SUCCESS STORIES AND BEST PRACTICES IN WATERSHED MANAGEMENT AND CLIMATE CHANGE ADAPTATION IN NEPAL

Government of Nepal
Ministry of Forests and Environment
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Back: Phewa Lake Watershed provided by BMC, Gandaki

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FOREWORD

The Department of Forests and Soil Conservation (DOFSC) is pleased to present this publication titled *"Success Stories and Best Practices in Watershed Management and Climate Change Adaptation in Nepal."* This document showcases exemplary field-based practices, interventions and innovations, and community-led efforts that reflect Nepal's growing commitment to sustainable watershed management and climate resilience.

Given the country's fragile topography and increasing vulnerability to climate-induced hazards, integrated watershed management and climate adaptation strategies have become more essential than ever. Responding to these challenges, the Government of Nepal, through multi-level coordination and partnership across federal, provincial, and local governments, has implemented a range of initiatives to reduce soil erosion, restore degraded lands, stabilize riverbanks, improve water resource management, and strengthen climate-adaptive livelihoods. This publication brings together some of the most impactful success stories and best practices from across the country, reflecting the practical application of scientific approaches, local knowledge, and community-led conservation interventions.

These documented successes are the result of the dedicated efforts of the Soil and Watershed Management Offices in all provinces, the Basin Management Centers under DOFSC, and the Federal Watershed Management Resource Center in Kulekhani and other institutions working in the watershed management and climate change adaptation sectors. Their collaborative work with local communities, development partners, and civil society organizations has yielded technically robust and ecologically sound results, contributing significantly to environmental sustainability and community resilience.

DOFSC extends its sincere appreciation to all individuals and institutions who contributed to the development and documentation of this publication. Their efforts are instrumental in promoting institutional learning, bridging knowledge gaps, and enabling the replication and scaling-up of good practices in similar ecological and socio-economic contexts. A special note of appreciation goes to Mr. Ramkrishna Gautam, Ms. Smriety Regmi, Mr. Ram Krishna Rajthala, and Mr. Haribamsha Acharya for their tireless work in compiling, editing, and refining this volume. Their dedication and expertise have greatly enriched the quality and coherence of this publication.

I hope this publication will serve as a useful resource for policymakers, planners, practitioners, and all those involved in natural resource management especially in watershed management and climate change adaptation. The stories and practices shared here reflect the dedication and collaborative efforts happening in Nepal. We encourage continued learning, collaboration, and implementation of such good practices in the days ahead.

Badri Raj Dhungana
Director General
June 2025

Director General

ABBREVIATIONS AND ACRONYMS

ASHA	Adaptation for Smallholders in Hilly Areas
BCRWME	Building Climate Resilience of Watersheds in Mountain Eco-Regions.
BMC	Basin Management Center
CSV	Climate Smart Village
DCRL	Developing Climate Resilient Livelihood
DoFSC	Department of Forests and Soil Conservation
DSCWM	Department of Soil Conservation and Watershed Management
EbA	Ecosystem-based Adaptation
ERMC	Environment and Resource Management Consultant
FWMRC	Federal Watershed Management Resource Center
GoN	Government of Nepal
IFAD	International Fund for Agricultural Development
IK	Indigenous Knowledge
MACDG	Management Area Community Development Group
MoFE	Ministry of Forests and Environment
NAPs	National Adaptation Plans
NCCSP	Nepal Climate Change Support Program
PCTMCDB	President Chure-Terai Madhesh Conservation Development Board
PIU	Project Implementation Unit
PMU	Project Management unit
PPMU	Province Project Management unit
RCC	Reinforced Cement Concrete
RRM	Random Rubble Masonry
SDGs	Sustainable Development Goals
SPCDG	Sub-project Community Development Group
SWMO	Soil and Watershed Management Office
TK	Traditional Knowledge
WWF	World Wide Fund for Nature

Contents

SUCCESS STORIES AND BEST PRACTICES IN WATERSHED MANAGEMENT AND CLIMATE CHANGE ADAPTATION

Introduction

The Department of Forests and Soil Conservation (DoFSC) in Nepal has embarked on an ambitious initiative to compile and publish a comprehensive book documenting best practices and success stories in watershed management and climate change adaptation. This reflects the department's commitment in promoting sustainable environmental practices and addressing the pressing challenges posed by climate change. Watershed management and climate change adaptation are critical areas of focus in Nepal, a country characterized by diverse topography, fragile ecosystems, and increasing vulnerability to climate-induced disasters such as landslides, floods, and droughts. The publication aims to serve as a repository of knowledge, showcasing innovative practices, successful interventions, and lessons learned from various projects across Nepal. By documenting these success stories, DoFSC seeks to inspire replication, foster stakeholder collaboration, and guide policy and practice in environmental conservation.

This initiative is particularly significant given Nepal's unique geographical and climatic challenges. The country's watersheds, which are vital for water resource management, agriculture, and livelihoods, are under increasing stress due to deforestation, land degradation, and erratic weather patterns. Climate change exacerbates these issues, making adaptive strategies essential for sustainable development. The success story book will highlight exemplary efforts in watershed management and climate change adaptation, drawing from projects such as the DCRL Project, Former ASHA Project, EbA-II Project, and BRCRN Project and others. It will also provide a platform for stakeholders to share their experiences, contributing to a collective understanding of effective conservation practices.

This document provides a detailed overview of the context behind the publication, the objectives of the initiative, and the outcomes of two key meetings held to advance this project: the Stakeholders Identification Meeting on 2081-11-06 BS (18th Feb, 2025) and the Stakeholders Engagement Meeting on 2081-11-11 BS (23rd Feb, 2025).

Context and Rationale for the Success Story Book

Nepal's watersheds are critical for maintaining ecological balance, supporting biodiversity, and providing ecosystem services such as water supply, soil conservation, and flood regulation. However, rapid population growth, unsustainable land use practices, and climate change have put immense pressure on these ecosystems. Landslides, soil erosion, and water scarcity are increasingly common, threatening livelihoods, particularly in rural areas. Climate change further complicates these challenges by altering precipitation patterns, increasing the frequency of extreme weather events, and accelerating glacial melt in the Himalayas.

The DoFSC recognizes that effective watershed management and climate change adaptation require innovative, community-driven, and science-based approaches. Over the years, various projects and programs, supported by both government and non-governmental organizations, have implemented successful interventions in Nepal. These initiatives have demonstrated measurable impacts, such as improved water availability, enhanced soil stability, and increased community resilience to climate change. However, these success stories are often scattered, under-documented, or not widely disseminated, limiting their potential to inform policy, guide future projects, or inspire replication.

The publication of a success story book addresses this gap by systematically documenting best practices and case studies. The book will serve multiple purposes:

1. **Knowledge Sharing**: It will provide a centralized platform for sharing successful strategies, enabling stakeholders to learn from each other's experiences.
2. **Policy Guidance**: By highlighting evidence-based practices, the book will inform policymakers and planners, helping them design more effective interventions.
3. **Community Empowerment**: The publication will showcase community-led initiatives, encouraging local participation and ownership in conservation efforts.
4. **Global Recognition**: Documenting Nepal's efforts in watershed management and climate change adaptation will contribute to global discussions on sustainable development and climate resilience.
5. **Stakeholder Collaboration**: The process of compiling the book fosters collaboration among government agencies, NGOs, community groups, and international partners, strengthening the conservation ecosystem in Nepal.

The Conservation Technology Development Section of Watershed and Landslide Management Division, is leading this initiative to ensure that the book reflects diverse perspectives and captures the most impactful practices. The publication will also align with Nepal's national priorities, such as the National Adaptation Plan (NAP) and the Sustainable Development Goals (SDGs), particularly those related to climate action, clean water, and sustainable land use.

Two strategic meetings were conducted with relevant stakeholders to finalize the criteria to select the successful watershed management and climate change adaptation practices along with the templates for documenting the success stories.

