

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



Monitoring the Illegal Killing of Elephants (MIKE)
Eighth meeting of the Technical Advisory Group
Nairobi, 14-15 December 2009

Summary minutes

- Colin Craig, MIKE TAG member, Southern Africa
- Iain Douglas-Hamilton, MIKE TAG member, Eastern Africa
- Martin Tchamba, MIKE TAG member, Central Africa
- Moses Kofi Sam, MIKE TAG member, West Africa
- Liz Bennett, MIKE TAG member
- Kenneth Burnham, MIKE TAG member
- Anil Gore, MIKE TAG member
- Simon Hedges, MIKE TAG member
- Bob Burn, co-opted member MIKE Sub-TAG
- Tom Milliken, *ex officio* member MIKE Sub-TAG
- Tom De Meulenaer, *ex officio* member MIKE Sub-TAG (Chairman)
- Julian Blanc, MIKE Central Coordination Unit
- Mahaman Sani Massalatchi, MIKE Sub-regional Support Unit, West Africa
- Sebastien Luhunu, MIKE Sub-regional Support Unit, Central Africa
- Martha Bechem, MIKE Sub-regional Support Unit, Central Africa
- Edison Nuwamanya, MIKE Sub-regional Support Unit, Eastern Africa
- Tapera Chimuti, MIKE Sub-regional Support Unit, Southern Africa
- Tony Lynam, MIKE Sub-regional Support Unit, Southeast Asia
- Diane Skinner, IUCN/SSC African Elephant Specialist Group
- Fiona Underwood, University of Reading
- Russell Taylor, independent consultant (for agenda item 9)
- Louisa Sangalakula, ETIS programme officer
- Margaret Onyango, MIKE Central Coordination Unit
- Claire Mogambi, MIKE Central Coordination Unit
- Natascha van den Bosch, intern, MIKE Central Coordination Unit i

Absent with apologies:

- Aster Li Zhang, MIKE TAG member, Southeast Asia
- Raman Sukumar, MIKE TAG member, South Asia
- Holly Dublin, MIKE TAG member
- Hugo Jachmann, MIKE TAG member

Strategic and administrative matters

1 Adoption of the Agenda TAG08 Doc. 1

The MIKE Coordinator opened the eighth meeting of the MIKE Technical Advisory Group (TAG8). He noted the absence with apologies of Aster Li Zang, Raman Sukumar, Holly Dublin and Hugo Jachmann and extended a special welcome to Liz Bennett and Kenneth Burnham who had been unable to participate in the last two meetings of the MIKE Technical Advisory Group (MIKE TAG).

The agenda was adopted. The following items were suggested for inclusion under agenda item 17, Any Other Business:

- Update on aerial survey standards
- Feedback on the MIKE-ETIS Subgroup of the Standing Committee
- Dates for MIKE Sub-regional Steering Committee Meetings

2 Adoption of the Working Programme..... TAG08 Doc. 2

The TAG adopted the working programme, taking note of some rescheduling because of the availability of the representative of the IUCN/SSC African Elephant Specialist Group (AfESG) and the desire to move item 12 to the first day of the meeting.

3 Minutes of the 7th meeting of the Technical Advisory Group (TAG7) TAG08 Doc. 3

The MIKE TAG took note of the summary minutes of its seventh meeting (TAG7, Nairobi, 12-13 March 2009). The MIKE Central Coordination Unit (MIKE CCU) agreed to continue producing similar summary minutes for the present and future meetings of the TAG, including a list of agreed action points. They will be circulated to the meeting participants and TAG members for comments and finalized within a reasonable timeframe, normally not exceeding three months after the meeting took place.

4 Progress on the action points agreed to at TAG7..... TAG08 Doc. 4

The MIKE CCU presented document TAG08 Doc.4 and its annexes, describing progress until November 2009 on action points agreed at TAG7 and those that had remained in effect following its sixth meeting (TAG6, Entebbe, March 2008).

At TAG7, 49 action points had been adopted and the implementation of each was reviewed in some detail. The TAG agreed that 23 action points had been completed as described in the document; 11 were in progress of which several were expected to be discussed or concluded at the present meeting; 7 action points were ongoing; and 8 had not been executed. The TAG noted in particular the following action points (numbers refer to the relevant TAG7 agenda items):

- Items 1, 2, 3, 12, 14, 16 and 17: completed and can be deleted
- Item 4: The first action point was completed and the second is ongoing.
- Item 5: The Notification to the Parties was posted on the CITES website on 26 November 2009 and is shown in Annex 2 of document TAG08 Doc.4.
- Item 6: See agenda item 14 of the current meeting.
- Item 7: See agenda item 5 of the current meeting.
- Item 8: The workshop on the MIKE Standard and Analytical Reporting Framework is scheduled for February 2010. See agenda item 10 of the current meeting.

