

PROJECT PROTECT HIMALAYAS

GROWTH UPDATE 2025

From the COO's Desk

At SankalpTaru Foundation, we have always believed that planting a tree is just the beginning. What truly matters is protecting fragile ecosystems and nurturing communities who call them home, until every sapling grows into a shield of hope and resilience.

Our work in the Himalayas is a testament to what's possible when care meets commitment. Through Project Protect Himalayas, we are safeguarding the green lungs of our nation while strengthening the lives and livelihoods of mountain communities.

Every sapling planted here is not only preventing soil erosion, enriching biodiversity, and conserving water, but also weaving a stronger bond between nature and people.



We are proud to witness this impact unfold; one slope, one orchard, one village, one donor at a time. And we are deeply grateful to every supporter who has chosen to stand with the Himalayas.

To our donors and well-wishers, thank you for walking this path with us. Your trust and generosity are not just nurturing trees, but fortifying mountains, protecting rivers, and securing the climate for generations to come.

Together, let's continue to protect the Himalayas, for they protect us all.

Warmly,
Priyanka Negi Bhandari
Chief Operating Officer
SankalpTaru Foundation

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Introduction

Himalayas: Of peaks, rivers, and green landscapes

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The Himalayas, stretching across northern India, are celebrated as the "abode of snow" and revered for their majestic peaks, sacred rivers, and rich cultural heritage. Formed over millions of years by the collision of tectonic plates, this mighty mountain range continues to shape not only landscapes but also the lives of millions who dwell in its folds and valleys.

Geographically, the Indian Himalayas extend from Jammu & Kashmir in the west to Arunachal Pradesh in the east, spanning diverse ecological zones. Towering ranges cradle fertile valleys, while glacial rivers such as the Ganga, Yamuna, Sutlej, and Brahmaputra flow down their slopes, nourishing the plains below. The terrain is steep and rugged, with elevations ranging from subtropical foothills in the Shivaliks to alpine meadows and snow-clad summits at higher altitudes. Communities here rely on these rivers and forests for water, agriculture, and livelihoods, making their protection vital.

Ecologically, the Himalayas are one of the world's richest biodiversity hotspots. They host Oak, Deodar, Rhododendron, and Pine forests, along with medicinal herbs and high-altitude flora found nowhere else. Wildlife ranges from snow leopards, Himalayan tahr, and black bears to an array of migratory and endemic birds. The region is also vulnerable to soil erosion, landslides, and extreme weather events such as cloudbursts, flash floods, and early snowmelt, highlighting the urgent need for conservation and sustainable land management.

Culturally, the Himalayas are home to diverse indigenous traditions, farming practices adapted to steep terrains, and spiritual sites that attract pilgrims from across the world. Despite challenges of remoteness, harsh climates, and increasing climate variability, Himalayan communities remain resilient, working in harmony with their environment and local ecosystems.

The Himalayas are not just mountains, they are water towers, biodiversity reservoirs, and cultural sanctuaries whose protection ensures ecological stability for the entire subcontinent.

Why Project Protect Himalayas?

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Why the Himalayas Need Our Care

The Indian Himalayas face increasing ecological stress due to deforestation, soil erosion, melting glaciers, and growing pressures from tourism and unsustainable development. In recent years, extreme weather events, including record heatwaves, early snowmelt, cloudbursts, flash floods, and landslides, have damaged homes, crops, orchards, and infrastructure, underscoring the urgent need for ecosystem protection. Though the region sustains rich biodiversity and vital river systems, communities here face unpredictable rainfall, water scarcity, and shrinking forest cover, which threaten both livelihoods and the natural balance.

With varied climatic zones ranging from subtropical foothills to alpine meadows, the Himalayas experience steep slopes, fragile soils, and monsoon-dependent rainfall. Lower hills and valleys face human-induced pressures, while higher elevations are vulnerable to glacial melt and flash floods. To address these challenges, **SankalpTaru has introduced natural rainwater harvesting trenches** that slow the runoff during monsoon, store water for irrigation, and help maintain soil moisture throughout the year. Locally known as Chaal and Khaal, these micro-catchments are built to conserve water and sustain plantations even during dry months.

Complementing these traditional techniques, we also use **IoT-based monitoring devices** to track soil health, moisture, temperature, and humidity, ensuring each sapling gets the care it needs to survive in tough terrains. By blending innovation with community wisdom, these interventions restore degraded slopes, conserve water, and strengthen local livelihoods.



