



# Law Enforcement Training for MIKE Site Managers

## TRAINING MODULE: MIKE SITE MONITORING GUIDELINES & PROCEDURES

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## Introduction to the MIKE site manager training modules

The Monitoring the Illegal Killing of Elephants (MIKE) Programme has been implemented since 2001 by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Secretariat together with African and Asian elephant range States and with the support of the European Union (EU) and other donors. The programme aims to generate reliable and impartial data on the status and trends in illegal killing of African and Asian elephant populations, to inform international and range State decision-making and action concerning elephant conservation, as well as to assist MIKE sites to strengthen their law enforcement capacity to combat poaching of elephants and other endangered species.

In 2019, the MIKE Programme secured additional support from the EU for a four-year, Euros 10m initiative designed to continue and build on previous phases of the MIKE Programme, in particular, to strengthen support for MIKE sites across the African continent for their continuing work to monitor the illegal killing of elephants as well as for their efforts to protect vulnerable elephant populations. The new project will also support national, sub-regional and continental efforts to protect elephants and other key mammals and to combat wildlife crime.

An important finding of previous phases of the MIKE Programme is the need to enhance the skills of MIKE site managers in a variety of technical themes that are critical to the success of site-level law enforcement and wildlife crime prevention measures, building on best practices being implemented across the continent. Developing these skills is an important aim of the new EU funding. Additionally, the MIKE Programme has recently established a cooperation with the GIZ Partnership against Poaching and the Illegal Wildlife Trade Project, which has significant previous experience in identifying protected area law enforcement best practices in sub-Saharan Africa, to develop specific training materials addressing key topics.

This series of training modules for MIKE site managers is a direct outcome of both the EU and GIZ support to the MIKE Programme. The modules aim to draw out the essential information that MIKE site managers need to understand about key law enforcement best practices, and to help improve their knowledge and skills in the limited time that they have available. The modules are designed for self-guided learning by the protected area staff themselves but are complemented by online learning courses provided on the **CITES MIKE Online Learning** platform and in due course by specialised training sessions for MIKE site managers that will be organised by the MIKE Central Coordination Unit.



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# Contents

Introduction to the MIKE site manager training modules.....	ii
Abbreviations and acronyms.....	iv
Introduction to this training module .....	v
Module overview .....	vi
<b>1. Introduction .....</b>	<b>1</b>
1.1 MIKE elephant mortality monitoring: What is it?.....	1
1.2 How does MIKE use elephant mortality data? .....	2
1.3 MIKE sites in Africa and Asia.....	3
<b>2. MIKE data collection.....</b>	<b>5</b>
2.1 Elephant carcasses.....	5
2.1.1 Type and cause of death .....	6
2.1.2 Carcass location and date found .....	8
2.1.3 Status of tusks.....	8
2.1.4 Carcass decay stage.....	9
2.1.5 Carcass detection method.....	9
2.1.6 Elephant age and sex.....	10
2.1.7 Human-elephant conflict status.....	10
2.2 Patrol effort and coverage.....	12
2.2.1 Patrol effort .....	13
2.2.2 Patrol coverage.....	13
2.3 Recording MIKE data in the field .....	15
2.3.1 Elephant carcasses.....	15
2.3.2 Patrol effort and coverage.....	15
2.3.3 GPS location coordinates.....	15
<b>3. MIKE data management and reporting.....</b>	<b>17</b>
3.1 MIKE data management systems .....	17
3.1.1 MIKE workbook.....	17
3.1.2 MIKE online database.....	19
3.1.3 Use of software-based RBM management systems.....	21
3.2 Responsibility for managing MIKE data .....	22
3.3 MIKE data compilation, validation and approval .....	23
3.4 MIKE reporting timelines .....	24
<b>4. MIKE implementation and support systems.....</b>	<b>26</b>
4.1 MIKE site and national focal points.....	26
4.1.1 MIKE site focal points .....	27
4.1.2 MIKE national focal points .....	27
4.2 MIKE Sub-Regional Steering Committees .....	27
4.3 MIKE international support mechanisms.....	28
4.3.1 MIKE CCU.....	28
4.3.2 MIKE TAG.....	29
4.4 MIKE focal site and national-level support.....	29
4.5 MIKE training approaches.....	30
4.6 MIKE Law Enforcement Capacity Assessment.....	31

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## Abbreviations and acronyms

CCU	Central Coordination Unit (MIKE)
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CoP	Conference of the Parties
ETIS	Elephant Trade Monitoring System
GPS	Geographic Positioning System
HEC	Human-Elephant Conflict
IUCN	International Union for Conservation of Nature and Natural Resources
LECA	Law Enforcement Capacity Assessment
MIKE	Monitoring the Illegal Killing of Elephants (CITES Programme)
PA	Protected area
PIKE	Proportion of Illegally Killed Elephants
RBM	Ranger-based monitoring
SMART	Spatial Monitoring and Reporting Tool
SSC	Sub-regional Steering Committee (MIKE)
TAG	Technical Advisory Group (MIKE)
UTM	Universal Transverse Mercator (geographic coordinate system)

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## Introduction to this training module

*Are you a manager of an existing or aspiring MIKE site, a staff member in a national wildlife management agency, or a MIKE site partner who would like to understand what is needed to be a fully contributing member of the MIKE network? Would you like to know what data you need to provide, why the data is required, and how best to collect, manage and submit it to MIKE?*

The main aim of this MIKE Site Monitoring training module is to assist those responsible for the field implementation of the MIKE Programme to learn about the site and national-level requirements for the fulfilment of the MIKE mandate as detailed in CITES Resolution Conf. 10.10 (Rev. CoP18) on Trade in elephant specimens.

On successful completion of the module, you will have a good understanding of:

- What the MIKE Programme is aiming to achieve, how MIKE uses elephant carcass and other site data, and the network of MIKE sites in Africa and Asia
- The specific requirements for collecting MIKE data, especially concerning elephant carcasses and patrol effort and coverage
- The mechanisms that the MIKE Programme has put into place for managing MIKE data and for submitting data to the MIKE Central Coordination Unit, including the MIKE online database and the MIKE workbook, and associated reporting timelines
- The implementation and support systems that the CITES Secretariat has established for the effective and efficient delivery of the programme, including the MIKE national and site focal points, the Sub-regional Steering Committees and the MIKE Central Coordination Unit

The module is designed for MIKE site managers, national wildlife agency staff, and staff from other organisations involved in supporting MIKE site management. It is best used together with the guide on “MIKE Site Monitoring Guidelines and Procedures” which can be found on the MIKE Online Learning platform, and which features additional videos and handouts designed to support the practical fulfilment of MIKE data requirements.

After a short introduction that provides a general overview of the MIKE Programme and its rationale, the module first looks at the guidelines and procedures for collecting MIKE data, then at how the data is best managed and reported, and lastly at some of the key MIKE Programme support systems.



## Module overview

The table below overviews the key topics covered in the training module.

Key Topics	Page #
MIKE Introduction	
1. Using elephant carcass monitoring data provided by patrol staff, conservation area managers and government officials, the MIKE Programme has been monitoring the extent of and trends in the illegal killing of elephants in Africa and Asia for almost two decades	P1
2. In accordance with CITES Resolution 10.10, MIKE data is used by CITES Parties to inform measures concerning trade in elephant specimens and elephant protection and management actions	P2
3. The MIKE Central Coordination Unit and Technical Advisory Group has developed the Proportion of Illegally Killed Elephants (PIKE) ratio as a means of adjusting estimates of illegal killing of elephants to take account of variations in patrolling effort and the probability of locating elephant carcasses at MIKE sites	P2-3
4. There are currently 69 MIKE sites in 32 range States in Africa, and 30 MIKE sites in 13 range States in Asia	P3-4
Data Collection	
5. There are seven categories of elephant carcass information required by MIKE, relating to: a) type and cause of death, b) carcass location and date found, c) status of tusks, d) carcass decay stage, e) carcass detection method, f) elephant age and sex, and g) human-elephant conflict status	P5
6. Type and cause of elephant death data is the most essential MIKE data, and underpins calculation of the PIKE estimate	P6-7
7. Status of tusks information helps in the understanding of the type and cause of death, while decay stage information helps eliminate repeat records of the same elephant carcass	P8-9
8. Human-elephant conflict status records are increasingly important as human population density neighbouring MIKE sites increases	P10
9. Patrol effort and coverage data is important for understanding the reliability of elephant death estimates, and also contributes to the adaptive management of the MIKE site	P12-14
10. MIKE sites use different methods for recording elephant mortality data in the field, including patrol forms and smart devices. The default method is the MIKE carcass form	P14-15 Appendix A
11. Human errors in recording carcass location GPS coordinates are a major cause of error in MIKE data	P15-16

Key Topics	Page #
Data Management and Reporting	
12. Three main methods are available for compiling and managing MIKE site monitoring data: a) the MIKE Excel workbook, b) the MIKE online database, and c) ranger-based monitoring systems already in place at the site. The MIKE Central Coordination Unit can receive data from all these data management types, but if feasible recommends the use of the MIKE online database	P17-18
13. The MIKE online database dashboard enables MIKE national and site focal points to view the location of reported elephant deaths on a map, as well as to interrogate summary elephant mortality statistics across multiple years in chart format	P19-20
14. The MIKE site focal point is responsible for data entry and annual validation. The national focal point is responsible for annual review and approval of the data and onward transmission to the MIKE Central Coordination Unit	P22-23
15. MIKE site monitoring data must be transmitted to the MIKE Central Coordination Unit by 31 <sup>st</sup> January of the year following the data year	P24
Implementation and Support Systems	
16. Over the two decades of MIKE implementation, a number of implementation and support mechanisms have been established to ensure the effective and efficient delivery of the CITES CoP Res. Conf. 10.10 mandate	P25
17. The MIKE national and site focal points are the designated range State officers responsible for overseeing the delivery of MIKE in the country and site concerned	P25-26
18. The MIKE sub-regional steering committees oversee the delivery of the MIKE programme at the sub-regional level, and also enable communication between the concerned wildlife management agencies. There are four subregional steering committees in Africa and two in Asia	P26-27
19. The MIKE Central Coordination Unit (CCU) is responsible for reporting on MIKE information and analyses to the CITES Standing Committee and Conference of the Parties, and also for providing support to the participating range States and sites	P27
20. The MIKE Technical Advisory Group (TAG) provides technical advice on MIKE data collection and analysis methods	P27-28
21. MIKE provides law enforcement capacity building support to a subset of selected MIKE sites, called the MIKE focal sites. Assistance is also provided in undertaking assessments of the law enforcement capacity of MIKE sites, and in capacity building through training and other initiatives	P28-31

# 1. Introduction

## 1.1 MIKE elephant mortality monitoring: What is it?

Since its inception, the MIKE Programme has supported the collection of information on elephant deaths in MIKE sites across Africa and Asia. Based on the information provided by these sites, and thanks to the contributions of hundreds of patrol staff, conservation area managers and government officials, for almost two decades MIKE has been at the forefront of documenting trends in levels of elephant poaching and has highlighted the urgent need for action to reduce the threat to elephant populations across Africa as a result of the international illegal trade in their ivory.

The MIKE elephant mortality<sup>1</sup> database now comprises the most substantial information base of illegal killing of elephants in the world. This information enables MIKE to monitor any changes in poaching pressure and to develop both sub-regional and a continent-wide picture of the extent of and trends in the illegal killing of elephants.

