Implementers and Trainer's Workshop

16 – 20th June 2014

Final Report

SOUTHERN AFRICAN
WILDLIFE COLLEGE

Prepared by WCS, ZSL, CITES MIKE, and the SMART Partnership

AFRICA BIODIVERSITY COLLABORATIVE GROUP

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Executive summary

A regional SMART technical training was conducted at the Southern African Wildlife College (SAWC), Hoedspruit, South Africa between the 16th and 20th June 2014. The training targeted two different groups; the SMART implementers (administrators and trainers) who are interested in adopting SMART within the sites they work; and the Wildlife College Directors who might be interested in including a module on Law Enforcement Monitoring using SMART within their training curriculum.

A total of 28 participants representing 19 organizations joined the workshop from 17 African countries. The course covered: the philosophy of adaptive patrol management and the role SMART plays in facilitating this; how to use the SMART software (V3.0.1) and adapt it to the needs of the site, with introduction to the new plug-ins (entity tracker and independent observation); and the process of implementing SMART at a site (trainings, meetings, and technical support). Additionally the wildlife college directors evaluated the training curricula for SMART implementation, and how to adapt the training for wildlife college needs. Overall, both the training and the SMART software were well received with 100% of respondents agreeing that the SMART approach to law enforcement monitoring (LEM) is relevant and useful to their conservation site and 100% agreeing that they can apply the knowledge and skills learnt to their work.

The course was taught by Tony Lynam, Ruth Starkey and Olivia Needham, and coordinated by Alexa Montefiore.

Report prepared by

Ruth Starkey, Tony Lynam, Olivia Needham, and Alexa Montefiore

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Introduction

A regional SMART technical training was conducted at the Southern Africa Wildlife College (SAWC), Hoedspruit, South Africa between the 16th and 20th June 2014. The training was aimed at two different audiences; 1) SMART implementers, including administrators and trainers, who work in important wildlife conservation areas within Africa and who are interested in adopting SMART within the sites they work, and 2) African wildlife college representatives, holding such positions as directors of studies or senior trainers, who desire to incorporate standard law enforcement monitoring training curricular into their protected area management courses.

Training aims and objectives

The training course aimed firstly to increase the number of protected area staff and conservationists able to use and implement SMART at their sites. Secondly to sensitize the wildlife colleges to the SMART approach with potential development of SMART modules within their training curriculum.

The main objectives of the training course were to:

1) Provide instruction in use of the SMART conservation software as a tool to support protection efforts.
2) Train the national and regional staff from conservation areas and other important elephant sites in Africa how to use SMART.
3) Present training approaches for imparting knowledge about SMART with wildlife colleges and training institutions.
4) Plan for implementing SMART v3.0.1 at sites and familiarization with Cybertracker and other plug-ins.

Expected outputs from training

The expected outputs from the training are:

1) Specific skill in the use of the SMART conservation software.
2) Increased appreciation of the importance of ranger-based data for decision-making and management of conservation areas.
3) Improved organization of law enforcement monitoring data.
4) Increased effectiveness of patrolling and field enforcement strategies.
5) Understanding of the range of training approaches available for different levels of staff from ranger-based data collection, to database training, to LEM training for managers.

Training handbook and software

An updated Training of Trainers manual was provided for SMART 3.0.1, which was customized for this training course. Additionally the support materials were developed specifically for the workshop and were tailored based on the participants and the venue (e.g., shapefiles were of SAWC area, employee list included all workshop attendees). Participants were provided a hard copy of the manual and they received all training materials, presentations, and information on a USB drive.

For the purposes of instruction in this workshop, the trainers and attendees used SMART 3.0.1, which was recently released. SMART 3.0.1 includes two new plug-ins – Entity Tracker and Independent Incident Plug ins. As these are new features had not been thoroughly field tested, they were not included in the training course, though an overview demonstration was provided briefly at the end of the workshop to give a sense of their potential uses. The training manual incorporates an instructional module on each of these new features.

Trainers and Participants

The course was taught by:

- Antony Lynam (CITES MIKE Sub regional Support Officer, Southeast Asia and WCS Asia Programs)
- Ruth Starkey (WCS - Tanzania)
- Olivia Needham (ZSL)

The course was coordinated by Alexa Montefiore and Southern African Wildlife College.

A total of 28 participants representing 19 organizations joined the workshop from 17 African countries. At many of these sites, some form of law enforcement monitoring is already in place, and they are moving over to SMART e.g. MIKE sites. At other sites, data collection during patrols is occurring, though with an inadequate data management system. Therefore, SMART is being established for the first time as a law enforcement monitoring tool e.g. WCN/ Niassa Carnivore Project.

Implementers

Fifteen participants were implementers of law enforcement monitoring from key conservation sites around Africa from 12 organizations. This included the MIKE SSO for Southern/Eastern Africa, Tapera Chimuti, who oversees collection of patrol data and elephant carcasses across multiple sites.

Some participants had previously participated in a MIKE-led ranger based data collection workshop in Botswana (13 – 16 December, 2010) where sets of patrol forms were designed and basic training in use of the MIST software was imparted.

Wildlife college directors

Fourteen participants were from seven wildlife colleges and training institutes, including the host, South African Wildlife College. Some participants had previously participated in a MIKE-led ranger training curriculum development course held at SAWC that was run by Tony Lynam and Tapera Chimuti, MIKE SSO for Southern/Eastern Africa from 16 – 18th August 2010.

Workshop Format and content

The agenda for the workshop followed a unique format to accommodate the different training needs and interests of participants (Annex 2). Training was structured with introductory presentations about the philosophy of adaptive patrol management and the role SMART plays in facilitating this, training, and data collection tools, followed by instruction based around the SMART training manual for v3.0.1, which is comprised of training modules.

