The Rufford Small Grants Foundation

Final Report

Congratulations on the completion of your project that was supported by The Rufford Small Grants 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	Mirera David
Project title	Strengthening and empowering silvofisheries initiatives along the coast of Kenya as a tool for community participation in mangrove management
RSG reference	25.07.08
Reporting period	November 2009 - May 2010
Amount of grant	£5900
Your email address	dimirera@yahoo.com
Date of this report	12.05.2010

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
1. Promotion/development of silvofisheries (fish, mud crabs) initiatives in coastal communities		√		-The culture of silvofisheries candidate species is new and therefore takes time for people to adopt well. -Tangible benefits of silvofisheries initiatives like mud crab culture need between 4 and 10 years before they can be sustainable thus cause doubts within the farmers. - A lot of labour/ extension work and training is needed for effective dissemination and development. -The market for the silvofisheries project is not well developed leading to less income to the farmers. Some groups accessed tourist hotels and were able to make a breakthrough. -There were sudden mortalities of silvofisheries organism like mud crabs which need to address through research to alternative culture methods since they lower the determination by farmers.
2. Development of alternative income generation activities through planting casuarina, mangrove nurseries and bamboos inclusive nurseries		√		-Some species of mangroves like *Avicennia marina* have high mortalities in nurseries hence need to be investigated on the possible approaches that can be developed. -*Ceriops tagal*, *Rhizophora mucronata* and *Sonneratia alba* were well established in nurseries by the communities. -Development of nurseries and planting of casuarinas was impacted by the tendercare needed in watering and fencing to avoid goats and cows from accessing them which the communities could not provide well. However for the farmers who had planted them in farms the success was high. -Bamboo cuttings had a high mortality in all the villages due to need for watering which could not be provided adequately by the communities.
3. Carrying out awareness campaigns on silvofisheries			√	- This was well achieved through community meetings, development of signboards for some groups, and advertisement flyers for other groups. -The silvofisheries work was also shared

				in local, national, regional and international meetings during the project period. -Youths were also trained in classes on silvofisheries and involved during the annual mangrove planting days as a means towards awareness development.

2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

The project was conceptualized without taking into consideration some of the nagging issues that hindered the project implementation process. The project needed a lot of workforce in terms of extension to work with the communities to train them and ensure that the right things are practised which were not included in the project but effort was made to train and use some of the community members that helped the process. The high mortality of crabs in the cages greatly reduced the chances of getting good profits and heavily impacted the outcome of the project. More working hours was advised for cage micromanagement to reduce mortality and research has been initiated on alternative culture methods like pens and ponds which may not need intensive daily management. Also the labour and resources needed to cover to development of fences around where casuarina seedlings were planted was not visualised and planned for leading to loss of several planted casuarina seedlings there in the field due grazing by cows and goats. Simple makuti (local coconut leaf) fences were advised to help control this situation and succeeded where they were set. Bamboos required a lot of water to be able to grow but the communities could not meet this requirement. It's my suggestion that small bamboo nurseries be developed and supplied to the farmers. Some community groups needed pieces of land where they could build their offices and this being seen as a good idea was supported in the Majaoni Youth group. The plan to expand culture of red snapper in acadjas could not proceed due to lack of seeds thus effort was made to introduce milkfish in silvofisheries ponds that looked successful since seeds were available.

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

a. Strategies for conservation of mangroves (awareness, mangrove nursery and casuarinas)
The three communities (Makongeni, Dabaso and Majaoni) have been well trained on mangrove nursery development and transplanting. Effort was made to expose them to the different methods of developing mangrove nurseries for four species of mangroves (*R. mucronata*, *A.marina*, *C. tagal* and *B. gymnorrihiza*). Each of the groups has planted 10,000 mangrove seedlings within the last year and currently 5,000 seedlings are in their respective nurseries. Ten individual farmers have been facilitated with casuarina seedlings and currently 7,000 causarina seedlings have been traplanted while five farmers have been helped to develop casuaruna nurseries. The observed developments if well nurtured will help to improve the livelihoods of people since there is a high demand for trees within the coastal towns for construction.

Mangrove awareness campaigns were held in the communities enabling transfer of information to the wider public in these areas and beyond. In addition, Makongeni's Baraka conservation group was assisted to develop a signboard to help give diferection to the visitors and other people who intend to visit the area. The signboard was also strategically placed on the main road to pass information to the road users. Dabso Conservation group was assisted to develop posters that were intended to

market their silvofisheries activities in addition to giving people some information on the associated community ecotourism that utilizes the developed walkboard.

b. Livelihoods improved through mud crab/fish farming and baord walk eco-tourism

The communities engaged have developed skills and initiated mud crab/fish farming that is friendly with mangrove conservation. These communities have sold their harvests and have gotten income out of the initiatives. All this groups have developed mangrove walkboard and are at different stages of promoting mangrove ecotourism as a package of the silvofisheries intiatives. Dabaso conservation group is the pioneer that has seen profits coming out of the eco-tourism package and has gone ahead to establish a mangrove mini bar at the end of their mangrove walk board. These initiatives are also attracting support from other local NGOs and government departments as alternative livelihood demonstration centers.

