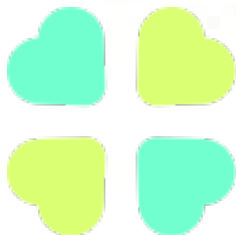




***“Integrated Forestry and Water Management in the
Uttarakhand Himalayas”***

January 2024-December 2026

In collaboration with



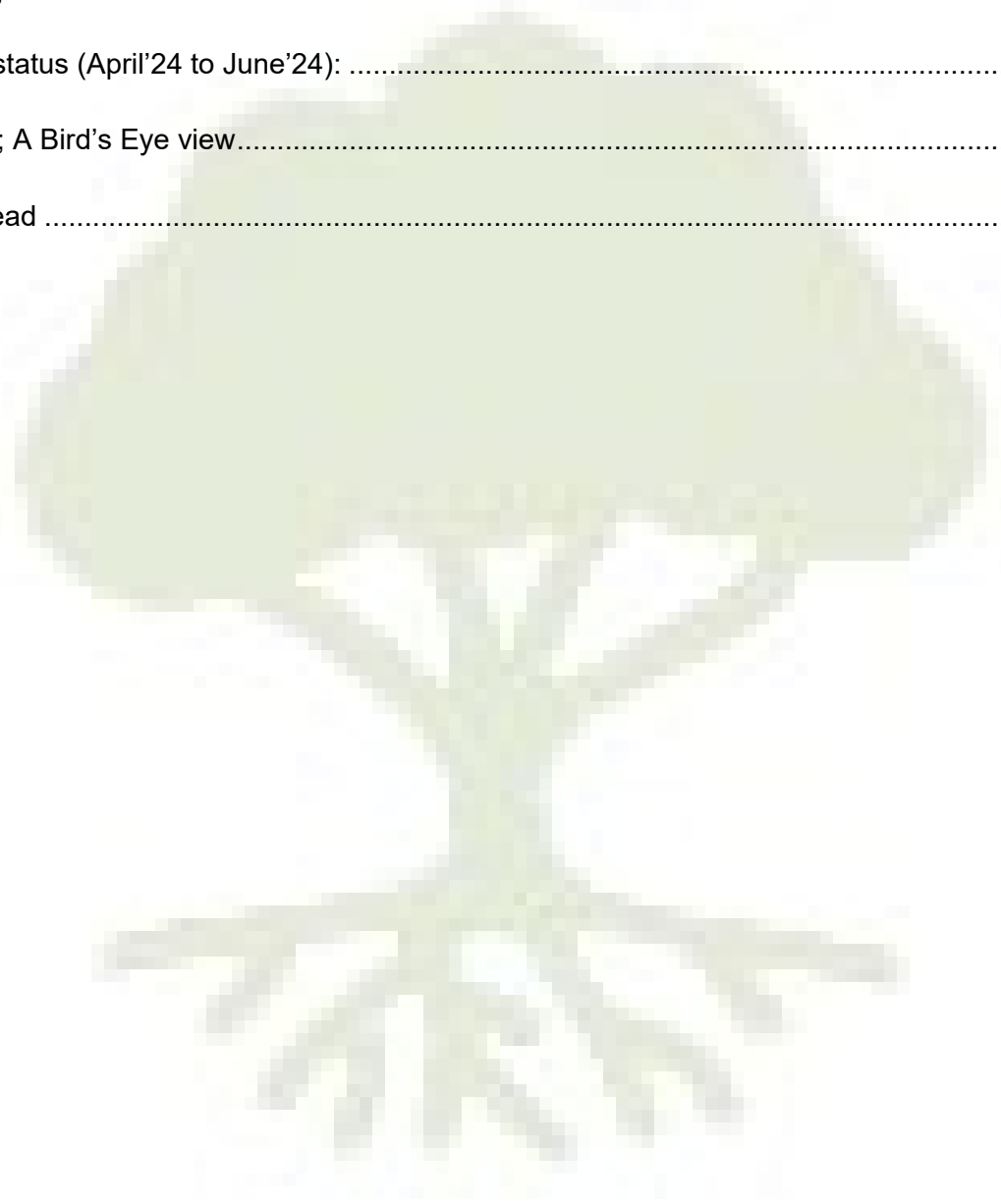
**MAKEMYTRIP
FOUNDATION**

Quarterly Report

April'2024 - June'2024

Contents:

Background:	3
Context:	5
Core Objectives:	6
Current status (April'24 to June'24):	6
Timeline; A Bird's Eye view	10
Way Ahead	11



Project Report

Status report of the project implementation sites of Uttarakhand

Background:

The ecosystems in the Hindu Kush Himalayan region are diverse in their composition; they constitute significant forest resources, water resources, habitats and biodiversity. Humans benefit from ecosystems in many ways: ecosystems provide many goods that are crucial to people, they regulate the water cycles, purify the air, host many useful plants, provide raw material of many kinds, are a place of spiritual practices, recreation and many more. These benefits that humans get from ecosystems are called “Ecosystem Services” and such services derived solely from forest are known as “Forest Ecosystem Services” (FES).

According to Millennium Ecosystem Assessment (MEA) (2005), there are four categories of ecosystem services: provisioning, regulating, cultural and supporting services. The intended outcome of this partnership is to connect all the key stakeholders from the proposed sites on a common understanding about this interplay between the ecosystem services and the need to conserve them for the use by future generations.

Most of the Himalayan villages are facing a severe crisis of forest degradation and water shortage in recent times. These resources are under immense pressure from various human activities leading to environmental, social and economic consequences.

Forests are traditionally known to assist the replenishment of water sources. Forests and water resources are intricately linked, as forests play a vital role in regulating the water cycle. Healthy forests contribute to water quality, reduce erosion, and stabilize watersheds. However, they are often threatened by deforestation, climate change, and unsustainable land use practices. Integrated Forestry and Water Development seeks to address these challenges while promoting sustainable water management and ecosystem resilience.

They contribute in many ways towards the recharge of water sources:

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1. Regulating through fall: The branches/leaves of the trees/shrubs/grasses intercept the rain drops, slowing down the impact of raindrops directly on the soil. This assists in arresting surface run-off and enabling a sustained contact of rainfall with the surface for infiltration.
 2. Promoting infiltration through Root systems: Deep penetration of roots create channels that allow water to infiltrate more easily. They also enhance soil stability, reduce the chances of erosion with their soil binding properties.
 3. Retain Moisture: The leaf litter, organic matter absorb water and slow down the movement of water along a slope. This assists in maintaining moisture for a long duration.
 4. Enables better aeration in soil through microorganisms: The vegetation cover assists many soil organisms that help in aeration of soil which is crucial in smooth flow of water through soil profile.
 5. Microclimatic advantage: Vegetation regulates the microclimatic condition of the soil surface through the process of evapo-transpiration. This advantages the retention and infiltration of the water through the layers of the soil.

It is very important that the communities/concerned stakeholders acknowledge the value of these attributes of ecosystem (as a store-house of critical and diverse ecosystem services) and attach a utility to them so that ownership, commitment is ensured for Sustainability. There is an urgent need to trigger a behavioral change in stakeholders towards sustainable management of ecosystem services, especially Forests and Water.

Context:

The forests in Himalayas are some of the most important ecosystems in the world providing a wide range of essential services to people and environment. They host wide range of biodiversity and play a significant role in regulating water flow, preventing soil erosion and mitigating climate change. A report by the Forest Survey of India published in 2022, indicates that the forest cover in Uttarakhand has reduced from 67.6% to 65.6% in last 10 years. This rate threatens the forests and the services they are providing, especially Water.

Most of the Himalayan villages are facing a crisis of water shortage in recent times. The crisis is an outcome of a gradual but regular reduction of water in natural springs that form the lifeline for most people. The decline in springs is at present believed to be multifaceted with change in rainfall pattern and receding vegetation cover. The reduction has had a cascading effect on the streams that are-fed by springs. They show a decline during the summer months further affecting the community as well as the ecology downstream.