Stakeholders Identification Meeting:

The DoFSC convened a **Stakeholders Identification Meeting** on 18th February, 2025 (2081/11/06 B.S.) at the Karnali Hall, DoFSC, with the involvement of DoFSC staffs to lay the groundwork for the success story publication by identifying relevant stakeholders, reviewing draft criteria and templates, and planning subsequent steps.

Objectives of the Meeting:

- To identify key stakeholders involved in watershed management and climate change adaptation in Nepal.
- To present and discuss the draft criteria for determining successful practices.
- To review the template for calling success stories and the field verification template.
- To plan for a broader stakeholder engagement meeting for further discussion.

Decisions

1. **Revision of Criteria** to reflect social inclusion and long term sustainability.
2. **Amend templates** to include qualitative data and visual elements.
3. **Stakeholder Engagement:** Organize a follow-up meeting with wider representation.

Stakeholders Engagement Meeting:

Building on the initial meeting, this broader engagement session, held on 23rd Feb, 2025 (2081/11/11 B. S) at the Karnali Hall, DoFSC, included representatives from the DCRL Project, Former ASHA Project, EbA-II Project, BRCRN Project, and DoFSC staffs. The focus was on finalizing success criteria and templates and identifying potential field verification sites.

Objectives

- Finalize the revised criteria for identifying successful watershed management and climate adaptation practices.
- Validate the refined templates for story collection.
- Identify potential field verification locations.
- Promote collaboration and stakeholder input in the publication process.

Decisions

1. **Finalization of Criteria:** Final criteria to include suggested refinements on clarity and inclusiveness.
2. **Template Approval:** Revised templates approved with minor usability enhancements.
3. **Field Verification Sites:** Sites with demonstrated impact identified for priority verification.

Success Stories Sharing Meeting:

Success story sharing meeting was held on 3rd July, 2025 (2082/03/19 B. S.) at the Karnali Hall, DoFSC where representatives from various organizations including DCRL, WWF Nepal, Soil and Watershed Conservation Office Dhading, Basin Management Center, Koshi and EbA II presented their success stories. Key points included the need for regular exchange of knowledge and skills among federal, provincial, and local stakeholders, the importance of documenting and publishing success stories in both Nepali and English language, and integrating insights from these practices into future planning and implementation. It was also decided to continue collecting and disseminating successful practices through coordination among relevant institutions, and to express gratitude to all contributors.

Next Steps and Future Plans

The outcomes of both meetings have set a clear path for the publication of the success story book. The finalized criteria and templates will guide the collection of high-quality case studies, while field verifications will ensure the accuracy and credibility of the documented practices. The DoFSC plans to:

- Issue a public call for success stories using the finalized template.
- Conduct field visits to verify selected case studies, focusing on diverse geographical and thematic areas.
- Compile the success stories into a professionally edited and designed book, ensuring accessibility for both technical and non-technical audiences.
- Disseminate the publication through success story sharing workshops, and online platforms to maximize its reach and impact.

The publication is expected to be a landmark contribution to Nepal's conservation efforts, fostering collaboration, knowledge sharing, and sustainable practices in watershed management and climate change adaptation.

SUCCESS STORIES FROM PROJECTS

1. Bamboo crib walls: A nature based solution for stabilization brings hope and safety to a landslide prone village

Gairakhet village, located in Ward No. 7 of Aathbis Palika, Dailekh District, faced recurring landslide threats that endangered over 90 homes and forced displacement of residents due to farmland destruction. The community lived in constant fear, especially during monsoons. In response, with the assistance from NCCSP phase 2, Aathbis Palika implemented the "Gairakhet Landslide Protection Project," completed in April 2024, using bamboo crib walls-a nature-based bioengineering solution-combined with structural measures such as gabion walls.

The intervention successfully stabilized the slope, safeguarding more than 100 homes and improving safety for over 500 residents. As a result, residents report reduced stress and fear during the rainy season, and a renewed sense of security has encouraged a return to farming activities. The project demonstrated multiple benefits: environmental protection through slope stabilization, social improvements through enhanced safety and mental well-being, and economic gains by preserving land and homes. The initiative also strengthened institutional capacity by aligning with Local Adaptation Plans for Action (LAPA) and supporting national disaster risk reduction and climate adaptation goals.

A notable innovation was the observed sprouting of bamboo from stem nodes, which added to the wall's long-term stability. The intervention's sustainability is ensured by the local availability of bamboo and increased community knowledge and acceptance. Its success has prompted Aathbis Palika and residents to plan replication in other vulnerable areas, highlighting its potential as a scalable and cost-effective solution for landslide-prone regions.

General Information

S. N.	Description	Details
1	Title of the Success Story	Bamboo Crib Walls: A Nature-Based Solution Bringing Hope and Safety to Landslide-Prone Gairakhet Village
2	Location	Province: Karnali District: Dailekh Local Level: Aathbis Municipality, Ward No. 7, Gairakhet village.
3	Date/Time Period of Implementation	Key construction completed in April 2024. "Gairakhet Landslide Protection Project"
4	Name of Implementing Office/Agency	Aathbis Municipality
5	Contact Person (Name/Designation)	Kalpana Thapa, Deputy Mayor, Aathbis Palika Raj Bahadur Chand & Man Bahadur Chand (Local Residents/Beneficiaries)
7	Collaborating Partners	Implied collaboration: Aathbis Palika (technical/ financial support) and the Gairakhet community.
8	Funding Source/Donor	Aathbis Municipality, NCCSP Phase 2
9	Name of user group/committee	Gairakhet community / Residents of Gairakhet (acting as beneficiaries and potential stewards)

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention/Activity	Bioengineering (Bamboo crib walls), Soil Stabilization, Embankment construction, Landslide protection. Combination with structural measures (gabion walls).
2	Objective(s) of the Intervention	To stabilize landslide-prone areas in Gairakhet. To protect homes and farmland from landslides. To reduce fear and enhance safety for the residents. To control future landslides and enable a return to farming. To effectively address climate change impacts through locally-led initiatives.
3	Area Conserved/Protected/ Rehabilitated)	The project safeguarded more than 100 homes and associated land, previously at high risk.
4	Duration of the Project	Key construction completed in April 2024..
5	Major Stakeholders Involved	Local communities (residents of Gairakhet), Aathbis Palika (Local Government).
6	Number of People/HHs Benefited	Direct: Over 500 people from more than 100 homes (safeguarded). Initially, ninety homes were identified at high risk.
7	Key Activities Conducted	Construction of bamboo crib walls, construction of embankments, utilization of gabion walls in conjunction with bamboo, community engagement and awareness (implied by positive response and learning).

S.N.	Description	Detail
8	Major Challenges Faced	Initial challenge: High risk of landslides threatening 90+ homes, previous devastation of farmland and homes forcing residents to flee, constant fear among residents during rainy seasons.

Testimonials/Quotes:

Man Bahadur Chand, resident of Gairakhet, shared, *"I didn't realize the potential of bamboo for stabilizing sloping land, and I had never seen bamboo sprouting from stem nodes or used in combination with gabion walls before. Now, there's hope that landslides will be controlled. We've 5 learned that when bamboo is combined with engineering techniques, it's very effective. We plan to use bamboo crib walls in other landslide-prone areas to protect both homes and land."*

Kalpana Thapa, Deputy Mayor of Aathbis Palika, highlighted the community's positive response to bamboo crib walls. *"Before, the fear of landslides kept people awake during the rainy season. Now, that stress has been alleviated, and rain is no longer a concern."* She added, *"The Palika plans to replicate those projects in other landslide prone areas in the coming years. With Local Adaptation Plans for Action (LAPA) integrated into our periodic plans, this locally led initiative has given us hope for effectively addressing climate change impacts."*

2. Transforming water access from scarcity to adequacy in Fungra

Fungra is a small mountain village in Ward No. 5 of Sinja Rural Municipality, Jumla District. It is located over 3,000 meters above sea level in Karnali Province. For many years, the 115 households living here suffered from a serious lack of water. People had to walk long distances to fetch water from two faraway springs, which often dried up, especially during dry seasons. Climate change made things worse. Children missed school to help collect water, and women faced extra difficulties, especially during menstruation or after childbirth, due to traditional beliefs that restricted their access to shared water sources.

