



Proposal to the African Elephant Fund:

Establishment of an Efficient, Effective and Reliable Communications Network to Support Wildlife Law Enforcement Operations throughout Queen Elizabeth Protected Area, Uganda

Project Details

Country: Uganda

Location: Queen Elizabeth National Park

Overall Project Cost: \$158,000

Requested AEF: \$140,000

Project Duration: 6 Months

Project Proponent: Uganda Wildlife Authority

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Project Summary

The Queen Elizabeth Protected Area (QEPA), located in western Uganda provides protection for by far the largest elephant population (2,970) in Uganda. QEPA is bordered to the west by Virunga National Park in DRC. The elephant population between these transboundary conservation areas is contiguous. QEPA is a complex park, having international and national trade routes throughout the park and eleven fishing villages inside the park, across five districts. Poaching groups have been able to monitor ranger movements and easily communicate and coordinate in response. The poaching threat in the park is still high, and Uganda Wildlife Authority (UWA) needs immediate support to ensure it is capable to protect Uganda's largest elephant population.

UWA recently developed a law enforcement plan for QEPA that defined the most important threats impacting the park, and the actions needed to address them. The plan's third main strategy is to '*strengthen patrol communication, coordination and management*', and highlights the need to deliver the following outputs '*control room established and equipped*' and '*radio communication network established*'. Furthermore, the integrated nature of the park, with substantial human populations living in enclaves has led to high levels of human-wildlife conflict. HWC response mechanisms need to be enhanced through the integration of community monitoring processes into the communications system in order to increase the ability of the UWA to respond to issues in a timely manner.

The delivery of these three outputs (i.e. a control room development, communications network established and improved HWC responses) will have a significant and sustained positive impact on the

protection of QEPA's critical transboundary elephant population over the long-term. The delivery of these aspects of the QEPA plan, and the HWC response mechanism, directly align with the AEAP objectives and strategies and are the basis of the support requested in this proposal. As detailed below, wherever possible, the activities have been designed to be as sustainable as possible by aiming to reduce recurrent expenditures through the use of more appropriate and sustainable mechanisms.

Priority AEAP Objectives and Activities Addressed

The following AEAP priorities objectives, strategies and actions will be address through the successful implementation of the activities set out in this proposal:

Priority Objective 1: Reduced Illegal Killing of Elephants and Illegal Trade in Elephant Products

- Strategy 1.1: Strengthen the capacity of law enforcement authorities/agencies to combat poaching and illegal trade in ivory and other elephant products.
 - Activity 1.1.2: Recruit and train staff at all levels to combat poaching and illegal trade in ivory and other elephant products
 - Activity 1.1.3: Equip wildlife authority staff on the frontline of enforcement with appropriate tools to carry out their mission as safety and effectively as possible

Priority Objective 2: Maintained Elephant Habitats and Restored Connectivity

- Strategy 2.1: Ensure connectivity, where possible, between elephant ranges within and among range States.
 - Activity 2.1.3. Create and / or restore, where possible, the connectivity between areas of elephants within, between and among range States.
 - Activity 2.1.6. Identify and provide capacity, where appropriate, to ensure connectivity between elephant range States, both within and among range States.

Priority Objective 3: Reduce Human-Elephant Conflict

- Strategy 3.1: Apply adaptive management approaches in addressing HEC mitigation, focusing on capacity building of managers and local communities.
 - Activity 3.1.2. Research and pilot different mitigation strategies to reduce HEC and develop guidelines accordingly.
 - Activity 3.1.3: Train and equip wildlife officers and local communities to ensure that appropriate HEC management approaches are implemented.

