

Final Evaluation Report

Your Details	
Full Name	Gilbert Nyabochwa Atuga
Project Title	Macroplastic pollution in lower River Sabaki, and its surrounding environment: its influx to the Indian Ocean
Application ID	38662-B
Date of this Report	12 th August 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
Selection of monitoring sites within the water column of River Sabaki				Four permanent sites were selected for water column monitoring using fishermen's seine nets. GPS coordinates were recorded for subsequent plastic litter monitoring at these locations. Additionally, ten local fishermen volunteers were chosen per site for periodic monitoring.
Selection of monitoring sites at river bank sites				Three permanent riverbank monitoring sites were selected, with GPS coordinates recorded for easy identification during subsequent monitoring. Ten local community members, including youth and women, were selected to periodically monitor these sites.
Identify local volunteers to be used for plastic data collection				A total of 20 volunteers were selected to participate in periodic data collection and clean-up exercises. Among them, 50% were women and youths. The key criterion for selecting volunteers was that they had to be local residents who understood the dynamics of the monitoring sites.

<p>Training and familiarizing the volunteers with project goals and protocols to be used for plastic litter data collection</p>			<p>A total of eight training sessions were organized, each featuring hands-on fieldwork demonstrations to practice protocols. These sessions were held as two per site across the four selected locations. Additionally, volunteers from three riverbank sites were combined with nearby sampling volunteers to reduce the number of training sessions.</p>
<p>Volunteers carry out data collection on the pre-selected water column and river bank sites</p>			<p>Volunteers collected data every two months, and when unavoidable, quarterly. Additionally, our team organized parallel sampling campaigns for ground truthing.</p> <p>After each sampling campaign, a riverbank clean-up exercise was organized, led by the Sabaki Conservation Youth Group.</p>
<p>Data entry and analysis</p>			<p>This was conducted right after the fieldwork data collection. Nonetheless, it remains an ongoing activity.</p>
<p>Presentation of data and insights to the local community and concerned stakeholders</p>			<p>The project outcomes were shared with fishermen, local volunteers, and targeted community members through selected trained volunteer trainers. This approach ensured that the outcomes were translated and communicated to local communities in their native languages.</p>
<p>Publication/Other dissemination reports write ups</p>			<p>I have already submitted a publication to a peer-reviewed journal. However, the other dissemination reports are still a work in progress</p>

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

- a). Participation in this project has significantly raised awareness about plastic pollution in the River Sabaki. Over 70% of the 100 respondents surveyed reported an increased understanding of plastic pollution and its environmental impacts.
- b). Over 300 fully packaged sacks with plastic waste have been cleaned up and transported to designated dumpsites. With recyclable materials, such as plastic bottles, taken to nearby recycling pickup points
- c). During the project implementation period, over 100 participants, including local community members, were trained in situ to become environmental stewards.

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

1). The heavy rainfall from October 2023 to January 2024 disrupted our project implementation plans. The runoff from the rains carried plastic litter downstream, causing a shift in plastic accumulation zones at our monitoring sites. To address this, some project activities were rescheduled to future dates. To compensate for lost time, we focused on data entry and analysis. Additionally, we adapted our monitoring strategy to include opportunistic sampling in the new accumulation zones while maximizing plastic clean-up initiatives.

2). We encountered cultural and language barriers during our interactions with the local community. To address this, we utilized volunteers from the respective communities for translation and to facilitate smoother interactions with community members.

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

In this project, local community members were involved from start to end. Volunteers supervised the monitoring sites for plastic litter data collection and clean-up, with the help of local community leaders and elders. This approach built trust and encouraged community participation. Subsequently, the volunteers were trained in plastic litter monitoring and later acted as trainers for other community members interested in the project. This step was crucial in overcoming cultural and language barriers.

By involving community members in the project, the community has come to appreciate the threat of plastic pollution and realize that through collective efforts, they can drive the necessary changes to address this issue through behaviour change. Additionally, regular clean-ups of riverbank sites have resulted in a cleaner environment, enhancing the aesthetic value for those using the riverbank for recreation or water collection. Moreover, partnering with local recyclers to sell

recyclable plastic bottles can provide a source of income for the community, creating a win-win situation for both the environment and the local residents.

5. Are there any plans to continue this work?

Yes, because plastic pollution in our river systems is driven by human behaviour, it is essential to continue our efforts. This will prevent any setbacks in any gains made through community involvement, address the plastic pollution issue, and provide data to inform policy decisions.

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

I plan to publish this work in a peer-reviewed journal. Additionally, I will present it at seminars organized by the Kenya Marine and Fisheries Research Institute, where I am employed, as well as at other external conferences. Moreover, I will share the findings during outreach programs such as the Annual Agricultural Society of Kenya, where various government institutions showcase their innovations to stakeholders.

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

The project's continuity plan should encompass expanding to involve more community members and broadening the implementation locations. Additionally, it's crucial to engage nearby schools to involve young learners as future stewards of a plastic-free environment. This plastic clean-up initiative should also be designed to become community-driven in the long term.

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, the Rufford log was utilized during the awareness campaign and the organized training workshops. Additionally, a scientific paper submitted to peer-review Journal, if published, acknowledges Rufford contribution.

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

Kobingi Nyakeya:

As an environmental expert specializing in riverine research, he played a key role in directing fieldwork for establishing monitoring programs in estuary environments, making necessary adjustments based on the dynamics of the riverine ecosystem.

Edward Waiyaki:

He contributed significantly to the socio-economic dimension of the project by coordinating the volunteer involvement process. He also designed survey questionnaires to assess the project's impact, including socio-economic effects on awareness creation, behaviour change, and stakeholder.

Sammy Kazungu:

He provided essential expertise on the optimal deployment of nets for plastic “fishing” in the water column, ensuring bycatch was minimized. Additionally, he played a crucial role in guiding the setup of plots along the riverbank environment.

Amina Makori:

She was keen on the application of GIS and geophysical technologies and GIS. These skills were instrumental in the spatial and temporal setup and analysis of plastic pollution in the study site stations.

Chepkemboi Labat:

She is skilled in integrating traditional knowledge into ecological research. Recognizing that plastic pollution is both an environmental and social issue. She devised innovative ways to gather indigenous knowledge and understand how communities cope with plastic pollution.

Local community members:

They guided us on the safest locations to deploy our monitoring equipment, ensuring protection from aquatic animals like hippopotamuses. Their deep understanding of the environment made their input crucial for site selection.

10. Any other comments?

The successful implementation of this project was rooted in community involvement. This underscores the importance of consistently engaging the community in finding solutions to environmental issues.