CEPF SMALL GRANT FINAL PROJECT COMPLETION REPORT

Organization Legal Name:	The MUSE, The Science Museum of Trento
Project Title:	Using biodiversity surveys, website and film to promote the value of the Kabobo massif for conservation support.
Date of Report:	April 2018
Report Author and Contact Information	Michele Menegon, Ana Rodriguez Prieto, Marina Moreno, Deo Kujirankwinja Contact: mmenegon@gmail.com

CEPF Region: Eastern Afromontane Hotspot

Strategic Direction:
Strategic Direction 1 (Mainstream biodiversity into wider development policies, plans and projects to deliver the co- benefits of biodiversity conservation, improved local livelihoods and economic development) and 2 (Improve the protection and management of the KBA network throughout the hotspot).

In particular (a) Communication materials that show the beauty of the Eastern Afromontane hotspot / Eastern Afromontane KBAs. (E-)Books, photos, films, videos, and/or other PR materials that can be used to raise interest/awareness about the hotspot and its many values (ecological, cultural, aesthetical, economic etc) and Biological surveys that show (changes in)* the conservation status of selected KBAs that CEPF has invested in since 2012. Specific focus on trigger species for the KBA.

Grant Amount: $US 19,790

Project Dates: 01/02/2017 – 30/04/2018

Implementation Partners for this Project (please explain the type and level of involvement for each partner):

Main partners:

Prof. Massimo Delledonne; Department of Biotechnology, University of Verona (Italy). Responsible for the development and implementation of the field DNA sequencing activity

Dr. Ana Rodriguez Prieto; MUSE, Science Museum of Trento, assistance in the development and implementation of the field DNA sequencing activity

Dr. Marina Moreno; MUSE, Science Museum of Trento, assistance in camera trapping and small mammals investigation

Dr. Anna Sustersic; scientific communication and real-time blog

Mr. Arcel Bamba; WCS, coordination of logistics in the field

Mr. Emmanuel Muindo, WCS, assistance in zoological investigation

Dr. Simone Pecorari, video shooting in the field, video editing

Did not participate in field work:

Mr. Deo Kujirankwinja, WCS, expedition overall coordination

The implementation of the project was made possible thanks to the collaboration of *L'Institut Congolais pour la Conservation de la Nature* (ICCN)

Conservation Impacts

Please explain/describe how your project has contributed to the implementation of the CEPF ecosystem profile (refer to Strategic Direction and Investment Priority).

Investment Priority 1.1. Enhance civil society efforts to develop and implement local government and community-level planning processes to mainstream biodiversity conservation, and leverage donor and project funding for livelihood activities that explicitly address causes of environmental degradation in and around priority KBAs in priority corridors.

The Kabobo massif is the largest, isolated area of montane forest in Eastern DRC, it stretches for about 100 km along the western shore of the Lake Tanganyika and is naturally separated from the Itombwe massif to the north, by a 50 km wide savannah through which crosses the Kilombwe River (Kerbis et al., 2013), making it an area of potential high species endemism, as the savannah could constitutes a barrier to dispersal both for forest associated bird, mammal, reptile and amphibian species. Given its size, isolation and geographic location it could therefore represent an area of outstanding biological value and conservation importance at global scale. Since the 1960s it has been the hideout of armed militias who have been fighting against the government and it has remained largely unexplored till recently. Despite the still scarce information on its biodiversity, the region, based on data collected during the 50s of the last century, has been identified as an important bird area.
Wildlife Conservation Society (WCS) carried out field surveys both in 2007 and 2012 and showed that the forested regions of the landscape are particularly rich in species making the proposed Ngamikka Park one of the top ranking sites in the Albertine Rift for conservation in terms of both species richness and numbers of endemic and threatened species (Plumptre et al. 2008). In 2008 WCS undertook a socioeconomic survey of the communities living around the Kabobo massif which showed that most of the people interviewed were in favour of creating a protected area. More recently, in order to grant access to forest resources to the local communities living along the boundaries of the protected area, seems that the establishment of a National Reserve could be the next step forward (Plumptre et al., 2008; 2015). Because of WCS preliminary findings, we have planned and carried out additional targeted surveys for mammals, reptiles and amphibians with the aim of collecting additional scientific information of Kabobo biodiversity and PR material on Kabobo massif in order to raise interest/awareness about the hotspot and its many values. During our expedition, we have performed on site DNA sequencing of species belonging to different taxonomic groups encountered in the field, through the use of a mobile lab and showcased the activities on a real-time blog.