Project Rationale

The Queen Elizabeth Protected Area (QEPA) is located in western Uganda and comprises of Queen Elizabeth National Park (1978km²) and two buffering Wildlife Reserves (WR), Kyambura (157km² - which protects important populations of chimpanzees) and Kigezi WR (330km²). All are important elephant habitats. Contiguous to the park are the Maramagambo, Kashoya-Kitomi and Kalinzu Forests, which are all also strongholds for elephants and chimpanzee. QEPA is also part of an extensive transboundary ecosystem that includes Kibale Forest, Rwenzori Mountains, Semliki National Parks, Toro-Semliki Wildlife Reserve in Uganda, and the Virunga National Park in the Democratic Republic of Congo, which is a World Heritage Site. At present, QEPA is the lynch-pin protecting the vast majority of elephants found in this matrix of protected areas.

QEPA's elephant population was in 2016 reported by Uganda Wildlife Authority (UWA) as 2,970 individuals. This gives QEPA by far the largest elephant population in Uganda. The population has

been increasing steadily over the last twenty years, since being reduced to around 400 elephants in 1988, but remains well below the 4,000 elephants estimated in the mid-1970s. It is important to note that QEPA is bordered to the west by Virunga National Park in DRC. The elephant population between these transboundary conservation areas is contiguous, and the population moves in response to the level of poaching threat in each area. Thus, the protection of QEPA elephants also has the potential to benefit Virunga National Park population as and when security returns to the area.

QEPA is a complex park in shape, having international and national trade routes throughout the park and eleven fishing villages inside the park, across five districts. Poaching groups have been able to monitor ranger movements and easily communicate and coordinate in response. Armed poaching is prevalent across the park and close by in eastern DRC, due to presence of various militia and rebel groups operating in eastern DRC. The poaching threat is very high, and UWA needs immediate support to ensure it is capable to protect Uganda's largest elephant population, one critical for a large network of adjoining parks both in Uganda and the Democratic Republic of Congo.

In March 2017, the UWA developed a law enforcement plan for QEPA that defined the most important threats impacting the area, and the actions needed to address them. According to the law enforcement strategy the two most significant threats impacting the area are commercial poaching and subsistence poaching for local consumption. The easy access to firearms crossing the international border with DRC was regarded as an important factor in fuelling commercial poaching, while the threat from subsistence poaching relates to the huge number of snares being set in remote and inaccessible parts of the PA, and the easy access to snare-making material.

The QEPA Plan notes that there are very significant weaknesses in QEPA's law enforcement systems and infrastructure. For instance, the QEPA Headquarters lacks a dedicated law enforcement control room. Instead there is a law enforcement office but it has no maps of the park sectors and very limited communications equipment. Mobile phones are used for patrol-patrol and patrol-to-base communications, which is insecure, ineffective and unsustainable. A digital VHF radio communication system would be more effective while also boosting patrol discipline by enforcing the use of standard radio communications protocols, and could also enhance communication with neighbouring protected areas, and with Virunga National Park in DRC. In addition, the control room operatives would always know where assets are, and would be able to coordinate patrols and community support more efficiently and effectively. In QE, law enforcement and community conservation are incredibly important management responsibilities.

The lack of management and communication infrastructure is seriously undermining the effectiveness of park managers to protect the area's elephants. The nature of the park, surrounded by densely populated areas on one side and an insecure international border on the other, eleven large villages within the park, major trade trunk roads passing throughout the park, makes the area particularly vulnerable to poaching threats. While some critical equipment and capacity needs have begun to be addressed through support of a small EU funded project (MIKES), patrol management and communication issues remain. Recent and past security incidents in other nearby protected areas in Uganda and in the DRCC have also sadly highlighted the risks that UWA patrol staff faces. The need for secure and reliable communications with their management and other park staff has been needed for decades.

In response to these issues the QEPA law enforcement plan's third main strategy is to '*strengthen patrol communication, coordination and management*', and highlights the need to deliver the following outputs '*control room established and equipped*' and '*radio communication network established*'. Furthermore, the integrated nature of the park, with substantial human populations living

in enclaves has led to high levels of human-wildlife conflict. *HWC response mechanisms* need to be enhanced through the integration of community monitoring processes into the communications system in order to increase the ability of the UWA to respond to issues in a timely manner.