This difficult situation changed with the help of Sinja Rural Municipality, the Nepal Climate Change Support Programme Phase 2 (NCCSP2), and the Fungra community itself. Together, they built a solar-powered water supply system. The project protected the spring sources, built water tanks, installed solar panels and pumps, and provided private tap connections with meters for each household. A caretaker was hired to look after the system, and a maintenance fund was set up with support from the Palika and community.

Now, clean water is available right at people's homes. This has greatly reduced stress and made daily life easier. Women can now use water freely during sensitive times, improving their health and dignity. Children can go to school regularly instead of spending hours fetching water. There is better hygiene, sanitation, and overall health in the community. Conflicts over water have stopped, and families now have more time for farming and other useful activities.

This project shows how a simple solution like solar lift water supply can bring big changes to a remote village. It has improved health, education, gender equality, and peace in the community. With strong support from the local government and active involvement of the people, the Fungra model is a great example that can be used in other similar areas facing water problems in Nepal.

General Information

S. N.	Description	Details
1	Title of the Success Story	Transforming water access from scarcity to adequacy in Fungra
2	Location (Province/ District/Local Level/ Geospatial location)	Province: Karnali District: Jumla Local Level: Sinja Rural Municipality, Ward No. 5, Fungra community. Altitude: Over 3,000 meters above sea level
3	Name of Implementing Office/Agency	Sinja Rural Municipality
4	Contact Person (Name/ Designation)	Krishna Bahadur Rokaya (Chairperson, Ward No. 5, Sinja Palika) Raj Kanya Rokaya (Beneficiary) Bishnu Lal Rokaya (Principal, Kailash Secondary School)
5	Collaborating Partners	NCCSP2 (Nepal Climate Change Support Programme Phase 2 - provided support), Fungra Community (financial contribution, system management).
6	Funding Source/Donor	Sinja Palika, assistance from NCCSP2, Community contributions.

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention/ Activity	Solar lift drinking water supply, Sanitation (DWSS), Spring source protection (using integrated engineering techniques), Water reservoir construction (collection and service tanks), Installation of solar panels and solar-powered pumps, Yard connections with metered taps.
2	Objective(s) of the Intervention	To address severe water scarcity. To improve daily water access for 115 households. To improve living conditions, livelihoods, agricultural productivity, education, and overall well-being. To reduce stress and conflicts over water. To improve hygiene and sanitation.
3	Area Conserved/ Protected/ Rehabilitated)	Focus on protection of two spring sources.
4	Budget Allocated/Utilized	A maintenance fund of NPR 100,000 established by Palika, with additional funds contributed by the community.
5	Major Stakeholders Involved	Sinja Rural Municipality, Fungra community residents, NCCSP2
6	Number of People/HHs Benefited	Direct: 115 households, over 700 people.
7	Key Activities Conducted	Protection of spring sources, installation of solar panels and pumps, construction of collection and service water reservoir tanks, installation of yard connections with metered taps, hiring and establishment of a system for a caretaker, setting up a maintenance fund.

S.N.	Description	Detail
8	Major Challenges Faced	**Before Intervention:** Severe water scarcity, reliance on two distant springs prone to drying up, worsened by climate change, stress, children missing school to fetch water, inter-community conflicts over water, significant hardship for women (especially during menstruation/childbirth due to cultural norms and water access).

Testimonials/Quotes:

Raj Kanya Rokaya, 46, a beneficiary, shared, *"The relationship between water and women is as intimate as the relationship between nails and flesh. Women are generally responsible for water-related tasks such as cooking, cleaning, caring for pets, gardening, and farming. Before this project, the lack of accessible water made life very difficult, especially during menstruation. Our rituals label women as impure during menstruation and for 11 days after childbirth, making them untouchable. This prevented us from accessing the springs, forcing us to rely on others for water, which was often insufficient for drinking and maintaining personal hygiene. It affected both our physical health and mental well being. Now, the stress has been alleviated, and we can use as much water as we need from our personal taps."*

Bishnu Lal Rokaya, Principal of Kailash Secondary School in Fungra Ward No. 5, shared his observations, *"Before the project, the school faced high absenteeism, with many students missing classes to help their parents fetch water from the springs. This issue has now been resolved. Students are attending school regularly, completing their homework, and maintaining better hygiene. The new drinking water supply scheme has brought numerous benefits to the community, improving children's education, hygiene, sanitation, health, and overall well-being."*

3. Reviving Water Sources in Nepal's Hills: Ecosystem-based Adaptation in Salyan District

Bangad Kupinde Municipality in Ward No. 7 of Salyan District, Karnali Province, faced serious water shortages. Springs and waterspouts were drying up due to climate change, irregular rainfall, and landslides. People had to walk long distances to fetch water. Farming suffered, soil became dry, and many traditional water conservation methods were no longer used because many young people had moved away from the village.

To solve this problem, the Ecosystem-based Adaptation (EbA) II Project, with support from Bangad Kupinde Municipality, took action. They worked closely with the local community, and water management groups. Together, they built conservation and recharge ponds, restored forests, controlled soil erosion in gullies, and set up rainwater harvesting systems. One key site was Maidupokhari Conservation Pond, which became a model for ecosystem restoration in the area.

The community members reported a significant improvement in water yields after constructing conservation ponds, with an average rating of 6.12 on a scale from 0 (no increase) to 10 (very high increase). They also noted enhanced greenery due to increased water retention and soil moisture, with households rating this environmental benefit at an average of 6.14, indicating positive changes in local ecosystems and biodiversity.

Through these efforts, the water sources started to come back to life. Women and girls now spend less time collecting water, which means they have more time for school and income-generating activities. There are fewer health issues, more water for farming, and better food security. People are also earning more by growing high-value crops.

This project is special because it mixed traditional practices like maintaining water channels and protecting water sources with modern technologies like recharge ponds. Community members were trained and made responsible for managing the systems. The local government also supported the project with a budget of NPR 1,000,000, showing strong local commitment.

The success of this project shows that ecosystem-based solutions are affordable, sustainable, and can be easily used in other hilly areas of Nepal. It has also helped strengthen local government planning and supports national goals like the SDGs, especially clean water and climate action.

General Information

S. N.	Description	Details
1	Title of the Success Story	Reviving Water Sources in Nepal's Hills: Ecosystem-based Adaptation in Salyan District
2	Location (Province/District/Local Level/ Geospatial location)	Bangad Kupinde Municipality, Ward No. 7, Salyan District, Karnali Province.
3	Date/Time Period of Implementation	
4	Name of Implementing Office/Agency	Ecosystem-based Adaptation (EbA) II Project
5	Collaborating Partners	Bangad Kupinde Municipality, community water management committees, local NGOs
6	Funding Source/Donor	GEF and UNEP through EbA II Project, and Bangad Kupinde Municipality

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention/Activity	Construction of conservation and recharge ponds, gully control, reforestation, rainwater harvesting, community-managed water storage systems
2	Objective(s) of the Intervention	Enhance groundwater recharge, improve water availability for domestic and agricultural use, restore degraded ecosystems, and build climate-resilient communities in Salyan District
3	Area Conserved/Protected/ Rehabilitated)	Includes sites around Maidupokhari Conservation Pond in Bangad Kupinde Municipality
4	Budget Allocated/Utilized	NPR 1,900,000 (NPR 900,000 from EbA II Project, NPR 1,000,000 from Bangad Kupinde Municipality for Maidupokhari Conservation Pond)
5	Major Stakeholders Involved	Local communities, EbA II Project team, Bangad Kupinde Municipality
6	Number of People/HHs Benefited	(Part of 392-household)
7	Key Activities Conducted	- Site identification for Maidupokhari Conservation Pond - Formation and institutionalization of community water management committees - Construction of conservation/recharge ponds - Reforestation of catchment areas - Maintenance of water channels and sources - Study on EbA measure effectiveness

4. Integrated Land-Use Management for Community Resilience

For many years, the Tamang people of Gaurishankar-8 in Nepal's Dolakha District depended on traditional multi-cropping methods to sustain their food supply and income, growing maize and millet on terraced hillsides. Recently, however, these lands began to deteriorate due to reduced soil fertility, excessive surface runoff, and serious soil erosion. Unsustainable activities such as overgrazing and deforestation made matters worse, leading to poor crop yields and forcing some residents to find other ways to earn a living or migrate for work.