MIKE reports and analyses are presented and discussed by Parties at annual CITES Standing Committee meetings and three-yearly meetings of the Conference of the Parties (CoP). Summary reports of the information on trends in illegal elephant killing are updated annually on the CITES website. At the national and MIKE site levels, MIKE helps inform policy and management by enabling decisionmakers to understand spatial and temporal changes in the distribution of elephant poaching incidents in their protected areas.

In addition to its support for collecting and managing elephant mortality information, MIKE also supports strengthening of law enforcement capacity across the MIKE site network. Site-level law enforcement capacity assessments (see section 4.6 below) provide site managers with an in-depth understanding of the key factors undermining the site's ability to combat wildlife crime. Such assessments also enable MIKE to provide tailor-made local law enforcement capacity building packages for a limited number of sites, designed in collaboration with national wildlife agency staff and site managers. Although each activity package is different, support has typically focused on training, field equipment, and law enforcement operations support.

The CITES Resolution 10.10 mandate which sets out the overall aims and objectives of the Programme is summarised in the box overpage.

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<sup>1</sup> MIKE uses the collective term “elephant mortality” to refer to all aspects relating to elephant deaths.





### Box: The MIKE mandate

MIKE gets its mandate from Res. Conf. 10.10 adopted by the CITES Conference of the Parties (CoP) held in Harare in June 1997, which resolved to establish a system for the international reporting of incidents of illegal killing of elephants as a baseline against which trends could be detected. The resolution, which has been modified at subsequent CITES CoPs, sets out four main objectives for MIKE and its sister programme, the Elephant Trade Monitoring System (ETIS):

1. Measuring and recording levels and trends, and changes in levels and trends, of illegal elephant killing and trade in ivory and other elephant specimens in elephant range States, ivory consumer States and ivory transit States
2. Assessing whether and to what extent observed trends are related to measures concerning elephants and trade in elephant specimens taken under the auspices of CITES, changes in the listing of elephant populations in the CITES Appendices, or the conduct of legal international trade in ivory
3. Establishing an information base to support the making of decisions on appropriate management, protection and enforcement needs
4. Building capacity in elephant range States and, as applicable, countries involved in trade in elephant specimens, to implement and make use of MIKE and ETIS in managing elephants and enhancing enforcement.

A key aim of this training module is to assist national wildlife management authorities in elephant range States, managers of MIKE sites and other conservation partners in the fulfilment of MIKE objectives contained in Res. Conf. 10.10.

## 1.2 How does MIKE use elephant mortality data?

The elephant mortality data provided by MIKE sites requires further analysis to be useful in developing a subregion-wide and continental picture of the levels of and trends in illegally killed elephants. In this regard, a major challenge that the MIKE Programme has experienced since its inception is understanding how the reported information on elephant deaths relates to the actual total number of elephant deaths that have occurred in the MIKE site concerned. In this regard, two key factors are especially influential:

- The effort made by the MIKE site to find dead elephants (usually through undertaking patrols)
- The probability of locating dead elephants in different habitat types (this being more difficult in forested or wooded sites)

For example, consider a site where over the past year there has been limited patrolling carried out (i.e., the effort invested in discovering dead elephants has been low) and as a result only a small number of dead elephants are discovered,

giving an inaccurate picture of the actual elephant deaths at the site. In contrast, another MIKE site may have a high level of patrol effort, so that all dead elephants are discovered. This could give the misleading impression that poaching is lower in the first site.

The effort invested in finding dead elephants is likely to vary greatly from site to site and year to year, as will the challenges of finding dead elephants in different habitat types. A mechanism is therefore needed to adjust for these factors and generate a figure that reflects the true elephant deaths at each MIKE site.

After more than a decade of practical experience in generating site-level elephant mortality information, the MIKE Programme, advised by its Technical Advisory Group (TAG), has developed a method for evaluating relative elephant poaching levels and trends known as the **Proportion of Illegally Killed Elephants (PIKE)**. Specifically, PIKE is calculated as the number of illegally killed elephants found divided by the total number of elephant deaths (whether illegally killed, natural deaths, or otherwise) found in an area, aggregated by year for each site.

Assuming that natural deaths are relatively constant, the PIKE calculation in effect broadly cancels out issues of patrol effort and probability of finding dead elephants, since it is assumed that these, as well as other influencing factors, will apply equally to locating both natural deaths and illegal deaths.

However, although the best estimate of illegal killing of elephants that is currently available, PIKE can be affected by a variety of potential biases related to elephant mortality data quality, variation in natural death rates (e.g., as a result of drought or other natural disasters), detection probability (linked to patrol effort and probability of locating carcasses) and other factors, and hence results need to be interpreted with caution. On the other hand, the fact that elephant illegal killing information provided by PIKE estimates are in good agreement with quantitative and qualitative information from other sources, provides some confidence as to the robustness of the results.

In this regard, information on sub-regional trends in the illegal killing of elephants collected by the MIKE Programme is supported by site-level information on key elephant population trends, as well as additional information from ETIS and the IUCN African and Asian Elephant Specialist Groups. Taken together, these data play a major role in guiding international decision-making relating to elephant conservation and management under CITES.

### 1.3 MIKE sites in Africa and Asia

There are currently a total of approximately 100 MIKE sites in Africa and Asia (see Figure 1 overpage). At the time of writing, there are currently 69 MIKE sites in 32 African range States in the following four sub-regions:

- Central Africa: 16 MIKE sites in seven range States

- Eastern Africa: 16 MIKE sites in six range States
- Southern Africa: 19 MIKE sites in eight range States
- West Africa: 18 MIKE sites in 11 range States.

In Asia, there are currently 30 MIKE sites in 13 range States in the following two sub-regions:

- South Asia: 15 MIKE sites in five range States
- South East Asia: 15 MIKE sites in eight range States

Range States can nominate additional sites and therefore the number of MIKE sites could potentially increase in the future.

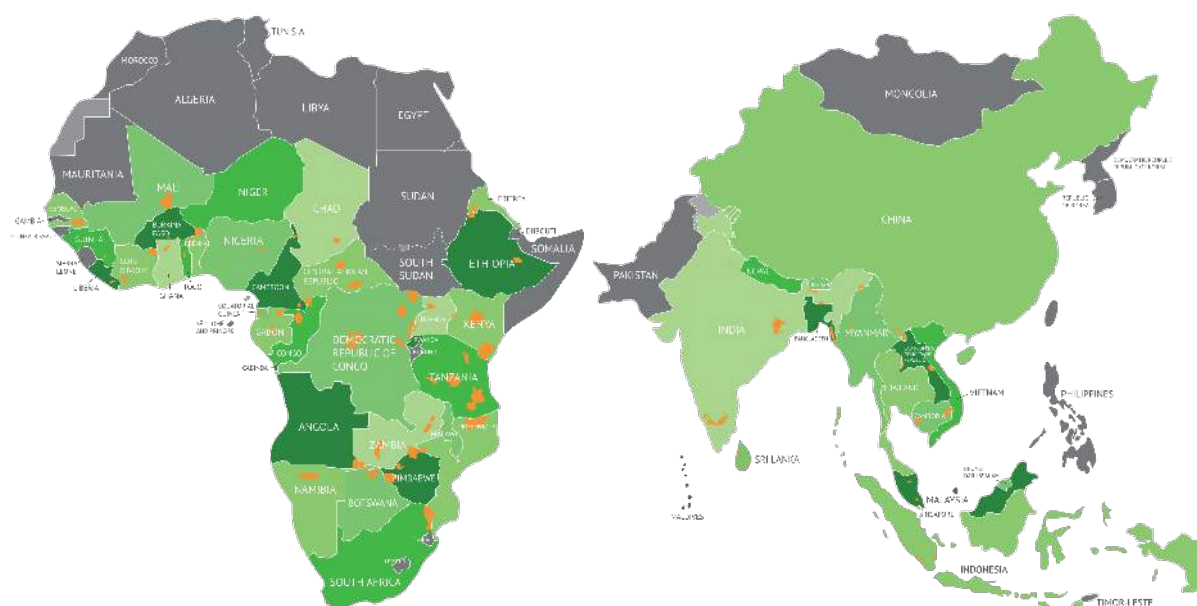


Figure 1. MIKE sites in Africa and Asia (sites shown in orange)

When elephant range States join the MIKE Programme and nominate MIKE sites, they take on the following key responsibilities:

- Appointing a MIKE site focal point and a national focal point, with the key responsibility of overseeing MIKE-related activities at the site and nationally respectively
- Regularly collecting, synthesising and transmitting data on elephant deaths occurring at the site (and wherever possible, patrol effort and coverage data) to the MIKE Programme
- Facilitating independent verification of site data when requested by the MIKE Programme
- Carrying out assessments of site law enforcement capacity, by completing the MIKE Law Enforcement Capacity Assessment (LECA)

These responsibilities are described in more detail in this module.

## 2. MIKE data collection

To help build a robust continent-wide picture of the extent of and trends in the illegal killing of elephants, all MIKE sites are expected to regularly collect two main types of data:

- Elephant carcass data
- Patrol effort & coverage

Usually, the site's ranger patrols are responsible for the collection of this data, supervised and overseen by the responsible MIKE site managers. The guidelines and procedures for collecting each of these data types are described in the following sections. Further information on the procedures and practices involved in ranger-based monitoring is provided in the companion MIKE training module "Making Ranger-based Monitoring Work", which can be found on the MIKE Online Learning platform.

### 2.1 Elephant carcasses

In line with the MIKE data analytical approach described in section 1.2 above, MIKE sites are expected to collect key information on **all** dead elephants found at the site during the course of the year, **irrespective of whether death was due to illegal, natural, management or other causes**. This includes information on:

- Type and cause of death
- Carcass location and date found
- Status of tusks
- Carcass decay stage
- Carcass detection method
- Elephant age and sex
- Human-elephant conflict status

To assist in the process of collecting this elephant mortality information, MIKE has developed a series of practical and informative video presentations and handouts, as well as a pocketbook for ranger patrols to carry with them. All these materials can be downloaded or viewed in the MIKE Online Learning guide to MIKE Site Monitoring Guidelines & Procedures that accompanies this document.

#### *Geographic scope of elephant carcass data collection*

MIKE sites should collect information for all dead elephants found within the MIKE site itself as well as in surrounding areas where the dead elephant is believed to be part of the site's elephant population. The intention is to monitor mortality in the site's elephant population, rather than a strictly defined geographical boundary.

MIKE recommends that information is collected on all dead elephants that come to the attention of site management, and that care be taken to record an accurate GPS location. Provided that the GPS information on the carcass location is accurately recorded (see section 2.3.3 below), the MIKE Central Coordination Unit (CCU) will be able to exclude records of dead elephants that are considered too far from the MIKE site during the subsequent analysis.

### 2.1.1 Type and cause of death

Determining the **type and cause of elephant deaths** is one of the most challenging aspects of MIKE site monitoring, but for the MIKE Programme it is also the most critical. This information is vital to understanding whether the elephant died of natural or illegal causes, and also to understanding the different reasons for elephant deaths, and associated trends. Crucially, the type of death information is vital for the estimation of PIKE (Proportion of illegally Killed Elephants) – see section 1.2 above.

MIKE defines five main types of elephant death:

1. **Natural:** death has occurred through natural or accidental causes, without any human involvement.
2. **Illegal:** death has occurred through illegal acts by people (e.g., poaching or as a result of human-elephant conflict). This type of death can be determined by the evidence located at the scene, ivory status and wound marks<sup>2</sup>.
3. **Management:** death is caused through legal management action, for example veterinary reasons, culling or problem animal control<sup>3</sup>.
4. **Other human related deaths:** death has occurred due to factors such as road or train accidents, electrocution, or drowning in water wells. In these cases, there will have been no human intention to cause harm or death.
5. **Unknown:** no indication can be found for the cause of death. This will often be the case with very old carcasses where there are few bones left and large-scale scattering of bones due to scavenger action<sup>4</sup>.

