HUMAN WILDLIFE CONFLICT ASSESSMENT FOR THE DEVELOPMENT OF SAFE SYSTEMS STRATEGY IN GREATER VIRUNGA LANDSCAPE

A case study of Queen Elizabeth Protect Area (Queen Elizabeth National Park) (Kyambura and Kigezi Wildlife Reserves)

WWF - UGANDA
ACKNOWLEDGEMENT

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EXECUTIVE SUMMARY

Greater Virunga Landscape (GVL) is one of the priority landscapes in which Worldwide Fund for Nature Uganda Country Office (WWF-UCO) is playing a vital role working with Uganda Wildlife Authority (UWA) and other relevant agencies to conserve the rich biodiversity in the landscape. One of the key challenges to conservation in and around Queen Elizabeth Protected Area (QEPA) is Human Wildlife Conflict (HWC). Approximately 56% of households in communities adjacent to QEPA spend time guarding their gardens from crop damage by elephants and other animals. WWF seeks to develop a Strategy for SAFE Systems approach to management of HWC working in QEPA as a pilot area and eventually scaling to other PAs in the GVL. The SAFE Systems approach is a shift away from existing HWC strategies, which often focuses on “resolving” and “mitigating” the conflict, and addresses only part of the problem and at only specific times of a conflict event. The SAFE systems approach ensures integration that results into Safe People, Safe Assets, Safe Wildlife, Safe Habitats and effective monitoring.

Hence, WWF-UCO commissioned a baseline assessment of the HWC situation in and around QEPA to inform formulation of the SAFE Systems strategy. The assessment covered selected HWC hotspot areas of Kameme Kihihi subcounty, Kikarara-Bwambara Subcounty, selected fishing villages, Kyenzaza, and Nyakatonzi. Rapid participatory assessment methods were used to collect data. These included desk review of literature about HWC in and around QEPA, stakeholder consultations (at local, protected area, district local governments and national levels), using key informant discussions, focus groups, community discussions and field transects/survey in hotspot areas.

Generally, the incidence of HWC has been on the increase, both wildlife damage of crops, property, but also human injury and death. The assessment shows that the number of HWC cases sharply increased from 16 reported incidences in 2013 to 862 cases in 2020 and 845 cases in 2021. The slight reduction in the number of cases reported is attributed to the erection of electric fence in some hotspots like Kyenzanza along Kyambura Wildlife Reserve, Kasese-Kikorongo, and Lake Katwe boundary areas. Overall, crop damage is the most rampant form of HWC, accounting for 89.5% of the reported HWC cases, followed by livestock predation (4.8%), human injury (4.1%) and human death (1.6%).

The presence of poaching and illegal entry into protected areas by wildlife criminals was reported to be rampant. Poaching brings community members and park staff into direct confrontation, leading to arrests, prosecution and imprisonment. It also exposes the affected people to the risk of being killed by wildlife. This in turn creates animosity towards the PA and wildlife among the communities. Illegal cattle grazing in the Protected Area (PA) especially in the fishing villages remains a serious cause of HWC, especially during the prolonged dry seasons, where cattle are left un-herded or herded in the PA. Removal of livestock from the fishing villages is a priority action in the QEPA GMP 2023/24 – 2032/33. To support implementation of this action, the Government of Uganda (GOU) should expedite the formulation of regulations to regulate human activities and livestock in the fishing villages.

Increasing HWC incidences are attributed to dwindling wildlife migratory corridors, increased human population in the fishing villages and around QEPA, leading to increased interface between wildlife and people. Other drivers that accentuate HWC incidences include among others; inadequate benefits from wildlife, limited sustainable alternative livelihoods, climate change and frequent wild fires also induced.

vegetation changes in the protected area, increasing the areas covered by invasive and unpalatable species, pushing some wildlife to move outside protected areas in search for pasture/forage. The main HWC causing animals are the African elephant (*Loxodonta africana*), buffalo (*Syncerus caffer caffer*), hippopotamus (*Hippopotamus amphibious*), lion (*Pathera leo*), leopard (*Pathera pardus*) and crocodile (*Crocodylus niloticus*).

Prevention and mitigation measure include trenches excavation and maintenance along the park boundary; beekeeping to scare away elephants; caging, scare shooting; planting of unpalatable crops such as chili; electric fencing; camp fires, garden guarding by scouts using vuvuzelas and torches to scare away animals at night. Other measures include promotion of tourism related businesses, employment, revenue sharing, controlled resource access, alternative livelihoods projects, and compensation. The Uganda Wildlife Act, 2019 provides for compensation of damage induced by wildlife outside the PAs. However, the limitation of compensation was reported to be the lengthy bureaucratic reporting and compensation procedures causing delays in compensation or no compensation at all.

Electric fence has proved to be effective against elephants. Crop harvests have improved, night guarding by men stopped, freeing labour to other productive activities and creating stability of families. The electric fence, though expensive to establish and maintain, will greatly reduce the cost of HWC.

Maintaining Safe habitats is through the PA zoning. More than half (55%) of the PA is prescribed as a wilderness zone, which ideally provides a high level of protection to the natural vegetation of the PA (QEPA GMP 2023/24 – 2032/332023). However, the safety of the habitat is threatened by habitat fragmentation due to loss of migratory corridors and degradation from invasive and uncontrolled wildlife which has accentuated HWC. According to the PA management, about 30% of QEPA has been closed up by invasive species negatively affecting quality of habitats, abundance, diversity and distribution of several animals in the invaded areas. It is necessary for partners working in QEPA to support aspects like invasive species management, funding electric fencing, and restoration of corridors and wildlife migratory routes.

The policy and legal provision for protection of Wildlife and HWC management are adequate. The Wildlife Policy 2014 and Wildlife Act 2019 provide for strong deterrent measures to wildlife crimes, as well as good incentives for wildlife and HWC management.

The HWC response by UWA is greatly impeded by limitations of manpower and mobility. There are few rangers at the outposts, QEPA has only 7 Community Conservation (CC) rangers to cover the whole PA which is quite inadequate. To be effective in responding to the numerous HWC cases, there is need for more staff, well facilitated with transport. The scouts should be trained and equipped to enhance their capacity, in addition to organizing them into strong cooperatives and supported with income-generating projects as motivation and incentives for continued participation in HWC management.

Application of Earth Ranger Software and the concept of Joint Operation Command Centre have enhanced monitoring of poaching, problem animals as well as provision of early warnings. However, the application is not yet well integrated into other aspects of HWC such as scouts’ activities, implementation and effectiveness of mitigation interventions and mapping the extent of problem animal crop damage.
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<td>AWF</td>
<td>African Wildlife Foundation</td>
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<td>CARE</td>
<td>CARE International in Uganda</td>
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<td>CBO</td>
<td>Community Based Organisation</td>
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<td>CC</td>
<td>Community Conservation</td>
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<td>CCR</td>
<td>Community Conservation Ranger</td>
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<tr>
<td>CITES</td>
<td>Convention on International Trade in Endangered Species</td>
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<td>DRC</td>
<td>Democratic Republic of Congo</td>
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<td>EU</td>
<td>European Union</td>
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<td>FGD</td>
<td>Focus Group Discussion</td>
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<td>GIS</td>
<td>Geographical Information System</td>
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<td>GVL</td>
<td>Greater Virunga Landscape</td>
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<td>GVTC</td>
<td>Greater Virunga Transboundary Collaboration</td>
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<tr>
<td>HEC</td>
<td>Human Elephant Conflict</td>
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<td>HQ</td>
<td>Head Quarter</td>
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<tr>
<td>HWC</td>
<td>Human Wildlife Conflict</td>
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<td>IGCP</td>
<td>International Gorilla Conservation Programme</td>
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<td>IUCN</td>
<td>International Union of Conservation of Nature</td>
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<td>JOCC</td>
<td>Joint Operation Command Centre</td>
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<td>KETIC</td>
<td>Katwe Eco-Tourism Information Centre</td>
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<tr>
<td>KIPACA</td>
<td>Kungu Problem Animal Control Association</td>
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<tr>
<td>LC</td>
<td>Local Council</td>
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<tr>
<td>MAAIF</td>
<td>Ministry of Agriculture Animal Industry &amp; Fisheries</td>
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<tr>
<td>MDAs</td>
<td>Ministries, Departments and Agencies</td>
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<td>MTWA</td>
<td>Ministry of Tourism Wildlife and Antiquities</td>
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<tr>
<td>NGO</td>
<td>Non-Government Organisation</td>
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<td>NPPC</td>
<td>National Plant Protection Centre</td>
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<td>PA</td>
<td>Protected Area</td>
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<td>QENP</td>
<td>Queen Elizabeth National Park</td>
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<td>QEPA</td>
<td>Queen Elizabeth Protected Area</td>
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<td>SAFE</td>
<td>Safe Systems</td>
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<td>ToR</td>
<td>Terms of Reference</td>
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<td>UCF</td>
<td>Uganda Conservation Foundation</td>
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<td>UWA</td>
<td>Uganda Wildlife Authority</td>
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<td>UWEW</td>
<td>Uganda Wildlife Education Centre</td>
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<tr>
<td>UWRITI</td>
<td>Uganda Wildlife Research and Training Institute</td>
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<td>WCS</td>
<td>Wildlife Conservation Society</td>
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<td>WWF</td>
<td>World Wide Fund for Nature</td>
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<td>WWF-UCO</td>
<td>World Wide Fund for Nature Uganda Country Office</td>
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1.0 INTRODUCTION

Communities living around protected areas in Uganda regularly face the threat of crop destruction from wildlife, attacks to people resulting into life threatening injuries or deaths, predation on livestock and destruction of property like livestock fences, water sources, etc. Attacks are from a variety of endangered species, such as African elephant (*Loxodonta africana*), common chimpanzee (*Pan troglodytes*), Lion (*Panthera leo*), Buffalo (*Syncerus caffer caffer*), Hippopotamus (*Hippopotamus amphibious*), Crocodile (*Crocodylus niloticus*), and others like Bush pig (*Patamochoerus larvatus*) and Olive Baboon (*Papio anubis*). The frequent negative interactions and conflicts with wildlife lead many community members to resent the PAs and the animals that live within them. These conflicts negatively impact on the community livelihoods, relations with PAs management and overall support for conservation. Without resolving the Human-wild conflicts, there will remain adverse effects on both the communities living near the park and the park management with negative implications on conservation and community livelihoods.

This study aimed at undertaking baseline assessment and understanding HWC situation in and around QEPA so as to inform WWF’s HWC management programme that seeks to develop strategies for enhanced mitigation measures that bring about co-existence between wildlife and the people. The growing population in and around QEPA has led to increased conflicts as people encroach on park land especially in the fishing villages (wildlife sanctuaries) and compete with the wildlife for survival.

This study therefore, presents a baseline assessment report on HWC in and around QENP in southwestern Uganda as input for the development of the HWC mitigation SAFE Systems Strategy for the Greater Virunga Landscape using QEPA as a pilot.

1.1 Background

Greater Virunga Landscape (GVL) is one of the priority landscapes in which Worldwide Fund for Nature Uganda Country Office (WWF-UCO) is playing a vital role working with Uganda Wildlife Authority (UWA) and other relevant agencies to conserve the rich biodiversity in the landscape. However, the rich biodiversity in the area is threatened by various factors, which include poaching, habitat loss due to encroachment, overgrazing and climate change, natural disasters, including flooding, landslides, fires and invasive species among others. Densely populated communities exerting pressure on the Protected Areas (PAs) resources around the PAs within this landscape has resulted into increased interface with wildlife, encroachment of habitats, resource degradation and HWC to mention a few. An example is Queen Elizabeth National Park (QENP), a biosphere reserve in which 11 fishing communities live inside the PA and depend on park resources as well as interacting with wildlife on a daily basis.

Most of the communities in and around QENP carry out livestock and crop farming, and without a buffer zone, the interface between wildlife, people, livestock and crops is high resulting into crop raids, attacks to livestock, human injuries or death, and destruction of other properties. There have been registered loss of livestock (cattle, sheep and goats) due to predation by lions, crops raided by elephants and other animals, human injuries and sometimes deaths, which has put HWCs at an alarming level. Wildlife intrusions into community areas and damages have increased the risk of retaliatory killings of wildlife by the communities when trying to defend themselves and protect their property/assets from wildlife destruction.
This has made the safety of community assets, human lives, existence of wildlife and habitats vulnerable, in turn negatively affecting the sustainability of community livelihoods and conservation of wildlife resources in and around the PA.

Therefore, in mitigating HWCs in the landscape there is need for a systems approach that streamlines and integrates the components of the conflict into SAFE systems that include safe assets, safe human lives, safe wildlife and safe habitats.

1.2 Human Wildlife Conflict

General overview

Uganda has a high diversity of wildlife species found both inside and outside protected areas. However, this diversity is under threat from poaching, encroachment, habitat degradation and loss, human-wildlife conflicts and climate change among others. The interaction between humans and wildlife has been characterised by conflicts especially as a result of the associated costs and losses largely emanating from crop destruction, property damage, human attacks and deaths and cross transmission of diseases among others. The conflict is exacerbated by increasing human population as more land is opened for agriculture and settlement. The HWC is expected to worsen as population increases and more wildlife areas are lost to other land uses that are in conflict with wildlife.

To address the HWC challenge, UWA in partnership with communities, conservation partners like WWF, Uganda Conservation Foundation (UCF), African Wildlife Foundation (AWF), CARE International in Uganda (CARE), Space for Giants and other NGOs have previously implemented numerous interventions including scare shooting, trench excavation, bee keeping, capture and translocation, live and electric fencing, buffalo wall construction, chili application and promotion of non-palatable commercial crops in addition to gazetting some selected animal species namely the vervet monkey (Chlorocebus pygerythrus), olive baboon (Papio anubis) and bush pig (Potamochoerus larvatus) as vermin to be managed by Local Governments (Gazette General Notice No. 74 of 2001). This implies that the local government authorities are responsible for managing vermin though their capacity to effectively control and/or manage vermin is limited. These interventions have generated varying degrees of effectiveness, however, the actual contribution and effectiveness of some of them remain unknown due to the absence of a systematic or standardised and coordinated monitoring data collection and reporting mechanism.

The Uganda Wildlife Act 2019 and revised UWA Community Conservation Policy 2020 provides for development of a comprehensive Human-Wildlife Conflict Management Strategy including establishment of a standardised monitoring and reporting system, scaling up effective interventions, enhancing development of new and innovative strategies and increasing capacity of LGs to control/manage vermin.

Queen Elizabeth Protected Area context

Queen Elizabeth National Park, a United Nations Educational, Scientific and Cultural Organisation (UNESCO) Biosphere Reserve and the adjoining wildlife reserves of Kyambura and Kigezi (jointly managed as Queen Elizabeth Protected Area (QEPA) are faced with challenges of increased human-wildlife interactions in the fishing villages (gazetted as sanctuaries in 2003) and outside the PAs boundaries. Population pressure is one of the key drivers of increasing HWC around QEPA, followed by limited alternative sources of income. The majority of people around the park depend on subsistence farming and sale of surplus produce. Fishing stock in the water bodies of the PA (Lake Edward, Kazinga Channel, and Lake George) reduced due to overfishing, poor methods of fishing and increased number of people fishing on these water bodies, thus resorting to encroaching fish breeding areas getting into direct conflict with hippos and crocodiles.

The major human–wildlife conflicts around QEPA is crop damage by elephants, predation by lions among the livestock keepers, human injuries and death by hippos and crocodiles in the fishing villages. A study on the understanding of HWC around QEPA\(^4\) show that violation of wildlife regulations through snaring and armed poaching, arrests and sometimes direct exchange of fire with park rangers was one of the key reasons for negative attitudes and poor relations between the park and the local communities. Livestock predation has on several occasions triggered retaliatory killing of lions by poisoning also leading to death of untargeted species like vultures and hyenas. Other reasons for poor relations and negative attitudes are poor response by park authorities and failure to control animals from crossing the park boundaries into community areas, delayed compensations and no compensation at times for the loss of both human lives, livestock and crops.

Some mechanisms to resolve the human-wildlife conflicts as the problem is widespread include; trenches excavation and maintenance along the park boundary to control movement of elephants and buffaloes, beekeeping to scare away elephants, caging, capture and translocation of problem crocodiles, scare shooting, planting of unpalatable crops such as chili, electric fencing, camp fires, noise making vuvuzelas and torches light to scare away animals at night.

1.3 The Safe Systems Approach to HWC Management

The SAFE Approach to HWC management, developed by the Tigers Alive initiative of WWF seeks to make people and their assets, and wildlife and their habitats safe\(^5\) does this by identifying and eliminating the risk factors that contribute to HWC. In the long term, the focus on safety of each part of the system can lead to a gradual decrease in incidents and therefore contribute to maintaining tolerance for wildlife locally. The safe system approach is results-focused and delivered through five Strategic outcomes: safe person, safe wildlife, safe assets, safe habitat, and effective monitoring. Making ‘human – wildlife systems’ safe involves making the four components of the system – people, wildlife, assets and habitat – safe. The safety of these four components is therefore the cornerstone of the entire approach. Each strategic outcome is guided by strategic intents or minimum standards, which, if met through locally applicable means and actions, contribute to making the system safe, and ensuring the co-existence between humans and wildlife without detriment to either.

A SAFE systems strategy for the landscape is therefore crucial to streamline the four SAFE systems components in addressing HWC to achieve meaningful human wildlife co-existence. Baseline information on HWC status for QEPA identified as the pilot PA in GVL, is required to support the development of a SAFE strategy for the entire landscape. The assignment therefore geared towards undertaking an assessment of the status of HWC in GVL with reference to QENP to provide input for formulation of the HWC mitigation SAFE System Strategy involving all the key stakeholders of QENP.

1.4 Objectives of this study

The main purpose of the study was to undertake HWC baseline assessment in and around QENP in southwestern Uganda as input for the development of WWF-HWC Mitigation SAFE systems Strategy for GVL.

Specific objectives included the following:

1. To consult stakeholders and generate information on HWC in and around the QEPA
2. To review relevant documents that contribute to the broader knowledge base of HWC in the PA
3. To generate a standard report on the HWC status for the PA and the implications on the conservation status of key wildlife species.
1.5 Scope of the study

The study entailed document review and conducting consultations with key stakeholders at the local level, protected area, district local governments, and UWA headquarters about the status of HWC in and around the QEPA. A fair representation of all the communities surrounding the PA and other stakeholders involved in HWC was crucial to get a well-informed assessment.

An exhaustive assessment of the baseline conditions of HWC ensuring that the information on all five (5) strategic outcomes of the SAFE system for HWC mitigation i.e. safe person, safe wildlife, safe assets, safe habitat, and effective monitoring is fully generated. This was done to ensure that the information for input into development of the planned SAFE strategy is sufficient for developing an effective and implementable strategy.

The geographical scope involved areas in and around QENP, a Biosphere Reserve, the adjoining wildlife reserves of Kyambura and Kigezi which form part of the Queen Elizabeth Protected Area system in which, by nature, there is significant interaction between wildlife and communities most especially in the fishing villages and livestock farming communities. The assessment targeted communities within QENP especially fishing villages (sanctuaries) and those living outside along the boundary (as indicated in Table 1) in HWC affected villages and parishes as well as lower local governments (sub counties) and higher local governments (districts).

Figure 1: Map of Queen Elizabeth National Park with adjoining Wildlife Reserves

The scope of consultations targeted national level, PA, district local government, and local community stakeholders. The national, PA and district local government involved both UWA field and headquarters staff, Uganda Wildlife Conservation Education Centre (UWEC), Ministry of Agriculture, Animal Industry & Fisheries (MAAIF), WWF field Office, selected District Local governments that share boundaries with QEPA, which include Kasese, Kanungu and Rukungiri as shown in Table 1. At the local level, target communities were fishing villages in Queen Elizabeth National Park (Hamukungu, Kayanja and Katwe-Kabatoro), local communities along sampled hotspot areas of Nyakatonzi, Kameme, Kikarara and Katerera.

Table 1: Sampled sites where stakeholders consultations were conducted in and around QEPA

<table>
<thead>
<tr>
<th>Site</th>
<th>Subcounty</th>
<th>District</th>
<th>Problem animal/conflict related</th>
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</thead>
<tbody>
<tr>
<td><strong>Outside park boundary</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kyenzaza</td>
<td>Kichwamba</td>
<td>Rubirizi</td>
<td>Elephant- electric fence (19.5 km)</td>
</tr>
<tr>
<td>Nyakatonzi</td>
<td>Nyakiyumbu</td>
<td>Kasese</td>
<td>Livestock killings by lions &amp; illegal grazing in the park; cattle impounded</td>
</tr>
<tr>
<td>Kameme</td>
<td>Kibihi</td>
<td>Kanungu</td>
<td>Elephant crop destruction- Human Elephant Conflict (HEC)</td>
</tr>
<tr>
<td>Kikarara</td>
<td>Bwambara</td>
<td>Rukungiri</td>
<td>Elephant crop raids (UWA has a satellite HWC outpost)</td>
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</tbody>
</table>

**Fishing Villages**

<table>
<thead>
<tr>
<th>Site</th>
<th>Subcounty</th>
<th>District</th>
<th>Problem animal/conflict related</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hamukungu</td>
<td>Lake Katwe</td>
<td>Kasese</td>
<td>Buffalo and Lions killed by cattle keepers, grazing in the park &amp; cattle impounded by park management</td>
</tr>
<tr>
<td>Kayanja</td>
<td>Isango</td>
<td>Kasese</td>
<td>Hippopotamus</td>
</tr>
<tr>
<td>Katwe- Kabatooro</td>
<td>Lake Katwe</td>
<td>Kasese</td>
<td>Hippopotamus &amp; Crocodiles</td>
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7https://ugandawildlife.org/wp-content/uploads/2022/01/Queen_Elizabeth_PA-GMP.pdf
2.0 METHODOLOGY

2.1 SAFE Systems Framework

The SAFE Systems approach framework to HWC management, formed the basis for the baseline assessment of HWCs and their management in and around QEPA. This approach is a shift away from existing HWC management strategies, which often focus on “resolving” and “mitigating” the conflict, and addresses only part of the problem and at only specific times of a conflict event.