To address these issues, the EbA II Project implemented improved terrace systems to stabilize the land and combat erosion. Additionally, local grasses like amriso and babiyo were planted to strengthen the soil structure. Water conservation methods were introduced to retain moisture and improve soil health. By promoting eco-friendly agricultural techniques, the project boosted crop production while preserving the environment. This not only revived the local economy but also equipped farmers with sustainable tools and practices. The success of this initiative offers a valuable model for other highland communities facing similar climate-related challenges.

To ensure lasting impact, the project followed a well-planned approach that emphasized collaboration, training, and adaptation. It began by partnering with local governments, communities, and technicians to raise awareness about Ecosystem-based Adaptation (EbA) and its long-term benefits. Farmers received practical training to improve terraces, manage water effectively, and plant erosion-controlling grasses like amriso, babiyo, and Napier to minimize surface runoff and stabilize slopes. Crop and income diversification through high-value produce such as potatoes, onions, and ginger enhanced food security and economic resilience. Community ownership was reinforced through the creation of terrace improvement committees and a strong focus on monitoring and adaptive management, which helped refine and scale successful practices over time.

Through terrace improvements, native vegetation planting, and water conservation, the initiative reduced landslide risks, enhanced soil fertility, and turned previously barren slopes into productive farmland for crops like maize, millet, potatoes, and onions. Farmers adopted erosion-control techniques using local grasses and traditional terrace designs, expanding cultivable land while minimizing environmental risks. These efforts stabilized steep slopes, improved harvests, and provided fodder for livestock, which reduced household expenses and strengthened livelihoods. The project also fostered local ownership by forming terrace improvement committees and involving farmers—especially women—in decision-making, boosting leadership and long-term engagement. Partnerships with local governments and technical training promoted sustainable land management practices and climate-resilient agriculture. Overall, the project empowered communities with knowledge, skills, and resources, creating a sustainable model for adaptation and resilience against climate change.

General Information

S. N.	Description	Details
1	Thematic Area	Climate Change Adaptation
2	Location	Gaurishankar Rural Municipality, Ward no. 8, Dolakha, Bagmati province
3	Name of Implementing Office/ Agency	EbA-II Project
4	Funding Source/Donor	GEF & UNEP

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Sustainable farming
2	Objective(s) of the Intervention	To restore the land and resuscitate agriculture in Langjing and Patabu belt
3	Area Conserved/Protected/ Rehabilitated)	2.04 ha of land revitalized
4	Budget Allocated/Utilized	NRs 1,800,000
5	Major Stakeholders Involved	local government officials, community members, and technicians
6	Number of People/HHs Benefited	42 HHs (Tamang)
7	Key Activities Conducted	Terrace improvement, grass plantation, crop diversification

Terrace improvement in Langjing belt

Terrace improvement in Patabu belt

5. Sustainable Water Source Protection in Bhadaure: A Community's Journey to Self-Reliance

Bhadaure, a community located in the Chisankhugadhi Rural Municipality is situated in the north-east part of the Okhaldhunga district. The area is dry due to the limited access to water sources and the absence of large-scale infrastructure project aimed at providing consistent drinking water and irrigation. The main source of potable water is situated in upper Bhadaure, particularly named as "Hulak Danda". The water is available year-round. At upper left side of this source, there is traditionally worshiping goddess Setidevi.

Before the reconstruction of the source, water was collected in a dilapidated small tank with leakage problem and there was wastage of water due to overflowing. The limited water stored in the tank was insufficient and people had to collect water in pot for a long time. In other side, the landscape around the source was vulnerable that needed land restoration treatment to sustain the outcome of the intervention. In dry season, (March-May) people were compelled to travel for as long as 45-minute to fetch water from this source because the water source at their locality dries up during this time. This caused significant hardships for the villagers, particularly during the dry season when water availability becomes even more scarce. Hence, there was high pressure over this source for fetching water. They were duty-bound to come to this source at mid-night for fetching water during this season.

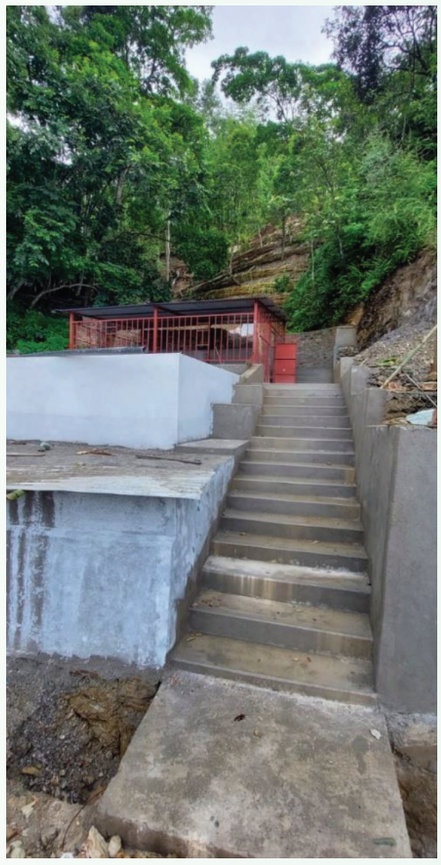
Meantime, the residents of Bhadaure reached out to their ward chair, seeking assistance to resolve this issue. In response, the ward chair closely worked with local government and various organizations to explore possible solutions. Later the communities were informed that they could collaborate with the *Developing Climate Resilient Livelihoods in Vulnerable Watersheds in Nepal" (DCRL),* a project focused on supporting water management and climate resilience in rural areas. DCRL project provided financial and technical support focusing on the management and protection of the only available water source in upper Bhadaure in 2024.

An integrated catchment restoration approach that employs both engineering and nature-based solutions (NBS) to ensure the sustainable management of water resources and soil conservation was implemented. The construction of a reservoir tank plays a vital role in ensuring water security and source sustainability. By regulating water flow, it helps maintain a steady supply throughout the year, reducing seasonal fluctuations. Additionally, a well-designed and properly maintained tank minimizes contamination risks, preventing external pollutants from compromising water quality. It also enhances resilience to climate variability by serving as a buffer during dry periods, ensuring consistent availability.

As this water catchment point is considered an auspicious site, it holds cultural and religious significance, particularly for the Hindu community, who practices post-death worship rituals at this location. To accommodate these rituals, especially during the rainy season, a shelter has been constructed to provide a suitable space for worship and related activities

Complementing this system, the water overflow collection tank efficiently manages excess water,

preventing wastage while mitigating erosion risks by controlling runoff. Instead of being wasted, surplus water is redirected for beneficial uses such as irrigation, livestock watering, or groundwater recharge, further strengthening the catchment's sustainability.



To address erosion and slope stability, gabion walls have been installed as part of gully treatment. These structures slow down runoff, reducing sediment transport and preventing siltation in downstream reservoirs. By reinforcing the landscape, gabion walls protect surrounding infrastructure, such as staircases and tanks, from potential damage due to soil erosion. Over time, the accumulated sediment behind the walls fosters natural vegetation regrowth, further stabilizing the soil.

Incorporating a nature-based solution, upstream bamboo Watling enhances soil conservation. Bamboo roots act as natural binders, preventing surface erosion and reducing the risk of landslides. By reducing runoff, this technique also improves water infiltration, aiding groundwater recharge. Moreover, bamboo Watling fosters biodiversity by creating a microhabitat that supports local flora and fauna. Additionally, broom grass (Amriso) and Napier grass have been planted alongside the bamboo Watling to enhance greenery, further reducing runoff and controlling soil erosion.