The delivery of these three outputs (i.e. a control room development, communications network established and HWC responses enhanced) will have a huge impact on the protection of QEPA's critical elephant population over the long-term. The delivery of these aspects of the QEPA plan, and the HWC response mechanism, is the basis of the support requested in this proposal. As detailed below, wherever possible, the activities have been designed to be as sustainable as possible by aiming to reduce recurrent expenditures (such as power and mobile top-up costs) through the use of more appropriate and sustainable mechanism.

Detailed Proposal

This project provides the foundation from which a digital radio network and control room can be established and fully operational in 2018. QEPA's current infrastructure and capabilities have not advanced from the 1960's and means UWA is unable to counter its vulnerabilities and threats. The project will be carried out in two six month periods, the first establishing the foundation and infrastructure for the system, the second expanding the system and making it fully operational.

Objective: Strengthen patrol communication, coordination and management across Queen Elizabeth Protected Area, and enhance community support for elephant protection

Currently there are only 52 rangers across QEPA, a third of the necessary number required, with only ten analogue radios across 26 ranger posts, many of which, as described in the law enforcement plan are to be closed and moved due to not being in priority areas, or being very run down. UWA is recruiting a further 30 rangers in early 2018, but this is still below the levels required. Only two ranger posts, and Mweya and the HQ in Katunguru have solar power units supporting radio and SMART phone charging, greatly limiting coordination and management of UWA's law enforcement assets and capabilities.

Through the EU funded CITES MIKES Project and 'Recovery of QE programme' being run in partnership between UWA and the Uganda Conservation Foundation (UCF), activity lines within the law enforcement strategy are being addressed in a stepwise process as funds become available. However, the scale of problem requires immediate additional support as the park is in significant trouble. One purpose built ranger post has been already been built, ten analogue VHF handsets procured and training courses have been added to park operations.

QEPA law enforcement capabilities include sector based ranger capabilities, a small mobile 'supplementary team' and marine rangers operating across Lakes George and Edward and the 33km long Kazinga Channel. These rangers are expected to prevent and respond to poaching and elephant crop raiding across QEPA, and in the adjoining National Forestry Authority forests including Kashoya-Kitomi, Kalinzu and Maramagambo Forests, where UWA has no permanently based rangers. Law enforcement rangers are also expected to respond to all protected area threats and incidents, including elephant crop raiding. As shown by Michael Keigwin in the Elephants, Crops and People project (1997 to 2006) where the reduction in elephant crop raiding by 90% helped enormously in reducing poaching pressure stimulating community support for the park. In QE it is imperative to work on both law enforcement and community matters for sustained impact.

In order to be able to carry out these responsibilities efficiently and provide effective protection to the entire park area, the management of patrols and communications between patrol staff and QEPA senior management needs to be strengthened, and response to HEC incidences needs to be fully integrated into the QEPA communications network. The following three outputs have been established to bring about this situation:

- **Output 1: QEPA Wildlife Law Enforcement Patrol Management and Control Room Operationalised**
- **Output 2: Effective Digital Radio Communication Network Established Throughout QENP**
- **Output 3: HEC Responses and Management Integrated into Digital Radio Communication Network**

The overall project will take twelve months. Phase 1 (this application) is between Jan / July 2018 , and Phase 2 August to December, 2018. The rationale and activities involved in delivering each of these outputs is set out below:

Output 1: QEPA Wildlife Law Enforcement Patrol Management and Control Room Operationalised

By the end of Phase 1 (Q2 2018) we will have completed the design of the control room and digital radio system and procurement lists, with advisory support from partners Vulcan. The construction of the control room will also be completed allowing for a secure operational environment to be fitted with the necessary equipment and furniture.

By the end of Q4 2018 the plan is to have completed the procurement, set up and training requirements of the control room, constructed the ranger posts, and installed the solar power and digital radios. By Q4 2018 (phase 2 of the project) the integrated system will be fully operational.