Training on each module consisted of an overview in plenary followed by a classroom exercise that enabled each participant to work individually through the step-by-step guidelines in the manual, with trainers circulating the room to provide assistance. Training was interactive in that participants were able to raise questions as they worked through the exercise. Each module concluded with a de-briefing in plenary and a summary of questions/problems encountered. Practical examples were given throughout the training based on the trainer's experience from Africa and Asia.

Ten modules were covered including: 1. Setting up a Conservation Area; 2. Map navigation and GIS; 3. Patrols; 4. Analysis: Queries and Summaries; 5. Reports; 6. Planning and intelligence; 7. Data Model Management; 8. Administrative Tasks; and 9. Cybertracker plug-in.

The order of instruction was adjusted to ensure the optimal flow of information. The instruction began with Modules 2, 3, 4 and 5 on the first two days and was based around a predefined conservation area using the SAWC as the conservation area limits. During the following two days Modules 6, 7, 8 and 1 were taught.

Module 1 was taught last and as a practical exercise to enable participants to learn how to set up a conservation area. Participants then set about creating their own conservation areas in SMART based on the set of human activity, wildlife, and features at their field sites. The trainers have made themselves available to troubleshoot problems and provide advice to the participants as they move forward with creating data models, setting up conservation areas, and implementing SMART at their sites.

Module 6 (planning and intelligence) was demonstrated with a practical example from Seima, Cambodia, where, monthly patrol planning at this site incorporates sets of numeric and spatial targets for patrol teams. The group was shown how actual patrol efforts are compared with the targets set up in the planning module, and how these become part of the discussion at the monthly meeting.

Ruth Starkey led the training of the Cybertracker plug-in (module 9), which is designed to improve the efficiency of collection of data in the field, and transfer to the conservation area database. As part of the instruction, the Cybertracker software was installed on a set of Nexus tablets. The tablets and datasheets were simultaneously used in a practical exercise in the SAWC grounds around the classroom to make observations at a set of "crime scenes". The class was divided into small teams (approximately 4 persons per group) with each using a set of 10 waypoints to navigate to. At each waypoint, the team recorded observations at the crime scenes (which were photos of real crime scenes). Participants were able to compare the efficiency of recording data using the different methods.

In addition to the software modules, presentations were provided on adaptive patrol management processes. A demonstration was given using the example of Seima, Cambodia of the adaptive patrol management process from data collection to data entry, analysis, and feedback to rangers. A standard reporting template is used to summarize key effort and results from law enforcement. Information from remote sensing data is used in conjunction with patrol based monitoring to identify deforestation/land clearance hotspots and advise the deployment of field teams.

Additionally, the steps for implementation at a field site were discussed covering the 3 core, required trainings, including: 1) ranger training on data collection: what this should cover, and what could be included; 2) database training on SMART for the data base managers, including data management and data transfer processes; 3) adaptive management training for the senior park staff on how to use the data to make informed decisions.

The implementers participated in a full schedule of training, including introductory presentations, and specific instruction in the core SMART modules 1 – 9 which was given by Ruth Starkey, Tony Lynam and Olivia Needham. Additional presentations were done on the last day covering the newly developed entity tracker plug-in, incentive schemes, and examples of how training in data collection is imparted to field rangers at sites in Africa (Ruaha, Tanzania) and Asia (Seima, Cambodia).

The wildlife college and institute attendees participated in all of the introductory presentations and instruction on SMART modules 2, 3 and 4. Some also stayed for the instruction on SMART module 1, 7, 8 and 9 on the last day. On the third day, the college and institute participants engaged in a half-day of dedicated discussions led by Tony Lynam including an overview of the reporting functions of SMART (separately covered in detail by the implementers in a concurrent session, following module 5), and discussion of SMART training curricular. A set of draft training outlines were presented and discussed for three levels of SMART training; 1) data collection training, 2) SMART database – level 1, and 3) LEM training for managers. The lead trainers, Ruth and Tony, expect to provide assistance where needed, for advising the development of these institutional SMART training courses.

All software bugs reported during the workshop were inputted on the SMART Assembla website (www.assembla.com/spaces/smart-cs/wiki). Furthermore, a comprehensive list of feedback and requests for new features raised by participants were also added to the SMART Assembla site.

Wildlife College Training discussions and next steps

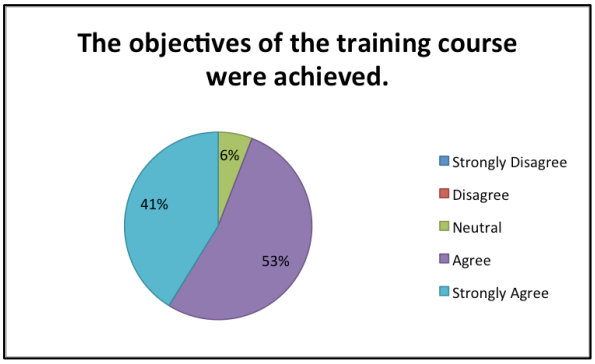
A set of draft training outlines were presented for three levels of SMART training; 1) data collection training, 2) SMART database – level 1, and 3) LEM training for managers. These outlines were enthusiastically discussed and participants provided extensive comments and suggestions to develop the content and context. While recognizing that the training institutions each have their own training needs, many of the inputs from participants could generally apply to any training institution.

A set of revised training outlines will be distributed along with the report from the training to these participants. These outlines are expected to form the basis for developing SMART training curriculum that will be taught in the training institutions.

