

Final Evaluation Report

Your Details	
Full Name	Alfayo Koskei
Project Title	Potential of Community-based ecotourism project for the conservation of two endangered reed frogs, A. sylvaticus & H. rebrovermicalatus in Shimaba Hills, Kenya
Application ID	39578-1
Date of this Report	16 th February 2024



1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
To conducted ecological surveys and map the distribution of the two amphibian species in Shimba Hills Ecosystem.				We conducted ecological surveys in wetlands within the Shimba Hills National Reserve and adjacent wetlands in community. However, we identified some wetlands in community lands (not adjacent to protected area) with potential species occurrence but was out of our scope (and has not been surveyed before). We recommended further surveys in these areas such as Dzombo hills and Kaya Gandini.
To train youth as Amphibian Forest Guides and members of local community on sustainable uses of wetlands				During our awareness campaigns, we registered members to participate in the livelihood projects to conserve the wetlands. We then conduct some training among them on the beekeeping farming in wetlands areas and production of local organic manure (not in wetlands) (to replace the use of commercial organic fertilisers). Four youths successfully accompanied us during the ecological surveys and were trained on field techniques.
To conduct awareness campaigns in schools, community, and other forums				We conducted awareness with communities and churches, but schools were on recession during the months of campaigns (November 2023-January 2024).
To establish ecotourism initiatives such as forest guides Associations, tree nurseries and reforestation programs.				We managed to train and register community members to benefit from the projects at second phase. Initiation of these projects was not in the scope of the budget of this phase. Establishment of tree nurseries was supported by the members but are concern on the market for their seedlings. Members identified two major projects namely, beekeeping and production of organic manures.

2. Describe the three most important outcomes of your project.

a) Successful ecological surveys (revealing the distribution and habitat type for each species). Some habitats we surveyed have only Hyperolious rebrovermicalatus but no Afrixalus sylvaticus, (especially the marshes with no



water) in swamps such as Mwandabara and Marere headworks. On the other hand, A. sylvaticus was observed in some waterways and sewer lines in main municipality (Kwale Town) whereas *H. rebrovermicaltus* was never spotted in wetlands or marshes in urban and residential areas. Another important outcome is the photo gallery of *A. sylvaticus* breeding activities. We recorded an amazing video of the amplexing pair of *A. sylvaticus* in one of the habitats (Shedrick falls) which was one of its kind during our entire survey and even my career!

To this extent, we collected suitable data in sampling sites, distributed within the protected area and adjacent wetlands in community lands. These we have processed and now doing analysis for interactive mapping and presentation to bring more understanding of species distribution and habitat characteristics.

b) In awareness and education, it was evident that communities have low level of awareness and negative perceptions of these two amphibian species especially their benefits or roles. Almost all communities we visited could not tell any role of the amphibians including our species of concern in their habitats. In terms of perception, most perceive it as source of bad omen and danger to livestock (some cited that cows could ingest while grazing on reeds and marshy areas and some argued that they can chock the chicken if they swallow). As a result, some admitted that they often kill when they spot them, and this underscores the magnitude of negative persecutions that these amphibians go through because of lack of knowledge and awareness of their importance.

The major outcome of the project therefore was the education to dispel these myths and their harmless nature as well as the important roles that these amphibians play on the ecosystem, which directly or indirectly benefits them. We provided education and awareness on the important ecosystem roles of these species and the need to protect them and their habitats including avoiding burning of the wetlands as it has been the norm among these communities. While we have not done evaluation for the success of these campaigns, we identified in last education exercise (February 2024) a regenerated wetland area (where we used as demonstration) that was initially burnt (photos shared). This highlights the potential success of the awareness campaigns. However, we still felt that more awareness is still needed especially on other villages, and the alternative livelihood options that aligns with the conservation of the wetlands. Like butterfly farming which is somewhat successful project that youth group (SHIFOGA) has started, although not in wetlands, alternative projects such as beekeeping can help conserve these areas and linked to community-based tourism networks.

c) We have created three community groups of about 20 members each (one in every village) for the implementations of the income generating initiatives in our proposed second phase of the project in the wetlands. They offered to run the project jointly as sub-groups for the benefits of the members whose lands do not extend to wetlands and were willing to support the conservation



initiatives. The project engaged an expert in apiary and bee farming, and he trained members on the project and its products.

3. Explain any unforeseen difficulties that arose during the project and how these were tackled.

- One of the proposed alternative incomes generating activity in this project was the establishment of the fish farming (fishponds) in the wetland areas. However, members of the community oppose the idea citing that they had tried it before but faced challenge of fish predators such as birds, snakes, etc., and were not willing to adopt it in areas far from their homesteads. They also highlighted the seasonality of some wetlands/streams that renders some fishponds dry and no supply of water. They reported that they would prefer the fishponds near their homesteads made of PVC containers to keep water for long with no seepage. However, this was against the goal of the project to establish the alternative livelihood options in the wetlands to avoid degradation or clearing for farming. So, this will not be feasible in the current project. In its place the members of local communities suggested another livelihood option of the local manures production, where groups can produce and sell the compost manures to be used in farms.
- Although not a major difficulty, there were scarcity of security rangers in the park (Shimba Hills National Reserve) owing to expansive patrol bases and the few available staff in park. So, at some point, we could not visit many transects as planned and had to break the activity for another period (October and December 2023).
- We had a challenge of vehicle given that the park had only one operational vehicle meant for patrol and our transport to sites. We adjusted our programme so that we could be dropped in sites much earlier and so that we wait for survey hours (dusk) in the site while the vehicle moves other staff on their duties. Nevertheless, the management of the park was extremely supportive of the research process and promising for future collaborations. The park terrain is not easily accessible with other vehicles for hire. The terrain of the park was also challenging for some of my team, some forest sites were very thick, and with hilly terrain so accessing the wetlands was a challenge.

4. Describe the involvement of local communities and how they have benefitted from the project.

- Local communities were involved in identification of the alternative income generating activities in the wetlands after we did our awareness campaigns. The community supported the idea of beekeeping and local manure enterprises but suggested areas of improvement if we shall go ahead with fish farming as they highlighted major concerns in fish farming in wetland areas.
- Members of community also suggested we consider an annual events or routine education in schools, such as developing a short curriculum and liaising with ministry of education in the area so that the project team can visit



schools or invite school children to educational centre or designated venue and giving them training on amphibians and ecosystems conservation at least once in a year.

- In terms of direct benefits, the community were educated and trained on the ecotourism and entrepreneurship opportunities including market access for their products such as honey, wax, etc., and the options to link with existing community-based tourism networks.
- We created three community groups one in each village namely, Mwaluphamapa, Tsimba/Stahamili and Majimboni. Members agreed to participate and offer to support tree planting in their wetlands in the next phase of the project. They also assured that they will support these livelihood options. Just like the butterflies farming in some kaya forests (sacred forest sites) which have adopted ecotourism, they also suggested exploration of ways of developing these areas for ecotourism such as opening access for community-based tourism and promoting the sites among the local tour operators.
- As part of the next phase plans, we encouraged members to establish indigenous tree nurseries and especially the species suitable for wetlands and catchment protections such as bamboos, Mkuyu (Ficus cycomorus), etc., so that we can purchase from them in next phase of the project while launching the income generating activities.

5. Are there any plans to continue this work?

- Yes, we have plans to establish these income generating activities for the wetland conservation and protecting our target amphibian species together with other anurans. These efforts will protect wetlands from degradation or from pollution from sources such as overland flow and agro chemicals including the inorganic manures. I also plan to extend the education and ecological surveys to communities living far from the protected areas.
- In the long-term, I am planning to spearhead education particularly among the young generations. In that regard, I am planning to develop a shortcurriculum, probably a 1-day curriculum for education in school, so that we visit some schools in the area, or organise venue and transport learners and offer them the opportunity to understand and appreciate the amphibians and conservation.
- I am also looking forward to planting thousands of trees in wetlands and supporting the seedling entrepreneurship.

6. How do you plan to share the results of your work with others?

 I am enthusiastic and proud to share the results of our conservation efforts by way of publications and presentations. During the survey I promised the local community that I will go back with results of our conservation and research



work including photos of these species and the distributions with their roles in the ecosystem. They requested some leaflets like the one we gave them during the awareness campaigns which will show the results of the efforts we are doing.

- I am also preparing to publish the results on peer review journals, or book chapters that I have received invitation to publish.
- I will also share the results in conferences and workshops (upcoming international conference in our university, Egerton University).
- As part of the requirements during licensing/permit processing, we should also share the results with research partners such as WTRI, KWS, and academic institutions. This is in form of project report.

7. Looking ahead, what do you feel are the important next steps?

- To establish the income generating initiatives as way of creating the awareness and supporting the communities to avoid burning the wetlands or using as pastureland for grazing. Beekeeping stood out as the best strategy because grazing and other human activities will be limited in the apiary sites.
- There is also further need to carry out surveys in wetlands located further inland from the protected area and in other unsurvey forest such as Kaya Dzombo and Kaya Mrima where previous records show they occurred in these habitats. It was a bit of surprise to us during our night surveys to hear the calls of A. sylvaticus in sewer lines in the municipality and we spotted a few of them, and we thought the survey can also be conducted on urban waterways to establish their level of tolerance to pollution.
- It is also important to do routine education in schools in the areas of species occurrence. While we also educated community on tree species that promote wetland conservation and the need to avoid exotic species that drains water table such as casuarina and eucalyptus species, the next step is to do afforestation in the wetlands including those in community lands.
- In terms of further results dissemination, I am preparing a comprehensive report that I will share with all partners including Rufford, Wildlife Research and Training Institute (WRTI), Shimba Hills National Reserve, Coast conservation area (KWS), Egerton University etc as well as a simplified report with mainly photographs and educational messages that will be shared with communities we had visited.

8. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during your work?

Yes, all the materials, data sheets, participant sheets, the educational banners, flyers, leaflets, posters, and the t-shirts, I branded with the Rufford Foundation logo and the formats such as fonts, etc.



9. Provide a full list of all the members of your team and their role in the project.

	Organization	Contact details	Role
Alfayo Koskei	Egerton	Email: <u>kkalfayo@gmail.com/</u>	PI- Overall, field
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10. Any other comments?

To this end, we sincerely acknowledge, with a lot of thanks the generous support provided by The Rufford Foundation in form of this grant, to support this noble cause of conserving the endangered species and their habitats. We look forward to working with The Rufford Foundation in other phases of the project. I would love to share as many photographs of the project as possible, although I have put a few of them in the comprehensive report I am compiling and planning to share.





Aplexing pair, Afrixalus sylvaticus.





Alfayo Koskei (PI) with Trainees.





Community training, Mwaluphamba area.



Community training, Kivumoni wetland.