The most interesting, preliminary results of the fieldwork carried out, obtained by sequencing in the field DNA samples of collected individuals of mammals, reptile and amphibians are the ones obtained from the tree Pangolin in the genus *Phataginus* and the tree frog of the genus *Leptopelis*. In the first case, the 3% level of divergence that separates the Kabobo tree pangolin from the populations from which the GenBank received its sequences, seems to confirm the level of isolation of these forests, just as the 4% divergence of the *Leptopelis* specimen does. Additional results will

originate from the data and samples collected (124 specimens of amphibians, reptiles and mammals), which have still to be shipped to Europe where more detailed analysis will be carried out.
In order to improve and disseminate Kabobo's conservation relevance and highlights its biological value at continental and global scale a webpage and a documentary have been realized. Both the website and the documentary are being used as a visual portrait of the area, highlighting its beauty and biological relevance, furthermore updated information on Kabobo biodiversity. The strategy adopted, rather than advertise the site and the video on generalist channels, is to get the information through specialized channels and networks that already deal with biodiversity and conservation, in order to optimize the possibility of positive, and possibly concrete, feedbacks. The video was shown and the LCA board meeting in Wolwedans in Namibia, where possible donors and conservation organization were present. The link at the website has been posted and the website itself publicized in the GMBA network (Global Mountains Biodiversity Assessment). An article on the expedition, mentioning the website, appeared on Mongabay.com, a web portal dealing with environmental conservation which, on average in 2018, receive 2.5 million unique visitors a month.

List all short-term and long-term impacts (from your logical framework) and provide a narrative that describes your achievements (quantitative and qualitative) under each of the expected impacts.

Short-term impacts (project objectives)

- **To document (changes in) the vertebrate biodiversity and their status of Kabobo massif across spatial and altitudinal gradient.**

The collected data are not enough to meaningfully document any change in the known vertebrate biodiversity and its status across spatial and altitudinal gradient on Kabobo massif. Nonetheless, previously unknown species, putatively new to science, have been discovered during the expedition. More data will be available once the DNA analysis of the specimen collected will be finalized.

- **To document the presence and assess the taxonomic placement of the local population of Bongo (*Tragelaphus eurycerus*)**

The presence of the Bongo at the higher altitudes of Kabobo massif is confirmed, biological sample of the species has been obtained from local hunters and DNA analysis aiming to assess its taxonomic placement will be performed as soon as the sample will be exported and additional funds for the analysis secured.

- **To provide data on the status (changes in) of threatened and potentially threatened vertebrates such as Chimpanzees, amphibians and reptiles.**

Despite no specific investigation on chimps have been carried out, the observed density of nests, both fresh and old, was high. Especially at low and medium altitude. Despite few more adding, amphibians and Reptiles of Kabobo are still poorly known and deserve more focused investigation, both along spatial and altitudinal gradients. During our investigation, few more species putatively new to science were discovered.

- **To document levels of disturbance at selected forest sites.**

Kabobo massif’s forests and high-altitude mosaic of grassland and forest, at least in the areas visited by the expedition, look in good conservation status, with no or limited signs of human activities. The only exception and relevant sign of disturbance, at specific sites, is the presence of small to medium sized, semi-temporary settlements of artisanal miners. Main impact is on streams and small rivers.

- **To strengthen and expand the on-going primate monitoring program in Kabobo massif**

The few data collected on primates confirm the relative abundance of chimpanzee at low and medium elevation, but they are not enough to add anything meaningful to the results of previous monitoring. Moreover, the rare and poorly known Kabobo Angolan Colobus (*Colobus angolensis prigoginei*) has been observed and photographed in one site at low elevation.