- Item 9: The action points had been overtaken by events and should now be envisaged in the context of the analysis of MIKE data for the 15th meeting of the Conference of the Parties (CoP15, Doha, March 2010), which has taken account of the analysis of African data conducted in 2008 and was expanded to include updated information from Africa and Asia, additional covariates, and different methodologies. The full analysis is expected to be submitted for publication and peer review in February 2010. The TAG emphasized the need for undertaking credible scientific, peer-reviewed research but also to ensure that the results of the analysis are communicated in non-technical language to a broad audience. The MIKE CCU explained that the African Subregional Steering Committee meetings were used as opportunities to present the MIKE analysis to African range States in layman's terms (Central Africa: Bangui, October 2009; Eastern Africa: Dar Es Salaam, February 2010; Western Africa: Abidjan, February 2010; Southern Africa: Gaborone, February 2010).
- Item 10: The covariates that had been suggested during previous TAG meetings had been incorporated in the analysis for CoP15 and the relevant actions points were completed. But the TAG recognized that identifying suitable covariates was an ongoing process and agreed to continue supporting and collaborating with the MIKE CCU in this regard.
- Item 10.1: Several action points had been completed in the context of the MIKE document for CoP15. Others, including the outcome of the 'efforts' workshop, the appropriateness of using PIKE, and the protected area management effectiveness were to be discussed elsewhere during the current meeting.
- Item 11: While the analysis of MIKE and ETIS data for CoP15 had been completed separately, no research on joint datasets or combined analysis had been undertaken. A simple coordinated narrative between the MIKE Coordinator and the ETIS Director of the separate presentations at CoP15 was envisaged. Two case studies were still under consideration (Central African elephant poaching and trade situation; numbers of elephants killed in Africa), but relevant data sets were not very strong. For example, variables that are lacking are the time that it takes to accumulate a commercial shipment of ivory in Africa for dispatching abroad, or the time lag between poaching events and seizures, while information on domestic ivory markets and consumption are increasingly difficult to obtain.
- Item 13.1: The subregional TAG members had not produced a critique of the MIKE sites in their subregion with the exception of Colin Craig (Southern Africa). It was agreed that alternatively, inviting these TAG members to annual Subregional Steering Committee meetings, as has been the practice since 2008, offered good opportunities to interact with the subregion and acquire (or provide) relevant information.
- Item 13.2: The TAG recognized that the validation of the MIKE site sample had to be discussed separately from questions regarding site boundaries. See agenda item 11 of the current meeting. Questions regarding problematic site boundaries were to be addressed by the Subregional Support Officers (SSO's) under agenda item 13 of the current meeting.
- Item 15: In progress - see agenda item 16 of the current meeting.

The TAG noted progress in the implementation of the remaining action points emanating from TAG6, noting the following (numbers refer to the relevant TAG6 agenda items):

- Item 6: The MIKE standard and analytical framework workshop was scheduled to take place in February 2010, and Mike Norton-Griffith was to be invited (who already attended the 'efforts' workshop held in December 2009). To be deleted when the workshop takes place.
- Item 9: The spatial representation of the patrol coverage will be taken into consideration in the MIKE standard and analytical framework workshop. To be deleted when the workshop takes place.

- Item 12.3: The MIKE programme is frequently approached by elephant range States that wish to add new MIKE sites. The conditions for adding sites to the current sample, as established at TAG6, remained in place and were applied for such situations. The TAG agreed that the representativeness of the current ‘formal’ MIKE site sample (i.e. 45 MIKE sites in Africa and 18 in Asia) needed to be reviewed. The statistical experts on the TAG commented that in the mean time, enlarging the MIKE sample would not hamper but could potentially strengthen the analysis. Ongoing and to be incorporated in the Action Points emanating from TAG8.
- Items 13 and 15: Ongoing and to be incorporated in the Action Points emanating from TAG8.
- Items 16, 17 and 18: The action points had been overtaken by events, particularly through the adoption of MIST and similar ranger-based data collections systems, and by applying the outcomes of the ‘Efforts’ workshop regarding essential data needs. The Action Point directing the MIKE CCU to investigate performance-based incentive systems was deleted as it had proven impossible to implement.

The MIKE CCU drew attention to Notification to the Parties No. 2009/049 of 26 November 2009 concerning the MIKE and ETIS Technical Advisory Group (in Annex 2 to document TAG08 Doc. 4). The TAG took note of the Terms of Reference and the composition of the MIKE and ETIS Technical Advisory Group presented therein.

The membership of the MIKE TAG, consisting of 12 individuals, remained complete. Bob Burn informed the TAG that he had decided to relinquish his position as co-opted member of the MIKE Sub-TAG, and to remain a co-opted member of the ETIS Sub-TAG only. The ETIS Director stated that the remaining vacancy in the ETIS Sub-TAG would have to be filled by a resource economist but no timeframe for this to happen could be provided. The MIKE CCU reminded the TAG that any changes in membership of the TAG or in its Terms of Reference will be communicated through a Notification to the Parties to CITES.

5 Current and long-term objectives of MIKE TAG08 Doc. 5

The MIKE CCU introduced document TAG08 Doc. 5, explaining that during TAG7, a discussion had been initiated on the further evolution of the MIKE programme on the basis of a number of questions regarding the overall objectives, structures and *modus operandi* of MIKE as currently applicable and contained in Resolution Conf. 10.10 (Rev. CoP14) on *Trade in elephant specimens*. The TAG had provided some initial reactions on four questions, but four others had remained without comments or guidance. Both the MIKE report for CoP15 and the recent efforts workshop had identified a number of additional questions regarding the further evolution of the MIKE programme. They related to the capacity of the elephant Range States to internalize the MIKE monitoring system as currently devised, and to run it on a sustainable basis. But also technical challenges had been noted: Should MIKE data collection be completely and exclusively ranger-based? If so, what to do with non-protected or badly monitored MIKE Sites? How to move MIKE closer to and it make more relevant for the Sites?

In its document for CoP15, the MIKE CCU had noted that “*although the objectives, scope and general modus operandi of MIKE are specified in Resolution Conf. 10.10 (Rev. CoP14), it seems important to explore ways to develop and strengthen the MIKE system further and render it as sustainable, useful and relevant as possible. This is one of the reasons why the Secretariat proposes to review the Resolution in consultation with the MIKE-ETIS Subgroup of the Standing Committee and TRAFFIC*”. The MIKE CCU explained that it had proposed that this revision be undertaken between CoP15 and the 16th Conference of the Parties (CoP16) in 2013, and that at least the technical and scientific elements of this revision would require the active input from the TAG. This could be organized in different manners: the MIKE CCU could produce a discussion paper for review by the TAG; the TAG could create a working group; the SARF workshop could be requested to start looking into future MIKE evolutions; or the MIKE CCU could be asked to submit several alternative development scenarios.

