BEST PRACTICES IN WATER & ECOSYSTEM RESTORATION

A water-led pathway from landscape restoration to resilient livelihoods








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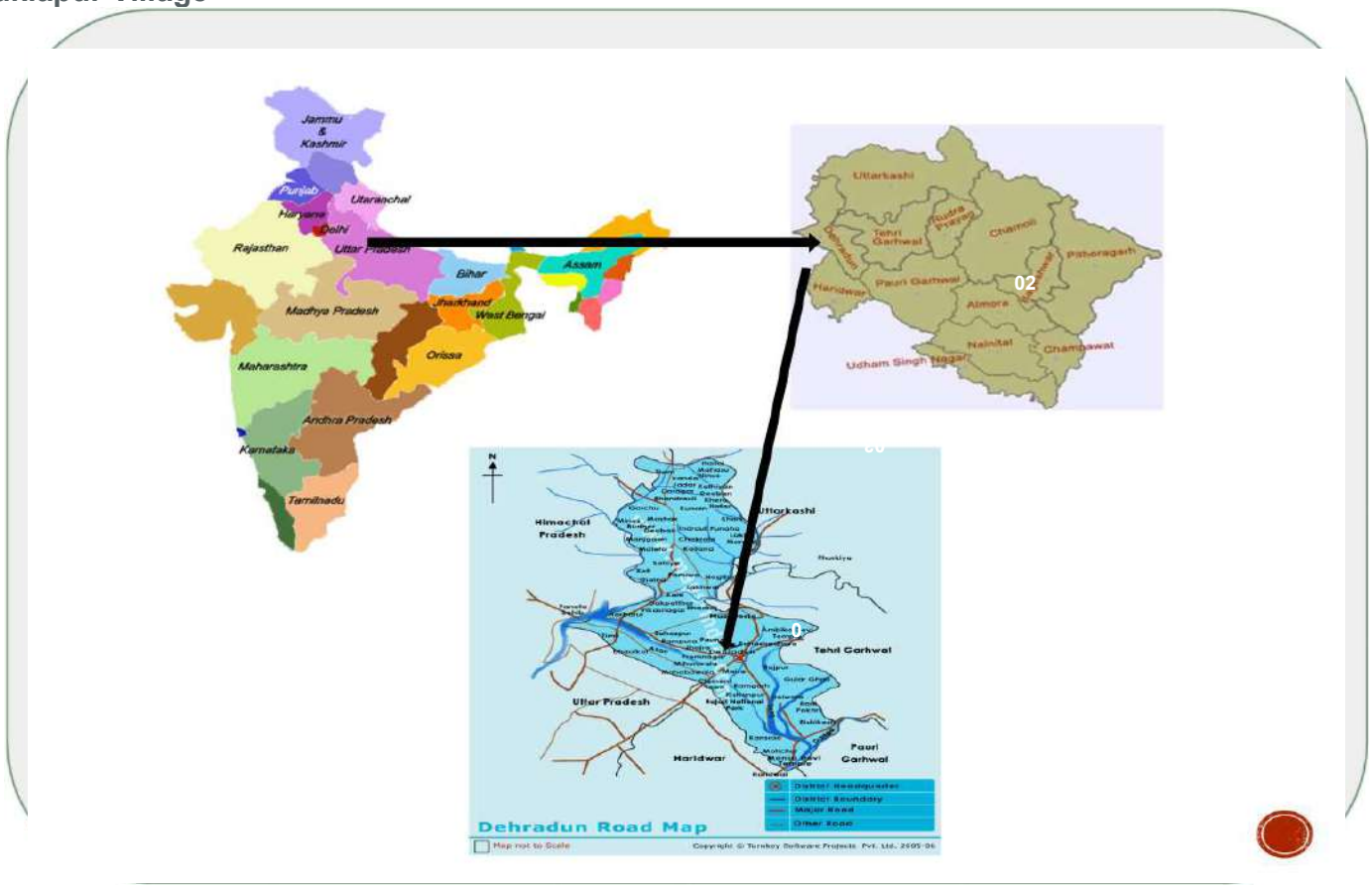
Dehradun, Uttarakhand, India

Study : Location

India → Uttarakhand → Dehradun District → Shuklapur Village

A Case Study:

Reviving the River, Restoring the Ecosystem: Learning from the Science of Nature



STUDY SITE: SHUKLAPUR

History



- Baseline condition of the Asan River tributary, Shuklapur, Dehradun – 2010

Before (2010)



Degraded landscape with severe soil erosion and minimal vegetation cover

After (2019)



“Natural regeneration led to improved vegetation, reduced erosion, better soil–moisture retention



RAIN







Treatment: Percolation Ponds for Water Recharge





"Percolation Ponds: Promoting Water Recharge and Soil Moisture Conservation"

Impact

2010



2013



2023



- **2010 – Degraded Landscape → 2013 – Natural Regeneration → 2023 – Ecological Recovery**

Reviving the Flow. Restoring Life





From Dry to Living Stream

The river story begins with understanding how the landscape stores, moves and releases water