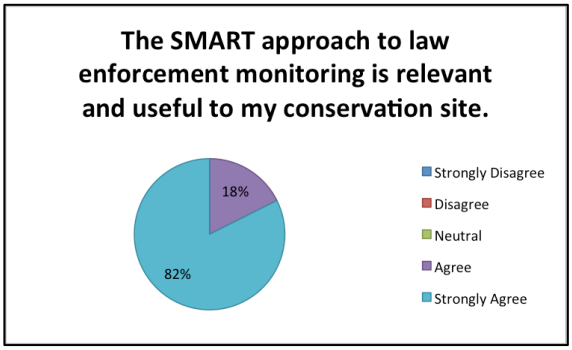
Participant responses to the training

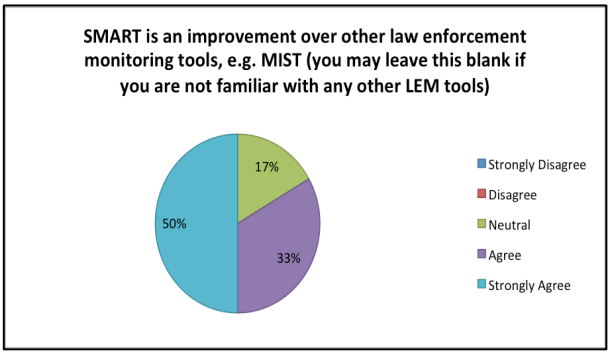
A questionnaire was circulated to all participants at the end of the training (see Annex 3). A total of 20 completed questionnaires were received. Overall, both the training and the SMART software

were well received: 100% of respondents agreed that the SMART approach to LEM is relevant and useful to their conservation site, 100% agreed they can apply the knowledge and skills learnt to their work, and 88% agreed they felt confident enough to teach others how to use the SMART software. Other results of the questionnaire are summarized in the pie chart and bar graph figures below.