This holistic catchment management approach showcases how combining infrastructure with nature-based solutions can effectively restore degraded landscapes, improve water availability, and strengthen community resilience. Now people have access to regular drinking water and improved sanitation, even during the dry season when water is typically short in supply. The surplus water is used for kitchen gardens and vegetable production in tunnels, allowing residents to spend time on agriculture, moving towards self-sufficiency in vegetable. The ward office has envisioned to establish a local market nearby the source to sell local agricultural products in near future.

The successful implementation of source protection and management has had a transformative effect on the lives of the Bhadaure community, providing them with a sustainable water source that will help them achieve self-reliance.

Before reconstruction

After reconstructions

General Information

S. N.	Description	Details
1	Thematic Area	Watershed Management
2	Location	Bhadaure village, Chisankhugadhi Rural Municipality, Ward no. 6, Okhaldhunga, Koshi province
3	Date of Implementation	2024 AD (2081/82)
4	Name of Implementing Office/Agency	Soil Conservation and Watershed Management Office, Okhaldhunga
5	Funding Source/ Donor	GEF/UNDP
6	Name of user group/committee	Bhadaure farmers group for water source protection and Indrasiddha farmers group for bamboo Watling, embankments, water storing pond

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Water Source Protection and Management
2	Objective(s) of the Intervention	To make potable water accessible in the dry area
3	Duration of the Project	12/9/2080-3/30/2081
4	Budget Allocated/ Utilized	NRs 230000 for water source protection, NRs 1800000 for bamboo Watling, embankments including water storing pond
5	Major Stakeholders Involved	Bhadaure famers group Indrasiddha farmers group
6	Number of People/HHs Benefited	250 people from 48 HHs (40 Janajati, 3 Brahmin/Chhetri & 5 Dalit)
7	Key Activities Conducted	Constructions of water tank, water storing pond, and embankments for land restoration.

Benefit/Impact Assessment

S.N.	Description	Details
1	Situation Before Intervention	Insufficient water Prone to Risk of being damaged the water source structures
2	Situation After Intervention	Sufficient water for drinking, washing, taking bath, cleaning measures, and as alternate option of irrigation to downstream locations Safety of water source protection structures Developed resilience of water supply for some days Sustainability of outcomes of the interventions.
3	Key Benefits Achieved	Sufficient water for drinking, washing, taking bath, cleaning measures, and as alternate option of irrigation to downstream locations Safety of water source protection structures Developed resilience of water supply for some days
4	Employment Generation	The people of downstream use the water for vegetable farming and they will be able to sell the products at the local market supposed to establish nearby the source. It supports their livelihoods.
5	Innovations or Unique Features	The structures have beautified the location. It is attractive. Innovatively, ward office has plan to establish local market nearby the source in future.
6	Sustainability	The package structures are for sustainability of the water source.
7	Policy and Institutional Strengthening	The ward office will own this and operate institutionally through developing certain norms Focal Persons: Ward chairperson and users group
8	Lessons Learned	Innovation in certain intervention replicates the benefits
9	Replicability and Implications for future reference	Innovative ideas create multiple benefits that are replicable

6. Sustainable Watershed Management Practices through Contour Trenches.

Nestled along the banks of the Dudhkoshi River, parts of Okhaldhunga district particularly in the lower rainfall belt have long grappled with drought and increasing water scarcity. In recent years, climate change has only intensified this challenge, further straining already limited water resources and heightening the vulnerability of local communities.

One such affected area is the Tinpiple community, who has been battling chronic water stress for generations. The dry season brings especially harsh realities, when access to safe and sufficient water becomes a daily struggle. The entire community depends on a single unimproved water source located within their vicinity. The water source named "Gallimuni dhara" was frequently remote and intermittent, on the verge of drying off. The source has a minimal yield, falling significantly short of meeting even the basic needs of the residents. As the dry months progress, the situation worsens. Women and children, primarily responsible for water collection, often spend hours each day trekking to the source and waiting in long queues just to fill a few vessels. The physical and emotional toll of this routine is profound—time lost from school, income-generating activities, and rest.

Recognizing the gravity of the issue, the "Developing Climate Resilient Livelihoods in Vulnerable Watersheds in Nepal (DCRL)" project has begun implementing targeted watershed management interventions in this region. Under the project interventions, first the survey was undertaken and design proceeded in 2022. The contour trenches of total length of 2km were dug out along contour lines of equal elevation in the uphill area to promote local water infiltration and hence source recharge. The contour trenches were dug wide of grassland or private barren land within the catchment area of the targeted spring water source. The positioning of the contour was further guided by an analysis of the runoff characteristics and subsurface flow patterns within the catchment area.

Contour trenches

Contour trenches can be applied in areas with slopes up to 30%. Above this threshold, the project makes use of the smaller eyebrow trenches for stability reasons. As long continuous trenches may pose a risk in heavy rainfall events, the project opted for interrupted trenches, i.e., several shorter rectangular ditches of about 5m length, with a width of 0.5–1m and a depth of 0.5–0.75m.

The excavated soil was placed on the downslope-edge of the trench to form a small bund and well compacted. To reinforce the soil and trap sediment during rainfall events, stripes of local grass varieties like Napier (*Pennisetum purpureum*) or Amlisso (*Thysanolaena maxima*), as well as local shrub species (*Asparagus racemosus*, *Persian lilac*) are planted on these bunds.

As part of the water source protection efforts in Tinpiple, a small RCC water tank was constructed to collect water and help meet the community's peak water demand. Additionally, surplus or waste water, particularly during the night, was directed to a small downstream pond for reuse in agricultural activities. These interventions were completed in July 2023.

By the end of 2023, local residents began reporting a noticeable improvement in the yield of the water source compared to previous years. To validate these observations, water yield measurements were conducted using the bucket and stopwatch method at different intervals:

March 2023 (Baseline): 0.024 liters per second (lps)

May 2024: 0.04 lps

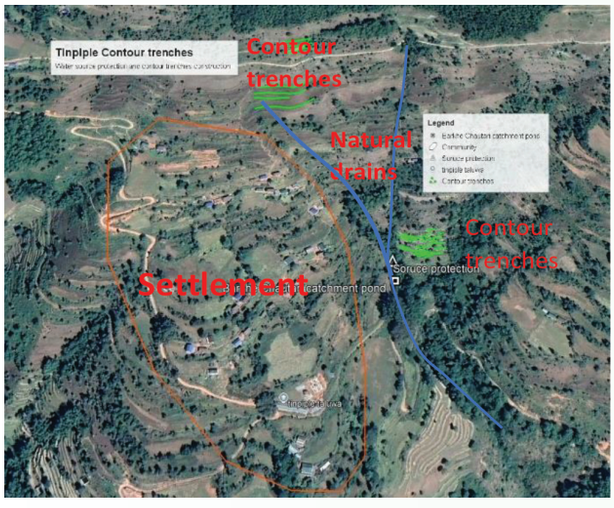
August 2024: 0.09 lps

April 2025 (Dry Season): 0.04 lps

These results demonstrate a consistent increase in water yield compared to the baseline data, even during the driest month (April 2025), when the yield remained at 0.04 lps—substantially higher than the 0.024 lps recorded in March 2023.

The improvements in water yield are attributed to the introduction of contour trenches in the upstream catchment area. These trenches have enhanced groundwater recharge during the monsoon season, contributing to increased and more sustained base flow at the source.

The combination of community observations and empirical data suggests that the integrated watershed management approach—particularly the implementation of contour trenches and water retention structures—has had a positive impact on water availability and resilience against seasonal water stress in the Tinpiple community.