BEFORE — LOW / FRAGMENTED FLOW



AFTER — REJUVENATED FLOW

Increased Command Area



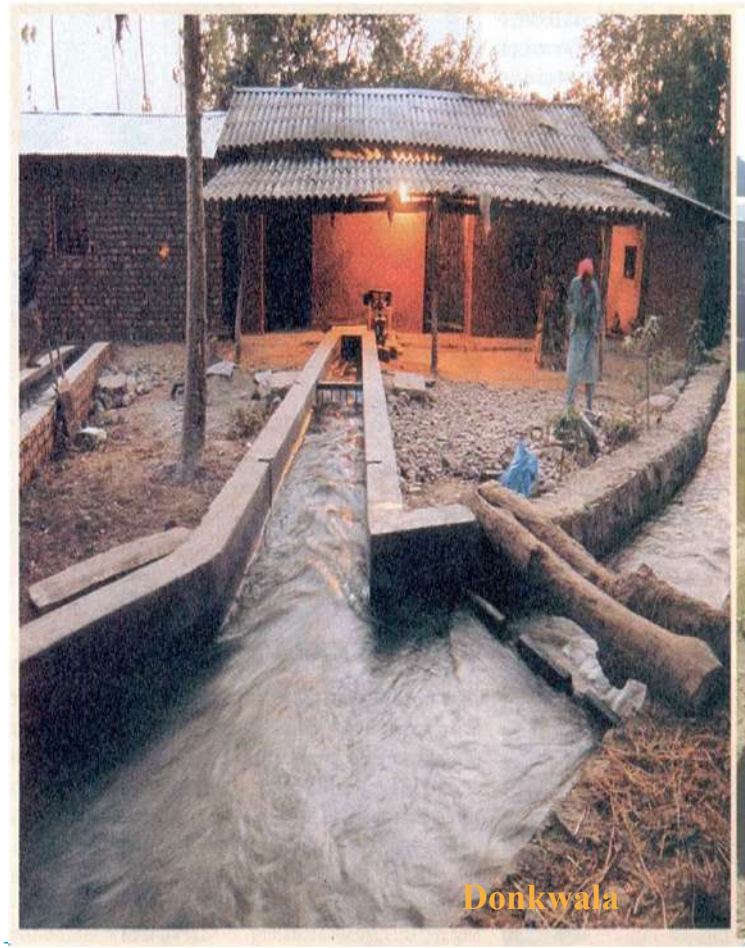
Improved water availability → Expanded irrigated area → Enhanced agricultural livelihoods



Water Powers Tradition. Tradition Powers Livelihoods

Mill on March

Watermill functioning efficiently on the rejuvenated river canal in Donkwala, Shuklapur.





When Nature Recovers, Wildlife Returns



Rabbit



Deer



Sambar Deer



Porcupine



Wild boar



Nilgai

Leopard



Hornbills





Peacock



Hornbills

- **Restored vegetation and improved habitat conditions are supporting diverse wildlife**

Biodiversity Recovery



- From degraded landscapes to thriving ecosystems

Socio-Economic Empowerment

Herbs Collection Empowering Women





(Worth Rs 15 Lakh annually)

As the Asan River ecosystem recovered, women strengthened their livelihoods through sustainable collection of forest herbs


2004
HESCO
HESCO OFFICE, SHUKLAPUR
30.311, 77.932
2019
HESCO
30.311, 77.932
HESCO OFFICE, SHUKLAPUR

Pine forest : without under growth



Follow-





Trenches at Forest catchment of Ratanpur, Rudraprayag

A Natural Conversion



Fire Fighting, Nature Ways

- **Zero Incidents:** No fire incidents occurred in the nature park in the last one and a half decades.
- **Natural Barriers:** High moisture in the soil and dense green cover discouraged the spread of fire.
- **Ember Prevention:** Since there is no surface fire, the chances of ember formation become zero.
- **Hydrological Security:** Water as a tool keeps the system well recharged, preventing fire incidents.

Community Contribution

Reviving Chandrabhaga River







Community Contribution

Reviving the tributary to Khoh River, Uttarakhand







From a Local Initiative to a Replicable Model

Reviving the Baya River

Location: Bihar, Begusarai













LEARN → ADAPT → REPLICATE



From learning the HESCO approach to implementing spring rejuvenation in his own village.