SankalpTaru celebrating Harela 2025 with the community in Khyarsi, Uttarakhand

In the Himalayan belt, environmental stewardship is woven into everyday life. Each year, communities celebrate **Harela: the Festival of Green**, by sowing seeds and planting saplings as a symbol of renewal and gratitude to nature. Such traditions remind us that caring for the land is not only an ecological need but a cultural inheritance passed across generations.

Through Project Protect Himalayas, SankalpTaru is nurturing forests of resilience, where every planted tree safeguards biodiversity, supports mountain communities, and builds a greener, more climate-secure future for all.

Flora and Fauna

The Indian Himalayas, with their sweeping altitudinal range and diverse climatic zones, nurture one of the richest ecosystems on Earth. From subtropical sal and chir pine forests in the lower hills to alpine meadows dotted with rhododendron and juniper in higher reaches, the region supports extraordinary biodiversity. Native tree species such as Oak (*Quercus leucotrichophora*), Deodar (*Cedrus deodara*), Pine (*Pinus roxburghii*), Rhododendron (*Rhododendron arboreum*), and Walnut (*Juglans regia*) form dense canopies that help regulate temperature, store carbon, and conserve soil moisture.

This mosaic of forests shelters rare and endangered wildlife, including the Himalayan black bear, snow leopard, musk deer, and red fox, alongside countless species of birds like monal pheasants, Himalayan griffons, and sunbirds. The region's rivers, streams, and natural springs sustain aquatic life, while grasslands and shrubby slopes provide habitats for grazing animals and pollinators.

The floral wealth also includes an abundance of medicinal and aromatic plants, such as jatamansi, kuth, and kuthra, that have been traditionally used by local communities. Seasonal flowering species like Buransh (Rhododendron) not only beautify the landscape but also support bee and bird populations essential to ecological balance. Despite their resilience, Himalayan ecosystems are increasingly threatened by deforestation, changing rainfall patterns, and soil erosion. SankalpTaru's restoration initiatives focus on reintroducing native species and reinforcing biodiversity corridors that help flora and fauna adapt and thrive

Adaptations to the Environment

- Evergreen oaks and deodars retain moisture and stabilize slopes year-round.
- Alpine shrubs and herbs survive freezing temperatures with deep roots and waxy leaves.
- Wildlife such as Himalayan tahr and snow leopards navigate steep terrains with specialized hooves and camouflage.
- Birds like the monal migrate vertically across altitudes to adapt to shifting climates.

The Himalayan ecosystem, in its resilience and diversity, reminds us that conserving nature here safeguards not just the mountains, but the ecological lifeline of the entire Indian subcontinent.

Ecological Background & Challenges of Afforestation in the Himalayas

The ecological fabric of the Indian Himalayas is defined by its steep terrains, diverse altitudes, and fragile mountain ecosystems. Stretching from the foothills of Uttarakhand to the higher Garhwal ranges, the region rises from about 400 meters to over 3,000 meters above sea level. The terrain varies from subtropical slopes to alpine ridges, intersected by glacial rivers and rain-fed streams that sustain both people and forests. While forest cover remains relatively high, much of it is degraded or fragmented due to soil erosion, overgrazing, and climate-induced disturbances.

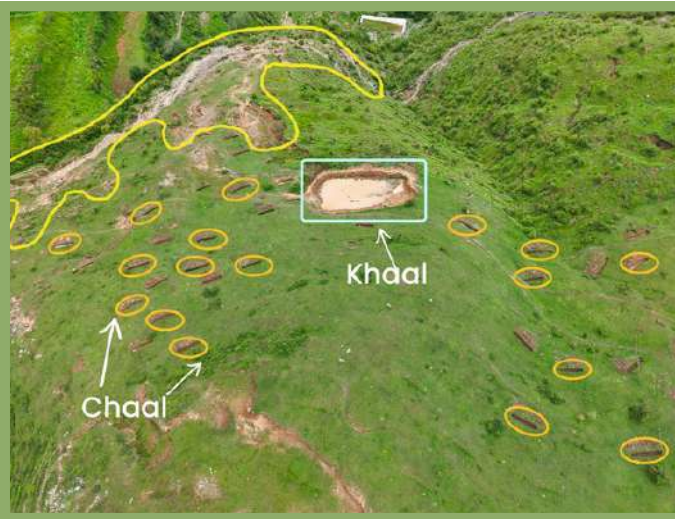
The Himalayas experience sharp climatic contrasts, from warm, humid valleys to snow-covered peaks. Annual rainfall averages between 1,000–2,500 mm, concentrated in the monsoon months. However, the region also faces erratic rainfall and frequent cloudbursts, which trigger flash floods and landslides, washing away topsoil and young saplings. In recent years, villages across Pauri, Tehri, and Uttarkashi districts have witnessed intense weather events, from heatwaves accelerating snowmelt to destructive monsoon floods damaging farmland and orchards.

