

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. 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. 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	Johnson Grayson Mshana
Project title	Conservation awareness campaign for the protection of critically endangered Jipe tilapia <i>Oreochromis jipe</i> and its habitat in Lake Jipe Tanzania
RSG reference	15759-2
Reporting period	November 2014-November 2015
Amount of grant	4990
Your email address	mshanajohn1@suanet.ac.tz
Date of this report	December 2015

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
<p>To raise public conservation awareness to primary and secondary school students, school teachers and parents in lake conservation and mobilise community to adopt environmental friendly biogas and improved fire wood stove</p>			√	<p>The education and awareness campaign involved school teachers, one secondary students and two primaries pupils of the Lake Jipe mountainous areas. Awareness were raised to eight school teachers, 89 students at Ubangi Secondary School, 140 primary pupils at Vuchama and 170 pupils at Mriti schools. Three school environmental clubs were formed and registered (through Mali Hai Club of Tanzania) with 35 members at Ubangi secondary school, 76 primary pupils at Vuchama and 97 pupils at Mriti schools. Capacities of club members to the protection of Lake Jipe ecosystem through conservation action in the mountainous areas were strengthened through workshop training. Club members at Mriti primary school established one tree nurseries with a total of 1550 seedlings that will be planted in the forest degraded areas in March 2016.</p> <p>In addition, the capacities of the 1st RSG Environmental Club members at Ruru primary (36 members) and Jipe secondary school (68 members) were strengthened following one day training workshop.</p> <p>In collaboration with village and district government leaders, education and awareness were raised to 87 villagers/local residents on the use of environmentally friendly biogas and economy firewood stove at Jipe, Vuchama and Ruru villages. To the end of the project, three biogas systems were in operation following resident's acceptance of the technology for domestic purpose. The use of economy firewood stove was adopted for domestic purpose by 25 residents. In addition, five selected residents were trained on design, construction and management of biogas and economy firewood stove so that the community should continue to benefit the project through local experts after the project timeline.</p> <p>One of the negative outcomes of the project is</p>

			<p>that private and government schools around the lake/catchment areas accepted the technology but did not adopt it in the project time despite high demand of firewood for cooking. One of the reason is some technical difficulties and high construction cost for institutional purpose.</p> <p>Through participation, local communities around the lake and in the mountainous areas were concerned with forest degradation that increases siltation. Mr Msuya of Jipe Village said ‘siltation is a major threat to the breeding sites of Jipe tilapia and other fish species, and the main cause of it include soil erosion following unsustainable agricultural practices, large animal herds and forest degradation’. On the other hand, Ms Selina from Vuchama village noted that ‘without establishment of local conserved areas for fish breeding and promotion of woman participation in fishery governance, the extinction risk will not be reduced’.</p> <p>The objective was fully achieved due to community participation and a good working relationship with district and village government leadership.</p>
<p>To establish school and village indigenous tree nursery beds and mobilise community participation in restoration of degraded areas through tree planting.</p>		<p>v</p>	<p>The forest degraded areas in the lake catchment were mapped. Community members including students, teachers and parents were mobilised to stop further negative actions to the environment and participate in the restoration programme. One day training was conducted in each of the two participating school to build the capacity of students and teachers on tree nurseries management and mobilise participation in the restoration of the degraded catchment areas. A total 4200 indigenous tree seedlings were sown at Ruru primary school and Jipe secondary school. In April 2015, a total of 1700 seedlings were sown by students in degraded areas in Ruru village while in only 350 seedlings were planted by students in the Jipe village. Following high rainfall in the same month, floods affected seedlings in the nurseries based at Jipe secondary school and cause high mortality. Local residents and students involved in the project suggested that a combination of tree planting in the degraded areas, use of agro- forestry and nature enterprise are among ecological sound technique for the reduction of threat to Lake Jipe</p>

