

## Final Project Evaluation Report

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Your Details	
Full Name	Moushumi Basu
Project Title	Managing Man Tiger Conflicts & Conserving Tigers In Indian Sunderbans By Restoring Mangrove Bio Diversity With Community Participation
Application ID	23079-B
Grant Amount	£10,000
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Date of this Report	August 31, 2018

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
1. Reducing human pressures and dependency of local communities on natural resources of tiger habitat through sustainable livelihood options in our 16 target villages, where the project work is continuing.				<p>This is being done by –</p> <p>A) Extending the scope of our on-going livelihood options generated through development of community mangrove forests, community ponds and other sources to more number of beneficiaries and villages.</p> <p>Our community mangrove forests generate earnings to the beneficiaries</p> <ul style="list-style-type: none"> <li>• through tidal fishing.</li> <li>• through visiting apiarists from outside districts, who keep their honey bee boxes in areas rented out around beneficiary homes that are in the vicinity of the community mangrove forests.</li> <li>• collection of wild honey from community mangrove forests is also gradually emerging.</li> </ul> <p>Our community ponds are being used</p> <ul style="list-style-type: none"> <li>• to culture various species of fish and crabs besides raising ducks.</li> </ul> <p>B) Identifying newer income generation sources, with particular stress on local fruit/ vegetable cultivation.</p> <p>This time we have further increased the utilisation of our community ponds for livelihood augmentation by cultivation of Indian Jujube apple – a seasonal fruit with good market demand.</p> <p>At least 175 - 200 grafts of the plants have been planted by the side of six ponds in our villages. These fruits fetch good returns in the market, We have allocated the fruit trees amongst 18 -</p>

			<p>20 beneficiaries (mostly tiger widows), who will maintain the plants and earn money by selling the fruits. Further, the dried up wood, leaves and other plant parts are good sources for domestic fuel wood and thus reduce pressure on mangrove forests too.</p> <p>PN- This activity was however not listed in our budget and we managed to raise the amount from other sources.</p> <p>Side by side, our beneficiaries are also cultivating local and seasonal vegetables in small patches near their homes for personal consumption and selling surplus in the market.</p>
2. Reducing incidents of man tiger conflict in the target villages.			<p>By reducing the entry of villagers in the tiger habitat, the incidents of human deaths and injuries due to human-tiger conflicts have naturally reduced than in the past.</p> <p>There have been two cases of human deaths in our target villages during the current project duration. This has occurred when villagers entered into the jungle for catching crabs, without permits from forest department. Hence these deaths do not figure in the official records of forest department either.</p> <p>However we are aiming at zero incidents. Given the various livelihood options and capacity building that are emerging in our target villages from our project activities, we are able to convince the villagers better.</p> <p>When such incidents of human tragedies occur in our villages, we have reached out to the bereaved families and participated in their grief and loss. We next counseled them to give up going to tiger habitat and take part in our project activities instead, that can minimise their life risks while providing them with sustainable sources of income.</p>
3. Climate Change Mitigation			<p>The earthen embankments bordering the villages along the tidal streams</p>

			<p>are the lifeline of the villagers. Our community mangrove forests developed / developing along the periphery of our target villages, are safeguarding these earthen embankments by minimising various impacts of climate change as sudden tidal storms and tornadoes, incursion of saline water in the villages as a result of rising tides from Bay of Bengal, coastal erosion etc.</p> <p>Mangrove trees are excellent eco barricades that stand out strongly against such impacts and vagaries of climate change and thus protect the homes, assets and fields of the villagers. Nearly 38 km of such earthen embankments stand protected today as a result of our community mangrove forests.</p>
<p>4. Developing agriculture as a feasible means of livelihood and viable alternative to forestry.</p>			<p>Our beneficiaries are mostly small / very small landholders, who prefer forestry to agriculture. However, we have been trying hard to bring a conscientious change in approach amongst our beneficiaries towards cultivation of certain local / coarse varieties of crops and vegetables in areas particularly next to the community ponds.</p> <p>The best part is they are gradually taking to the cultivation of folk/native variety of rice that is adaptable to local climatic and soil conditions. We organised workshops and training programmes where young farmers from the Forum For Indigenous Agricultural Movement practising organic folk rice cultivation in North Bengal, shared their expertise with the beneficiaries.</p> <p>About 3.5 – 4 ha of land has been brought under cultivation this time. Thanks to our community ponds partly, that provide water for irrigation through harvesting of rain water.</p> <p>Further, our beneficiaries are using organic manure for cultivation. We</p>

			<p>created awareness on how the chemical fertilisers and pesticides are not only expensive but also hazardous for health and environment. Many of our beneficiaries have dug up pits outside their homes or created small tanks, where they dispose various bio degradable waste, plant litters etc. for developing vermi compost.</p> <p>Along with cultivation, we are also promoting agro forestry in the paddy fields. This is not only enhancing area's biodiversity but also adding to food security of the villagers. This includes various seasonal vegetables as gourds, potatoes, water melon etc. suiting the saline soil conditions.</p>
5. Cleanliness Drives for protection of mangrove saplings as well as income generation			<p>Our beneficiaries regularly clean up the mangrove plantation sites that mostly occur by the banks of the tidal streams. The trash collected are largely poly packets and plastic thrown away litter by the tourists. While such activities protect our saplings from getting choked, these colourful plastics that are non-biodegradable and have disposal problems are also generating some money for our beneficiaries.</p> <p>During our last project tenure we began by training six women including tiger widows for creating daily utility articles as baskets, storage of different sizes amongst others with these plastic litters and other waste</p> <p>This time, we have organised at least 30 women forming five self-help groups of six members each. Three of them have succeeded in getting their products linked with tourist resorts that display their items for sale before visiting tourists. These products are also in demand in the weekly village markets.</p>
6. Awareness Drives on mangrove & tiger protection along with income generation			<p>Our awareness drives, integrated with folk culture and music, had begun even prior to our RSG rounds to educate our local villagers on the</p>

opportunities.			<p>importance of tigers as our national animal and Sunderban as an important tiger habitat.</p> <p>With RSG however, our efforts were more streamlined and we approached the villagers with better planned strategies and activities developed with mutual discussion of our team members and expert suggestions. The results were very encouraging.</p> <p>With increasing number of beneficiaries and participants in our project activities, this time we could develop four awareness building teams with 12 folk artistes in each. They not only enlighten the local villagers but most importantly also educate the tourists with do's and don'ts of forest behaviour and ethics. Such messages combined with ethnic culture and presented by the teams to entertain tourists in the lodges, most importantly also generate income for our beneficiaries, while propagating native culture.</p>
7. Restoration of traditional practices as Folk Medicine & other local customs as conservation & worship of sacred groves			<p>Presently there are four centres of folk healers running in our beneficiary villagers. Our community forests provide them with their requirements for their folk medicines.</p> <p>Simultaneously we are also reviving some local practices/ customs of the indigenous communities that look up trees/ mangroves as sacred and thus be conserved as a part of ethos and religion, ensuring long term conservation.</p>

**2. Please explain any unforeseen difficulties that arose during the project and how these were tackled.**

Like last year, during this year too, the monsoon was heavy between mid-June to late July. The tides were rough and became higher than the normal times of the year. This inundated some of our ponds, particularly the ones in low lying areas. Though, we had to pause our work intermittently during such extreme weather conditions. It did not create significant impact on the overall progress of our work.

This time however we experienced a new kind of problem with the local political activists/ workers. They initially appreciated our work and expressed interest in visiting some of our work sites, to which we agreed. They commended our effort but unfortunately they started planting their party flags here and there probably with the intention of passing it off as their work and get credit for it.

However, thanks to some of our core committee members who handled the situation wisely. They first made the political persons see reason, by arguing that our work is for tiger conservation and to save poor villagers from man tiger conflicts. And well tigers certainly do not understand politics and cannot vote for them!

Simultaneously, they also alerted the local government and police officials regarding some of these incidents, who assured help if required. After this, our beneficiaries went ahead in groups, uprooting all such party flags in our area and handed them back. They were warned to stay away from our work sites henceforth.

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

**a). This time we covered about 38 ha of available vacant/degraded land** with mangrove plantation across 10 -12 villages. This also includes the incomplete plantation work, stray/ left over sites from our previous rounds in the respective villages. In the process, we have planted about 14 species of mangroves. Some of them include the Endangered Sundari (*Heritiera fomes*), Near threatened Goran (*Ceriops decandra*), Tora (*Aegialitis rotundifolia*), Hental (*Phoenix paludosa*), Bhola Sundari (*Brownlowia tersa*) besides Dhundul (*Xylocarpus granatum*), Byne (*Avicennia officinalis*), Peara Byne (*Avicennia marina*), Keora (*Sonneratia apetala*), Kankra (*Bruguiera gymnorhiza*), Passur (*Xylocarpus mekongensis*) etc. These forests are owned, managed and maintained by the local communities using their traditional and sustainable practices.

Our older community owned forests are already a part of the lives of our beneficiaries. They are generating sustainable sources of livelihood through tidal fishing, crab catching in mangrove slush after recession of tide, wild honey collection, income from outside apiarists besides supplementing their needs for firewood.

Further, these community mangrove forests are protecting earthen embankments bordering our villages from incursion of tidal water. They act as eco barricades against various impacts of climate change as rise in sea level, tidal storms, cyclones etc.

In order to make our plantation work further sustainable, we have also developed three more nurseries in our target villages, this time. This has created sapling pools of various mangrove species for our restoration work. In the process, our local community is becoming more self- reliant and more assured on the respective choice of saplings and their survival



**b) Developing seven community ponds**, that sustain diverse species of fish besides crabs whose fingerlings have been released in these water bodies by the beneficiary families.

Further, such community managed water bodies are also helping in rain water harvesting, that provide water for irrigating small cultivable plots, thereby promoting agriculture as an additional livelihood option and ultimately adding on to our conservation outcome in target villages.

**c) Steady generation of more livelihood options, capacity building and awareness for reducing biotic pressures in tiger habitat –**

Our persistent and focussed goal is to generate as many livelihood options possible. We are convinced that this alone can check the entry of our beneficiaries to the jungle. Along with those generated from community forests and ponds, besides promoting organic agriculture, we have achieved/further working out additional low investment, income generating livelihood means with our members. We approach our beneficiaries with such viable and sustainable options with which we persuade them to give up forestry.

As for example eggs/meat of ducks reared by our beneficiaries in community ponds or poultry have been linked with tourist resorts that are high on demand for non-vegetarian products.

Cultivation of Indian jujube apple is also fetching good returns to the beneficiaries. Our awareness and cleanliness teams are also earning money by engaging with tourists, through folk culture programmes or selling articles/handicrafts created out of throw away plastic packets, often littered by tourists.

We have further enhanced capacity building of the local communities by organising various skill development workshops and training on agriculture, fishery, training our tiger widows/women on various income generating activities as creating useful articles out of plastic packets and waste, besides holding discussions/talks by the trainers on better poultry management and increase in output.

Our various awareness programmers especially with children have also helped to bring about attitudinal changes in the villagers.

We organised five - six village level awareness meetings, with the help of experts from our associate NGOs. The beneficiaries are getting more aware and convinced that it is possible to continue with their traditional livelihood even outside the tiger habitat. This way we not only save human lives and reduce man tiger conflict but also help in tiger conservation.

Our efforts have helped us to reduce about 40% of human pressures either partially or fully from the target villages, in the tiger habitat area.



**4. Briefly describe the involvement of local communities and how they have benefitted from the project.**

The core objectives of the project are intrinsically linked with the involvement and benefits of local communities. The area of the project, its activities and ways of implementation besides other details are first worked out with the concerned beneficiaries, taking into account their ideas and requirements through village level meetings and social surveys. Such exercises thus empower them through more decision making and management opportunities, besides enabling their collective participation in the activities.

These are resulting in generation of various means of livelihoods for the villagers. With such emerging benefits, the villagers are developing a greater sense of belonging towards the project and its aims. Their skills are further enhanced through workshops and meetings with experts and other organisations. We have set up Mangrove Conservation Committees in our villages with local men and women, for monitoring the grass root implementation of the respective activities and their efficacy.

To add to them, the awareness programmes with the villagers and their children related to mangrove landscape, tigers and wildlife, impacts of climate change are also giving the local communities a better understanding of the environment around them whereby human, tiger and mangrove need to co-exist in mutual best interests and not at the cost of the other.

**5. Are there any plans to continue this work?**

Yes of course our work as a whole is a part of our larger, long-term programme which is essential both for tiger conservation and protecting lives of our local communities. And one of the biggest challenges of the project is bringing about altitudinal change in the beneficiaries by convincing them to gradually give up forestry in favour of various sustainable livelihood options possible outside tiger habitat. Thanks to RSG support that we are gradually succeeding in this regard and situations are becoming more suitable to carry out our larger goals by involving more number of villages and beneficiaries and expand our work further.

Also, the area of our work is a part of global climate change hotspot. Hence the project is very important as it is also helping the villagers to locally adapt to climate change impacts, through restoration of mangrove biodiversity around their villages. Hence, further continuation of the work is essential.

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

The results of our work are being compiled and processed by few of our school teachers and few other villagers, in vernacular language they are also part of our awareness campaigns with children and thus are best suited for the work. These would henceforth be ideal lessons on environment that we plan to share with our school children, by way of fortnightly lessons, as part of their extracurricular activities.

This time, few of our youth members are also compiling the experiences/recommendations of the local villagers and beneficiaries across the target villages. We plan to share and discuss them with our NGOs working together at the grassroots like us during our meetings for mutually learning and imbibing each other's best practices.

On special occasions as International Tiger Day on July 29, International Mangrove Day on July 26, World Environment Day on June 5, and other such awareness occasions, we will especially show case our project activities at the local level as well as at state levels as forest department, NGOs etc. Our archive/slide of still pictures, various survey reports, awareness programmes prepared by the local villagers will be presented on such platforms. Our cultural teams have songs, skits, dances etc. to propagate the objectives of our project during such programmes and events.

Furthermore, our updated survey reports prepared by members from time to time, will be shared with other grass root organisations, through workshops and meetings. They will also be shared with the forest department at various levels besides local environmentalists and journalists for their suggestions and information.

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

The grant was used over a period of one year from the first week of September 2017 to September 2018.

Since this was the third round of our RSG, the activities were more organised and streamlined. We began with our usual round of social surveys and public meetings with our new round of beneficiaries. However, we could finish these introductory phases much faster within 7-10 days, as the villagers were already aware of the activities. Following this, we went ahead with our planned activities and even introduced few new ones (mentioned in the updates from time to time) and managed to complete them within anticipated duration.

**8. Budget: 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. It is important that you retain the management accounts and all paid invoices relating to the project for at least 2 years as these may be required for inspection at our discretion.**

1 GBP = Rs.89.38 as on date -21/8/18 Source - Google)

PN – The figures have been rounded off to the next decimal

Item	Budgeted Amount	Actual Amount	Difference	Comments
Mangrove Seed Collection	549	574	25	One more tiger widow got included in this work on grounds of her urgent need.
Setting Up & Maintenance Of Mangrove Nurseries	744	746	2	
Mangrove Sapling Plantation	1110	1253	143	We exceeded our targets by about 4 - 5 ha. This extra money was adjusted through part of funding given by one of our references, as a gesture of appreciation towards our work.
Mangrove Protection & Mangrove Guard	624	626	2	
Cleaning of Plantation & Nursery sites	340	352	12	
TOTAL AMOUNT FOR DEVELOPING COMMUNITY MANGROVE FOREST	3367	3408	41	(from budgeted amount) (+) 143 from external funding
Manual de-siltation of 7 natural ponds	809	852	43	
Introducing fingerlings of fish, crabs & duck rearing in 7 community ponds	1652	1681	29	
Cleaning of community pond sites & banks of streams in the vicinity of ponds	415	430	15	
Cultivation of Indian Jujube Apple by the side of six ponds		287		Not originally budgeted for in the application This money was adjusted through part of funding given by one of our references, as a gesture of appreciation towards our work.
TOTAL AMOUNT FOR DEVELOPING COMMUNITY PONDS BY RESTORATION OF MANGROVE AQUA SYSTEMS	2876	2963	87	(from budgeted amount) (+) 287 from external funding
Banners , posters , wall	152	169	17	

