

# Case Study: Narmada Landscape Restoration Project

NTPC, in partnership with USAID, is supporting the first-of-its-kind project to demonstrate and establish a Payment for Ecosystem Services Model for urban drinking solutions in Madhya Pradesh. The "Narmada Landscape Restoration Project" is aimed at the restoration of agriculture and forest landscapes and the conservation of the river Narmada tributaries between Maheshwar and Omkareshwar in the Khargone district. Indian Institute of Forest Management (IIFM) located in Bhopal, India, and the Global Green Growth Institute (GGGI) headquartered in Seoul are the joint implementing partners. The project aims to incentivize agriculture and forest communities to preserve and improve water resources by adopting sustainable landscape practices like soil and water conservation measures, irrigation water use efficiency, natural and organic farming, sustainable NTFP extraction, forest fire, assisted natural regeneration, and forest conservation. Its successful execution holds the potential to set an example through which many Indian cities can secure the water source.

During the financial year 2022-23, the project has made rapid progress through government support and community ownership. Some of the important milestones are as below:

Natural Resource Management (NRM) Structures: Detailed Project Report (DPR) for 12825.35 hectares of mixed landscape has been finalized. A list of 104 NRM structures to be built at the cost of Rs. 9.58 Cr creating a storage capacity of 287387 CUM have been prioritized. During FY 2022-23, close to 170 Hectares of the landscape have been restored due to the construction of 6 stop dams, 1 check dam, 5 Gabion Structures (GS), 2 Loose Boulder Structures (LBS), and 1 farm pond. Close to 15.81 hectares of the landscape have been restored through demonstration, organic inputs, soil health inputs, and Assisted Natural Regeneration.



Figure: Multiple NRM Structures

NLRP has been carrying out several demonstration activities to motivate the agriculture and forest-dependent community in sustainable landscape practices.

### Demonstration Activities (Agriculture)

- Organic Farming: Sustainable farming activities for the previous season (Rabi 2022-2023) have been successfully concluded, resulting in the creation of approximately 70 demonstration plots. For this season (Kharif 2023), around 140 farmers have expressed a strong interest in participating in on-field demonstrations. To promote organic farming activities, two vermicompost units, four poultry sheds, six sanjeevak, and three cattle urine tanks have been completed.



Figure: Demonstration Plots

- Additionally, zero-budget natural farming was demonstrated with 10 farmers using Beejamrut and drum techniques, and integrated farming systems were showcased with another 10 farmers.



Figure: Beejamrut and seed trials

- Water use efficiency: Drip irrigation enables greater water use efficiency which will have a positive impact on the water resources in river Narmada and its tributaries. Successful demonstrations and distribution of equipment were completed for 10 selected small and marginal farmers.



Figure: Drip Demonstration and Distribution

- Demonstration of Soil Testing & Soil Health Management: More than 150 farmers have benefitted by rationalizing their use of fertilizers based on Soil Health Cards by NLRP.
- Demonstration of Seed Treatment with Bio-Culture, Seed Germination Tests: 40 farmers demonstrated seed treatment activities for sustainable agriculture and were provided with bio-culture kits. Out of the 152 farmers that received training in seed germination testing last year, 81 farmers conducted these tests on their own before sowing this year. Seed germination testing is a part of non-pesticide management (NPM) and plays a vital role in increasing crop production. Proper sowing techniques based on seed germination results contribute to healthier crops, reducing the need for chemical fertilizers that drains into river tributaries and pollutes the water.



Figure: Farmer exposure Visit

- FIGs and FPOs: NLRP by March 2023 has formed 11 Farmer Interest Groups (FIGs) consisting of 106 farmers. These FIGs serve as collective platforms for farmers to come together, share knowledge, and collaborate on various agricultural activities. To ensure effective communication and coordination, regular monthly meetings are organized with the FIGs, providing an opportunity for farmers to discuss their progress, and challenges, and exchange ideas. These meetings play a crucial role in fostering a sense of community and collective action among the farmers involved in

the project. Sixty-three farmers have been enrolled with an existing Farmer Producer Organization (FPO) in the region called Deep Jyoti. These farmers' details have been shared for enrolment in organic certification to Madhya Pradesh State Organic Certification Agency (MPSOCA)



Figure: FIG meeting for Rabi season crop

#### Demonstration Activities (Forestry)

- Tripartite Agreement: NLRP will carry out activities in the forest landscape in coordination with Joint Forest Management Committees and Forest Department. For this, a tripartite agreement detailing the roles and responsibilities of all the three partners is being worked out. The initial draft covering the area of 20 hectares under the Dabadh JFMC (South Bank) has been submitted to the Divisional Forest Officer, Barwaha for review and approval. The first JFMC strengthening training has also been completed under the capacity-building exercise.



Figure: JFMC Capacity Building training in village Dhabadh.

- Smokeless Chulha Demonstration and Distribution: NLRP recently distributed 100 modern stoves (smokeless chulha) to women in Bekalya and Julwaniya villages as part of the Project's aim

to reduce wood consumption and smoke emissions, benefiting the environment and the health of the women and their families.



Figure: Smokeless Chulha Demonstration and Distribution

- Non-Forest Timber Products (NFTPs) Harvesting: NLRP project area contains abundant Palash trees which is known for its beautiful orange flowers, durable leaves, lac-producing ability, medicinal values of its bark, and many more. NLRP is working with a forest-based community to explore livelihood opportunities in dona pattal making from Palash leaves. For Lac cultivation, trainings and demonstrations focussing on an overview of Lac cultivation, its background, history, and its significance as an income-generating activity is being conducted.



Figure: Lac Cultivation training