The TAG indicated that the current real or perceived ‘top-down’ approach of imposing a certain method to collect and analyze statistically relevant data on illegal killing of elephants needed to be discussed. While recognizing that range States had shown great interest in learning more about elephant poaching levels and had broadly agreed to ranger-based monitoring approaches as favored by MIKE, they might want to collect data in their own way. MIKE should therefore establish and encourage quality standards for MIKE data compilation. The programme should analyze the collected data (standard and/or non-standard) in the best possible manner and help the range States in interpreting their information, thereby reducing the perception of a top-down approach. A more bottom-up approach, starting from the MIKE Sites with a minimum set of data requirements, was felt important. The MIKE CCU indicated that by promoting and supporting MIST important steps in that direction were ongoing: the installation of MIST responded first to the overall information and monitoring needs of the Site, with MIKE requirements coming next and fully integrated in the former. It also involved in a number of Sites collaboration with NGOs to help range States and Sites.

In the context of the long-term future of the MIKE programme, the TAG discussed the programme's funding and resources in case Resolution Conf. 10.10 (Rev. CoP14) would be revised earliest in 2013 at CoP16. If there was no financial support beyond 2011, not much could be done to evolve the MIKE programme. The MIKE CCU mentioned that there was a commitment to support MIKE in Africa until 2011 and that some discussions were ongoing for support in Asia. It mentioned that external long-term funding would always remain a challenge. The MIKE CCU indicated that the implementation of a draft *African elephant action plan*, developed by the African elephant range States, was estimated to need 97,350,000 USD between 2009 and 2012. While MIKE or ETIS were not explicitly mentioned in this *action plan*, Activity 6.2.3 stated: “Effectively implement provisions in MEAs [CITES, CBD, CMS, etc.] relevant to elephant conservation and management”, which could be assumed to include compliance with all the provisions on MIKE and ETIS in Resolution Conf. 10.10 (Rev. CoP14). The African Elephant Fund that the Secretariat should establish in support of the *Action plan* was not yet existing because the *Action plan* was still not finalized (four donors had made early pledges totaling some 300,000 USD).

The TAG encouraged the MIKE CCU to put effort in seeking resources to maintain a vibrant and strong MIKE programme, both in Africa and in Asia. The TAG agreed to look at the design of MIKE and contribute to discussions on further developments of MIKE.

Technical matters

Analytical issues

6 MIKE analyses for CoP15 TAG08 Doc. 6

In preparation of CoP15, an analysis of all MIKE data available to the MIKE CCU was conducted in August 2008 by Bob Burn and Fiona Underwood, with the assistance of the MIKE Data Analyst. The document summarizing the methods, results and conclusions of the analysis and was circulated to the TAG for comments on 11 September 2009 (see TAG08 Doc 6. Annex 1). A number of comments concerned: data quality; time-changing covariates; relationship between the sizes of areas and poaching rates; relationship between Proportion of Illegally Killed Elephants (PIKE) and elephant population size; relationship between impacts of poaching and PIKE; scale of the probable fraction; net primary production as a proxy for vegetation cover; and choice of information criterion. An adapted version of the analysis would be submitted to a scientific journal for publication that would take account of these and other TAG comments, as well as any new data collected in the course of 2009.

The MIKE CCU mentioned that the data in the analysis presented in the document for CoP15 (TAG08 Doc 7. Annex, CoP15 Doc. 44.2) included MIKE data up till June 2009. In late January or the beginning of February 2010, if the SSO's had finished with data collection for the remainder of 2009, a re-analysis of the data was scheduled. The resulting revision of document CoP15 Doc. 44.2 would be presented at CoP15.

De Data Analyst presented the analysis together with Bob Burn and Fiona Underwood. The objectives of the analysis were to determine trends in illegal killing of elephants and to investigate

relationships between illegal killings of elephants and different covariates. These covariates were determined both at country level and at site level. The variable used was the PIKE, which the TAG agreed was a key indicator for determining poaching levels. At site level, the analysis showed positive relationships between the sizes of elephant populations and PIKE and the net primary production and PIKE; and a negative relationship between the area and PIKE. At national level, there was a negative correlation between PIKE and government effectiveness as measured by the World Bank. This last relationship was statistically the strongest. The analysis illustrated that the effects of area, elephant population and net primary production (vegetation cover) were far more pronounced in countries with low governance than in countries with highly effective governance. Furthermore, the analysis provided evidence that, looking at site- and country level, a number of sites and countries can be interpreted as suffering from above-average levels of elephant poaching, while others have an average level of elephant poaching or enjoy below-average levels of elephant poaching.

The analysis also demonstrated a time trend for PIKE, suggesting a decline between 2002 and 2006, followed by an increase peaking in 2008. Although the trend line suggested an apparent decline in 2009, this should be interpreted with caution because only six months of data were available for 2009 and data coverage across sub-regions was uneven. In particular, the data available for 2009 lacked records from Central Africa, which otherwise was the region with the highest overall PIKE. The update analysis was expected to provide trends for 2009 that should become more reliable.

The TAG preferred the analysis to indicate that linkages between CITES decisions and trends in PIKE were not (or could not be) established at this stage. It recommended removal of the graphics comparing time trends in PIKE, ivory seizures, legal ivory trade and African timber exports as these analyses were not robust enough. It commented that nevertheless, the outcomes of the MIKE and ETIS analyses showed similar trends and general findings, using different data and analytical protocols. This was felt to be a very strong basis for answering questions about key-factors related to elephant poaching and illegal trade, i.e. those mentioned in the MIKE analysis.

Iain Douglas-Hamilton presented the results of research into the levels of illegal killing of elephants in the Laikipia-Samburu MIKE site, which had been integrated into the MIKE reporting for CoP15. The study investigated *inter alia* the relationship between land use and PIKE. Data had been derived from regular patrols and from a participatory network (actively harnessing local knowledge). The results indicated that areas with higher degrees of insecurity or political strife experienced higher levels of illegal killing. Protected areas surrounded by insecure regions demonstrated much higher PIKE values than similar areas bordering on more secure regions. Neither elephant population size nor area was significantly correlated with PIKE, which indicated that the landscape context was the critical aspect related to illegal killing. The PIKE level peaked in 2008 (50%) and dropped again in 2009 (38%) although that absolute figures of elephant mortality in that year were higher than before, partially explained by severe draught conditions.

