

The Rufford Foundation Final Report

Congratulations on the completion of your project that was supported by The Rufford Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to jane@rufford.org.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details	
Your name	Gilbert Nyabochwa Atuga
Project title	Mwache Mangrove Forest Regeneration: Integrated Approach to Restore Mangrove Habitat
RSG reference	22335-1
Reporting period	31 July 2017 to 31 st December 2018
Amount of grant	5,000 sterling pounds
Your email address	atuga2004@yahoo.com
Date of this report	1 st January 2019

1. Please 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
Mapping of degraded ecosystem project site at Mwache Mangrove forest.				<p>-Sites identified, survey and zonation done with help of community volunteers. During this stage the following was observed for action:</p> <ul style="list-style-type: none"> -Some sites have been turned into habitable land by local community, exacerbating the degradation effect. -Some sites have been degraded with the construction of the New Kenya Standard Gauge railway. -Some sites degraded due to lack of clear guidance policy such as protection from degradation due to logging and competition among the local to exploit mangroves for construction and firewood. -Though currently on hold, plans to construct Mwache River dam upstream may lead to further degradation of the Mwache mangroves. This was done with help of Bonje Conservation group, fisheries officers, fisher groups and local leaders.
Mwache community mobilization and awareness on mangrove conservation				<ul style="list-style-type: none"> -Three workshops and education seminars organised to train community on importance of Mwache mangrove restoration. -Fliers and posters were also used to create awareness. -Lobbying and advocacy was emphasised to bring to attention the effect of Mwache dam construction on mangroves. -It was observed that some community members still regard mangroves as their birth right hence have right to exploit the mangroves, this was major stumbling block to awareness creation.

<p>Collection of baseline data on biotic and abiotic characteristics of project site.</p>			<ul style="list-style-type: none"> -Important for monitoring and evaluation of project success. -Baseline data was collected with help of community, community based organisation and local conservation groups (citizen science - this was to assist in sending a message on importance of mangrove and extent of degradation). -It was also important to make community make sense out of data collected and which information can be derived to better conserve this ecosystem, however in future more follow training is needed to capture a wider community.
<p>Construction of brushwood groynes along the Mwache mangrove forest for creation of enabling environment for mangrove seedlings recruitment and growth with community participation.</p>			<ul style="list-style-type: none"> -Groynes stretching more than 800 m were constructed for wave attenuation to avoid seedling death on planting, and also from grazing by cattle. -Some sites, due to high sedimentation level, had turned into dry land and it was hard to construct groyne structures. In future more strategies need to be incorporated with county government partners to excavate the sediment to turn the place to be more suitable for mangrove growth. -Operation and maintenance cost availability is critical for viability of this structures. However, the community can be incentivised to maintain the structures by themselves through training to adopt alternative source of livelihoods.
<p>Monitoring and evaluation (M & E) of project progress in relation to baseline data with community participation.</p>			<ul style="list-style-type: none"> - It needs a long time period for mangroves take time to grow -This needs community volunteer training on how they should gather and communicate data gathered from the monitoring and evaluation.

Community empowerment and how they will benefit from ecotourism promotion				<p>-Lack of resources and partnerships to fulfil the objective.</p> <p>-Community have to be enlightened to embrace alternative sources of living to ease pressure from mangrove forest degradation.</p>
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

A number of challenges were experienced. The abrupt change of weather from sunny to wind and rain during the restoration was experienced which slowed down our restoration timetable (especially during April and May 2018). To circumvent this, temporary shelters were constructed by community to shield from weather change, and awareness was created for them to wear extra safety gear such as appropriate clothing in case of weather change, so that their health is not affected.

There was also resistance of some local community members to restore the site, as they thought exploitation of resources was their birth right. To counter this a model was hatched to motivate local community groups on rewards and sanctions on utilisation of resources. These were set through internal set mechanism of the group hence create sense of ownership of rules set.

Another challenge was that women were not able to freely express themselves. In order to counter this some meetings were organised where women were separated from men. This was to give them freedom to air their views, as women in Mwache community are culturally not expected to talk in presence of their men; this depicts a sense of rudeness hence need to separate them to circumvent this.

On the other hand, Mwache community young generation were reluctant to attend the workshops creating a problem on how future conservationists for the community can be initiated for sustainability of conservation efforts, therefore in future a better strategy should be put in place to motivate their participation.

Also the over expectations of community members e.g. allowances, as the case is for donor project, however this was countered by explaining to them what the project intends to achieve and that no money was allocated for that.

3. Briefly describe the three most important outcomes of your project.

1. The suitable conditions necessary for Mwache mangrove forest restoration was observed in some of the restored sites (approximately 45 % of the pilot site) - i.e. self-regenerated mangroves, crabs, and millipedes were seen recolonising the area.

2. Awareness creation was very successful, it targeted the conservation groups, local community both men and women and fisher community, however youths were not well captured as they were very reluctant to attend.

3. 800 M stretch of groyne structures was constructed to shield the restoration site from stressors such as waves and marine debris which may suffocate the seedlings.

4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).

The Mwache local community were involved from the beginning as the success and sustainability of the project depended on local community involvement. The community were therefore involved in initial survey to identify causes of mangrove degradation; they were also involved in processes to undertake to restore the sites to suitable state for self-regeneration of mangroves this through groyne structures construction. Local communities were involved in nursery set up, maintenance and replanting to degraded sites and also how to identify mature seedlings for replanting to increase seedling survival rate. Community were also involved in data collection for monitoring and evaluation of project success - actually baseline data was generated with help of community. These involvements created a sense of ownership and group acceptance by government to be a representative on assessment of how Mwache dam construction will affect their livelihoods if mangroves were affected by the project.

