MIKE Coordinator noted that MIKE policy makes no specific provisions for data access by research collaborators, and it would be desirable to align both MIKE and ETIS policies. He suggested that the MIKE should be changed to match ETIS i.e. by allowing collaborators, as this is more appropriate

Decision: There was a general agreement with the ETIS data policy is more appropriate, and that a single data policy for both MIKE and ETIS would be optimal.

ACTION ITEM: ETIS to outline data policy on website. Potentially using the AED data access form as a template. TAG can play a role in reviewing applications electronically.

ACTION ITEM: A joint MIKE and ETIS data policy to be refined and proposed at the COP as resolution is under review.

- The MIKE Coordinator also suggested that ETIS produce and make available a number standard basic data summaries, which could go a long way towards meeting demand for ETIS data products.

- The ETIS Director agreed with this idea, and suggested for example, number of seizure cases by country by year could be made available, as this avoids the issues of missing data on weight and sensitivity of amount seized per country.
- The MIKE Coordinator suggested that a certain level of processed data could also be made available that would allow a degree of data manipulation without allowing data to be misrepresented.

ACTION ITEM: ETIS Director to make summaries of ETIS data available on the ETIS website.

Doc 12; Bullet 13: Subsidiary databases

- Holly Dublin suggested bringing forward elements of the guidelines from the TRAFFIC workshop to the development of an ETIS market monitoring standard that could help inform the related subsidiary database.

Decision: There was agreement that this is a good way forwards to help standardize collection and monitoring of such information.

ACTION ITEM: ETIS to work towards developing market monitoring standards (as time and funding permits)

Doc 15; Bullet 17: Ivory stockpiles declarations and destructions

- The ETIS Director highlighted the incomplete nature of the stockpile declarations received to date, and the lack of clarity about what stocks have been destroyed and what remained after many destruction events.
- Russell Taylor questioned how complete is the information available. Tom highlighted that there is a major compliance issue but that ETIS is currently maintaining information in rudimentary database.
- The ETIS Director further clarified that it is currently hard to assess what percentage of stock piles are destroyed. He stated that Stop Ivory does have more complete information of what is destroyed, and has agreed to provide this information to ETIS.
- The ETIS Director also pointed out that more data is needed on impacts of destructions of ivory on worked ivory prices, as early evidence suggests destructions can potentially increase the price and possibly unduly influence illegal trade.

5 Funding Arrangements

5.1 Funding for the MIKE Programme

- The MIKE Coordinator provided an overview of MIKES project funding up to the end 2018. He pointed out that the project is expanding beyond monitoring trends in elephant poaching and building capacity for law enforcement monitoring to support law enforcement for elephants and other species at eight focal sites and to support law enforcement at the national level in four countries.
- He also highlighted that future funding possibilities including the EU Regional Indicative Programme (RIP) project in Eastern and Southern Africa, and that funding from the EU had also been secured for MIKE in Asia, where UNODC would be the signatory and MIKE will receive funds via a UN-UN agreement.
- Chris Thouless, noted with concern that population surveying is missing from MIKES and future proposals, and that this is a critical piece of the puzzle. Holly Dublin strongly agreed with this point.
- The MIKE Coordinator agreed population surveys are important, but pointed out they require more resources and capacity than the MIKE programme is able to provide. Despite their importance is not something that MIKE was able to provide.

- Holly Dublin, felt that many people using MIKE/ETIS data are not aware of lack of population surveys are important, and that MIKE needs to continue to raise this point, and point out that MIKE analyses depend on this information.

ACTION ITEM: MIKE to highlight importance of population surveys in in the report to the COP - including where clear population data is included and where it is based on estimates.

ACTION ITEM: SSO's to encourage range States to apply to AEF to secure funding to support population surveys in key countries and areas.

5.1 Funding for ETIS

- The ETIS Director introduced the funding situation for ETIS, which currently is practically entirely funded through the MIKES project. The funds available amount to around \$600,000 until 2018, and that ideally budget for full operation of ETIS is around \$300,000 per year.
- The ETIS Director further clarified that the alliance with CITES has greatly strengthened ETIS's funding position, as it has opened doors that would otherwise be closed to TRAFFIC.
- He concluded by pointing out that a web application for use by Parties had been developed, but that the French version was not yet ready and that additional resources were required to complete it. He hoped that MIKE Asia project would enable the work on the web application to continue.

6 Membership and ToR of TAG

- The MIKE Coordinator described the process of approval for new members and new TOR, and encouraged all members to familiarise themselves with the new TOR. He followed this with a brief overview of TAG membership changes.

7 Nomination of new MIKE sites

- The MIKE Coordinator provided an overview of the historic process of the selection of MIKE sites, and highlighted that, despite sub-optimal selection from a purely scientific perspective, around 30-40% of elephant populations covered.
- The MIKE Coordinator pointed out that, following a recommendation from the TAG, new sites could now be added to the MIKE Programme, without expectations of additional support from the MIKE Programme, and that a form has been developed and application process outlined.
- He described applications for new sites in the final stages from Cameroon and Mozambique. South Sudan and Angola have also expressed interest in joining the MIKE Programme. All new proposals would need to be carefully vetted by the TAG.
- Esmond Martin questioned why sites with no elephants are still part of the MIKE Programme. Such sites exist in Nigeria, Togo, CAR, Cote d'Ivoire, and Senegal. The MIKE Coordinator clarified that in a number of such sites there was uncertainty as to the continued presence of elephants, and that in general range States were reluctant to have such sites removed from the list.
- Russell Taylor mentioned that there are risks of confusion between MIKE sites and the MIKES focal sites. The MIKE Coordinator clarified that this distinction has been made clear to the range States, and that the site nomination form also made this clear.
- Holly Dublin asked how data verification will be carried out at the new sites. The MIKE Coordinator responded that that the SSOs will continue to do this, with additional support staff, and STAs will also be able to help with reduce current burden.
- Li Zhang highlighted the need to include elephants that are killed beyond the boundary of the MIKE sites. JB clarified that this issue is addressed in the new MIKE Programme Monitoring Protocols, which will be discussed under document 13.

Decision: Additional MIKE sites will be of a benefit to the analysis. MIKE sites where there is uncertainty as to the continued presence of elephants will remain in the list unless agreed otherwise by the range States concerned.

ACTION ITEM: In order to build on recent positive steps from Angola the MIKE Programme will follow up and encourage them to join the MIKE network and to nominate a supported site.

Technical Matters

3.3 Analytical Issues

8 MIKE Report to COP17

- The MIKE Coordinator outlined proposed COP analysis to match the four components of the MIKE Programme mandate i.e. PIKE trends and estimates of poaching rates and numbers of elephants killed; results of modelling work on factors associated with poaching levels; and capacity building activities.
- Chris Thouless highlighted that PIKE is likely to overestimate of rate of illegal killing and suggested that this should be made clear in reports. The MIKE Coordinator responded that this would be explained in the report, and highlighted that fundamentally the problem is not a statistical one but one of detection probability bias, which is likely to affect the reliability of PIKE especially in forested areas and sites with very small populations.
- Some concerns were expressed that a low PIKE level or a decline in PIKE could be interpreted as an improvement in the general situation, whereas it could simply be a result of a significant decline in the overall population. The Coordinator emphasized that small populations where there is poaching tend to have higher PIKE values, as fewer elephants die naturally. Hence a decline in the population would not necessarily translate into a decline in PIKE.
- The MIKE Data Scientist provided an overview of the data and parameters that had been incorporated into the preliminary analyses presented in the outline MIKE Programme CoP17 report, and methods used to deal with uncertainty.
- Ken Burnham recommended that some extrapolation should be possible to all sites, but with caveats clearly stated (i.e. if the same conditions held this is the kind of conditions that we would be dealing with).
- Ken Burnham also recommended that text be included to reflect the fact that in future the figures may change as better data and analyses become available and applied, and new population estimates come online. There was broad agreement with this suggestion.

ACTION ITEM: MIKE Programme to include specific reference to issues surrounded detection rate of forest elephants in report for CoP.

9 ETIS Report to COP17

- A presentation of ETIS data management and analytical framework was made via PowerPoint, with commentary by Fiona Underwood. Key variables and issues to consider were highlighted.
- The ETIS Director highlighted some additional issues regarding the truncation of time data to match MIKE reporting period - especially with estimates at the beginning of the time period. Ken Burnham added this is a common issue and to be expected.
- The ETIS Director also highlighted the lack time between the results shown and the more recent activities of some countries to help reduce the trade in ivory. As such, he emphasized that ensuring understanding of this will be key to acceptance at COP.
- In addition, The ETIS Director also highlighted that there are some serious inconsistencies in the data reported to ETIS, and raised concerns that some countries are only reporting data from customs seizures and not ivory seized by other agencies.

- With regard the ‘*countries of concern*’, The ETIS Director pointed out that progress has been made in some areas, but there is no clear pattern as some other nations have not made much progress.
- In addition, he also noted that ‘*countries to watch*’, have been monitored, and that some of these such as Cambodia and Angola appear to show encouraging signs of increased seizures.
- The ETIS Director showed that ETIS data appear to show significant declines from 2013 to 2014. This appears to hold true across the majority of countries and categories of countries. However, serious data gaps remain.
- Esmond Martin commented that the data does not show weight. The ETIS Director referred to earlier comments that this is problematic as often seizures reported without weight, and the data is sensitive in many countries.
- The ETIS Director highlighted that the real challenge for ETIS is to manage exceptions, keep countries focused on the NIAP process and positive aspects of the analysis, and aware that recent improvements may not be reflected in the ETIS results.
- In this regard, he noted that ETIS analysis will only show trends up to the year 2014, and therefore the use of the data to assess the implementation of NIAPs for COP17 is extremely limited.
- Finally, Tom stated that ETIS will present a summary of information in large scale ivory seizures as gives a window into the organization crime element of the trade. This data should be up to date and relatively complete.
- Russell Taylor highlighted that traffickers may adapt tactics away from large scale shipments towards smaller multiple shipments to reduce risk and avoid publicity associated with large scale seizures.
- Emmanuel Hema requested clarification on any relationship between MIKE and ETIS trends. The ETIS Director responded that there appears to be a one or two-year time lag between MIKE data and ETIS secure records.
- Emmanuel Hema also noted the low level of seizures in West African countries in particular. The ETIS Director highlighted that this is due to a combination of capacity, reporting bias, poor systems etc.
- Leonard Mubalama highlighted that it is problematic for a CITES legislation score to be included in analysis, as one country cannot have legislation against trade, and that implementation of legislation is more important.
- Esmond Martin highlighted concerns about the term ‘*weak governance*’ and a clear distinction is needed between weak and corrupt governance, e.g. Nepal has weak governance, but a low level of corruption.
- The ETIS Director added that he would like to build in compliance mechanism or highlighting countries that are not meeting requirements; possibly through the identification of specific countries, and maybe even auditing of stockpiles.

ACTION ITEM: TAG members to review COP17 documents that will be ready around early April. NB There will only be around 10 days allowed for review (e.g. between 10-20 April).

3.4 Research Issues

10 Validation of PIKE-based inference

- The MIKE Coordinator highlighted that two major issues regarding PIKE are 1) detection rates of illegally killed elephants leading to biases in detection probability and 2) the level of natural mortality.

Natural Mortality

- A PowerPoint presentation was given with audio commentary from Fiona explaining the importance, implications and a possible approach to identifying natural mortality levels based on formal elicitation.
- Comments from TAG members were requested on Document 10, Annex 2 in response to expert elicited estimates of natural mortality rates of elephant populations, and specifically member views on the appropriateness of this approach.
- As an alternative Ken Burnham outlined had estimated natural mortality rates based on age structure of population (calculated on the assumption that there is zero poaching of individuals).
- He went on to suggest that expert opinions are likely to be different based on question that is asked, e.g. life span, survival rates, or mortality rates. As a general approach Ken Burnham clarified did not like the method of sampling opinions.
- Chris Thouless raised the question of at what age individuals are included in the PIKE calculation, with a particular regard to possible problems of including a level of juvenile mortality.
- Both The MIKE Coordinator and Ken Burnham highlighted the concern that an estimate is needed only for the population that is being poached i.e. only sub-adults and older. As such, estimates based on complete population studies are inappropriate.
- Chris Thouless also highlighted that there is the additional further potential complication of potential complicity of field staff, for example under reporting or misreporting carcasses found.
- However, The MIKE Coordinator pointed out that for purposes of COP a level is needed, and a level needed to be chosen. 3% is known to be too high as it incorporates juvenile deaths, however for the purposes of the current analysis suggested it may be appropriate.
- Holly Dublin suggested working with a range of values, and specifying the assumptions that are being assumed to hold true in the analysis and making this explicit in the report to COP17.
- The MIKE Coordinator also highlighted that George Wittemyer is currently looking at Samburu elephant population, which may give an insight into approaches that can be used to cut out juvenile mortality in the future.
- Holly Dublin highlighted that the well studied Amboslei and Dzanga Sangha populations may also have some data that can contribute to this aspect, and maybe complement the outcomes of George's work.
- Chris Thouless questioned whether additional consultations are needed, and suggested that it is better to focus on most complete data available from Samburu, Amboseli, and Dzanga Sangha (possibly other data sets too) as a basis for estimating mortality in the future.
- Ken Burnham suggested that a stage structure model could be an approach that is used to analyse the population data available. However, members noted that critical data may not be available from the limited number of studies that have examined the issue.
- The MIKE Coordinator added that careful consideration of the data from these studies is needed as they may not differentiate between natural and illegal elephant death, which may undermine the usefulness of these datasets.

Decision: Further consideration will be given to the literature, initially focusing on using the same figure for forest and savannah elephant populations, and consider the issue at further TAG meetings.

Decision: Research based estimates is the most appropriate way to proceed with estimating natural mortality. This will be made clear to WCS to avoid multiple approaches being developed.

Decision: Pending further investigation of available data, the same natural mortality rate will be used for forest and savannah elephants in the analysis that will be used for submissions to COP17.

ACTION ITEM: MIKE CCU to respond to WCS regarding the decision to focus on research based estimates of natural mortality decision to help avoid multiple approaches.

ACTION ITEM: MIKE CCU to draft terms of reference for a consultancy to incorporate a more in-depth investigation of literature available on natural mortality.

Detection bias

- The MIKE Coordinator highlighted that the key issue with the bias in detection probability is the 'strip width' and how to calibrate results to take this into account, with a particular reference to forest environments.
- Three approaches outlined in the document prepared by Hugo Jachmann were considered by the TAG:
 - Covariate analysis
 - Artificial simulation
 - Total carcass counts
- In response, Chris Thouless suggested that most practical aspect is, as this stage, to focus on the method of detection, as if, as suspected, the majority of carcasses found in forest environments come from intelligence then the issues of strip width may not be relevant.

Decision: Collection of information on carcass detection methods should be promoted in MIKE Focal sites and ideally in sites being supported by Save the (e.g. Odzala and Ndoki).

ACTION ITEM: MIKE CCU to engage with Save the Elephants/Vulcan with a view to collecting information on the method of carcass detection.

ACTION ITEM: MIKE CCU to build the collection of this data into the activity plans for the three forest sites supported under the MIKES project (i.e. Dzanga Sangha, Boumba Bek and Okapi).

11 Analysis of the Illegal Ivory Trade

- The MIKE Coordinator provided an overview of the issues to be discussed in this section.

Linking the four elephant monitoring systems

- The MIKE Coordinator provided an overview of the four monitoring systems that are involved in monitoring the various parts of the chain in the ivory supply chain, MIKE, ETIS, WCMC and AED.
- He continued to highlight that there is a strong and long-standing desire to link these monitoring systems and carry out an integrated analysis from some members of the CITES secretariat and other areas.
- He added that some work has been undertaken in this area under the previous funding tranches that the MIKE Programme has been awarded, but major progress has not been made in this area to date.
- A PowerPoint presentation was made to the TAG, with commentary from Fiona Underwood, on possible linkages between the four monitoring systems that could be established with additional work.
- Ken Burnham commented that he liked the approach and would like to see this type of integrated approach pursued, however, he highlighted that he has the luxury to ignore the cost aspects.
- Russell Taylor complemented this comment by highlighting that the cost could be quite considerable, and this would need to be considered with regard the potential benefits, and the additional work required to obtain the data required.

- Chris Thouless suggested that the approach was over optimistic with regard the quality of the data available, and that there are major differences of opinion on even the most basic data, such as the population trends of savannah elephants.
- Holly Dublin highlighted that while the approach has merit, she agreed with Chris Thouless, that the data relied upon has some serious issues. She questioned if there is a more simplified approach before a full exploration of the model.
- Holly Dublin continued that there has been an increasing degree of integration between MIKE, ETIS, and AED as the various programmes have moved forwards and wonders if the value added of this approach would justify the additional cost.
- Russell Taylor referred back to the discussion on PIKE, and that fundamental issues remain with the basic measures and that these should be addressed before more elaborate analyses were undertaken.
- Chris Thouless suggested that perhaps a simpler level of integration, for example between MIKE and ETIS, could be used to predict the level of ivory flows that would be expected in different areas.
- Holly Dublin agreed with the above concerns, and backed up the suggestion that a simplified slimmed down version of the full analysis proposed in the paper could be pursued as a first step.
- The ETIS Director added that with the increased use of DNA data ETIS is able to to get a better understanding of the flows of ivory, which gives the scope for a more spatial and quantitative assessment of the supply chain.
- The MIKE Coordinator responded that even this relatively simple integration of monitoring systems could prove problematic as ETIS currently works at the national level, while MIKE works at the site level and this risks creating a mismatch.
- Chris Thouless reminded members that this is not a purely theoretical consideration, and could potentially inform the allocation of scarce conservation resources, and that linking of the stages in the supply chain could be useful to managers.
- Holly Dublin agreed with this point this up by highlighting that careful consideration would be needed to given to identifying the aspects of the chain that would give most useful information managers.
- Leonard Mubalama highlighted that donors are more focused on protection rather than research, and national wildlife management agencies could be approached to get endorsement for more research orientated activities, such as the analyses proposed.

Decision: The approach has potential, and key aspects could be investigated through links with universities and by targeting research funding.

ACTION ITEM: MIKE Coordinator to get Dr Milner-Gulland's feedback on this idea and follow up regarding work focused on a less holistic model and a more spatially explicit approach.

Use of DNA-based origin analyses

- The MIKE Coordinator requested feedback from TAG members on potential additional benefits of DNA analysis for use in MIKE Programme analysis (as opposed to ETIS where value added is more clear).
- Chris Thouless questioned general understanding of analysis results, and questions level of engagement that has been achieved with the lead scientist and availability of data on accuracy.
- Holly Dublin pointed out that a sampling strategy would be helpful. Chris Thouless suggested that MIKE/ETIS could help Samuel Wasser with access to DNA samples in return for the him being more systematic in sampling.
- The MIKE Coordinator questioned whether the aspect of DNA sampling should be built into the mandate, potentially during the revision of resolution 10:10 at COP17. Holly Dublin agreed that this would be important.

- The ETIS Director suggested that in order to help encourage submission of DNA data from large seizures a summary table be provided in the ETIS report to COP17, but that nevertheless a more formal mechanism is needed.
- Chris Thouless summarised the challenges faced by the Samuel Wasser, which are focused on access to the samples, and not on funding. There was a strong request for assistance in access.
- Russell Taylor questioned what will happen when the new DNA analysis laboratory is established in Africa, and whether more countries may be happy to release data to a regional centre.
- The MIKE Coordinator highlighted that sampling is expensive and complicated and therefore if CITES mandate is strengthened by a compliance mechanism this could result in under reporting of seizures.
- Li Zhang highlighted that major issue is that the current Samuel Wasser has refused to open up the data to other laboratories and enable the work to be carried out in other laboratories.
- The MIKE Coordinator highlighted that he has released some sequences, but the reference library has not been made available to other laboratories. Holly Dublin suggested that any mandate should therefore focus on release of reference data.

Decision: TAG recommends that the reference library data on all elephant ivory DNA should be made public to enable regional centres to carry out analysis

ACTION ITEM: MIKE/ETIS to propose suggested revisions in order to provide a mandate for accredited laboratories to carry out DNA and isotope analysis.

ACTION ITEM: MIKE/ETIS to include in this revision a formalisation of the reporting requirements of laboratories carrying out DNA analysis to ETIS

ACTION ITEM: MIKE/ETIS to include a section in reports to COP on the value of the information that can be obtained from the analysis of seized ivory.

Systematic collection of ivory price information

- The ETIS Director provided a summary of the collaboration with the World Bank on that was attempting to understand the economics of the ivory trade. He highlighted one key issue is that prices are often poorly justified and not linked to a stage in the supply chain.
- He highlighted that to help address this TRAFFIC has collected over 4000 price observations on raw ivory and over 16000 observations on worked ivory, all linked to a stage in the supply chain and a date.
- The ETIS Director continued to provide an overview of the results of this work between the period 1970 - 2015. Showing steep price increases until late 1980s, and then again from mid 90s to present day.
- The MIKE Coordinator highlighted that this is being brought to the TAG to assess the potential of whether the price variable should be considered as part of MIKE/ETIS analysis, and if price data collection should be mandated.
- The MIKE Coordinator suggested that this could be linked to the TRAFFIC market monitoring protocol, and that this would imply that any organisation following the mandate should be able to collect the information and make it available.
- Leonard Mubalama backed up the request that such information be available to the MIKE and ETIS Programmes by highlighting that it could be useful to link price data and the level of illegal killing.

Decision: The TAG agreed that this is an important and missing area of information that could potentially be used to enhance both MIKE and especially ETIS analysis, and that the collection of such data should ideally be mandated.

Decision: The Members also agreed that if other organisations are involved in collection, data management should be embedded with ETIS as a subsidiary database in order to give parties confidence in the use of information.

ACTION ITEM: ETIS to include analysis of ivory price data in report to COP17 in order to begin demonstrating value of such information to the Parties. No mandate will be sought at the moment.

Stockpile information and management

- The ETIS Director suggested that CITES Parties could be required to submit information on stockpiles, and potentially be subject to audits, and that this could form another subsidiary data base that ETIS manages.

ACTION ITEM: ETIS to include data on stockpiles in report to COP17. MIKE will be involved in the drafting of the text. No mandate will be sought at the moment.

3.5 Process and operational issues

12 MIKE Monitoring Tools

Law enforcement benchmark assessment

Comments on assessment

- The MIKE Coordinator provided an overview of the main elements of the MIKE monitoring tools, and began the discussion with an overview on the background and use of the law enforcement benchmarks.
- The MIKE Coordinator summarised that around 44 sites have completed the assessment, and while it may not be useful for analysis, it serves to focus sites on where support is needed and MIKE can focus support.
- Russell Taylor commented that the benchmark assessment is a good approach, and that it serves to remind the site managers of where the needs are, and where additional attention is needed.
- Chris Thouless commented that with regard to the law enforcement criteria, the issue of informant networks has been overlooked, and that this should be included in the assessment.
- Russell Talor commented that we should refer to 'wildlife intelligence' and not simply 'intelligence' as this can become confused with national security and increase reluctance to provide information.
- Holly Dublin suggested that a summary of all the law enforcement benchmarks on the front page would serve as a useful reference when completing or reviewing the assessment.

ACTION ITEM: MIKE to edit existing question to reflect the existence or not of paid informant networks (and/or voluntary informers), and clarify the focus is wildlife information only.

ACTION ITEM: MIKE/ETIS to include summary of all the law enforcement pillars on the front page to provide a summary of the approach and the subjects that will be covered.

Review of results

- Mrigesh Kshatriya provided an overview of the results that were returned from the benchmarks, first giving an overall view of the responses, and then with the results spatially distributed on a map.
- It was noted that some of the analysis results did not match the TAG members' knowledge of individual sites; however, the results from the majority of sites were generally agreed to be accurate.

- Holly Dublin suggested that it may be useful to try different methods of presentation depending on targeted audience, and select most appropriate, and also to bear in mind implications of the colour selected to represent each pillar.
- The general consensus was that some of the overall results do give some cause for concern as, for example, the Central African region seems to have scored highest overall, but this is unlikely to be the case.
- Chris Thouless pointed out another possible complication in that capacity does not go as far in forested areas, due to restricted visibility and reduced effective coverage compared to savannah areas.
- Mrigesh Kshatriya then gave an introduction and overview of the principle component analysis that have been carried out looking at the relationship between questions and PIKE levels.
- Members commented that ground truthing of the results will be essential to verify the results, and improve the general level of confidence in the results. The SSO's added that this will be a key part of their work in the future.
- Chris Thouless clarified that summaries of the information provided could be very useful for targeting donor support. The MIKE Coordinator cautioned that the results can be shared with the TAG but should not be disseminated further.
- The MIKE Coordinator then suggested that partners at particular sites could also be engaged to assist with the verification of the information provided. Russell Taylor agreed with this point, and highlighted that this approach will need '*champions*' to role out.

Law enforcement metrics and MIKE Workbook

- The MIKE Coordinator provided a brief summary of the history that has led to the recognition that some element of law enforcement metrics would provide an added degree of rigor to MIKE Programme analysis.
- The MIKE Coordinator then continued to provide a brief summary of the recommendations made by Hugo Jachmann with regard metrics that could be implemented, and pointed out that elements of this approach had been piloted in Queen Elizabeth National Park.
- He also clarified that the MIKE Programme is not concerned with the particular data collection system being used at a site, only that it is appropriate, and meets the needs of area management, and ideally MIKE data requirements too.
- He continued that this position led to the development of the MIKE Workbook, which in its most recent iteration, has developed from a record of elephant carcasses to include other aspects of law enforcement and summaries.
- Russell Taylor commented that he really liked the incremental approach moving up in data collection system sophistication as capacity developed. He underscored that no system should be imposed, and the tool much fit the needs of the site.
- Holly Dublin questioned how to integrate the implementation of the MIKE Workbook with the implementation of SMART, and highlighted the need to inform the SMART partnership to bring them on side with the MIKE Workbook.
- Holly Dublin also raised the issue that wider awareness of the MIKE Programme's concerns with regard SMART may be lacking, and that donor's may be surprised and concerned if this is not discussed with them at an appropriate time.
- Chris Thouless highlighted that the SMART partnership may concerned about the MIKE Workbook, and see it as a threat, and that further engagement with the partnership maybe needed to ensure that this does not happen.
- He continued that this may be compounded by the recent development of the Vulcan system, which is intended to provide real time information to management. Currently purely the system is purely tactical, but strategic aspects may develop.

- Tapera Chimuti explained that to date the MIKE Programme has not had any report generated by SMART, and that he feels that the Workbook will be broadly accepted by many sites.
- Martha Bechem highlighted that in Central and West Africa they are used to computer based systems, and reverting the Workbook maybe problematic, and that there has been some good up take of SMART, but with limited overall success.
- The MIKE Coordinator concluded the discussion by re-emphasizing the point that there is no need to push the MIKE workbook, and that the most appropriate system should be used for the site in question.

ACTION ITEM: MIKE Programme will continue with the development of the MIKE Programme Workbook, and investigate options for the integration of the Workbook with SMART

ACTION ITEM: MIKE CCU to engagement SMART Partnership and communicate directly with members to up date them regarding the role out of the MIKE Workbook.

ACTION ITEM: MIKE CCU to include concerns and issues with SMART in the MIKE Programme report to the COP17, so that there is broad awareness of the MIKE Programme stance.

MIKE sites ranger based monitoring assessment

- The MIKE Coordinator provided an overview of the ranger based monitoring assessment that is completed by the SSOs, and gave a brief overview of the results that have been generated to date.
- Holly Dublin commented that the limitation of three categories of response are a concern as the default is that responders are tempted to simply opt for the middle option, and that this appears to be the case from a preliminary overview of the results.

ACTION ITEM: MIKE CCU to review the ranger based monitoring assessment with a view to elaborating the responses to include four categories to avoid biased responses

ACTION ITEM: MIKE CCU to include an additional question on the debriefing of patrol staff upon return from patrol into the SSO ranger based monitoring assessment form

Site Data Quality Assessment

- The MIKE Coordinator provided a brief overview of the MIKE site data quality assessment, its key features and purpose, and an short overview of the results presented at the end of the document under consideration.
- The MIKE Coordinator pointed out that a more qualitative assessment was considered but was rejected as the time involved to complete the assessment would increase significantly, and for the purposes defined this approach was most suitable.
- Leonard Mubalama raised the question of whether it was possible to identify the means of carcass detection. The MIKE Coordinator responded that this information is now being collected and has been included in the MIKE Workbook.
- Russell Taylor questioned whether the results described the site coverage or just that they had answered the question. The MIKE Coordinator confirmed this was just that they had answered the question, and that the workbook would address this issue of site coverage.
- Holly Dublin highlighted that at some point in time it will be necessary to assess whether the level of data quality could be maintained without the MIKE Programme site support, especially with regard project evaluations.
- Holly Dublin continued that summaries of the results should be included in reports as they can help demonstrate that data quality is improving, and at what levels and which sites.

- Russell Taylor highlighted that alongside MIKE support some measure of government support is also needed. The MIKE Coordinator agreed, but pointed out that it has proved very difficult to obtain this information.

13 MIKE Monitoring Guidelines and Protocols

- Dave Henson provided a brief overview of the latest guidelines and protocols, and highlighted the key features and purpose of the document (such as summary tables, sample data collection sheet etc.)
- Holly Dublin questioned whether more details were required on the type of weapon used, however, The MIKE Coordinator responded that in most cases in the past such detailed information has not been provided by field staff.
- Russell Taylor questioned how accessible the document is. Tapera Chimuti responded by outlining the dissemination process, and that person to person discussions are needed to enhance understanding at the site level.
- Chris Thouless highlighted that the carcass form does not mention anything about presumptions, particularly with regard the management killing of injured animals, and that this risks distorting PIKE.
- Leonard Mubalama questioned why patrol grid coverage is only '*desirable*' and not '*required*' given its importance. The MIKE Coordinator responded that SMART does not have a simple way of generating this report, and it risks causing complications.

Decision: The TAG confirmed that the MIKE Monitoring Guidelines and Protocols are a useful document and should be kept up to date with further developments.

14 Operation of MIKE in African and Asian Subregions

East and Southern Africa

- Tapera Chimuti explained that due to financial constraints the number of field visits have been limited over the last 12 months. However, this situation is now resolved, and visits are planned for the next quarter.
- He continued to explain that data submission to the MIKE Programme has generally been timely, however, both Kenya and Tanzania have caused some issues with the late submission of data.
- Tapera Chimuti continued that the same situation has applied with the regard the returns of the law enforcement benchmark data from Kenya and Tanzania, despite persistent follow up.
- The MIKE Coordinator added that this is not a new problem and that these two countries, especially Kenya, have continually submitted data after the deadline has passed in the preceding years, which has delayed analysis.
- Chris Thouless highlighted that for the Samburu MIKE site there may be significant complications with the submission of the law enforcement benchmark data due to multiple agencies involved in site management, and this may need some consideration.

Decision: TAG members should use positions and access to help promote the importance of submitting data on time, particularly with regard Kenya where strong existing contacts already exist.

ACTION ITEM: Tapera Chimuti will email Chris Thouless outlining the issues with regard Kenya late submission of data and where assistance is required to help resolve the reoccurring issue

Central and West Africa

- Martha Bechem reported that there are 11 countries that have not reported this year in the Central and West African region. Countries of particular concern are Gabon and Liberia, as they have reported in the past.
- She further clarified that in Gabon this is due to the rotation of key personnel and the lack of a replacement. This includes both national and site level focal points, and that a visit is needed to address this situation.
- Liberia has not responded to requests for data, but does respond to other requests and queries. Chris Thouless suggested that contacts in FFI may be able to move data via the focal point to MIKE.
- One key issue in the region is the site in Cote d'Ivoire, where all elephants have been translocated, but is still currently classified as a MIKE site. Martha questioned if this is still appropriate.
- The MIKE Coordinator pointed out that to date such sites have been tolerated, and suggested that perhaps a process via the TAG or MIKE ETIS subgroup for removing MIKE sites may be appropriate, and could be taken up at a subsequent meeting.
- Martha Bechem highlighted that there are additional complications as the majority of sites in the region are not connected to the Internet, which creates problems with communications and follow up.
- Emanuel Hema questioned how committed the focal points are to providing data, and highlighted that key demographic knowledge of elephant populations in important areas is missing.
- The MIKE Coordinator agreed that these remain key issues and long term challenges, and are especially relevant with regard small elephant populations are concerned as is common in the vast majority of sites in West Africa.
- Martha Bechem responded that MIKE Programme focal points are nominated by the range States and the level of engagement really varies according to the individual, and is beyond the control of the MIKE Programme.
- The ETIS Director questioned whether the MIKE Programme was monitoring aggregated killings, which not only distort general PIKE levels, but also provide an indicator of scaled up poaching pressure.
- Julian responded that to date the full potential of the carcass information has not been capitalised on, and that with increased capacity in the CCU this could perhaps now begin to be addressed.
- Leonard Mubalama then returned to the number of seizures and issue of stockpiles, and particularly the lack of information on the destruction of ivory (i.e. The amount of ivory destroyed and number of elephants this relates to).
- The ETIS Director responded that ETIS has been advocating for an inventory and audit of each stockpile prior to destruction, and that this needs to be promoted. He also highlighted that stockpiles have only just entered into the resolution, and that further work is needed.
- Russell Taylor highlighted that ETIS has developed a standard for ivory stockpile management and hoped that this would be adopted by other organisations as the standard for their management.
- The ETIS Director responded that the best management will depend on the capacity and logistics of the country concerned, and that Stop Ivory have also developed techniques for collecting and storing information.
- Tom Millken recommended that ideally each year each country would carry out an audit of the amount and location of ivory, which could then also be used to estimate the number of elephants killed.

Decision: CITES guidelines on stockpile management and destruction events should be developed, or reviewed/updated as appropriate. These could be based on old guidelines - if they exist.

15 AOB

Minutes of the ETIS TAG6 Meeting

- As the minutes of have only just been released the minutes will remain open for comment for two weeks. If no response it will be assumed that the minutes are approved.

ACTION ITEM: ETIS to circulate previous ETIS TAG meeting minutes to all members present at last meeting and request for comments and outline deadline for submission

- Leonard Mubalama then requested additional information on large scale seizures, and implications for trade routes. Tom gave a short explanation on progress to date highlighting shortfalls and potential usage.

New Joint MIKE-ETIS TAG Meeting Format

- The MIKE Coordinator requested member feedback on the new joint meeting format. There was general consensus that the new format was better and a more effective and efficient use of member's time.
- Holly Dublin requested periodic updates on progress that has been made with agenda items discussed at the TAG meeting. She also noted that the documentation is very formal, and a less formal presentation of the materials may help members stay engaged.

16 Next MIKE ETIS TAG Meeting Date and Venue

- The MIKE Coordinator raised the idea of the next meeting taking place in Harare, but added that this will bring some complications with regard the UN procurement process. As such, Nairobi may be easier.
- The MIKE Coordinator noted that the next budgeted meeting is for two years time, however, if sufficient cost savings have been made consideration will be given to holding another meeting next year.
- The MIKE Coordinator drew the TAG meeting to a close by thanking all participants for their attendance and inputs, and especially thanked the new members for their engagement despite the large volume of information to digest.
- Tom echoed Julian's comments by thanking all participants for attendance and their advice to the programme and noted that members can also chase data on behalf of ETIS as well as MIKE!