The TAG agreed that overall, the MIKE data analysis and the case study conducted in Laikipia-Samburu showed that PIKE was a useful measurement for the level of illegal killing of elephants. One would need to know some demographics of the elephant population (e.g. elephant population size) to be able to estimate the strength of the relationship between PIKE and land use.

Bob Burn presented the statistical analysis of the MIKE data. He rationalized the utilization of PIKE, which theoretically eliminated the effort factor on the basis of the underlying assumption that the same amount of effort was put into detecting elephant carcasses, whether illegally killed or not. He explained however that it was not possible to reliably estimate effort and site-level variables based on site summaries alone. While every site itself encounters a positive relationship between effort and catch, the use of site summaries can show a negative relationship between efforts and catch instead. He furthermore indicated that it might be possible to fit generalized linear models to estimate p (PIKE - the probability of an elephant being killed) from patrol level data, but that this has to be tested. In reaction on this presentation, the TAG mentioned that another way of addressing the problem of effort and site-level variables was not to use patrol-level data, but applying dedicated surveys (e.g. with dogs) for detecting carcasses.

Another issue mentioned by the TAG was that of bias. One way was to make the analytical model more complex and incorporate bias into the model. The other way was to use the current model and correct it later for bias, which made the bias independent from the analytical model. Whatever way will be used, the results should be incorporatable.

The MIKE CCU suggested that it would be good to put these research questions to the research network. The TAG supported this suggestion, implicating that a list of research questions on this topic would be established and worked out.

7 MIKE report for CoP15 TAG08 Doc. 7

The MIKE CCU presented the MIKE reporting to CoP15. The document (CoP15 Doc. 44.2) includes: a summary of the analysis of the MIKE data collected in Africa and Asia between 2002 and mid-2009; a summary of the detailed analysis of the PIKE in Laikipia-Samburu; a summary of information on the implementation of MIKE in MIKE sites and by participating range States, based on a questionnaire survey at the site- and country-levels; an overview of activities undertaken by the CITES Secretariat and its MIKE programme; and conclusions and recommendations. It had been available from the CITES website since late October 2009 but the MIKE CCU had not received any external feedback since then. The report was being translated in French, but the French version was not yet available from the CITES website.

In compliance with a request from the Standing Committee at its 58th meeting (SC58, Geneva, July 2009) to provide the CoP with as up-to-date and complete information as possible, elephant carcass data will continue to be collected in the course of 2009 and an updated analysis will be undertaken in late January and February 2010 for communication at CoP15. As a consequence, the document for CoP15 will be revised and presented as document CoP15 Doc 44.2 (Rev.).

The MIKE CCU explained that very limited time will be allocated for presenting the documents, meaning that only key-findings of the updated MIKE data analysis and Laikipia-Samburu research will be presented. The MIKE CCU intended to coordinate this presentation closely with ETIS. On a question if the report and its findings would be translated into any Asian language, the MIKE CCU answered negatively, but indicated that a power point presentation of the MIKE findings could perhaps be translated into Cantonese or other languages for use in Asian countries.

8 MIKE/ETIS linkages and analysis for CoP15 TAG08 Doc. 8

The MIKE Phase II project made provisions to “ensure that appropriate MIKE/ETIS linkages are created”. The MIKE CCU explained that the subcontract with TRAFFIC in support of its ETIS work contained specific provisions for TRAFFIC to address MIKE/ETIS linkages by developing statistics and data models that integrate the ETIS and MIKE data sets in conjunction with professional consultants, and by comparative assessments and integration of the ETIS and MIKE data results for presentation at the CITES Conference at the Parties. In line with the terms of reference of TRAFFIC’s subcontract, it was anticipated that a collective analysis of joint research results from MIKE and ETIS would be presented at CoP15 as an informative document. At TAG7, it had been advised to focus on two case studies based on MIKE/ETIS data, one updating and expanding the research on the number of elephants required to supply ivory markets and a second about poaching and ivory trade routing in Central Africa.

The MIKE CCU noted that these contractual activities had not been initiated, and that it would be practically impossible to do so by CoP15. Tom Milliken confirmed this. He mentioned that although ETIS did not contain sub-regional levels of analysis, as MIKE does, and was using different datasets, the outcomes of the two analyses showed similar outcomes. Both conclude that the quality of governance was a key factor in explaining levels of illegal trade and illegal killing. Poverty was an additional factor compounding poaching levels. These should be key messages for CoP15.

In terms of research, the TAG agreed that time lags required further in investigations, i.e. the time between poaching incidents, accumulation of ivory shipments, and movements to markets as this would help to understand the linkages between MIKE and ETIS. The TAG also emphasized the need to have more labs working on DNA sourcing of ivory and aging, including in Asia, and

encouraged the MIKE CCU to promote this further. The MIKE CCU reminded the TAG that since 2007, range States were already instructed to provide elephant or ivory samples for DNA identification but that it might be possible to work with one or a few range States in Africa and Asia to champion this task.

9 Measurement of law enforcement and detection effort

9.1 Outcomes of a workshop on law enforcement and detection efforts TAG08 Doc. 9.1

The TAG had recommended previously that issues surrounding the measurement in MIKE sites of the effort that law enforcement personnel invest in detecting elephant carcasses and incidents of illegal killing should be addressed at a workshop. The 'CITES-MIKE programme Law Enforcement Monitoring and Detection Efforts Workshop' was held on 9-11 December 2009 in Naivasha, Kenya. The workshop was facilitated by Russell Taylor and attended by 28 participants from various disciplines and fields of interest. Its objectives were: to review existing measurements of effort in different countries and protected areas; and to assist the MIKE programme in identifying appropriate and feasible measures of enforcement and search effort that could be applied in MIKE sites in Africa and Asia, allowing standardized comparisons across sites.

Russell Taylor presented a summary of the deliberations, recommendations and conclusions of the workshop, announcing that the full workshop report would be available from the CITES website. The TAG was requested to take note of the recommendations from the workshop and to discuss their applicability to the implementation of the MIKE programme.