- **To document and disseminate, through website, printed material and video the beauty, main characteristics and biological value of Kabobo massif and the collaboration between local communities and scientists on the documentation and protection of the area.**

During the expedition, a dedicated blog was carried out, through a satellite connection, documenting with text and images the progresses of the expedition. A website and a short documentary on Kabobo have been completed.

Long-term impacts (project objectives)

- **Improve and disseminate the knowledge about Kabobo's biodiversity, highlights its biological value at continental and global scale**

The main aim is to improve Kabobo massif's conservation status. Possibly to combine the existing protected areas into one, managed at national level and contribute to the knowledge of Kabobo massif's biological value.
In order to improve and disseminate Kabobo's conservation relevance and highlights its biological value at continental and global scale a webpage and a documentary have been realized. Both the website and the documentary are being used as a visual portrait of the area, highlighting its beauty and biological relevance, furthermore updated information on Kabobo biodiversity.
The strategy adopted, rather than advertise the site and the video on generalist channels, is to get the information through specialized channels and networks that already deal with biodiversity and conservation, in order to optimize the possibility of positive, and possibly concrete, feedbacks.

- ✓ The video was shown and the LCA board meeting in Wolwedans in Namibia, where possible donors and conservation organization were present.
- ✓ The link at the website has been posted and the website itself publicized in the GMBA network (Global Mountains Biodiversity Assessment).
- ✓ An article on the expedition, mentioning the website, appeared on Mongabay.com, a web portal dealing with environmental conservation which, on average in 2018, receive 2.5 million unique visitors per month.

- **Support Kabobo conservation and, possibly, the gazzettement of the area as National Park**

The current strategy was discussed between MUSE and WCS personnel. At this stage ICCN just provided the necessary permits to carry out the field study. ICCN will be involved , on the ground of the existing MoU with WCS, once further steps will be defined. The possibility of combining the currently established protected area into one, larger and comprehensive protected area (National Park or Nature Reserve) has been presented and discussed at the LCA (Leadership for Conservation in Africa) board meeting. The board approved and a discussion on a potential partnership between various organizations including LCA, PAMS Foundation and WCS has been initiated in order to join efforts and define and a shared strategy aimed to work toward the combination of the various protected areas currently present and a better,

unified management of the entire landscape. It would be of great importance to undertake further investigations on the biological value of Kabobo, in particular a phototrapping campaign covering the extension of the massif and the entire altitudinal gradient would be necessary in order to collect the necessary documentation on the medium-large fauna. This survey should be carried out using standard and replicable methodologies in order to constitute a baseline for future monitoring. Currently PAMS Foundation has established a contact with the new WCS responsible for the area, aiming at the organization of visit to define the steps of a collaboration between the two institutions for the conservation of the Kabobo massif and the camera trapping campaign would be one of the first action to be undertaken.

Were there any unexpected impacts (positive or negative)?

No unexpected impacts were recorded.

List all expected results/outputs (from your logical framework) and provide a narrative that describes your achievements (quantitative and qualitative) against each of them. Use the indicators that you defined in your logical framework.

- **Scientific publications documenting survey results;**

Preliminary analysis has shown that many of the samples collected are interesting from a taxonomic, conservationist or biogeographical point of view.
One of the collected chameleons (*Rhampholeon* sp.) is a putatively new species to science. A collaboration between Michele Menegon and other chameleon experts, co-authors of a recent work on the *Rhampholeon* of the Albertine Rift, began with the aim of formally describing the species, the work is estimated to be completed in about 18 months.
The sample of Bongo (*Tragelaphus eurycerus*) collected on Kabobo, together with a sample obtained from the staff of the Kahuzi-Biega National Park, further north, are currently under analysis because, in particular the sample of the population of Kabobo, could have relevant taxonomic and conservationist implications on the species. Time needed to publish the results of the study is estimated to be about 18 months.
Among the results of the preliminary analyses carried out, a frog of the genus *Amietia* and an arboreal pangolin of the genus *Phataginus* showed levels of genetic divergence such as to suggest taxonomic implications. In both cases the first contacts with research groups were established in order to start the study and then the formal description of the species. At this stage it is not possible to define with sufficient certainty the time when the work will be completed, also because of the difficulties of exporting the sample of pangolins, especially in Appendix 1 of CITES.