General Information

S. N.	Description	Details
1	Thematic Area	Climate Change Adaptation through water recharge
2	Location (Province/District/Local Level/ Ward/ Village/ Settlement)	Tinpiple community, Siddhicharan Municipality ward no. 1, Okhaldhunga, Koshi province
3	Date of Implementation	2079/80
4	Name of Implementing Office/Agency	Soil Conservation and Watershed Management Office, Okhaldhunga
5	Funding Source/Donor	GEF/UNDP

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Water source recharge
2	Objective(s) of the Intervention	to increase the yield of water spring source and greenery around the surrounding of source
3	Number of People/HHs Benefited	23 HHs (2 Brahmin & 21 Dalit)
4	Key Activities Conducted	Contour trenches, water source protection, grass plantation

7. Empowering Women Farmers Through Climate-Resilient Irrigation and Vegetable Farming in Kalayam

The Kalayam sub-scheme of the Pachnali Subproject, under the Building Climate Resilience of Watersheds in Mountain Eco-Regions (BCRWME) Project, has emerged as a promising example of rural resilience and women's empowerment through integrated watershed management. Located in Ward No. 6 of Shikharpur Municipality (formerly Pachnali VDC), this intervention addressed the longstanding challenges of water scarcity and low agricultural productivity in a climate-vulnerable region of Nepal.

Implemented through MACDG under SPCDG Batch II, and with technical support from the Environment and Resource Management Consultant (ERMC) Pvt. Ltd., the project primarily engaged 17 female farmers organized under an 11-member committee responsible for civil and catchment-based activities. These included construction of an intake, a reservoir tank (RVT), tap stands, and irrigation ponds for vegetable farming. To support sustainable farming practices, the project provided technical training, seeds, daily wages (hajari), five plastic tunnels, 12 sprinklers, and 200 meters of irrigation pipe. Motivated by the benefits of tunnel farming, the community voluntarily constructed two additional tunnels using their own resources.

This community-led agricultural shift empowered women to cultivate a variety of seasonal and off-seasonal vegetables such as cauliflower, tomato, potato, radish, brinjal, garlic, coriander, and mustard leaf (Rayo). Within just six months of operation, the farmers produced approximately 1,200 kg of tomato, 500 kg of potato, 300 kg of radish, and smaller quantities of other vegetables. Most of the produce was used for household consumption, significantly improving local food security. For instance, the farmers consumed all 20 kg of cauliflower and 500 kg of potatoes, translating to a direct economic value of NPR 800 and NPR 12,500, respectively. A surplus of 1,000 kg of tomatoes was sold at the local market in Pachnali, generating an additional NPR 30,000 in income.

The income earned was used for essential expenses such as child education, healthcare, and daily household needs. More importantly, the success of the initiative has instilled confidence and a sense of self-reliance among women farmers, who now express strong interest in receiving more training to enhance their agricultural entrepreneurship. As one group member shared, “These programs boost our confidence for survival in life. We are grateful to BCRWME for giving us this opportunity and showing us the path to business and resilience.”

This success story illustrates how participatory watershed management, when aligned with women-centric livelihood promotion, can foster both environmental resilience and socioeconomic transformation in vulnerable mountain regions.

General Information

S.N.	Description	Details
1	Thematic Area	Watershed Management, Climate Resilience, Livelihood Improvement
2	Proposed Title of the Success Story	Empowering Women Farmers Through Climate-Resilient Irrigation and Vegetable Farming in Kalayam
3	Location	Sudurpashchim Province, Doti District, Shikharpur Municipality, Ward No. 6 (Former Pachnali VDC, Kalayam)
4	Date of Implementation	FY 2018/19
5	Name of Implementing Office/Agency	Department of Soil Conservation and Watershed Management (DSCWM)
6	Collaborating Partners	ERMC Pvt. Ltd. (Consultant); MACDG (Local Implementation Partner)
7	Funding Source/Donor	Asian Development Bank (ADB) under Grant No. GO357 NEP
8	Name of user group/ committee	11-member local committee of 17 women farmers

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Livelihood support, Irrigation Pond Construction, Vegetable Tunnel Farming, Catchment Restoration
2	Objective(s) of the Intervention	Improve climate resilience and food security through integrated watershed and livelihood management
3	Area Conserved/Protected/ Rehabilitated	Not specifically mentioned; pertains to household-level vegetable farming and catchment area
4	Duration of the Project	2018
5	Budget Allocated/Utilized	NPR 30,000 (from tomato sales alone); full project investment details not specified
6	Major Stakeholders Involved	DSCWM, ERMC, Local Community (17 female farmers), MACDG
7	Number of People/HHs Benefited	17 female farmers directly; indirect benefits to households through food and income
8	Key Activities Conducted	Tunnel installation, irrigation pond construction, seed and pipe distribution, sprinkler support
9	Major Challenges Faced	Initial lack of irrigation infrastructure and exposure to modern vegetable farming techniques

Photos:

Irrigation Pond

Vegetable Farming for Livelihood Support

8. Transforming Rural Livelihoods through Climate-Smart Agriculture and Water Access in Rittha, Dadeldhura

The Building Climate Resilience of Watersheds in Mountain Eco-Regions (BCRWME) Project, under Grant number GO357 NEP, has been a significant initiative aiming to enhance the reliability and accessibility of water resources for domestic use, livestock, and irrigation in Nepal's climate-vulnerable river systems. With the Department of Soil Conservation and Watershed Management (DSCWM) as the executing agency and technical implementation support provided by ERMC (P) Ltd. through the Project Management and Implementation Consultant (PMIC) team, the BCRWME Project continues to play a pivotal role in transforming communities.

One such remarkable transformation is observed in the Rittha sub-scheme, situated in Ward No. 8 of Ganyapdhura Rural Municipality (previously Ganeshpur VDC Ward No. 2), Dadeldhura District. Implemented under Batch I through MACDG under SPCDG, this subproject was designed to restore catchments, improve irrigation, and promote sustainable vegetable farming.

The intervention targeted 20 farmers, with a 7-member community committee managing civil works such as intake construction and irrigation pond development. The project provided technical assistance, daily labor support (hajari), seeds, and critical inputs such as five plastic tunnels, 15 sprinklers, and 250 meters of irrigation pipe.

Over three years, potential female farmers started cultivating various seasonal and off-season vegetables including cauliflower, cabbage, tomato, potato, radish, brinjal, sweet pepper, bitter gourd, coriander, and mustard leaf (rayo). The average seasonal production was substantial: 70 quintals of cauliflower, 65 quintals of cabbage, 45 quintals of tomato, 80 quintals of potato, 60 quintals of radish, and so forth.

Of the total yield, a significant portion was consumed domestically, saving families large sums of money. For instance, 10 quintals of cauliflower were used at home, valued at NPR 50,000. The remaining produce was sold locally, in district, and regional markets. Local businessmen directly procured vegetables from the farm gate due to good road access. The estimated seasonal revenue from market sales includes NPR 300,000 from cauliflower, NPR 150,000 from cabbage, and NPR 210,000 from potatoes, among others.

This enterprise has become a critical source of income, especially for women, who now invest in children's education, health services, and household needs. Women farmers expressed that beyond income, the program instilled confidence, increased self-worth, and fostered empowerment.

"This initiative has shown us the way. With future training and support, we can expand our business and sustain our livelihoods," they remarked, expressing heartfelt gratitude to the BCRWME Project.

General Information

S.N.	Description	Details
1	Thematic Area	Watershed Management, Climate Change Adaptation
2	Proposed Title of the Success Story	Empowering Women Farmers through Climate-Resilient Vegetable Farming in Rittha Sub-Scheme, Dadeldhura
3	Location	Province: Sudurpashchim, District: Dadeldhura, Local Level: Ganyapdhura Rural Municipality, Ward No. 8, formerly Ganeshpur VDC Ward No. 2, Rittha Sub-scheme
4	Date of Implementation	FY 2078/079
5	Name of Implementing Office/ Agency	Department of Soil Conservation and Watershed Management (DSCWM), PMU Dadeldhura
6	Collaborating Partners	ERMC (P) Ltd. – Technical Support, Local MACDG under SPCDG – Implementation Partner
7	Funding Source/Donor	Climate Investment Fund , Government of Nepal (GoN)
8	Name of user group/ committee	*Rittha Sub-scheme Farmers' Committee* (7 members)

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Irrigation improvement, Vegetable farming, Catchment restoration, Livelihood enhancement
2	Objective(s) of the Intervention	To improve water accessibility for irrigation and domestic use, enhance livelihoods, and build resilience of women farmers through sustainable agriculture
3	Area Conserved/Protected/ Rehabilitated	Approx. 5 hectares of farmland improved under vegetable production
4	Duration of the Project	approx. 3 years
5	Budget Allocated/Utilized	NPR ~10,00,000 (including irrigation materials, training, and inputs)
6	Major Stakeholders Involved	PMU-DSCWM, ERMC (P) Ltd., MACDG/SPCDG, Local Farmers' Group
7	Number of People/HHs Benefited	20 farmers (majority women), 7 committee members directly; ~100 individuals indirectly
8	Key Activities Conducted	Construction of intake and irrigation pond, distribution of tunnels, sprinklers, pipes, seed support, technical guidance
9	Major Challenges Faced	Initial knowledge gaps on modern farming, market linkage, and record keeping

Photos:

Irrigation Support and Vegetable Farming for Livelihood Support

9. Icon of Resilience-How Bardanda Turned the Tide with BRCRN's Riverbank Intervention

Tucked within the fragile foothills of the Churia range, Bardanda in Ward No. 6 of Bardibas Municipality once stood on the frontline of a slow-moving disaster. Each monsoon season, the Ratu River surged beyond its banks, carving through agricultural lands and threatening homes and food security. Over 500 hectares of fertile farmland were repeatedly lost to bank erosion and sediment overflow, putting the livelihoods of the entire community at risk. This was a recurring issue, as the Ratu river system alone covered 58,539 hectares and impacted 28% of the river-dependent population across Madhesh Province.

Recognizing the growing climate-induced hazards such as hydraulic undercutting, silt-laden floodwaters, and sediment deposition, the BRCRN project, supported by the Green Climate Fund, selected Bardanda as a critical intervention zone. Guided by the Environmental and Social Management Framework (ESMF), BRCRN developed a holistic and hybrid nature-based solution tailored to the socio-ecological needs of Bardanda.

With active community participation, the project introduced bioengineering techniques, including bamboo and vetiver-based live fascines, brush layering, and napier grasses to stabilize slopes. Dry-stone gabion revetments strengthened eroded banks while sediment harvesting dams were built upstream to trap coarse sediment. Additionally, slope reprofiling aligned with natural fluvial gradients to aid hydrological balance. These innovations, executed at a cost of NPR 1,143,077 (with NPR 135,522 in community in-kind contributions), restored confidence and ownership within the community.

Environmental impacts have been significant: 500 hectares of farmland have been protected, riverbank vegetation surged from less than 10% to over 80%, and downstream sedimentation has reduced dramatically. Soil organic carbon levels are now recovering, supporting long-term fertility. At a social level, the community has resumed farming on previously damaged fields, regenerated fodder and fuelwood sources, and reduced the burden on women and youth. Mental well-being has improved, as summed up by a local quote, "Now, we sleep soundly—even in the heaviest rains."

The intervention has also contributed to Nepal's climate goals. Bamboo and grasses support carbon sequestration, enhanced water infiltration supports biodiversity and groundwater recharge, and stabilized lands reduce pressure on surrounding forests.

Bardanda has become a flagship demonstration site within BRCRN's river system management strategy, serving as a blueprint for similar interventions in other flood-prone rivers like Balan, Khando, and Hardinath. The story of Bardanda is not just about controlling a river, but about learning to live in harmony with it—through empowerment, resilience, and respect for nature.

General Description

S.N.	Description	Details
1	Thematic Area	Riverbank Restoration, Flood Risk Reduction, Climate Resilience
2	Title of the Success Story	Icon of Resilience: How Bardanda Turned the Tide with BRCRN's Riverbank Intervention
3	Location	Bardanda, Ward No. 6, Bardibas Municipality, Madhesh Province
4	Date of Implementation	
5	Name of Implementing Office	Building a Resilient Churia Region in Nepal (BRCRN)
6	Project Period	Intervention completed in 2025
7	Implementing Agency	Provincial Project Management Unit, BRCRN, Madhesh Province
8	Contact Person	Dr. C.L. Chowdhary (Forestry Expert), Sunil Kumar Gupta (Watershed Specialist & PPMU Coordinator)

Project/Intervention Details

S.N.	Description	Details
1	Type of Intervention	Hybrid Nature-Based Solution including Bioengineering, Gabion Revetments, Sediment Harvesting Dam, and Riverbank Vegetation Restoration
2	Objectives	To reduce flood risk, restore degraded riverbanks, improve ecosystem services, and enhance community resilience against climate change impacts
3	Area Conserved/ Restored	Approximately 500 hectares of farmland protected from future flood damage
5	Budget Allocated / Utilized	NPR 1,143,077 (with NPR 135,522 community contribution)
6	Major Stakeholders Involved	BRCRN, Community Members, Riverbank Protection Committee, Local Government
	Key Activities Conducted	Bioengineering (Bamboo, Vetiver), Gabion Walls, Slope Reprofiling, Sediment Harvesting, Embankment Stabilization
8	Innovations	Use of indigenous materials, local labor, community-led riverbank committee, hybrid ecological and structural design
9	Outcomes	Reduced sedimentation, increased vegetation cover, resumed agriculture, carbon sequestration, improved mental well-being
10	Replicability	Model replicated in neighboring rivers (Balan, Khando, Hardinath) based on Bardanda's success

Testimonials/Quotes:

"We had come to believe nothing could stop the river from taking what it wanted," remembers **Sagar Moktan, 38**, a local farmer. *"Each monsoon meant losing sleep, land, and sometimes, our very peace of mind."*

"When we planted bamboo stakes along the riverbank, it felt like we were planting safety, dignity, and the right to farm without fear," shared **Amar Singh**, a Dalit youth who helped organize local work teams.

Before, we would wake up at dawn and rush to check if the river had claimed our fields overnight," said **Harka Bahadur Tamang, 30**, Chairperson of the Laxmipur Riverbank Committee. *"Now, we sleep soundly—even in the heaviest rains. The embankment hasn't just held back the river—it has restored our peace."*

"This is not just engineering—it's regeneration," emphasizes **Sunil Kumar Gupta**, Watershed Specialist. *"We're not fighting the river—we're working with it, letting nature repair the damage we caused."*

"The Ratu River hasn't changed," reflects **Sagar Moktan**, surveying his revitalized paddy. *"But we have. And now, instead of fearing it, we walk alongside it—prepared, resilient, and proud."*

Photos:

Debris-laden floodwaters surge through Laxmikhola, a tributary of the Ratu River originating in the Chure range. The flash flood has mobilized sediment and organic matter from the upstream community forest.

Climate-induced hazards such as mudflows and debris-laden floods not only blanket agricultural land with sediment but also permanently erode fertile soil. The resulting land loss has left communities in a state of deep psychosocial distress

Turfing is a critical bioengineering technique involving the establishment of vegetative cover, primarily grasses, on the crest and slopes of embankments to enhance slope stability and mitigate erosive forces from precipitation and biotic disturbances

Environmentally sustainable bioengineering practices that harness indigenous knowledge and locally sourced materials are fundamental to the long-term resilience and structural integrity of protective infrastructure

Runoff harvesting dam is currently under construction at the upstream terminus of the river embankment to intercept surface flow, reduce downstream sediment transport, and enhance groundwater recharge

Within a three-month period, the runoff harvesting dam accumulated approximately 1,200 m^3 of sediment, effectively doubling the surface water retention upstream while reducing downstream sediment transport by nearly 50%.

The community has experienced enhanced psychosocial well-being following the mitigation of flood hazards, protection against involuntary agricultural land loss, and the ecological restoration of the degraded landscape

Community-led initiatives play a pivotal role in ensuring the structural sustainability of the intervention. The strategic plantation of bamboo along the downstream side of the dam contributes to slope stabilization, enhances soil reinforcement through deep-rooted rhizomes, and provides a resilient natural barrier against erosive forces.