The TAG agreed that one of the important outputs of the efforts workshop were unambiguous clarifications of the minimum information that needed to be collected on elephant carcasses and on patrol/detecting efforts for meaningful statistical analysis. The TAG recognized that the resulting new, simpler carcass and patrol forms should be more workable, and that data quality verification remained important. Challenges remained to integrate those data in a broader analysis.

The MIKE CCU emphasized the importance to first meet the specific information monitoring needs of each individual site; then assist in installing the relevant monitoring tools; and finally to build-in the specific MIKE data requirements. This was the best manner to generate sustainable support from the sites for routine MIKE data collection and verification. Furthermore, in order to obtain MIKE field data in a useful format, either for management purposes or for analysis, local 'champions' were needed. MIKE Site Officers were specifically nominated to fulfill such a role, but their appointments and performance were outside of the remit of MIKE (the posts of MIKE Site Officer and MIKE National Officer are not formalized under CITES). The original design of the MIKE programme anticipated that Site and National Officers would devote fifty percent of their time to MIKE issues, but this is unlikely to be true for any site or range State. Site Officers may therefore not be in the best position to ensure data flows and data management.

While recognizing these challenges, the TAG did not provide alternatives or a way forward on how to deal with these important responsibilities.

9.2. Protected area management effectiveness as a measure of conservation effort..... TAG08 Doc. 9.2

The TAG recommended at TAG7 that the MIKE CCU should look into indices of Protected Area Management Effectiveness (PAME) as a possible proxy for conservation efforts in MIKE sites. The MIKE CCU gave a detailed update on the outcome of the actions that it had undertaken in this regard. It had contacted the UNEP-World Conservation Monitoring Centre (UNEP-WCMC), which has been compiling existing assessments of PAME around the world, to request access to the PAME records that had been put into a common reporting format. Information for 22 MIKE sites only was available, less than a third of the total number of sites. Given the paucity of the available data, the MIKE CCU had decided not to incorporate the PAME scores in the MIKE analysis conducted in August 2009.

When asked about the advisability of MIKE for undertaking further PAME assessments or explore ways to collate this information, the TAG suggested that before putting too much effort into this approach, a test assessment could be undertaken with data from the 22 sites to examine whether a relationship between PAME and PIKE existed. Non-protected MIKE sites would in any case remain difficult to evaluate in this manner.

10 MIKE standard analytical and reporting framework..... TAG08 Doc. 10

The MIKE CCU reiterated that the development of a Standard Analytical and Reporting Framework (SARF) was recommended by the evaluation of MIKE Phase I. Funding for MIKE Phase II included provisions to hold a workshop on the development of a SARF.

A discussion arose about the subjects to be tackled by, and the scope of this workshop. Suggestions included: appropriate reporting mechanisms; reporting formats; frequency of reporting; a re-evaluation of the design of the MIKE programme; quality standards and control for carcass and patrol data; handling covariates that changes over time; MIKE outcomes and outputs; data collection; and encoding and transfer of information.

The TAG agreed that the workshop needed well-defined, focused objectives to avoid too broad or fuzzy approaches. Care should be taken to continue including Asia and sites with small elephant populations. The TAG concluded that the questions formulated in paragraph 5 of document TAG08 Doc. 10 were valid, but that the main purposes of the workshop should be: analysis of MIKE information; reporting and communication of MIKE data and subsequent outputs at site- and global level; and implementing data analysis strategies. Instead of looking at a radical overhaul of the existing MIKE programme, the workshop should focus on current protocols and practices, assess what had been accomplished, and identify areas where the MIKE system could be improved (i.e. evolution rather than revolution). It was agreed that Mike Norton-Griffith should be invited to this workshop since he had been one of its initiators.

Processes and procedural issues

11 Validation of site sample TAG08 Doc. 11

The MIKE CCU described the problems with the current set of MIKE sites, particularly whether they were truly representative for the status of African and Asian elephant populations and/or their ranges. Historically, the starting point for identifying the sample had been a pre-selected list of sites in a number of elephant range States. This list was then subjected to a cluster analysis, resulting in 45 sites in Africa and 18 in Asia. However, the initial list was probably biased and not truly statistically representative, and so is probably the resulting site sample that the MIKE programme currently uses. The MIKE CCU explained that it had resources to re-validate the MIKE sample and re-evaluate the site selection. It was seeking a model for evaluating the consequences of adding, replacing or removing sites. Based on a number of research questions formulated in document TAG08 Doc. 11 and on ensuing discussions, the TAG encouraged the MIKE CCU to undertake a consultancy as outlined in the document. The results could then be presented to and discussed by the TAG at its next meeting.

12 Operation of MIKE in African and Asian subregions..... TAG08 Doc. 12

The SSO's gave a presentation on technical and analytical issues concerning the implementation of MIKE in their subregions.

Central Africa

The different MIKE sites in Central Africa were presented with site characteristics, staffing situation, borders, local challenges to implement MIKE, etc. Most sites used MIKE forms in addition to others, while some never used MIKE forms. Three sites used the MIKE database only, while eight held it as a secondary database and five as a temporary database. Two sites had no carcass data: Monte Alen, which did not provide any records, and Kahuzi Biega that reportedly had no carcasses.

An inventory of elephant populations in Bangassou, using faecal DNA capture-recapture methods, had been initiated (with initial investigations showing no elephant signs inside the site but presence in the neighboring hunting zone). Previous estimations had mentioned between 500 and 1,500 elephants, but without clear basis. The biggest constraints were coordination and collaboration with the laboratory for undertaking the analysis, and the general inaccessibility of, and very difficult logistics in the area (savannah-forest). Another survey in Sangba, eventually with participation of WWF CAR, was under discussion.

The following issues were commented upon by the TAG:

- Site boundaries of Sangba and Bangassou

If no elephants were encountered in the Bangassou site itself, then that could reflect population declines or movements. If the boundaries would be extended to include the neighboring zone with elephants, it might look as if no changes in the site had occurred. But the TAG agreed on a flexible approach, arguing that including the area where elephants were present would give more information for the analysis. Besides the boundary issue, data on relative elephant abundance had to be considered. In South and Southeast Asia, lots of areas with small elephant populations existed but they were significant in terms of the status of the species. In Central Africa, by comparison, most elephant populations were large, so that a small population in Bangassou might not be all that significant.