				<p>ecosystem.</p> <p>Apart from flood, another challenge behind this objective was the fact that parents believe that tree nursery management and activities could be done by children in schools but they can participate in tree planting programme. Apart from these challenges, the project was partially successful due to community support at all levels from students, teachers, local residents, and village and district government leaders.</p>
<p>To provide environmental education on soil conservation and mobilise local community to adopt best land use practices to the people living around Lake Jipe</p>			v	<p>Field visits were conducted in two mountainous villages of Lake Jipe to sensitise and mobilise farmers on the best land use practices and soil conservation. Farmers in the mountainous areas were mobilised to adopt organic farming technology alongside best land use and agricultural practices such as construction of terraces cage farming to reduce soil erosion and siltation in the lake. Following mobilisation and awareness programme, 2-day workshops were organised and a total of 40 farmers were trained on the construction of terraces, cage farming practices and organic farming for soil conservation and subsequent protection of Lake Jipe ecosystem.</p> <p>In addition, local communities were mobilised to conserve soil and adopt best land use practices through reducing large number of cattle herds and adopt dairy farming. Following awareness and mobilisation activities, 1-day workshop was conducted and 30 cattle keepers were trained on the soil conservation for the protection of the Lake through best practices in dairy farming. To the end of the project, five livestock keepers reduced their cattle herds and adopted dairy farming. The project organised 1-day visits for the four trained members for education and knowledge sharing in the nearby successful dairy farmers in Marangu area.</p> <p>The community involvement and the spirit of project ownership was the reason for the success of this objective.</p>
<p>To mobilise and conduct training on improvement of environmental friendly alternative livelihood activities (i.e. beekeeping and improved local chicken</p>			v	<p>Improved Beekeeping:</p> <p>Two workshops were conducted and 45 beekeepers from three villages were trained on improved beekeeping as a tool in the conservation of lake Jipe ecosystem. Three participants were trained on the hive</p>

<p>keeping) to the fishers and other residents living around Lake Jipe</p>			<p>construction using local available materials, hive sightings and best practices in honey harvesting, value addition and marketing. This is a long term capacity building as local experts will continue to support mobilised beekeepers even after the project time line. A manual on 'IMPROVED BEEKEEPING- UFUGAJI BORA WA NYUKI' was produced and distributed to the participants. To the end of the project, a total of 23 improved hives were constructed and sighted whereas 16 hives (69.5%) were noted to have honeybees by the end of October 2015. One of the project success was the harvest of honey from 5 hives (31.25%) in September and October 2015 whereas an average of 9 litres (equivalent to 31.4£ per hive) was obtained by beekeepers. In collaboration with district beekeeping officers, three beekeepers association was formed and registered. Beekeepers at Ruru Village were provided with 50 hectares of the forest area for beekeeping activities. The area was declared by Village Government Authority as 'Village Bee Reserved Forest Area'.</p> <p>Improved local chicken keeping: Local chicken keepers were mobilised on Lake Jipe protection through improved local chicken keeping. A total of 112 local chicken keepers from three villages were trained on the best practices of improved local chicken. A manual on 'IMPROVED LOCAL CHICKEN KEEPING-UFUGAJI BORA WA KUKU WA KIENYEJI' was produced and a total of 61 copies were provided. Following training, 19 chicken keepers constructed new improved chicken house and started to practice principles and guidelines of improved local chicken keeping. The project members in collaboration with district leadership requested 'SHENGENA POULTRY FARM' to support the mobilized 19 chicken keepers with improved chicks. A total 250 chicks (with approximate value of 215£) were provided by the farm in September 2015 and distributed to the farmers. Three local chicken farmers association was formed and registered with support from the district livestock officers.</p>
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

In the course of project implementation, the following were unforeseen difficulties.

- Floods that affected tree nurseries in Jipe secondary school. Mobilized Environmental Club members in the same school in collaboration with teachers and ward forest officers selected another tree nursery site and new nurseries were established. However, plastic bags with seedlings are kept on cage that is 1 m height from the land surface. New tree nurseries by mobilized club members has total of 2800 seedlings and will be planted in March following rainy season.
- Large number of motivated local community participation in the training of improved local chicken and beekeeping as alternative activities for fishing increased demand of training manual and facilities beyond the project budget line. This was tackled by mobilising cost sharing through photocopying additional manuals to meet demand. Cost sharing enabled all trained members to have manuals for beekeeping and local chicken keeping.