The SAFE Systems approach ensures that:

a) All Six elements of HWCs are integrated in the HWCs management

b) That the Strategic Outcomes of the SAFE approach act as minimum standards for HWC management, and;

c) That if each of the five Strategic Outcomes are met, then contact between humans and wildlife is minimized, and both can be safe in the event of contact within acceptable limits of tolerance.

Below is schematic presentation of the five strategic outcomes of the SAFE System approach.

![Schematic presentation of the five strategic outcomes of the SAFE System approach.](image)

The SAFE approach to HWC provides a holistic view of the HWC conflict in its entirety; it is inclusive in that it encompasses all the interactions between the people, their assets, decision-makers, government interests, and wildlife. The holistic principle in the SAFE System framework aided in ensuring that an exhaustive assessment of the baseline conditions is conducted to generate sufficient information for formulation of the SAFE System strategy.

The Six elements of human wildlife conflict and integrated HWC management that formed a basis for baseline assessment are presented in figure 4.


*Ibid*
The Six elements of conflict exist in all HWC contexts. Actions in each element must be included within any HWC management program for it to be effective. Thus, the SAFE Systems approach is a holistic and modern approach to HWC management challenges. It integrates the components/tools within each of the six elements of conflict to gradually increase overtime the safety of people and their assets, wildlife and their habitat in an area.

An integrated approach to HWC means that managers recognize that HWC is a system, and that the six elements must be accounted for in any management program, and none should be implemented in isolation, and lessons in each element inform and reinforce actions in the other elements. Managing HWC often requires applying a variety of approaches in parallel to achieve the desired impact. Therefore, the effectiveness of the approach is contingent on actions in all elements being implemented concurrently.  

2.2 Assessment of baseline HWCs and management approaches

The above framework was used to evaluate whether the HWC management programmes in and around QEPA have an integrated approach that ensures that all the six elements are accounted for and whether the strategic outcomes of the SAFE system are being achieved. This enabled the consultants’ team to identify the gaps in the focus on safety of each component of the system as well as synthesising the status of HWC management in order to make appropriate recommendations for formulation of the SAFE System Strategy. Using National Plant Protection Centre (NPPC) and WWF-Bhutan (2016), baseline data was collected on the six elements of HWCs and integrated HWC management as well as the intents that contribute to the strategic outcomes and safety of SAFE System. Thus, the HWC baseline assessment involved the following steps:

1. Collection of data on the six elements of HWCs to appraise how they are accounted for in the HWCs interventions and whether they are implemented in an integrated approach within the existing HWC management programmes or interventions.

2. Data collection on the intents that contribute to strategic outcomes and indicators of a SAFE System so as to ascertain whether the five Strategic Outcomes of the SAFE approach are being met and to what extent they are acting as the minimum standards for HWC management in and around QENP.

3. Based on the data and information in 1 and 2, the team synthesised the status of the HWC and management approaches, identified the gaps that should be addressed by the SAFE Strategy.


Key data and information that was collected regarding the six elements of HWC for the assessment included.

i. **Policy**
Relevant policy and legal provisions for HWC, and their effectiveness, these include protocols, principles, provisions and measures undertaken to manage HWC, which are stipulated in the legislation and governmental plans. The following were the focus of policy and legislation analysis:

The following were the focus of the analysis:

a) Policies on wildlife and HWC management
b) Wildlife crimes
c) National HWC strategy and management plans
d) HWC response mandates
e) Compensation policy
f) International collaboration for transboundary areas
g) Spatial plans

ii. **Understanding of HWC**
This entailed assessment of all aspects of the conflict profile. Aspects that were assessed include:

a) Type of HWC in, around QEPA, particularly the status and trends analysis. The analysis covered type of conflicts, effects on the ecosystem, species involved and mapping HWC hotspots.
b) Changes in frequency, geographical scale and distribution of HWC over the years and drivers.
c) Animal species involved (ranked), associated damages on livestock, people and assets
d) Key drivers of HWC in QEPA including climate change stress
e) Affected communities inside the protected area-fishing villages/sanctuaries or communities bordering QEPA boundaries
f) Impact of HWC on the livelihoods and local economy, including sections of the community that are most affected to establish the social characteristics of the victims and community attitudes.
g) Severity and impact monitoring relative to other community challenges. Ecosystems, species, and resources that are particularly threatened by impacts of HWC
h) Community and institutional (UWA/QEPA and Local government) capacity for HWC management
i) Presence/absence of cases of retaliatory killing wild animals due to HWC

iii. **Prevention**
This focused on actions to stop or prevent HWC before it occurs and strategies employed to manage HWC and effectiveness, challenges, and opportunities for replicability. The mechanisms for prevention that were examined in this study include:

a) Education and community awareness
b) Livestock management and crop management
c) Law enforcement
d) Barriers (e-fence, bio-fence, trenches, bee fencing etc.) and Deterrents (lighting systems, fires, sirens (local vuvuzelas), burning dried chilies, scare- crows)
e) Habitat management/water points/removal of invasive plants
f) Creation of safe working environments  
g) Removal/translocation of problem animals  
h) Land use planning

iv. Mitigation

This involved assessment of measures undertaken to reducing the impacts of HWC after it occurs and documentation of stakeholders and partners such as government agencies, donors and international organizations, local entities, private sector and others involved in the implementation of the measures. It also covered the establishing perceived positive impacts and challenges of the various mitigation measures being applied. Mitigation measures are intended to mitigate the impact of a given HWC event, and for species conservation. The ultimate purpose is to increase or maintain tolerance of wildlife in that area by local people, and thereby reduce retaliatory killings.

Measures for offsetting HWC costs assessed include:

a) Compensation programs (public awareness about the program and community obligations, district local government awareness and their roles, community views, and barriers)
b) Any insurance schemes for crops and livestock
c) Support for alternative livelihoods
d) Livelihoods diversification
e) Revenue /benefit sharing schemes
f) Indigenous knowledge, practices and interventions that can be adopted in the SAFE system

v. Response

These are the measures taken to alleviate a specific or ongoing HWC incidents. The study looked at the following response mechanisms:

a) Existence, accessibility and effectiveness of HWC response team (s) in QEPA  
b) HWC incident reporting and response/feedback protocol (timely response and communication).
c) HWC incidences not reported and possible reasons for such incidences failing to reach UWA and local authorities including strategies for improving reporting and feedback protocol.
d) Standard Operating procedures
e) Removal or translocation of problem Animals
f) First aid/rescue to human and wildlife victims
g) Response and rescue of wildlife affected by snaring, retaliatory killings
h) Patrols and prosecution of wildlife crimes
i) Cases of retaliatory killing of wildlife emanating from HWC vs level of wildlife tolerance.

vi. Monitoring

The study assessed how UWA/QEPA management and the key stakeholders engaged in HWC management are monitoring the trends of HWC, its effects on species conservation and community livelihoods, as well as the impact of HWC prevention and mitigation interventions. Monitoring involves documenting the performance and effectiveness of HWC management over time. It improves understanding of the conflict (which can change overtime), and facilitates adaptive management. Key aspects of monitoring that assessment focused on are:
Information on key indicators and intents that contribute to the strategic outcomes and measuring safety of the SAFE system components was also collected as presented in table 2 below. These indicators determine how strategic outcomes of SAFE system (Person, Wildlife, Assets and Habitat and effective monitoring) are realised and gaps in the current conservation and HWC approaches, as well as the effectiveness of the current monitoring and evaluation system is informing and improving the effectiveness of HWC management.

<table>
<thead>
<tr>
<th>Strategic Outcome</th>
<th>Indicators and intents that contribute to the strategic outcome</th>
</tr>
</thead>
</table>
| Safe Person       | • Does not hunt wildlife  
                   | • Practices wildlife friendly farming  
                   | • Has access to funds to develop local preventative solutions  
                   | • Has more than one income stream  
                   | • Reduces reliance on conflict prone incomes  
                   | • Participates in an insurance scheme  
                   | • Reports all HWC events  
                   | • Is supported by a Response Team (PAC)  
                   | • Has access to conflict information;  
                   | • Participates in conflict education  
                   | • Participates in the development of HWC management plan |
| Safe Wildlife     | • Is protected under law and is safe from hunting and habitat loss  
                   | • Has access to sufficient habitat, fodder and prey  
                   | • Does not have access to domestic livestock or crops  
                   | • Is separated from people via barriers, deterrents and land use plans  
                   | • Is not attracted to anything in human settlements  
                   | • Makes a positive contribution to local livelihoods;  
                   | • Is supported by Response Teams  
                   | • Is treated and monitored in the event of injury |
| Safe Assets       | • Are separated from wildlife by barriers, deterrents and land use plans  
                   | • Follows a wildlife-friendly grazing and cropping plan  
                   | • Are guarded during the day and protected at night  
                   | • Livestock graze in agreed areas  
                   | • Crops have buffers around them;  
                   | • Are protected against invasive species (plant or animal) through active management & buffers. |
| Safe Habitat      | • Is protected under law  
                   | • Houses wildlife that are protected  
                   | • Is recognized in, and managed in accordance with a spatial plan  
                   | • Is large, connected and not shrinking |
| Effective Monitoring & Evaluation | • Conflict hotspots are known, mapped, and modelled regularly.  
                   | • There is clear understanding of the actual and relative human and financial cost of conflict locally.  
                   | • Community attitudes and tolerance for wildlife is known.  
                   | • Clear knowledge if programs are achieving the desired goals. |
2.3 Data collection methods and tools

Rapid participatory assessment methods were used to collect data. These included desk review of literature about HWC in and around QEPA, stakeholder consultations (at local, protected area and national level), field transects/survey in hotspot areas of QEPA and field observations for visual data like photos and recordings to illustrate how HWC has affected the four components of SAFE systems around the PA. A representative sample population of at least 200 people was consulted using key informant interviews, focus group discussions, in-depth group interviews, telephone discussions and online/virtual discussions.

Interview guide and observation checklists were used to conduct the consultations. Interview guide and observation checklist are in Annex II & III. The interview guide and observation checklist enabled the field team to jot down important observed points and photos during transect walks allowing the team to obtain first-hand information in the naturally occurring context and captured the nonverbal communication key information for the assessment.

Transect walks and target visits to HWC sites were done opportunistically as the field team moved from one location to another for consultations.

The movements were made to coincide with areas of HWC that could be well accessed. In as much as possible 2-3 different HWC interventions were visited and transect walks conducted. QENP staff provided security and the community leaders guided the team to selected sites. The objective of the site visits was to gain insight of what was on-ground regarding the extent of HWC problem and the salient features relating to its management. During the transect walks and site visits important points were observed and recorded as well as collecting photo data.

2.4 Data analysis

Data generated from the review of documents was triangulated with findings from stakeholder consultations. Qualitative data analysis methods were used to analyze the data. The views of respondents and information generated from various approaches was compiled and organized into one feedback repository, as a matrix table.

Data was coded into similar themes so that the relationships between the themes and meaningful insights could be extracted and reported about.

2.5 Quality Assurance

At all stages of the consultancy, integrated quality control approaches were employed to ensure quality deliverables and reliable recommendations. One of the quality control approach among others was to work closely with the WWF staff that was attached to the consulting team for coordination and review purpose.

2.6 Stakeholder Consultations

The main objectives of the stakeholders’ consultations were to:
1. Provide clear and accurate information about the objectives of the HWC baseline assessment.
2. Obtain the concerns and perceptions about HWC in and around QEPA
3. To ensure adequate participation and relatively sufficient input into the assessment by all key stakeholders
4. Obtain suggestions and recommendations for SAFE systems approach to management of HWC.

The consultations were conducted in form of:

a) Interviews with key informants mainly the authorities, technical staff of the district local governments and CBOs
b) General community meetings

Focus groups discussions were held in selected HWC affected fishing villages. The focus groups participants included community-based organisations like Katwe Eco-Tourism Information Centre (KETIC), women group-Kungu Problem
Animal Control Association (KIPACA) in Kyenzaza, Kyambura Wildlife Reserve, farmers (crop cultivation and cattle keepers). Community consultations and discussions were conducted in the local language. In total 2 parishes/village general community meetings were held and 4 focus group discussions.

Stakeholder consultations were held mainly with key stakeholders at national level that included UWA headquarters, UWEC and MAAIF, staff of selected district local governments of Rukungiri, Kanungu and Kasese that neighbour the QEPA; QEPA staff, representatives of Kihifi and Bwambara sub counties, and community groups in HWC hot spots areas around the protected area as well as fishing sanctuaries (fishing villages) within the national park. Other key stakeholders that were consulted included key informants and knowledgeable people within the community, KIIMA Foods a locally based NGO, private sector representatives of hotels and lodges operating within and around QEPA as well as relevant institutions like the Uganda Wildlife Research and Training Institute.

Details of stakeholders consulted were submitted in a separate file.
2.7 Limitations of this study

A major limitation to the study was the limited timeframe within which to conduct consultations with all stakeholders and to cover all the hotspots. Nonetheless, key hotspots areas representing the different categories of HWC were sampled to ensure sufficient input from the affected communities. Another key limitation was the unwillingness of the communities to disclose information on issues they felt were sensitive and could put them in trouble with park management such as poaching, retaliatory killings, and other illegal activities in the park.

In addition to the above limitations, communities were very angry and bitter about HWC especially elephant crop raids and the poor response from park management, livestock predation, crocodile attacks and deaths, penalties considered harsh such as impounding cattle and auctioning by court order for illegal grazing in the park. For example, in Hamukungu, the livestock keepers were initially unwilling to meet the field team due to a case where cows found grazing inside the park had been impounded, while in Kikarara the participants were disruptive.

To overcome these limitations and challenges the team used techniques such as probing while discussing about sensitive topics like poaching, building effective rapport at the beginning and throughout the discussions, showing empathy and patience. Ensuring effective communication and listening including facilitating the discussions with involvement of the community leaders helped to control disruptive participants. Giving different group members including women and youth the opportunity to present their views ensured effective participation of members in the discussions.

Some relevant technical staff at the districts and MDA at national level, for example MAAIF, MTWA were unavailable due to other programmes particularly end of FY closure activities which coincided with the consultations. There is limited primary data on HWC management especially reported cases of the feedback, positive results or impacts of interventions being done (except for the electric fence) and compensation. These data gaps were addressed through review of relevant literature.
The key drivers of HWC in QEPA that undermine the safe systems include among others:

1. Human population pressure from both inside (fishing villages/wildlife sanctuaries) and outside the protected areas (communities bordering the protected area). According to the Chief Warden, fishing villages which were occupied by few people engaged in fishing activities have expanded with many people engaged in various economic activities including livestock rearing. Definitely has a direct negative impact on wildlife habitats as people strive to acquire land for food production and, put people at the risk of HWC.

2. Wildlife habitat loss especially in the southern sector and Kigezi Wildlife Reserve were a portion of the protected was degazetted in 2002 due to heavy encroachment reducing the size of wildlife buffer zone and migratory routes (see above figure 2, Kiyanga and Kikarara areas proposed/degazatted). The continuous degradation and loss of wildlife habitats has left wildlife with no suitable place to stay or feed from. The search for food or trace of their migratory routes eventually results into conflicts.

3. Poaching and illegal trade in wildlife and its products for both subsistence and commercial purposes scares and displaces wildlife leading to HWC. Sometimes attempts by local communities to carry out retaliatory killing of dangerous animals like leopard (Pathera pardus), buffalo (Syncerus caffer caffer) and African elephant (Loxodonta africana), can lead to defensive attacks from wildlife and may cause fatalities and death.

4. Inadequate and or lack of buffer zones or migratory corridors as already mentioned, the ever-increasing human population and the demand for food production has led to clearing of buffer and migratory routes. This has left protected areas with a hard borderline between a protected area, crop fields and settlements, leading to HWCs. This implies that when wildlife leaves the protected areas it ends up in gardens and homes resulting into conflicts. Furthermore, human settlements and incompatible human activities in wildlife migratory routes which used to act as wildlife dispersal areas have exacerbated the HWCs situation in QEPA.

5. Impact of climate change and variability have had a direct negative impact on the quality of habitat and productivity of both protected areas and agricultural land, leading to water and food scarcity. During prolonged droughts, water sources outside the protected area (especially in cattle keeping areas e.g. in Nyakantoozi and Karusandara) dry up, forcing livestock and people to enter wildlife areas in search of water and pasture. The presence of livestock and people in the park exposes human beings
and domestic animals to the risk of being attacked by dangerous animals like leopard, lion, buffalo and African elephant, it also leads to impounding the cattle and arrest of the people by park management, hence, a source of HWCs.

6. Inadequate capacity for UWA and district local governments to provide timely response and feedback to reported cases. It is clearly appreciated that cases of HWC are widespread and frequently making it difficult for UWA with limited manpower, most of it being confined in protected areas, to effectively deal with the problem by providing timely response to all reported cases. Besides, district local governments which are mandated to deal with vermin (olive baboon (Papio anubus), vervet monkey Chlorocebus pygerythrus and bush pig (Patamochoerus larvatus) lack technical and financial capacity to execute the task. Many of the local governments except Kanungu District have not yet recruited Wildlife Officers responsible for vermin. Those that have designated officers to handle vermin have neither equipped them with the necessary expertise nor facilitated them to do a good job.

7. Poor community attitude and mind-set, for instance, the fishing community seems not to be aware that overfishing denies the crocodiles a food source (fish) and as the crocodiles look for alternative food, the human being, unfortunately, becomes the most available weak prey. Even in areas where people are fully aware that crocodiles exit, people have still not understood or have ignored the fact that swimming or stepping in water known to have crocodiles would expose them to crocodile attacks, and this puts their lives in danger. Even where UWA has established safe water cages for fetching water, the mind-set and attitude has not changed and communities do not adequately use these protected places but instead use water outside the cages where there are high chances of being attacked by crocodiles.

3.1. Safe Person

The strategic outcome of Safe Person – is a critical part of the overall safety of the system. The success of conservation depends on peoples’ attitudes and behaviour towards wildlife, which is in turn shaped by the nature and degree of conflict. People interact with wildlife either directly through hunting, chasing the wildlife from their gardens, protecting their livestock or indirectly through accidental encounters. For example, during collection of resources from the park (fuelwood, grass, fish, herbs, honey among others), and or travelling through the national park. In either case, the result can be human injury or death or escape or and property damage. The Safe Systems approach seeks to make people safe and be able to live and engage in their livelihood activities in the landscape they live in. People are the main players in the conflict, and they are the critical part of the overall safety of the system. Safe People in Safe System means people are complying with laws, taking responsibility for preventing conflict and actively participating in the conflict management while they are financially buffered from the shocks of conflict events.

Ensuring people and their livelihoods are safe is fundamental to effectively managing conflict in the long term. Below, the report explores the status of key aspects that determine safety of people in and around QEPA.

This section describes the prevalence of HWC in and around QEPA. Among the parameters described are whether people comply with wildlife regulations and report cases of HWCs to the concerned authorities, and the timeliness of responses to such reports. The section also describes the kind of interventions undertaken to prevent HWC, to protect people, and the mitigation measures available to minimise the impact of HWC, including alternative sources of livelihoods and compensation.

3.1.1 HWC incidences in and around QEPA that undermine the safety of people

Although empirical evidence shows that HWCs related to crop damage are more prevalent than those that involve body injuries and human death as shown in Table 3 and Figure 9, the few cases that involve loss of human life attract more public outcry and resentment to wildlife than those that lead to the loss of property. The number of HWC cases in and around QEPA sharply increased from 16 reported incidences in 2013 to 862 cases in 2020 (98% increase) and reduced to 845 cases in 2021 as indicated in Figure 9. It should be noted that both HWC involving human safety and property were initially on upward trend until recently. The slight reduction in the number of cases reported is attributed to the erection of electric fence in Kyenzaza on the edge of Kyambura Wildlife Reserve, Kasese-KCCL to Kikorongo and Kikorongo to Isango park boundary areas.

