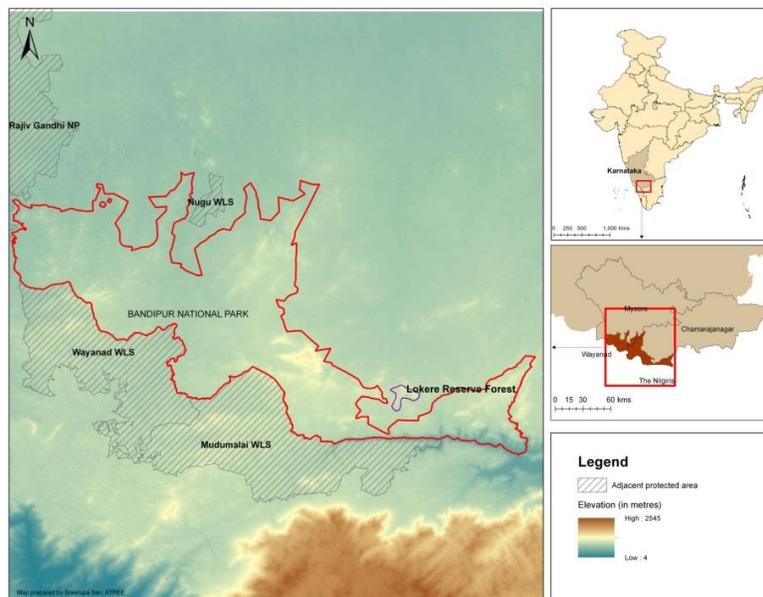


Second interim report on Ashirvadam Trust funded project for community-managed reforestation of degraded reserve forests adjoining Bandipur National Park: dated 15 November 2014

1. Introduction

Junglescapes Charitable Trust has been working for the last 5 years on restoration of degraded forests in the Lokkere Reserve forest, contiguous to the Bandipur Tiger Reserve. Lokkere Reserve forest (refer attached map below) has a total area of around 30 sq kms and lies within the recently notified Eco-Sensitive Zone of Bandipur National Park. This reserve forest forms an important buffer habitat for Bandipur Tiger Reserve and is part of a vital elephant migratory corridor that connects Bandipur NP with the Eastern Ghats.

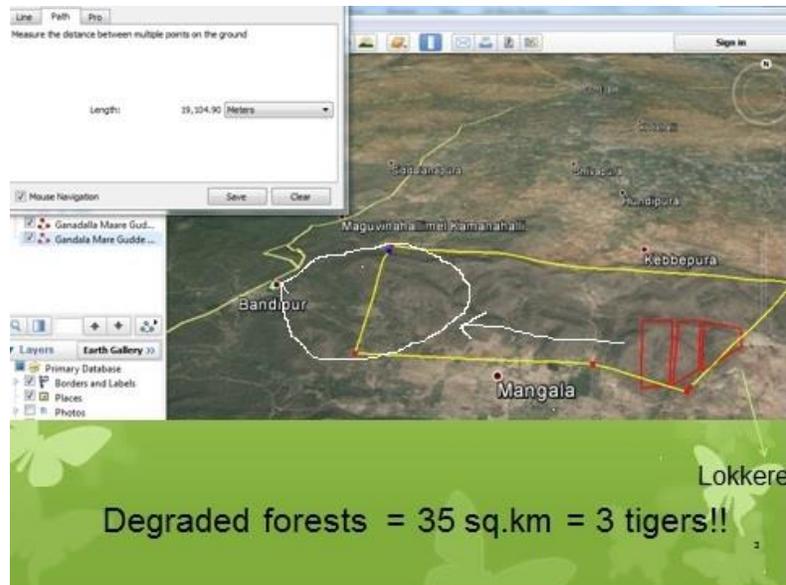


The unique community managed reforestation initiative is done in close partnership with the local forest dwelling communities which consist mostly of indigenous tribes, and the forest department. Around 1000 acres of degraded forests have been restored during 2010-13 using a mix of sapling planting, rain water trenches and rejuvenation of natural saplings. The reforestation activities have generated additional livelihood for nearly 50 families over a four year period; the community in turn has protected the reforested region from grazing and cutting resulting in significant growth of vegetation, and therefore improved canopy cover. *This unique model of conservation thus creates a win-win situation between the forest dwelling communities and the wildlife that surrounds them.*