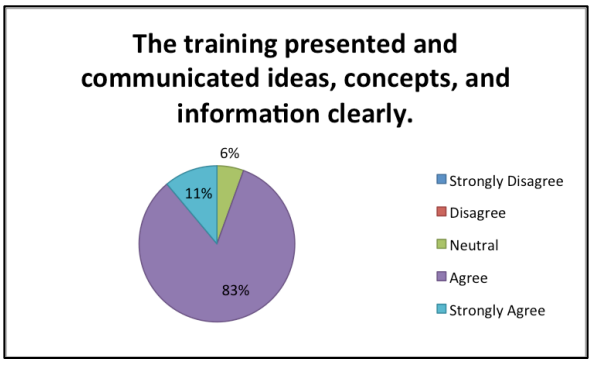


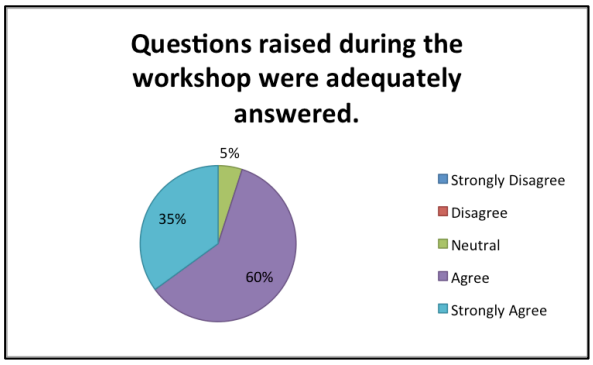
The SMART approach

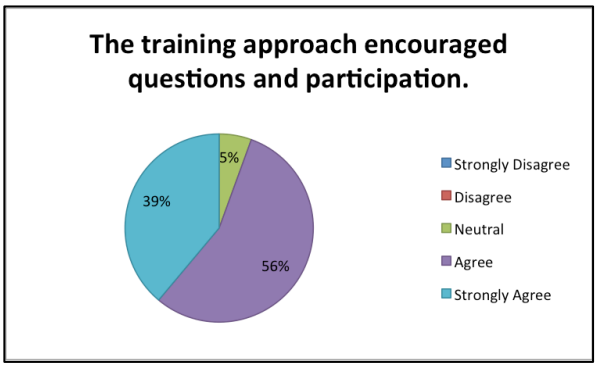


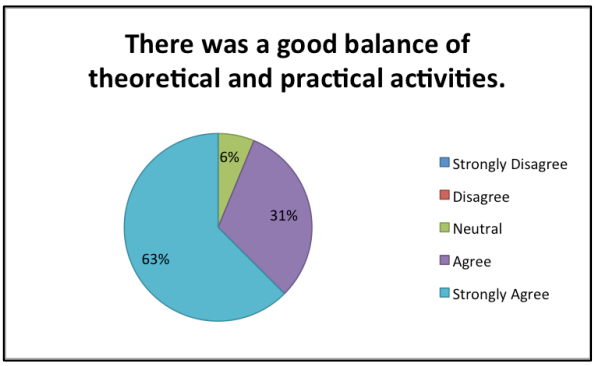


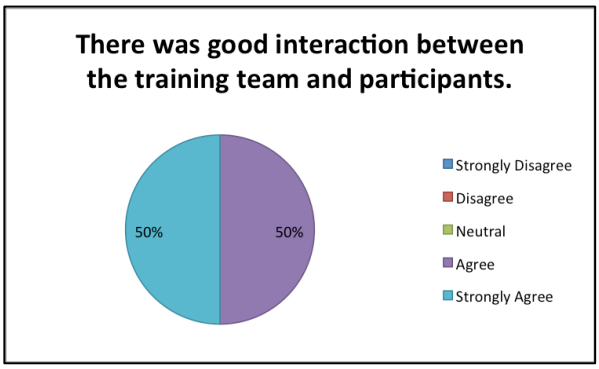
The Training Approach and Content

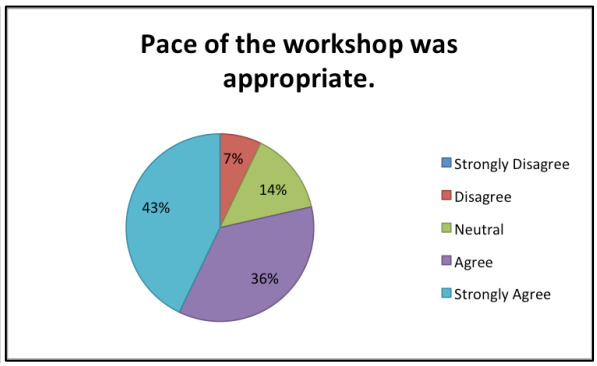


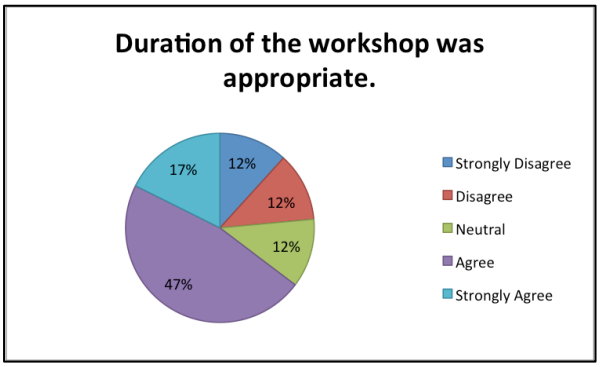


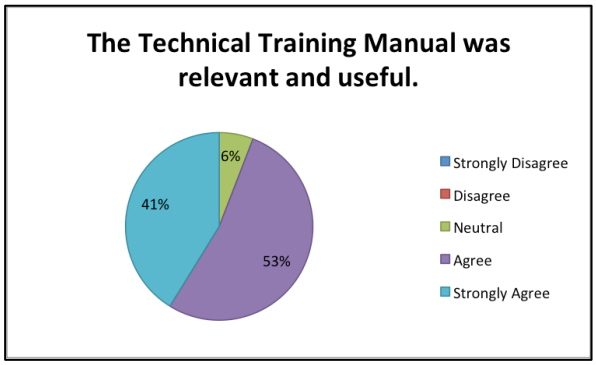


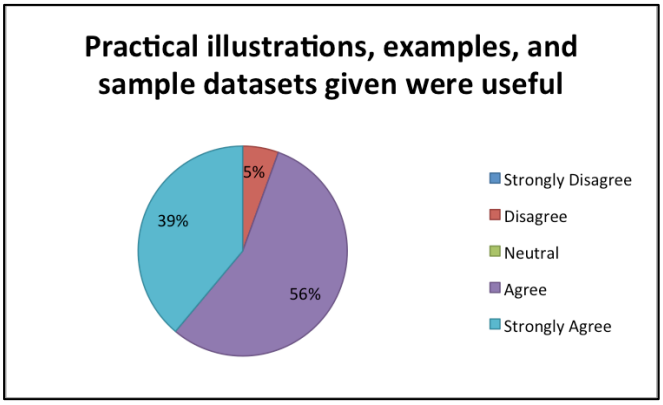



There was good interaction between the training team and participants.
50%
50%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree

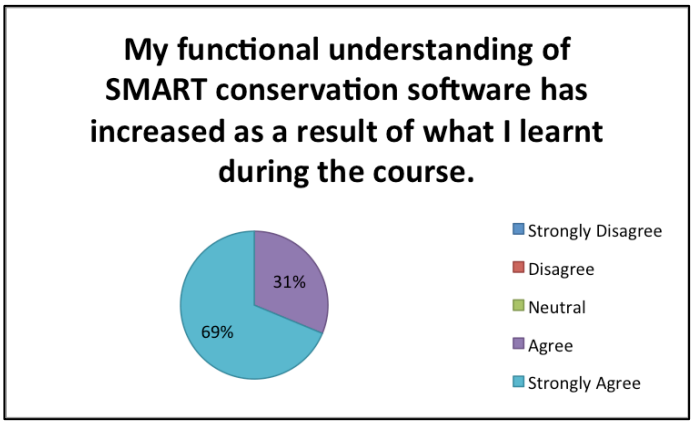

Pace of the workshop was appropriate.
7%
14%
43%
36%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree

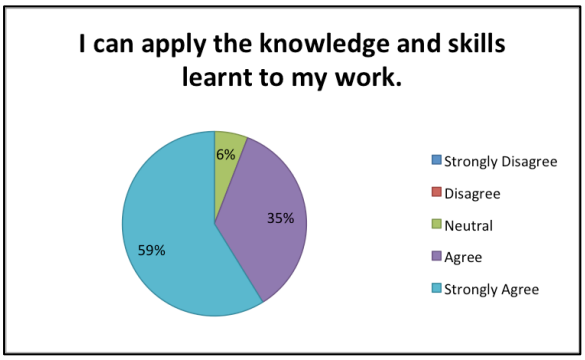

Duration of the workshop was appropriate.
17%
12%
12%
12%
47%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree

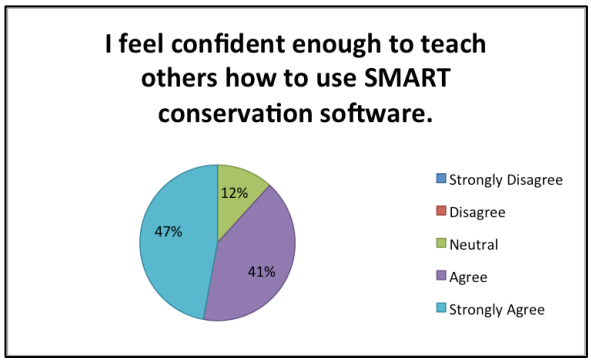

The Technical Training Manual was relevant and useful.
6%
41%
53%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree

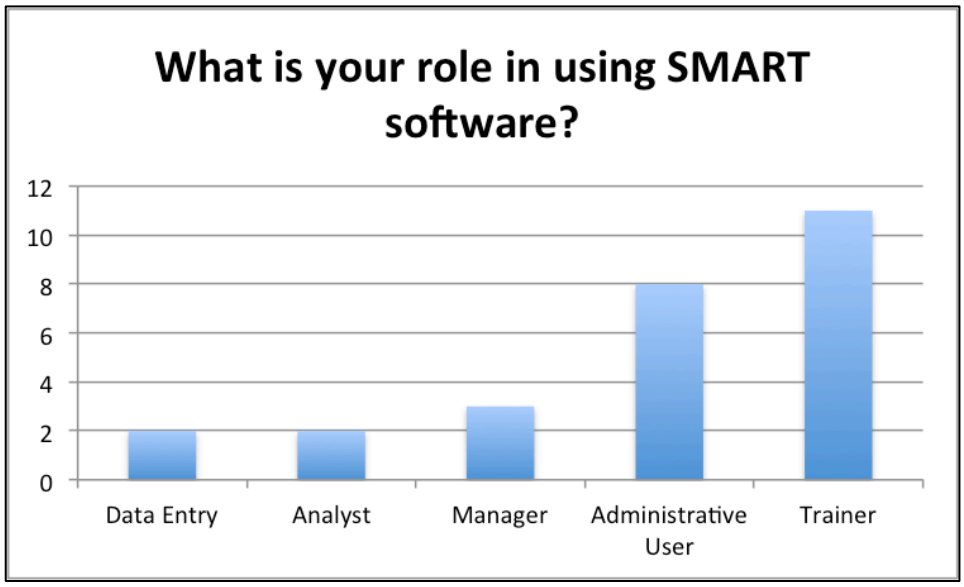

Practical illustrations, examples, and sample datasets given were useful
5%
39%
56%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree

Overall


My functional understanding of SMART conservation software has increased as a result of what I learnt during the course.
31%
69%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree


I can apply the knowledge and skills learnt to my work.
6%
35%
59%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree


I feel confident enough to teach others how to use SMART conservation software.
12%
47%
41%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree


What is your role in using SMART software?
12
10
8
6
4
2
0
Data Entry
Analyst
Manager
Administrative User
Trainer

Participant's feedback on SMART implementation

Resources needed for SMART implementation at their site

Participants indicated several broad categories of resources that were needed, including equipment, tools, technical support, strategic planning, and language support.

- Equipment: most sites stated that they will require new equipment to implement SMART
    - Computers
    - GPS
    - Trimbles (or other mobile data collection device)
- Several participants indicated they required such training tools as:
    - Tablets available for training courses
- Technical support:
    - Additional trainings, which also includes refresher trainings
    - On site instruction and support would be very useful after 3-6 months
- Strategic planning: strategic discussion with the team about the changes on the modules (adapt to our contexts), define the tasks of people involved and train our scouts on SMART
- Language: French version of training materials, which were shared with the group, and one participant requested Portuguese as well.

How does SMART compare with other law enforcement monitoring tools, e.g. MIST?

- The majority of participants who answered this question indicated that SMART is much better than other tools, such as MIST or ODK, and that is an all around great tool. Several examples of specific feedback received from the questionnaire are included here:
    - "Works better than ODK"
    - "SMART is very good and easy to learn and apply"
    - "Very flexible in areas with the capacity, great tool"
    - "A fantastic tool and wonderfully matured to offer a comprehensive data and information tool for park management."
    - "SMART is more relevant and useful likewise a modern technology."

What would add value to SMART?

The broad areas that participants suggested would provide added value to SMART included: equipment, software enhancements, technical support, information sharing outlets, and buy in. An overview of the suggestions provided is included below.

- Equipment: more affordable Trimbles
- Software enhancements: CyberTracker functionality for Mac computers, further development of the intelligence plug in, and more visually appealing maps
- Technical support: onsite support once data has been collected to refine the process, frequent trainings, further communication
- Information sharing: a facility for sharing data on poachers and legal cases involving poachers; a general central repository; creation of a feedback loop whereby implementers share suggestions for future development considerations; a workshop to further develop a standardized approach for entering intelligence data

- Buy in: endorsement from GBIF; JRC; FAO and other global players – Standardizing toward their data collection and management protocols
- Patrolling: field patrol activities monitoring and administration for enhancing efficiency and modernization with copping the speed of poaching in conservation areas

Additional comments

Below we have included the additional comments provided by attendees, which have been organized according to positive feedback on the workshop as well as suggestions for future improvements.