A control room is the nerve centre of site-based law enforcement operations. It is the central location through which all information passes from patrols to senior management and vice versa. A well-equipped, suitably staffed and efficiently managed control room is therefore a critical component of any site's law enforcement system. One of the significant weaknesses in QEPA's law enforcement systems and infrastructure is that the Park's Headquarters at Katunguru lacks a dedicated law enforcement control room and any means to coordinate its resources.

In its place, there is a law enforcement office with no detailed maps of the park sectors or specialised communications equipment. In addition, unlike dedicated control rooms used in some other African PAs to effectively and securely direct operations in the field, QEPA's law enforcement office is not protected by specific security measures and can easily be accessed by non-law enforcement staff.

This ease of access risks compromising the confidentiality of sensitive information discussed or stored within the room. Collusion is a very real risk in QE, not least due to poaching communities being able to monitoring ranger movements across the roads and waterways. UWA's law enforcement teams must operate more professionally, more securely.

This output seeks to address this shortfall by supporting the establishment of a dedicated secure patrol management and control room at QEPA headquarters. The following activities are proposed to achieve this:

Activity 1.1 Plan of control room and procurement list (Phase 1: Q2 2018)

Activity 1.2 Procurement and delivery of control room equipment (Phase 2: Q3 2018)

Activity 1.3 Implementation of control room established and equipped

1.31 Extend current room to provide space for control room (Phase 1: Q1/2 2018)

1.32 Establish control room team, standard operating procedures, roles and responsibilities. (Phase 2: Q3 2018)

1.33 Set up control room (Phase 2: Q4 2018)

1.34 Undertake operational training exercises (Phase 2: Q4 2018)

Activity 1.4 Evaluation and reporting (Q2 & Q4 2018)

Output 2: Effective Digital Radio Communication Network Established Throughout QEPA

Reliable communication between patrol staff and a senior manager with decision-making authority is critical to enabling patrol members to report incidents, and request support or logistical back-up. This increases the confidence of patrol staff during operations. From a management perspective, reliable communications are essential for enabling the monitoring of patrol progress and the rapid adaptation of patrol movements in response to new information or changing conditions on the ground.

In the vast majority of areas, such communication has usually been achieved using analogue VHF handheld radios that are linked to a central control room via a system of repeater stations distributed throughout the area. However, many areas are now transitioning to digital VHF radios. Despite higher cost and some additional complexity of operation, they have a number of advantages over the traditional analogue system. These advantages, and particularly the ability to track the real-time location of the patrol through the VHF radio, have led to the rapid adoption of the digital platform over recent years.

Presently, QEPA's radio communications systems are largely inoperable, and there is a reliance on cell phones for communications between ranger patrols and managers. However, some of the more remote parts of the PA are not covered, which means that ranger patrols operating in these areas are often out of contact with managers, and the use of personal cell phones for communications also has an impact on radio communications procedures; with no regular contact schedules between patrols and QEPA Headquarters in Katunguru, and no use of radio communication SOPs.

In order to address this issue, this output focuses on the establishment of a digital radio communications network throughout QEPA, which is linked back to the control room established under the previous output. The activities required to deliver this output are outlined below:

Activity 2.1 Planning: Design digital radio network and power requirements (Phase 1: Q1)

Activity 2.2 Procurement: digital radio and solar power equipment (Phase 1 & 2: Q2 & Q4)

Activity 2.3 Implementation of radio of communication network

2.31 Establish Communications SOP (Phase 1: Q2 2018)

2.32 Train all digital radio and solar power users into the use and maintenance of the equipment, and Communications SOP (Phase 2: Q3 2018)

2.33 Set up digital radio and solar power systems network (Phase 1 & 2: Q2 / Q3 2018)

2.34 Undertake operational exercises (Phase 2: Q3 2018)

Activity 2.4 Evaluation and reporting (Q2 / Q4 2018)

Output 3: HEC Responses and Management Integrated into Digital Radio Communication Network

Our aim is to establish the Community Conservation Unit capability by the end of Q2, July 2018 – in three regions including Kikarara and Ntungwe in Ishasha, Kyambura and the Kichwamba escarpment. By the end of 2018 the CC department will coordinate through the Control Room.