![Figure 9: Trends of reported human wildlife conflicts. Source QEPA records](image)

HWC associated with crop damage dominated cases in Queen Elizabeth Protected Area. From January to the end of August 2022 out 489 HWC cases reported, 430 (87.9%) of the incidences were crop destruction/damage. Similarly, in 2021 crop related cases constituted 91.4%, in 2020 it was 88.4%, 2019 was 91.6% and 87.9% in 2018 as shown in Table 3. Therefore, overall, crop damage was consistently the most rampant form of HWC, accounting for 89.5% of the total reported HWC cases over the period of 5 years, followed by livestock predation (4.8%), human injury (4.1%) and human death (1.6%).

### Table 3: Summary of HWC Cases Attended to in QEPA from 2018 to Sept.2022

<table>
<thead>
<tr>
<th>Year</th>
<th>Crop Damage</th>
<th>Human Death</th>
<th>Human Injury</th>
<th>Livestock Predation</th>
<th>Total</th>
<th>Percentage of crop damage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2022 (Jan – Sept)</td>
<td>430</td>
<td>13</td>
<td>24</td>
<td>22</td>
<td>489</td>
<td>87.9</td>
</tr>
<tr>
<td>2021</td>
<td>772</td>
<td>11</td>
<td>33</td>
<td>29</td>
<td>845</td>
<td>91.4</td>
</tr>
<tr>
<td>2020</td>
<td>762</td>
<td>15</td>
<td>43</td>
<td>43</td>
<td>862</td>
<td>88.4</td>
</tr>
<tr>
<td>2019</td>
<td>745</td>
<td>5</td>
<td>22</td>
<td>41</td>
<td>813</td>
<td>91.6</td>
</tr>
<tr>
<td>2018</td>
<td>514</td>
<td>13</td>
<td>24</td>
<td>39</td>
<td>590</td>
<td>87.9</td>
</tr>
<tr>
<td>Total</td>
<td>3,223</td>
<td>57</td>
<td>146</td>
<td>174</td>
<td>3,600</td>
<td>89.5</td>
</tr>
<tr>
<td>% of total cases</td>
<td>89.5</td>
<td>1.6</td>
<td>4.1</td>
<td>4.8</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source: QEPA records, July 2023*
Generally, the incidence of HWC has been increasing, both wildlife damage of crops, property, but also human injury and death. Local community group discussions revealed the presence of poaching and illegal entry into protected areas by wildlife criminals who were alleged to be coming from outside parishes bordering the protected area but hosted by some residents. It was reported that individuals were even passing through the electric fence to poach. Park staff reported wire snare injuries of wildlife so high to the extent that on average patrols find at least one animal per week injured or killed by wire snares. However, in areas where WWF in collaboration with PA management had supported reformed poachers to be engaged in income generating activities and livelihood projects of apiary, piggery and coffee growing, it was reported that the level of wildlife poaching had reduced. PA management attributed the reduction in illegal activities to improved community participation in reporting cases of poaching to management for appropriate action/response. The challenge is that such interventions were confined to limited areas especially where WWF was operating, specifically in Bwambara Sub County.

Added to the challenge of limited area of coverage of interventions, UWA staff attribute the increased human-wildlife interaction to lack of wildlife migratory corridors and buffer areas. As human population in the fishing villages and areas around QEPA has increased, the human settlement and farming activities covering the vital habitats for wildlife have with time become common and widespread. Staff also noted that over-fishing on the lakes has forced some of the fishermen to extend to the fish breeding areas that are inhabited by hippos and crocodiles triggering HWCs.

**Table 4: Law enforcement effort (hunting tools confiscated and wildlife products retrieved)**

<table>
<thead>
<tr>
<th>Hunting tools confiscated</th>
<th>2021/2022</th>
<th>2022/June 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panga</td>
<td>149</td>
<td>128</td>
</tr>
<tr>
<td>Spear</td>
<td>32</td>
<td>22</td>
</tr>
<tr>
<td>Firearm</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Rounds of ammunitions</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>Axe</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Wire snare</td>
<td>20</td>
<td>9</td>
</tr>
<tr>
<td>Knife</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wildlife trophies/products retrieved</th>
<th>2021/2022</th>
<th>2022/June 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ivory (African elephant tusk)</td>
<td>147.6Kg</td>
<td>46 (plus one raw ivory and a piece)</td>
</tr>
<tr>
<td>Bush meat of various animals</td>
<td>777 Kg</td>
<td>1,255 Kg</td>
</tr>
<tr>
<td>Lion skin claws &amp; teeth</td>
<td>0</td>
<td>2 claws &amp; 2 teeth</td>
</tr>
<tr>
<td>Pangolin scales/skin</td>
<td>1.5 Kg</td>
<td>3Kg</td>
</tr>
<tr>
<td>Crocodile skin</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Monitor Lizard skin</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Giant Forest hog Tail</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Hippopotamus teeth</td>
<td>40</td>
<td>28</td>
</tr>
<tr>
<td>Elephant skin</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Python skin</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

*Source: QEPA records, July 2023*

Other drivers that accentuate HWC incidences include among others; inadequate benefits from wildlife, as revenue sharing and resource access schemes do not reach every individual within a
community because the funds are mainly used to fund community-based projects. This in the long run breeds public negative attitude towards wildlife. Climate change compounded with rampant uncontrolled wild fires has reportedly induced vegetation changes in the protected area, increasing the areas covered by invasive and unpalatable species, making the habitats unsuitable for some wildlife species. Without enough food in the PA, some wildlife moves outside protected areas in search of pasture/forage.

According to the PA staff interviewed, inadequate knowledge of animal behavior among the communities could be among the key causes of HWC. For instance, fishermen tend to undertake fishing activities very close to schools of hippopotamus with young ones and therefore aggressive to intruders, which is very risky for the fishermen. Sensitization of the public and ongoing awareness creation among residents of fishing villages has yet to yield positive attitude change.

### 3.1.2 Compliance with the law

A critical part of the Safe System is that people and communities comply with established laws on wildlife, protected species, and wildlife habitats. Lack of compliance e.g. illegal grazing in the park, keeping livestock in the fishing villages/sanctuaries often leads to frequent interaction of wildlife and people leading to attacks on humans and or predation of livestock.

The key threats facing QEPA are poaching, illegal grazing, encroachment, illegal pitsawing and wild fires. The main animals poached include hippopotamus (*Hippopotamus amphibious*), buffaloes (*Syncerus caffer caffer*) and to a lesser extent Uganda Kob (*Kobus kob thomas*) topi (*Damaliscus lunatus*), reedbuck (*Redunca redunca*), waterbuck (*Kobus ellipsiprymnus*), warthog (*Phacochoerus africanus*) and the giant forest hog (*Hylochoerus meinertzhagen*), and some occasional African elephant (*Loxodonta African*) is poached. The main purposes of poaching at small scale is usually for domestic consumption but when it involves massive killing of animals or involving big mammals it is for commercial purposes.

A study by WWF-UCO on Illegal Wildlife Trade in 2013 revealed that hippopotamus and elephants both in Uganda and DRC are the most hunted for commercial bush meat, followed by other species such as buffaloes, Uganda Kobs, topi and duikers, among others. The study also reported hotspots for Hippo poaching (and other wildlife species) as concentrated in areas along Kasenyi on L. George, River Ishasha and Nyakakoma area around L. Edward in Uganda. Sometimes, weapons used include automatic fire arms, wire snares, foot traps and nets. Poaching brings community members and park staff into direct confrontation, leading to arrests, prosecution and imprisonment. It also exposes the affected people to the risk of being killed by wildlife. This in turn creates animosity towards the PA and wildlife among the communities, but also families lose breadwinners and can easily slump into poverty.

Illegal cattle grazing remains a serious cause of HWC, especially during the prolonged dry seasons, where cattle are left unherded or herded in the PA. This poses the risk of livestock attack and potential disease transmission between livestock and wildlife, a situation that has led to poisoning carnivores. For example, in 2018, eleven (11) lions were allegedly poisoned by cattle keepers in Hamukungu fishing enclave, as a retaliation action because the carnivores had killed cattle, the residents put poison on the carcass, killing the lions and vultures. As a way of deterring illegal grazing and minimizing HWC, QEPA management recently imposed a fine which must

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**WWF-UCO, 2013.** Extent of Illegal Timber, Charcoal, and Wildlife Trade in the Greater Virunga Landscape, WWF Uganda.
be paid before cattle keepers retrieve their livestock. This has caused animosity among the habitual offenders, and in one incident the Government auctioned cattle after the owner refused to reclaim them for an extended period (Per. Comm. QEPA Management, 4th July 2023). Because of this policy, the cattle keeping community attitudes to PA management have deteriorated.

Illegal pit sawing takes place in the dual-managed forested part of the PA in the Maramagambo Forest, and Dura area. This destroys the habitat for big forest mammals and primates, and interferers with the forest hydrological functions. The increased human populations within the fishing enclaves has also increased demand for resources like fuelwood, ambatch (used for fishing and salt mining floats) and building materials, most of which are illegally harvested from the PA. Increased human population also leads to increased incidence of human injury and at times death, both within the fishing enclaves and as people move along the roads within the wilderness. The recent series of photos shared on Facebook and tweeter showing a man on a motor cycle loaded with matooke riding (perhaps going to sell the matooke in one of the fishing village) past a pride of lions on the road and later believed to have been killed by the lions when the motor cycle was cited without the man among stationed tourists vehicles with tourists watching the pride is clear evidence of the increased interaction of people and wildlife resulting into conflicts. UWA had to issue a press release clarify that the man was not killed by the lions as he was rescued by one of the tour guides who allowed him to jump on the tourists’ vehicle17.

On the water bodies, hippopotamus and crocodile attack remain the main form of HWC. While there is risk of crocodiles attacking people at the edge of the lakes as they fetch water, the main cause of crocodile attacks is fishing in the fish breeding areas of the lakes, which are also inhabited by schools of hippos and crocodiles. In Katwe-Kabatoro the community mentioned that hippos had killed 2 people two weeks before this study.

3.1.3 Reliance on wildlife-prone farming systems

Crop raiding and livestock predation are common HWC, and for people to be safe, they should adopt farming systems that reduce incidence of damage. Crop farming and livestock rearing are the main livelihood activities among communities adjacent to QEPA. There were several incidences of crop damage in the hotspot areas, most which are yet to be covered by electric fence as shown in Table 5. Many households are solely dependent on crop farming for household subsistence and income, which increases vulnerability and poverty, leading to lack of basic needs. The communities around QEPA grow crops that are susceptible to wildlife damage which include rice, millet, maize, sorghum, sweet potatoes, cassava, mangoes, bananas, jackfruit and beans. And while elephants do not eat some crops like coffee, tobacco, red chili and sesame, often they break the coffee trees and trample the sesame as they pass through the gardens.

The main wildlife raiding crops are African elephant (Loxodonta africana), but also buffalo (Syncerus caffer caffer), hippopotamus (Hippopotamus amphibious), olive baboon (Papio anubis), waterbuck (Kobus ellipsipymnus), Uganda Kob (Kobus kob thomas and bush pig (Potamochoerus larvatus). The animals which are responsible for causing human injury and or death as well livestock attack and predation are lion (Pathera leo), leopards (Pathera pardus), spotted hyenas (Crocuta crocuta), crocodiles (Crocodylus niloticus), African rock pythons (Python sebae) and other snake species.


17 https://www.ugstandard.com/lions-didnt-kill-the-boda-boda-rider-uwa-clarifies/ (Downloaded 10th August 2023)
African elephant (Loxodonta africana) buffalo (Syncerus caffer caffer), hippopotamus (Hippopotamus amphibious) are also responsible for.

In Kibimbiri Parish (Kihihi Sub-county, Kanungu District), the community perceives the numbers of destructive wildlife to have increased dramatically since 2020, which they attribute to DRC Government decision to fence Virunga National Park which is contiguous with QEPA boundary. Furthermore, the civil unrest in DRC characterized by gunshots and indiscriminate killing of wildlife are some of the factors community members thought were responsible for pushing elephants into Uganda.

UWA field staff indicated that some areas where human activities are currently thriving around Queen Elizabeth Protected Area; once served as wild animal dispersal areas and migratory routes whenever wildlife was in search for water, mineral salts, food, and breeding (for genetic exchange). Such areas are Kameme, Kikarara in the Ishasha sector and Kiyanga previously part of Kigezi Wildlife Reserve (Game Reserve). The areas of Kikarara and Kiyanga used to be wildlife migratory routes and dispersal areas between QENP and Virunga National Park of the Democratic Republic of Congo (DRC), but due to severe encroachment in the 1980’s, they were degazetted in 2002 under the Government of Uganda Protected Areas Systems rationalization Plan (see Figure 2).

3.1.4 HWC prevention mechanisms around QEPA

a) Guarding gardens and noise making

The main HWCs prevention mechanism for crop protection include guarding crops (day and night) often accompanied by drumming/vuvuzela noise and fires to scare animals. UWA has trained 125 volunteer wildlife scouts, though some are not yet equipped, to support communities to guard their gardens. Some communities have scouts equipped with protective wear and torches. The scouts are supposed to alert PA staff at the nearest ranger posts, and work with them to scare the animals away. In some cases, the PA staff scare shoot especially where elephants are involved. However, communities mentioned that some elephants have become bold and undeterred by noise (they are accustomed to the Vuvuzela noise and gunshot sound), and sometimes they charge at the guards, and have in some instances even deliberately trampled and destroyed the temporarily guard shelters in the gardens.

The challenge associated with PA response to HWC alerts is that the ranger posts are usually under-staffed, with inadequate transport means. The PA staff/team therefore does not respond on time. HWC sometimes happens concurrently in several villages in an area, and the rangers cannot be in all the hotspots at the same time. For example, the team were informed that there were only 27 rangers in Kigezi WR, yet the entire perimeter of the reserve is farmed. What is worse is that through group discussions it was established that some local people perceived the reduced ranger patrols/presence and slow/delayed response to reported cases as intentional, yet it was reported as an institutional capacity gap on the part of QEPA/UWA.

However, recently recruited and trained rangers were expected to be deployed in protected areas to bridge this gap. It should be noted that without armed rangers, the scouts’ security and safety were at risk, especially when dealing with dangerous animals like elephants and buffalos. In Kikarara the community members alleged that often when they call the rangers to intervene, the person calling is asked to provide fuel for the rangers to travel to the site. Farmers also complained that when rangers come, they do not want to scare shoot at the animals, instead, they insist on use of vuvuzela noise. The community interpreted this as rangers being mean with their bullets, and reserving them for poachers. Also, the fact that scouts are basically volunteers who are not well motivated with any form of financial payments they sometimes become reluctant to act on reported cases or to spend their airtime and transport to call PA staff to rescue the community.
b) **Electric fence and other barriers**  
Barriers including trenches, beehive lines, live fencing and electric fence that has been recently installed on some parts of the PA perimeter are the other mechanism used to prevent HWC. The electric fence is rated very effective, even if it is still on a limited scale (total 58.7 km). According to the community group in Kyenzara, Kirugu Sub-county in Rubirizi district, in the areas with the electric fence, crop yields are fully realized, land purchase and rent value has shot up because crop destruction by elephant has been eliminated and people are sure of crop harvests. Even crops that could not be grown in the area like cassava and sweet potatoes were being harvested without much damage by elephants. Similarly, the 2022 Impact Assessment Study of the electric fence phase III along the Kasese KCCL-Kikorongo park boundary by Space for Giants also found that the value of land had doubled over a period of 3 years attributed to the electric fence and 40.6% of the farmer respondents in the study reported a lot of increase in the harvest compared to the harvests before electric fencing\(^8\). On the other hand, communities in the fishing enclaves claim that levels of HWC have increased in their communities because the elephants and buffaloes are hemmed in by the fence (mentioned in Kayanja Fishing community).

However, UWA in collaboration with European Union (EU), Greater Virunga Transboundary Cooperation (GVTC) and Space for Giants, is in the process of funding the erection of electric fence in new areas especially the hotspot areas. The only issue is that some areas particularly wetlands and boggy places are likely to pose challenges in installation of the electric fence. Another challenging situation is where many roads crisscrossing the park provide exit points for wildlife. This will require rails or manned gates/barriers to control problem animals.

The other crucial concern about the fence is the possibility of being vandalized, as poachers find their way over the fence. The maintenance costs of the fence are high, especially controlling vegetation growth along the fence line. At the moment some casual laborers (called Fencers) were recruited to maintain the electric fence, with each Fencer monitoring 5km of fence, including keeping watch on the


*Figure 10: Split cassava being dried in Kyenzaza; Good harvest was realized due to the electric fence that stopped elephant raids; (Pers communication by member of KIPACA women focus group discussion, 4th July 2023)*
installed camera traps. There is urgent need to create local community ownership of fence monitoring to maintain its integrity, because the bad people who are likely to vandalize the fence are not necessarily residents of the neighboring communities who understand its importance.

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c) **Community perception on electric fence intervention**

The crop farmers and cattle keepers perceive the use of electric fence to curtail problem animals, especially African elephant (*Loxodonta africana*) differently. For crop farmers, the electric fence was a relief to crop damage by wild animals, even though with time baboons and bush pigs have managed to cross it. Nevertheless, unlike elephants, baboons and bush pigs are easy to manage and cause less damage. Therefore, crop farmers who have had their areas fenced have been relieved of night guarding and have achieved improved harvests. Those farmers whose protected areas boundary is not yet covered by electric fence are yearning for it. This is contrary to their counterparts the cattle keepers, who are opposed to the electric fence. For example, though cattle keepers in Nyakatonzi and Hamukungu, were experiencing serious problem of lions, hyenas, leopards, elephants and buffalo attacking their livestock and residents, they did not support the idea of electric fence, because they want to maintain access to pasture and water in the PA.

This is evidenced by findings of the baseline assessment study in 2022, by Space for Giants, for construction of the electric fence phase III along Kikorongo-Mpondwe park boundary whereby cattle keepers in Nyakatonzi expressed fears about being unable to access the park for pasture and water in the dry seasons once the fence is constructed, hence their livelihood and source of income would be severely affected.\(^{19}\)

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\(^{19}\)Space for Giants, 2022. Human-Elephant Conflict in Queen Elizabeth Protected Area: Baseline Survey Report; Electric Fence Project Phase 3: Kikorongo – Mpondwe; [www.Spaceforgiants.org](http://www.Spaceforgiants.org)
In this HWC assessment study the cattle keepers were instead more concerned with heavy fines put on the livestock found grazing inside the park, delayed and failure to compensate for injured livestock and lack of an effective community institution to link them with protected area management. They were annoyed with the protected area approach of resolving cases of illegal grazing of livestock inside protected areas through the courts of law. An incident where the Court ordered the auction of livestock of one of the residents after he stubbornly refused to present himself to the authority sparked off harsh reaction from livestock farmers and created poor working relation between cattle keepers and QEPA management (Per. Comm, QEPA Management, 5th July 2023). This situation is not good for wildlife conservation and measures must be put in place to improve the relations for the good of wildlife conservation. In addition, it is costly for PA management to keep the impounded cattle as a ranger has to be assigned to herd them and ensure their safety against predation both during day and night for the time before the owners claim them.

The leaders in Nyakatonzi were of the view that QEPA and partners should support them to eradicate invasive species especially Latana camara to improve pasture because invasive species have reduced the grazing area and made the productivity of their rangeland low, forcing them to graze their livestock in the park. Invasive plants also create thickets which are used as hiding places for buffaloes, carnivores and other predators that attack livestock and humans.

Noting that underlying and driving factor of cattle keepers being negative towards erection of electric fence is the fear that once it is established, they will find it difficult to access pasture for their livestock during prolonged drought, management should explore and support other ways that will improve the productivity of the communal grazing areas in Nyakatonzi and Karusandara. The community leaders proposed the removal of invasive species, extraction/diversion of water from R. Nyamugasani to fill up community valley dams and supporting them to acquire milk cooling plant that will add value to their milk and its products. The Chief Warden of QECA agreed with local community leaders’ proposals. He indicated that by establishing a reliable water system in the communal grazing areas, removing invasive species, establishing community-based tourism ventures, providing veterinary services and supporting community to practice modern livestock farming systems would be better options than continuing to allow residents grazing inside the national park which is risky to both livestock and wildlife.

d) Trenches
Trench construction was the most common intervention against elephant, bush pigs and buffalo. In QEPA more than 100km were excavated in various areas to control problem animals. However, it could not work in areas with flat surface rocks, wetlands and flooded plains. A trench requires frequent maintenance otherwise, with time, the walls tend to collapse and eventually become ineffective due to siltation.
Capture and translocation of problem animals

It has been and is still a normal practice by UWA to capture and translocate problem animals especially from non-protected areas to protected areas. Common animals that are captured and moved to secure places include crocodiles, snakes, monitor lizards and cats. For QEPA problem Nile crocodile (Crocodylus niloticus) has been translocated from the fishing villages to other water bodies in addition to setting up crocodile cages to protect local people against crocodile attacks while fetching water. The residents of Kayanja fishing village and Katwe-Kabatoro enclave appealed to UWA to translocate some problem crocodiles because the predators have increased in number and at the same time human population has greatly multiplied.

A summary of HWC interventions being implemented in QEPA and specific places where they are located is given in Table 5.