Soil conditions vary from loamy and rich in the lower valleys to thin and rocky at higher elevations, making plantation challenging. Slopes are prone to runoff, and the lack of consistent irrigation adds to plant stress during dry months. Traditional farming and deforestation for fuelwood further deplete soil fertility and forest density. Afforestation in the Himalayan region thus requires an approach tailored to mountain ecology, using native species like oak, rhododendron, walnut, and deodar that can anchor slopes, improve moisture retention, and resist temperature extremes.

To overcome the challenge of water scarcity, SankalpTaru has introduced innovative micro-harvesting systems, natural contour pits and percolation basins that slow down monsoon runoff and store water for gradual soil absorption (**locally known as chaals and khaals**).

In addition, the integration of **IoT-based monitoring devices ("Internet of Trees")** enables real-time tracking of soil moisture, temperature, and humidity, ensuring timely irrigation and plant survival during dry spells.

Through these adaptive methods, afforestation not only stabilizes slopes and conserves water but also helps regenerate biodiversity corridors and strengthen climate resilience across mountain communities.



Marked contour pits (chaals) and percolation basins (khaals) capture rainwater and allow it to slowly seep into the soil. This helps prevent soil erosion and ensures moisture is available to plants during dry months.

An aerial view of the plantation site showing natural slope management. The chaals and khaals are built along contours to control runoff and support healthy sapling growth on steep terrain.



Solar-powered IoT devices monitor weather and soil conditions in real time. This helps the team track rainfall, humidity, and temperature to plan irrigation more effectively.

An on-ground "Internet of Trees" sensor records soil moisture and temperature. These smart tools ensure timely watering and improve sapling survival even during dry spells.



Challenges on the Ground & How We Solve Them

Restoring the Himalayas, One Sapling at a Time

Planting in the Himalayas is not just an ecological responsibility, it is an act of courage against a landscape shaped by steep slopes, fragile soils, unpredictable weather, and shifting human settlements. The mountains bring beauty, but also volatility. Water disappears when it is needed most, roads vanish under landslides, and entire villages migrate in search of stability.

Yet, through these challenges, SankalpTaru continues to adapt, innovate, and earn the trust of communities living in some of India's most difficult terrains.

- **Unpredictable Mountain Weather: Abundance to Scarcity in a Single Season**

In the Himalayan region, water availability follows an extreme rhythm. During the monsoon, small mountain streams, locally called gadirā, gush with life. Farmers collect this rainwater using chaals and khāals (community ponds), storing every drop for the months ahead. But once winter approaches, these sources almost disappear. In many villages, there is barely enough drinking water, let alone water for farming.



Flash floods after cloudbursts in Uttarkashi on 22 July 2023, causing damage to homes, vehicles, and roads

This challenge intensified further this year after severe cloudbursts and widespread landslides across Uttarakhand, leaving large portions of the state disconnected and water systems disrupted.

And so, our field teams guide farmers in designing and expanding chaals and khāals, enabling them to harvest and conserve monsoon water more effectively. By helping them understand the natural flow of water along slopes, we ensure that even when streams dry up, farmers maintain a reserve for essential irrigation.

- **Landslides & Isolation: When Connectivity Breaks, Everything Stops**

In hilly regions, one day of heavy rain can reshape the land.

More monsoon rain means more frequent landslides, blocking roads, damaging footpaths, and isolating entire hamlets. During these periods, everything from market access, product sales, transportation, and even basic household activities, shifts to on-foot movement, making routine farm work exceptionally difficult.

This year's landslides in the Tehri and Chamoli belt made farmer outreach and sapling distribution particularly challenging.