FROM LEARNER TO COMMUNITY GUARDIAN





Follower Spring Rejuvenation

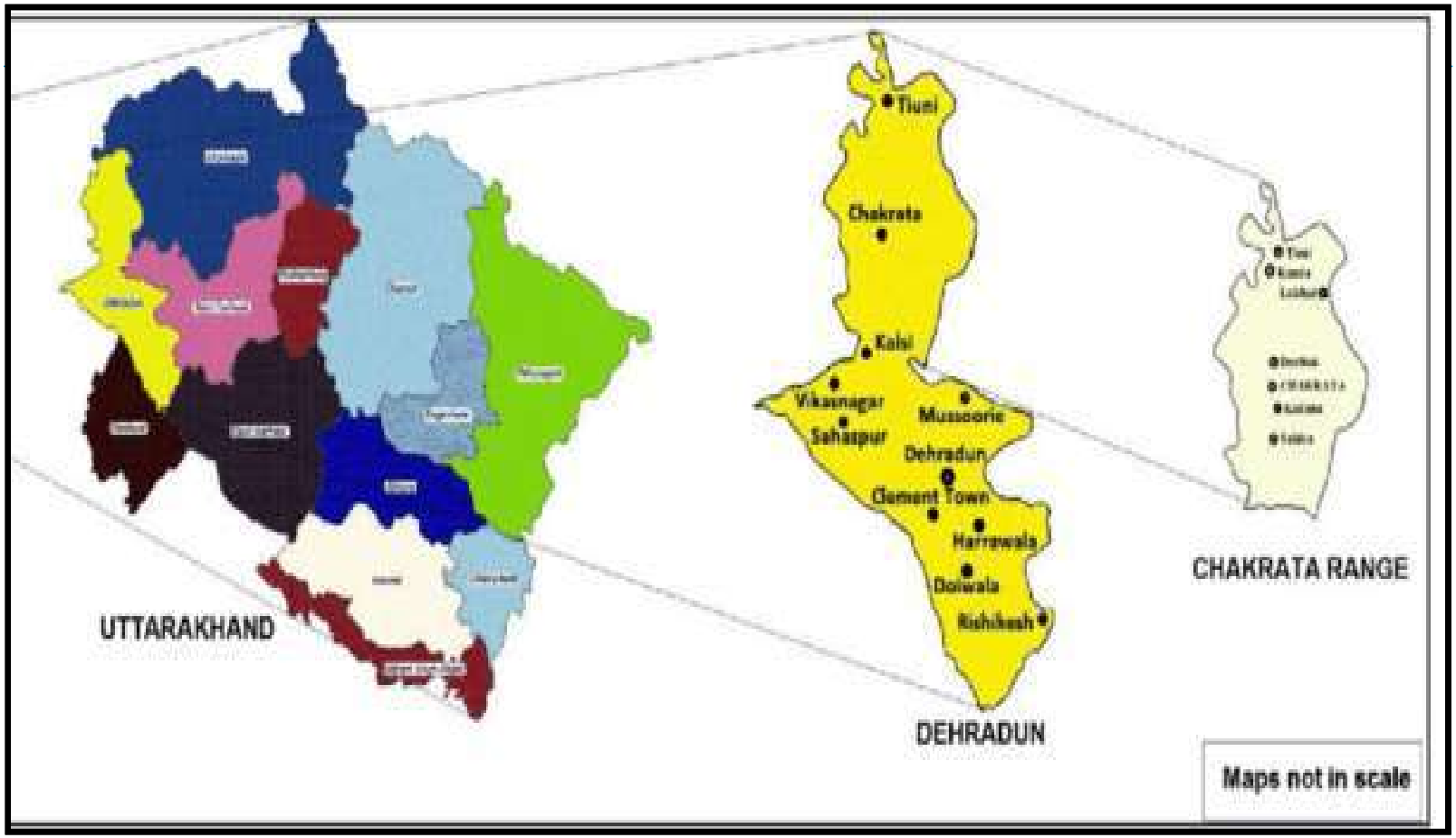
- **Govind Singh Bisht | Gangolihat, Pithoragarh, Uttarakhand**

SPRING RETURNS



- Restored springs reconnect communities with their natural water sources

Location Map



Area: Jakhadhar region, Kwasi

BASELINE: UNDERSTANDING THE LANDSCAPE BEFORE INTERVENTION



- Assessing terrain, water availability and site conditions as the foundation for orchard development

CAPTURE. STORE. CHANNELIZE. CULTIVATE.









We did not simply plant orchards. First, we understood the available water, harvested it, stored it, and properly channelized it

Plantation initiated across ~3 hectares with quality planting material.





Water-secured landscapes transformed into productive, sustainable mountain orchards





WHEN WATER RETURNS, LIFE RETURNS (Ecological restoration creating lasting livelihood opportunities)

Intercropping



Fruit trees take around three years to start giving meaningful returns. We therefore did not want farmers to wait for three years for an income. Intercropping allowed them to use the same land during this period, generate short-term returns, and gradually transition towards a more stable orchard-based livelihood.”

Intercropping



FROM WATER HARVESTING TO FRUIT HARVEST





Nursery at Jakhadhar







We developed a local nursery at Jakhandhar to produce quality planting material—making farmers less dependent on external sources and creating the foundation for expanding the model

A LIVING LAB FOR HIMALAYAN SUSTAINABILITY







Today, Jakhandhar is not only demonstrating the model; farmers, students, universities and other stakeholders come here to learn, exchange experiences and understand how water management can support sustainable agriculture and livelihoods in the Himalayan landscape."

THANK YOU

Water Security • Healthy Ecosystems • Resilient Communities

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Restore • Recharge • Rejuvenate • Together