Table 5: QEPA HWC Prevention Measures

<table>
<thead>
<tr>
<th>Measures and Locations</th>
<th>Quantity</th>
<th>Status of measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Fence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Kyenanza, Kirugu, Kafuru, Rukoma, Katerera, Kanyinya, Kyabakara and Kagarama in Rubirizi District</td>
<td>19.5 Km</td>
<td>Active and effective</td>
</tr>
<tr>
<td>2. Isango- Katholhu, Kabirizi , Kaleberyo, Kahokya, Kikorongo, Lyemubuza, and Kikorongo-KCCL in Kasese District</td>
<td>39.2 Km</td>
<td>Active and effective</td>
</tr>
<tr>
<td>Beehives</td>
<td>No. of beehives</td>
<td>State of beehives</td>
</tr>
<tr>
<td>3. Kayanzi parish, Nyakiyumbu Subcounty, Kasese (Kayanzi Beekeepers Association)</td>
<td>78</td>
<td>colonised</td>
</tr>
<tr>
<td>4. Kayanzi parish, Nyakiyumbu Subcounty, Kasese (Rwehingo Beekeepers Association)</td>
<td>14</td>
<td>Fair</td>
</tr>
<tr>
<td>5. Kayanzi parish, Nyakiyumbu Subcounty, Kasese (Nyakiyumbu Wildlife Scouts Beekeepers Ass.)</td>
<td>40</td>
<td>fair</td>
</tr>
<tr>
<td>6. Kiyanga Parish (Kiyanga Farmers Association)</td>
<td>150</td>
<td>Good</td>
</tr>
<tr>
<td>7. Kyalanga Parish, Karusandara Subcounty, Kasese (Kyalanga Beekeepers Association)</td>
<td>60</td>
<td>Good</td>
</tr>
<tr>
<td>8. Scheme ward, Nyamwamba Div. Kasese (Kasese United Friends Bee Keepers Association)</td>
<td>132</td>
<td>good</td>
</tr>
<tr>
<td>9. Nyanga parish, Nyanga S/C, Kanungu (Ishasha community Beekeing Association)</td>
<td>30</td>
<td>fair</td>
</tr>
<tr>
<td>10. Rumuri Parish, Kichwamba S/C, Rubirizi (Bateso bee keepers group)</td>
<td>40</td>
<td>Good</td>
</tr>
<tr>
<td>11. Kibimbiri Parish, Kihihi S/C, Kanungu (Kameme Reformed poachers)</td>
<td>25</td>
<td>Good</td>
</tr>
<tr>
<td>12. Kyanyabutongo Beekeepers</td>
<td>30</td>
<td>Good</td>
</tr>
<tr>
<td>13. Isango Sub County, Kasese (Isango II Bee-Keeprs Association)</td>
<td>50</td>
<td>Good</td>
</tr>
<tr>
<td>14. Isango Sub County, Kasese (Isango Shed for the future)</td>
<td>12</td>
<td>Good</td>
</tr>
<tr>
<td>15. Bwambara Sub County, Rukungiri (Kikarara Environment Protection Association (KEPA))</td>
<td>70</td>
<td>Fair</td>
</tr>
<tr>
<td>16. Bwambara Sub County, Rukungiri (Rweshama Bee Keepers Group)</td>
<td>40</td>
<td>Good</td>
</tr>
<tr>
<td>17. Mahyoro Town Council, Kitagwenda District (Turibamwe Mixed Farmers Group)</td>
<td>79</td>
<td>Good</td>
</tr>
<tr>
<td>Measures and Locations</td>
<td>Quantity</td>
<td>Status of measure</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------</td>
<td>------------------</td>
</tr>
<tr>
<td>18. Kirungu Sub County, Rubirizi (Kirugu PAC Bee keepers Group)</td>
<td>100</td>
<td>Good</td>
</tr>
<tr>
<td>19. Katunguru Sub County, Rubirizi (Katunguru Bee Keepers Group)</td>
<td>100</td>
<td>Fair</td>
</tr>
<tr>
<td>20. Katunguru Sub County, Rubirizi (Katunguru P/S)</td>
<td>29</td>
<td>Fair</td>
</tr>
<tr>
<td>21. Kicwamba Sub County, Rubirizi District (Katara Women Group)</td>
<td>250</td>
<td>Good</td>
</tr>
<tr>
<td>22. Kicwamba Sub County, Rubirizi District (Kyambura Bee Keepers Group)</td>
<td>36</td>
<td>Good</td>
</tr>
<tr>
<td>23. Kyabakara Sub County, Rubirizi (Nyakarambi Bee Keepers Group)</td>
<td>60</td>
<td>Good</td>
</tr>
<tr>
<td>24. Nyamwamba Division, Kasese district (Mt. Rwenzori Bee Farmers Association)</td>
<td>200</td>
<td>Good</td>
</tr>
<tr>
<td>25. Lake Katwe Subcounty, Kasese (Lake Katwe United Bee Keepers Association)</td>
<td>100</td>
<td>Fair</td>
</tr>
<tr>
<td>26. Kyalanga Parish, Karusandara Subcounty, Kasese(Beekeepers Association)</td>
<td>60</td>
<td>Good</td>
</tr>
<tr>
<td>27. Kibimbiri Parish, Kihhi Subcounty, Kanungu (Kibimbiri Rwerere Beeking Association)</td>
<td>50</td>
<td>Good</td>
</tr>
<tr>
<td>28. Kibimbiri Parish, Kihhi Subcounty, Kanungu (Rwerere C &amp; A Reformed poachers)</td>
<td>25</td>
<td>Good</td>
</tr>
<tr>
<td>29. Rushoroza Parish, kihhi Subcounty, Kanungu (Cumbugu Community Bee keeping Association)</td>
<td>40</td>
<td>Good</td>
</tr>
<tr>
<td>30. Kibimbiri Parish, Kihhi Subcounty, Kanungu (Rutoobo Kweterana Beekeepers Association)</td>
<td>20</td>
<td>Fair</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Crocodile Cages</th>
<th>No of cages</th>
<th>status</th>
</tr>
</thead>
<tbody>
<tr>
<td>31. Katwe Kabatoro Town Council, Kasese</td>
<td>07 Cages</td>
<td>Effective&lt;sup&gt;20&lt;/sup&gt;</td>
</tr>
<tr>
<td>Trenches</td>
<td>Distance covered</td>
<td>Status</td>
</tr>
<tr>
<td>32. Nkongi-Kamabale, Kiyanga Subcounty, Mitooma District</td>
<td>6km</td>
<td>good</td>
</tr>
<tr>
<td>33. Kikarara, Bwambara Subcounty, Rukungiri</td>
<td>10km</td>
<td>Good but it doesn’t cover wetland areas</td>
</tr>
<tr>
<td>34. Nyanga-Kihhi , Nyanga &amp; Kihhi Sub counties, Kanungu</td>
<td>9km</td>
<td>Good</td>
</tr>
<tr>
<td>35. Kyambura-Hakungu, Kicwamba Subcounty, Rubirizi</td>
<td>6km</td>
<td>Good</td>
</tr>
<tr>
<td>36. Isango-Nyamugasani, Isango, Nyakiyumbu &amp; Nyakatonzi Sub Counties</td>
<td>18 km</td>
<td>Good</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Live Fencing (Mauritius Thorn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>37. Kicwamba Subcounty, Rubirizi</td>
</tr>
<tr>
<td>38. Kirungu Subcounty, Rubirizi</td>
</tr>
</tbody>
</table>

Source: QEPA records, July 2023

<sup>20</sup>But some community members do not use them, putting lives at risk
3.1.5 Livelihoods effects of HWC

Most conflict landscapes have active government and NGO programs in support of livelihoods development, market access, and public service support. The success of such programs is critical for buffering individual and household incomes from the shocks associated with conflict events. Some livelihoods activities can also have dual benefits for incomes and conflict reduction. Livelihood actions to support diversion away from high conflict risk livelihoods should also be explored. To be safe, people should be engaged in more than one income generating stream, and their reliance on conflict prone incomes should be minimised.

The PA adjacent communities that were consulted all mentioned that they depend on crops, the majority of which are palatable to wildlife, and livestock farming making them vulnerable. Wildlife damage has several economic and social effects on the community. In the short run, crop losses to wildlife lead to food shortage and lost income among affected households.

There is stress on household resources, as farmers spend a lot of time guarding crops, or have to pay for labour to guard. It was reported that while guarding crops, people are susceptible to mosquito and tsetse fly bites, leading to sickness and increased medical expenses. Some farmers mentioned that they are forced to harvest maize crop before full maturity, to avoid loss. This poses the problem of poor food quality and possibility of aflatoxins developing in the cereal. Other short-term effects mentioned were domestic violence due to mistrust, stress and fatigue, sexual abuse of women and girls, indiscipline by the children due to absence of husbands/father figure in the home as most of the time the men are away guarding gardens. With the coming into force of the new compensation law, farmers incur extra expenses related to damage assessment and registration.

The long-term effects of HWC include illiteracy among the communities due to high school dropout rates, as children miss school to guard crops, or breadwinners die in confrontation with dangerous animals. In Kikarara leaders mentioned that some farmers have lost property used as collateral for farming loans where harvests are meager due to wildlife damage. The communities consulted mentioned that by men spending extended periods guarding crops, cases of marital disharmony arise and families’ breakdown. Children who drop out of school also have higher chances of early marriages, leading to domestic violence, rapid population growth rates and persistent poverty. Some households unable to cope with the stress of HWC have had to sell off their property and migrate. Some of this land is under uses not prone to wildlife damage, including tree planting, tourism lodges, and livestock grazing. In few locations, landowners have adopted crops not palatable to wildlife damage.

In Kibimbiri Parish community members mentioned that in the long term, HWC triggers feelings of marginalization among affected communities, which in turn yields negative attitudes towards the park and lack of concern about illegal activities. They mentioned that some community members, especially those disgruntled by wildlife damage act as collaborators with poachers from other areas, offer labour to carry the meat and or timber out of the PA, and others rent accommodation to the poachers, or just turn a blind eye to illegal resource use. In addition, communities consulted said that people spending time guarding crops at the PA boundary, and youths who have dropped out of school and are jobless can be easily recruited into poaching.

3.1.6 HWC mitigation strategies

A number of HWC mitigation strategies have been adopted around QEPA. Many of these are linked to conservation and are discussed below.

a) Bee keeping
In Kirugu Sub-county, Rubirizi District, an 18-members group; KIPACA, has since 2012 been supported to do apiary along the PA boundary as a problem animal management initiative, which also has livelihood impact. The group has an MoU with UWA, and has been supported by UWA, the District Local Government and GVTC. They sell honey to the community and to the tourist facilities. They also make candles and skin oils from beeswax, which they sell locally. The group received trained to make liquid soap and are selling some of the products to the nearby tourists’ lodges. Apiary has created an extra income source, but crop farming remains the main economic activity in the area. The group mentioned that the establishment of the electric fence along the PA boundary has greatly increased crop yields, and freed labour into other productive activities. Land prices and rent rates have shot up.

The Kayanja Beekeepers group keep about 600 beehives in the PA. The group sells its honey in Kabarole, at UGX 10,000 per kg. Enjojo Lodge in Kyambura has supported local bee keepers with beehives.

b) Tourism-related business
Tourism facilities buy local produce from the local communities. In Kirugu sub-county a group of bee keepers sell honey and liquid soap to the tourists’ lodges. The tourism investors have bought land from community members, and as a result land adjacent to the PA has shot up in value. Some of the tourism investors hold large tracts of land, which are left pristine. However, this becomes a challenge to local people when these mini forests harbor destructive wildlife (elephants and primates). The cases in point are Volcanoes Safari Lodge in Kyambura, and Enjojo Lodge in Ishasha that own large pieces of forested land adjacent to the PAs which communities reported to harbor wildlife. However, to the community an extra source of income Volcanoes Safaris Lodge has engaged a group of women to collect and process premium wild coffee from the land owned by the lodge. The lodge then buys the coffee from the women group at a price higher than the market rates in the area.
c) **Employment and community tourism enterprises**

Though limited numbers of skilled staff in the tourists facilities are recruited locally, some youths are employed in the tourism facilities around QEPA, as security personnel, cleaners, cooks, to mention but a few. Volcanoes Safari Lodge in Kyambura has trained youths in tourism service provision and customer care, and gets them internship placements. Those who excel are eventually employed by the lodge or other lodges in the area. Local Government revenue of the surrounding districts like Kasese, Rubirizi, Kanungu and others has been boosted from the Local Service Tax paid from the tourism facilities.

Community members have set up craft businesses to sell to tourists and to supply to curio/souvenir shops of the neighbouring lodges and hotels. There are also community based tourism enterprises that some communities have set up with support from development partners as alternative sources of livelihoods, employment and income streams. For example, Katwe Ecotourism Information Centre (KATIC), a merger of six (6) community tourism associations to work together for better benefits, offers tourism services and products like Lake Katwe salt mining tours, birding along Lake Munyanyange, Game drives, cultural tours and entertainment to tourists and students. The enterprise employs the youth (both male and female) as guides, cultural entertainers, staff and workers of KATIC as well as supporting some community projects like a community orphanage and school. KATIC women group members also make crafts they sell at the centre to tourists and other clients.

![Figure 14: Tourism related business that communities are undertaking for alternative livelihoods](image1)

![Figure 15: Recycling plastic bottles into waste bins in Lake Katwe Sanctuary is an innovative way the youth are engaged in to address waste management and income generation.](image2)

d) **Revenue sharing**

In accordance with Section 65 (4) of the Uganda Wildlife Act, 2019, the Board of Trustees is compelled to authorize Executive Director of Uganda Wildlife Authority (UWA) to pay 20% of the park entry fees collected from a wildlife protected area to the local governments of area surrounding the wildlife protected area from which the fees were collected as a conditional grant. The revenue sharing program is meant to offset costs incurred by communities bordering protected areas, including crop damage, human and livestock attack by wild animals. In addition, it is aimed at winning community support for protected areas, improving community livelihoods and creating community appreciation of conservation. Revenue sharing funds have been commonly used to fund social infrastructure, livelihood projects and problem animal management interventions. Over the last 13 years, over 10 billion Uganda shillings have been disbursed to the district local government adjacent to QEPA as shown in Figure 16.
Whereas, in the past, revenue sharing was used to put up schools and health units in remote parts of the community, bringing services nearer to protected area neighboring community, there is a feeling by both protected area management and local communities that the scheme has not adequately achieved the intended objectives. The concern of PA management is that the local government and communities view it as “free money”, that the money has been used to fund social infrastructure (common good projects) which is officially planned for and funded by government, and that in most cases the same projects are accounted for under different funding sources, and that some of the projects are never completed and are poorly executed. Both communities and PA management cited cases where projects selected by beneficiary communities are changed by the local government leaders, and intended beneficiaries are missed. Distribution of goats to local communities adjacent to PAs has become a popular project, mostly favored by Local Government leaders. However, it is riddled with lack of transparency. The goats supplied are usually overpriced, the beneficially selection process is at times not transparent (and some communities claimed that beneficiaries are sometimes swapped), and it’s common for beneficiaries to sell off the received goats to waiting business people as soon as they receive them, at very low prices, to meet immediate cash needs. There is no effective follow-up of the project to ascertain sustainability. An Area Councillor in Kihihi summed it up:

“The planners of revenue sharing think we are stupid. They tender the supply of goats, and it is the supplier who benefits from the projects. Yet the suppliers are not affected by wildlife damage”

In Kayanja the community claimed that the communities receive less money than what is allocated and signed for. Also, procurement of service providers is done by sub-county leadership, and beneficiary groups are not empowered to monitor the quality of projects. This leads to poor quality work, as was the case in Kayanja fish enclave (see figure 17). Before the formulation of the new regulations which have turned the revenue sharing money into a conditional fund, UWA had no legal mandate to question the use of these funds.

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22The worst case scenario reported is where Sub-county officials allegedly used revenue sharing funds to pay officials’ allowances.

23In Kibimbiri and Kikarara the team was informed that a goat priced at UGX 250,000 by the suppliers can be sold for UGX 60,000 by the beneficiary immediately after receiving it.
e) Controlled PA Resource access

Section 32 (1) of the Uganda Wildlife Act 2019 obliges UWA to establish guidelines for sustainable access of communities neighboring conservation areas to protected area resources which are historically crucial to the survival of those communities. Section 35 (1) (f) creates a wildlife use right class F (community resource Access). The overall goal of community resource access is to provide local communities and stakeholders the opportunity for sustainable utilisation of non-timber resources to support both livelihoods and economic developments. Resource access approach is one of the ways to buffer individual and household incomes from the shocks associated with conflict events. Although there are communities in and around QEPA have MoUs with UWA for controlled access to specified resources, including handcraft materials and beehive siting and honey extraction, there are areas that do not have these MoUs or where they have expired and the communities continue to access resources illegally triggering conflicts with park management. QEPA management and the Community Conservation unit should review the resource access programme to renew MoUs where they expired and negotiate new one in areas where they do not exist and local communities are accessing resources illegally.

f) Alternative livelihood projects from UWA partners

A number of UWA partners support community groups in various livelihood initiatives. These include the World Conservation Society, WWF, GVTC, USAID and others. Some groups have received multiple support from different funders. However, QEPA is a huge area, and these partners tend to support small isolated groups. PA management is concerned that this approach will not yield visible impact over such a huge area. Rather, partners should consider activities that involve whole parish communities.

In Kibimbiri Parish, WWF has supported a group of reformed poachers with a piggery project. However, some community members were of the view that various options of such projects should be supported, to accommodate various community interests. One participant observed that Muslims cannot benefit from a piggery project. The team was also informed that UWA, with
World Bank funding, is supporting training of selected members of the community (3 people per sub-county) in vocational skills (building, mechanics, motorcycle repair, mobile phone repair) to provide alternative and sustainable livelihoods.

**Table 6: Alternative livelihood support initiatives around QEPA implemented by UWA and Partners**

<table>
<thead>
<tr>
<th>Partner</th>
<th>Area of support as perceived by local communities</th>
<th>Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>WWF-UCO</td>
<td>Supporting reformed poachers to be engaged in alternative income generating activities like apiary, piggery, rabbit earing and coffee growing as well assessment of invasive species as incentives to leave poaching and to become community anti-poaching champions.</td>
<td>Ishasha Sector, Rubirizi and Nyakatonzi</td>
</tr>
<tr>
<td>CARE Uganda</td>
<td>Resource access, human rights and beach management</td>
<td>Used to operate in the entire PA but the project ended</td>
</tr>
<tr>
<td>RTI- Biodiversity for Resilience</td>
<td>Assessment of potential area of support</td>
<td>Rubirizi part of QEPA</td>
</tr>
<tr>
<td>GVTC</td>
<td>Supply of modern beehives</td>
<td>Rubirizi part of QEPA</td>
</tr>
<tr>
<td>Virunga Foundation &amp; European Union</td>
<td>In process of funding electric fence</td>
<td>Ishasha Sector of QENP &amp; Kigezi Wildlife Reserve</td>
</tr>
<tr>
<td>Uganda Conservation Foundation (UCF)</td>
<td>Establishment of Joint Operation Command Centre and Earth Ranger system</td>
<td>Entire protected area</td>
</tr>
<tr>
<td>Space for Giants</td>
<td>Technical support towards electric fence construction</td>
<td>Entire protected area</td>
</tr>
<tr>
<td>Uganda Carnivores Project</td>
<td>Rescue of wire snared animals, conservation of lion and experiential tourism</td>
<td>Entire protected area</td>
</tr>
<tr>
<td>Uganda Wildlife Research &amp; Training Institute</td>
<td>Research and training services</td>
<td>Entire protected area</td>
</tr>
<tr>
<td>World Bank- CD</td>
<td>Electric fence, trenches, training scouts and community income generating projects and studies on invasive species</td>
<td>Entire protected area</td>
</tr>
<tr>
<td>National Agricultural Research Organisation</td>
<td>Piloted the use of biological control to manage invasive.</td>
<td>Along Katunguru-Mweya track</td>
</tr>
</tbody>
</table>
3.1.7 Compensation for Wildlife damage

Compensation is expected to reduce the incidence of retaliatory killings by mitigating the impact of conflict after the event, and to manage local perceptions of risk. If people perceive that a conflict event will have a significant impact on their lives, there will be a tendency for a disproportionate response to any event in order to reduce future risk of it happening.

Section 83 of Uganda Wildlife Act, 2019 creates a wildlife compensation scheme consisting of 2% of money collected by UWA from services it offers, money approved by the Parliament of Uganda and any other source approved by the Board. The compensation claims are verified by a Wildlife Compensation Verification Committee established under Section 82.

Section 83(2) stipulates areas of compensation claims, including human death, injuries or damage to property caused by wild animal outside a protected area.

Article 4 of Uganda Wildlife (Compensation Scheme) Regulations 2022 compels a person who suffers from an incident that gives rise to a claim for compensation to report within 72 hours of the occurrence of the incident to UWA officials, police or the area local council chairperson. The local council chairperson is then required to inform UWA and police about the HWC reported to him. The police officer is expected to investigate the incident and share the findings with an UWA official.