- **Data provided to the CEPF Outcomes database;**

Raw data of the sample collected are attached to this report. Final results will be compiled and transmitted to CEPF as soon detailed analysis performed and results published.

- **A dedicated blog webpage of the biological exploration;**
- **Short film of the conservation importance of Kabobo with subtitles in both English and French;**
- **A website dedicated to the biological exploration the beauty and biological value of Kabobo massif**

The above deliverables are available at the following link:
http://www.easternafromontane.org

Lessons Learned

Describe any lessons learned during the design and implementation of the project, as well as any related to organizational development and capacity building. Consider lessons that would inform projects designed or implemented by your organization or others, as well as lessons that might be considered by the global conservation community. Please organize your lessons as follows:

1. Project Design Process: (aspects of the project design that contributed to its success/shortcomings)

The design of the project was intended to include zoological surveys at several sites and across the whole altitudinal gradient of Kabobo massif for not less than 15 days in the field. This would have allowed us to have a heavy return on the data and improved knowledge on the biological importance of the Massif. Because of some logistical problems and impediments, the actual amount time spent investigating was shorter than planned and in fewer sites, which led to fewer data collected. It is therefore suggested to include a reconnaissance survey by a couple of team members at least a week before the actual biological survey, in order to address potential issues with local guides, local assistance, armed escort and sampling sites localization.

2. Project Implementation: (aspects of the project execution that contributed to its success/shortcomings)

The original plan, developed in agreement with WCS, provided for the involvement, from the beginning, of 4 experienced people who would provide all the necessary assistance in terms of organization and logistics in the field. For internal WCS reasons, at the beginning only one person was made available for the expedition and about 10 days later a second person joined the group. This made logistics management, planning and implementation of field work difficult and resulted in a series of delays and a number of sampled sites lower than planned. In general Kabobo massif is vast, with a large altitudinal gradient and a high diversity of habitats. It is recommended to allocate enough time in the field in order to optimize the complexity of the organization of the trip.

3. Other lessons learned relevant to conservation community:

N/A

Additional Funding

Provide details of any additional donors who supported this project and any funding secured for the project as a result of the CEPF grant or success of the project.

Donor	Type of Funding*	Amount	Notes
MUSE, the Science Museum of Trento (via the Fondo Gino Zobele)	Project co-financing	39.000	Around 30.000 USD were transferred to WCS for assistance and logistic on site.
Fondo Gino Zobele			
Oxoford Nanopore Technologies	In kind		DNA mobile lab equipment
Intermatica/Thuraya	In kind		Satellite modem
Great Escapes	In kind		Camping equipment
GoalZero	In kind		Solar panel and batteries

Aquapac	In kind		Waterproof bags
Lowa	In kind		Boots
Ledlenser	In kind		Headlamps and torches

Additional funding should be reported using the following categories:

A *Project co-financing (Other donors contribute to the direct costs of this CEPF project)*

B *Grantee and Partner leveraging (Other donors contribute to your organization or a partner organization as a direct result of successes with this CEPF project.)*

C *Regional/Portfolio leveraging (Other donors make large investments in a region because of CEPF investment or successes related to this project.)*

Sustainability/Replicability

Summarize the success or challenge in achieving planned sustainability or replicability of project components or results.

Aims of our project were both the improvement of the current knowledge on the biodiversity of Kabobo massif and the documentation of its characteristics in order to raise interest/awareness about the area and its conservation.
There are two main aspects related to the sustainability of the activities we have carried out:
1) Enable longer-term data collection and inform conservation about the area, especially in the light of the wide spatial and altitudinal gradient and habitat heterogeneity of Kabobo, which require focused and repeated surveys.
2) Facilitate the documentation and dissemination of information, images, news, etc about Kabobo biological values and conservation relevance.
Our project has already created a link between ICCN, WCS and other organization potentially interested in collaboration to the common goal of improving the knowledge on Kabobo, through further biological investigations and undertake conservation actions.

