Final Evaluation Report

Your Details	
Full Name	Veryl Achieng Obodi
Project Title	Initiating and consolidating community led integrated fish farming (Polyculture) to promote conservation of endangered fish in Lake Kanyaboli
Application ID	24593-B
Date of this Report	9960

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 Assess fish population and fisheries in Lake Kanyaboli				The population dynamics of the endangered fish species (*Oreochromis esculentus*, *Oreochromis variabilis* and *Haplochromis phytophagus)* was fully carried out both detailed and basic. Basic monitoring and assessment was done daily through fish landing entries provided by the beach management unit (BMU).
To train in aquaculture and sustainable fisheries and construct 3 fishponds as a fish learning resource unit and				Within the course of four trainings, we were able to train over 240 women and 132 men. This was deliberately done to promote the involvement of women in aquaculture production and of other value chain areas.
To advance and promote the mandate of the Lake Kanyaboli Environmental Stakeholders Forum				Since its inception the LKESF has ensured most of the fisherfolk and other resource users are conversant with the local fisheries by-laws.
To develop a Lake Kanyaboli Management and development plan				The development of a comprehensive management plan has taken a long time owing to the participation and inclusion of more stakeholders than previously anticipated. We have also included stakeholders from Busia County which forms part of the Yala catchment area. This has meant that there was need for more consultative meetings. We have therefore finalised the draft plan which is awaiting final deliberation and approval by the two counties (Siaya and Busia)

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

a). Construction of Fishponds: We were able to construct three fishponds to completion and they have already been very useful in helping reduce the exploitation of endangered fish in the lake. This has been evident from our monthly monitoring exercises from the lake. The fish landing areas have experienced few

fishermen and fishmongers owing to the availability of fish from the ponds. We believe that through more partnerships and collaboration with relevant organisations we can increase the number of ponds and effectively help in increasing the native and endangered fish in the Lake.

b). 240 students were educated and trained on the ecological, cultural, and economic functions of Lake Kanyaboli. We have had five students who have come to do internship and volunteer work at the fish demonstration site with the hope of undertaking an environmental course and program at college level. We were also able to create seven nature clubs in the schools and two community conservation groups, all of whom forms part of the Lake Kanyaboli Environmental Stakeholders Forum (LKESF). This has provided the forum with more human resources as they push for the development and implementation of a site action plan.

c). Establishment of Lake Kanyaboli Fish Conservation Zones (FCZs). Through the intervention of LKESF and other stakeholders, we were able to establish two FCZs along Lake Kanyaboli. The FCZs are designated as locally protected areas in which the local community plays a significant role in their establishment and management. The two FCZs have regulations that include:1) when fishing is allowed, 2) what types of fishing gear are allowed 3) which fish species or sizes may be harvested.

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

The construction of the ponds proved to be a bit challenging owing to the high rains and near flooding of the project site. We had to build dikes to redirect the water into other areas. It was however important for the team and the community to experience this as we were able to learn more valuable information of the soil type of the area. Furthermore, we did not need to pump as much water into the ponds as was first planned. The "wetting" and saturation of the soil was easily achieved and this help in ensuring the maturity of the ponds to start holding water was fast.

We were also faced with the larger challenge of COVID-19 Pandemic which greatly affected our operations and activities. We lost three of our community members in LKESF during this period. We were able to resume operations at half the speed we had hoped for. We however managed to complete the activities in mid-2021.

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

The local community around Lake Kanyaboli (Hawinga and Kaugage communities) were highly involved in the implementation of the project activities. First, the beneficiaries of the aquaculture ponds were community members drawn from different villages to form LKESF. Through the different aquaculture value chains of the project there was involvement of the community i.e., management of aquaculture, harvesting, marketing, transportation amongst others. This has ensured sustainability of the project as the community feels part of it.

During the monitoring and assessment of endangered fish in Lake Kanyaboli, the community were the main scouts and did continuous monitoring (both detailed and basic). The fish arriving at the fish landing zones were recorded by the beach management unit and availed to the research team.

The community has been able to gain knowledge through training, partnerships, and networks especially in terms of aquaculture and fish conservation. This has been possible through the involvement of NGOs and research institutions such as Jaramogi Oginga-Odinga University in Bondo.

5. Are there any plans to continue this work?

Yes, we currently have established a partnership between the LKESF and the county government of Siaya, together with Ministry of Fisheries to help in advocating for establishment of aquaculture as a means of promoting conservation of endangered fish species in Lake Kanyaboli. The MoU between the parties is in its final stages and will be signed in November 2022.

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

We have shared the results of our work with project stakeholders, Siaya County governmental and non-governmental organisations and advertised the project activities. We were also able to share part of our work in the 2nd annual aquaculture conference in Bondo on 18th September 2019.

Furthermore, we are working with our partners and experts to finalise our two publications which will be submitted to a peer-reviewed journal. We hope to have them published in the last quarter of 2022.

Our work will also be available through the Rufford website and therefore can be accessed by all interested people.

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

Within the post project years, our hope is that there will be continued sustainability and effective management of the Lake Kanyaboli fisheries and the entire catchment area. project activities especially community led aquaculture. The continued monitoring and assessment of endangered fish (*Oreochromis esculentus*, *Oreochromis variabilis* and *Haplochromis phytophagus*) should continue and this should incorporate a much wider project area to include the wider catchment (i.e., Yala Swamp).

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

Yes, we were able to use the Rufford Foundation logo in all our outreach campaign banners, flyers, brochures, and signposts. We introduced our project activities to stakeholders as being funded by Rufford Foundation.

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

Mr. Raphael Ogolla has a diploma and a degree in Fisheries and aquaculture from Moi University. He has been doing his research at Kenya Marine and Fisheries Department on Cichlids. He has a wealth of knowledge on monitoring and surveying of fish and other inland freshwater biodiversity. He was responsible for guidance on monitoring of the fish species and abundance in L. Kanyaboli.

Rachael Sindoga has a BSc degree in Environmental Science from University of Nairobi and a Diploma in Rural development from Kenyatta University. She has also had various community projects in Siaya and Bondo counties. She led the Outreach and education activities in schools and community groups.

Ms Olivia Akinyi is a member of the Young Women Forum in Siaya County. The forum brings together different women groups and discusses some of the challenges women face both as a community in the households. Ms. Olivia was in charge of setting up and contacting the Stakeholders forum and facilitating all the meetings and venues. She brought her experience in mobilizing resources and partnership acumen in ensuring that our project objectives are attained.

Ms. Anne Ngule who has a Masters in Aquaculture and is currently a researcher/ part time lecturer at Kenyatta University provided in depth assistance during the construction of the fishponds.

10. Any other comments?

N/A

Figure 1: Women in Hawinga assessing their first catch from their polyculture pond.

Figure 2: Procurement of granulated fish feeds for the polyculture ponds in Hawinga.