Article 5 provides a detailed procedure for reporting the incident. The law provides that a victim of wild animal should inform the village Local Council Chairman, who writes them a letter to take to police. The police come and register the case. Photographs of the damage have to be taken, printed in hard copies and attached to the case file. The Chairman invites the UWA officer to come and assess the damage. Then the victim calls UWA to come and assess the damage, and depending on whether the case is crop damage, livestock injury or human injury, the victim also calls the District Agriculture, Veterinary or Health officer to assess and value the damage. Sometimes the District Officers delegate to the Sub-County Extension Officers. The district compensation rates are used to determine the value of compensation. However, the rates provide for only crops and trees, not livestock, human injury and death. Ideally, both the District and UWA officers should assess the damage at the same time, so that consensus is built but the schedules of the two stakeholders do not tally, and valuation is done at different times. This sometimes leads to different valuations and disagreements. Sometimes the District Officer cannot come on site, and relies on the UWA assessment. During the peak seasons of HWC, the cases are very many and district officers and UWA/QEPA staff may not be able to attend to all of them. In one of the districts, the Agricultural Officer based at sub-county was said to have refused to be involved in this process without official communication from government and UWA, since the compensation law provides that the District Valuer will assess the damage and assign a value, not any other officer.

Farmers complained about the long bureaucratic reporting procedure that affects both claimants of small amount of compensation and those that demand significant amount of money. To make matters worse, claimants incur costs associated with verification and registration, and once the compensation claims are submitted, UWA does not give a feedback or acknowledge the receipt. They also complained about the delayed HWCs compensation payments. In Nyakatonzi, the livestock keepers and the leaders claimed that they had given up and were no longer submitting claims as it was considered a waste of time and money.


25Kanungu District revealed during the consultations
Table 8 indicates the number of cases that were registered around QEPA in the period 2018-2022. Crop damage was the most prevalent form of HWC, accounting for 75% of the cases. It should be noted that most of the cases registered as single cases of crop damage actually include groups of farmers and the total claimed compensation amounts are substantial. Human injury accounted for 8.7% of the cases. The majority of the cases involved elephants (80.6%) and hippos (12.6%).

Table 7: HWC cases registered around QEPA in the period 2018-2022 and the Wildlife involved

<table>
<thead>
<tr>
<th>Forms of HWC</th>
<th>Number</th>
<th>%</th>
<th>Wildlife involved</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crop damage</td>
<td>77</td>
<td>74.8</td>
<td>Elephant</td>
<td>83</td>
<td>80.6</td>
</tr>
<tr>
<td>People injured/ killed</td>
<td>9</td>
<td>8.7</td>
<td>Hippo</td>
<td>13</td>
<td>12.6</td>
</tr>
<tr>
<td>Structures destroyed</td>
<td>6</td>
<td>5.8</td>
<td>Crocodile</td>
<td>3</td>
<td>2.9</td>
</tr>
<tr>
<td>Livestock injured/killed</td>
<td>5</td>
<td>4.9</td>
<td>Buffalo</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>Trees destroyed</td>
<td>5</td>
<td>4.9</td>
<td>Lion</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>Equipment destroyed</td>
<td>1</td>
<td>1.0</td>
<td>Warthog</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>103</strong></td>
<td><strong>100</strong></td>
<td><strong>Total</strong></td>
<td><strong>103</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: QEPA Records (this data is not comprehensive as data recording at QEPA has some gaps)

As earlier mentioned, the compensation process comes with a cost to the claimant. Sometimes the claimant has to incur the costs of transporting the police officer, the district officer and for printing the pictures, in addition to their own transport costs. In Kikarara the team was informed that sometimes the UWA officer also asks for fuel to come to assess the damage. When the evidence is put together, it is submitted to QEPA office, who also send it to Kampala for decision making on whether it is a legitimate claim and how much the compensation should be. Nonetheless, local communities reported that they were not fully aware of the compensation procedures and their responsibility.

With regards to the fishing enclaves, the compensation regulations do not cater for compensation of cases in the sanctuaries because the community is resident inside the park. The fishing communities are not aware of this, and they view it as discriminatory against them especially that the face higher risks of injuries and deaths from hippo and crocodile attacks. A case in point was in Hamukungu where it was reported that one of the residents was killed by an elephant in June 2022 within the enclave, but were informed that he did not qualify for compensation as the incident happened inside the PA. This, in addition to impounding cattle found inside the park has caused public outcry from the fishing communities and animosity towards park staff. There is need for regulations to guide on how such cases in the sanctuaries should be handled.

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26This data does not include Kanungu, Kamwenge and Mitooma Districts.
The compensation process takes time, yet people expect immediate help from UWA. Before the regulations came into force, UWA implemented the “compassionate” response in terms of medical assistance for injury, and contribution to burial expenses where there was death. But the current law does not provide for this. Only 2 people around the PA (from Kasese) were reported to have been compensated since the law came into force. These were said to be elites who hired lawyers to push their cases through.

There is apprehension among the communities because the compensation has taken too long to materialise. People have lost trust, and some of the communities that were consulted mentioned that UWA should rather establish effective problem animal control measures, than promise to compensate for the damage which is not materialising. The cattle keepers’ question why fines for illegal grazing in the PA are immediate, yet compensation for livestock injury take ages. This is in contrast with the quasi compensation scheme operated by Uganda Carnivore Program (UCP), headed by Dr. Siefert Ludwig who pays 50% of the cost of killed livestock to the farmer immediately. The pastoralists have come to trust this scheme more than the UWA compensation regulations. The Nyakatonzi pastoralists said they have refused to fill the compensation forms because they do not trust the system. However, the pastoralists in Nyakatoni and Hamukungu raised concern that the UCP feeds carnivores near the communities, encouraging them to stay around settlements and increasing risk of lion attacks. Although feeding the lions is meant to minimise the risk of eating poisoned prey, ideally, feeding the lions when near communities makes the residents perceive increased risk of attacking livestock which may in turn trigger retaliatory killings.

3.1.8 Challenges facing the compensation scheme

1. Exaggeration of damage - there is a danger of exaggeration. This is why in some case assessment UWA and District officials give conflicting reports. This would be best resolved by having joint assessments. However, the challenge is that the two stakeholders are overwhelmed by the demand of damage assessment and cannot always be available concurrently.

2. Availability of key players in the assessment process (police, agricultural officers, veterinary officers, health officers and UWA) in time is a challenge.

3. Uganda Wildlife Act, 2019 does not provide for compensating livestock or people attacked by wild animals inside protected area. As a result, Compensation Regulations have ignored HWC involving communities in the sanctuaries, yet these are legally located in the PA as wildlife sanctuaries. This has created negative attitude towards wildlife and encourages retaliatory killing of problem animals. In the past, UWA would offer compassionate support to affected families in the fishing villages which stopped as soon as the compensation scheme started.

4. The law did not foresee the costs associated with reporting and assessment of wildlife damage cases. These include both monetary and time costs.

5. Literacy levels among the communities are low, many victims cannot write, some get discouraged from going through the process.

6. Decision making process is highly centralised, yet the conflicts are at PA level, where PA managers should be able to take some decisions. There is a need to categorise levels of conflict into those that can be handled at PA level and those to be handled centrally. This could be based on the value of damage, for instance compensation claims of up to UGX 1,000,000 should be delegated to Chief Wardens to handle.

3.1.9 Reporting of HWC

An effective HWC management program requires a rapid reporting system to allow fast responses, and to ensure conflict data is captured and fed back into the program. If local people are not able to quickly report incidents then the entire management system cannot properly function. A viable reporting system must be user friendly and bottom-up, site-based, fully resourced.
with capacity, tools, funds and local willingness; linked back to compensation / incentives and rapid responses; time bound; and linked to preventative measures.  

The application of Earth Ranger Software and collaring of problem lions and elephants has enabled the Joint Operation Command Centre based at QEPA Head Quarter to monitor the movement of problem animals and report their presence near communities to responsible units to act before causing damage to community property. The network of community scouts has helped crop growing communities to report the presence of problem animals in their villages to QEPA staff for action. Where wild animals cause damage to property, injure or kill a person or attack livestock, the responsible person is expected to report to the Local Council 1 Chairperson or Police or UWA and in accordance with the Compensation Regulations. However, UWA is facing the challenge of institutional capacity to effectively attend to numerous cases reported from various villages due to shortage of manpower, inadequate fuel and vehicles to transport response team to affected villages on time.

Communities use telephone, write or walk to the nearest Police Station or UWA outpost to report the incidence of problem animals in their area. They also use Vuvuzela noise to alert the rest of the members of the attacked community. It is noted that most of the community scouts lack smart phones to capture data that would be integrated into QEPA SMART and Earth Ranger application for effective management decisions.

3.1.10 Poaching and other illegal activities

While PA staff and community members mentioned that some community members do report illegal activities to PA staff, not everyone reports. In both Kibimbiri and Kikarara Parish meetings, we were informed that community members rent accommodation to poachers from far, inform them of ranger patrol movements, offer labor to carry game meat from the PA and buy game meat from them. One community leader put it this way:

“We are all poachers in different ways, because we collaborate with poachers, by renting them accommodation and by not reporting them. The poacher is not just the person that spears the animal. Even the one who helps him to carry the meat from the park to the community for pay is a poacher, and so is the one who buys the meat knowing it is game meat”

(Community leader in Kibimbiri, Kihiki Sub-county)
3.1.11 Response to HWC

Response Teams are at the frontline between wildlife conflict and wildlife conservation. If Response Teams are not present shortly following an incident, the chance of an adverse outcome for people and the wildlife increases, and chances for an agreeable management response diminishes. A well-defined decision tree process that allows Response Teams to quickly reference and take action is key in HWC management. The PA law enforcement rangers and other supporting law enforcement agencies are key in the response system.

The QEPA management mentioned that in many cases there is delayed response to HWC cases due to technical and logistical challenges. HWC is both a Law Enforcement (LE) and Community Conservation (CC) issue, handled by these two departments. HWC emanating from communities (mainly poaching and illegal resource offtake) is managed by the LE Department. HWC caused by wildlife damage on the other hand is handled by the CC Department, which is grossly understaffed, ill equipped, and poorly facilitated. Therefore, the unit cannot adequately address HWC issues when available resources are insufficient. For example, there are only 7 Community Conservation Rangers (CCRs) in the whole of QEPA, and some ranger outposts have no CCR. The LE Department on the other hand has about 84 rangers, beefed up by the army. However, even the LE rangers are few compared to the size of the PA. On average there is a minimum of 2 rangers at an outpost, who cannot effectively handle all issues in their area of operation. However, during the peak HWC periods, temporary deployment of additional rangers is made to beef up available manpower.

Lack of mobility also delays response. Often when the ranger outposts are called to handle looming damage, they have no transport. The team was informed that QEPA has 32 motorcycles, of which 19 are in bad mechanical condition. The remaining 13 which are in relatively good condition are shared between the park Head Quarters (HQs) and the outposts. The PA also has only 10 motor vehicles, of which 3 are not fit for use. Ishasha sector has 2 of these, and Kyambura has 1, leaving only 4 vehicles in good condition at the park headquarters.

3.1.12 Availability of human and veterinary services for victims of HWC

In 2004 there was a major anthrax outbreak in QENP that killed at least 300 hippos which was 10% mortality rate and there have been other minor outbreaks since then. The unique nature of QEPA as a Biosphere Reserve and its continuity with a porous border of DRC exposes it to various zoonotic diseases. Foot and Mouth Disease has caused conflicts between PA management and some pastoral communities, due to claims of wildlife being the source of some the livestock diseases. To address some of the zoonotic disease transmissions, the PA now has a Biosafety laboratory, the Uganda Wildlife Diagnostic and Research laboratory for quick disease detection, identification and control so as to manage emerging and re-emerging diseases in the ecosystem. The lab hosts researches by UWA and other partners. Currently research is being done about diseases of the cattle corridor and Marburg. Farmers in the area can bring their samples to be tested in the lab.

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30UWA (2023): Queen Elizabeth Protected Area General Management Plan 2023/24 – 2032/33
The UWA Veterinary Officer on site and the UCP staff attend to emergency wildlife injuries. The lead person of the UCP project Dr. Seifert Ludwig also provides forensic expertise, which is needed in court processes involving wildlife killings. He also trains young vets, both volunteers and UWA staff in biosafety analysis and forensics, and is currently involved in transforming the laboratory at QEPA into a center of excellence.

The UCP initiated experiential tourism to raise funds for carnivore conservation and emergency response to wildlife injury. Tickets are sold at $100. The project utilizes $10 of each experiential tourism ticket to compensate livestock injured or killed by carnivores (payment of 50% of the value livestock killed). The project also offers veterinary services to cattle keepers.

Human injury cases are transferred to any nearby health center. Before the law on compensation was instituted, UWA would provide “compassionate” assistance to the injured in form of medical costs. However, that arrangement was stopped as soon as compensation regulations were gazetted in 2022.

3.1.13 Access to information

Access to information enables local people understand the current issues and trends in their community regarding HWC and lessons from other areas to adapt and apply them locally. Information is accessed through available media about recent events, hotspots, local solutions, trends etc. Both the PA management and local people should be able to share such information. The information system should include education on species and their behaviour, wildlife, monitoring, which can be shared through schools and other community events and forums. Community meetings, workshops, written reports, brochures; newspapers and site visits are also options for information sharing.

3.1.14 Community participation

Without active participation of communities, HWC management strategy is weak. Community participation determines the effectiveness of the rule of law, intelligence gathering, compensation schemes, reporting, and other livelihood support initiatives, response to HWC, monitoring and evaluation, interventions, education and awareness strategies. ‘Trust’ is a critical element that determines success of response to HWC, and processes of compensation. The more local communities are involved in decision making processes and development of local ideas, the more that trust can be built, and communities will take responsibility for the Safe System. In QEPA, communities effectively participate in reporting the presence of problem animals in their villages and damages they cause to property, human injury or death and livestock attack. Local people also participate in the implementation of HWC interventions.

However, due to the gaps in participation, there are community perceptions, attitudes and practices towards wildlife that create HWC. For instance, in Kameme one community member alleged that when they step in droppings of animals especially for elephants, they get foot diseases such as elephantiasis. In Rubirizi District most of the residents believe that animal products like Hippopotamus meat is believed to increase fertility and productivity in women. Some traditional healers associate certain wild animal parts like lion fats, elephant penis, and pangolin skins to mention a few with medicinal properties. All these beliefs promote illegal killing of animals, creating HWC and confrontation with protected area management. Demand for wildlife products for medicinal purposes is a major driver of wildlife trafficking. Hence, there is need for sensitisation and awareness creation about wildlife, the different species behavior and their ecology, to demystify the perceptions and unfounded beliefs about medicinal properties of wildlife body parts which is a driver for poaching and wildlife killings.
3.2 Safe Wildlife

The high level of protected area integrity as well as a healthy and viable population of wildlife species are paramount factors for healthy ecosystem. Realisation of a healthy ecosystem enhances wildlife conservation and ensures that wildlife is safe. In the safe system approach, a safe wildlife is one that has no interaction with humans or their livelihoods and is protected by law with harsh associated penalties for any violation. The need for large spaces for wildlife to roam and establish territory, adaptation to very diverse habitats and ecosystems, location of wildlife passages is inevitable and crucial. In areas of high human presence, the rapid rise in the human population and their need for more space for agricultural production, industrialisation, urbanisation, settlement and exploiting natural resources, lead to wildlife habitat loss and ultimately decrease the safety of wildlife. The enforcement of laws, regulations and guidelines protecting wildlife equally ensures the protection for its habitat. For the habitat to be safe, there is need for law enforcement team (such as rangers, wildlife police and community scouts and others) to devote to wildlife protection through consistent enforcement of the law. The law enforcement teams must have a legal mandate to deliver the law, remove threats, prosecute any violations, monitor and support the safety of the wildlife over the long term31.

3.2.1 Policy and Legislation

There are a number of conservation policies and legislations at various levels that support management of wildlife and its habitat as well as addressing HWC aspects.

a) The Constitution of Uganda, 1995

Article XIII of the Constitution requires the state to protect important natural resources including wildlife, while Article XXVII emphasizes the need to promote sustainable development for present and future generations. As such, wildlife resources should be managed to achieve this national aspiration. Part IV of the same article provides for the creation of protected areas including national parks and reserves.

b) Uganda Wildlife Policy, 2014

Objective 2.4.1 and 2.4.2 of the Uganda Wildlife Policy, 2014 highlight the need to promote sustainable management of Uganda’s wildlife populations in and outside protected areas respectively. In addition, objective 2.4.4 of the policy highlights the need to effectively mitigate human-wildlife conflicts. The Policy outlines various strategies to tackle the challenges of HWC, including:- i) establishment and maintaining barriers along wildlife protected area boundaries for all areas prone to stray wild animals; ii) generating baseline information on HWC cases; iii) establishing a special fund to support mitigation interventions; iv) investment of revenue sharing funds in HWC mitigation; v) compensating for losses occasioned by wild animals escaping from wildlife protected areas; vi) building the capacity of local governments and communities to address problem-animal and vermin control challenges; vii) developing and implementing national guidelines for problem animal and vermin management; and, viii) identifying wildlife species to be classified as vermin, problem animals and protected species.

c) Uganda Wildlife Authority Community Conservation Policy, 2019

One of the policy objectives is to develop and implement mechanisms for addressing HWC. The key strategies to realise this important objective include among others; the development and implementation of HWC Management Strategy, establishment and maintenance of barriers to control problem animals, putting in place mechanisms for supporting victims of problem animal attack, engagement of volunteers (community scouts) in the management of problem

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animals and vermin, HWC monitoring system, engagement and building the capacity of local governments and local community in problem animal control to effectively reduce cases of HWC as well as the creation of awareness about human wildlife interactions and associated potential zoonotic diseases.

d) **National Agricultural Policy, 2013**
One of the policy objectives is to ensure household and national food and nutrition security for all Ugandans by among others promoting application of appropriate technology and practices for minimising postharvest loss crops/food. Crop raiding by wild animals undermines the realisation of this policy objective. Therefore, implementation of barriers and other HWC interventions by UWA is in line with the National Agricultural Policy 2013 in terms of appropriate technology and practices that minimise crops before, during and postharvest process.

e) **The Uganda Wildlife Act 2019**
The Act mandates Uganda Wildlife Authority (UWA) to manage wildlife resources inside and outside protected areas. Section 2 (1) (d) highlights the need for the promotion of ecologically acceptable control of problem animals while Section 6 (i) mandates UWA to monitor and control problem animals and support capacity development of the district local governments to control and manage vermin.

Section 20 establishes a Community Wildlife Committee for each conservation area which is a grass root institution responsible for among others; to advise UWA and local community on matters of wildlife management and conservation as well as development around conservation area.

Section 54 of the Act provides for the declaration of vermin by the Board while Section 55 outlines procedures for hunting or killing vermin. The Act defines vermin as “any animal declared to be vermin under section 54” while problem animals include “any animal which poses a danger to human life or property”.

Section 83 creates a wildlife compensation scheme consisting of 2% of money collected by UWA from services it offers, money approved by the Parliament of Uganda and any other source approved by the board. The compensation claims are verified by a Wildlife Compensation Verification Committee established under Section 82.

Section 83(2) stipulates areas of compensation claims, including human death, injuries or damage to property caused by wild animal outside a protected area.

Section 84 provides for procedures for claiming the compensation. However, Section 85 of the Act provides for general indemnity making it clear that an action shall not lie against the authority for the recovery of damage caused to a person or property by an animal in wildlife conservation area.

Section 86 (k) empowers the Minister to make regulations that provide procedures for compensation for any injury or death caused to a person or damage to property caused by wild animals outside wildlife conservation area.

Section 86 (l) empowers the Minister to make regulations that operationalize the Community Wildlife Committee established under Section 20 of the Act.

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f) **The Local Government Act 1997**

Paragraph 5(b) under Part 2 of the Second Schedule decentralises and mandates districts to provide entomological and vermin control services. Paragraph 4 under Part 4 of the same schedule lists several functions and services that are be devolved by district councils to lower Local Government councils and one of them being the control of vermin in consultation with the Ministry responsible for tourism and wildlife and any other relevant Ministry.

g) **Uganda Wildlife Conservation Education Centre Act 2015**

The Act establishes the Uganda Wildlife Conservation Education Centre (UWEC) legal mandate to undertake conservation education across the country. UWEC also acts as a rescue and rehabilitation facility for injured and confiscated animals, some of which could be problem animals. The Act empowers UWEC in collaboration with UWA to raise awareness about wildlife conservation and management of HWC and play an active role in the capture and management of problem animals that pose a serious threat to the public.

h) **Uganda Wildlife Research and Training Institute Act 2015**

The Act establishes the Uganda Wildlife Research and Training Institute (UWRTI) with legal mandate to ecological research, consultancy, and capacity building. The Institute could play a significant role in conducting research on HWC issues such as appropriate interventions, driving factors, and social and economic impacts to mention a few.

i) **Uganda Wildlife (Compensation Scheme) Regulations 2022**

Article 4 compels a person who suffers from an incident that gives rise to a claim for compensation to report within 72 hours of the occurrence of the incident to UWA officials, police or the area local council chairperson. The local council chairperson is required to inform UWA and police about the HWC reported. The police officer is expected to investigate the incident and share the findings with UWA official.