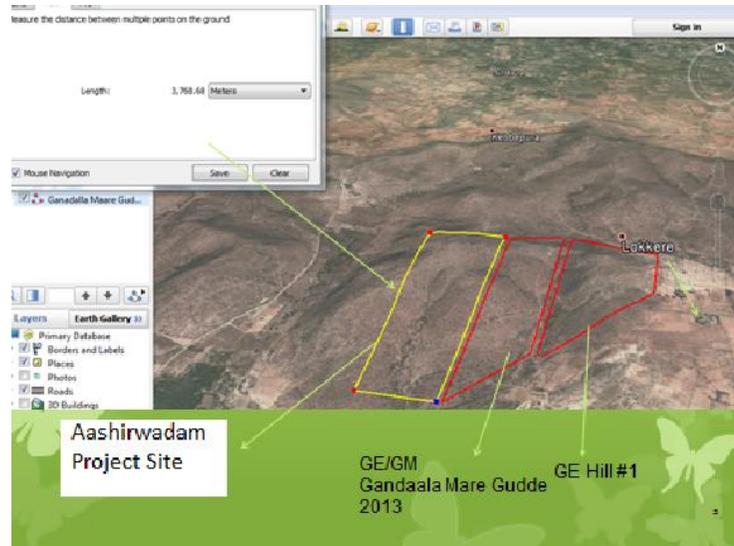
2. Project Scope

This project is aimed at reforesting a part of the Lokkere reserve forest. The scope of the project is as below:

- Reforest the western face of the Gandada Mara Gudde covering a total area of approximately 500 acres (approx 2 sq km). The western face of Gandada Mara Gudde has a total area of around 1000 acres, therefore this project will cover 50% of the area.
- Gandada Mara Gudde is one of the series of hills that connects Lokkere reserve forest with Bandipur NP (Jali Gudde→Gandada Mara Gudde→Mensina Mara Gudde→Anajundi Gudde→Bandipur NP) and hence provides an opportunity to restore a habitat that is contiguous with the national park.
- Gandada Mara Gudde is a good habitat for wildlife as it is relatively less disturbed by human interference like cattle grazing.
- The eastern face of the hill is already being reforested by Junglescapes as part of its ongoing projects.
- Please see below images which show Gandada Mara Gudde and the project area in relation to Bandipur Tiger Reserve (BTR) and the existing reforestation area.



Junglescapes project area in relation to BTR



Ashirvadam project in relation to the Junglescapes' GE project

- The reforestation plan as per the initial proposal was as below:
 - Support 25000 natural juvenile plants through rain water harvesting trenches.
 - Create two water bodies / ponds within the project area.
 - Plant 10000 saplings of native species.
 - Carry out seedball and dibbling activities of appropriate native species.
- **Post the visit of the Trustee and CEO of Ashirvadam Trust to the project site on 10 April 2014, the project plan was revised** with lesser emphasis on sapling planting and greater emphasis on rain water harvesting. The revised plan was as below:
 - Support 35000 natural juvenile plants through rain water harvesting trenches.
 - Create 10 water bodies consisting of small check dams and stone ponds (Kal Keres).
 - Plant 5000 saplings of native species.
 - Carry out seedball / dibbling activities of appropriate native species, and mulching of plants post monsoon.
- All activities shall be carried out through the local community members from Guddukere village that lies close to Gandade Mara Gudde.



Junglescapes

Towards Sustainable Wildlife Protection

3. Project time lines

As the project was approved after the completion of the 2013 SW monsoon, the implementation time lines were discussed with the CEO of Ashirvadam Trust and it was agreed that we would handle the project in two phases:

- Phase 1
 - Natural juvenile support for 25000 saplings and digging of two ponds to be taken up in October and November 2013 coinciding with the 2013 NE monsoon.
- Phase 2
 - Additional trenches and making of further water bodies prior to be done prior to the onset of the 2014 SW monsoon.
 - Sapling planting and seedball activities to be conducted in July-September 2014 coinciding with the 2014 SW monsoon.
 - Phase 2 - Post planting activities like mulching to be done in January 2015 post the 2014 NE monsoon.

The phasing was essential to ensure that the saplings to be planted had the benefit of adequate rainfall of both SW and NE monsoons. As the 2013 NE monsoon was a near total failure in the Bandipur area, the main benefits of the project activities would accrue from mid-2014 onwards.

4. Project Status

The status of the project as on 15 November 2014 is as below:

A. Rain water harvesting trenches

A total of 30351 rain water harvesting trenches has been completed.