Understanding why an elephant died is not straightforward, especially if the carcass is not fresh. However, there are usually tell-tale signs on and around the carcass which can pinpoint the cause of death, and therefore the type of death, as shown in Table 1 overpage.

<sup>2</sup> In some cases, poachers may attempt to hide the dead elephant by burning or covering the carcass with branches, or they may try to aid carcass decay by removing the skin. There may also be other indicators such as poacher camps, other elephant carcasses nearby, or meat racks near the carcass.

<sup>3</sup> If management has intervened to euthanize an animal that has been illegally wounded, the death is categorized as illegal.

<sup>4</sup> This option should only be used if all investigations have been done and no evidence of a natural, illegal or management type death could be identified.

*Table 1. Causes of elephant deaths according to MIKE's type of death categories.*

Type of death	Cause of death	
Natural	<ul style="list-style-type: none"> <li>• Old age</li> <li>• Disease/ Wounds</li> <li>• Drought</li> </ul>	<ul style="list-style-type: none"> <li>• Predation</li> <li>• Accident (Natural)</li> </ul>
Illegal	<ul style="list-style-type: none"> <li>• Gunshot</li> <li>• Poison arrow</li> <li>• Snare/trap</li> </ul>	<ul style="list-style-type: none"> <li>• Spear</li> <li>• Poisoning</li> </ul>
Management	<ul style="list-style-type: none"> <li>• Problem animal</li> <li>• Management cull</li> <li>• Self defence</li> </ul>	<ul style="list-style-type: none"> <li>• Sport hunting</li> <li>• Veterinary</li> </ul>
Other human related	<ul style="list-style-type: none"> <li>• Train collision</li> <li>• Vehicle collision (road)</li> <li>• Death of calf (mother poached)</li> </ul>	<ul style="list-style-type: none"> <li>• Electrocution (unintentional)</li> <li>• Drowning in water well</li> </ul>
Unknown	<ul style="list-style-type: none"> <li>• Bones only</li> </ul>	<ul style="list-style-type: none"> <li>• No evidence</li> </ul>

Patrol staff that locate the dead elephant should try to form a mental picture of how the elephant died, paying special attention to the position of the elephant and the area around the carcass. Depending on the age of the carcass when discovered, they should look for any signs on or around the carcass that might give clues to the cause of death. In some cases, especially if the carcass is not fresh, the evidence may not be conclusive, but experienced patrols will be able to make a judgement of the cause of death.



**Key point:** Collecting accurate information on “type of death” is vital.

All the MIKE elephant mortality data requirements are important for MIKE analysis purposes, but accurate and reliable “type of death” data, along with carcass location and date found, are vital for carrying out robust analyses of trends in illegal killing of elephants. As described in section 1.2 above, the MIKE analyses depend on the PIKE ratio of illegally killed elephants and natural deaths.

In this regard, over the years many dead elephants located at MIKE sites have been recorded as “type of death: unknown”. This may well be accurate for very old carcasses where there are no visible signs remaining on how the death occurred. However, it can sometimes be convenient for ranger patrols to select this type of death when they are preoccupied by other patrol obligations, weary after a long spell in the field, or they don't fully understand the importance of accurate type of death information and the signs that can help determine this.

When the type of death is incorrectly recorded as “unknown”, the accuracy of the PIKE analysis is undermined. For this reason, it is essential that rangers are provided with training on the importance of recording type of death information accurately, and how they should go about determining type of death.

## 2.1.2 Carcass location and date found

Data on **when and where the elephant carcass was found** (in addition to the carcass decay stage – see section 2.1.4 below) helps to ensure that dead elephants are not recorded multiple times in submitted reports. For example, if a carcass is reported at a particular location in one year as a recent carcass and another older carcass is found at exactly the same location in subsequent years, it is likely that the two carcasses are one and the same.

Carcass locations are usually recorded with a GPS device, or increasingly with a smart device used for ranger-based monitoring. Further information on recording locations (or “waypoints”) and on the geographic coordinate systems used can be found in the MIKE Online Learning course “Making Ranger-based Monitoring Work”. The companion MIKE online guide to this training module also includes a handout on the use of GPS devices.

The recording of GPS location data has been highlighted as one of the major causes of error in MIKE data collection and analysis. As such, it is important to keep the equipment used as simple as possible and to ensure that field staff are trained in its use. Section 2.3.3 below reviews some of the common errors associated with recording carcass location data.

## 2.1.3 Status of tusks

Data on the **status of tusks** at the carcass also helps in the understanding of the type and cause of death. If the tusks are still in place, it suggests that the elephant died either naturally or that it did not die immediately and managed to get away from the poachers. If the tusks are absent, it could mean that they were either removed illegally, were naturally absent, or that they were removed by a previous patrol. If the tusks have been hacked out of the skull, this points to an illegal killing.

MIKE defines four main categories of tusk/ivory status as follows:

1. **Found in/around carcass:** Tusks are present in the skull or are located around the carcass (in older carcasses) with no signs of illegal removal.
2. **Removed illegally:** Tusks may have been pulled or hacked out. If hacked out on new carcasses the elephant’s face may be missing; on older carcasses there may be hack marks on the remaining bones. If pulled out, empty sockets will be present.
3. **Naturally absent:** Often in young calves or occasionally in older animals which never grow tusks. If skin is still present, there will be no marks where the tusks would have been. On older animals, tusk sockets may not have developed.
4. **Absent;** Uncertain cause - it is impossible to determine the cause of ivory removal. E.g., in very old carcasses.

For recent carcasses, any other missing body parts (for example, tail, ears, skin or meat are often taken in some areas) should also be recorded.



### 2.1.4 Carcass decay stage

Elephant carcasses can remain intact and visible for years after death has occurred, so it is important to collect data on the **stage of decay** when the carcass is first found. This is especially important for eliminating from the records elephant carcasses that were found at the same location in previous years.

There are many factors that will influence the rate of decay of a carcass, such as weather, moisture, scavenger action, insects, etc., and for this reason it is only possible to determine the approximate age of an elephant carcass. To assist in determining the carcass decay stage, MIKE uses four broad carcass age categories:

1. **Fresh (< 1 month):** The carcass is wet, has a rounded appearance. Vultures (or ants in forests) are probably present, and a pool of body fluids is still moist on the ground.
2. **Recent (< 1 year):** A rot patch around the body, the carcass is dry and no meat is left. In forests, carcasses may not be dry and the stomach contents should be present, but skin can quickly disappear. No recent scavenger activity.
3. **Old (> 1 year):** White and potentially scattered bones, no rot patch - plants are now growing again around the carcass. In forests, bones may have a green discolouration from algae.
4. **Very old (10 years and older):** Bones grey in colour, extensively cracked and often scattered over wider area. No rot patch and often overgrown with vegetation.

The carcass decay stage can also be used as a measure of the PA's effectiveness in detecting elephant deaths through ground and aerial patrols and other methods. If carcasses are usually fresh this indicates that detection methods are working effectively.

### 2.1.5 Carcass detection method

Collecting data on the **carcass detection method** is important for developing an understanding of the ways in which the site is working to pinpoint all elephant mortalities. In this regard, detection method refers to **how the elephant carcass was first detected**, not when a patrol eventually reaches the carcass.

For example, an elephant carcass may be initially detected from a tourist report, intelligence information, aerial observation, or some other means. This initial reporting is what is recorded as the detection method. The different possibilities for detection method include:

- Aerial patrol
- Ground patrol
- Aerial animal survey
- Ground animal survey
- Researchers
- Intelligence operations
- Local community
- Tourist
- Operator (safari/hunting)
- Other



## 2.1.6 Elephant age and sex

Data on the **elephant's age and sex** is useful for understanding elephant population dynamics at the site concerned – factors such as the population's age structure and whether it is increasing or declining. This can also be helpful in understanding patterns of natural elephant deaths at the site.

There are two main ways of ageing a dead elephant when very little is left of the carcass. The first is based on the size of bones and skeleton features while the second estimates age by gauging the elephant's molar development progression.

MIKE uses three elephant age categories:

1. **Juvenile (0-8 years):** Shoulder height up to 2 metres. Up to 3 fully grown molars, with possibly molar 4 growing.
2. **Sub-adult (9-17 years):** Shoulder height above 2 meters. Molar 4 fully grown, with molar 5 growing.
3. **Adult (18 years and older):** For savannah elephants, shoulder height above 2.5 meters. Molar 5 at least half grown, full grown or worn out. Molar 6 growing or fully grown.

To the untrained eye, ageing and sexing elephants may be difficult. Patrol staff will most likely see live elephants more frequently than carcasses, and this may assist them in determining the age and sex of a carcass.

Depending on how much is left of a carcass; the elephant's body size, skull, lower jaw and tusks can be used as physical features to identify the gender and age of the elephant. Fully mature males will be larger than fully matured females. If only bones remain, the size of bones can still be used to determine sex and age. See the handout and videos on determining elephant age and sex in the companion MIKE Online Learning guide on MIKE Site Monitoring for further information.

## 2.1.7 Human-elephant conflict status

As human population density neighbouring many protected areas increases, human-elephant conflict (HEC), involving community responses to elephant crop-raiding and even injuries and death of people, is becoming an increasingly common cause of elephant death, especially in Asia. Because of the growing prevalence of HEC, the MIKE Programme wants to record data on elephant deaths that are caused by HEC, so that it can include an analysis of HEC trends in its reporting. For this reason, MIKE sites are also asked to report on when they believe HEC has been the underlying cause of elephant death.

Space for recording whether an elephant death is suspected to have resulted from HEC is included in the MIKE carcass form (see section 2.3.1 below). Factors to consider include: crops under cultivation in nearby areas, the distance to neighbouring farms, a history of HEC in the area, and intelligence information provided by local community members.