Vegetation has a key function in enhancing the recharge of ground water in hilly areas. Vegetation in the form of trees, shrubs, grasses regulate the throughfall of rain, promote compaction and enable infiltration towards the replenishment of ground water. Through its function of intercepting the rains, they reduce splash erosion of soil, litter layers enable moisture retention, root systems penetrate deep into the soil, creating channels to allow water to infiltrate more easily, create soil stability, supports soil organisms to enable a healthy aeration process. The vegetation controls the microclimate of soil surface during its cycle of evapo-transpiration thereby enabling a more favourable environment.

Some of the visible outcomes of the depleting natural resources are loss of biodiversity, soil erosion, increasing forest fires, human wildlife conflicts, reduced water flows, change in climatic patterns, increased carbon emissions and loss of livelihoods.

In Uttarakhand, Van Panchayats are traditional institutions that have historically played a significant role in forest conservation. Through application of traditional knowledge, understanding needs of the community helped them make informed decisions for management of their forests. The institution inculcated a sense of collective ownership of the forests and was very effective in adapting their techniques of forest management based on changing environmental conditions and social dynamics.

In the given context, Himalayan communities in Uttarakhand are highly dependent on natural resources for their survival and cultural identity. Protecting forests and water resources is crucial for the well being of the Himalayan communities in Uttarakhand. Forests and Water form foundation of life not just in the Himalayan Region but also in the downstream.

The conservation efforts require collaboration among local communities, reinstating community led institutions (Van Panchayats), Allocation of Resources, Catalyzing the efforts through effective mobilization, innovating, integrating & promoting traditional knowledge and building ownership among the natives.

CHIRAG, in collaboration with MakeMy Trip Foundation takes cognizance of these pertinent issues and has initiated a mechanism to address them.

Core Objectives:

The collaboration looks to address the following key objectives:

1. Sustainable Ecosystem Management: To maintain and restore forest ecosystems, ensuring their resilience and adaptability to environmental changes
2. Water Resources Management: To create awareness on Himalayan Ground water and enhance water resources for use of present generation without compromising on the needs of future generations
3. Climate Change Mitigation and Adaptation: Contribute to the global efforts in building resilience to climate change through preservation & restoration of forests and water sources
4. Build a cadre of youth sensitive towards the sustainable management of natural resources
5. Strengthen the village level institutions for local governance of the ecosystems

Current status (April'24 to June'24):

During the second quarter of 2024, significant progress was made across 11 sites: Sirsoura, Kaltani, DhuraSangrouli, Palna, Ralakot, Toli, Dol, Golimohar, Dhubrouli, Chauna, and Kanra. Key activities included nursery establishment, seed distribution, community engagement, baseline surveys, and hydrogeological surveys. The quarter began with field transects, marking quadrants, and community interactions for site selection. Nursery bags were distributed, and training sessions for nursery personnel were conducted. Baseline surveys were carried out in the villages. Hydrogeological surveys identified potential recharge zones, leading to proposed soil and water management activities. Regular nursery visits ensured the monitoring of sapling growth across all sites. Seed distribution continued consistently.

Spring inventories were conducted to assess water resources, and recharge activities commenced. Direct seed sowing in Van Panchayats promoted natural regeneration, while Assisted Natural Regeneration (ANR) activities began. Protective measures included repairing protection walls and installing barbed wire fencing. The quarter saw sustained efforts in nursery establishment and community engagement, with 223 nursery personnel engaged, including 218 women. A total of 213,700 poly bags were filled, and nurseries were maintained. Baseline surveys were concluded in four villages, and hydrogeological surveys were conducted in three springs, laying a robust foundation for future activities.