- More realistic and pragmatic guidelines for undertaking forest elephant population surveys as formal MIKE standards proved prohibitively expensive and practically inapplicable.

While partnerships with local governments or NGOs could reduce costs, the fact remained that not all organizations wanted to apply the laborious MIKE standards. The TAG agreed to look at a set of minimum qualitative and quantitative requirements for undertaking forest elephant surveys in MIKE sites for situations where the MIKE standards could not be applied. The relative merits of rainfall models and faecal DNA were discussed. It was finally recognized that MIKE's core business was to detect and catalogue elephant carcasses, with techniques such as detection dogs and targeted searches to be explored further.

The TAG decided to create a working group to explore survey methods for forest elephants in Central Africa that were applicable in the field. Simon Hedges, Ken Burnham, Moses Kofi Sam, Martha Bechem, Bofo Yaw and Julian Blanc all volunteered for that working group, with an open invitation for further TAG members to join.

Eastern Africa

The boundary and organizational issues in the sub-region's MIKE sites were shown (only Selous was the MIKE site and not Mikumi; Selous is bigger than all other MIKE sites in the region combined, but has only one MIKE Site Officer – each of its eight sectors could do with an 'Assistant MIKE Site Officer'; Rungwa and Ruaha should be managed as two separate MIKE sites; Tsavo should be complemented by a new site, Mkomazi, across the border in Tanzania). While most countries were using the MIKE carcass forms, only Rwanda and Tanzania also applied the LEM reporting protocols and forms. Uganda and Rwanda were now providing both LEM and carcass information through MIST applications, with Kenya and Tanzania now following. Most MIKE states had carcass data available up to the end of 2009 (in the Rwanda site, no mortality had been recorded).

It was explained that the MIKE site in Eritrea (a non-protected, non-patrolled area) was poorly defined. But the government had decided to change it into a National Park, with rangers being recruited and boundaries demarcated that covered the whole elephant range.

Ethiopia was keen on joining MIKE and had provided relevant information on two proposed new sites. Working with Sudan was more complicated because official communications were directed to Khartoum in the north, while elephants (and interests to join MIKE) were mainly concentrated in the semi-independent south.

Overall implementation challenges included: occasionally unclear site boundaries; staff turn-over; varying institutional structures; inadequate national funding; dealing with incompatible conservation philosophies and policies, promoted by international NGO's operating in the subregion; and integrating Ethiopia and Sudan in the MIKE structures.

Following up from this presentation, the TAG discussed what to do with sites that did not provide MIKE data. For the CoP15 data analysis, sites with no data records as a consequence of lack of MIKE activities had been excluded. It had been tried to separate these instances from those sites where patrolling had taken place and no carcasses had been recorded. But the TAG agreed that MIKE should look more systematically into data failures and the existing gaps, and suggested that these issues be addressed at the SARF workshop.

Southern Africa

The overview of the different sites in Southern Africa indicated that the Chobe site was considering the whole district and not only the National Park. With Caprivi, the number of conservancies has increased, making it more difficult to define boundaries. The boundary of Nyaminyami has not been confirmed by the government. Cabora Bassa was not yet delineated but the government was in the process of doing so.

It had been possible to collate information on the indices of protection in the sites, expressed as dollars spend per square kilometer, and of the manpower, expressed as the number of rangers per square kilometer. A lot of sites had too little budgets and staff. With regard to MIKE data collection, most sites were up to date but this had been difficult in South Luanga, Chewore and Nyaminyami because of poor information management, while Niassa had not supplied information since 2006 and Cabora Bassa none at all. The TAG was informed about plans for aerial elephant population surveys and capacity building activities (including a workshop on ranger-based data collection and aerial survey training).

Challenges included defining site boundaries in terms of ecosystems vs. the MIKE sample; integrating MIKE into routine wildlife monitoring and LEM; and rationalizing the institutional arrangements for implementing the MIKE programme.

West Africa

This subregion has historically held the most MIKE sites, but it has the least elephants in Africa. The overview included the characteristics of the different MIKE sites such as size, boundaries, status of data collection, and MIKE implementation challenges. In Benin, MIKE forms were not used consistently. Burkina Faso had frequent changes of staff and a leadership problem. Côte d'Ivoire had institutional problems and civil strife. In Ghana, the data transmission was not a routine. Guinea depended mainly on external support. Liberia had leadership problems. Mali and Togo changed frequently their site-officers. And Nigeria and Senegal both had institutional problems and sites that probably no longer held elephants. A specific problem was that some individuals seemed to be holding on for too long to positions in the national MIKE organigram (e.g. beyond retirement age). Overall, it seemed that the subregion's elephant populations had changed little over the years.

The TAG commented that dealing with frequent staff turnover, staffing questions and institutional problems needed to be resolved by the countries that participated in the MIKE programme, and that the TAG had little or no solutions to offer.

The TAG was informed about collaboration in Sapo between MIKE and the Wild Chimpanzee Foundation in a joint survey of elephants and chimpanzees. Further collaboration in multi-species surveys would be useful but the approach was scientifically quite challenging and required careful coordination.

A number of technical questions about forest elephant survey emerged (length of transects, costs, dealing with small elephant populations,...). The TAG recalled that these were discussed in the MIKE dung survey standards manual. For transects, it was not the length of transects that was important but the numbers needed to get reliable results. Training in the field was important to

ensure consistence. Dung pile decay methods were more expensive than others and if no dung piles were found, the capture-recapture method was recommended.

Southeast Asia

This subregion had no formal SSO, but WCS had conducted a project over the last year that simulated activities of a MIKE Subregional Support Unit, which were explained in detail. MIKE sites had problems due to low staff capacity, understaffing, inadequate operational budgets, lack of motivation, problems with communication and the perception that MIKE was externally driven. Most of the elephant killings occurred just outside protected areas (and MIKE sites), principally due to escalating human/elephant conflicts, calling for a standardized 10 or 20 km 'ecological impact/buffer zone' around each MIKE site from where data on elephant mortality should be collected. But this was very challenging as patrols were not effective in finding and reporting such carcasses.