Assistance has been provided to help QEPA rangers address HEC through a system developed in QE as an off-shoot of the WILD LEO project (Wildlife Intelligence Leadership Development for Law Enforcement Officer) and Elephants, Crops and People project (ECP, southern QE 1998 – 2006). Using this approach community rangers monitor boundaries, barriers and crop raiding, including the maintenance of trenches and fences, using a specifically designed system called WILD COM. This system enables Community Conservation Rangers to easily record and monitor the maintenance of barriers and crop raiding.

This proved a key success factor in the Recovery of Ishasha by the ECP programme, having communities and park officials working together proactively, and in response to incidents.

The basis for this partnership was implemented in Ishasha, QE in 2003, which resulted in a 90% decrease in elephant crop raiding in Ishasha after 35km of elephant trenches, 11 fences, 110 bee hives were installed, and 1000 acres was turned from subsistence agriculture to tourism. Today, after ten years without external support, large parts of this area have maintained the successful partnership thereby keeping crop raiding at a more tolerable level.

Using a SMART phone, as used by law enforcement rangers, regular and standardised data collection is easy, quick and above all is sharable and usable within hours. The nature of QE is that wildlife – human interaction is part of life, and levels of negative elephant – human interaction are such that WILD COM needs to be included into frontline operational monitoring and management, and linked with the communications infrastructure proposed for development under this project. In doing so, limited resources can be deployed to priority operations, whether to proactively, or in response to incidents.

The following activities are proposed to deliver this output and strengthen the approach outlined above and ensure it integrates monitoring into the QEPA communications network established under the previous two outputs:

Activity 3.1 Planning of roll out of WILD COM to priority areas (Q1 2018)

Activity 3.2 Procurement of 10 SMART phones (Q1 2018)

Activity 3.3 Implementation:

3.31 Train Community Conservation Rangers & Community Scouts (Q2 18)

3.32 Train Community Conservation Warden & command centre staff (Q2 18)

3.33 Introduce system to park – community committees around the park (Q2 18)

3.34 Establish high level knowledge management and sharing system: reporting and briefing plan (Q2 18)

Activity 3.4 Evaluation and reporting (Q2 18)

The Uganda Wildlife Authority and Uganda Conservation Foundation have a long history of working well together. More recently the 'Recovery of Murchison Falls National Park Review of Progress' was carried out by the Conservation Development Centre. This report is available in soft and hard copy.

Charles Tumwesigye and Michael Keigwin have worked together since 1997, including on the Elephants, Crops and People in the Ishasha sector of QE; work that included the setup of the transboundary partnership between the VNP and QE management teams, reducing elephant crop raiding along the Ntungwe and Kikarara border areas, creating and supporting the partnership between the communities and park, and in reducing poaching in southern QE.

Monitoring & Evaluation

The Uganda Conservation Foundation (UCF) and UWA have successfully worked together for many years, more recently in Murchison Falls National Park in the Recovery of Murchison Falls project. UWA will therefore sub contract UCF to handle procurement related aspects of the project to minimise delays associated with government bureaucracy in procurement processes.

UCF is already providing technical support to QEPA in the implementation of the QEPA MIKES Project having been sub contracted by CITES/MIKE Central Coordination Unit. UWA will therefore continue to work with UCF in this partnership to ensure delivery of the outputs of this project.

A monitoring committee of Charles Tumwesigye (Deputy Director of Field Operations) and Michael Keigwin (Founder Trustee of UCF) will carry out internal progress and performance assessments, both in Kampala and in QEPA. They will also assist the QEPA senior management team in preparing quarterly and annual technical and financial reports for the project for submission to AEF Secretariat by UWA.

Monitoring and evaluation will cover all stages of the project, from planning and procurement, to implementation and financial reporting. Financial management will also be overseen by Sam Thakkar, Senior Partner of UHY Thakkar & Associates.