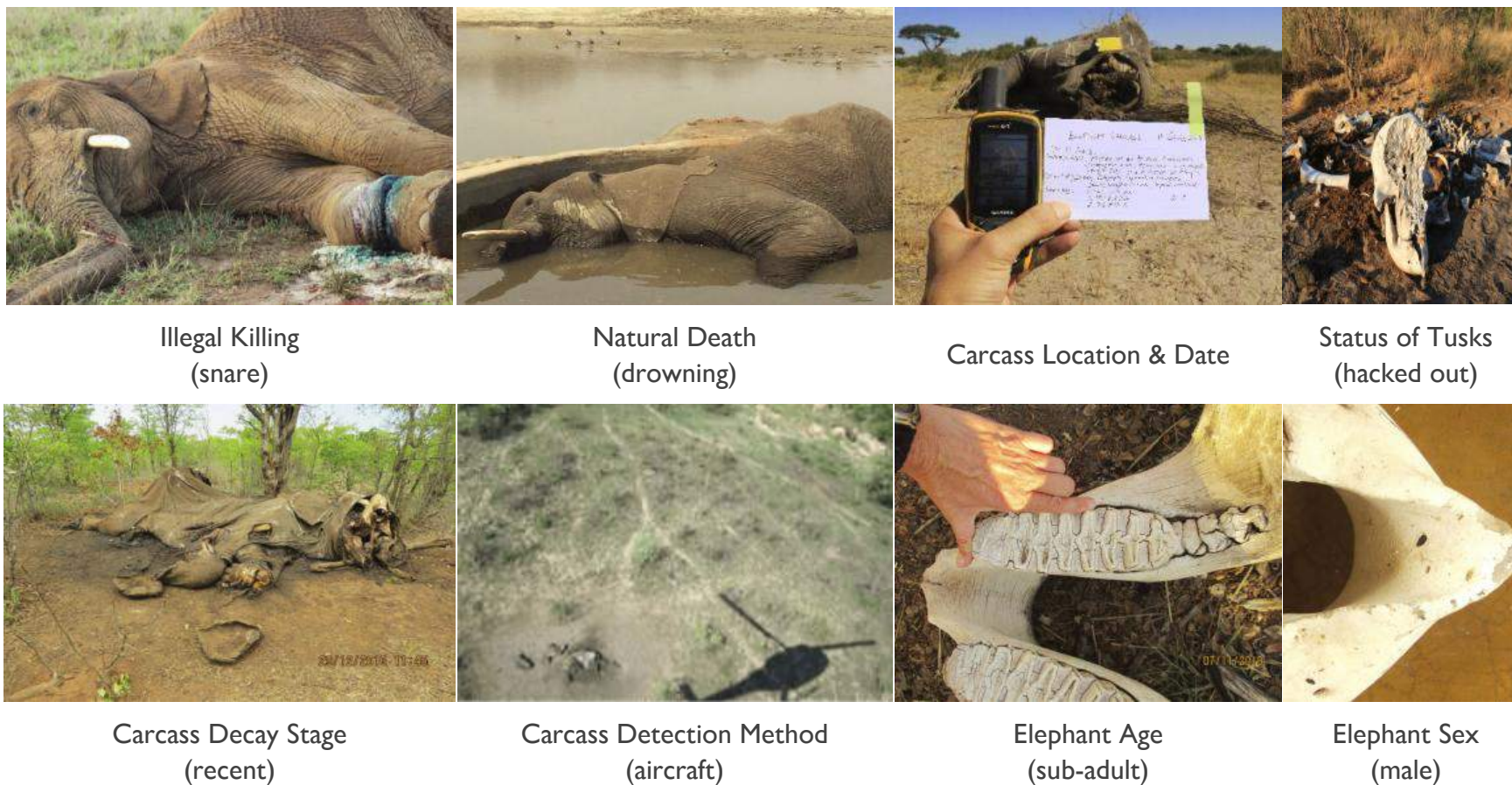


Figure 2. Examples of the different kinds of MIKE elephant carcass data requirements. Refer to the videos and handouts in the MIKE Online Learning course on MIKE Site Monitoring for more details

## 2.2 Patrol effort and coverage

As explained in section 1.2 above, information on the effort that individual sites invest in locating elephant carcasses is critical to understanding the reliability of a MIKE site's elephant death estimates. Patrol effort data can also be useful in informing the adaptive management of the site itself, especially if linked to the use of a ranger-based monitoring system, which can provide a detailed analysis of patrol effort (e.g., by transport type or sector, outpost, or patrol team or team member).

Patrol coverage information can also help managers identify parts of the site that have been under-patrolled or missed entirely. See the MIKE Online Learning course on “Making Ranger-based Monitoring Work” for more information on this aspect.

However, it is important to note that patrol effort and coverage data does not provide an absolute measure of the probability of detecting elephant carcasses at a MIKE site. This is because carcass detection probability depends on a variety of site-specific factors, in particular the visibility and access at individual sites.

For example, an open savannah grassland site may have much lower annual patrol effort and coverage figures than a forested site, but nevertheless the probability of detecting carcasses in the savannah site is significantly higher. Patrol effort and coverage data must therefore be used with caution, and only for identifying trends within a site by comparing annual data from successive years.

For MIKE purposes, patrol effort is understood by measuring the amount of patrolling carried out at a site during a year, while patrol coverage is the proportion of the site visited by patrols during a year.

This in turn requires collecting data on the following:

- The number of active patrol days during the year
- The distance in kilometres covered by patrols during the year
- The routes followed by patrols during the year

The specific information requirements are outlined in the following sections.



**Key point:** The main focus for MIKE's patrol effort and coverage analysis is ground patrols<sup>5</sup>.

In addition to ground patrols, MIKE sites may carry out a variety of different types of law enforcement surveillance, including aerial reconnaissance, boat patrols and forest listening posts. However, because ground patrols are carried out in all MIKE sites, this mode of surveillance is the focus of MIKE's patrol effort and coverage data requirements and MIKE sites are requested to focus their efforts on collecting regular and reliable ground patrol effort and coverage data. Similarly, the MIKE data management systems – the MIKE workbook and the MIKE online database both prioritise ground patrol data (see section 3.1 below).

However, if the site is using a software-based RBM system such as SMART and is recording effort and coverage data for different types of surveillance, data for these can also be provided to MIKE as part of the submitted patrol effort and coverage data, making sure that records for the different surveillance types are clearly distinguished. For sites without a software-based system, provision for recording information on these alternative surveillance types is included in the MIKE workbook (see section 3.1.1).

### 2.2.1 Patrol effort

MIKE presently uses data on the number of 'active patrol days' carried out at a site (i.e., the number of days that patrol teams are actively carrying out surveillance activities) to estimate patrol effort, rather than 'man-days' (i.e., the number of patrol days multiplied by the number of patrol staff in each patrol). There are several reasons for this, including:

- a) Above a patrol size of 4-6 rangers there is unlikely to be a direct relationship between patrol size and the effectiveness of patrols in detecting illegal activities, particularly the likelihood of finding elephant carcasses
- b) For long patrols that allow remote parts of a site to be accessed, patrol staff are often accompanied by support staff such as porters or cooks. These staff increase the nominal patrol size without significantly adding to patrol success

If patrols are less than a full day's duration – for example, a half-day patrol – these should be added up to give the number of full day patrols.

### 2.2.2 Patrol coverage

By recording the routes followed by patrols, sites that have a software-based RBM system, such as SMART<sup>6</sup>, can easily generate patrol coverage information. To achieve this, patrol staff need to take regular GPS waypoints when actively patrolling. The compiled data on patrol routes can then be analysed in the RBM system

<sup>5</sup> In this document, ground patrols are expected to be mainly foot or walking patrols carried out by rangers, but in some sites may also include vehicle or bicycle patrols.

<sup>6</sup> The Spatial Monitoring and Reporting Tool, a software-based RBM system developed by the SMART Partnership.



to provide a picture of the overall coverage of patrols in an area and a measure of the relative level of patrol intensity in different parts of the area (see the MIKE Online Learning course on “Making Ranger-based Monitoring Work” and Figure 3 overpage).

Although more time-consuming, sites that do not have a software-based RBM system can also collect patrol coverage information. In this case, a grid overlay of the site can be developed, with site managers working out the proportion of the total site grid squares that were visited at least once in the course of the year, as well as the total number of grid square visits. These two measures will provide MIKE with an estimate of overall annual patrol coverage and intensity, supported by a grid map showing actual patrol coverage information as shown in Figure 3.

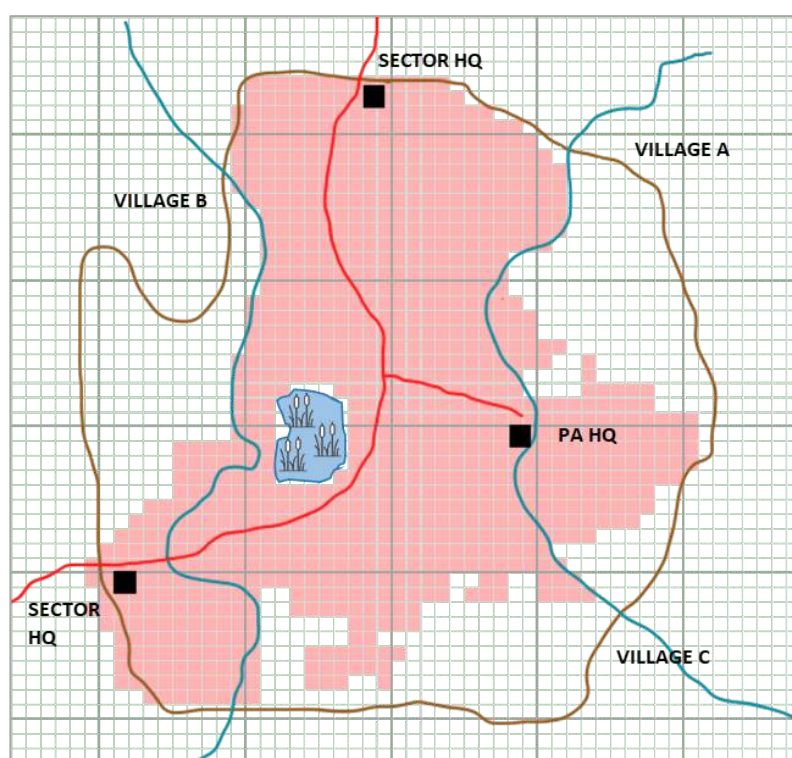


Figure 3. Illustration of a patrol coverage map showing areas of the site (brown outline) covered by patrols (pink grid squares) and areas with no cover (blank grid squares)



**Key point:** For recording ground patrol route and coverage data, patrols should ideally take a GPS waypoint every 30 minutes when actively patrolling.

If batteries are in short supply or recharging is problematic, this can be reduced to every hour.

Spare batteries should be kept at outposts to ensure GPS devices can be effectively used throughout operations. GPS devices that use li-ion batteries, rather than AA batteries, have proved more reliable. But this does require specialist recharging equipment to be available at headquarters and outposts. Portable solar battery chargers can be used for recharging batteries in the field and are increasingly available and affordable.

## 2.3 Recording MIKE data in the field

### 2.3.1 Elephant carcasses

MIKE elephant mortality data requirements are varied, and it is important that patrol staff have the means to record the required data efficiently and accurately. In this regard the MIKE CCU recommends the use of the **MIKE carcass form** for this purpose (see Appendix 1).

However, the MIKE Programme recognises that many range State wildlife management agencies or MIKE sites have developed their own Patrol Data Sheets for recording ranger patrol observations, including elephant carcass data, while other sites are increasingly using digital data collection systems, such as smartphones with the CyberTracker or SMART Mobile app (see the MIKE Online Learning course on “Making Ranger-based Monitoring Work”).

Where an alternative to the MIKE carcass form is being used, it is important that these patrol data recording systems are as far as possible aligned with the MIKE elephant carcass data requirements as detailed in section 2.1 above.

Ideally, all law enforcement patrols at MIKE sites should include at least one person trained in the MIKE elephant carcass data requirements who is able to accurately record the required information using the data collection systems in place at the site. In addition, all dead elephants encountered by other patrols that lack suitably trained staff should wherever possible be subsequently examined *in-situ* by specialised site-level staff such as investigators, veterinarians or law enforcement managers in order to validate the information collected and to ensure that all elephant carcass records meet the MIKE requirements.

### 2.3.2 Patrol effort and coverage

Recording ground patrol effort and coverage data manually can be very time consuming, so it is ideal if this data is collected as part of a ranger-based monitoring system in use at the site. As with elephant carcass data, patrols are likely to record patrol effort and coverage data on paper forms such as a Patrol Data Sheet, coupled with a GPS device, or on a smartphone with a specialised app installed such as Cybertracker or SMART Mobile.

For further information on setting up protected area RBM systems, see the MIKE Online Learning course on “Making Ranger-based Monitoring Work”.

### 2.3.3 GPS location coordinates

As mentioned in section 2.1.2 above, human errors in recording of GPS location coordinates are a major challenge for the MIKE analysis. Where sites are using smart devices to record elephant carcass locations, the opportunities for human error are reduced but not eliminated.