5. Are there any plans to continue this work?

Yes!

- Strategies for long-term monitoring and evaluation of the restored Mwache mangrove forest site need to be done. This will give community clear roadmap on what needs to be done to protect the critical resource. This is also important as mangroves take time to mature hence close monitoring is important.
- Marine debris being one of leading cause of seedlings suffocation and death, a clear awareness campaign needs to be done with regular clean up initiatives by community. This will over time create a mangrove forest free from marine debris hence conserve mangrove biodiversity.
- Bi-monthly training of school children on Mwache mangrove conservation will create future mangroves conservationist.
- Also more groyne structures need to be constructed and the current constructed 800 m stretch monitored closely. This will be important to capture wide area and also to avoid recurrence of degradation due to wave attenuation and other stressors such as marine debris.

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

The results have been shared previously through Kenya Marine and Fisheries Research Institute Internal seminars and communication bulletin. I have also shared the results in International Platform at Australia National University through non-award academic writing and very soon if accepted will be in Australian library and will get a non-academic masters award for the work, will share the same once results are out. I have also presented my work in the recently concluded Kenya Rufford grant conference organized on 1st and 2nd December, 2018 where I was one of the oral presenter. I also presented an abstract in the recently concluded November, 2018 Blue Economy conference organised by Kenya Government. Local community forums have also been used to disseminate the information.

I intend to write technical report which will share with you for Rufford website sharing. I have also shoot a number of videos which I intend to upload on you tube for sharing of project work. I also intend to create Mwache Community conservation group as an information sharing platform,

7. Timescale: Over what period was The Rufford Foundation grant used? How does this compare to the anticipated or actual length of the project?

The Rufford grant was used for 13 months. This was important mainly for progress monitoring, however more time is needed on this as mangroves take time to grow. The nature of project still requires more time for full implementation. Local conservation group volunteers have been very instrumental in pushing the project running for up to 15 months as at current.

8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Field work allowance (team)	1600	1450	-150	The field work personnel was organized in such away one key person at a time goes to field, to save on allowance cost.
Field work allowance (community)	500	400	-100	The community members involved were briefed on expectations hence some work was volunteered
Transportation costs (Fuel)	300	458	+158	Due to rains in April, May and September some roads were impassable hence used long route

Brushwood construction structure	800	978	+178	800 meter stretch was constructed
Mangroves Nursery and preparation, and maintenance	400	478	+78	Apart from mangrove nursery, nursery for indigenous trees planting was prepared to provide alternative source of firewood and construction materials in future.
Seedlings hardening and mangroves replanting	200	177	-13	In some instances volunteers were used
Monitoring and Evaluation and materials	300	293	-7	KMFRI office materials were also used in kind
Workshops and seminars for awareness	700	817	+114	One more workshop was organized for women to get their views which was not foreseen in budget
Stationery, writing and printing materials	200	150	-50	KMFRI office materials were also used in kind
TOTAL	5000	5198	+198	The extra money was derived from KMFRI near shore strategy kit to fill deficit in one fieldwork

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

1. Monitoring and evaluation should be continually carried out to monitor the progress of the project, and add value where modification needs to be done.
2. The brushwood groyne structures need to be maintained by local community to avoid crumble, with more extension needed to cover wider area.
3. Awareness campaign among youths is needed for sustainability of the project as they are future conservationists.
4. The local community need to be trained on adoption of alternative source of livelihood to ease pressure on Mwache mangrove forest.
5. This being pilot study, roll out of the project to other areas will be recommended in future as concrete success motivation evidence is made available for adoption to other sites.

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

The Rufford Foundation logo was used during the three organised workshops and seminars, it was also used during presentation of project in Australia National University. During the recently organized Rufford grant conference in Kenya i.e. 1st and 2nd December, 2018 the logo was also used. All fliers and posters developed during the project were embedded with Rufford Foundation logo.

In future I intend to share recorded videos of the work on you tube, Facebook and other digital platforms.

11. Please provide a full list of all the members of your team and briefly what was their role in the project.

Mr. Gilbert Nyabochwa Atuga

Project coordination, with assist in Brushwood groyne construction, monitoring and evaluation of progress and team coordination.

Mr. George Onduso

Coordination of local community on nursery development, mangrove planting, and linkage to other conservation groups with local community.

Mr. Rashid Anam

He will help in fish species identification for determination of reemergence of fish diversity in the regenerated mangroves sites overtime.

Kilonzo Joseph:

He provided valuable knowledge in identification of crab species diversity in regenerated and healthy mangrove sites overtime.

Faith Kimanga:

She was handy to determine ways to secure acceptability of sustainable and cost effective approach to mangrove conservation with wider coastal community acceptance.

Mwache Local community:

They provided assistance in coastal structures construction (Bush wood groynes). The community are also currently in-charge of time to time maintenance of the structures. They also participated in planting of mangrove seedlings and routine monitoring of the field progress on training.

12. Any other comments?

This work needs continuation for the success story of the project to be fully realised. Bearing in mind that mangroves ecosystem are fragile to sporadic eternal disturbances.