

Final Evaluation Report

Your Details	
Full Name	Neethi Mahesh
Project Title	Spatial Ecology and Conservation of Mahseer, in the Western Ghats Region.
Application ID	23047- 2
Grant Amount	£ 5,000
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Date of this Report	17-02-2020

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
<p>River ecology and water quality monitoring, with government schools in Coorg District.</p>				<p>Timeline of work: 2018 (October) 2019 (March- April)</p> <p>A total of 10 schools, located along 45 km of the river Cauvery, participated in activities engaging them in river exploration, water quality assessments and reporting of the same as part of their eco club curriculum. The activities help develop an understanding of how anthropogenic factors affect the immediate riverine health. The visits have been successful.</p> <p>The work is currently in a phase where a mobile application linked to a website is being developed to increase the scope and potential to replicate work in the Cauvery basin, as a citizen science, monitoring and reporting effort. This however still requires more funding to ensure a successful, sustainable platform.</p>
<p>Tribal riparian nursery and restoration efforts with school groups.</p>				<p>Timeline of work: 2018- Ongoing.</p> <p>A Jenu Kuruba, forest dwelling household has been hosting to the riparian nursery, for which work began in the year of 2019, and successfully raised 1000 saplings belonging to five different species of riparian trees. The present model has been recognised by the Karnataka Forest Department, for a Joint Forest Management initiative and shared as a case study for river rejuvenation efforts to the Ministry of Environment, Forests and Climate Change (Indian Government Ministry) who have commissioned work to authorities, to compile "Detailed Project Reports" to be submitted for a Cauvery Rejuvenation initiative. The nursery work will be handed over to the state government, i.e. the Forest Department</p>

				<p>and Jenu Kuruba community, by the end of 2020.</p> <p>Restoration work was carried out along a 300 m stretch of the river, affected by the worst flooding the region has ever experienced in August 2018 and 2019, respectively. Schoolchildren who were affected by the flood, from a village called Nelliahudikeri, participated in a restoration planting drive, in October 2019, in collaboration with the Forest Department, in Coorg District.</p>
Riparian Flora Restoration Guidebook,				<p>Timeline: 2017- 2019</p> <p>A Riparian Flora Guide was published to help citizens with restoration efforts in the district. The book acts as a case study, with details of tree species, while providing guidelines for planting and restoration in riparian zones. The book is being distributed to NGOs, local communities, educational institutions and officers within the Karnataka Forest Department.</p>

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

2018 was filled with unprecedented, extreme weather and natural disaster events. The forest in March (a period of flowering and fruiting for most species), was set ablaze with man-made forest fires, burning down the Dubare Reserved Forest, our primary focus area and location of the project. (Press Release: <https://www.newindianexpress.com/states/karnataka/2018/mar/03/fire-fries-forests-in-aanekadu-dubare-1781351.html>).

This was a period of high stress where all manpower, including our team were required to prevent forest fires from spreading, for a period of 2 weeks. The forest fires set fieldwork back and we were unable to harvest fruits or seeds in the most crucial time of harvesting. Furthermore, the monsoon unleashed itself with a high intensity rainfall event over a short duration of time, leading to intensive flooding, submerging the riparian forest for a duration of 2 months between August and September (Press Release: <https://india.mongabay.com/2019/08/extreme-rainfall-devastates-kodagu-yet-again/>)

Field work continued nonetheless, and the nursery was only fully established and functional in 2019.

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

- Successful field visits, along with teacher training on a yearly basis with 10 schools, situated along the Cauvery river, in Coorg District. Work presently focuses on handing over the learning and monitoring activities to schools, independent of the need to facilitate, by making necessary learning and teaching tool kits available to schools and citizens in general. The objective is to provide a transparent, democratic documenting and reporting system, to ensure long term sustainability and empower citizens to create their own monitoring projects all across the Cauvery basin, which is key to conservation of biodiversity and freshwater indicator species of fish such as mahseer.
- Recognition of the role Tribal communities' play, towards conservation of riverine and forest landscapes using traditional knowledge and their capabilities with nursery expertise, through various Forest Department initiatives, has helped draw out a concrete plan to sustain riverine conservation efforts in the district. While the nursery work is still supported through funding from small grants, the complete handing over of responsibilities is to take place when the Forest Department releases funds and hands over the work to the local forest department, through their Joint Forest Management scheme, which recognises and includes forest communities in their conservation plans.
- The riparian flora guide serves as a primer, by providing a successful model of restoration steps taken while emphasising on the need to document naturally occurring, native species, to help guide and support similar efforts and initiatives for rejuvenation of the Cauvery river, through forestry intervention.

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

- Reinstating the value of indigenous knowledge: Carries the potential to renew an age-old relationship based on nurture and care towards native species and biodiversity. The Jenu Kuruba tribal community in Coorg District are losing traditional knowledge with each passing generation as they get integrated into mainstream society, due to the economic benefits gained through employment in large coffee estates. Qualitative data also suggests that this is detrimental to their way of life, with preference given to commercial species of trees in the forest, which bring more economic benefits to sustain livelihoods. A nursery of native tree species which can bring livelihood and economic benefits, will go a long way in retaining the relationship the tribals share with nature. The Joint Forest Management initiative will hopefully help secure a way of life which is intertwined with the river and biodiversity.
- River monitoring: has helped connect the dots between rapidly changing landscape in Coorg District and its effects on the river. An increased awareness towards conserving native tree species which are quickly being replaced by monoculture plantations at an unprecedented rate, is the immediate need. This awareness is brought out by inculcating the value of

preserving what is natural and the various benefits of conserving biodiversity, with children, who increasingly find wild or natural landscapes alien in the present scenario. Climate change reports and findings in the wake of man-made and natural disasters point towards rapid unsustainable development and change in trend with farming practices and land management as precursors to the unfolding extreme events affecting livelihoods and the riverine landscape as a whole.

- Building climate resilience: Stakeholders such as coffee planters with estates bordering the river, have a huge role to play in conservation of riparian habitats, where they can monitor restoration sites once planting has been carried out. Estates affected by floods have carried out planting along a small stretch of the river and can monitor the success of the same. Other marginal communities affected by the floods, also see the benefit in planting riparian species of trees to protect themselves from floods in the future.

5. Are there any plans to continue this work?

Our River, Our Life: Mobile application linked to an interactive website, wholly dedicated to rivers, with the Cauvery river as the focus of this initiative.

The lack of adequate funding has been a challenge in executing river monitoring objectives to its full extent. The ongoing work requires a dedicated team of people, including design, education and technology professionals to make river monitoring a successful replicable initiative. Work at present requires funding to be able to support a team of professionals who can take the work from the field and make it accessible to citizens interested in river conservation. Ongoing work entails creating education material, teaching tool kits and data dependent information available on an online platform.

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

- 1) The Riparian flora guide has been distributed within the district to various stakeholders, empowering them with necessary information required for restoration drives, which are crucial to the survival of riverine biodiversity, including mahseer.
- 2) Our River, Our Life: The online platform will essentially act as a repository of information relevant to conservation of rivers, along with all available material on the river Cauvery and its catchment area in the Western Ghats, thus far.

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 from January 2018- June 2019 and stretched for over a year due to unavoidable circumstances.

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.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Jenu Kuruba, tribal personnel.	£1800	£2737	+£937	Extended period of field work.
Travel fuel for school visits and weekly supplies/ grocery shopping.	£388	£1029	+£641	Undercalculated distances and fuel prices.
Strip test water testing kit, with dissolved oxygen tests and coliform bacteria petrifilms.	£122	£160	+£38	Transition from the Jal tara testing kit to user friendly strip tests and parameters, which require less reagents and chemicals.
Food and provisions	£462	£772	+£310	£ 65 per month.
Internet and telephone	£56	£51	-£5	
Room rental/ accommodation (February 2019- June 2019)		£268	+£268	Moved from the forest to the closest town due to unavoidable circumstances.
Parent nursery and maintenance	£1440		-£1440	
Design and printing of the riparian flora field guide	£732		-£732	
TOTAL	5000	5017	+£17	

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

Spatial ecology of mahseer: The grant supported work studying the spatial ecology of mahseer, in Coorg District. This however needs to be replicated in other stretches of the river Cauvery to provide us a better understanding of their spatial and ecological requirements outside the Western Ghats, where the river and mahseer fish pose threats from a proposed dam in a critical mahseer area. The work will further be continued in collaboration with the Wildlife Association of South India, an NGO based out of Bangalore, Karnataka state.

Launching of Our River, Our Life: The app and website act as conservation tools required for river monitoring in the Cauvery, which further has scope to extend to other rivers in India.

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?

The Rufford Foundation logo was used in the Riparian Flora guide titled: Riparian Profile of Dubare Reserved Forest. The logo was also used in presentations made to the Forest Department of Karnataka and various outreach visits with local communities and educational institutions.

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

Full time field personnel from the Jenu Kuruba tribal community: **Ramanna, Bundajja** and **Appane**.

Part time field personnel from the Jenu Kuruba tribal community: **Siddajja** and **Darshan**, who were employees of Aanemane Foundation, helped with field documentation work when the full-time personnel were not available.

12. Any other comments?

Rufford grants have enabled much of the work required to come up with robust conservation measures for the Cauvery river in Coorg District, and I would like to use this space to thank the foundation for providing me the opportunity to do so.