Nursery Establishment, Maintenance, and Seed Distribution: Across all 11 sites, a total of 213,700 poly bags were filled and maintained, with regular visits conducted to monitor sapling growth and health. This effort successfully engaged 223 nursery personnel, including 218 women, promoting gender inclusion and community participation. Continuous training sessions were held for nursery personnel to ensure proper nursery management practices. Additionally, the distribution of a variety of seeds, including Oak, Bhimal, Bhatula, Amla, Koirala and Padam, was carried out consistently, ensuring a diverse mix of species for planting and promoting biodiversity and ecosystem resilience.



Nursery visit by the Team Members at different sites

The women in our village often have to travel long distances into the forest for fodder and fuel, frequently facing the danger of encountering wild animals. This has always been a significant concern for us. However, with the trees we are planting through this project, we look forward to a future where fodder and fuel will be readily accessible, reducing the time and effort required and enhancing the safety of our community members.

Poorav prasad Arya, a resident of Toli

Community Engagement and Capacity Building: Intensive community engagement was a key focus, with efforts centered on nursery establishment and maintenance. A total of 223



nursery



Visits to Monitor Nurseries



Training on Nursery Stacking

personnel actively engaged and was facilitated through regular community orientation meetings designed to raise awareness about the project's objectives and encourage active participation. Training sessions were also conducted to build the capacity of community members, ensuring they were equipped with the necessary skills for effective nursery management. These sessions covered various aspects of nursery management, seed sowing, and plant care, enhancing the community's knowledge and ability to contribute to the project's success. Additionally, ongoing support and guidance were provided to nursery personnel, fostering a sense of ownership and responsibility towards the project.

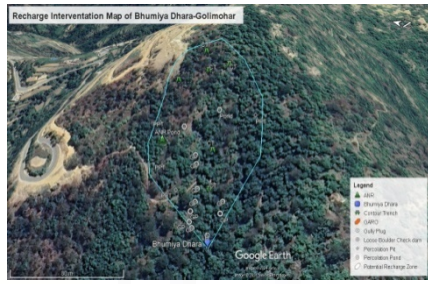
We have previously collaborated with CHIRAG on the rejuvenation of a spring, and it is wonderful to join forces again for our Van Panchayat. This project is enabling us to make our forest denser and healthier. Additionally, the establishment and maintenance of nurseries have provided us with much-needed employment opportunities. I believe our future generations will be proud of the efforts we are putting in to preserve and enhance our forest.

Har Singh Bargali, a resident of Talli Toli

Hydrogeological Surveys and Recharge Activities: Hydrogeological surveys were conducted to identify potential recharge zones, leading to the proposal of soil and water management activities in Golimohar, Dhubruli, and Kaltani. These surveys facilitated targeted soil and water conservation interventions. Additionally, spring inventories were conducted across all sites to assess water resources, and recharge activities for Bhumiya Dhara in Golimohar were initiated, enhancing the understanding of water resource status and improving water availability.



Hydro Geological Survey



Map of Activities proposed for Recharge of Spring in Golimohar



Construction of Contour Trench

Direct Seed Sowing and Assisted Natural Regeneration (ANR): Direct seed sowing initiatives were launched in various Van Panchayats, promoting natural regeneration by distributing and sowing seeds directly into the soil. This method is cost-effective and promotes a more natural forest composition. ANR activities, initiated in Dhubrouli, Dol, and Kaltani, involve protecting and nurturing naturally occurring seedlings and saplings, allowing them to grow without significant human interference. These activities included selective weeding, constructing physical barriers to protect young plants from grazing, and applying organic mulches to retain soil moisture. Together, these efforts promoted natural regeneration, enhancing forest cover, supporting biodiversity, and contributing to ecosystem restoration by increasing the diversity and resilience of forested areas.



Plot visits before initiating ANR Activities



Direct Seed Sowing in Van Panchayat



ANR activities in the Van Panchayat

Since I was a child, I don't recall any project of this scale being initiated in our Van Panchayat. As the Sarpanch, I feel proud to be part of this initiative. Everyone in the village is involved, either directly or indirectly, in planting trees. Under the MakeMyTrip project, we are planning to plant 15,000 trees in the Golimohar Van Panchayat.