Article 5 provides a detailed procedure for reporting the incident, highlighting avenues or form of channel through which HWC cases can be reported namely; phone calls, other electronic means or walking into UWA offices nearest to the conservation area and make an oral or written complaint. For oral reports, UWA official is required to make the report in writing to the authority. The regulations allow reports written in vernacular to be translated in English by the authority. Where the report is recorded by any other person other than complainant, the recorded report shall be read back to complainant to ascertain, sign or endorse with a thumbprint as a proof that it is a true and accurate statement of what was reported.

Article 6 guides on how the response to incident is managed which include investigation by the police or an assessment of the incident by relevant officer of the district within 12 hours of receipt of the report.

Article 7 highlights a set of conditions of compensation of injury or death of person. The key factor being that injured or killed person was not in wildlife conservation area. It should be noted that compensation scheme like the Act does not cover people living in fishing villages (sanctuaries) inside QENP.

Article 8 provides a list of documents required in the case of injury or death of person which include duly completed form, medical report, local council chairperson’s letter, certified medical bills, postmortem report in case of death and photographs.

Article 9 of the regulations sets conditions for the compensation of injury and death of livestock, the key being a proof that the incident never occurred inside the wildlife conservation area. This again leaves the residents of fishing villages who own livestock outside the compensation scheme.
Similarly, Article 11 sets conditions for compensation for damage to property and required which again leaves the residents of fishing villages inside QENP in dilemma. The subsequent articles indicate how claims for compensation are submitted (Article 13), verification of claims (Article 14) and one is very important is Article 18 that sets limits for compensation as follows:

a) In case of death, the limit is set at 20 million
b) Injury occasioning disability 15 million in addition to the actual medical bill.

J) National Environment Act 2019
The Act empowers NEMA in collaboration with the lead agency to develop guidelines on the identification of vermin as stipulated under Section 59 (2g). However, in Section 59 (3) the lead agency in this case, UWA is given the responsibility for ensuring that issued guidelines issued by NEMA are implemented.

k) Gazetted Vermin
The General Notice No. 74 of 2001 gazettes three wild animals namely; vervet monkey (Chlorocebus pygerythrus), olive baboon (Papio anubus) and bush pig (Potamochochoerus carvalus). This empowers the local government authorities play an active role in the management of vermin. However, many district local government lack technical capacity to deal with wildlife issues, including HWC. On positive note Kanungu District recently recruited a wildlife officer to handle matters of wildlife conservation.

l) UWA Strategic Plan 2020/2021 to 2024/2025
The strategy recognises the fact that local communities who live in and UWA protected area are often in conflict with wildlife because the wildlife inflicts on people’s property and sometimes injuries or loss of human lives. It takes note of absence of compensation for crop damage, human injuries and death has accentuated the problem. To address HWC challenge, implementation of the National Human Wildlife Strategy which sets priority management interventions is emphasised. Another strategic action highlighted is the strengthening the capacity of staff, district local governments and community scouts through training and equipping program.

m) The National Strategy for Managing Human-Wildlife Conflict 2020-2024
The National HWC Management strategy recognises the fact that HWC affects local economies and livelihoods by undermining food security, creating negative attitude by the public towards wildlife conservation and calls for engagement and therefore recognises the need to engage local community in HWC management.

The key strategic actions include mapping out HWC hotspot, implementing mitigation and management intervention, establishing effective communication system and monitoring system. The strategy also recognises the need to strengthen the capacity of UWA staff and stakeholders to effectively manage HWC. Some of the proposed strategic actions include; setting up a specialised HWC Management Unit, recruiting adequate staff, training and equipping staff and community scouts.

n) Convention on Biological Diversity
Uganda is a contracting Party to the Convention on Biological Diversity (CBD), which recognizes the dependency of indigenous and local communities on biological diversity and the unique role they play in the conservation of biological resources on Earth. This recognition is enshrined in the preamble of the Convention and in its provisions. Article 8(j) of the Convention on Biological Diversity obliges Parties to respect, preserve and maintain the knowledge, innovations and practices of indigenous and local communities relevant for the conservation of biological diversity and to promote their wider application with the approval of knowledge holders and to encourage equitable sharing of benefits arising out of the use of biological diversity.
**o) Convention on the Conservation of Migratory Species**
Uganda is a contracting Party to the Convention on the Conservation of Migratory Species (CMS) of Wild Animals, an international agreement between governments that provides a global platform for the conservation and sustainable use of migratory animals and their habitats. Uganda is therefore obliged to implement measures that ensure that migratory problem species are safe and protected from poaching and retaliatory killings from local people.

**p) East African Community Protocol on Environment and Natural Resources**
This protocol obligates Uganda to cooperate with partner states and promote sustainable management of wildlife resources in partnership with the local communities. The engagement of local communities in the implementation and monitoring the performance of HWC interventions is of paramount importance.

**q) Greater Virunga Transboundary Collaboration (GVTC) Treaty, 1991**
This provides a strategic mechanism for collaborative management of the Greater Virunga Landscape. It mandates member States namely Uganda, Rwanda and Democratic Republic of Congo to strengthen cooperation in the management and conservation of species and habitats with a view to enhancing ecological services and increasing socio-economic benefits. It is implied that the treaty supports the coordinated, collaborative and joint management of transboundary HWC cases involving problem animal species such as African elephant, mountain gorilla and buffalo that crisscross international borders. QENP being part of the greater Virunga Landscape would benefit from this transboundary cooperation and framework.

### 3.2.2 Policy and legal gaps

Whereas, the existing legal and policy framework provides a good environment for managing HWC cases, the aspect of not compensating residents in wildlife sanctuaries has created negative public attitude towards wildlife. It is understandable that the law does not allow compensation for life and property attacked inside protected area but as a public relationship strategy, UWA may reinstate a compassionate scheme to attend to cases that involve human death resentment. Another limitation is the long bureaucratic reporting and compensation procedures that cost claimants a lot of time and more financial resources to undertake the process. Government should consider reviewing the Compensation Regulations to reduce the bureaucratic compensation claim procedures as well as reporting system.

### 3.2.3 Prevention coverage of hotspots

The current HWC hot spots in QEPA are presented in Table-9 and Figure-18. The table also describes the issues at the various hotspots and the HWC prevention measures applied.
<table>
<thead>
<tr>
<th>Hotspot</th>
<th>HWC</th>
<th>Wildlife involved</th>
<th>Other issues that accentuate HWC</th>
<th>HWC prevention measures in place</th>
</tr>
</thead>
</table>
| Isango Sub-county-Nyakiyumbu-Nyakatonz-Nyamugasani, Nyamatungo to Kibirizi-Busunga subcounty | Crop damage, livestock attack, human injury and death | Elephants, Buffalos, Lions | • In Busunga, cattle keepers do not want the electric fence because they need to access the PA during dry season.  
• In L. Katwe Sub-county the park boundary line is still contested by residents  
• In Nyakiyumbu elephants are said to cross from the DRC – Virunga National Park | Crop guarding, occasional scare shooting |
<p>| Karusandara Sub-county and Nyamwamba Division in Mubuku Irrigation scheme | Crop damage | Elephants, Buffalos | No other issues | Crop guarding |
| Kyambura-Nyamusingingiri | Crop damage | Elephants | No other issues | Crop guarding |
| Masyoro, Kitagwenda | Crop damage, Human injury | Elephants, hippos | People cultivate up to the shores of L. George and riverine of River Bwindagi. There are high numbers of human injury because people frequently attempt to kill hippos for meat. A total of 14.2km of fence is planned for the area. However, in some sections the fence will have to be erected on community side to allow hippopotamus access to the river. | Crop guarding |
| Nkongoro Parish, Kamwenge sub-county | Crop damage, livestock injury | Elephants, Lions | No HWC prevention intervention yet. But the area is suitable for electric fencing | Crop guarding |
| Rukungiri District, Bwambara sub-county, Kikarara Parish: Buruka Nyatatembe, Nyankabungo A &amp; B, Rurambi, Kafunjo, Rwesigiro Villages, | Crop damage | Elephants | Increased human population, cultivation at the PA edge, cultivation in previous ranging areas of wildlife, and migratory route | Crop guarding, scare shooting |</p>
<table>
<thead>
<tr>
<th>Hotspot</th>
<th>HWC</th>
<th>Wildlife involved</th>
<th>Other issues that accentuate HWC</th>
<th>HWC prevention measures in place</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kiyanga-Mitooma-Rwoburunga and Kigyende sub-counties</td>
<td>Crop damage, elephant damage of structures attracted by fermented local brew</td>
<td>Elephants</td>
<td>In Mitooma District the boundary line is marked by a river accessed by both communities and wildlife. Also, some areas have steep hills. So, trenches and electric fence are not feasible. Live fencing and beelines are the feasible option at the moment.</td>
<td>Crop guarding</td>
</tr>
<tr>
<td>Kumbugu and Kazinga Upper, Rushoriza Parish Kameme and Kinyabutongo Villages in Kibimbiri Parish-in Kihhi Sub-county, Kanungu District</td>
<td>Crop damage</td>
<td>Elephants, Buffalos, Waterbucks, Uganda Kob</td>
<td>Increased population, cultivation at the PA edge, crops grown are vulnerable to elephant and buffalo damage, cultivation in previous ranging areas of wildlife, and migratory route Two land owners along the park boundary are contesting the boundary line and may delay electric fence installation</td>
<td>Crop guarding, wildlife scouts, scare shooting</td>
</tr>
<tr>
<td>Bukoobe and Nyanga Villages in Bukobe Parish in Nyanga Sub-county, Kanungu District</td>
<td>Crop damage</td>
<td>Elephants, Buffalos, Waterbucks, Uganda Kob</td>
<td>Increased population, cultivation at the PA edge, crops grown are vulnerable to elephant and buffalo damage, cultivation in previous ranging areas of wildlife, and migratory route</td>
<td>Crop guarding, wildlife scouts, scare shooting Proposed 7km electric fence may not be feasible in some sections because of the thick forest and soft top soil. Use of apiary should be considered as well.</td>
</tr>
<tr>
<td>Katwe-Kabatooro-Sanctuary</td>
<td>Human and livestock injury</td>
<td>Crocodiles and Hippos and Buffaloes</td>
<td>Due to reduced fish population in the lake, fishermen resort to fishing in the fish breeding zones, where the risk of crocodile and hippo attacks is high, increased human population, increased livestock population, increased crocodile population</td>
<td>7 cages installed on L. Edward. People use them to fetch water -Livestock watering trough</td>
</tr>
<tr>
<td>Hotspot</td>
<td>HWC</td>
<td>Wildlife involved</td>
<td>Other issues that accentuate HWC</td>
<td>HWC prevention measures in place</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------------------</td>
<td>------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Other Fishing villages</td>
<td>Human and livestock injury</td>
<td>Elephants, Crocodiles and Hippos, Bufallos</td>
<td>7 cages installed on L. Edward. People use them to fetch water, reduced fish population in the lake, fishermen resort to fishing in the fish breeding zones, where the risk of crocodile and hippo attacks is high, increased human population, increased livestock population, increased crocodile population</td>
<td>- Woody fences around homes and livestock kraals, some cattle lepers have installed solar lights along kraal edges that flash repeatedly and scare carnivals away - Kayanja fishing community urgently requested for crocodile cages to decrease injuries</td>
</tr>
</tbody>
</table>

*Source: Field Data compilation (30th June-5th July 2023)*
3.2.4 Impact of HWC on Species conservation

Poaching is a major HWC affecting species conservation. Any illegal killing of wildlife; such as for bush-meat trade, subsistence, trophy hunting and the killing of problem animals that have destroyed community crops, livestock or property, is a problem throughout QEPA, but the threat is especially high in the easily accessible wildlife corridors where wildlife is more visible and open to attack and more likely to stray into adjacent community land. A substantial loss of lions is reported in the Ishasha corridor and overall decline in population in the park, mainly attributed to poaching (poising) thought to be in retaliation for lion attacks on livestock and trade in body parts.

34WCS/CDC, 2008. Protecting the Wildlife Corridors of the Queen Elizabeth Conservation Area. QECA Corridor Action plan
In 2020, six (6) lions were killed in Ishasha sector allegedly targeted for trade in body parts. Poaching using snares has resulted into many untargeted animals being snared and the most affected species are elephants that get maimed or even die of the wounds.

Poaching for bush meat trade as source of income for the local people continues to be a major threat to the safety of wildlife. There is a flourishing bush meat market in the Democratic Republic of Congo (DRC) for Uganda communities. Information gathered during the WWF-UCO 2013 study on Illegal Wildlife Trade in the GVL revealed that a full grown hippo fetches about Uganda shillings six million (UgShs 6,000,000/=) approximately USD 2,000 in DRC.

In DRC, baboons and monkeys are a delicacy and so are hunted to supply mainly the urban centres. Baboons are considered vermin in Uganda and so are free and ready sources of income. The Ugandan communities therefore hunt and smoke primate meat to sell in DRC. Some of the key drivers of poaching identified in the WWF-UCO study were bush meat trade as an economic activity, increasing human population and rising demand for bush meat, weak governance, institutional deficiency, unemployment and limited alternative sustainable livelihoods and income streams, war and civil strife creating demand and access to guns and ammunition.

3.2.5 Positive linkages to reinforce wildlife conservation

When wildlife is seen as a valuable contributor to local development and livelihoods the communities have a much stronger foundation on which to maintain local tolerance of wildlife and ultimately coexist. Linking wildlife to human development and green economies can be explored in many ways at the landscape scale. Livelihood relies on wildlife or their habitat through tourism ventures or locally managed resources. The landscape may also have enabling conditions that could attract funding through external mechanisms such as product certification schemes, green bonds, payment for ecosystem services (PES) and REDD+ where benefits accrue to the landscape and communities to ensure the continued provision of those services. In QEPA revenue sharing scheme, the use of apiary (bee keeping) as an intervention for controlling problem elephants and promotion of local people to invest in community-based tourism ventures generate economic benefit to local people which in turn demonstrate economic value of wildlife to local communities.

Some residents in districts bordering QEPA have invested in tourist accommodation like Embogo Lodge, transport services and guiding services that create employment opportunities for local communities as well as a market for their agricultural products.

3.3 Safe Assets

The assets include all crops, livestock and structures. Crops and structure must be protected and livestock must be controlled and managed. Safe Assets are those that are managed through wildlife-friendly practices that ensure they do not interact nor come into contact with wildlife.

In most pastoral communities Safe domestic animals are only allowed to graze in designated areas stipulated through an agreed community land use and grazing plan, or within fenced areas. Livestock is herded and guarded in open areas by a person during the day, and is fenced or tethered at night. Domestic animals are usually supported with ongoing enhancement of their management through exploration of improved breeds, better pasture, and breeding regimes, graze in open spaces and have full visibility of their surroundings with the ability for a quick escape if required.

37Exchange rate: 1USD = 2,600 UG. SHS
In pastoralists grazing areas around QEPA this can be done through weed/invasive removal and habitat management program to ensure that predators do not have cover and escape is impeded. Programs to optimize livestock management rely strongly on hotspot mapping and active community participation in developing agreed land use and zoning plans.

Capital intensive and modern measures such as electric fencing and introduction of new breeds may come from local micro-credit schemes and innovation funds. In QEPA the Uganda Wildlife Act, 2019 does not provide for grazing of livestock in a protected area. It is indeed a crime to have domestic animals in a protected area, but the cattle keepers keep driving their cattle into the park citing limited pasture and water in their communal grazing areas.

In Nyakatonzi and Hamukungu some cattle keepers were assisted by one of the projects to put up predator proof fences/ kraals with solar lights to protect their livestock. According to beneficiaries, these night kraals are effective. This intervention should be promoted to help cattle keepers protect their livestock against night predators.

Safe crops are those that are guarded and protected and located within a buffer zone away from wildlife habitat areas, have fencing, barriers or deterrents separating them from wildlife, and are given extra protection during peak HWC times (e.g. seasonally, at night etc.). In this regard, QEPA lacks adequate clear buffer zone that shield the public against HWC. In addition to electric fence that has served communities within a protected boundary perimeter of more than 58 km, trench, night guarding and private investors especially those that have acquired land next to the protected area for accommodation.

Preventing crop raiding requires a combination of hard (walls, fencing, trenches, and early warning systems and improved resource and crop management), and soft resource and land use management solutions, resource and crop management, plus softer land use planning solutions in the longer term. The application of Earth Ranger Software in data collection as well as establishment of the Joint Operation Command Centre in QEPA has gone a long way to provide early warning of impending HWCs, by monitoring movement of animals (collared elephants and lions) which has improved information processing and dissemination. In terms of land use planning, QEPA management has in the past resisted crop growing as well as livestock rearing in sanctuaries (fishing villages/enclaves) to minimise HWC but this has not been successful.
3.4 Safe Habitat

Protecting habitats resolves one of the drivers of conflict – habitat loss, so conflict management system must value habitat protection as highly as human safety, and include actions to protect it. Habitats are the safe domain of wildlife, and the protection of habitat reduces the likelihood for wildlife to stray into human dominated areas and settlements. A Safe Habitat is one that is allowed enough space to foster ecosystem health and continuation of ecological processes. It has enough space to offer large range species space to roam and breed and maintain genetic diversity, and is protected in the long term from fragmentation, encroachment, clearing, selective logging, linear infrastructure and new settlements. It includes areas designated as “core no-go” zones for any development due to their vulnerability, and irreplaceability after disturbance, and provides sufficient buffer between human areas and wildlife.

As habitats are degraded and fragmented, the chances for encounters between wild animals, people, livestock and crops increases.

Wild animals can avoid disturbed or closed up areas due to invasive species and move further into forest systems or outside the PAs in search of more favourable areas, or wild animals can utilize least cost energy pathways to roam across their territory.

3.4.1 Land use and spatial planning

The HWC is highest in soft edge areas where wildlife, humans and livestock most overlap. It is pertinent therefore to as much as possible separate humans and wildlife and preferably at large spatial scales. This is typically achieved through either the relocation of settlements out of wildlife areas or through land use and spatial planning. Relocation of settlement is most relevant to the increasing human population and settlements in the fishing villages gazetted as wildlife sanctuaries. Zoning is used in most of the protected areas to delineate various areas of the protected area into specific allowable or prohibited activities within the larger area to secure the different habitats.

3.4.2 Maintaining a safe wildlife habitat through PA zoning

In terms of land use planning, UWA uses the concept of the zonation of protected area during the general management planning process, prescribing areas of core protection zone, minimum human activities, resource utilization, administrative use and tourism. It should be noted that QENP is a Biosphere Reserve which applies the concept of zonation of the core area with minimum human activities, multiple use and sustainable development (transitional zone). However, considering the fact that QEPA hosts human enclaves’ enforcement of these zones is a challenge.

More than half (55%) of the PA is prescribed as a wilderness zone, which ideally provides a high level of protection to the natural vegetation of the PA. The permitted activities are limited to: education, research and monitoring activities, overnight utilization by approved researchers and PA staff only, day and night utilization by visitors on designated routes and camps, fire management activities, law enforcement patrols and access to cultural sites under agreed terms and conditions. Figure 20 indicates the QEPA management zones.

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39 Ibid
Table 1: Summary of the different zones in QEPA

<table>
<thead>
<tr>
<th>ZONE</th>
<th>AREA (Sq. km)</th>
<th>PERCENTAGE AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Wilderness zone</td>
<td>1,085</td>
<td>55%</td>
</tr>
<tr>
<td>2 High impact tourism zone</td>
<td>389</td>
<td>20%</td>
</tr>
<tr>
<td>3 Restoration zone</td>
<td>157</td>
<td>8%</td>
</tr>
<tr>
<td>4 Collaborative resource zone</td>
<td>138</td>
<td>7%</td>
</tr>
<tr>
<td>5 Low impact tourism zone</td>
<td>119</td>
<td>6%</td>
</tr>
<tr>
<td>6 Administrative zone</td>
<td>89</td>
<td>5%</td>
</tr>
</tbody>
</table>

3.4.3 Habitat quality and evasive species

For QEPA, the major habitat concern is that the ecosystem has been severely affected by various invasive plant species especially sickle bush/Kalahari Christmas tree (*Dichrostachys cinereal*), latana (*Lantana camara*), congress weed (*Parthenium hysterophorus*), water hyacinth (*Eichhornia crassips*), Siam weed (*Chrolaena ordata*), prickly pear cactus (*Opuntia vularis*) and spear grass (*Imperata cylindrica*). These are negatively affecting the abundance, and distribution of several herbivores in the invaded areas. According to the PA management, about 30-40% of QEPA has been closed up by invasive plant species. For instance, *Dichrostachys cinerea* is not a palatable shrub and is avoided by wildlife, including African elephant due to its sharp, hard thorns. Once *Dichrostachys cinerea* has fully established, it tends to lock up occupied...
areas, restricting animal movements and ranger patrols. It also suffocates pasture and other plants and eventually dominates affected areas. When fully grown, it obscures tourist game viewing capacity while on game drives.