paintings etc.				
Street Corner Campaigns	540	566	26	
Village Meetings/ Social Surveys	1080	1102	22	
Workshops & Exchange Programmes with local grass root organisations/ academicians , experts etc.	125	137	12	
Setting up Educational Mangrove Gardens in School	130	141	11	
Promoting folk culture teams for raising local awareness & performance in tourist lodges	350	362	12	
Various awareness programmes with children		220		Not originally budgeted for in the application This money was adjusted through part of funding given by one of our references, as a gesture of appreciation towards our work.
TOTAL AMOUNT FOR AWARENESS BUILDING & SKILL ENHANCEMENT	2377	2457	80	(from budgeted amount) (+) 220 from external funding
TOTAL AMOUNT FOR ORGANISING CONSERVATION LESSONS FOR CHILDREN	310	341	31	
TOTAL AMOUNT FOR TRAINING TO TIGER WIDOWS & WOMEN SHGs UNDER OUR PROGRAMME OF WEALTH OUT OF WASTE	655	758	103	This extra amount was adjusted from our Miscellaneous expenses
MISCELLANEOUS	545	556	11	
NET TOTAL –	10130	10483	353	This extra amount was adjusted from our Miscellaneous expense head
<b>TOTAL EXTERNAL FUNDING</b>			<b>650</b>	<b>This money was given by one of our references, as a gesture of appreciation towards our work during his visit to the project site.</b>

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

Firstly we want to continue and further expand our work of mangrove ecology restoration, in more number of villages.

Next we want to give more thrust on traditional agriculture with restoration of native and ecological farming practices that are both sustainable and cost effective. Our beneficiaries are poor with very small land holdings. One reason we found they stayed away/avoided agriculture was the cost factor involved in buying chemical fertilisers, chemical insecticides, seeds etc. and at the end there was no guaranteed yield either due to erratic rainfall and vagaries of weather. But we are trying to introduce cheaper, climate resilient and natural farming practices, through cooperation with our partner organisations.

**10. 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, we largely used the RF logo in our awareness programmes, in the posters used by our cultural teams, in our wall writings, to educate the tourists on do's and don'ts of forest conduct. Use of Rufford Foundation logo, much boosted our confidence and credibility among the visiting tourists.

The Mangrove Conservation Committees (MCC) set up in our respective target villages, to review and monitor the progress of our project work, are also our "local ambassadors" who take part in exchange visits, workshops and discussions with relevant government agencies and other organizations working in the area. During such occasions, RF invariably figured in our talks and deliberations, whereby its support for our work was acknowledged and appreciated. In fact, this also made the other participants sit back and take notice of our work further. Some of them plan to apply for RSG in future, to carry out their work further.

As the project leader, I shared my experiences of working with RF, with other conservationist colleagues, wildlife biologists as from Bombay Natural History Society (BNHS) Wildlife Institute of India forest department and other concerned organizations.

**11. Any other comments?**

This time, we could raise some funding (£650) from other sources. One of our references/ well wisher, visited our project site to see our work in January 2018. He was very pleased when we shared some new ideas/activities, with him, which however was not originally budgeted for in the application. In a token gesture of appreciation, he gave us the amount to help us implement some of these activity ideas. This was a great morale booster for us and we hope to get more such support in future to expand our work further and make it long term sustainable.

Our journey with the local communities feels very satisfying seeing them develop with confidence from frightened victims of man tiger conflicts earlier. Thanks to RF, that such transformation is being made possible in the larger interests of tiger conservation in this important habitat. The local communities are realising the importance of tigers as an endangered species and feeling proud of their landscape. They are slowly believing that it is certainly possible to develop other feasible options of livelihood, based on their traditional knowledge/ skills even outside tiger habitat while also staying safe in their villages.