Our coordinators traverse hillsides on foot, relying on Gram Pradhans and local networks to locate farmers, deliver saplings, and conduct field visits. Even when roads collapse, relationships hold steady, and it is through this community trust that plantations continue without interruption.



Landslides during the monsoon blocking roads and village paths in the Tehri–Chamoli region

- **Mixed & Intercropping Practices: Farming with the Mountain, Not Against It**

The Himalayan soil requires a different rhythm of cultivation. Farmers grow maize, wheat, pulses, rajma, beans, and soybean through mixed cropping, allowing natural nitrogen fixation to enhance soil fertility.

This method reduces dependence on chemical inputs, saving money and protecting fragile mountain soils.

We encourage mixed cropping as a sustainable model, helping farmers understand soil cycles, natural nitrification, and long-term fertility gains.

Through this, farmers avoid external chemicals and cultivate healthier orchards.



Mixed-cropping fields in the Himalayan foothills supporting natural soil fertility

- **Snowfall & Seasonal Livelihoods: When Winter Means Loss**

Winters bring beauty to the hills, but also hardship. Heavy snowfall damages young orchards, and farmers often cannot cover their plants adequately. As a result, orchard development becomes seasonal, and income from farming fluctuates dramatically. Many families turn to livestock or small occupations for survival.

Our guidance includes seasonal orchard planning, recommending spacing, and slope-aligned layouts to reduce winter damage. Even during non-farming months, our teams remain in touch to ensure continuity of learning and support.



Heavy winter snowfall covering farms and villages in the Himalayan region

- **Migration & Farmer Identification: A Human Landscape in Motion**

Mountain communities often migrate seasonally, making it difficult to identify, verify, and follow up with beneficiaries. Villages are scattered, houses sit at varying elevations, and connectivity issues make coordination unpredictable.

SankalpTaru works closely with Gram Pradhans and local volunteers to identify eligible farmers, verify land availability, and distribute NHB-certified saplings. Regular village meetings, counseling sessions, and trust-building activities ensure that plantations reach the right hands and thrive under proper care.

- **Connectivity Challenges: When a Phone Signal is a Luxury**

In many Himalayan villages, network connectivity fluctuates, sometimes disappearing entirely after a landslide or storm. This disrupts communication, monitoring, and emergency guidance for farmers. We rely on in-person touchpoints, field visits, and community nodes for coordination. Important updates are communicated through local leaders, ensuring that even when digital connectivity breaks, human connectivity does not.

- **Root Rot & Fungus in Apple Orchards: When Water Becomes an Enemy**

While water scarcity is a major issue, excess water brings its own problems. Steep slopes cause water to accumulate in pockets during monsoon, leading to root rot and fungal diseases, especially in apple trees. SankalpTaru facilitates soil and water testing, educates farmers on diverting water channels, and helps them create gadhiras, chaals, and khāals to redirect overflow. By reworking field layouts and allowing periodic sunlight exposure, farmers protect orchards from excess moisture and save large portions of their plantation.



Apple trees showing fungal damage caused by excess moisture

Every sapling planted in the Himalayas carries a story of endurance, adaptation, and mountain spirit. Amid cloudbursts, snowfall, steep slopes, and migrating communities, protecting the Himalayas requires more than plantation. It demands patience, trust, and continuous innovation.

Season after season, SankalpTaru walks alongside the communities of the hills, ensuring that each sapling not only grows but survives, protects, and strengthens the very mountains that sustain us.

The Story Today

Thanks to your support, Project Protect Himalayas is growing stronger, just like the mountains it helps protect. Between April 2022 and March 2025, your contributions helped us restore and nurture thousands of native trees across the Himalayan slopes, each one standing as a living symbol of resilience, renewal, and hope.

SankalpTaru Foundation's mission to revive fragile ecosystems and empower mountain communities has taken deeper roots this year. Through innovative rainwater harvesting systems, soil-restoration plantations, and IoT-enabled monitoring of sapling health, our efforts have turned vulnerable slopes into green sanctuaries of life.