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

- Awareness and education raised to 399 primary pupils and secondary students, three School Environmental Clubs formed and registered, the capacity of the 104 1st RSG School Environmental Club members strengthened on conservation, awareness raised to 87 people on environmental friendly biogas and firewood stove whereas three and 25 residents successfully adopted, constructed and started to use biogas and firewood stove for their home purpose, respectively. In addition, five selected residents were trained on design, construction and management of biogas and economy firewood stove, hence long term capacity building.
- Following awareness and training on soil conservation, five cattle keepers around the lake reduced their herds and adopted dairy farming hence reduced the threat to the Lake Jipe ecosystem. Transforming livestock keepers with large cattle herds will actually reduce soil erosion and Lake Siltation. Mobilised five community members will stand as catalyst for other cattle herds to change the farming system.
- Strengthened capacity of 45 beekeepers in three villages on improved beekeeping for Lake Jipe conservation, five selected local residents trained on the design, construction, sighting, harvesting of honey, value addition and marketing. The production of a manual on 'IMPROVED BEEKEEPING- UFUGAJI BORA WA NYUKI' is a long term tool for beekeepers as will continue to provide knowledge and guidance even after the project. A total of 23 improved hives were constructed and sighted whereas to the end of the project 16 hives (69.5%) were noted to have honeybees and honey from 5 hives (31.25%) at the average of 9 litres per hive (equivalent to £31.4 per hive) were harvested by beekeepers. Three beekeepers associations were formed and registered at district level and 50 ha forest areas in Ruru village was declared as 'Village Bee Reserved Forest Area' by the village government. The Reserved Forest for beekeeping will not only reduce forest degradation but also improve the health of the lake ecosystem through reduced siltation. A total of 112 local chicken keepers were mobilised and trained on the best practices of improved local chicken keeping, house construction using locally available materials, feeding, disease and disease control and vaccination, record keeping, marketing and value addition. A manual on 'IMPROVED LOCAL CHICKEN KEEPING-UFUGAJI BORA WA KUKU WA KIENYEJI' was produced and distributed to the farmers making a long lasting impact of the project. The project was successful to

collaborate with private company in which SHENGENA POULTRY FARM motivated 19 mobilised local chicken keepers by supporting 250 chicks for free.

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

Village leaders and local communities were involved in the project activities including education and awareness programme, workshop training in the soil conservation and best land use practices. Pupils and students from two primaries and one secondary school were involved in the awareness programme and tree planting in the degraded forests and catchment areas around the lake. Long term capacity building to the local residents includes training on the best practices in improved beekeeping and local chicken keeping as alternative and environmentally friendly activities for the protection of Lake Jipe ecosystem. In addition, the community have benefitted from the training manuals with various aspects on improved beekeeping and local chicken keeping. Furthermore, the local communities were involved in the training for environmentally friendly and economy biogas and fire wood stove technology. One of the most important benefits is that five residents were provided with advanced training on the biogas construction and energy efficient firewood stove, a long term community capacity building as members will continue to support other residents after project timeline. In addition, involvement and participation of the local communities increased the spirit of ownership, support and good working environment for the project executors.

5. Are there any plans to continue this work?

Yes. The project will continue to address conservation activities for the protection of Lake Jipe ecosystem and Jipe tilapia through the following approaches:

- Conduct research on Jipe tilapia biology, distribution, identifying and mapping breeding grounds, promoting and establishing locally conserved area.
- Support mobilised resident's income generating activities (beekeeping and local chicken keepers).
- Reduce Lake Siltation through promoting dairy farming.
- Promote and improve governance of the fisheries sector by strengthening capacity of woman, Beach Management Units (BMUs) and District Authorities.
- Support environmental friendly and economy fire wood stove selected primaries and secondary schools around Lake Jipe catchment areas.
- Mobilise more trees planting in degraded forest areas, promoting agro forestry in mountainous areas and nature based enterprise for the conservation of Lake Jipe.
- Promote the concept of 'legal gear mesh size' for the protection of Jipe tilapia and ecosystem.
- Enforce laws in the protection of Lake Jipe ecosystem.

