VNV Advisory

Improving Rural Livelihoods Through Agroforestry Practices in Punjab, India

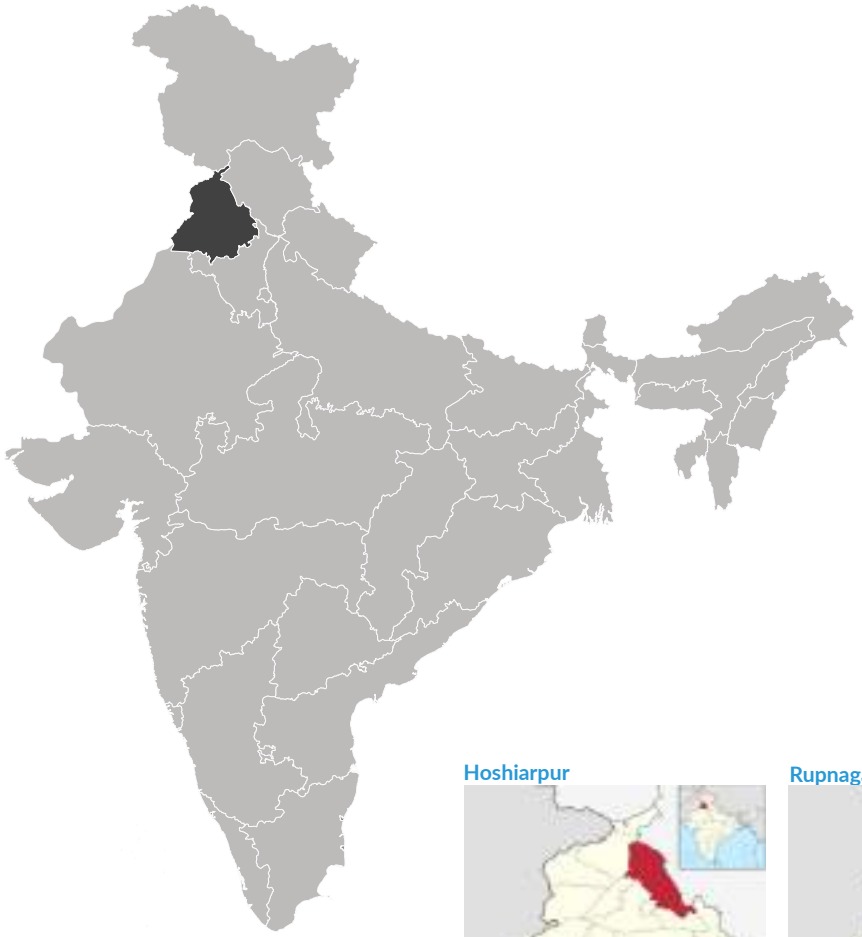
The problem

The State of Punjab is an agriculture intensive state with a traditional rice-wheat cropping system that has contributed towards food security of the country. However, the productivity of this system has declined in certain areas due to depletion of nutrient reserves and emergence of their deficiencies, under-ground water table has lowered and resurgence of insects and diseases has increased due to over exploitation. This has given rise to the need for diversification from this system.

About the program

- Agroforestry has emerged as one of the viable alternatives for diversification from existing rice-wheat rotation. At present, more than 80% demand of wood and wood products in the country is met from the agroforestry sector, 6% from natural forest and 12% from import.
- Agroforestry can contribute more than 2 billion tons of CO2e reductions by 2030 if the government provides them Minimum Support Price (MSP) of timber produced by farmers. Due to lack of MSP, whenever there is a glut in the market, farmers have to sell timber at throwaway prices.
- However, agroforestry can supplement farm income by selling the carbon credits in the carbon markets, enable risk reduction and contribute towards climate resilience.
- Different tree species are traditionally grown in the various agro-climatic zones of Punjab. The main tree species adopted by the farmers on their agriculture fields as block and boundary plantations are Poplar, Eucalyptus and Dek.
- Also, the demand for timber and other tree-based products is increasing day by day and one feasible alternative to fulfill such a demand would be adopting agroforestry practice as this is one system that can provide both wood and food while at the same time conserve and rehabilitate ecosystems.
- The potential of carbon sequestration in five districts (Roopnagar, Hoshiyarpur, Ajit Singh Nagar, Shahid Bhagat Singh and Pathankot) is around 6-6.5 million tons of CO2 per year.
- The selection of clusters will be done in consultation with the State Forest Department and the Self-Help Groups (SHGs) in the selected five districts.
- The farmers could benefit from around Rs. 300-400 crore per year in addition to the timber value on the basis of existing carbon price in the voluntary market.
- The carbon finance program will enhance the income of farmers and also help Punjab to move forward towards carbon neutrality.

Key components



Project area
500,000+ Hectares

The selected 5 districts are from the Kandi Area and they are – Hoshiarpur, Rupnagar, Sahibzada Ajit Singh Nagar, Shahid Bhagat Singh Nagar and Pathankot.

Table: Details of Geographic and potential area for agroforestry

Sl.No	Name of the District	No. of Villages	Geographical area (in HA)	Cultivable area (in HA) / Potential area for agroforestry*
1	Hoshiarpur	1,399	340,000	201,000
2	Rupnagar	606	144,000	78,000
3	Pathankot	373	356,000	287,000
4	Shahid Bhagat Singh Nagar	471	119,000	91,000
5	Sahibzada Ajit Singh Nagar	438	144,000	78,000

**In the table we have listed the total potential area for agroforestry. However, the area for conducting the Carbon Finance Program and for designing the Project Design Document will be decided in consultation with the Punjab Forest Department and based on different parameters.*

Hoshiarpur

Rupnagar

Pathankot

Shahid Bhagat Singh Nagar

Sahibzada Ajit Singh Nagar

Self-help groups (SHG) development and capacity building benefits

The detailed roadmap on the implementation of project activities would be developed in the form of an Inception Report.

Developing institutional mechanism through SHG development for 3287 villages

There are around 3287 villages present in the 5 selected districts of Punjab. At the village level, Self-Help Groups would be formed to manage and monitor project activities. The SHGs would comprise of representative members of the village as well as of forest staff to ensure plantation success and the equitable sharing of the benefits derived from these plantation activities. The role of SHGs in the proposed project envisages enhancement of biomass which is also an important indicator of carbon sequestered. The SHGs will ensure transparency and accountability towards the planning, preparation, and implementation of plantation activities.

Five training and capacity building workshops for frontline staff and SHG members on carbon assessment and preparation of Project Design Document

Capacities would be built for the frontline staff of all the 5 districts in assessment of 5 pools of carbon. A Five day programme (3 days class + 2 days field work for frontline staff (RFO and ranks below) would be developed on topics such as 5 pools of carbon stock namely,

- Above Ground Biomass (AGB)
- Below Ground Biomass (BGB)
- Soil Organic Carbon (SOC)
- Deadwood (DW)
- Litter (L)

Other components include capacity building of forest personnel through training programs on remote sensing, use of GIS & GPS, for real time monitoring of forest dynamics, preparation of project design document (PDD) and the registration of the program under verified carbon standards (VCS. A detailed 'Training Manual' for frontline staff on methodology for carbon stock assessment of forest ecosystems would also be developed.

Capacity building of frontline staff on preparation of monitoring reports (MR)

There will be suitable capacity building development programs for the forest personnel as well as the members of the SHGs. The details of this will be included in the Monitoring Report (MR). All the aspects required in developing the MR will be clearly described to the stakeholders. The MR is an important document which supports the third party validation exercise.The entire process will be well briefed to all the stakeholders from 5 districts of Punjab.

Development of monitoring reports for voluntary carbon market

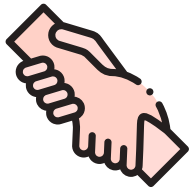
Detailed monitoring reports (MR) will be prepared for each selected SHG. The monitoring report provides information about the project site, details of the project activities, the rationale for conducting the project at the specified location and the general timeline of the project.
Details about the parameters used for calculating the biomass and the VERs such as the Biomass expansion factor, Density, Carbon fraction, Stem volumes, Root shoot ratio etc. will also be specified.

Intended Outcomes

Employment opportunities for marginalised farmers to empower livelihood upliftment & increased income generating activities

Generation of additional income from carbon credits to the farmers

Promotion of local financing arrangements for restoration of degraded lands by resource-poor farmers



Promotion of farmer-industry partnerships with buy-back arrangements

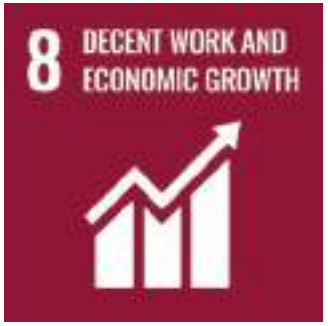
Development of institutional mechanisms for implementing Carbon projects

Gender sensitive strategies promoted by providing gainful employment to women

Improved air quality, soil quality, and biodiversity from the afforestation of degraded lands

Improved access to education and improved health and safety

SDGs addressed by the project







VNV ADVISORY

VNV Advisory Services has been at the forefront of working with climate change and livelihoods. Our decade-long experience has seen us develop low-carbon projects that support these communities in getting their basic needs while adapting to and mitigating the harsh impacts of climate change. We work in areas of clean cooking, social forestry, sustainable agriculture, rural energy access and many other related community based technologies. With support from over 40 NGOs and implementation partners, our work encompasses over 4 million rural households and 50,000 hectares of forest areas under management across the South Asian (India, Bangladesh, Nepal, Laos, Myanmar and Sri Lanka) region. We have also been able to engage with businesses to address issues of Social Responsibility, Environmental Sustainability and Carbon Neutrality.

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