Errors can be introduced in recording GPS coordinates both by the ranger patrols themselves – when they are using a manual method to transfer coordinate data from the GPS device to a carcass or patrol form, or back at the site Headquarters, when the data manager transfers coordinate data into the MIKE workbook or into the MIKE online database (see section 3.1 below).

Common errors include:

- Reversing the latitude and longitude references. The standard practice is to record the latitude first and longitude second, and this is how MIKE needs to receive the data. However, it is easy to get the coordinates back to front
- Missing out the negative sign for latitude readings south of the equator. This will mean that the elephant carcass is recorded as being in the northern hemisphere
- Using a mixture of different coordinate systems (e.g., decimal degrees and UTM)

For MIKE purposes recording locations in decimal degrees is the preferred option, with the GPS reading looking like this:

LAT: -17.928403 S

LON: 25.857179 E

Note that the latitude coordinate above is located in the Southern Hemisphere (i.e., the minus sign).

However, the most important factor is the use of a **uniform coordinate system** on all devices at the same MIKE site. Provided the data from a site is consistent (for example recorded in UTM) it can always be converted at a later stage.

## 3. MIKE data management and reporting

The elephant carcass and patrol effort and coverage data collected by MIKE sites as detailed in the previous section needs to be compiled and managed before it can be transmitted to the MIKE CCU. This entails keeping good records and managing the information in a way that it can be stored indefinitely and easily accessed as and when required. The different ways of managing MIKE data are detailed below.

### 3.1 MIKE data management systems

There are three main ways in which MIKE sites and range State national wildlife agencies manage their elephant carcass and patrol effort and coverage data:

1. The **MIKE workbook**: This is a simple Excel-based workbook that uses standardised data categories and drop-down menus to ensure all data can be recorded in a standardised format, which aids subsequent reporting and data analysis.
2. The **MIKE online database**: This is an online data platform that provides for the direct entry of MIKE monitoring data into the global MIKE monitoring database.
3. A **software-based ranger-based monitoring system**, such as SMART, or a custom-made RBM database developed by the national wildlife agency or by site staff.

Each of these systems is discussed in the following sections. In all cases, it is important that the site-level staff responsible for managing elephant carcass data ensure that information collected using the available field-level data recording systems (see sections 2.3) is as complete and accurate as possible before it is entered into any database.

#### 3.1.1 MIKE workbook

The MIKE CCU has developed a customised Excel workbook (the “MIKE workbook”) to facilitate recording elephant carcass and patrol effort and coverage data. This is the recommended method for managing MIKE data unless the MIKE site or national wildlife agency concerned has a software-based RBM system capable of managing MIKE data or is able to make use of the MIKE online database.


The workbook is made up of seven worksheets, as follows:

- Sheet 1: Guidelines on how to complete the workbook
- Sheet 2: Elephant carcass worksheet
- Sheet 3: Patrol effort worksheet
- Sheet 4-7: Patrol coverage worksheets



The main data entry worksheets are discussed further below.

**Elephant carcass worksheet.** This is the most important worksheet where the details of all elephant carcasses found during the year are recorded. The worksheet has been designed to align with the carcass information requirements given in section 2.1 above. Drop-down menus are used to simplify data input and reduce opportunities for errors. A separate line in the workbook should be completed for each elephant carcass recorded (see Figure 4).




**Elephant Carcass Information Records**

Date (Format DD/MM/YYYY)	GPS X (Longitude/Easting Coordinates)	GPS Y (Latitude/Northing Coordinates)	UTM Zone	Type of Death	Cause of Death	How carcass was Found	Carcass Age	Elephant Age	Sex	Left Tusk Ivory Status	Right Tusk Ivory Status	Comments (Include comments)
17-Jan-19	17.515.16	023.190.79		Natural	Accident	Regular Ground Pat	Fresh	Juvenile	Male	Found in/around c	Found in/around c	The elephant was bu
26-Jan-19	17.71665	023.17182		Illegal	Gunshot	Regular Ground Pat	Fresh	Adult	Male	Illegally Removed	Illegally Removed	The elephant was ille
28-Jan-19	17.3849	23.23062		Natural	Predation	Regular Ground Pat	Fresh	Juvenile	Male	Found in/around c	Found in/around c	The elephant was kil
21-Feb-19	17.99169	23.14421		Illegal	Gunshot							
					Accidents Poison Arrow Snare/Trap Spear Poisoning Other/unknown							

Figure 4. Partly completed MIKE workbook elephant carcass worksheet, showing a drop-down list

**Patrol effort worksheet.** This sheet is designed for recording the number of active patrol days carried out in the site during the year. Rows in the worksheet enable patrol days for different sectors or outposts to be recorded, while columns enable data to be recorded by month. See Figure 5 below.

The worksheet is designed for recording information on ground patrols only. Where a site is making extensive use of other types of patrols and also has a software-based RBM system in place, information on these other patrol types can be recorded in the system and data subsequently provided to the MIKE CCU (see section 3.1.3 below). Where no software-based RBM system is in place, it is still possible to record summary patrol effort information for key other types of patrol in sheets 4-7 of the workbook (see overpage).



**Patrol Records (Days)**

When entering the number of days of active patrolling per month please remember that, for MIKE purposes, eight hours of active patrolling equals one 'patrol day', and it is 'patrol days' (i.e. the total number of days patrols were active) should be recorded not 'man-days' (i.e. number of patrol staff times days active).

**Total Annual Patrol Days: 1045**

Sector/Outpost	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
													0
	14	14	14	14	14	14	14	13	10	14	14	14	162
	14	14	14	14	14	14	14	10	10	13	14	14	159
	10	14	12	8	9	11	10	11	9	9	12	12	127
	6	6	6	6	6	6	6	6	6	6	6	6	72
	8	8	8	8	8	8	8	8	8	8	8	8	96
	14	14	14	14	14	14	14	14	14	14	14	14	168
	10	10	10	10	10	10	10	10	10	10	10	10	120
	12	12	12	12	12	12	12	12	12	12	9	12	141
													0

Figure 5. MIKE workbook patrol records worksheet, showing monthly data for several sectors/outposts

**Patrol coverage worksheets.** These worksheets are designed for recording summary information concerning the area of the PA covered by patrols annually for four different types of patrol: ground patrols, aerial patrols, boat patrols, and listening posts in forests. Where sites have appropriate data for these different types of patrol, it should be entered in these worksheets. If a MIKE site has data for other additional patrol types that they would like to submit, they should inform the MIKE CCU who will adapt the MIKE workbook to accommodate this.

### 3.1.2 MIKE online database

To expedite the entry and transmission of MIKE elephant mortality data, the MIKE CCU has developed an online system – the **MIKE online database** - that enables MIKE sites and national range State agencies to directly record, manage and interrogate elephant carcass and patrol effort and coverage data.

There are four main components of the online database:

- Carcass record tab
- Zero carcass and patrol information tab
- Dashboard
- Site reports tab

MIKE data is captured using simple forms that are aligned with the MIKE elephant carcass and patrol effort and coverage data requirements outlined in section 2, and that are similar to the data fields used in the MIKE workbook. The online database is available in both English and French versions.

The dashboard is an especially powerful feature of the online database as it enables MIKE site and national focal points to interrogate and analyse site data through the production of maps and graphs (see box below).



#### Box: MIKE online database dashboard

The analytical and visualisation capabilities of the online database's dashboard represent a significant added value over and above the database's efficiency benefits. The dashboard enables MIKE national and site focal points to view the location of reported elephant deaths on a map, as well as to interrogate summary elephant mortality statistics across multiple years in chart format. The dashboard has two main components:

- Location and type of elephant deaths over time
- Elephant mortality information

#### *Location and type of elephant deaths over time*

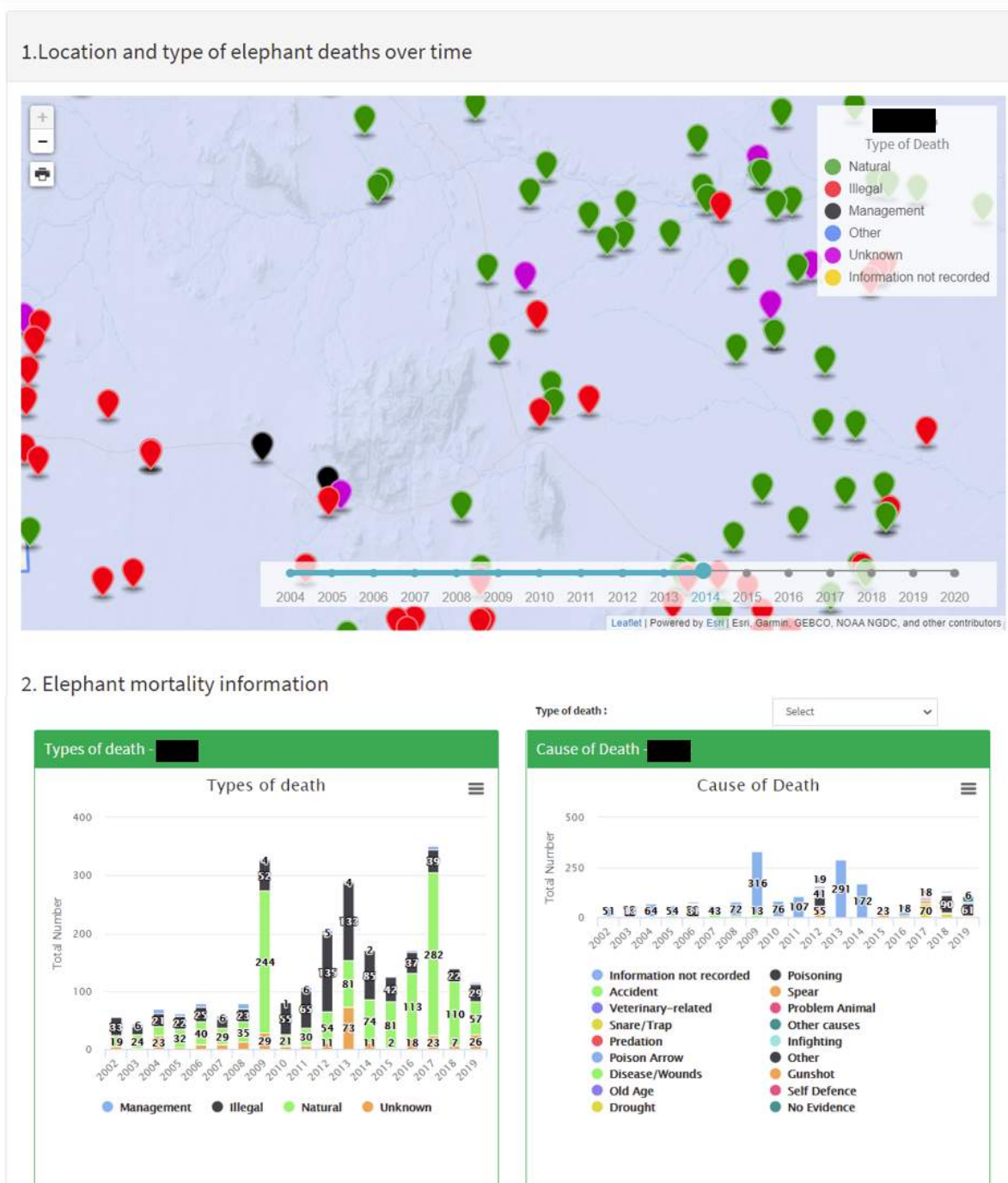
This tab displays elephant death record locations and the MIKE site boundary on a map. On selecting a MIKE site, a map of the site will load with a time slider widget and legend to denote the different colour codes on the map. The time slider enables carcass distribution data to be

viewed for a particular year or a range of years.

### Elephant mortality information

This tab displays elephant mortality data for the site as a series of bar graphs. The bar graphs allow the user to filter data to focus on specific data types, as well as providing further detail hovering the pointer over different components of the chart.

See selected MIKE online database dashboard visualisations overpage for an example MIKE site.



### 3.1.3 Use of software-based RBM management systems

Where MIKE sites have a software-based ranger-based monitoring system in place such as SMART, the collection and management of MIKE elephant carcass information can be very effectively integrated into the wider RBM system. Such RBM systems are especially good for recording and managing patrol effort and coverage data and they can produce the data outputs required by MIKE quickly and effectively (see the box overpage for information on extracting SMART reporting).

If a software-based RBM system is used to compile and manage MIKE elephant mortality data, it is essential that the RBM database scheme as well as the outputs of the system fulfil all the MIKE data requirements as set out in section 2.1 above. This is not always the case. For example, some RBM database schemes may not always record important MIKE carcass data details, such as the cause of death (e.g., spear or old age) or the original detection method used to locate the carcass. In these cases, it is ideal if the necessary additional MIKE data fields can be added into the database scheme.

Figure 6 below shows a typical elephant carcass observation record screen in SMART. The database scheme illustrated does not record the detailed cause of death (e.g., spear or old age) or the detection method.

**Patrol Day: Tuesday, 13-Nov-2012**

Start Time: 15:59:57 End Time: 16:34:09 Rest Minutes: 0 Total Hours Patrolled: 0h 34m

Distance Travelled (km): 19.66 Set Track View TrackPoints

Observations / Waypoints: Import Waypoints

Waypoint ID	X Coordinate	Y Coordinate	Time	Observation	Comment	Attachments
1	11.589880642	-0.108351186	15:59:57	People - direct observation (1): Firearm...	13-NOV-12 14:59:57	(None)
2	11.489212895	-0.093737841	16:16:04	(None)	13-NOV-12 15:16:04	(None)
3	11.414985945	-0.102002816	16:32:18	Camp (1)	13-NOV-12 15:32:18	(None)
4	11.415123325	-0.101913046	16:33:02	(None)	13-NOV-12 15:33:02	(None)
5	11.41513749	-0.101997368	16:34:09	Carcass (1)	13-NOV-12 15:34:09	(None)

**Waypoint Observations - Waypoint ID: 2**

**Observation Details**  
Enter the observation attributes for Carcass - Wildlife. Add multiple rows if required.

**Carcass** Page 1 of 1

Threat: None  
Species: *Loxodonta africana* (African Elephant)  
Cause of Death: Illegal  
Age of Animal Carcass: Fresh  
Age of Animal: Adult  
Sex: Male  
Action Taken Animal: Left At Scene

Update Observation Add Observation

**Carcass Observations:**

Threat	Species	Cause of Death	Age of Animal Carcass	Age of Animal	Sex	Action	Edit	Delete

Figure 6. SMART database observation record screen for an elephant carcass



### Box: Using SMART to produce MIKE data outputs

In MIKE sites where SMART is being used, the required MIKE data outputs can be generated by going to the relevant queries in the 'Query' perspective in SMART and selecting and running the following queries for the appropriate time period:

- MIKE Carcass Data
- Patrol effort by transport type
- Patrol grid coverage

Once the query outputs are exported to a folder in your computer, you can transmit them to your MIKE national focal point for onward transmission to the MIKE CCU.

If the MIKE Carcass Data query does not appear as an option in your SMART installation, it will be necessary to create the query. The MIKE CCU can provide you with advice on how to do this.

For patrol effort and coverage information, software-based RBM systems are capable of storing and managing all the data required by MIKE, including the number of active patrol days, the distance in kilometres covered by the patrols, and patrol coverage data (percentage of the site covered by patrols during the year and associated maps as in Figure 3 above).

Outputs from the RBM management system can be shared electronically with the MIKE Programme, for example in SMART query result and report formats. In this regard, a SMART Carcass Data query has been developed that extracts the required MIKE data (see box above).

The MIKE Online Learning course on "Making Ranger-based Monitoring Work" provides further information on setting up and using a software-based RBM system.

## 3.2 Responsibility for managing MIKE data

The person responsible for the management of site-level elephant mortality data should ideally be the designated MIKE site focal point (see section 4.1 below). This helps to ensure that the MIKE Programme has direct access to a site-level contact person who, through direct involvement in data management, is familiar with site-specific challenges and lessons learnt.

In some cases, however, the designated MIKE site focal point may be the overall PA manager, with a suitable staff member given responsibility for MIKE data entry and management. In these instances, this person should ideally be nominated as a deputy site focal point and wherever possible also have a direct line of communication to the MIKE Programme. Such direct communication is key to enabling the

MIKE CCU to provide time-sensitive data management advice and technical back-stopping.

Site staff involved in MIKE data management and validation should receive training in the MIKE data requirements and in achieving proficiency in the use of the relevant systems and tools (e.g., the MIKE workbook). This training module and the companion MIKE Online Learning guide on MIKE Site Monitoring is one means of providing this training, but the MIKE Programme also provides *in situ* training when feasible.

### 3.3 MIKE data compilation, validation and approval

As described in section 3.1 above, MIKE data can either be compiled and managed in the MIKE workbook, the MIKE online database, or in a site-level RBM system if this is in place. To guard against inaccuracies introduced by delays in data entry, MIKE data should be entered into whichever data management system is in use **as soon as it is received during the year**, especially while understanding of specific elephant deaths is still fresh.

For the MIKE workbook, the Excel file should be renamed to indicate the site name and year the data corresponds to. This will ensure that the data is not overwritten in subsequent years and also helps the MIKE CCU to organise the transmitted workbook files.

At the end of each year, the compiled elephant carcass and patrol effort and coverage data needs to be carefully validated by the MIKE site focal point. Thereafter, before the data is transmitted to the MIKE CCU it should be reviewed and approved by the range State national wildlife agency concerned, working through the MIKE national focal point – see section 4.1)<sup>7</sup>.

Depending on the data management system the site is using as well as other local factors, individual MIKE sites and range State wildlife agencies are likely to carry out this validation, approval and onward transmission process in different ways. A typical process is illustrated in Figure 7 overpage.

If the site is using the MIKE workbook or an RBM data management system, the annual review and approval by the national focal point will be done by sending the relevant compiled and validated data to the national focal point. In the case of the MIKE online database, the national focal point will review and approve site-level data by accessing the online database at the end of the year or start of the following year. Where a range State has multiple MIKE sites, the national focal point will be responsible for reviewing and approving MIKE data for all sites.

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<sup>7</sup> Where there is no national focal point, the site focal point should submit the annual reporting directly to the MIKE CCU.



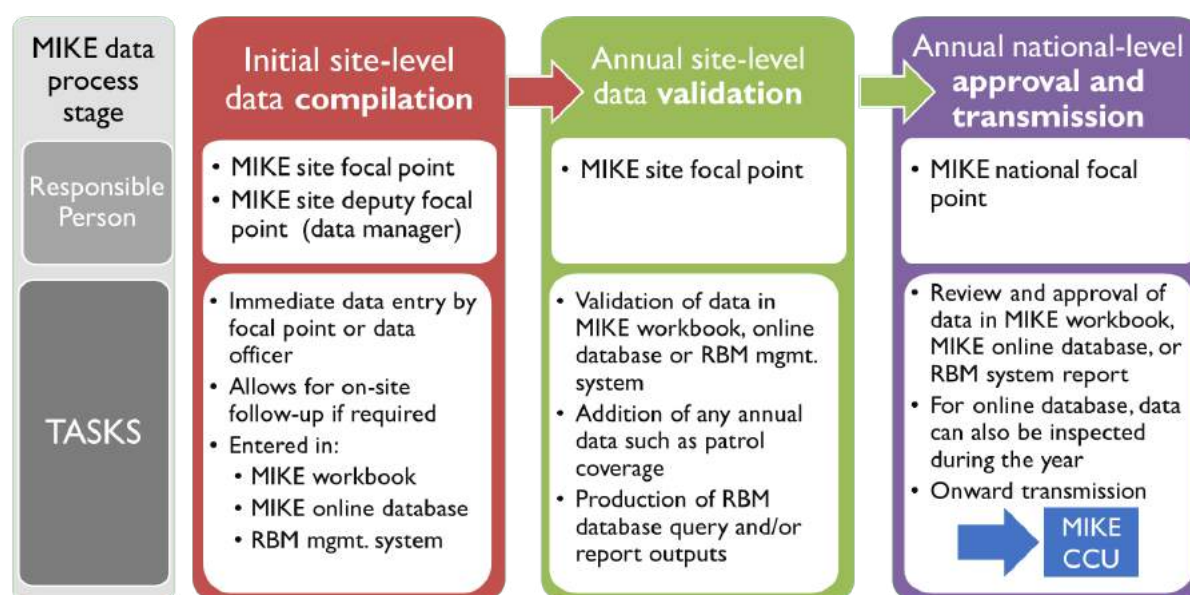


Figure 7. Visual representation of the MIKE data compilation, validation and approval process

### 3.4 MIKE reporting timelines

The annual reporting of MIKE data is linked into the broader CITES reporting requirements, specifically relating to the schedule of CITES Standing Committee and CoP meetings. To fulfil these requirements, the MIKE CCU prepares an annual MIKE report for the Standing Committee. In addition, prior to each meeting of the CoP, a detailed report on the MIKE Programme is prepared.

In order that the MIKE CCU can fulfil these reporting obligations, the MIKE national focal point (or site focal point if there is no nominated national focal point) needs to submit their verified and approved annual MIKE data reporting **by 31st January** of the subsequent year.

However, for a limited number of range States, this may not be feasible because of differing annual calendars for reporting and compiling wildlife-related monitoring information. In these rare instances, annual MIKE data should be submitted as soon as it is available.



**Key point:** Several factors will impact on a MIKE site's ability to manage MIKE data effectively and efficiently.

Key aspects to consider include:

- Where the MIKE site is using patrol forms, effective paper record management (transmission from the field to the PA HQ and subsequent archiving) is essential for maintaining the integrity of MIKE data
- Treating Patrol Forms as 'security items' has proved an effective way to help improve the management of data and the effectiveness of data entry in some areas

- Data entry is best done throughout the year as information is received from patrols. This prevents backlogs, improves accuracy and can aid site management
- Multiple staff with data collation/analysis skills need to be trained at each site to prevent backlogs developing due to absences, transfers or other issues
- Ideally, audits of patrol data should be carried out regularly on site by the MIKE site focal point or other experienced staff to ensure data entry and analyses are being performed correctly
- Regular quality checks and debriefing provides an opportunity to timely address technical and logistical challenges being faced in conducting patrols and recording data



## 4. MIKE implementation and support systems

In order to deliver on CITES CoP Res. Conf. 10.10 mandate effectively and efficiently, the MIKE Programme has established several implementation and support systems at various levels. These are illustrated in Figure 8 below and described in the following sections.



Figure 8. MIKE implementation and support systems from site to international levels

### 4.1 MIKE site and national focal points

The MIKE site and national focal points<sup>8</sup> provide a vital link between the range State wildlife agencies and the MIKE Programme, with lead responsibility for co-ordinating and overseeing MIKE monitoring activities in their country or site, and for liaising and collaborating with the MIKE CCU. In recognition of the focal points' pivotal role, MIKE seeks to facilitate their work on behalf of the programme through regular communication and problem solving.

MIKE does not have significant financial resources to support the focal points' activities at either the site or national level, and the work of these staff with regard MIKE is therefore expected to be part of the commitment of the range States towards the implementation of the MIKE Programme.

The following sections summarise the responsibilities of the site and national focal points. Full terms of reference are provided in Appendix 3.

<sup>8</sup> The requirement for range States participating in the MIKE Programme to appoint national and site focal points is set out in CITES Res. Conf. 10.10 (CoP18).

### 4.1.1 MIKE site focal points

MIKE site focal points act as the key liaison between MIKE sites and the MIKE CCU for all MIKE activities being implemented at the site level. Specifically, MIKE site focal points play the lead role in overseeing the collection, validation and compilation of MIKE site-level elephant carcass and patrol effort and coverage data as described in section 2 and 3 above. This includes the regular and timely entry of data into the site-level data management system (such as the MIKE workbook, MIKE online database or software-based RBM system) and its periodic onward transmission to the national focal point or directly to the MIKE CCU as appropriate.

In addition, the site focal points are ideally placed to provide the MIKE CCU with key information with regard potential capacity gaps in the site's law enforcement and elephant protection efforts, wherever possible using the MIKE law enforcement capacity assessment as a framework (see section 4.6 below), and to work with the MIKE CCU in organising appropriate training events (see section 4.5 below). The focal points are also well placed to promote the use of MIKE elephant mortality and patrol effort outputs in strengthening adaptive law enforcement responses at the participating site.

### 4.1.2 MIKE national focal points

MIKE national focal points act as the primary liaison between range State wildlife agencies and the MIKE Programme for all MIKE activities being implemented in the country concerned. They are the key range State officer responsible for coordinating the review and approval of all site-level MIKE data and have lead responsibility for the regular and timely transmission of the data to the MIKE CCU. Fulfilling this role requires the focal points to engage in regular communications with the MIKE CCU to address potential challenges related to the validation, compilation and transmission of site-level MIKE data.

Similarly, the national focal points' role also requires them to work closely with the MIKE Programme in reporting on MIKE data outputs and presenting them to their sub-regional steering committee (see next section), as well as ensuring that key PA management-related information emerging from MIKE is conveyed to senior managers in the concerned range State wildlife agency. MIKE national focal points are also expected to liaise with the MIKE CCU to facilitate site and national level participation in training events organised as part of MIKE implementation.

## 4.2 MIKE Sub-Regional Steering Committees

The MIKE Sub-regional Steering Committees (SSC) are mandated by CITES Res. Conf. 10.10 and provide a mechanism for more senior representatives of the range State wildlife agencies to engage in the work of the MIKE Programme, and to interact with colleagues in the sub-region concerned. In this regard, there are four

sub-regional steering committees in Africa – West, Central, Eastern and Southern – and two in Asia – South and Southeast.

The primary role of the SSCs is to oversee and facilitate the implementation of the MIKE Programme mandate according to Res. Conf. 10.10, including managerial, governance and sustainability aspects. Meetings of the MIKE SSCs are expected to be held at regular intervals – usually annually or biennially depending on available funding.

SSC meetings are usually convened by the MIKE Programme Coordinator, in consultation with the host country. The MIKE CCU acts as the secretariat for SSC meetings, with responsibility for developing meeting agendas, providing MIKE analyses and other documentation, facilitating meeting attendance and producing and circulating meeting minutes.

Each range State is expected to nominate one member for the SSC, and to be represented at SSC meetings by this member. In this regard, range States are encouraged to nominate as the SSC member the head of their national agency or ministerial department responsible for wildlife conservation and management, or someone of equivalent status or responsibility.

## 4.3 MIKE international support mechanisms

### 4.3.1 MIKE CCU

The MIKE Central Coordination Unit is a small team of CITES Secretariat staff hosted by the United Nations Environment Programme at its Headquarters in Nairobi. As its name suggests, the main function of the CCU is to coordinate and support the implementation of the MIKE Programme and the delivery of CITES Resolution 10.10, under the overall guidance of the CITES Standing Committee. The main responsibilities of the CCU are to:

- Provide technical support, advice and training to elephant range States and MIKE sites in Africa and Asia in the fulfilment of MIKE monitoring requirements and in strengthening wildlife law enforcement capacity for combatting wildlife crime
- Develop systems and procedures for collecting, managing and reporting elephant mortality-related data and for assessing MIKE site law enforcement capacity
- Carry out validation and analysis of MIKE elephant mortality data and, with the guidance of the MIKE Technical Advisory Group, prepare reports on elephant mortality trends for the CITES Standing Committee and the CoP
- Report to the CITES Standing Committee and CoP on the implementation of the MIKE Programme and respond to any guidance provided

### 4.3.2 MIKE TAG

The MIKE-ETIS Technical Advisory Group (TAG) is responsible for providing technical oversight for the MIKE monitoring systems, as well as for the elephant trade monitoring carried out by ETIS. The TAG comprises of 12 members, including several “global” TAG members providing broad elephant conservation expertise, one sub-regional member for each of the MIKE sub-regions, and additional co-opted members providing supplementary specialist expertise. The main functions of the TAG are to:

- Ensure the consistency, scientific robustness and appropriateness of MIKE implementation across the six sub-regions in Africa and Asia
- Review MIKE data collection methods and procedures to ensure that they are technically correct and feasible
- Advise on the analysis and interpretation of MIKE data, appropriate analytical procedures and the technical content of outputs
- Review MIKE training modules and capacity-building materials

Further information on the MIKE-ETIS TAG can be found here: <https://cites.org/eng/node/10506>.

In addition to the MIKE-ETIS TAG, the CITES Standing Committee has established a mechanism to oversee the further development, refinement and implementation of activities aimed at delivering the CITES Res. Conf. 10.10 mandate, called the MIKE-ETIS Subgroup. The terms of reference for the subgroup can be found here: <https://cites.org/eng/node/43790>.

## 4.4 MIKE focal site and national-level support

The MIKE Programme has a small fund aimed at supporting MIKE sites to address key material weaknesses experienced in fulfilling the MIKE site monitoring requirements as set out in this document, such as providing GPS devices for field data collection, and computers to facilitate the management of MIKE data. All such material support is provided in accordance with the financial and procurement procedures established by the CITES Secretariat and the respective donor.

In addition, the MIKE Programme has been successful at raising funds to support strengthening law enforcement capacity at selected MIKE “focal sites”. The overall aim is to address the CITES Res. Conf. 10.10 mandate aimed at “building capacity in elephant range States... to manage elephant populations and enhance enforcement”.

The funding available for this capacity building support is limited, so through a process implemented in consultation with the MIKE sub-regional steering committees and range State wildlife management agencies, a series of priority sites have been identified, called “MIKE focal sites”. For the selected sites, priority law enforcement capacity-building support needs are identified through a planning

process that involves the use of the MIKE Law Enforcement Capacity Assessment (LECA - see section 4.6 below).

To date, the MIKE Programme has supported 15 sites in Africa through its law enforcement focal site support initiatives, as detailed in Table 2 overpage.

Many of the outcomes that the MIKE Programme aims to achieve at the site level in terms of strengthening site-level monitoring and law enforcement systems are dependent on the support and human and material resources of the range State national wildlife agency concerned. For this reason, MIKE has also secured financial support for strengthening national-level actions by elephant range States to mainstream innovative wildlife crime, law enforcement and monitoring systems in their protected area systems and management policies.

Another important priority is providing support to range State national wildlife management agencies in strengthening responses to wildlife crime and fulfilling key CITES decisions concerning the trade in elephant specimens. This includes strengthening systems for storing, managing and disposing of ivory and other confiscated wildlife specimens and developing capacity and systems for forensic analysis, crime scene management and wildlife trafficking case prosecutions.

*Table 2. List of MIKE focal sites giving sub-region/country and years supported*

Sub-region	MIKE Law Enforcement Focal Site	Range State	Years of Support
West	Parc W National Park	Benin/ Niger/ Burkina Faso	2018-2020
	Mole National Park	Ghana	2021-2023
	Taï National Park	Côte d'Ivoire	2021-2023
	Gourma MIKE site	Mali	2021-2023
Central	Boumba Bek National Park	Cameroon	2018-2020
	Dzanga Sangha National Park	Central African Republic	2018-2023
	Okapi National Park	DRC	2018-2023
	Minkébé National Park	Gabon	2021-2023
	Nouabale-Ndoki National Park	Congo	2021-2023
Eastern	Queen Elizabeth National Park	Uganda	2018-2023
	Tsavo West National Park	Kenya	2019-2023
	Selous Game Reserve	Tanzania	2020-2023
	Kafta Sheraro National Park	Ethiopia	2020-2023
	Katavi-Rukwa	Tanzania	2018-2020
Southern	Niassa National Reserve	Mozambique	2018-2023
	Lower Zambezi National Park	Zambia	2020-2023
	Mana Pools, Sapi and Chewore	Zimbabwe	2018-2023
	Sioma-Luiana-Bwabwata	Zambia/ Angola/ Namibia	2020-2023

## 4.5 MIKE training approaches

Rapid turnover of staff in MIKE sites, including staff transfers to non-MIKE sites, means that training is needed at regular intervals to ensure that sufficient patrol

staff as well as managers understand why the elephant mortality information is being collected and how it is used, what data is required, and how MIKE data should be recorded and managed.

To address these needs, the MIKE Programme aims to provide MIKE site and national wildlife agency staff with appropriate training opportunities to enable them to fulfil MIKE requirements effectively and efficiently, as well as to strengthen site-level law enforcement capacity. Two main training approaches are used:

1. The **MIKE Online Learning** website, of which this MIKE Site Monitoring training module is a part, provides an online learning resource for MIKE site and other protected area staff in a range of topics designed to enhance site-level capacity for law enforcement and for combatting wildlife crime
2. **MIKE site-level training** for MIKE elephant mortality data collection and management. These training events may be organised *in situ* at participating MIKE sites or at other suitable venues such as regional wildlife colleges.

## 4.6 MIKE Law Enforcement Capacity Assessment

The MIKE mandate identifies the need for range States and sites to better understand the status of their wildlife law enforcement efforts, specifically the effort and resources employed in detection and prevention of illegal killing of elephants. The **MIKE Law Enforcement Capacity Assessment (LECA)** has been developed to address this need. The primary function of the LECA is to assist range States and sites to optimise the management of available resources as well as the planning and delivery of targeted site-level law enforcement support and capacity building, potentially in cooperation with relevant donors and partners.

For CITES and the MIKE Programme, the LECA process also underscores that addressing the illegal killing of elephants cannot simply be about monitoring elephant deaths, but also about strengthening the capacity of range States and MIKE sites to combat wildlife crime, in particular the illegal killing of elephants.

Through a participatory process involving site managers and senior law enforcement staff, the LECA enables MIKE sites to assess their capacity to deliver a range of law enforcement-related aspects from patrols, through law enforcement operations, intelligence and investigations concerning wildlife crime, and the role of stakeholders in combatting wildlife crime.

The LECA also has the benefit of providing immediate feedback to site managers concerning the strengths and weaknesses of their law enforcement capacity, in the form of a dashboard which summarises the detailed assessment information in real-time (see Figure 9 overpage).







Management Need	Status
Patrol effort	
Patrol staff aptitude and skills	
Patrol outfitting	
Patrol staff standards	
Job satisfaction	
<b>Law Enforcement Patrols Overall</b>	

Figure 9. Typical LECA dashboard output (for law enforcement patrols)

As such, undertaking the assessment can be an effective teambuilding exercise to enable site managers and staff to work together to determine where they should focus their efforts to build law enforcement capacity. Repeating the exercise every 2-3 years will enable MIKE sites to understand the progress they are making at strengthening their capacity.

For this reason, the MIKE Programme recommends that all MIKE sites undertake participatory LECA exercises on a regular basis. The MIKE CCU is keen that the outcomes of these exercises are shared with the CCU whenever the exercise is completed.

In addition, the MIKE Programme requires LECA assessments in two key circumstances:



- MIKE law enforcement focal sites.** For sites receiving law enforcement capacity building support from the MIKE Programme (see section 4.4 above), the LECA provides a mechanism to assist the concerned wildlife agencies and the MIKE Programme to identify the site's law enforcement capacity strengths and weaknesses, determine where best to focus the limited MIKE focal site support for optimal impact, and monitor progress in strengthening site-level law enforcement capacity.
- Potential new MIKE sites.** In this case, the LECA also provides a baseline to better understand the capacity of the site to effectively participate in the MIKE Programme.

The use of the LECA is described in detail in the Law Enforcement Planning Toolkit guide of the MIKE Online Learning platform.



## Appendix 1. MIKE carcass form

The illustration below shows the front page of the MIKE carcass form, which contains most of the elephant carcass information that needs to be recorded. The back of the carcass form provides space for recording additional observations, as well as tusk and lower jaw measurements.

		<h3>MIKE Elephant Carcass Report</h3>			
Site Name: _____					
Patrol ID: _____		Name of recorder: _____		Found by: _____	
Date found: _____		Day: _____		Month: _____ Year: _____	
GPS WP ID: _____		GPS coordinate: X/E _____		Y/N _____	
Coordinate System: <input type="checkbox"/> Decimal Degrees <input type="checkbox"/> UTM <input type="checkbox"/> (Zone: _____ (e.g. 36M), Hemisphere (N/S) _____)					
Name of location: _____					
<b>Type and Cause of Death:</b> (tick one heading <u>and</u> one cause in the <u>same</u> box)					
<input type="checkbox"/> <b>Natural</b>		<input type="checkbox"/> <b>Illegal</b>		<input type="checkbox"/> <b>Management</b>	
<b>Cause:</b> <input type="checkbox"/> Old age <input type="checkbox"/> Disease/Wounds <input type="checkbox"/> Drought <input type="checkbox"/> Starvation & thirst <input type="checkbox"/> Predation <input type="checkbox"/> Accident (natural) <input type="checkbox"/> Other (add details below)		<b>Cause:</b> <input type="checkbox"/> Gunshot <input type="checkbox"/> Poison Arrow <input type="checkbox"/> Snare/Trap <input type="checkbox"/> Spear <input type="checkbox"/> Poisoning <input type="checkbox"/> Electrocution <input type="checkbox"/> Explosive <input type="checkbox"/> Other (add details below)		<b>Cause:</b> <input type="checkbox"/> Problem Animal <input type="checkbox"/> Management Cull <input type="checkbox"/> Self Defence <input type="checkbox"/> Sport Hunting <input type="checkbox"/> Veterinary-related <input type="checkbox"/> Rogue elephant <input type="checkbox"/> Other (add details below)	
		<input type="checkbox"/> <b>Other - unintended human related deaths</b>		<input type="checkbox"/> <b>Unknown</b>	
		<b>Cause:</b> <input type="checkbox"/> Train/Vehicle collision <input type="checkbox"/> Falling in a human-made trench <input type="checkbox"/> Electrocution (unintentional) <input type="checkbox"/> Drowning in water well <input type="checkbox"/> Death of calf due to mother being poached		<b>Cause:</b> <input type="checkbox"/> Bones only <input type="checkbox"/> No evidence <input type="checkbox"/> Other causes	
<b>Signs (evidence) of cause of death (please give details):</b>					
_____					
_____					
Was a post-mortem conducted? Yes <input type="checkbox"/> No <input type="checkbox"/> (If yes, please give details in Additional Notes below)					
Is there evidence that the killing was associated with a human-elephant conflict incident? (If yes, please give details in Additional Notes below)				Yes <input type="checkbox"/> No <input type="checkbox"/>	
<b>Carcass details:</b>					
How was the carcass first detected?					
<b>Method</b>	<b>Tick</b>	<b>Method</b>	<b>Tick</b>	<b>Method</b>	<b>Tick</b>
Aerial patrol		Researchers		Operator (tour/safari/hunting)	
Ground patrol		Local information/intelligence		Other (give details)	
Aerial animal survey		Local community		Management Report	
Ground animal survey		Tourist		Intelligence operations	
<b>Decay stage (Carcass Age)</b> <input type="checkbox"/> Fresh <input type="checkbox"/> Recent <input type="checkbox"/> Old <input type="checkbox"/> Very Old <input type="checkbox"/> Undetermined		<b>Elephant Age</b> <input type="checkbox"/> Calf or infant <input type="checkbox"/> Juvenile <input type="checkbox"/> Subadult <input type="checkbox"/> Adult <input type="checkbox"/> Undetermined		<b>Sex</b> <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Undetermined <input type="checkbox"/> Makhna (Male naturally without tusks, Asia only)	
		<b>Trophy (ivory) status</b> <input type="checkbox"/> Found in/ around carcass <input type="checkbox"/> Removed illegally <input type="checkbox"/> Naturally absent <input type="checkbox"/> Not found/ uncertain cause		<b>Status of other parts</b> <input type="checkbox"/> All other body parts intact <input type="checkbox"/> Skin removed <input type="checkbox"/> Meat removed <input type="checkbox"/> Tail removed <input type="checkbox"/> Meat removed <input type="checkbox"/> Other parts removed (add details below)	



## Appendix 2. Overview of MIKE implementation and support roles and responsibilities

Category	Function	Site & nat. focal points	CCU	TAG	Sub-regional Steering Cmtee.	CITES Standing Cmtee.
<b>MIKE data acquisition &amp; collation</b>	Development and review of MIKE monitoring standards, tools and guidelines		✓	✓		✓
	Development and review of MIKE monitoring training modules and materials		✓	✓		
	Implementation of MIKE monitoring training		✓			
	Technical support and problem solving for MIKE monitoring		✓			
	Material support for site-level MIKE monitoring		✓			
	Engagement with national and site focal points in MIKE monitoring data collection, management and reporting		✓			
	Compiling, validating and transmitting MIKE data annually	✓				
	Consolidating MIKE data in online database	✓	✓			
<b>MIKE data analysis</b>	Development of MIKE monitoring data guidelines and procedures		✓	✓		
	Elephant carcass data analysis and reporting (including PIKE methodology)		✓			
	Reviewing the technical correctness, relevance and timeliness of MIKE data analyses and interpretation			✓		
	Reviewing the technical and scientific oversight provided to MIKE by the TAG					✓
	Development and dissemination of site-specific MIKE data summary reports		✓			
<b>Law enforcement capacity building</b>	Facilitation of site-level MIKE LECA exercises	✓	✓			
	MIKE law enforcement focal site selection		✓		✓	
	Design of focal site support packages	✓	✓			
	Implementation and monitoring of focal site support packages	✓	✓			
<b>National &amp; sub-regional coordination</b>	Facilitating appointment of national and site focal points and briefing them on their role		✓		✓	
	Supporting the work of MIKE national and site focal points		✓			
	Keeping range States Ministries and decisionmakers informed on the objectives, progress and achievements of the MIKE Programme	✓			✓	
	Data reporting for MIKE Sub-regional Steering Committee meetings	✓	✓			
	Organisation of MIKE Sub-regional Steering Committee meetings	✓	✓			
	Securing range States' commitments for the delivery and long-term sustainability of the MIKE Programme				✓	

Category	Function	Site & nat. focal points	CCU	TAG	Sub-regional Steering Cmtee.	CITES Standing Cmtee.
	Examining Res. Conf. 10.10 and its annexes to ensure that it remains valid and pertinent		✓			✓
<b>MIKE re-reporting &amp; visibility</b>	MIKE sub-regional implementation monitoring and reporting to donors		✓			
	Reporting to CITES Standing Committee & CoP		✓	✓	✓	
	Participation in international elephant-related events	✓	✓			
	Maintenance of MIKE website and other visibility tools		✓			

## Appendix 3. MIKE national and site focal point TORs

### MIKE national focal point

The MIKE national focal point will act as liaison between the partner national wildlife agency and the MIKE Programme for all MIKE activities being implemented in the country concerned. In particular, he/she will:

- Facilitate and promote smooth and effective communications between the national wildlife management agency and the MIKE Central Coordination Unit (CCU)
- Coordinate the review and approval of MIKE site-level elephant mortality, and patrol effort and coverage data, and take lead responsibility for the regular and timely transmission of such information to the MIKE CCU for the production of national, sub-regional and continental reports
- Coordinate the completion of site-level and national-level Law Enforcement Capacity Self Assessments, and take responsibility for the transmission of completed assessments to the MIKE CCU
- Input into the development of MIKE annual country reports for the concerned country, and in presenting and elaborating on these reports to the host wildlife management agency partner and the representative to MIKE Subregional Steering Committee meetings
- Ensure that key management information emerging from MIKE monitoring information collection is conveyed to senior managers in the wildlife agency in a timely manner, including ensuring that the representative attending MIKE Subregional Steering Committee meetings is adequately informed in advance of such meetings
- Ensure that the synthesised site-level monitoring information and analyses as well as MIKE Programme reporting are provided to senior management at participating sites in a regular and timely manner
- Actively cooperate in data audits carried out from time-to-time by the MIKE Programme
- Liaise with the MIKE CCU regarding site and national-level participation in training events implemented through the MIKE Programme
- If MIKE financial support is provided to facilitate work at national and site levels, take responsibility for transmission of expenditure documents to MIKE CCU

### MIKE site focal point

The MIKE site focal point will act as liaison between the participating site and the MIKE Programme for all MIKE activities being implemented at the site concerned. Wherever possible, communications between the site focal point and the MIKE Programme will also be communicated to the MIKE national focal point. In particular, he/she will:

- Facilitate and promote smooth and effective communications between site management and the MIKE CCU, wherever possible involving the MIKE national focal point in all communications

- Appoint a deputy focal point who can assist in carrying out focal point responsibilities and can act on behalf of the focal point in his/her absence
- Oversee the collection of MIKE site-level elephant mortality and patrol effort and coverage data as stipulated in the MIKE Site Monitoring Guidelines and Procedures document
- Facilitate the implementation of MIKE Law Enforcement Capacity Self Assessments for the concerned site, and the transmission of completed assessments to the MIKE national focal point or direct to the MIKE CCU as appropriate
- Support the effective operation of ranger monitoring teams and activities as appropriate, and identify key training needs to enhance performance
- Oversee the regular and timely entry of data into site-level monitoring systems (such as the MIKE Workbook), and the subsequent analysis of monitoring data;
- Take lead responsibility for undertaking routine and regular data quality validation activities, and actively cooperate in data audits carried out from time-to-time by the MIKE CCU
- Take lead responsibility for the regular and timely onward transmission of monitoring data to the MIKE national focal point, or directly to the MIKE CCU as appropriate
- Contribute to the development of MIKE annual country reports in collaboration with the MIKE national focal point and the MIKE CCU
- Promote the use of MIKE elephant mortality and law enforcement monitoring data in strengthening adaptive law enforcement activities at the participating site