The degradation of wildlife habitats by invasive plant species is a serious threat and challenge to ecosystems integrity both inside and outside wildlife protected areas as they out-compete the rest of the plant species include pasture and forage for the gravers and browsers. Some of the invasive plant species are the heaviest users of water, and in semi-arid areas these impacts are felt greatly by wildlife and associated ecosystems. Currently, the spread of invasive plant species has significantly reduced the grazing space for herbivores. This has a direct bearing on the wildlife protected areas’ carrying capacity, availability of wildlife feeds including prey, breeding cycles and ecosystem stability. Subsequently, animals are displaced, affecting tourism activities and increasing human-wildlife conflicts.

According to the Principal of the Uganda Wildlife Research and Training Institute, various invasive species eradication methods are being studied in sample plots by the Institute.

In the meantime, UWA is using mechanical approach to physically remove the invasive species. So far 102ha has been cleared however to have real impact the eradication teams must make annual removal of germinated seedlings using manual methods to keep the area free of invasive species. In the 2023/2024-2032/2033 QEPA General Management plan, 8% of the PA will be restored within the Katunguru-Mweya area which forms the restoration zone. In addition, the World Bank is in the process of funding a scientific study that will map the coverage and distribution of invasive species in QEPA to guide management on appropriate intervention and method to manage invasive species.

Figure 21: Map showing extent of invasive species in QEPA (Source: UWA, 2023)

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40 UWA (2023): Queen Elizabeth Protected Area General Management Plan 2023/24 – 2032/33
Another factor that determines the safe habitat in QEPA is that the prolonged droughts have caused scarcity of water for wildlife forcing problem animals like elephants and other species to migrate beyond protected area boundaries in search of water and pasture, increasing cases of human-wildlife conflicts, sometimes resulting into the loss of human life or retaliatory killing of some wild animals. This was reported in Kameme where local communities use the wetlands on the edge of the protected area to grow rice and whenever wild animals come for watering, they end up destroying the crops.

3.4.4 Habitat degradation and fire

The application of prescribed fire is used to improve the quality of the habitat because it is used to generate young and nutritious pasture and kill parasites such as ticks. However, once the fire is not prescribed it may not be easily controlled and cause the damage on the habitat, property and infrastructure. For example, poachers use fires as a hunting tool, to attract wildlife to the lush grass to hunt them, or to herd animals into hunting nets. The two-dry season of December-January, and June-August are characterized by widespread fires in the PA. The fact that QEPA is crisscrossed by many access roads also exposes it to accidental fires, and some fires spread from the adjacent farmlands41.

3.4.5 Threats to wildlife habitat size in QEPA

a) Habitat fragmentation

Wildlife Conservation Society (WCS) and Conservation Development Centre (CDC)42 identified corridors that play an important role in the functioning of the GVL ecosystem and in the protection of key habitats, and are especially crucial in enabling the movement of large mammals from one part of the ecosystem to another, in particular elephants, lions, chimpanzees and large antelopes. These corridors play a pivotal role in ensuring the ecological integrity of the Greater Virunga Landscape, but also would contribute towards the reduction of human-wildlife conflicts and the improvement of sustainable livelihoods of communities living alongside the wildlife corridors. However, these corridors have over time reduced in size or wiped out altogether due to human settlements and cultivation.

The PA management expressed concern that if these corridors are not secured the long term survival of wildlife in QEPA will be in jeopardy as the GVL conservation habitat will be fragmented leaving some animal populations isolated in areas that may not have sufficient feeds, or limited escape routes making them more vulnerable to poaching and increased HCWs triggering retaliatory killings. Figure 22 shows the key QEPA wildlife corridors and dispersal areas that are critical for ecological and wildlife populations stability. The WCS/CDC, 2018 action plan for protection of these corridors, and the strategies and actions identified therein are still valid and should be adopted.

Figure 22: Map showing the wildlife corridors that enable movement of animals across the Ecosystems (Source: WCS/CDC, 2008)


42WCS/CDC, 2008. Protecting the Wildlife Corridors of the Queen Elizabeth Conservation Area. QECA Corridor Action plan
Apart from poaching which is the main threat to the elephant conservation in the QEPA corridors, the other major threat to the elephant conservation is the shrinking size of the corridors due to encroachment from human populations and agricultural conversion of land right up to the corridor boundaries. In Muhokya Town Council, the expansion of the settlements has narrowed the corridor making it difficult for elephants to use the corridor. In the QEPA-component of the greater landscape, seven (7) critical wildlife corridors, four in savanna areas and three in forests were mapped out, which by 2008 still had the potential to be reclaimed and gazetted as wildlife corridors. Their status today has to be verified. These included 4 forest corridors and 3 savannah corridors as presented in Table 9 and Figure 22. These corridors need to be salvaged as a matter of urgency.

Table 9: Key wildlife corridors that need to be salvaged to ensure ecosystem health

<table>
<thead>
<tr>
<th>Savannah corridors</th>
<th>Key Species</th>
<th>Key features</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ishasha corridor linking southern QENP to Virunga National Park in DRC</td>
<td>Migrations of Elephants, Topi, Lion, Hertbeest Buffaloes, Hippos and other large mammals</td>
<td>• Transboundary wildlife migration between QECA and Virunga NP  • Vital to the health of the GVL  • Riverine woodlands along the Ishasha River, and extensive woody grasslands important for Topi and the tree-climbing lions  • Major threats to the lion population results from human-lion conflicts</td>
</tr>
<tr>
<td>2. Bwera corridor linking northern QENP to Virunga NP in DRC</td>
<td>Elephants</td>
<td>• Provides the second link between QENP and VNP  • Serve as the only protected migratory route for wildlife moving from DRC to the northern sector of QENP.</td>
</tr>
<tr>
<td>3. Muhokya corridor within northern QENP</td>
<td>Elephants, Uganda Kob, Waterbuck and Buffalo</td>
<td>• Narrow strip of QENP west of Lake George, which links the Kasenyi and Dura regions of the park.  • Muhokya village enclave narrows the corridor to about 100 metres width</td>
</tr>
<tr>
<td>4. Dura corridor linking northern QENP to Kibale NP (at Kiryatete)</td>
<td>Elephants movement between Kibale &amp; QENP</td>
<td>• Links QEPA to Kibale National Park (KNP) and is part of the Lake George Ramsar site  • Important for elephant movement between QEPA and KNP  • Severely affected by poaching and heavy metal pollution from the past and present mining operations.</td>
</tr>
<tr>
<td>Forest corridors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Kyambura-Buhindagi/ Kasyoha-Kitomi corridor (Irimya Village)</td>
<td>Elephants, Chimpanzees &amp; other primates</td>
<td>• Links KWR to Kasyoha-Kitomi Forest Reserve  • Averages about 600 metres in width, but reduces to only 300 metres at its narrowest section</td>
</tr>
<tr>
<td>6. Kyambura Gorge corridor linking Kyambura and Kasyoha-Kitomi (Kigarama Village)</td>
<td>Chimpanzee and other primates, birds and lions</td>
<td>• The gorge is home to chimpanzees and other primates, lions and diverse birdlife, and provides an important corridor for primates (especially chimpanzees) to connect between Kasyoha-Kitomi Forest Reserve and Kyambura Wildlife Reserve  • A significant portion of this riverine corridor passes through community land.</td>
</tr>
<tr>
<td>7. Kasyoha-Kitomi / Kalinzu-Maramagambo</td>
<td>Elephants and various other mammals</td>
<td>• About 3 kms in width, mostly grassland  • NFA allowed local people to establish pine and eucalyptus plantations in the area  • Facilitates primates and elephant’s movement, and also connectivity for wild pigs, duikers, striped jackal, serval cats and genets</td>
</tr>
</tbody>
</table>

Source: WCS/CDC, 2008
Figure 23: Elephants along Katunguru-Ishasha road, elephants are highly migratory animals and loss of their migratory routes is a serious concern for conservation and human elephant conflicts

b) **Linear infrastructure development**

The PA has many roads crisscrossing the PA. These expose the PA to various threats including poaching, fire, waste dumping and other illegal activities.

c) **Settlement**

The PA is a Biosphere Reserve, with 11 fishing enclaves within its boundaries. At the same time the PA is surrounded with dense human settlements and human population which has greatly increased over time. Population within the enclaves has greatly increased since the creation of the park, now estimated to be more than 40,000 people. (Per. Comm. QEPA Management). The bylaws on enclave operations have since broken down, and people even started selling plots of land. Park management mentioned that in Kahendero and Katwe-Kabatoro people have shifted the pillars that mark the enclave boundaries. There have also been demand for more land from the PA. Initially the population in the enclaves were involved basically in fishing. Over the decades the range of activities and land use in the enclaves have changed. Livestock were introduced and their numbers have increased. People have constructed permanent houses and business is booming. All this creates pressure on the PA resources from both within and outside its boundaries.

The 2018 wildlife census counted about 6,000 cattle in the wildlife sanctuaries, a number too high to be sustained within the fishing villages given the limited land (Per. Comm, PA Management). Livestock grazing in the sanctuaries has increased HWC. Livestock is easy prey for lions, and when the livestock are injured or killed, some owners poison the carcass to kill the lions, but other animals such as leopards, hyenas, elephants and vultures end up also being killed.
The status quo also increases incidence of zoonotic diseases such as anthrax. As a result, the lion population has been decreasing. When the PA management resorted to impound cattle found grazing in the park, the pastoralists started grazing at night. The situation is complicated by politics, where politicians rush in to support community claims without adequate information (Per. Comm, PA Management). A selected committee of UWA, Ministry of Tourism Wildlife and Antiquities (MTWA) and the community has been put in place to engage and resolve these issues. Regulations for sanctuaries are being developed by the MTWA. While one of the strategies to be implemented in the 2023/2024-2032/2033 QEPA General Management Plans is to ensure that livestock is eliminated from the sanctuaries to minimize the negative impacts created and promote natural regeneration as well as reduce the HWC.

3.5 Effective Monitoring and Evaluation

Monitoring is a cornerstone of effective HWCs management because it facilitates the process of determining if mitigation interventions are achieving the desired results and objectives. Monitoring enables wildlife managers to capture and analyze HWC data on problem animals, prone areas, seasons of attack, common victims, to mention a few and by doing so appropriate decision is made on how and where to direct HWCs management resources, targeting the right locations and HWCs issues. The results of monitoring data analysis can be used to inform local communities on lessons and most effective preventative measures. In addition, the PA management is able to understand local people’s tolerance levels with wildlife. UWA has a two-layer monitoring system namely the specific protected area (field) based and UWA H/Q national based HWC monitoring approach.

3.5.1 QEPA Human Wildlife Conflict Monitoring System

Queens Elizabeth Protected Area has a fully-fledged Joint Operation Command Centre (JOCC) where investigation, intelligence and law enforcement data are collected, processed and analyzed and thereafter the processed information is given to concerned departments for appropriate action. JOCC is more or less a data processing house that disseminates the product of analyzed data to concerned departments. The center uses both SMART and Earth Ranger application software and technological approaches.

For HWC cases, Earth Ranger Application tracks the movement of collared lions, elephants and vultures to detect the presence of problem animals close to the protected area boundary as early warning indicator which triggers management actions. The major contribution of Earth Ranger system is that it has enabled management to easily determine HWC hotspots areas of the park boundary where problem animals cross into community land. However, the application is not yet well integrated into other aspects of HWC such as the implementation and effectiveness of mitigation interventions, and; mapping the extent of problem animal crop damage.

Another field-based monitoring approach is entrenched in the HWC compensation verification reporting protocol which include inspection and documentation of crop damage, human injury and death caused by wild animals. At the field level, monitoring the status of the electric fence was being done by a team called fencers; 1 fencer is responsible for 5 km, while 25 km are managed by fencer supervisor, fencers report to the fencer supervisors or the CCRs. The fencers are employed by UWA as casual laborers; however, there is low motivation because they are not formally employed. This arrangement was incorporated in the maintenance and monitoring structure of the fence to ensure sustainability of the monitoring component.

\(^{43}\text{UWA (2023): Queen Elizabeth Protected Area General Management Plan 2023/24 – 2032/33}\)

\(^{44}\text{Ibid}\)
Monitoring of the electric fence covers the following:

a) Looking out for any areas that are cut, and any suspicious people that may damage the fence
b) Identifying overgrown bush along the fence that may interrupt the electric current/voltage
c) Clearing bush along the fence
d) Looking out for weak wires and connections that may need replacement.

3.5.2 UWA HQ Based Human Wildlife Conflict Monitoring

The Community Conservation Unit on weekly basis receives information on HWC from protected areas which is used to compile weekly reports to top management. The weekly reports are used to compile quarterly and annual reports on HWC.

At the same time, the Monitoring and Evaluation Unit has developed a monitoring tool that captures data on problem animals and the kind of damage they cause. The tool captures date and place (village, parish, sub county and district); location of HWC occurrence, the problem animal involved, the nature of the conflict it has caused (crop damage, human injury/death or livestock attack), the extent of damage (for crops it is in terms of acreage of crops damaged), interventions or actions taken and the gender of the affected person including; the compensation claims and verification reports that contain information on problem animal damage and estimated monetary value of the damage.

The major limitation of UWA H/Q based monitoring system is the absence of feedback mechanism that allows easy response or sharing the analyzed data with the field team and affected local community and or individuals. There are no clear evidence that HWC monitoring outputs influences prioritization of protected area activities and allocation of financial and human resources to address HWC in hotspot areas. For instance, Kamwenge, Kitagwenda areas with increased cases of problem elephants and Kyambura Wildlife Reserve are manned by one Community Conservation Ranger.

3.5.3 Relevance of Monitoring HWC

Considering the fact that the Uganda Wildlife Act 2019 provides for compensation scheme for damages caused by wild animals, monitoring of problem animals and taking action before they cause a damage to property is of paramount importance in minimizing HWC. Monitoring and verification of damage is also key in the valuation of property destroyed by wild animals and ensuring that the compensation scheme is transparent, addresses genuine claims and the money paid is commensurate to the damage caused.

3.5.4 The Role of Communities in Monitoring of HWC Management

The local community plays a key role in reporting the incidences of HWC and providing information on affected wild animals, the nature of damage and location of the occurrence. The information provided is then verified by UWA and Police. The local community also provide labor force for implementing mitigation interventions such as trenches, electric fence and live hedge of Mauritius thorny trees. For instance, electric fence supervisor who takes charge of 25 km and the fencer that monitors 5 km of the fence responsible for routine inspection and assessment of the state of the electric powered fence are from the local community. The KIPACA women group in Kyezanza where the electric fence was erected revealed that the local people had taken it upon themselves as their responsibility to report weak points of the fence that could be used by wild animals to escape into people’s crop fields.
Local communities select volunteers who act as community scouts that participate in chasing away problem animals and reporting HWC cases in their villages to the nearest UWA outposts and wildlife management centers. Some scouts can be trained in the use of monitoring tools like GPS and smart phones to collect and forward HWC related data to the protected area management. The key parameters for which community scouts may collect data include damages on barriers like the electric fence, trenches and beehives, vandalisation and destruction of the electric fence (cutting escape points by poachers), areas of electric fence that require regular maintenance.

3.5.5 Gaps and challenges of HWC monitoring at QEPA

The main challenges facing HWC monitoring at QEPA include the following:

• Manpower; human resource capacity in terms of skills and numbers - The Monitoring Unit of QEPA is understaffed and there is a need to strengthen the capacity of the unit to effectively and efficiently monitor HWC cases which are widespread.

• Inadequate tools and equipment; such as appropriate software and infrastructure like GPs, computers, data collection tools like smart phones for data collection, analysis and dissemination.

• Inadequate financial capacity; resulting into limited budgetary allocation to the Monitoring Unit.

• Inadequate integration and utilisation of monitoring data and information to inform protected area management for informed decisions making and adaptive management.

• Weak mechanisms for disseminating results of monitoring to stakeholders and decision makers.
4.0 GENERAL OBSERVATIONS, CONCLUSIONS AND RECOMMENDATIONS

4.1 Observations

- The challenge of HWC in QEPA is real because of the presence of many people in fishing villages inside the protected area, lack of buffer zones or migratory routes, leading to frequent human interaction with wildlife.

- The number of HWC cases have been on the increase but reducing in areas already covered by the electric fence. Indeed, crop farmers who have benefited from the electric fence are happy and appreciate the intervention that protects them and their crops from the wild animals enabling them to get good harvests. However, this is contrary to cattle keepers’ view of the electric fence as a barrier for grazing inside the PA.

- Application of Earth Ranger Software and the concept of Joint Operation Command Centre has eased monitoring of problem animals and enhanced the delivery of an early warning system of HWCs.

- HWC response is greatly impeded by limitations of manpower and mobility. To be effective in responding to the numerous HWC cases, there is need for more staff that is well facilitated with transport.

4.2 Conclusions

- Electric fence has proved to be effective against African elephant which is a notorious problem animal that is the most destructive. Where electric fence has been erected crop harvests have improved, night guarding by men stopped, freeing labour to other productive activities and creating stability of families. The electric fence, though expensive to establish and maintain, will greatly reduce the cost of HWC response.

- Invasive species both on communal grazing area of Nyakatonzi and within QEPA have degraded habitat and accentuated the problem of HWC. This has undermined relationship between the pastoral community and PA management.

- Compensation for damage caused by wild animals is a good concept but the bureaucratic procedures for reporting and processing claims has created added costs to the victims, delays in releasing funds and dissatisfaction amongst affected communities, creating negative attitude towards wildlife. It is important that mechanism to expedite the reporting, verification and compensation process is developed and implemented.

- There are a number of partners supporting numerous interventions related to various components of HWC. It is absolutely necessary for some of these partners to support aspects like invasive species control, funding electric fencing, and acquisition of corridors and wildlife migratory routes.

- The existing legal and policy framework provides for HWC management. However, the aspect of compensation needs to be reviewed to address the problem of bureaucracy involved in claiming compensation.

- Whereas, QEPA has adopted technology in the monitoring of HWC, it is crucial to integrate community scouts’ activities in the Earth Ranger application to be able to capture data on the crop damage by wild animals, HWC interventions and problem animals.
4.3 Recommendations

Based on the findings, the assessment proposes the following recommendations:

**Status of HWC and management in QEPA**

HWC incidents are on the increase. Although crop damage dominates HWC cases (89.5%), human injury (4.1%) and death (1.6%) attract more public outcry and resentment to wildlife than crop destruction and property loss. Crop farmers perceive electric fence as a great relief to HWC challenges but on the other hand cattle keepers see it as a hindrance to accessibility to pasture and water resources inside the PA. In areas where reformed poachers have been engaged in alternative income generating activities, PA management has noticed that the level of illegal activities have reduced. Dependence on crop and livestock only makes local communities more vulnerable. A number of HWC management interventions, including electric fence, trenches, use of bees and Mauritius thorny tree are implemented.

**Interventions:**

1. Put in place mechanism for minimising human attack by wildlife and where it occurs PA management response and feedback should be done swiftly. Specifically UWA/QEPA to:
   a) Allocate more resources both human, logistics and financial to the Community Conservation Department designated to manage HWC to enable it effectively respond, manage and implement interventions to address HWCs.

2. Intensify conservation education campaigns and engage cattle keepers in modern livestock practices with the following specific actions
   a) WWF or other UWA Partners should, in collaboration with UWA support the livestock keepers to eradicate invasive species in the communal grazing rangeland to make it more productive and to reduce cases of predators attacking livestock. Community leaders indicated they had worked with WWF to assess the magnitude of the problem before COVID pandemic and it would be prudent to resume collaboration and support.
   b) Build the capacity of cattle keepers to adopt modern livestock farming practices, access veterinary services, implement climate smart or green projects, restore grazing area/habitat and manage community based and or cultural tourism.
   c) Support communities to have permanent water sources for livestock within their communal grazing area from R. Nyamugasani instead of driving cattle long distance to watering points.
   d) Support and build capacity of the cattle keepers to establish predator proof kraals with lighting to prevent night predator attacks to livestock. Similar kraals were reported in Hamukungu village to be effective in preventing predator attacks to livestock.

3. Scale up the WWF-UCO reformed poachers’ alternative livelihood/income generating enterprises programme in Kameme to cover other areas and where possible the entire PA. Specific targets and actions:
   a) Extend the programme to HWC community scouts who should be trained, equipped and organized into strong cooperatives or associations and supported with income-generating projects as motivation and incentives for participating in HWCs management. For instance equipping trained scout leaders, smart phones would enable them collect HWC monitoring data and feed it into SMART and Earth Ranger system.
   b) WWF effort to support reformed poachers in alternative income generating projects be extended to cover other organized community groups with no access to alternative incomes sources especially the youth who are prone to recruitment into poaching due to unemployment and limited alternative sustainable livelihoods engagement

4. Secure financial and human resources to expedite electric fencing and other viable interventions.
HWC mitigation mechanisms around QEPA

Revenue sharing
There are concerns among the community beneficiaries of revenue sharing scheme and the protected area management that the scheme has not adequately achieved the intended objectives of offsetting costs incurred by communities living adjacent to wildlife. The local government entrusted with disbursement of funds view RS as free money and often divert the funds to projects not identified and endorsed by the beneficiaries, there is lack of transparency and accountability. There is no effective supervision and follow-up of the projects. The beneficiary groups are not empowered to monitor the quality of projects and this leads to poor quality work. Specific actions to improve RS projects implementation:

Actions

a) UWA Partners like WWF Uganda should support and build capacity of community leaders in areas of good governance so that they can effectively and appropriately manage revenue sharing funded projects.

b) Since revenue sharing is a conditional grant, it is important for UWA/QEPA and the local governments (both district and subcounty) to put in place measures that include participation of local communities/beneficiaries to enforce value for money, accountability and monitoring of revenue sharing funded projects.

c) It may be wise for UWA/QEPA to shift the livelihoods projects fund to some of the successful community SACCOs, which have proven to spur local community and individual households’ development instead of buying and distributing goats.