Positive feedback on the training workshop:

- Excellent resource to assist in making informed decisions on conservation
- Thanks for sharing your skills it was a great learning experience
- Very good for networking and forming links with SMART team, look forward to a SMART training partnership
- Great training team
- Looking forward to further support in providing training materials and engagement with colleagues
- Thank you for including PPF in this overview of SMART – we certainly hope and trust that we can look to assist and develop something which will be more enterprise based in terms of data management and exchange and sharing of information for the benefit of conservation as a whole. It is obvious that for Transfrontier Conservation the means of collecting and managing data goes beyond the borders of individual parks and merely looking at conservation as an isolated land use practice.
- Thanks to all training team! It was a real pleasure!

Suggestions for future improvements:

- More time to work on your own data in SMART and discuss with experts. Separate sessions for beginners vs people with a little bit of background. Encouraging participants to work through the exercises before they attend the training (as if they are meant to come out as trainers themselves they will need to have more practise than just a once off exposure). More sessions for people with some background on SMART to work on their own datasets in the presence of some SMART experts (and so encouraging people to enter some sample data into the system before the start of the meeting).
- Socialization among attendants was lacking, more relevant examples of all types from different areas/countries was lacking, defaults used should be specific to each attendee
- Good training, I just needed more time for training
- I only have comments on the way the training was organized. While the workshop agenda included reporting, intelligence and planning, the actual implementation of the workshop did not cover these areas especially planning and intelligence. I was discouraged by being shifted to another room while the 'implementers' were continuing with those modules which to the best of my understanding are the most important. However, I will make sure I do it on my own. We deserve to be issued with the certificate of attendance. This will be a kind of motivation. The time allocated for training was three days, 16th, 17th, and 18th June 2014. We actually had no training on 19th as we left at 10:00AM for Hoedspruit Airport this

period of three days was strictly not enough. I propose the period of seven days for this training. Otherwise, the training was excellent!

- Planning, control, assessing efficiency and reporting of law enforcement activities are crucial towards ensuring wildlife and other natural resources are properly (appropriately) conserved. SMART can play great role towards ensuring proper conservation; it should be used by conservation agencies officials/staff.
- Some representatives from the colleges (e.g., Mweka) felt as though they were being left out since their portion of the training ended a day ahead of the rest of the group.

Organizer/trainer comments:

- Although the difference in timing between the colleges and implementers was agreed upon by the SMART Partnership since this was supposed to serve as an introduction and sensitization to SMART for the colleges, several representatives expressed concern in leaving early. This organizational component of the training should be considered during future trainings. For example, either have two completely separate trainings for the different audiences or provide the college participants the opportunity to stay the whole duration of the training.

Annex 1. Workshop participants

Organization	Participant name	Email Address
Wildlife colleges:		
Botswana Wildlife Training Institute	Batshani Nduchwa	bnduchwa@gov.bw
Botswana Wildlife Training Institute	Dimpho Liberty Sebotho	dlsebotho@gov.bw
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Garoua Wildlife College, Cameroon	Babale Michel	mbabale@yahoo.fr
IUCN Southern Africa/CITES MIKE	Tapera Chimuti	taperachimuti@citesmike.org
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Mushandike Wildlife College, Zimbabwe	Rayfields Chateya	dchitupa@zimparks.co.zw
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Mweka Wildlife College, Tanzania	Gwamaka Mwasalemba	gwamaka@mnrt.go.tz
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Implementors		
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Annex 2. Training schedule

June 16th	
7:00 – 8:00	*Breakfast*
8:00 – 10:00	· Introductions and housekeeping · Sensitization to adaptive management and the SMART approach
10:00 – 10:30	*Coffee Break*
10:30 – 12:30	· Demonstration of the SMART software and its application · A guide to getting started with SMART · Introduction to the training curriculum for implementation
12:30 – 13:30	*Lunch*
13:30 – 16:30	· Training: Data collection · Exercise: Data collection
16:30 - 17:00	*Coffee Break*
17:00 - 17:30	· Installation of SMART + Cybertracker

June 17th	
7:00 – 8:00	*Breakfast*
8:00 – 10:00	· SMART module 2: Map Navigation and GIS · SMART module 3: Patrols data entry (GPS + datasheets)
10:00 – 10:30	*Coffee Break*
10:30 – 12:30	· SMART module 3: Patrols (Cybertracker) · SMART module 3: Patrols (multileg patrol data management)
12:30 – 13:30	*Lunch*
13:30 – 15:00	· SMART module 4: Analysis: queries and summaries
15:00 - 15:30	*Coffee Break*
15:30- 17:00	· SMART module 4: Analysis: queries and summaries

June 18th	
7:00 – 8:00	Breakfast
8:00 – 10:00	· SMART module 5: Reporting tool
10:00 – 10:30	*Coffee Break*
10:30 – 12:30	· SMART module 5: Reporting tool · SMART module 6: Intelligence and Planning
12:30 – 13:30	Lunch

13:30	· Field trip

June 19th	
7:00 – 8:00	*Breakfast*
8:00 – 10:00	· SMART module 1/7: setting up a database and data management
10:00 – 10:30	*Coffee Break*
10:30 – 12:30	· Setting up your own SMART database
12:30 – 13:30	*Lunch*
13:30 – 15:00	· Setting up your own SMART database
15:00-15:30	*Coffee Break*
15:30- 17:00	· Setting up your own SMART database

June 20th	
7:00 – 8:00	Breakfast
8:00 – 10:00	· Lessons learned from the field - practicalities of implementation and use. · Mechanisms for adaptive management
10:00 – 10:30	*Coffee Break*
10:30 – 12:30	· Mechanisms for adaptive management · SMART future plug-ins
12:30 – 13:30	*Lunch*

Annex 3. Training modules

Module 1. Configuring a Conservation Area.

Content: This module covered how to create and setup a new Conservation Area, define parameters of the law enforcement structure and organization, and prepare the database for entering patrol information.