Summarize any unplanned sustainability or replicability achieved.

N/A

Safeguard Policy Assessment

Provide a summary of the implementation of any required action toward the environmental and social safeguard policies within the project.

The Team leaders, according with the security protocols, have determined that the only possible, relevant, hazards would have been represented by the possible presence of local irregular militias. The strategies to minimise the risks have been defined and identified: information on the potential presence of militias across the survey area have been collected by local WCS personnel prior the start of the expedition and the situation has been defined as safe enough to carry out the expedition. Moreover, an armed escort provided by the national army, has been with the expedition team for the its whole duration. No additional action was required on the environment and social safeguard measures.
Research activity, species collection and sample export were done in accordance with the research and export permits issued to WCS DRC by *L'Institut Congolais pour la Conservation de la Nature* (ICCN).
For animal handling we followed IUCN Policy Statement on Research Involving Species at Risk of Extinction

For health and safety procedures we followed the Health and Safety frame developed for this specific project and based on the Documento di Valutazione dei Rischi per la Sicurezza e la Salute dei Lavoratori (Document of Assessment of Risks to the Safety and Health of Workers)developed by the MUSE.

Additional Comments/Recommendations

N/A

Information Sharing and CEPF Policy

CEPF is committed to transparent operations and to helping civil society groups share experiences, lessons learned, and results. Final project completion reports are made available on our Web site, www.cepf.net, and publicized in our newsletter and other communications.

Please include your full contact details below:

Name: Michele Menegon
Organization name: MUSE; PAMS Foundation
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Email: mmenegon@gmail.com
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Performance Tracking Report Addendum

Project Results	Is this question relevant?	If yes, provide your numerical response for results achieved for project from inception of CEPF support to date	Describe the principal results achieved during project period (Attach annexes if necessary)
1. Did your project strengthen management of a protected area guided by a sustainable management plan? Please indicate number of hectares improved.	NO		Please also include name of the protected area(s). If more than one, please include the number of hectares strengthened for each one.
2. How many hectares of new and/or expanded protected areas did your project help establish through a legal declaration or community agreement?	NO		Please also include name of the protected area. If more than one, please include the number of hectares strengthened for each one. N/A
3. Did your project strengthen biodiversity conservation and/or natural resources management inside a key biodiversity area identified in the CEPF ecosystem profile? If so, please indicate how many hectares.	NO		N/A
4. Did your project effectively introduce or strengthen biodiversity conservation in management practices outside protected areas? If so, please indicate how many hectares.	NO		N/A
5. If your project promotes the sustainable use of natural	NO		N/A

resources, how many local communities accrued tangible socioeconomic benefits? Please complete Table 1below.			

If you answered yes to question 5, please complete the following table.

Table 1. Socioeconomic Benefits to Target Communities

Please complete this table if your project provided concrete socioeconomic benefits to local communities. List the name of each community in column one. In the subsequent columns under Community Characteristics and Nature of Socioeconomic Benefit, place an X in all relevant boxes. In the bottom row, provide the totals of the Xs for each column.

Name of Community	Community Characteristics								Nature of Socioeconomic Benefit											
									Increased Income due to:											
	Small landowners	Subsistence economy	Indigenous/ ethnic peoples	Pastoralists/nomadic peoples	Recent migrants	Urban communities	Communities falling below the poverty rate	Other	▪ Adoption of sustainable natural resources management practices	Ecotourism revenues	Park management activities	Payment for environmental services	Increased food security due to the adoption of sustainable fishing, hunting, or agricultural practices	More secure access to water resources	Improved tenure in land or other natural resource due to titling, reduction of colonization, etc.	Reduced risk of natural disasters (fires, landslides, flooding, etc)	More secure sources of energy	Increased access to public services, such as education, health, or credit	Improved use of traditional knowledge for environmental management	More participatory decision-making due to strengthened civil society and governance.	Other
Total																				

If you marked "Other", please provide detail on the nature of the Community Characteristic and Socioeconomic Benefit: