CEPF FINAL PROJECT COMPLETION REPORT

Organization Legal Name:	Snehakunja Trust
Project Title:	Linking fragmented fresh water swamps through the restoration of micro-corridors in Central Western Ghats, India
Date of Report:	30.06.2015
Report Author and Contact Information	Narasimha Hegde, snehakunjatrust@gmail.com, lifetrusts@gmail.com. 91-9448965015

CEPF Region: Western Ghats, India

Strategic Direction: 2. Improve the conservation of globally threatened species through systematic conservation planning and action.

Grant Amount: US$ 116,106.00

Project Dates: 01.01.2010 to 30.06.2015

Implementation Partners for this Project (please explain the level of involvement for each partner):

Snehakunja Trust was the main organization responsible for execution and implementation of the project.

College of Forestry - Scientists and taxonomists from the College of Forestry – Sirsi were involved in identification of the swamp species, in designing the vegetation surveys and in raising the nursery.

Life Trust – experience of working with the local communities and Village Forest Committees and on natural resources management have been provided by this organization.

Indian Institute of Science - helped in soil surveys and analysis.

Karnataka Forest Department and Western Ghats Task force, Government of Karnataka – assisted in restoration activities. Monitoring the restored swamps and provided leveraging grants to VFCs for fencing, planting, awareness building and overall management of the swamps.

Conservation Impacts

Please explain/describe how your project has contributed to the implementation of the CEPF ecosystem profile.

Sharavati valley in the central Western Ghats region, in which the work has been carried out, is one of the priority sites of the CEPF ecosystem profile in Malnad-Kodagu corridor. Freshwater swamps of the Western Ghats are one among the globally recognized, critically endangered habitats, and prioritized for restoration. These swamps are the major focus in the CEPF strategy.

They have been recognized as one of the most fragile and relic ecosystems that require urgent recovery actions. Among the IUCN red-listed plant species, four species in the 'endangered' category and one in the 'vulnerable' category are found in these ecosystems, which has been highlighted in the CEPF strategy. Further recovery actions are indeed the main areas identified in the strategy 2.1. Freshwater swamps are habitats occurring in the evergreen forest zone, and sheltering some of the last relics of ancient vegetation in the Western Ghats. They have been fragmented, degraded or lost through centuries of human impact. Through this project, a generic protocol for restoration of freshwater swamps suitable to the Western Ghats of India has been developed and demonstrated how species recovery and habitat restoration could go hand-in-hand.

Please summarize the overall results/impact of your project.

Identifying and mapping of over 100 swamps and ecological restoration of six degraded fresh water swamps on a participatory basis. Involvement of local communities was made in the nursery raising, protection and management of swamps. Awareness has been created through various activities, providing alternate income generating activities, establishing fuel efficient devices and leveraging grants from line departments. Swamp categorization and suggesting for future management plans.

Planned Long-term Impacts - 3+ years (as stated in the approved proposal):

- A generic protocol for restoration of micro-corridors in the swamps.
  Increased capacities of local communities to effectively conserve the swamp ecosystems.
- Classification of swamps based on the ecological characteristics, framework developed for future ecological restoration of swamps.

Actual Progress Toward Long-term Impacts at Completion:

The project was successful in achieving both the planned long term impacts.

Planned Short-term Impacts - 1 to 3 years (as stated in the approved proposal):

- Development of spatial recovery maps and identifying the threats for these systems.
- Development of an enrichment protocol for each of the micro-corridor with respect to the species, frequency and geometry of planting on a case by case basis.
- Demographic structure and regeneration status of in Swamp species.
- Creation of micro-corridors for a few swamp systems.
- An understanding of the critical micro-corridor in a swamp chain.
- A suite of nursery techniques for five 'threatened' tree species of the swamp species.

Actual Progress Toward Short-term Impacts at Completion:

The project was successful in achieving all of the planned short term impacts.

Please provide the following information where relevant:

Hectares Protected: nearly 75 hectares

Species Conserved:

Plant species - *Syzigium travencoricum Myristica fatua var. magnifica, Gymnacranthera canarica, Myristica malabarica, Pinanga dicksonii, Vateria indica, Mastyxia arborea, Myristica dactyloides, Semecarpus kathlekanensis, Ixora brachiata, Garcinia gummi-gutta, Garcinia indica, Artocarpus heterophyllus, Canarium strictum, Cinnamomum zeylanicum, Lophopetalum wightianum and Cinnamomum malabathrum.*

Fauna – Habitat created, restored and protected, which are very important for several critically endangered species including amphibians.

Corridors Created*:*

Originally creation of only two corridors was planned, however, by the end of the project five corridors created and area of two swamps extended.

Describe the success or challenges of the project toward achieving its short-term and long-term impact objectives.

See above.

Were there any unexpected impacts (positive or negative)?

No.

Project Components

Project Components*: Please report on results by project component. Reporting should reference specific products/deliverables from the approved project design and other relevant information.*

Component 1 Planned:

Mapping fresh water swamps and critical micro-corridors linking these swamps and drainage pattern from uphill landscapes as well as identifying the threats for these systems.

Component 1 Actual at Completion:

Over one hundred swamps were located and geo-coordinates recorded, put in to GIS platform. Micro-corridors and threats to the swamp forests were identified, and analyses of specific agriculture practices that contribute to disturbance and mitigation measures were done and suggested to the concerned authorities.

Component 2 Planned:

Characterizing the swamp fragments and micro-corridors for species composition. Understand the resource usage pattern by the local people and developing an enrichment protocol.

Component 2 Actual at Completion:

Intensive vegetation surveys and analysis were done in the catchment area of three major rivers (Sharavati, Aghanashini and Bedthi) and two minor rivers/tributaries (Mukti hole and Bilgi Hole) in Uttara Kannada district of Central Western Ghats. In which nearly 60 swamps are new to the scientific community, having never been recorded earlier. For instance, entire swamps in the Bedti river catchment were new additions to the earlier list. Regeneration studies were carried out and site sensitive and site specific species lists were made. Stakeholders were profiled and resource use patterns documented in and around swamps, as well as in uphill landscapes. A list of highly useful species was made, for the long term benefit of communities, as prioritized by the local people.

Component 3 Planned:

Standardizing protocol for propagation of swamp species through participatory approach.

Component 3 Actual at Completion:

Seeds of obligatory and facultative swamp species were collected from different swamp forests and community-based decentralized nurseries were established. One central nursery was established at the College of Forestry, Sirsi and seeds of important swamp species were provided to local forest department offices to promote their involvement in the setting up of swamp species nursery and to start planting in the degraded swamps.

Component 4 Planned:

Creation of micro-corridors through enrichment planting and through creation of new swamp populations such that habitat is also recovered.

Component 4 Actual at Completion:

Large-scale plantings were carried out in six degraded swamp forests to link them. Almost the same geometry and sequence of spatial distribution of swamp species that is found in nature was followed for the restoration. Nearly ten thousand seedlings were planted, and a further nine thousand were distributed to local communities. More than 25,000 seeds of obligatory swamp species were collected and distributed to state forest department, which they have raised with the utmost interest.

Component 5 Planned:

Achieving a lasting restoration of the swamps

Component 5 Actual at Completion:

A set of participatory tools and activities was developed. A combination of landscape level ecological knowledge and modern scientific knowledge was used as appropriate. Establishing soil and moisture conservations units, active planting of suitable species, monitoring their growth and survival, and involving major stakeholders at all levels of planning and implementation helped to achieve a lasting restoration. Two new village forest committees (VFCs) were established in collaboration with Karnataka Forest Department, and the activities of two existing VFCs were rejuvenated. Swamp conservation committees were established and their members were trained in nursery raising to NTFP value chains and marketing. Activities like trainings, workshops, rapid market appraisals and exposure visits were conducted as part of capacity strengthening of local community organizations, to facilitate their effective participation in decision-making processes, and overall management and conservation of swamps. More than 20 workshops were held at different places, which were attended by local people, VFC members, NTFP collectors, forest department officials, chairman of Western Ghats task force and researchers. Project activities and results were presented during workshops at state headquarters, where senior officers from all over the Western Ghats region of Karnataka participated. The dissemination strategy for the project included publishing brochures, community primers, handouts, books, and articles in the popular magazines, to raise awareness of the ecosystem services and ecological importance of swamps and stress the importance of conserving them. In a special program of all India Radio Dharwad, the swamp restoration project was broadcast all over the Karnataka state. Similarly, all India radio Karwar FM channel also broadcasted a program on swamp restoration.

Component 6 Planned:

Classification of fresh water swamps based on the ecological characters.

Component 6 Actual at Completion:

Swamps were classified in to four classes based on their ecological characteristics and associated threats.

Component 7 Planned:

Assess and monitor the success of newly created reference ecosystem of fresh water swamps.

Component 7 Actual at Completion:

Survival rates of obligatory and facultative swamp species were assessed.

Were any components unrealized? If so, how has this affected the overall impact of the project?

No.

Please describe and submit (electronically if possible) any tools, products, or methodologies that resulted from this project or contributed to the results.

We used standard vegetation surveys on occurrence, distribution, population and regeneration of plant species in the swamp forests. Apart from this we used various participatory tools to assess the ecological status or a kind of degree of occurrences. Four Cell Analysis (FCA) was used to list the available Non Timber Forest Products and swamp species, understand the abundance and distribution of species diversity by identifying which species or varieties are available and regarded as common, abundant, rare and threatened in the village and surrounding forests. These tools were used as described in De Boeff & Thijssen (2007) and Chevalier & Buckles (2008), with minor adaptations.

Lessons Learned

Describe any lessons learned during the design and implementation of the project, as well as any related to organizational development and capacity building. Consider lessons that would inform projects designed or implemented by your organization or others, as well as lessons that might be considered by the global conservation community.

Project Design Process: (aspects of the project design that contributed to its success/shortcomings)

Participatory research approach and combination of social science and ecological aspects for the restoration process contributed to the success of the project. Designing the project to make sure of the effective involvement of various stakeholders was another important aspect, which helped to evolve best suitable restoration plan and to implement it. Collaborating with college of forestry in various stages of the project design was helpful.

Project Implementation: (aspects of the project execution that contributed to its success/shortcomings)

In the project area, importance of fresh water swamps in terms of ecological and economics was not told to the local people earlier. We have tried to coin a new name, ‘Rampatre Jaddi’, for Myristica swamps so that local people could understand it and initiate discussion on conservation and management aspects.

Swamps are a complex network system. Hence, the ecological restoration of swamps was not an easy task. Once a natural system is disturbed, it is very difficult to reset back. We used different methods while restoring the degraded swamps. This included vegetation surveys and analysis to

understand the species composition and their spatial distribution within the swamp forests. Seed biology and germination pattern of swamp species was studied.

Local people were involved in developing planting stocks in the community nurseries. Planting and management of restored swamps is being done in association with forest department and local community organizations like VFCs. Important species for the communities were raised in the decentralized community nurseries and distributed to local farmers. Monitoring and management of the restored sites were being done in association with front line forest department staff and local community organizations.

Sensitizing the Forest Department staff on conservation issues and growing of swamp species in their nurseries was done. Workshops and meetings gave an opportunity to recognize and felicitate the outstanding involvement of the local residents that could inspire others to involve in swamp conservation work. Certainly it helped us to understand the interests of different stakeholder and needed efforts to make them to participate in the conservation process.

Other lessons learned relevant to conservation community:

In the light of the significance of swamps and immense human pressure due to perspective-shifts, bringing together key stakeholder groups (farming communities, Forest department –Western Ghats Task Force & Government machinery, College of Forestry and such research/ educational Institutes, NGOs and NTFP gatherers) to involve for the cause of conservation of swamps was crucial for success of the project.

During the project period we learnt that conservation of ecosystem fragments is not only protection of that specific vegetation, it is also concerned with conservation of other biotic and abiotic elements in that ecosystem because the system is like an interconnected web. Hence, various programs have been carried out in order to achieve our objectives on restoration and rehabilitation of Myristica swamps forest. As a part of our project activity we planted some of the swampy and associated species in six sites where we found some degraded land within swamps and we studied its survival rate. This was part of the study to assess and monitor the success of newly created reference ecosystem of fresh water swamps, assess the improved productivity. Along with these activities we also propagated some swamp species in department nurseries and planted in different sites. As a part of the project activity fuel efficient driers were established thus some kind of mutual commitment towards forest conservation in villagers was established. We often carried out some field visits to monitor the present situation in swamp area were we planted and assessed the vegetation. Ensuring long term participation of local communities in the restoration of fresh water swamps and realizing the global importance of their nearby ecosystems was very important for success of restoration activity.

Additional Funding

Provide details of any additional funding that supported this project and any funding secured for the project, organization, or the region, as a result of the CEPF investment in this project.