Competency: Starting SMART on your computer for the first time; naming and describing the Conservation Area; creating user accounts; choosing a data model; defining spatial boundaries; creating a list of stations; defining participating organizations and ranks; creating employees; defining patrol teams, transport types, objectives and mandates. This is the core modules used to design and create their own conservation area.

Trainer's assessment: This is core knowledge for all SMART administrators who are responsible for creating and managing a SMART conservation area. The module was given on the last day of training, and led into a session where participants began setting up their own conservation area.

Module 2. Map navigation

Content: How to use SMART's mapping features. Learn how to create custom maps, export maps, set basemaps and access attribute information directly from the mapping windows.

Competency: Icons and navigation; adding datasets; styling and labeling; exporting data; setting basemaps; setting map projections; identifying features.

Trainer's assessment: This is core knowledge for SMART users whose task is data analysis for example staff involved in monthly patrol reporting.

Module 3. Patrols.

Content: Covers the process for entering in new patrol data using either datasheets or using the Cybertracker Plug in, as well as how to edit and manage data in SMART. Details of patrols is first entered, then waypoint and track data imported from GPS or GPX files. The process of entering observation data associated with waypoints is straightforward.

Competency: Creating a patrol; loading waypoints; loading or setting tracks; entering observations; viewing a patrol map; making manual corrections; multi-leg patrols; exporting and importing patrols; patrol view filters; fixed patrols, importing data from the CyberTracker plug in. This module linked to data collection training is important for database managers to make the link between the data collection and data entry into SMART. The exercise was done using GPS, datasheets and Cybertracker. Waypoints and tracklogs from the GPS can either, be transferred to the desktop of the computer then imported as GPX files, or imported directly from the GPS.

Trainer's assessment: This is core knowledge for SMART users whose task is data entry. To support this module, a practical exercise was conducted around the Training site, where participants had to navigate using the GPS "go-to" function and record observations at a set of "crime scenes". Data was collected using datasheets/GPS and Cybertracker, this data was then used as the example data to be imported into SMART - creating a patrol and importing GPS data, and entering the crime scene observations and also using the CyberTracker plug in.

Module 4. Analysis: Queries and Summaries.

Content: Learn about queries and summaries, a powerful tool that lets the user perform a wide variety of different analyses, for example define catch per unit effort statistics, and spatial distribution of threats, and export the results. The overall purpose is for users to extract patrol and observation information from the database. There are four different types of data queries/summaries and five different patrol queries/summaries which can be defined within version 3.0.1. The process of building these queries can be completed through the new Query Wizard facility which helps users choose which query type to use.

Competency: Creating a simple query using patrol filters; creating compound queries using patrol filters; creating queries using data model filters; creating queries using spatial filters; understanding & changing query properties; saving & deleting queries; exporting & importing queries; creating simple summaries; and creating complex summaries. Users need to have an overall understanding of

each query and summary type that can be created and how observation and incident filters can be applied.
Trainer's assessment: This is core knowledge for SMART users whose task is data analysis for example staff involved in monthly patrol reporting, administrators and site managers. The querying functionality is more advanced than previous versions of the software therefore extensive time needs to be spent on getting users familiar with building all types of queries/summaries.

Module 5. Reports.

Content: Presents the process of creating, editing and populating a SMART report. SMART reports are highly configurable and allow for a wide range of standardized reporting. The information on the reports can be dynamically generated based on the results of SMART queries and summaries. A major component of SMART is its mapping ability, and SMART reports allow maps to be included and customized to suit the report
Competency: Understanding the components of the report editor; configuring data access; creating headers and footers; creating master pages; updating the library; building a report; running a report; exporting reports
Trainer's assessment: This is core knowledge for SMART users whose task is data analysis for example staff involved in monthly patrol reporting, administrators and site managers.

Module 6. Patrol Planning and intelligence

Content: Managers may desire to use information on patrol coverage, gaps, and problem areas, along with desired targets for patrol teams to create a monthly patrol plan including patrol routes (tracks) for the conservation area. The new patrol planning plug-in was presented as an exercise to generate a patrol plan using examples from a site in Asia. Information on illegal activity may be acquired from non-patrol based approaches e.g. from informants, reports from other field teams. This information can be incorporated as intelligence records that may be used to help shape the enforcement response.
Competency: Create patrol plans from scratch for individual substations, and for the conservation area; add targets, start and end dates, employees, patrol hours targets, numeric, spatial and administrative targets. Understand that targets can be evaluated for a conservation area, station/team, or individual patrol. Create new intelligence records, define source of data, descriptions, plot locations on map, add, photographs, and create patrol plans based on the intelligence records.
Trainer's assessment: This is specialist knowledge for SMART users who are data analysts, and site managers. This is a potentially extremely useful module for staff who need not be involved in the detailed analysis of patrol data but want to incorporate just the key information from SMART directly into monthly workplans for enforcement teams, and want to monitor such workplans.

Module 7. Data Model Management.

Content: How to manage the Data Model within the SMART system. How to create, disable or delete categories and attributes in line with best practices and principles of data modeling
Competency: Know the structure of the SMART data model; categories, sub-categories and attributes. Starting with a base data model consisting of human activities, position, animals, and features, add, edit, disable or delete categories and attributes to distill or expand to a working data model for the conservation area. Save data model changes.
Trainer's assessment: This is core knowledge for all SMART users. This was taught at the end of the course and led into the practical exercise where participants started to think about setting up their data models for individual conservation areas. The data model needs to be carefully considered when bringing existing MIST data across, and when designing new or refining existing patrol report formats.