The numbers ahead are a reflection of what your trust and generosity have made possible, **a thriving Himalayan landscape that breathes, sustains, and inspires.**

Your Impact in Numbers



Trees flourishing between April 2022 – March 2025:
2,20,000



Oxygen produced:
34,67,500 tons annually



CO2 sequestered:
50,50,500 tons annually



Survival rate:
90% survival rate on an average



Area greened:
700 acres



Fruit production:
3800tons/- per season



Eco. value for farmers:
Rs. 13.3 Crores

Note: The estimated O2 and CO2 values are theoretical values based on the study done; actual values may vary from these. These values are calculated for the entire life span of tree species estimated to be 20-25 years.

Sustainable Development Goals We Achieved Together



1. No Poverty – SDG 1

- Providing training and resources for sustainable farming techniques
- Creating opportunities for income generation through agriculture
- Facilitating access to microfinance and credit facilities

2. Zero Hunger – SDG 2

- Promoting organic farming practices
- Providing education and resources on nutrition and dietary diversity



3. Gender Equality – SDG 5

- Promoting women's participation in decision-making processes
- Providing vocational training and entrepreneurship opportunities for women
- Implementing gender-sensitive agricultural programs

15 LIFE ON LAND



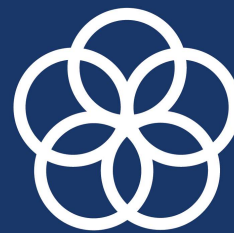
4. Life on Land – SDG 15

- Ending desertification and restoring degraded land
- Ensuring conservation of mountain ecosystems
- Protecting native biodiversity and natural habitats
- Providing access to genetic resources and fair sharing of the benefits.

5. Partnerships for the Goals – SDG 17

- Collaborative plantation projects unite governments, NGOs, and communities.
- Partnerships ensure long-term funding, technical support, and scalability.

17 PARTNERSHIPS FOR THE GOALS



13 CLIMATE ACTION



6. Climate Action – SDG 13

- Plantations act as carbon sinks, mitigating climate change impacts.
- They reduce soil erosion, floods, and extreme heat effects.

Stories of Change from the Ground

Beneficiary:
Lucky Singh Chauhan

Village: Kalich, Block: Mori
District: Uttarkashi
Fruit Species: Apple



Lucky Singh with our auditor Arvind in his thriving orchard

"I have been cultivating apples for several years, but after joining hands with SankalpTaru Foundation, I expanded my orchard on a larger scale. With their support and quality saplings, my farm's productivity and profit have increased significantly. Though challenges like soil erosion during heavy rains and pest management continue, the team's regular guidance helps us handle them better.

Our irrigation depends mainly on rainwater, but with every season, the orchard grows stronger. I am grateful to SankalpTaru for standing with farmers like us and helping us make the hills greener and more prosperous."



Soil testing and on-ground discussions during the field visit

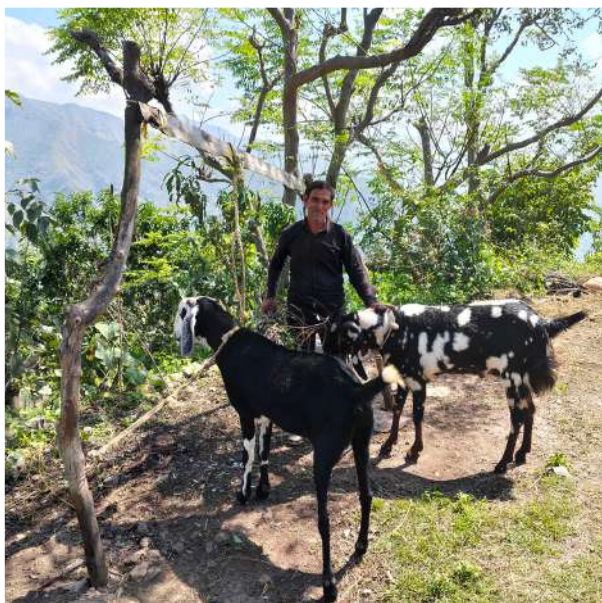
Beneficiary: Virendra Kumar

Village: Tikari (Lalotna),
Block: Dhanaulti,
District: Tehri Garhwal
Tree Species: Silver Oak



Virendra Kumar, receiving a certificate for 90% tree survival on his farm

"This hillside once grew only grass during the rainy season, but after planting Silver Oak trees with the help of SankalpTaru Foundation, the land has begun to transform. The trees not only improve the weather but also help retain moisture and promote better grass growth. Our source of irrigation is mainly rain and pond water, and the pond constructed under SankalpTaru's H2O Mission has been a great support for summer irrigation. Protecting the plants from cattle remains a concern, but we use composted cow dung from our livestock to naturally enrich the soil. We are happy with the work SankalpTaru is doing and hope their support for farmers like us continues in the future."



Livestock serving as an additional source of income for the household



A healthy Silver Oak tree thriving on his farm land

Beneficiary:

Urmila Devi (Pradhan)

Village: Bonsi (Satagad),

Block: Jaunpur,

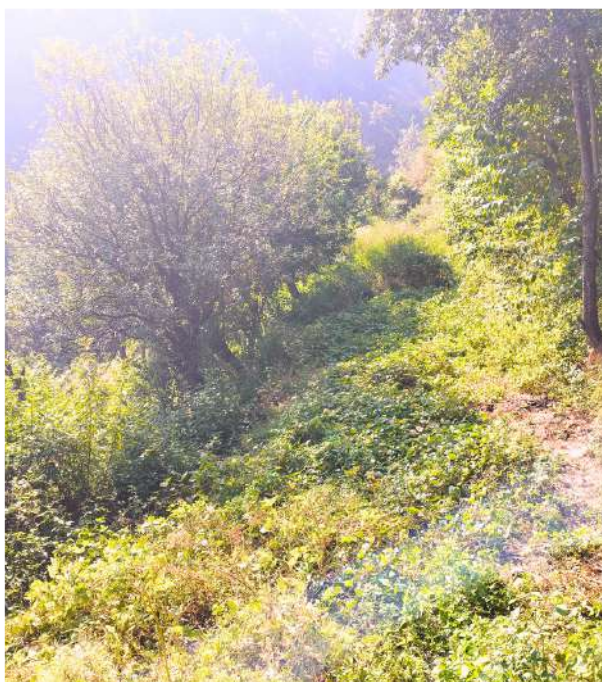
District: Tehri Garhwal

Fruit Species: Mulberry



Urmila Devi (Gram Pradhan) receiving a certificate for 90% tree survival

"With the support of SankalpTaru Foundation, we decided to plant Mulberry trees so that the land could retain more moisture and the environment would improve. The soil here is good, but with the plantations, it is becoming even more fertile. Our main source of irrigation is rainwater. While cattle protection remains a concern, we are very happy with the work SankalpTaru is doing and hope the organisation continues to support farmers like us in the future."



Orchard showing healthy tree growth under community care



Urmila Devi with her family at their home

Beneficiary:

Manmohan Singh

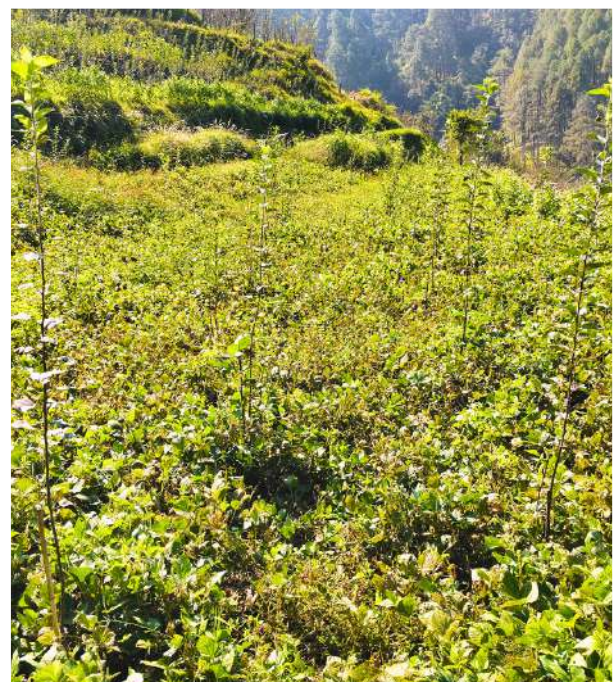
Village: Gainchwon,
Block: Mori,
District: Uttarkashi,
Fruit Species: Apple



Manmohan Singh standing in his well-maintained orchard

"With the support of SankalpTaru Foundation, we decided to plant Mulberry trees so that the land could retain more moisture and the environment would improve. The soil here is good, but with the plantations, it is becoming even more fertile.

Our main source of irrigation is rainwater. While cattle protection remains a concern, we are very happy with the work SankalpTaru is doing and hope the organisation continues to support farmers like us in the future."



Conversation with our auditor Arvind among healthy mulberry trees

Beneficiary:

Randheer Rana

Village: Thunara,

Block: Mori,

District: Uttarkashi

Fruit Species: Apple



Randheer Rana receiving a certificate for 90% tree survival on his farm

"I learned about SankalpTaru Foundation through a relative and soon joined the initiative. With their support, my apple cultivation has grown and improved my income. Their guidance helps tackle pests and diseases, and with better **grafting** and storage facilities, farming has become smoother. I appreciate SankalpTaru's continued support for farmers like us."

Innovation in the Orchards: Apple and Cherry Together

In Uttarkashi, progressive orchard farmers supported under Project Protect Himalayas are introducing cherry plants amidst their apple trees.

Both crops belong to the same botanical family, and this interplanting encourages pollinators to thrive while diversifying harvests.

Such farmer-led experimentation is helping local communities adapt to changing weather patterns and maintain productivity on high-altitude farms.



Apple and cherry trees thriving post-grafting, reflecting healthy orchard development and successful plantation outcomes

Your Impact in Pictures

From saplings to thriving orchards, a glimpse of the green change you've nurtured



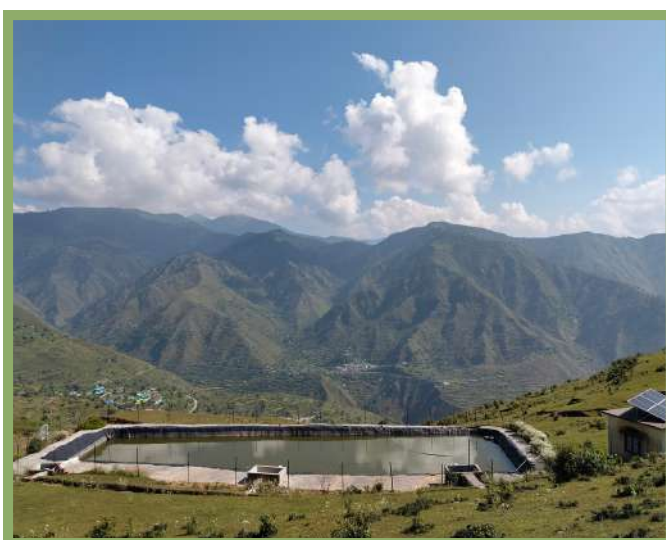
Fruits of Your Kindness

Through your kindness, mountain farmers now nurture apples, cherries, guavas, oranges, and kiwis, fruits that blossom from your generosity and sustain both people and the planet



Nature's Partners in Growth

Livestock and natural water sources form the foundation of sustainable mountain farming, providing nourishment, manure, and water security that strengthen both land and livelihoods



Together We Nurture

Community plantations and on-ground interactions bring people together, uniting farmers, coordinators, and supporters in a shared mission of environmental and social progress



The Way Forward

Every tree planted under Project Protect Himalayas is a step toward safer slopes, cleaner water, and stronger communities. With your support, degraded lands are turning into thriving green belts that conserve water, enrich soil, and provide new opportunities for families living in these mountain villages.

By combining traditional water-harvesting methods with innovative IoT monitoring, we ensure each sapling receives the care it needs to survive and flourish, even through the harshest monsoons and dry spells.

Your contributions directly nurture these trees, safeguard biodiversity, and help restore the fragile balance of Himalayan ecosystems.

There is still much to do. The mountains face recurring landslides, flash floods, and the growing impacts of climate change.

Every donation helps expand these green corridors, protecting both the environment and the livelihoods of the communities who depend on it.

Together, we can create a lasting legacy in the Himalayas, forests that stand tall, water that flows freely, and communities that thrive.

If you feel inspired to keep planting and grow this green legacy further, you can plant more trees in the heart of the Himalayas here: [Project Protect Himalayas](#)

Visit our website:

<https://sankalptaru.org/>

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For any queries call us at:

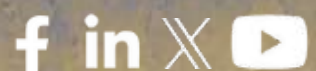
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Plant with us:

<https://sankalptaru.org>

Our Social Media



Together, let's nurture the Himalayas, green its slopes, and support its communities, tree by tree, village by village