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

I have presented the results of the project outcome to the district council members and lake stakeholders following invitation by the District Commissioner. The final report will be shared by the international community through conference participation and publication.

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

The RSG was used from November 2014 to October 2015. This was similar to the anticipated actual length of the project. However, the initial project time scale was 10 weeks but due to community demand on training and extension, the project was implemented for a total of 12 weeks.

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
Stationery and awareness campaign materials (printing, stationery and film show)	560	560	0	Fund was used as planned.
Management of tree nurseries and purchase of watering materials (purchase of water storage tanks, water pumps and water cane and plastic bags)	1900	1900	0	Fund was used as planned
Transport cost (car hiring, fuel, boat fare and bus fare) for team members	934	934	0	The fund was used as planned and was enough
Workshop training in three villages (for students, farmers, livestock keepers, bio gas and improved fire wood stove), hiring of trainers from the nearby centers.	820	1056	236	Fund was used was beyond the budget line for the item due to unexpected large number of trainees and facilities. As a result, emergency fund (budget of £236) was used to complement the budget.
Accommodation and substance allowance for team members	540	540	0	The amount was used as planned.
Emergency	236		0	The budgeted fund for this item was used to supplement the additional cost for the training of local residents on the best land use practices and improved fire wood stove and bio gas
TOTAL	4990	4990		

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

The most important next step includes the following:

- Promote and establish 'LOCAL PROTECTED AREAS' to enhance breeding of Jipe tilapia among other fish species in the lake.
- To reduce the number of fishers and improve the ecological health of Lake Jipe through collaborating with stakeholders in the improvement of local residents livelihood by supporting improved beekeeping and local chicken keeping.
- To reduce siltation and improve fish breeding grounds and ecological health by promoting diary farming, agro forestry and nature based enterprises.
- To project fishery and the ecosystem by promoting participation of woman in the governance of the fisheries sector and strengthening capacity of woman, Beach Management Units (BMUs) and District Authorities.
- Promote and enforce the concept of 'buffer zone' in Lake Ecosystem and connecting rivers.
- To reduce ecological threat to the lake and forest by supporting environmental friendly fire wood stove selected primaries and secondary schools around Lake Jipe catchment areas.
- Restoration of degraded areas by club members and promote the concept of 'Bee Reserved Forests' in all villages around Lake Jipe.

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 Logo was used in the following activities:

- Cover page and at the top of every page of the Manual for Improved Beekeeping-Ufugaji Bora wa Nyuki.
- Cover page and at the top of every page of the Manual for Improved Local Chicken Keeping-Ufugaji Bora wa Kuku wa Kienyeji.
- Printed Certificates for Trained Environmental Club Members.

11. Any other comments?

The involvement and participation of local residents played key role in species and habitat conservation of critically endangered Jipe tilapia and its ecosystem in Lake Jipe in Tanzanian part. Thanks to the financial support from Rufford Small Grant. The project made local communities get into understanding that human beings share the earth with other species, and it is an important responsibility for them to support the conservation of our shared planet. The community agrees that 'Extinction of species in Lake Jipe and deterioration of the ecosystem health is an unacceptable legacy for our next generation'. I finally realised that, the main responsibility of local residents, the government of Tanzania and the international community is actually to respect and protect them. However, as a conservation biologist, I believe that, apart from practical conservation strategies that integrate species and habitat protection, law enforcement and community empowerment, failure to include the local community in our species conservation plan will lead to extinction of many important and critical species. I feel proud to work with Lake Jipe communities and other stakeholders are invited to share experience and provide more support toward improvement of the lake ecosystem health.