In response to questions about extending boundaries to include important elephant movement corridors, encompass ecological landscapes or cover buffer areas that receive intensive monitoring for human-elephant conflicts, the TAG commented that there was actually no downside in expanding sites as long as the collected information was specially referenced. It agreed that in Laos PDR, MIKE sites could be switched for incorporation in future analysis if they received adequate support for surveys and LEM activities.

South Asia

The MIKE Coordinator clarified to have been in contact with the Director of Project Elephant to discuss the possibility for transferring the subregional MIKE operations to the Wildlife Institute of India. This looked a promising avenue for establishing a sustainable MIKE programme in South Asia. It was particularly unfortunate that Raman Sukumar, who had been kept inform about this planning and had facilitated contacts, could not participate in the present meeting to help address the practicalities of the move.

13 MIKE implementation status questionnaire.....TAG08 Doc. 13

The MIKE CCU had developed a questionnaire for MIKE site and national officers and SSOs at the request of the TAG to capture information on the overall implementation of the programme. Not all questionnaires were available before the deadline for reporting to CoP15, but a preliminary analysis, frequency tables and histograms had been produced.

The TAG commented that the questionnaires showed valuable insights in the difficulties in implementing a vast and complex programme such as MIKE. A series of identified problems were being addressed under the current Phase II, for example through capacity building and the deployment of MIST. But it was also recognized that even simple information was hard to come by and that the MIKE programme had a legacy of trying to collect too much data in too complicated manners (the old MIKE carcass form, with its 18 data fields of which many proved to be redundant, was given as a case in point; the implementation questionnaire itself was very comprehensive and 'heavy').

The TAG recognized that the challenges for implementing the MIKE routines on the ground were unlikely to change drastically in the nearby future. The questionnaire was felt to be very useful, but the TAG advised not to repeat it too frequently and to focus it on priority areas of concern, for example monitoring training progress over time

Research issues

14 Operation of the MIKE-ETIS research networkTAG08 Doc. 14

By introducing document TAG08 Doc. 14, Julian Blanc explained his activities to get the network up and running. Bob Burn explained that he had been unable to devote any time to the research network before September 2009. Holly Dublin, the other 'leader/animator' of the network, did not attend TAG8.

The TAG reviewed the list of research topics that had been identified at its previous meeting and was presented in the Annex to document TAG08 Doc. 14. Only a small number had been initiated or completed (research topics 1, 3, 8, 12, 12 and 25). From the feedback that the proponent/leaders gave, all others remained pertinent and relevant with the exception of research topics 4 (as the methodology would be difficult to repeat). The new leaders for research topic 19 were Simon Hedges and Martha Bechem.

Bob Burn commented on the analysis of PIKE, which had been one of the topics under this umbrella, and the research that had been conducted separate from the CITES context. The analyses was supposed to be peer-reviewed and published. But he expressed concern that the current MIKE data policy, which nominally requested extensive consultations with the MIKE CCU and countries that had contributed raw data, hampered normal scientific research and publication practices, and that this undermined research and analysis of MIKE information.

The MIKE CCU agreed that the MIKE data policy needed to be reviewed. It explained that other types of data that CITES Parties are submitting regularly, such as CITES trade data, became available in the public domain for research purposes or analysis as soon as they had been submitted by the Parties to the CITES Secretariat and published by UNEP-WCMC. In principle, MIKE (and ETIS) data could be handled in a similar manner.

The TAG agreed to maintain the concept of an open MIKE-ETIS research network to investigate scientific questions emerging from and pertinent to MIKE and ETIS. The list of research topics was felt to be very useful, not only for scientists and interested NGOs, but also for donors. The TAG recommended that the MIKE CCU revise and update the list of research questions in the light of the feedback received, and give it more prominence in the wider scientific community.

The TAG was asked if someone was interested in replacing Bob Burn as animator of the network and work with Julian Blanc and Holly Dublin (who should be asked if she was still keen on her position in the network). However, no TAG member could immediately respond positively to the invitation.

15 Collaboration with the IUCN/SSC AfESG and AsESG TAG08 Doc. 15

The representative of the IUCN/SSC AfESG presented progress on the activities undertaken in the context of its collaboration with and support from MIKE.

- Communications: *Pachyderm* now included a section for MIKE and ETIS updates.
- Harmonization of data: The development of an open-sourced, harmonized African and Asian Elephant Database was moving along. The design should allow for data to be downloaded and point sightings to be added, and for expansion to include other species. A website will be provided to test data applications. Historical elephant population estimates will be kept in the database, which should make it possible to provide trend analyses on a site-by-site basis.
- African elephant meetings: The AfESG reported on the support that it provided when MIKE organized the first and second African elephant meetings (Mombasa, June 2008; Gigiri, March 2009).
- Elephant bushmeat study: During the first half of 2009, background information had been gathered. The AfESG then published a call for proposals for undertaking the study in the summer, and selected implementers. The final product is expected to be an IUCN Occasional Publication in partnership with CITES-MIKE (with an Executive Summary for policy makers; Summary Analysis and Report; and detailed case studies at the Site and Country level). The TAG commented that in most of Central Africa, the urban bushmeat trade did not contain elephant meat, with the exception of Kinshasa. It was also announced that there would be at least two case studies in MIKE-sites to look at the overall MIKE carcass and patrol data and its linkage to bushmeat. Kinshasa was an exception in urban trade.

The representative then gave an update on a meeting of AfESG members, held in Nairobi in November 2010. Two working groups had been established with relevance to the MIKE

programme. The terms of reference for these working groups remained to be established. The first addressed trade in wildlife products and timber in Central Africa and was chaired by Tom Milliken. The second should collect information on elephant poaching incidents, principally outside MIKE sites, and was chaired by Patrick Omondi.