Donor	Type of Funding*	Amount (US$)	Notes
Karnataka State Forest Department	Partner leveraging	2,500	Providing matching grants to establish fuel efficient devices like ovens and dryers. Installing eco-friendly alternate energy devices like solar to the villagers who depend on swamps for their various daily needs. These units have been provided as incentives for participating in the restoration activity to bring sustainability to the project
Western Ghats Task Force, government of Karnataka	Portfolio leveraging	10,000	Provided grants to local community organizations like VFCs to undertake restoration of swamps, establish nurseries, and to organize awareness workshops and training materials.
Local communities	In – kind contribution	2,000	Participated in the workshops and trainings.
Snehakunja and Life Trust	In – kind contribution	3,000	Managing board members - provided time and guidance in implementing the project activities. Snehakunja secretary assisted in writing the manuscript regarding the project results and out comes.

Additional funding should be reported using the following categories:

A *Project co-financing (Other donors or your organization contribute to the direct costs of this project)*

B *Grantee and Partner leveraging (Other donors contribute to your organization or a partner organization as a direct result of successes with this CEPF funded project.)*

C *Regional/Portfolio leveraging (Other donors make large investments in a region because of CEPF investment or successes related to this project.)*

D In-Kind contributions can include staff and volunteer time, supplies, and other materials your organization provides to the project.

Sustainability/Replicability

Summarize the success or challenge in achieving planned sustainability or replicability of project components or results.

Ensuring long term participation of local communities in the restoration of freshwater swamps and realizing the global importance of their nearby ecosystems was important for the success of the restoration activity. Planting was done in consensus with senior forest department officials and experts in the college of Forestry, since the fresh water swamps form a unique assemblage of species. Following activities and initiatives contributed in bringing sustainability to the project, which is replicable in other swamp forests of the Western Ghats.

- Mapping and delineating the boundary of all the last remaining freshwater swamps. Earlier only 50 swamps had been located and identified by the researchers in the project area. However, more than 100 swamps were identified during the course of project.
- Swamp classification based on the ecological characters and existing and possible threats, implementing and suggesting management practices for relevant swamps classes.
- Training and awareness creation on freshwater swamps for front line Forest Department staff and local community organization like VFCs.
- Need to emphasize the implicit significance, unique elements and traditional knowledge associated with swamps in order to drive down their credence
- Nursery raising of freshwater swamps species in a larger scale through the state forest department and use them in restoration work by active planting.
- Involve and empower local communities and ensure their long term participation in conservation and management of freshwater swamps.
- Efforts to make self realization of existence of globally important freshwater swamps for restoration work.
- Provide more benefits and create community assets to those families who dependent on the swamps and adjacent forests for their day today needs.
- Training and skill development to local people especially women on value addition, value chain development and marketing of forest products and agricultural products to ensure their long term participation in conservation and management of the swamps.
- Immediate measures to practice sustainable use of water resources in the swamps, based on site specific conditions.
- Provided alternative income sources and alternate products through training on value addition and marketing of Non Timber Forest Products, planting of seedlings, by installing fuel efficient equipment to reduce pressure on swamps and surrounding forests for various products.

Summarize any unplanned sustainability or replicability achieved.

Because of the successful implementation of the project and bringing the issue of conservation importance to forefront these with the higher level of government was an unintended outcome of the project.

Active planting of swamp species in the degraded swamps by the forest department VFCs, putting up name plates, like 'swamp conservation area' or any other activities relevant to local conditions to several of the freshwater swamps.

Safeguard Policy Assessment

Provide a summary of the implementation of any required action toward the environmental and social safeguard policies within the project.

The project did not have any negative impact on environmental and social aspects. Nevertheless, the project objectives and activities were explained to major stakeholders by producing and displaying the brochures and during various programs, workshops and trainings.

Additional Comments/Recommendations

Link to an article published in a popular south Indian news paper Deccan Herald in their environmental issue: http://www.deccanherald.com/content/453069/a-green-makeover.html

Information Sharing and CEPF Policy

CEPF is committed to transparent operations and to helping civil society groups share experiences, lessons learned, and results. Final project completion reports are made available on our Web site, www.cepf.net, and publicized in our newsletter and other communications.

Please include your full contact details below:

Name: Narasimha Hegde
Organization name: Snehakunja
Mailing address: Kasarkod, Honnavar - 581342
Tel: 91-8387 - 230332
Fax: 91-8384-235450
E-mail:snehakunjatrust@gmail.com, lifetrusts@gmail.com

*****If your grant has an end date other than JUNE 30, please complete the tables on the following pages*****

Performance Tracking Report Addendum

CEPF Global Targets

Provide a numerical amount and brief description of the results achieved by your grant.
Please respond to only those questions that are relevant to your project.

Project Results	Is this question relevant?	If yes, provide your numerical response for results achieved during the annual period.	Provide your numerical response for project from inception of CEPF support to date.	Describe the principal results achieved from January 1, 2010 to June 30, 2015. (Attach annexes if necessary)
1. Did your project strengthen management of a protected area guided by a sustainable management plan? Please indicate number of hectares improved.	Yes		250	150 ha in Aghanashini Lion-tailed Macaque Conservation Reserve and 100 ha in Bedti Conservation Reserve in Uttara Kannada district, Karnataka.
2. How many hectares of new and/or expanded protected areas did your project help establish through a legal declaration or community agreement?	No			N/A
3. Did your project strengthen biodiversity conservation and/or natural resources management inside a key biodiversity area identified in the CEPF ecosystem profile? If so, please indicate how many hectares.	Yes		90	90 hectares in Sharavati KBA
4. Did your project effectively introduce or strengthen biodiversity conservation in management practices outside protected areas? If so, please indicate how many hectares.	Yes		500	Sustainable management of NTFPs and swamp species promoted through imparting training, workshops and capacity strengthening. These activities were carried out in the reserve forests of Hulekal, Gersoppa, Ramanguli, Kyadgi, Siddapur and Amenalli Forest Ranges in Sirsi, Honnavar and Karwar Forest Divisions. Biodiversity conservation been strengthened by following activities; 1. Providing forest tree species for domestication cultivation which is aimed for reducing the pressure on the wild. 2. Organizing training and awareness on sustainable harvesting practices and improved management of natural resources. 3. Capacity strengthening programs for VFC members to participate in decision making and effective governance mechanism. 4. Provided training on grafting, nursery raising and related gastronomical aspects and gender issues to make the entire process participatory and inclusive of gender and marginalized communities.

CEPF Global Targets				
Provide a numerical amount and brief description of the results achieved by your grant. Please respond to only those questions that are relevant to your project.				
Project Results	**Is this question relevant?**	**If yes, provide your numerical response for results achieved during the annual period.**	**Provide your numerical response for project from inception of CEPF support to date.**	**Describe the principal results achieved from January 1, 2010 to June 30, 2015. (Attach annexes if necessary)**
5. If your project promotes the sustainable use of natural resources, how many local communities accrued tangible socioeconomic benefits? Please complete Table 1below.	Yes		20	Totally 20 villages benefited from project, which provided seedling of priority species, training on nursery raising and grafting techniques was done. Matching grants were obtained from various government departments to build community assets. Local communities were trained on value addition of Non Timber Forest Products, especially, *Garcinia indica, Garcinia gummi-gutta*, wild varieties of *Mangifera indica* and medicinal plants. Exposure visits to small scale processing units and herbal extracting units were also organized as part of the project activities. Community assets like fuel efficient devises and solar lightnings were provided to these local communities both through the project as well as obtaining matching grants from the forest department.

If you answered yes to question 5, please complete the following table

Table 1. Socioeconomic Benefits to Target Communities

Please complete this table if your project provided concrete socioeconomic benefits to local communities. List the name of each community in column one. In the subsequent columns under Community Characteristics and Nature of Socioeconomic Benefit, place an X in all relevant boxes. In the bottom row, provide the totals of the Xs for each column.

Name of Community	Community Characteristics								Nature of Socioeconomic Benefit												
									Increased Income due to:												
	Small landowners	Subsistence economy	Indigenous/ ethnic peoples	Pastoralists/nomadic peoples	Recent migrants	Urban communities	Communities falling below the poverty rate	Other	Adoption of sustainable natural resources management practices	Ecotourism revenues	Park management activities	Payment for environmental services	Increased food security due to the adoption of sustainable fishing, hunting, or agricultural practices	More secure access to water resources	Improved tenure in land or other natural resource due to titling, reduction of colonization, etc.	Reduced risk of natural disasters (fires, landslides, flooding, etc)	More secure sources of energy	Increased access to public services, such as education, health, or credit	Improved use of traditional knowledge for environmental management	More participatory decision-making due to strengthened civil society and governance.	Other
20 villages in Uttara Kannada district	X	X	X				X		X				X	X	X	X	X	X	X	X	
Total																					

If you marked "Other", please provide detail on the nature of the Community Characteristic and Socioeconomic Benefit: