Annex 14

Contents

1. HWC MANAGEMENT PLANNING

1.1 Conservancy HWC Plans

Most, if not all communal conservancies have had at some point specific Human Wildlife Conflict plans (R. Diggle & C. Brown, *pers. Comm*.), although during the field trip it was not possible to see any of these plans. Subsequently, three examples of draft HWC management plans for Doro !Nawas, southern Kunene, and Khoadi //Hoas were provided by Dr Chris Brown, all dated in 2011. This notwithstanding, there was agreement that all conservancies should have updated HWC plans, requiring drafting or reviewing of existing plans, ensuring that these are aligned to the new National HWC management policy, and to any existing regional or species specific management plan.

The existing documents define a list of principles that should be applied when developing HWC plans at conservancy or regional level:

1. Be simple & practical
2. Actively involve key players
3. Clearly set out roles and responsibilities
4. Promote clear open communication
5. Have full ownership of the relevant stakeholders
6. Be realistic and achievable
7. Be accessible and understandable
8. Be time bound
9. Have an associated budget (not necessarily in the Plan)
10. Promote dynamic and adaptive management
11. Be monitored
12. Have measurable objectives and strategies
13. Be locally relevant (to meet local needs)
14. Apply best available practices
15. Be innovative and, where necessary, experimental and pilot new approaches
16. Take an integrated approach – i.e. a combination of strategies and actions to achieve objectives and vision

These remain sound principles, and the existing plans provide a good foundation on which to build.

1.2 Proposed Community Action Planning for Investment in Human Wildlife Security Management

As the species involved in HWC generally move across landscapes and conservancies, and the problems experienced are not unique to a particular conservancy, it is imperative that action plans for investing in human wildlife security management be aligned and coordinated. Ideally there would be a hierarchy of plans, each informing the lower level. Each plan must have a clearly defined responsible agency to oversee the implementation, even if distinct activities on the action plan are to be actioned by different persons / organizations.

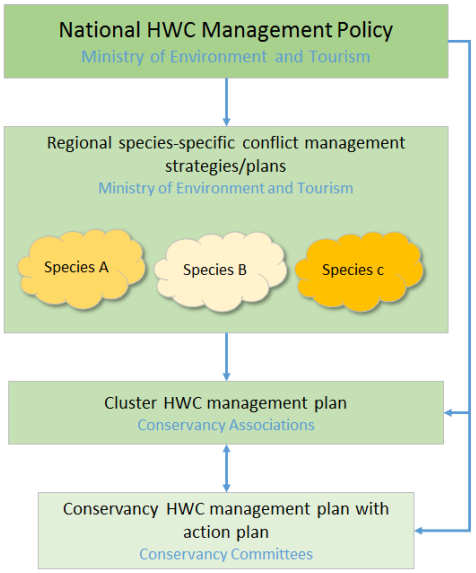

Figure A14 - 1 Diagram showing the proposed hierarchy of policies, strategies and action plans, and responsible agencies

2. HWC MONITORING AND DATABASE MANAGEMENT

2.1 Conservancy data base management systems

Database management systems are designed to manage the full data structure and exercise full control over the data stored in a database.

Conservation-related GIS data for Namibia are available from multiple sources. Some data are compiled by the **Natural Resources Working Group** while some are the product of other organisations like WWF and donor projects. To facilitate the sharing and updating of these data, many of them are available for download from **Namibia's Environmental Information Service** (http://www.the-eis.com/).

A set of **data mangement tools** relating to conservancies and management of their resources, enterprises and income have been developed and are in use. HWC related conservancy and game monitoring data base systems include:

- **Event book:** Initiated in 2000 and continuously refined. The event book is the main management tool involving the conservancy in the design, planning and implementation of resource monitoring. The event book is managed by the game

guards. The summary of the records is captured into a national conservancy database. A range of automated outputs include data summaries, reports and print-ready formatted posters. They are displayed in the conservancy offices. Each conservancy decides which resources it needs to monitor. Themes include human-wildlife conflict, poaching, rangeland condition, predators and other iconic wildlife. All events are recorded monthly in a paper book by the game guards; verified in an annual audit.

- Conservation areas (GIS based): A customised database to calculate and record the land areas and percentages of the major biomes in Namibia which are under each of the land uses: protected areas, concession, communal conservancy etc; land areas and percentages of the vegetation classes in Namibia which are under each of the land uses: protected areas, concession, communal conservancy. With this data base the **wildlife conservation area or risk corridors can be integrated**.
- Game count data base: A series of customized databases used for the compilation and analyses of game count data from several game counts includes all the conservancies and tourism concessions outside of national parks. The databases use distance analysis and other methods to produce species population estimates for defined areas such as zones and habitats. Automated outputs include game count posters showing population trends.
- Movement data: many animals have been marked with satellite / GPS collars to facilitate research projects, or as part of early warning systems to help avoid conflict incidents. This data is generally kept by the researcher in question, and is not centralized or easily accessible to others.

Figure A14 - 1 shows an outline of the HWC data structure as prepared and partially in use by NACSO.

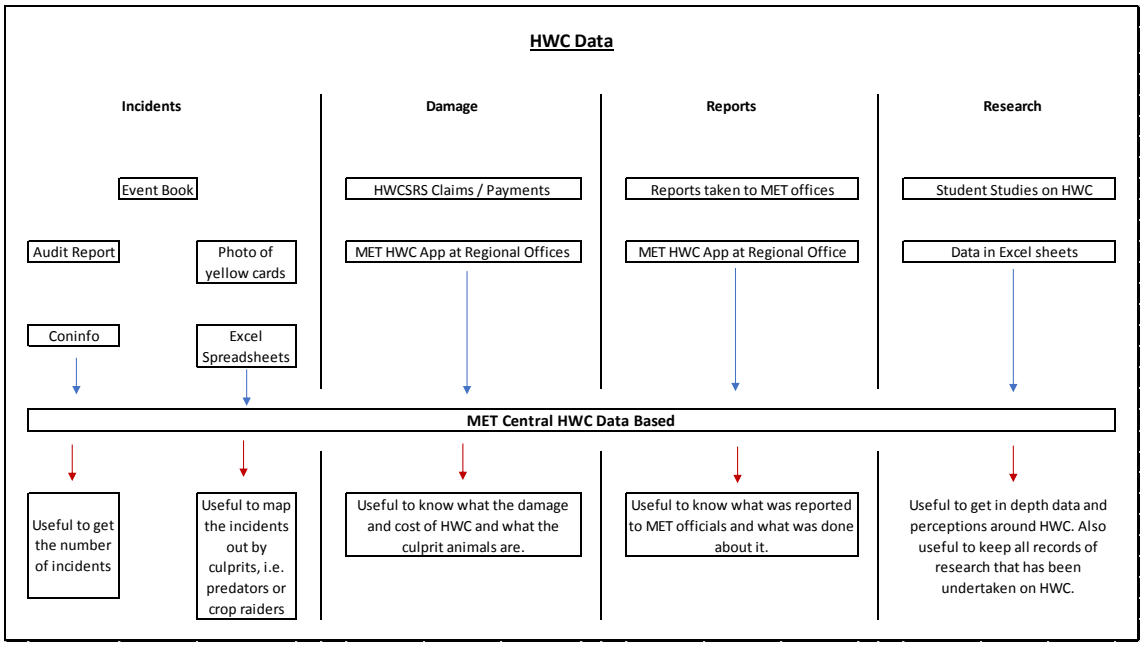

Figure A14 - 2 HWC data structure

Source: Dierkes, GIS data base management expert, NACSO 2018, pers. Comm.

This low-cost solution is a good reference for further development of a dynamic state-of the art user friendly HWC database system. Part of the system is covered by the recently developed MET HWC data base (see below).

2.2 Rangeland compliance monitoring

Emerging relevant data systems in Namibia like early warning systems for lions or up dated rangeland condition index maps of conservancies in short interval available at conservancy level are not yet integrated (see project proposal in Annex 10).

Monitoring to predict grazing compliance using satellite-based grass productivity estimates; data about cumulative rainfall; and landowners' past management history; can be used to predict which lands are being well-managed and which are not. This predictive power allows for more streamlined compliance monitoring – which is important for PEAs. In addition, this information can assist in predicting where livestock, people and wildlife are likely to move at any time, and therefore where conflict is likely to take place.

2.3 MET- Conservancy compliance monitoring system

The Conservancy Compliance Web-based Monitoring System currently developed with support of GIZ will become operational by end of February 2018. It is based on the CBNRM Policy and Guidelines for Management of Conservancies and Standard Operating Procedures.

The main features of the system development include:

1. Data collection on PCs and mobile devices (tablets and smartphones); high data protection, optimization for low bandwidth and mobile devices;
2. Online and offline data collection: GPS and Photos in addition to text, numbers, dates;
3. Scalability: Easy to design new forms/databases;
4. Functions to capture data on topics: Conservancy Reporting Toolkit, Conservancy Compliance Performance Tracking tool; Conservancy Document Archive; Wildlife Utilization and Tracking System; Human- Wildlife Conflict Tracking System; Wildlfe Crime Tracking System.

The Human/Wildlife Conflict (HWC) tracking system is the digitalization of the current forms:

- Human Wildlife Conflict Claim forms for crop damage and livestock loss; and funeral assistance;
- Human Wildlife Conflict Investigation form;
- Human Wildlife Conflict Damage Data Capturing form.

The Mission understands that the current focus restricted to digitizing the procedure and documentation of the offset claims currenty handled by the GPTF. Due to government IT policy the system will be managed as part of the government intra-net (managed within the Office of the Prime Minister) with specific restriction of disclosure of data. Currenty no IT staff is assigned to run the system, but MET will most likely create a new position (FASCHINA 2018, Teamleader , Support to CBNRM).

2.4 Issues

Despite the impressive data collection and data base system related to HWC, the following deficits have been identified by the FS Team:

- Conservancy web-based compliance monitoring system:
  - The current focus is restricted to digitizing the current procedure of offset claims application, and documentation, and the resources;
  - Mechanisms to upgrade and run the system with sufficient expertise and resources within MET are still under discussion;
  - The system is restricted by the IT policy of the government – which could become an impediment to running a dynamic HWC related system within MET.
- NACSO conservancy data base management:
  - Although NACSO developed an impressive HWC related data base system, due to limited resources (currently managed by a part-time GIS staff (5 h per day) the full use and further development is inhibited;
  - The current event book system captures number of incidences, without further elaboration. More detailed information is available on species/assets affected and value of loss, but it is not yet systematically captured in an electronic database (although currently a PhD student working under the NCE is compiling a more detailed database)
  - To complicate matters, each conservancy decides which resources it needs to monitor; hence it is not compulsory to have a comprehensive and updated data base on HWC. Conservancies without compliance monitoring of human-wildlife conflict conservancy should not participate in the planned project;
- Other emerging relevant data systems such as the early warning systems for lions or up dated rangeland condition index maps of conservancies in short interval available at conservancy level are not yet integrated.

For a dynamic system to be used for wildlife risk management there a need for a new system / meta-database, possibly outsourced as used by the insurance industry.

2.5 Project proposal for HWC database management system

Objective to develop a state-of-the art dynamic HWC data base management system with the purpose to input, collate and access data from different data bases by different end users:

1. To assess the risk and costs and effectively used in the modelling of the offset / insurance products;
2. To manage wildlife damage and wildlife performance reward funds.

Output: HWC data base management centre for collating data which is used for assessing risk and costs and effectively used in the modelling of the offset / insurance products as well as for management of wildlife damage off-setting and wildlife reward funds. The data base can also be used to identify hot spot areas, providing key information for interventions aimed at preventing losses.

Database construction/management and GIS based System development concept

Design principles

1. User-friendly tailored to needs and capacity of different users: The system must be user-friendly. It must have a user group function, so that different users of the system can only access the functions which belong to the group.
2. The database construction will be the key of the system. The GIS system must have a large database, and be set up to access / incorporate data from different sources.
3. Framework of the system: The core functions are based on the Web GIS technology. Web GIS is the process of designing, implementing, generating and delivering maps over the internet with an emphasis on analysis, processing of project specific geographic information and exploratory aspects. The software development will be based on the Browsers/Server combined with the Client/Server which is used to publish the maps. The system must be designed to have multi-platforms, including browser side programs and a smart phone APP. The conceptual structure adapted from the ESRI is shown in Figure A14-3.

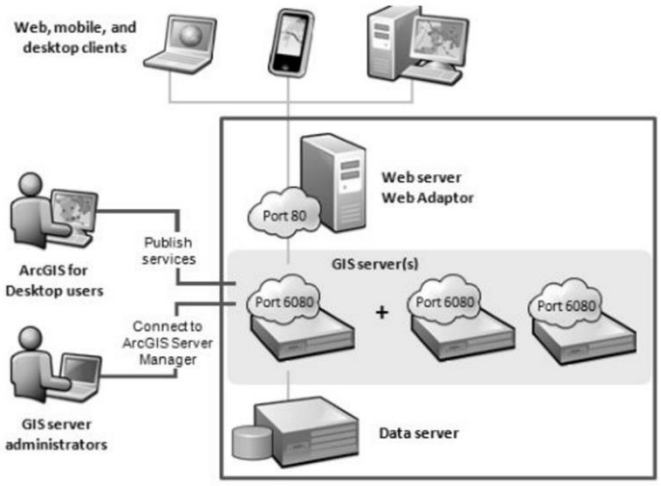

Figure A14 - 3 the concept structure of the system (adapted from ESRI)

The whole system will be built based on the most powerful GIS software, the ArcGIS for server, which will make the system stable, easy to use, quick to respond and efficient. The framework of this system will focus on two parts: database construction and GIS software development.

Management: The system will be managed by a specialized service provider

Cost estimate: Up to 50,000 Euro; in the case that data base infrastructure including a server is in place or can be rented (in the cloud) the cost might be reduced.

Major project activities are:

- Identify and analyse HWC related data bases (weakness, strength, data access policies (Consultant);
- Develop a data base management concept including involvement of intended user groups, and ToRs for tender of the system development and operation (Consultant);

- Prepare a public data sharing policy for data base management (MET);
- Tender the system development, capacity building and operating of the HWC data base management system (PMU).
- Test and run the system (outsourced to a service provider).