Final Evaluation Report

Your Details	
Full Name	Gordian Rocky Mataba
Project Title	Conservation awareness and compliance campaigns towards conservation of endangered Manyara Tilapia (*Oreochromis amphimelas*) and its habitat in lake Manyara, Tanzania
Application ID	34455-1
Date of this Report	11 May 2022

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 establish the current stock size of Manyara Tilapia and condition of its ecological habitat.			■	Something to note is we collected data from eight representative fish landing sites out of 16. Because this is how the methodology and budget were formulated. Although this was still adequate for estimating stock size and population structure of Manyara tilapia, for a small lake like Manyara, visiting all landing sites is important for precise fish stock estimate.
To restore the population and ecological habitat for Manyara Tilapia through fishery management and dissemination of conservation education.			■	Due to budget limitations this objective was implemented via nine villages (those directly adjacent to lake Manyara) out of 18 villages that rely on the lake. To ensure effective dissemination of conservation education and awareness for Manyara tilapia, all villages around Lake Manyara need to be reached. Nonetheless, the programme was successful because many people attended.
To train communities on different types of income generating activities and how to initiate them as alternative sources of income which will include tree nursery and poultry farming small projects.		■		Despite successful implementation of a tree planting project, the original plan for a poultry farming project was not implemented successfully. Only five instead of 10 chicken houses were constructed and stocked with adult chickens. The cause was the higher construction cost which was more than double that budgeted for. To accept the project, villagers demanded strong brick houses which were more expensive than normal simple chicken houses. All this was to ensure security of chicken from rain and carnivorous animals that can get inside the houses and mass kill the chickens. Find more details in the project update report.

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

a). We found that lake water is very turbid and eutriphic with high levels of nitrates and dissolved phosphates. We are very sceptical that these ecological conditions could be reducing fish spawning activity and causing egg and larvae mortality.

b). We also found high level of overfishing which led to low catch per unit effort (35 kg of Manyara tilapia/trip/boat/day) and shift in fish population structure to dominant small size fishes (SL: 3-13 cm). Overfishing in Lake Manyara is caused by overdependence of villagers on the lake to meet their daily needs. Thus, many people engage themselves in fishing mainly by using illegal small mesh size nets to maximise the catch. However, despite the current overfishing and ecological habitat deterioration in Lake Manyara, the stock of Manyara tilapia has increased to 9,012 tons/year from 0.5 tons/year in 1990 (all fish landed with Manyara tilapia constituting the largest proportion). This could be attributed to absence of lake drying episodes since 1990 which are more devastating than overfishing and ecological habitat deterioration.

c). Dissemination of conservation education and conduction of compliance campaigns for sustainable fishing enhanced villagers' awareness and willingness to conserve the endangered Manyara tilapia and its habitat. We thus expect to witness further growth in the population of Manyara tilapia soon.

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

It was difficult to construct the original planned 10 chicken houses in five villages (two houses for each village). Instead, five chicken houses were constructed. The original plan was to construct cheap normal houses, but the villagers complained that they were not safe for chickens. They did not protect chickens from rainwater and dangerous animals. This was resolved by building strong houses using bricks. This was a costly decision which doubled the original planned cost and thus to stay within limits of our budget we constructed only five chicken houses and stocked them with chickens.

It was also difficult to stock the built chicken houses with layers or broilers because they are very prone to diseases and environmental stress. Chicks are very prone to low temperatures and may end up dying if are poorly protected against cold weather. Also, the cost of maintaining favourable temperature for chicks is very high such that villagers would not afford this. Handling and feeding cost for layers/broilers was also higher than the project and villagers could afford. After learning this we decided to use local varieties instead of layers/broilers because local breeds are resistant to diseases and can easily tolerate environmental stresses. They can also feed themselves by collecting food when roaming outdoors. Thus, there is no feeding cost especially when they are in a small number. This strategy is very relevant and affordable to villagers even after phasing out of the project.

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

Local people participated fully during project implementation from inception stage to the end of the project. During inception stage we discussed together on how the project should be executed and how it should benefit them. During execution, they were recruited for measuring fish length and determination of catches the exercise which was preceded by training, and they received some allowances. Generally, local people were empowered through knowledge they gained on poultry farming for improvement of their income, tree planting for conservation of their soil and determination of illegal fishing nets (mesh sizes) and fish sizes which are important aspects of sustainable fishing. Lastly, they were provided with start-up inputs and materials such as trees, tree nurseries, chicken houses and chicken for direct income generation.

5. Are there any plans to continue this work?

I plan to continue with this project in the form of monitoring the population of Manyara tilapia and its habitat condition for several years for the purpose of establishing their trend. This will be done in line with monitoring performance of initiated income generating activities and the output of conservation education provided. I also, plan to continue with regular dissemination of conservation education to all villages whenever I have fund.

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

I expect to publish an article based on this work in a peer reviewed journal. I will also present this work in a MWECAU conference in July 2022 in Moshi Tanzania. In addition, I will prepare project brochures and disseminate them to Babati and Monduli districts and villages around lake Manyara which are overseeing utilisation of lake Manyara.

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

- Strengthening law enforcement for sustainable fishing (e.g., regular patrols and fishing licence control to reduce fishing effort).
- Involving villagers in fisheries management/co-management (e.g., establishment of beach management units-BMUs).
- Regular monitoring of population and habitat status for Manyara tilapia.
- Regular dissemination of conservation education and provision of citizen science to villagers that will enable them to monitor fish resources themselves.
- Provision of more support to villagers so that they can involve more in alternative income generating activities and stop relying on fishing as the main livelihood activity.

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?

I produced posters with Rufford Foundation logo which I used during our meetings with villagers. Generally, the foundation was well publicised to village leaders, government leaders and local people. See some pictures below.


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

Mr. Gordian Mataba – Project leader.

Dr. Grite Nelson – Aquatic ecology and fisheries expert.

Mr. Joseph Kigoda – Facilitator: Conservation education and sustainable fishing.

Mr. Haji Deus – Facilitator: Conservation education and sustainable fishing.

Mr. Wambura Patrick – Field assistant: Fish population and habitats survey.

Mr. Dula Mohamed – Field assistant: Fish population and habitats survey.

Ms. Happy Masaki – Facilitator: Tree planting and soil conservation.
Mr. Alfan Rashid – Facilitator: Poultry farming.

10. Any other comments?

None.