Compensation scheme
The long bureaucratic reporting and verification procedures make the compensation scheme costly to the affected individuals and together with delayed compensations have discouraged the victims and in some communities people have lost trust in the scheme. Other challenges include highly centralized decision making causing further delays. Compensation Regulations do not provide for HWC involving communities in the sanctuaries and yet these are very vulnerable to attacks by wildlife causing injuries or death including loss of property like livestock. There is also a general lack of awareness among the local government players and the communities about how the scheme is support to work. The local government players, Police and even UWA field staff supposed to facilitate implementation of the scheme are lack the requisite capacities to execute their roles effectively.

Actions

a) UWA in collaboration with partners should develop and implement awareness and education program to educate the community about the compensation regulations and reporting process.

b) UWA should put in place mechanisms for expediting compensation process so that claimants with clearly documented and valued cases are handled early enough so that they do not resort to court. This will reduce the cost of compensation and build community trust.

c) UWA Officers need to be present at the point of valuation of the damage by the district officers. This will ease consensus and build confidence in the process.

d) UWA to categorise levels of conflict into those that can be handled at PA level and those to be handled centrally. This could be based on the value of damage, for instance compensation claims of up to UGX 1,000,000 can be delegated to Chief Wardens to handle.

e) Support UWA and MTWA to initiate the review process to address the legal gaps (mechanism for improving the enforcement of the compensation scheme)
Safe Asset

Predator proof fences/kraals set up with support with development agencies have proved to be effective but are still being implemented on small scale. Erection of electric fence is effective in controlling problem elephants in areas already covered by the intervention (58.8 km) but has shifted the problem to new communities not yet served with electric fence. Absence or inadequate buffer zone and corridors has promoted regular interaction between wildlife and people leading to HWC. The safety of assets is also compromised by presence of domestic animals in fishing villages/ wildlife sanctuaries inside QEPA.

**Actions**

a) Support efforts to scale up the use of predator proof kraals to safeguard livestock at night.
b) Support efforts to extend electric fence to cover hotspots,
c) Explore the possibility of acquiring vital land/areas for game/wildlife corridors and buffer zones.

Safe Habitat

The concept of zonation is used in QEPA to delineate various areas of the PA into either allowable or prohibited activities. Zonation is applied during the general management planning process and is a key tool for managing UNESCO biosphere reserve like QENP. About 55% of PA is set aside as wilderness zone where human activities are highly restricted. Invasive species have colonized vital wildlife habitat and breeding sites, forcing wild animals to look for new sites beyond PA boundary leading to HWC. At the same time, invasive species especially lantana have degraded communal land and become hideouts for predators that attack livestock in Nyakatonzi Subcounty leading to HWC. UWRTI has established invasive species research plots. Climate change and variability have led to unpredictable seasons. Prolonged droughts force wild animals in some parts of the PA to go outside in search of water and pasture. For instance, in Kameme, Ishasha Sector, people face a lot of HWC in a dry season because the same wetland they use for rice growing is also utilised by wild animals as a source of water. Habitat fragmentation due to loss of and or degradation of wildlife corridors and dispersal areas is threat to habitat size and quality and ecosystem integrity and stability of wildlife populations especially flagship species like elephants, lions, Chimpanzees, Leopards.

**Actions**

a) Support residents of fishing villages to come up with land use plans that promote the compatibility of their activities with wildlife
b) Support the PA invasive species management strategy and interventions
c) Support the livestock communities to eradicate invasive species e.g. Lantana in Nyakatonzi in communal grazing rangelands and engagement in modern livestock farming practices as well as climate change adaptation projects like valley dams to hold water inside the communal grazing area.
d) Support UWRTI research agenda/program on invasive species
e) Build the capacity of local communities to mitigate and adapt to the effects of climate change and variability.
f) WWF should support UWA and Local Governments to come up with appropriate land use plans to ensure that human activities in enclaves are compatible with wildlife conservation and minimise HWC
g) UWA to engage partners and land owners to explore the possibility of acquiring vital corridors to ease wild animal migrations and dispersal; acquisition of land and buffer zone in Bwindi Impenetrable National Park (BINP) can be benchmarked for applicable lessons.
Monitoring system

Both field and UWA HQ monitoring system exist. However, the current system is not well integrated with community-based activities such as community wildlife scouts' operations as well as HWC compensation claims and reports. Use of SMART and Earth Ranger Software applications have improved the monitoring/ tracking of collared problem animals and whenever they are about to cross PA boundary, responsible units are alerted to take appropriate actions.

Actions

a) Integrate community HWC management interventions into SMART and Earth Ranger systems.

b) Train and equip community wildlife scouts to ease data collection.

Specific Actions for fishing villages/sanctuaries to enhance People safety, Safe assets, Safe Wildlife and Safe Habitat therein.

1. Promote education and vocational training centres for the youth in trades such as carpentry, welding etc., tourism services, so that more youth are motivated to move out poaching or not to join; UWTRI could consider offering appropriate incentives for training youths from the fishing villages.

2. Promote fish farming/caging to increase of fish production and lessen interactions with crocodiles and Hippos while fishing.

3. Extend crocodile cages to adequately cover the fishing villages to minimise on the public outcry of human attacks and killings.

4. Continued to support income generating projects and enterprises like community tourism, that are compatible with wildlife.

5. Support the fishing associations to adopt alternative clean energy sources like charcoal briquettes, modern fish smoking kilns and solar powered fish drying racks.

6. Government should develop and enforce a legal instrument that would regulate human activities and exclude or eliminate domestic animals/livestock in wildlife sanctuaries (enclaves) inside QEPA to minimize the interaction of livestock and wild animals and ultimately minimizing HWC.

7. UWA/GoU to develop Regulations on how to address HWC events and compensation of cases that occur in the fishing enclaves as the people there are legally residents.

8. Support UWA & MTWA to initiate the process to develop and enforce legal instrument to regulate human activities like no permanent commercial structures, crop cultivation and sale of land in the fishing villages.

9. The consultation process for developing the legal instrument can be facilitated by conservation and development partners.
1.0 Introduction

1.1 Background

Greater Virunga Landscape (GVL) is one of the priority landscapes in which WWF is playing a vital role in working with responsible management authorities to sustainably conserve the rich biodiversity in the area. Similar to other landscapes in the region, GVL is affected by different factors leading to drastic reduction in the diversity of the biological elements that directly impacts national economies and local community livelihoods. The threats to this high value conservation ecosystem include; poaching, habitat loss due to encroachment and climate change, natural disasters including flooding, landslides, fires and others. The Protected Areas (PAs) within this landscape are surrounded by densely populated communities who survive on PA resources. The activities taking place in the PA buffers have a direct impact on the conservation of the fauna and flora within the PA and vice versa and this leads to Human Wildlife Conflict (HWC). An example is Queen Elizabeth National Park (QENP), a man and biosphere reserve in which 11 communities live inside the PA.

Most of the communities in and around QENP carry out livestock farming which increases the interface between livestock and the carnivorous animals such as lions leading to attacks. It is important to note that, wild animals can break to the community lands due to limited prey base and livestock can also break to the PA in search of water and pastures, particularly in dry periods when there is no pasture and water in community farm lands. Other communities carry out crop farming that attracts herbivorous animals such as elephants that attack maize fields and banana plantations. The result of these intrusions and damages is the retaliatory killings of wildlife by the communities in trying to defend their assets from wildlife destruction. There have been registered loss of livestock (cattle, sheep and goats) due to carnivorous animals, crops raided by herbivorous animals, injuries and sometimes death to humans which has put the HWH at an alarming level.

1.2 Rationale

There is a need for systemic approach that integrates all the components of the conflict to mutually understand roles of keeping safe in what is known as SAFE systems approach. In this approach, four components are streamlined including; safe asset, safe human being, safe wildlife and safe habitat. This mechanism would demonstrate the requirements to keep all these SAFE components properly and come up with the collective positive impact on ensuring wildlife is effectively conserved with no harm to the environs. The HWC information for the pilot PA in this case QENP needs to be sufficient enough to support the development of the SAFE strategy for the entire landscape. This exercise is therefore geared towards undertaking an exhaustive assessment of the status of HWC in GVL with reference to the QENP involving all the key stakeholders of the PA.

2.0 The assignment

2.1 Purpose

The main purpose of this assignment is to undertake HWC assessment in and around QENP in south western Uganda.

2.2 Specific objectives

a) To consult stakeholders and generate information on HWC in and around the PA

b) To review other relevant documents that contribute to the broader knowledge base of HWC in the PA

c) To generate a standard report on the HWC status for the PA and the implications on the conservation status of key wildlife species.
2.3 Scope

The consultant is expected to consult key stakeholders at local, conservation area and national levels on the status of HWC in and around the PA. The consultant will also review other relevant documents about the subject. There will be the need to have a clear representation of all the communities surrounding the PA and the information synthesized into a precise report to achieve the intended purpose.

2.4 Methodology

The assignment will involve stakeholder consultations led by the consultant with the selected UWA staff from both community conservation and monitoring and research departments. The exercise will involve visits to the PA and districts. Desk work will also be done to review the relevant literature. The consultant will suggest the appropriate methodology that fits the assignment and this will be one of the key areas to review in the expression of interest by the consultants.

3.0 Desired skills and competence


b) Proven individual experience in handling similar assignments.

c) Proven record of solid analytical and conceptual skills, ability to think creatively and meet deadlines.

4.0 Deliverables

The consultant is expected to;

a) Submission and presentation of the inception report within the period of five days after the signing of the contract.

b) Submission and presentation of the draft assessment report 21 days after presentation of the inception report.

c) Submission and presentation of the final clean assessment report 7 days after the presentation of the draft report.

d) Submission of 10 perfectly bound copies of the assessment report and the soft copy of the final print version.

5.0 Duration of the assignment

The assignment should be completed within 33 days from the date of approval of the Inception Report.

6.0 Submission Procedure

Consultants who wish to express their interest in undertaking the prescribed assignment are requested to send hard-copies of the following:

(i) A technical proposal (in a sealed envelope clearly marked “Technical Proposal”) containing:

a) An understanding and interpretation of the TORs.

b) Methodology to be used in undertaking the assignment.

c) Evidence of relevant experience to undertake the assignment.

d) Curriculum vitae of the consultant to undertake the assignment plus relevant copies of key certificates.

(ii) A financial proposal (sealed in a separate envelope clearly marked “Financial Proposal”) including:

- Consultant’s daily rates in Uganda Shillings.
- Expected expenditure on undertaking the consultancy assignment.

7.0 Reporting

The Consultant(s) shall report to Chief Warden QENP but will work closely with WWF-Uganda country office, particularly the manager for wildlife and protected areas.
8.0 Cost of the Evaluation:

The estimated total cost of this assignment should cover professional fees for the consultant(s) as well as any other costs to be incurred in undertaking this assignment including transport to the field.

9.0 Submission Procedure:

Firms/individual consultants that wish to express their interest in undertaking the prescribed assignment are requested to email the following:

1) A technical proposal not exceeding 15 pages containing:
   a. An understanding and interpretation of the TOR.
   b. Methodology to be used in undertaking the assignment.
   c. Time and activity schedule.
   d. Evidence of relevant experience and samples of products related to the assignment.
   e. Curriculum vitae of the lead consultant plus short CVs of the rest of the team.
   f. Information on any representative of your team, or any member of your team, that may give rise to a direct or indirect conflict of interest

2) A financial proposal not exceeding 2 pages including:
   b. Any other related costs for undertaking the assignment in USD.

The Technical and Financial Proposals should be submitted as separate attachments, clearly marked “Human Wildlife Conflict baseline for the development of GVL SAFE systems strategy”. Please note that failure to separate the two proposals may be a reason for not honoring your submission.

The technical and financial proposal should be submitted only through the following email address (please don’t copy any WWF-UCO Staff in this submission) procurement@wwfuganda.org. The deadline for submitting proposals is 8th May 2023, 4:00pm East African Standard Time. Any late submission shall not be accepted.

Important:
Please note that it is your responsibility to ensure that your submission is successful, and WWF-UCO shall accept no liability whatsoever for undelivered submissions.

11.0 Clarifications:

Any request for clarification should be sent in writing only through the following email: procurement@wwfuganda.org not later than 5th May 2023, 11:00am. Clarifications will be provided within 24 hours from receipt of such request.
12.0 Evaluation and award of the contract

Eligible proposals will be evaluated based on full and open competition, in strict adherence to the Scoring Criteria detailed below:

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<thead>
<tr>
<th>Stage</th>
<th>Criterion</th>
<th>Score (marks)</th>
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<tbody>
<tr>
<td>Technical stage evaluation</td>
<td>Interpretation of scope of work</td>
<td>20</td>
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<td></td>
<td>Suitability of the proposed methodology</td>
<td>45</td>
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<td>Consultants’ qualification, skills, experience and expertise in similar assignments</td>
<td>20</td>
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<tr>
<td>Financial evaluation stage</td>
<td>Financial proposal</td>
<td>15</td>
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Notes of evaluation:
1. Only submissions whose technical proposal scores a minimum of 75% of the available 80 marks under the Technical Stage (a minimum of 64 marks), will have their proposals considered for Financial Evaluation. Any submission whose Technical proposal fails to score the minimum stipulated will not be considered for the Financial Evaluation Stage.

2. The Score at the Financial Evaluation stage shall be obtained through a formula state below:

\[ P = 15 \times \left( \frac{u}{z} \right) \]

- **P**: Financial Score
- **U**: Financial offer of Lowest Compliant proposal
- **Z**: Financial offer of proposal being evaluated

The successful bidder shall be the one whose submission obtains the highest score from the evaluation process; as a sum of the Technical and Financial Evaluation. The same shall be recommended for award of Consultancy contract to undertake the assignment.

13.0 Payment Schedule

The payment schedule is subject to negotiation with the consultant and is to be detailed in the contract to be signed between the Parties. The Consultant must however indicate preference in the submission.

14.0 Special Conditions:

WWF reserves the right to accept any proposal or reject all proposals. Technical evaluation will precede financial considerations. Any forms of canvassing will lead to automatic cancellation of the bid in question.

15.0 Feedback:

Notification to the successful bidder of the results of the tendering process shall be made within six (6) weeks from the date of closure of the bid submission deadline. If you don’t receive any feedback from us within 8 weeks from the submission deadline advised above, please consider your submission unsuccessful. No separate communication to this effect shall be made.

16.0 Disclaimer:

This is a call for proposals only and WWF UCO may cancel the process with or without notice and shall accept no liability whatsoever, arising out of such action. WWF UCO is also under no obligation whatsoever to award the contract to the lowest or any bidder; the decision of the Procurement & Disposal Committee shall be final. The bidder is wholly liable for the cost of submitting the proposal and WWF-UCO promises no refund whatsoever for all costs related to this process.
Annex II: FGD checklist for Local Community Groups

Perception of HWC causes, and trends
1. What is overall HWC situation your locality? (Main forms of conflict)?
2. What, in your view, are the causes of HWC?
3. Has the form of conflict changed over the years? How?
4. Has the severity of HWC changed over the years? (Scale of the damage caused both in crops and in domestic animas). How?
5. What are the perceived or observed causes of the changes?
6. Which are the main problematic wild animals?
7. Apart from the commonly seen losses HWC or damage, are there other (hidden or opportunity) costs/ associated HWC?45

Community Practices, Behavior and attitudes towards HWC
8. In your view, do people comply with laws relating to wildlife and habitat protection?
9. Do people make effort to for prevent HWC?
10. What kind of strategies are utilised to prevent HWC?
11. Have these been effective?
12. If yes, what factors enhance their effectiveness?
13. If no, what hinders their effectiveness?
14. What recommendations do you make for containing HWC?
15. Have local community members received support to develop innovations and ideas for conflict prevention?
16. Does the community receive technical support to refine the innovations?

Mitigation of the effects of HWC
17. What are the main sources of livelihood for the community members?
18. Do individual households have multiple income streams?
19. Have households endeavoured to invest in livelihood activities not prone to HWC?
20. Has there been any support offered in the community to undertake alternative livelihood options, away from conflict prone ones?
21. What is the situation of access to jobs, healthcare and education among your community? Does HWC affect its access in any way?
22. Do people access relief or compensation if their crops or livestock are lost, or ex a family member is lost or injured? Please describe what happens.

Community Participation in HWC management initiatives and HWC response
23. Do people participate in education & awareness raising on wildlife, conservation and conflict management?
24. Do local community members contribute to conflict monitoring programs? Please describe how.
25. Are community members, part of any trained Response Teams for Problem Animal Control?
26. Do people know the members of response teams, to ease reporting of incidences?
27. Do they have the necessary contacts to report?
28. Are contacts easily accessible?
29. When contacted, does response occur in time?
30. Have community members contributed to spatial planning of their area (landuse planning, GMP)
31. Do local community members comply with agreed zoning of the area (grazing regimes, crop and livestock

45(e.g. costs with guarding property, forgoing activities due to fear, psychological disturbance, transaction costs incurred when pursuing compensation, family disruption, livelihood and food insecurity due to crop and livestock loss and increased debt and aggravation of pre-existing poverty
Annex III: FGD checklist for Protected Area Managers and Other Key Conservation Stakeholders

**Management and protecting wildlife and its habitat**

1. In your view, is wildlife and wildlife habitat in QENP sufficiently protected by the existing laws and regulations?
2. Do the PA managers and staff have sufficient legal mandate to enforce the law, remove threats, and prosecute any violations?
3. Are the provided penalties for any violation deterrent enough?
4. Are the penalties easily enforceable?
5. Is there a (sufficient) force devoted to wildlife protection?
6. Is law enforcement consistent? Please explain
7. Do the PA managers and staff have sufficient resource to enforce the law, remove threats, and prosecute any violations?
8. Do the PA managers and staff have sufficient resource to monitor and support the safety of the wildlife over the long term?
9. Does the PA have access to a veterinary services or trained specialists who provide medical treatment and monitoring in the event of WL injury and disease?
10. In your view, does WL in QENP have free and open range habitat to roam and with sufficient wild prey and food it needs?
11. In your view, does the habitat in and around the PA provide enough space to foster ecosystem health and continuation of ecological processes?
12. Would you describe the QENP habitat as large enough, stable, and mostly contiguous space that facilitates wildlife to live, interact and breed?
13. Does the PA face any significant threat to the habitat from:
   a. Fragmentation
   b. Encroachment
   c. Illegal resource offtake/logging
   d. linear infrastructure development
   e. Settlement
14. Does the PA zoning provide for “no-go” zones (or strict nature reserves?) due to their vulnerability to, and irreplaceability after disturbance?
15. Is there sufficient buffer between human areas and wildlife in this PA?
16. In areas of degradation, is UWA or its partners undertaking efforts towards regeneration and habitat enrichment activities for wildlife. Please describe what is being done.

**Prevention of HWC**

1. Are local community assets managed through wildlife-friendly practices that ensure they do not interact nor come into contact with wildlife?
2. Is there an agreed livestock grazing plan? Do livestock graze in designated areas agreed on with the community?
3. Do livestock farmers use fences or barriers to prevent HWC?
4. What other methods do livestock keepers use to protect animals from predators?
5. What other methods do livestock keepers use to cope with HWC?
6. What methods are used by farmers to protect crops from damage by wildlife?
7. Have farmers adopted crops that are not prone to conflict?
8. Are farmers using new techniques and processes that serve to reduce HWC?
9. Are there other structures/assets (apart from livestock and crops), within or close to the PA that are prone to HWC? Please describe the situation.

Mitigation of the effects of HWC
1. Does wildlife contribute to local lives and livelihoods to reinforce positive linkages?  
2. Please describe the programs geared to community livelihood undertaken by UWA or its partners

Response to HWC
1. Does the PA have a rapid Response Team?
2. Please describe the mandate and activities of the team in relation to HWC.
3. What successes have your HWC response efforts achieved?
4. What challenges does the HWC response face?

Monitoring of HWC
1. Does this PA maintain a comprehensive HWC monitoring program?
2. Please describe what is monitored, and how data is processed and utilised?
3. How does the monitoring program help PA managers in the management of HWC?
4. Have any lessons been learnt about effective HWC mismanagement
5. How are lessons learnt fed back to communities to improve HWC management
6. Are lessons learnt reported to government and inform policy dialogues? Please describe and give examples
7. Please describe the local community tolerance levels with wildlife. Would you say that local communities are largely tolerant to wildlife?
8. What, in your view, informs this tolerance levels?

Annex IV: List and contacts of stakeholders consulted

Scanned lists of consulted stakeholders are submitted in a separate file

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46Linkages like eco-tourism, ecotourism, certification, wildlife premiums, green bonds, natural capital valuation and PES, biodiversity safeguards in REDD and associated climate mitigation financing