



**Agroforestry Project Report 2023-24**

**March 2024**

## **Background:**

Sustainable Green Initiative Foundation is a social organization focused on fighting climate- change, hunger and poverty since 2018.

Over the past 5 years, SGIF has positively impacted our environment and some of the most vulnerable communities in India by way of planting trees and creating sustainable livelihoods. SGIF is proud to have LTI Mind Tree as one of its biggest partners.

## **Project Name: Planting 2 lakh fruit and timber trees to fight poverty, hunger and climate change**

LTIMIndtree partnered with SGI Foundation to plant 1 lakh fruit and timber trees in Mirzapur UP in 2022 and 1 lakh fruit and timber trees in Sonbhadra(UP) and Balangir (Odisha) each in 2023.

Sonbhadra and Balangir are both aspirational districts.

The project is aimed at providing livelihoods to small farmers over a period of 5 years through planting trees. These trees are a mixture of fruit, timber and other commercial value. Sonbhadra and Mirzapur are neighbouring districts and are considered one of poorer districts in UP. This area is also one of the more arid and prone to extreme weather events leading to climate migration and poverty.

SGIF uses natural farming practices to encourage growth and survival of our trees. We also support the farmer throughout the process from planting to the maturity/fruit bearing of the tree. Our engagement and awareness sessions help the farmer in use of non-chemical fertiliser and pesticides. We also provide micro rhizomes to farmers to enhance survival rates. We also provide the farmer with vegetable seeds and support for the same so that the farmer can continue to earn from his land while the trees reach maturity.

## **UP: Mirzapur and Sonbhadra**

92.5% of farmers in UP are small or marginal. Out of 79.5% of the marginal families, land holding of 73.2% is less than 0.5 hectare and their average holding is 0.27 hectare. Traditional farming practices and dwindling land holding have made farming a financially non-viable enterprise. This has led to urban migration, malnutrition in rural India and general inequality. The frequency of extreme weather events (hail storm, drought, flood, pest attacks) has increased. This exposes this population to crop loss, poverty and malnutrition.

In Mirzapur district, there is scarcity of ground water during summer season. In Rajgarh, Halia, Marihan and Lalganj blocks there is decline in water level over the years (2005-2010). Even the area which were experiencing water logging during year 2001 are showing water level depletion since 2007. It is well known fact that being rocky and hilly area, the ground water level has declined significantly over the years except canal command area due to canal seepage. Long term water level trend reveals that it is declining in entire district. The average decline in water level is 0.25 m to 0.75 m/year.

Sonbhadra continues to be one of the most arid regions of the state with farmers entirely dependent on rainfall for their agriculture.

## Odisha: Balangir

While land holding patterns in Odisha are slightly bigger in Odisha. 83% of the total farmers in the state are marginal or small.

The demographic structure of Balangir is also a cause of concern. 17.1% of the population is SC and 21% are tribals. Small land holding and abject poverty pushes the majority of the population to become seasonal migrants to nearby states like Andhra Pradesh or UP. A very common occupation of these people is work in the brick kiln as quasi bonded labour. The money that they save when they come back home is barely enough to sustain for the next 6 months therefore repeating the cycle of exploitation.

Additionally, it has been noticed in the recent past that more and more farmers are moving to a form of contract farming of cotton. Declining yields and unstable prices are leading several farmers to debt. The price per quintal of cotton dropped from 8000 to 6000 this year leading several small farmers at the brink of abject poverty.

### Activity report

#### Pre-planting :

Agroforestry is as more about pre planting planning and post planting monitoring than the act of planting trees into the ground.

SGIF conducts a thorough survey of the villages identified for planting and choosing the right beneficiaries. The team spends tremendous effort to ensure that the planting takes place in no more than 10km radius so that the logistics of distributing plants as well as monitoring the health of the plantation. SGIF recognises that the most important factor to ensure maximum possible support to the farmer and the plants.

Community meetings are held in villages that have been shortlisted for the project. The community is made aware of the program and the advantages of planting trees and agroforestry.

Among other things, the farmer is assessed for the following key qualities

1. Size of land holding. (We prefer to work with small and marginal farmers)
2. Availability of water and fencing at the property
3. Farmer's openness to natural and organic farming practices
4. Presence of cattle at home to ensure some amount of supply of natural fertilisers

Once a farmer is found suitable, a list of desired plant species is collected from the farmer.

Order is placed with a suitable nursery and quality specifications are outlined to the supplier.

Plant distribution and plantation dates are decided and agreed with the farmer. The farmer is also given clear instructions of pit digging, plant distances and pit preparation.

#### Planting

Plants are distributed to the farmer atleast 5 days before the day of planting. The farmer is expected to have dug their own pits which were audited by SGIF staff.

Mycorrhiza is given to each farmer to place in each pit to promote root formation.

SGIF was able to finish 90% of its planting between the last week of June and mid September.

#### Post planting

SGIF team build deep and meaningful relationship with each farmer. The monitoring and evaluation process ensures that each farmer is visited at least once every two weeks. This visit is utilised to

understand any challenges that the farmer may be having with regard to the health of the plantation. Any disease or other challenges are addressed quickly making sure that only non-chemical and natural practices are used to address the challenges

### **Monitoring and Evaluation**

All plantation areas have been broken down into individually recognisable patches. Each patch has been given an identifying number called the MIS number. Each farmer has a dedicated Vrikshasevak associated to them. Each farmer is audited for survival once every month and a root cause analysis is carried out if survival is below 90%.

SGIF staff and managers cross check atleast 10% of the total audits to verify accuracy of data.

Over and above this, a socio economic survey has been conducted to baseline current status of our beneficiaries and SGIF will monitor movement on key metrics every year.

### **Impact Study**

#### **Community Participation**

For a project of this scale to succeed it is imperative to have constant community buy-in and interaction. Each farmer has a dedicated Vrikshasevak (VS) to face off to the farmer and the community. The VS is typically a local person who understands the social dynamics of the community as well as the needs of the project.

SGIF conducted natural and organic training courses across locations. All community members including the people who were not a part of our project attended these sessions and gained valuable inputs on cost effective ways to improve productivity while fighting pests.

SGIF distributed vegetable seeds to all our farmers including some women farmers how could not take part in the project support the farmer's income as well as nutritional needs.

#### **Income Enhancement:**

SGIF has introduced the following measures to enhance the income of the farmers associated with us.

- Vegetable seed distribution: SGIF distributed more than 10kgs of vegetable seeds among more than 60 farmers. We surveyed some farmers who had sown the seeds and found that these farmers had sold vegetables worth Rs.70000 (cumulatively) in one season after self-consumption and distribution of surplus veggies in the neighbourhood. SGIF plans to continue this activity at a larger scale going forward
- SGIF has distributed a minimum of three rounds of vermicompost to all our farmer to the quantity of 500gms per tree every time. We have distributed more than 6 metric tonnes of vermicompost across the project.
- SGIF has also conducted an organic training workshop in the communities. Some of the farmres who attended have started a micro enterprise by selling Beej Amrit and Jee Amrit in their communities.
- Last but not the least, SGIF rolled out a direct cash incentive program for all agroforestry farmers associated to the program. SGIF has paid out more than Rs 3.2 lakh as cash incentive to all farmers who have delivered a more than 85% survival for the trees planted with them. This is a quarterly cash incentive program.

#### **Ecological Impact:**

LTIMintree helped us plant more than 2 lakh saplings in UP and more than 1 lakh saplings in Odisha. While it takes more than 5 to 7 years for a change in the microclimate of the region, we are pleased to report that this project has led to more than 270 hectares directly towards tree plantation

and increasing green cover. This will directly lead to more than 1000 hectares of land being restored to good health. SGIF promotes the use of non-chemical and organic farming practices and has been able to convince several farmers to completely stop the use of chemical fertilisers and pesticides in the land where our trees have been planted. Practices like mulching, use of cowdung and vermicompost are a very quick way to increase the presence of microorganisms in the soil. It increases moisture retention as well as organic matter in the top soil. Some of the trees planted in 2022 have already started bearing fruit. Several trees planted have exceeded the height of 5 feet in Odisha

**Carbon Sequestration:**

The plantation carried out by LTIMindtree through SGIF will take away more than 12.7 MT from the environment every year\* in the next 10 years. This sequestration caused by arrest of erosion is over and above the above quoted number.

*\*University of New Mexico*

**Beneficiaries: 2023**

People employed for planting activity

Gender	UP	Odisha
Men	50	50
Women	40	20

Direct Beneficiaries

Gender	UP	Odisha
Men	366	165
Women	195	12

**Case Study Success Story: How agroforestry is offering the farmers of Odisha freedom from chemical pesticides and debt.**

The Turekela block of Balangir district is at the foot hills of the Gandhmardan. The area was an active Naxalite area less than a decade ago. The soil was fertile and it was not uncommon for the farmers to take two crops in a year with Paddy being the primary crop. A sizeable portion of the population is tribal. The ground water is stable and the area used to have droughts rarely. The region is however known to get really hot in the summers which has gotten worse in the recent past due to climate change. Hitting half century on a couple of days in the summers is not uncommon.

A few years ago cotton farming was introduced at a large scale to area. Passing through the region after the month of December is just driving past brown dry stubble of cotton plants left behind after the cotton has been plucked. Cotton is a great cash crop has always delivered profit until last year. All the farmers in the region have diverted completely to cotton farming. With this move came in pesticide, fertiliser and cotton seed companies. The deal was simple, the farming gets all these supplies on credit and pays back at the time of harvesting. As is the case with pesticides, the input (cost) increases every time while the selling price is declining. The farmer has had taking more and more of these chemical supplies to keep production steady eventually leading to debt.

The soil in the region is almost completely devoid of organic matter. This get worse when the farmer burns the cotton stubble left on the field causing irreparable damage to her soil and land.

When SGIF started conducted a survey of the villages and conducting community meetings to spread awareness on the benefits of Agroforestry and what we were offering, we were met with scepticism. Many NGOs had come for a survey and left and nothing had ever changed.

Finally, when the saplings started arriving at our unloading points in various villages, laden with Mango and Sagwan saplings some of the farmers started believing what we had promised. Our only condition to the farmers was that they cannot use any chemical fertilisers or pesticides where the trees given by us would be planted.

The planting period coincides with the cotton planting season as well. When Umashankar and Rajesh from our field team arrived at the field of Shri Sunil Sahu we found that he had hired 20 labour to start transplanting his cotton seedlings. When we refused to hand over the saplings to him as we knew he would add heavy chemicals to his cotton field, Shri Sahu took only a few minutes to ask his labour to uproot the cotton seedlings. We were conscious that he would incur a significant price to these lost seedlings. He explained to us that he has been desperately looking for an alternative to cotton. He has noticed how quickly the quality of his soil has declined. His debt to the seed company has increased and he just didn't have the Rs 60,000 that he would need to buy the 400 saplings that he had requested from us. He shared with us how he regretted giving up even an inch to cotton farming. His father had planted 200 Sagwan that he was really proud of. He wants to leave something for his grandkids. He and his son are now some of our model farmers. Their patch is something to behold and they inspire others in the village to plant more trees to finally escape the clutch of the cotton seed companies.

Our project on Agroforestry points to some very telling wins. These are :

1. The farmer's dire need to find alternate avenues of income.
2. The farmer's desire to move to natural and non-chemical farming practices
3. With just a little help from projects like ours the farmer gets a really good opportunity to impact the environment positively.



4.

**Location: Balangir. Sri Sunil Sahu has planted a total of 420 trees with us. He has had a 90% survival so far..**



Location: Balangir. Farmer Gouri Puta. One of the Jackfruit trees that was planted in July 2023 has already reached 5 feet.



Farmer Meeting in Sonbhadra UP



Farmer Meeting in Mirzapur UP



Lemon tree along the boundary of a farm that will also serve as a bio fence. Location UP





Vermicompost distribution in Odisha



Organic farming practices training in Balangir Odisha



We trialled setting up a micro nursery in Odisha where we were able to source 8500 moringa plants from.