- 25288 trenches during October-December 2013 in phase 1.
- 5063 trenches during July 2014 in phase 2.
- While 65% of the trenches have been made adjacent to natural juvenile plants in order to enable their faster growth, the remaining have been made in open areas for the sole purpose of water harvesting. The latter were used subsequently as sapling planting pits.



Trenches are 4 feet long & ¾ feet deep and made on hill slopes



In some places longer trenches of 12 feet have been made



A 4 feet trench can harvest over 40 litres of water in a 10 minute shower

B. Small ponds – check dam type

Three ponds (check dam type) have been dug in Gandada Mara Gudde. These ponds are dug along mid-sized streams with a 5 feet pit and diameter of 8 feet width and length. A stone check dam about 4 feet high is built to hold the water, with a bye-pass for overflow water (see image below). This pond is made manually and costs Rs 10-12000 depending on the terrain and stone availability in the vicinity.



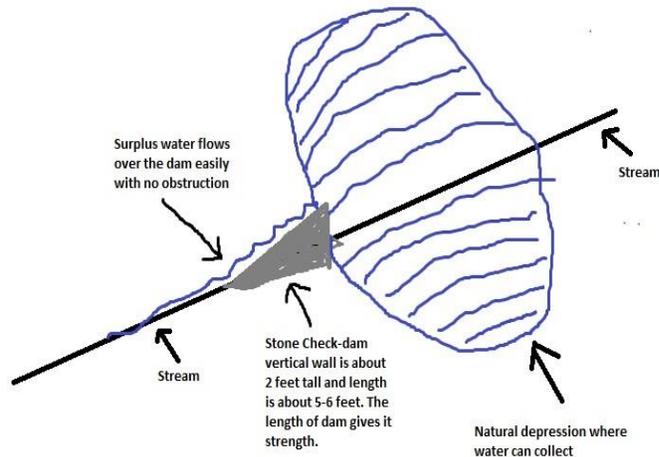
Images of small check-dam type ponds



A check-dam type pond digging activity in progress by local community

C. Small ponds – Kal Kere type

Five Kal Keres have been built. These are simple storage structures made in a natural shallow depression in a stream. In this method no pit is dug, instead a stone wall linking the two sides of the stream is built with the stones arranged in a sloping fashion. Overflow water flows over the stones downstream (see images in Annexure). While water storage is lower than a check dam type pond, the water absorption / increase in water table is good. The Kal Keres are also made manually and the cost is lower at Rs 6000.



Diagrammatic depiction of a Kal Kere



Picture of a Kal Kere made in 2014

D. Sapling Planting

- 5000 fresh saplings of native species have been planted. Mulching will be done during January 2015.
- Good quality saplings were procured from Arulagam, a wildlife NGO based in Coimbatore who have been providing us saplings for the last 3 years.
- There was active participation of 30 community members from Lokkere and Guddukere villages in the planting activity, including a number of women.

- We focused on a number of keystone dry deciduous forest species this year e.g.
 - Gmelina arborea
 - Bauhinea recemosa
 - Syzigium cumini
 - Terminalia Bellarica
 - Terminalia Arjuna
 - Albezi lebbeck
 - Wrightia Tinctoria



Images of sapling planting by community members

E. Project Learnings

- This is the first year where we have tried the concept of small water harvesting ponds and Kal Keres. The community-led teams have perfected the methodology for making check dam type of ponds with excellent results. Each such pond takes 3 days to construct and costs Rs 10-12000 depending on the terrain. This can therefore become a very powerful and low-cost reforestation tool.
- Our learnings show that ponds made in black soil are able to hold water above the surface for a fairly long time thus providing water for wild animals. Ponds made in red or clay soil tend to absorb the water quickly and will have high hydrological benefits. Both these variants are important for our objectives.
- The methodology for making Kal Keres is being learnt and improved. Finding a good location which has a fairly wide and shallow depression is critical, otherwise the water storage potential gets reduced.
- A key challenge we faced this year was that of matching manpower resources with projects. During the short monsoon window of June-November we had to implement 3 major restoration (Ashirvadam, GE and CEPF) projects totaling Rs 11 lakhs. The two village communities we work with have an average of 20

persons present per day for the restoration work. Better work scheduling and planning and recruiting more community members for this activity have been identified as key focus areas for 2015.

F. Project Impact

A. Community Involvement

- High community involvement on a sustained basis has been a major impact in 2013-14. We feel that the Ashirvadam Trust project has played a key role in making this alternate livelihood model a reality, since the project came close on the heels of the GE 2013 reforestation effort, thus enabling an almost unbroken opportunity of restoration work for the forest dwelling communities.
- A total of 45 persons from the Lokkere and Guddukere village hamlets have been involved on a continuous basis in the making of the trenches, water bodies, sapling planting, etc.



The Guddukere “Green” team

- 2013-14 is the first period where we have been able to create a core team of the community members that has been consistent in its participation. This has made it possible to establish a sustainable alternate livelihood model that is closely linked with the ecology of the project area. This is a model that can be easily replicated to other forest areas across the country, and could therefore be one of the main impacts of the project.

- Two important factors have contributed to this:
 - The Economic factor - earnings that are comparable or higher than farm labour in nearby farms. The farm labour fetches the villagers Rs 200 a day, while the trench digging has fetched them around Rs 280-300 per day on an average. Between the Ashirvadam, CEPF and GE projects we have been able to provide alternate livelihood opportunities for 15-20 days a month which has increased the attendance levels significantly.
 - The Ecological Factor - we can clearly see genuine affinity of the tribals towards the health of the forest lying close to their hamlet. This gives us the confidence that we can build on this factor and help them demonstrate greater stewardship of the forests that lie within their sphere of influence.
- Of the total project spend till date of Rs 3.30 lakhs, around Rs 2.60 lakhs or 78% has accrued to the local community. Another Rs 0.60 lakhs has accrued to another NGO (Arulagam) which runs community-managed sapling nurseries in Tamilnadu.

B. Increase in wildlife presence

- Good increase in wildlife movement has been observed in the restored forests. This is based on scat and pug-marks as well as sightings by our field workers. Species frequently observed include leopards, sloth bear, chital and wild boar.
- We also observe increase in presence of an increased diversity of birds, including nesting. Increase in the tree canopy is encouraging more birds to build nests in this area, and this augers well for seed dispersal.
- A few new bee hives have also come up, and we hope with improvement in canopy the number of colonies will also increase.
- For the first time in the last 6 years, we have pug mark and sighting evidence of tiger movement in the restored area.
- In our view this is due to a combination of the following factors:
 - Good improvement in ground level vegetation of native grasses and shrubs.
 - Increase in height of native juvenile trees providing better cover.
 - Availability of water.
 - Abstinence from cattle grazing by local community resulting in minimal human disturbance.
- Junglescapes has initiated a programme for systematic monitoring of wildlife presence in the reforested areas, to help measure the ground results of the habitat restoration activities.

G. Project expenditure

- The first instalment of funding of Rs 133000 was received in October 2013. The second instalment of Rs 200000 was received in May 2014, amounting to a total of Rs 333,000.
- Expenditure incurred till date against budget has been as below.

Item	Budget		Actual	
	Numbers	Amount	Numbers	Amount
Trenches	35000	175000	30351	151755
Ponds / Kal Keres	10	100000	8	58000
Saplings and seedballs	5000	155000	5000	120000
Post planting sapling care	-	15000*	-	10000*
Field supervision	-	8000	-	8000
GPS device + camera	-	13000	-	13000
Total		466000	-	330755

*Post planting care will be done in January 2015.

- Actual expenditure has been lower than budget mainly because of lower cost of saplings and pond making. This is due to a combination of two factors:
 - Lower sapling / planting cost vs budget (Rs 20 instead of Rs 30).
 - Lower cost of ponds vs budget since the Kal Keres cost only Rs 6000 to make.
- We request permission to utilize the balance budget available of Rs 1.35 lakhs as below:**
 - Removal of Lantana in the project area: Rs 60000
There are scattered populations of *Lantana Camara* in our project area. If removed now we can prevent their spread and make this a Lantana free area. We have had good success in our CEPF pilot plot in removing Lantana Camara using the Cut Rootstock method, and we would like to implement this in our project area. An estimated 300 mandays of work is planned.
 - Completion of balance trenches (Rs 25000)
We can complete the remaining 5000 trenches with the onset of the summer showers in April.
 - Additional ponds (Rs 50000)
Based on our learnings of making low-cost ponds in 2014, we can make an additional 5-7 ponds with the onset of the summer showers in April.

H. Acknowledgements

We would like to sincerely thank Ashirvadam for supporting this project, and also for giving us valuable inputs on course corrections during implementation. This has enabled us to concretize the eco-development model of conservation and build a strong relationship between the forest dwellers and the forest.