Prior to the end of the six month period, Michael Keigwin and Charles Tumwesigye will carry out a review of the report, and audit of all assets and deliverables. This process will cover the timely completion of the deliverables, whilst also reviewing short term impacts, successes and areas in need of improvement.

Anticipated benefits

By the end of July 2018, it is anticipated that this project will have ensured:

1. The control room has been completed providing a bespoke space for the integrated operations and security surrounding the control room, legal department, the radio and community conservation departments.
2. A 'fit for purpose' design of the control room will have been established enabling Phase 2 to be carried out:
 - a. the procurement, installation and operations of systems;
 - b. training of the teams;
 - c. integration and expansion of the digital radio system;
 - d. command and control of all UWA capabilities (Law Enforcement Rangers Units, Mobile unit, marine Ranger Unit, Community Conservation Unit)
3. Elephants across the Ishasha, Kikeri, Maramagambo Forest, Lions Bay, Kibwona Swamp, Katunguru and Kyambura regions will have solar power in their ranger posts supporting the digital radio requirements and SMART phone data collection requirements.
4. Significant gaps in SMART data collection (due to limited charging facilities) will be improved providing a more complete and useful outcome for the SMART system to law enforcement, community and legal teams;
5. Over half of QEPA's elephant population will be covered by law enforcement communications for the first time supporting field operations and the protection of a landscape that provides opportunity for adjoining protected areas to have elephants, such as the Virunga National Park;
6. The African Elephant Fund will have enabled the Recovery of Queen Elizabeth National Park project to focus on integration of new rangers into QE, raising funds and building the necessary ranger posts in time for the roll out of the control room and digital radio system across QE;
7. The Community Conservation Unit is for the first time provided frontline resources and focus in terms of management emphasis, protection of budgets and provision of support thereby ensuring communities and park commitments and partnerships are managed closely and human elephant conflict managed more effectively and efficiently; and
8. Methods and successes pioneered by the WILD LEO and Elephants, Crops and People projects in Queen Elizabeth National Park are leveraged further for additional impact.

Project Timeline

Activities	Q1	Q2	Q3	Q4
Output 1: Wildlife Law Enforcement Patrol Management and Control Room Operationalised				
Activity 1.1 Plan of control room				
Activity 1.2 Procurement of control room equipment				
Activity 1.3 Implementation of control room established and equipped				
1.31 Extend current room to provide space for control room				
1.32 Establish control room team, standard operating procedures, roles and responsibilities.				
1.33 Set up control room				
1.34 Undertake operational training exercises				
1.35 Establish high level knowledge management and sharing system: reporting and briefing plan				
Activity 1.4 Evaluation and reporting				
Output 2: Effective Digital Radio Communication Network Established Throughout QEPA				
Activity 2.1 Planning: Design digital radio network and power requirements				
Activity 2.2 Procurement: digital radio and solar power equipment				
Activity 2.3 Implementation of radio of communication network				
2.31 Establish Communications SOP				
2.32 Train all digital radio and solar power users into the use and maintenance of the equipment, and SOP				
2.33 Set up digital radio and solar power systems network				
2.34 Undertake operational exercises				
Activity 2.4 Evaluation and reporting				
Output 3: HEC Responses and Management Integrated into Digital Radio Communication Network				
Activity 3.1 Planning of roll out of WILD COM to priority areas				
Activity 3.2 Procurement of x 10 SMART phones				
Activity 3.3 Implementation:				
3.31 Training of Community Conservation Rangers and Community Scouts				
3.32 Training of Community Conservation Warden and command centre staff				
3.33 Introduce system to park – community committees around the park				
3.34 Establish high level knowledge management and sharing system: reporting and briefing plan				
Activity 3.4 Evaluation and reporting				

Budget (in USD)

Budget Line	Matching	AEF
Output 1: Wildlife Law Enforcement Patrol Management and Control Room Operationalised		
1.1 Plan of control room (Q1 2018)		
1.11 Engage Control Room specialist to design 'fit for purpose' system and procurement list for QE		4,200
1.2 Procurement and delivery of control room equipment (to be procured after building is ready – activity 1.312, Q3 2018)		
1.21 Purchase and shipping of equipment to Kampala		-
Computer network hardware; computers, screens, external storage, projector, computer software licenses, back-up power, USB's, stabilizers, furniture, electrics, lighting, printer & cartridges.		
Shipping & customs costs		-
1.22 Deliver equipment to QE		
1.3 Implementation of control room established and equipped (Q1 & Q2)		
1.31 Extend current room to provide space for control room		
1.311 Tender support from UCF		1,000
1.312 Construction of extension for Radio and Operational Planning Area		40,000
1.32 Establish control room team, standard operating procedures, roles and responsibilities. (Q3 2018)		
1.321 Technical support - SOP production & training		-
1.322 Training of team		-
1.323 Establish high level knowledge management and sharing system: reporting and briefing plan		-
1.33 Set up control room (Q3 2018)		
1.331 Engineer team set up & testing		-
1.34 Undertake operational training exercises (Q3 2018)		
1.341 Special technical support & guidance		-
1.4 Evaluation and reporting		
1.41 Q1 & Q2		600
1.42 Q3& Q4 (Q4 2018)		-
Total Output 1	-	45,800
Output 2: Effective Digital Radio Communication Network Established Throughout QEPA		
2.1 Planning: Design digital radio network and power requirements (Q1)		
2.11 Engage digital radio / solar power specialist to design fit for purpose system for QE		6,000
2.2 Procurement: digital radio and solar power equipment		
2.21 Purchase, customs, shipping and delivery of digital radio & solar power units to QE	18,000	50,000
Motorola Digital Repeaters x1 (DR 3000), Motorola Portable Radios & spare batteries x 15 (DP3401),		
Motorola DM3400 Base Stations x 15 (Ranger Posts), Motorola DM3401 x3 GPS Enabled Mobile Accessories		

Ranger Posts x5 (solar panels, batteries, stand and lightening cable protection),		
Repeater sites x2 (solar panels, batteries, stand, antenna, wireless telemetry link)		
2.3 Implementation of radio of communication network		
2.31 Establish Communications SOP		1,000
2.32 Train digital radio and solar power users into the use and maintenance of the equipment, and SOP		2,000
2.33 Installation of 5 solar power units, 5 base stations, 1 repeater and 3 car units		1,000
2.33 Testing digital radio and solar power systems network		1,000
2.34 Undertake operational exercises		4,000
Activity 2.4 Evaluation and reporting		
Planning		600
Procurement		600
Implementation		1,200
Report		1,200
Total Output 2	18,000	68,600
Output 3: HEC Responses and Management Integrated into Digital Radio Communication Network		
3.1 Planning of roll out of WILD COM to priority areas		2,000
3.2 Procurement of 10 CAT SMART phones		4,500
3.3 Implementation:		-
3.31 Training of Community Conservation Rangers and Community Scouts (3 regions)		7,500
3.32 Training of Community Conservation Warden and command centre staff		2,000
3.33 Introduce system to park – community committees around the park (3 regions)		3,000
3.34 Establish high level knowledge management and sharing system: reporting and briefing plan		3,000
3.4 Evaluation and reporting		
Planning		600
Procurement		600
Implementation		1,200
Report		1,200
Total Output 3	-	25,600
Total	18,000	140,000

The radio repeater included in matching funds above comes from the CITES / MIKES programme. In addition, UCF is close to confirming full funding of the Lions Bay 8 man ranger post (\$70,000). In addition, \$35,000 has been raised towards a third ranger post in Kibwona Swamp.

Phase 2 (Q3 & Q4 2018) covers a large element off the control room procurement, set up and operations. A full budget of the anticipated costs for phase 2 can be provided if needed. Phase 1 will be completed by July 2018, Phase 2 in December 2018.