Gopal Rawat, a resident of Golimohar

Protective Measures: Protective measures were crucial to ensuring the success of reforestation efforts. Protection wall was repaired to safeguard the area from soil erosion and unauthorized human activities. Barbed wire fencing was installed around the project sites to prevent grazing by livestock and other disturbances that could damage young plants and saplings. These measures were essential in creating a controlled environment where reforestation efforts could thrive. By preventing grazing, the newly planted and naturally regenerating vegetation had a higher chance of survival, leading to healthier and more resilient ecosystems. Additionally, these protective structures helped maintain the integrity of the



Reconstruction and Repairing of Protection Walls in Van Panchayat



Installation of Barbed Wire Fencing

reforestation areas, ensuring that the investments in planting and nurturing young plants were not undermined by external factors.

Timeline; A Bird's Eye view

In the second quarter, the project initiated the implementation phase with several key activities. Community orientation and meetings were successfully conducted at all sites, ensuring that community members were informed and engaged. Feasibility studies and site selections were completed across all locations, identifying suitable sites for project interventions. Nursery in-charges were identified and trained in each village, equipping them with the necessary skills for effective nursery management. Nurseries were established and maintained in all targeted villages, with poly bags filled to ensure a robust supply of saplings for reforestation efforts. Site preparation and pit digging are ongoing across all sites, laying the groundwork for planting and reforestation activities. Soil and water conservation interventions are underway in Golimohar and scheduled for the remaining sites to enhance soil health and water retention, which are critical for the success of reforestation and ecosystem restoration efforts. Transplantation is scheduled for the upcoming months, focusing on transferring healthy saplings from nurseries to designated planting sites to promote forest growth and biodiversity.

Activity Timeline												
S.No	Activity	Villages										
		Golimohar	Kaltani	Sirsoura	Dhubrouli	Dol	Dhura Sangrol	Ralakot	Toli	Palna	Chauna	Kanara (Paniyalichhina)
1	Community Orientation & Meeting	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	Feasibility Study & Site Selection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	Identifying Nursery In-Charge	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	Training of Nursery In-Charge	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	Nursery Establishment	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	Nursery Maintenance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	Site Preparation & Pit digging	Ongoing	Ongoing	Scheduled	Ongoing	Ongoing	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled
8	Soil & Water Conservation Intervention	Ongoing	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled
9	Transplantation	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled

Way Ahead

Building on the achievements of the second quarter, the project will focus on several key activities in the coming months to ensure continued progress and success. The transplantation of saplings from nurseries to designated planting sites will be prioritized, with careful monitoring to ensure high survival rates and robust growth. Soil and water conservation interventions will be expanded to all remaining sites, enhancing the resilience and health of the forest ecosystem. Continuous community engagement and capacity building will be emphasized, fostering a sense of ownership and active participation among local residents. Additionally, periodic assessments and evaluations will be conducted to track progress, address challenges, and make necessary adjustments to the implementation strategies. By maintaining this momentum and building on the foundations laid in the first two quarters, the project aims to achieve its long-term goals of reforestation, biodiversity conservation, and sustainable ecosystem management in the Uttarakhand Himalayas.

Annexures



Seed Distribution to Nursery Persons



Nursery visit with Sarpanch



Visit to Village Nurseries



Protection Measures by Nursery Persons

Annexures



Plantation Site visits with the Sarpanch



Repairing of Protection Wall in the Van Panchayat



Installation of Barbed Wire Fencing in the Van Panchayat



Training on Direct Seed Sowing



Direct Seed Sowing in the Van Panchayat

Anexuress



Baseline Survey



Bhumiya Dhara Spring of Golimohar



Geological Outcrop of Springshed



Soil and Water Conservation Activities in the Recharge Area of Golimohar



Regional Office Visit by MMT Foundation