Simon Hedges clarified that for the AsESG, the new elephant database was the main collaboration with MIKE. He recognized that the Asian elephant research community was not fully behind MIKE. That brought challenges and was unlikely to change in the nearby future.

The MIKE CCU introduced document TAG08 Doc. 15 and its Annex, drawing attention to Decision 14.78, taken at CoP14 and instructing the Standing Committee to regularly review the trade in and conservation status of elephants. As the original wording of this decision was poor and confusing to the point of being unworkable, the Secretariat had obtained the agreement of the Standing Committee to involve IUCN, TRAFFIC and UNEP-WCMC in these reviews. It had now drafted a revision of this decision for consideration at CoP15 that would further rationalize the inputs of IUCN, TRAFFIC and UNEP-WCMC. The proposed new decision simply invited these bodies to collaborate in the reviews to the extent possible.

The MIKE CCU also mentioned that the Secretariat had proposed to broaden the scope of Decision 14.78 (on funding for elephant-related CITES activities) to include ETIS, the African Elephant Fund and activities such those mentioned above (i.e. under a revised Decision 14.78).

Upon request, the MIKE CCU gave brief updates on a couple of other CITES processes and issues concerning elephants.

- A version of the *African elephant action plan*, thought to be final, had been circulated early in December 2009. The development by the African elephant range States of such an *action plan* had been decided at CoP14. An accompanying African Elephant Fund, to be created by the Secretariat, had not been able to move ahead in the absence of the *action plan*. The two African elephant meetings mentioned above had provided opportunities to build outputs on these issues.
- Three proposals concerning *Loxodonta africana* had been submitted for CoP15: Proposals 4 and 5 concerned the transfer of the populations of Tanzania and Zambia from Appendix I to Appendix II with specific annotations allowing *inter alia* for one-off sales of ivory stockpiles (Proponents: United Republic of Tanzania and Zambia respectively); and Proposal 6 amended the existing annotation for African elephant to eliminate all forms of ivory trade and stop the submission of downlisting proposals for 20 years (Proponents: Congo, Ghana, Kenya, Liberia, Mali, Rwanda and Sierra Leone). In compliance with Resolution Conf. 14.5, the CoP could call for a dialogue meeting for the range States of the African elephant to exchange views and seek consensus on these three diametrically opposed elephant proposals. One or more of the Parties that submitted these proposals may also request for a dialogue meeting, which in practice would have to be held on 19 and 20 March 2010 (the 2-day break between the first and second week of the meeting). It was however not clear if the African range States were ready to compromise, or if the required quorum of at least two-thirds of African elephant range States would be willing to participate in a Dialogue. If no compromise could be reached beforehand, the proponents would each present their proposal, possibly making various amendments during ensuing discussions to seek the necessary two-thirds support for adoption.

Logistical Issues

16 Hardware and software used by the MIKE programme. TAG08 Doc. 16

The MIKE CCU provided an update on the implementation of the hardware and software policies that had been explained and agreed upon and at earlier TAG meetings. The Inveneo computers, suitable for sites, were arriving in the first quarter of 2010. They were going to be powered by solar panels. Linux was chosen to be installed as operating system, because it was thought to be more immune to viruses. The Inveneo computers would be delivered with site-specific, customized MIST databases, GIS and other software as necessary. As GPS units, five models of data tracker

sticks (with a GPS receiver and data locker) had been purchased for testing. The main advantages were ease of use and no training requirements. The GPS units were to be distributed to sites in the first quarter of 2010.

Conclusion of the meeting

17 Any Other Business *No document*

- a. Colin Craig explained that he had committed to make a number of relatively minor updates and amendments to the existing MIKE aerial survey standards. These would be finished early in 2010.
- b. The MIKE Coordinator gave feedback on the MIKE-ETIS Subgroup of the Standing Committee, which met in the sidelines of the annual meetings of the Standing Committee. The membership consisted of seven countries (China, DRC, Kenya, Japan, UK, USA, Zambia). At its latest meeting in July 2009, they agreed on five substantial tasks:
 - MIKE gap-analysis and needs assessment
 - Review of the financial status of MIKE and ETIS
 - MIKE and ETIS data handling policies
 - Revision of Resolution Conf. 10.10 (Rev. CoP14)
 - MIKE future beyond 2011

The MIKE-ETIS Subgroup wanted to discuss these in the sidelines of the one-day meeting of the Standing Committee, held in Doha just before the start of CoP15. The Coordinator questioned if this was practically possible. He explained that questions about the MIKE finances had also emanated from animal welfare NGOs opposed to MIKE, indicating that apparently, such questions had been brought to the German and EU Parliaments. He expected that these NGOs would be actively criticizing MIKE during CoP15.

The Coordinator indicated that after 2011, new external funding would be required to ensure the continuation of the MIKE programme (MIKE nor ETIS had been included in the Secretariat's regular budget proposals for CoP15). The TAG reiterated that the MIKE CCU should actively engage in fundraising initiatives, and that it would be willing to support such efforts. It urged the MIKE CCU to again approach the long-term funders of the programme to ensure continuation until 2016, encouraged partnerships with NGOs and other stakeholders to obtain specific support for local MIKE activities, and supported approaching new partners and stakeholders, possibly China and India.

- c. Since 2008, the subregional TAG members (and the ETIS programme) had been invited to the annual meetings of the MIKE Subregional Steering Committees. The provisional dates for upcoming meetings were as follows:
 - Southern Africa Subregional Steering Committee Meeting: Gaborone, Botswana, 8-9 February 2010
 - West Africa Subregional Steering Committee Meeting: Abidjan, Côte d'Ivoire, 11-12 February 2010
 - Eastern Africa Subregional Steering Committee Meeting: Dar Es Salaam, Tanzania, 22-23 February 2010
 - Central Africa: held its meeting in Bangui in October 2009.
 - Southeast Asia Subregional Steering Committee Meeting: after CoP15.

18 Determination of the time and venue of the next TAG meeting *No document*

The dates and agenda for the next meeting of the MIKE TAG were dependent on the outcomes of CoP15, but TAG9 would most likely in the second half of 2010.