c. Capacity developed in silvofisheries

All the groups were trained on the varoius silvofisheries methods and systems like pond, pen and cage silvofisheries. Three training sessions were done in a class setting involving different group while various trainings were offered in the field at the different farm demonstration sites. The communities seemed to have grasped the basic methods of silvofisheries and are in the process of continuing their activities even after the end of the project. As a training strategy, several community meetings were held with the groups to sort out internal problems/misunderstandings that could affect the adoption of the silvofisheries innovations. These meetings helped to create harmony within groups up to 80% level. Other challenges could not be resolved and were left to be tackled over time with the local government adminstration and amongest the groups; this included control of theft of silvofisheries initiatives among others.

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

To ensure that the project was applicable and meaningful to the local communities, the activities supported were prioritised by the communities and implementation was done by them while I provided techenical expertise. Also other partiners in the areas of silvofisheries were involved to develop expertise to ensure sustainability of the initiatives. Initiatives like bamboos, casuarinas were on a community individual basis benefiting each of the involved people with techniques and giving an enterprise that will help them get income once they start harvesting. Mud crab and fish culture technologies were also given to the groups through training and field demonstrations. The communities have gained income through these initiatives and hence are able to support their families to some level. In general the capacity of the communities has been developed and now they are able to link conservation and livelihood improvement through utilization of the resources that they have.

5. Are there any plans to continue this work?

The silvofisheries initatives have been initiated and will need to be supported for more than 10 years through research and extension so that sustainability can be achieved. Funding has been obtained from the International Foundation for Science (IFS) to do research on alternative methods of culturing mud crabs in the mangroves e.g pens and ponds. The research is intended to provide useful information that will be provided to the communities to promote silvofisheries.

Irrespective of the end of the Rufford grant support, I still continue to support the communities technically by offering extension services to ensure adoptability is achieved through problem solving/advice and encouragment.

Also the communities will be linked to other projects along the coast being run by other NGOs to see if they can be give any support for their silvofisheries initiatives so that they can attain sustainability. More grant support will be requested from Rufford grant to boost the communities already implementing the silvofisheries projects. It's hoped that through this more ground will be developed to enable the projects stand alone.

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

The results of this work have been shared previously through national, international and regional workshops like WIOMSA Scientific Sympossium that was held in Reunion in 2009 where a poster on culture of red snapper in a cadjar nets was presented and oral presentation on silvofisheries innovations was made. Local community meetings and barazas are also used as forums for dissemination of this information. Futher dissemination is done through flyers and brochures like the one supported for the Majaoni youth development group. Local community trainings that I organise periodically will also be used as forums for sharing such informations while internet will be used to disseminate the project technical report.

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

The project was implemented for a span of 26 months. This was due to the need for extension to ensure that some of the concepts were well taken care off. This seemed to be more than the project period of 24 months which may imply that some projects need more time as compared to the rest due to difficulties in technology adoptability at different levels.

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
Personnel	2,160	2,715	-555	This was due to high extension work needed
Training	616	500	+116	More training was only required in the new group that was introduced
Awareness and stationary	936	1230	-294	There was need to have permanent structures like signboards to pass information to a wider population
Networking and incidentals	664	620	+44	Few incidentals were encountered
Technology implementation and monitoring	2248	1800	+448	The rennovations of the old supported cages and acadjas helped to reduced costs
Total	6624	**6865**	-241	

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

Silvofisheries in an important conservation and livelihood initiative that is well disseminated will improve the livelihoods of the local people. However priority needs to be given in the following areas to support the already rolling process. **1**. There is need for research to come up with suitable and simple methods for culture of mud crabs and fish that can increase profits for the people. The research also needs to assess its impacts on the environment which silvofisheries intiatives are being done in an area. **2**. There is a need to come up with strategies on how to carry make successful/profitable intergrated silvofisheries (fish, mangroves, eco-tourism, casuarinas, and bamboos). **3.** Training of village based silvofisheries extension agents should be prioritised to improve the performance. **4**. A market development for silvofisheries products may also be pramount as the innovations develop. **5.** There is need of having the developed groups succeed before moving on to the others, however if the other groups learn from their pears and start it will be worth to give technical assistance.

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

The RSGF log was used during the project implementation process through the flyers that were developed for Dabaso youth conservation group. Also the RSGF logo was used for a poster that was presented in the 6th WIOMSA scientific symposium at Reunion in 2009. RSGF also received publicity through the development of a signboard for one of the silvofisheries community groups (Makongeni's Baraka Conservation group).

11. Any other comments?

Silvofisheries innovations are pertinent community interventions to be supported until profitability is realised since they are not only conservation and livelihood promoters but also act as adaptation measures for climate change impacts. The poor are highly susceptible to climate change impacts and through silvofisheries the income of the poor is anticipated to increase and hence susceptibility reduced.