Module 8. Administrative tasks.

Content: Learn administrative functions to ensure a productive working environment in SMART. During this module, you will look at the export/importing capabilities, backing up and restoring of a

conservation area, along with other best practices that will ensure a minimal amount of downtime if disaster strikes

Competency: Changing your username and password; exporting and importing patrols; exporting the data model; importing a new common data model template for your sites; exporting and importing a conservation area; system backup; configuring automatic backups; backing up and restoring the database

Trainer's assessment: This is core knowledge for SMART users who are responsible for administering or managing databases.

Module 9. Cybertracker plug-in

Content: The CyberTracker plug-in is an optional plug-in that allows users to directly import observational data recorded using a GPS enabled PDA or smartphone directly into SMART through a semi-automated system. The plug-in eliminates users from having to manually enter data into the SMART system. This module gives users an overview of how to install the plug-in and how to use the plug-in on a PDA or smartphone.

Competency: Installing CyberTracker on a desktop computer; creating custom data models, installing CyberTracker on a PDA (Windows or Android); installing SMART-CyberTracker plug-in; transferring the data model to the PDA; collecting data using the PDA, exporting patrol information and data back into SMART.

Trainer's assessment: This is an optional plug-in but is core knowledge for SMART users responsible for data collection and data entry. This module was taught on the first day of the course as a practical exercise for all participants. All trainees went on a 'patrol' and collected observation data of threats on a Nexus tablet using the SMART CyberTracker plug-in. This exercise taught participants how to install CyberTracker and the SMART data model onto the tablet, how to collect data on the tablet and how to import that data back into the SMART software.

Additional modules: Entity Tracker and Independent Incidences

Entity Tracker

Content: The Entity plug-in is an optional plug-in designed to monitor specific features (entities) that are either fixed (post or watering hole) or transient (rhino).

Competency: Installing the Entity plug-in; creating entities, configuring entities, adding data model entities for entities, recording entity observations; querying entity observations. This module will help users define what entities they want to track within a conservation area, what attributes need to be monitored and how query and map entities.

Trainer's assessment: This is an optional plug-in but is core knowledge for data entry users in sites which are tracking individual entities. This module was not formally taught at this course. The overarching functionality of the plug-in was explained and discussed with the participants. Participants were encouraged to go through the manual post workshop.

Independent incidences

Content: The Independent Incidence plug-in is used to collect and monitor data that have some from sources out of regular patrols. This plug-in is optional and is designed to allow information from other sources to be entered and queried in the SMART database.

Competency: Installing the independent incident plug-in; creating independent incidences; configuring independent incidences; recording independent incidences; querying independent incidences.

Trainer's assessment: This is an optional plug-in but is core knowledge for data entry users and analysts. The need to record observational data from outside of patrols is likely to happen in many conservation areas therefore this module should be taught in all SMART training courses. This module was not formally taught at this course. The overarching functionality of the plug-in was explained and discussed with the participants. Participants were encouraged to go through the manual post workshop.

Annex 4. Post workshop evaluation form

Enter an X in the appropriate box for each numbered question. Codes are as follows;

SD = Strongly Disagree D = Disagree N = Neutral A = Agree SA = Strongly Agree

A	**Course Objectives**	**SD**	**D**	**N**	**A**	**SA**
1.	The objectives of the training course (listed below) were achieved. Become familiar with all components of the SMART software Be able to perform tasks; e.g. data entry, create and run queries, creating reports Refer to technical training manual as a resource					
B	**SMART Approach**	**SD**	**D**	**N**	**A**	**SA**
2.	The SMART approach to law enforcement monitoring is relevant and useful to my conservation site.					
3.	SMART is an improvement over other law enforcement monitoring tools, e.g. MIST (you may leave this blank if you are not familiar with any other LEM tools)					
C	**Training Approach and Content**	**SD**	**D**	**N**	**A**	**SA**
4.	The training presented and communicated ideas, concepts, and information clearly					
5.	Questions raised during the workshop were adequately answered.					
6.	The training approach encouraged questions and participation.					
7.	There was a good balance of theoretical and practical activities.					
8.	There was good interaction between the training team and participants.					
9.	Pace of the workshop was appropriate.					
10.	Duration of the workshop was appropriate.					
D	**Training Materials**	**SD**	**D**	**N**	**A**	**SA**
11.	The Technical Training Manual was relevant and useful.					
12.	Practical illustrations, examples, and sample datasets given were useful					
E	**Overall**	**SD**	**D**	**N**	**A**	**SA**
13.	My functional understanding of SMART conservation software has increased as a result of what I learnt during the course.					
14.	I can apply the knowledge and skills learnt to my work.					
15.	I feel confident enough to teach others how to use SMART conservation software.					

16. What is your role in using SMART software:

a. data entry b. analyst c. manager d. administrative user e. trainer

f. other, please specify: ……

17. Which components of SMART software are most useful to your work? Please check as many as apply.

	Module 1 – Configuring a Conservation Area
	Module 2 – Map Navigation & GIS
	Module 3 – Patrols & Data Collection
	Module 4 – Queries and Summaries
	Module 5 – Reports

	Module 6 – Planning and intelligence
	Module 7 – Data model management
	Module 8 – Administrative Tasks
	Module 9 – Cybertracker Plug - in

18. What resources do you need to implement SMART at your site?

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19. How does SMART compare with other law enforcement monitoring tools, e.g. MIST?
(you may leave this blank if you are not familiar with any other LEM tools)

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20. What would add value to SMART?

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Additional comments:

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……

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Optional:

Name: ……..

Email address: ……

Department/Agency: ……..

Thank you very much!