10. Rooted in Respect - Empowering Communities through BRCRN's Field Schools in Nepal's Chure Region

Stretching across Nepal where the hills transition into the plains, the Chure region is home to communities facing the direct and intensifying impacts of climate change. Despite decades of development efforts, many initiatives in this ecologically fragile region have struggled to produce lasting outcomes. A key reason: limited, often superficial, community engagement. Too often, local people were seen as passive beneficiaries rather than active stewards of their own environment and future.

In response to this persistent challenge, the Building a Resilient Churia Region in Nepal (BRCRN) project, the country's first Green Climate Fund-supported initiative (2020–2027), jointly implemented by the Ministry of Forests and Environment (MoFE) and the Food and Agriculture Organization (FAO), pioneered a different path. At the heart of BRCRN's success lies the Natural Resource Management Field School (NRMFS) — a vibrant, community-led platform that nurtures learning, experimentation, and empowerment.

From Fragility to Empowerment

In the Chure landscape, communities grapple with erratic rainfall, droughts, floods, forest fires, and soil degradation. Years of extractive farming and unmanaged grazing have depleted both ecological health and community resilience. Instead of introducing prescriptive technical solutions, BRCRN's NRMFS invited communities to become part of the solution.

The NRMFS Approach: A School Without Walls

The Field School model was developed with contributions from experts in forestry, watershed management, livestock, and agriculture, and validated through participatory workshops. Groups of 25 farmers gather regularly to identify problems, test solutions, and learn collaboratively in a practical, hands-on environment. Field school facilitators — selected from within the communities — are trained through a "training of trainers" model and receive continued mentoring.

Each NRMFS cohort progresses through three structured phases over 18 months:

- Phase I: Climate-Resilient Agriculture (4 months): Participants practice sustainable techniques like composting, mulching, and biochar application. Agro-Ecosystem Analysis (AESA) sharpens observation and decision-making.
- Phase II: Climate-Resilient Land Use (6 months): Farmers test adaptive techniques such as riverbed farming, green manuring, and agroforestry.
- Phase III: Ecosystem Restoration (8 months): Forest User Groups (CFUGs) engage in low-cost bioengineering and reforestation, spreading restoration efforts across degraded lands.

Impact and Outcomes

As of December 2024, 84 NRMFS had been established across 26 river systems, reaching 2,220 farmers — 70% of them women. These numbers reflect a deeper transformation:

- Women's Leadership: Women emerged as resource leaders, strengthening community governance.
- Organic Practices: Farmers turned to traditional inputs like jholmol, reducing reliance on costly chemical fertilizers.
- Improved Forest Management: Enhanced implementation of Forest Management Operational Plans (FMOPs), better forest fire control, and regulated grazing.
- Upstream-Downstream Collaboration: Trust and coordination improved among interlinked communities.
- Scalable Model: With a target of 120 NRMFS, the model is already being scaled up.

General Information

S.N.	Description	Details
1	Title of the Success Story	Rooted in Respect: Empowering Communities Through BRCRN's Field Schools
2	Location	Chure Region, across 26 river systems in Koshi, Bagmati, and Madhesh Provinces
3	Date/Time Period of Implementation	2020–2027 (ongoing)
4	Name of Implementing Office/Agency	MoFE/FAO-BRCRN, Project Management Unit (PMU, Provincial Project Management Units (PPMUs-Sindhuli/Bagmati, Bardibas Mahottari/ Madhesh, Itahari,Sunsari/Koshi)
5	Contact Person (Name/ Designation)	Project Management Unit, BRCRN Project , Babrmahal,Kathmandu
6	Collaborating Partners	Local Governments, Community Forest User Groups (CFUGs)
7	Funding Source/Donor	Green Climate Fund (GCF)
8	Name of User Group/ Committee	Community Forest User Groups and NRM Field School Groups, Incentives and post-support

Project/Intervention Details

S.N.	Description	Details
1	Type of Intervention	Community-based Natural Resource Management and Climate Resilience through NRM Field Schools
2	Objective(s) of the Intervention	To build community resilience to climate change through participatory natural resource management and knowledge-sharing
3	Area Conserved/ Protected/Rehabilitated	Working in 26 river systems across Chure (multiple hectares impacted)
4	Duration of the Project	2020–2027 (7 years)
5	Budget Allocated/Utilized	1.60 million USD (Total Budget for 120 NRMFS)
6	Major Stakeholders Involved	Community Members, Local Field School Facilitators, CFUGs, Local Governments, TITAN, Community Development Advocacy Forum, Nepal (CDAFN)
7	Number of People/HHs Benefited	2,220 farmers (including 1,555 women); Indirectly benefiting over 5,000+ community members
8	Key Activities Conducted	AESA, composting, mulching, riverbed farming, agroforestry, forest regeneration, bioengineering, group facilitation
9	Major Challenges Faced	Climate variability, traditional mindsets, sustaining community motivation over 18 months

Testimonials/Quotes:

"We were not taught what to do—we discovered it ourselves," says Kabita Mahato, a woman farmer from Mahottari.

"I now understand why many initiatives fail. It's not the activity that fails, but the process," reflects Dev Kumari Raut, a field facilitator from Udayapur.

Local governments and community-based institutions are now mobilizing additional resources to expand the NRMFS model, which is increasingly being viewed as a blueprint for inclusive, climate-resilient development. In a world of increasing climate risks, BRCRN shows that the most lasting solutions are grown, not imposed—and the most enduring change is rooted in respect.

Photos:

Field school participants measuring sample plants for agroecosystem analysis

Participants performing management actions on the regeneration trial plot

Participants prepare biochar out of forest biproducts to use as soil amendment in Morang

Participants celebrating happiness after receiving award from local government,Sindhuli

Participants prepare bamboo checkdam as low-cost soil conservation technique to control Gully erosion in Udayapur

Participants digging eyebrow pit within forest land to retain moisture and prevent runoff and soil erosion

11. Reviving Hope through Conservation Ponds in Nepal's Churia Region

In the heart of Nepal's fragile Churia hills, water scarcity has long been a critical issue, particularly during the scorching dry season. For years, the harsh summer months brought hardship to communities, as wells and tube wells would run dry. This left women and children walking long distances for water, hampered household chores, ruined crops, and threatened food security and livelihoods.

But in the summer of 2025, hope began to return to the region. The Building a Resilient Churia Region in Nepal (BRCRN) project, under the Ministry of Forests and Environment and supported by the Green Climate Fund, implemented a transformative initiative as part of its Critical Ecosystem Restoration Plan (CERP). This intervention introduced a series of water recharge ponds and check dams, strategically constructed in degraded, drought-prone, and water-stressed areas across the Churia landscape.

From Dry Wells to Flowing Taps

Before these interventions, the situation was dire. Communities endured severe water shortages during dry months, with many tube wells and dug wells becoming non-functional. However, after just a few seasons of the recharge pond installations, the change became visible and impactful. Groundwater levels began stabilizing, and many previously dry wells and hand pumps now yield water even in the height of summer.

Farmers report better access to irrigation, and some have even begun cultivating off-season vegetables—a significant boost to household nutrition and income. As Geeta Kumari Chaudhary from the Koiralo Khola Community Forest Users Group in Hatidaha shared: "For the first time in years, our tube wells are running even in peak dry season. Our well had water throughout the summer now. This recharged pond saved us. We hope that water ponds and forest will enhance our hope to increase water availability throughout the year."

Community-Led and Climate-Resilient

This success is drawing attention across local municipalities and provincial authorities. With climate change making rainfall patterns increasingly unpredictable, these ponds are now seen as a model for groundwater recharge and climate resilience.

The ponds are not isolated interventions. They are part of a broader ecosystem restoration approach that includes reforestation, gully plugging, and sustainable land management practices, all contributing to the climate resilience of the watershed.

As of June 2025, BRCRN has successfully completed 55 conservation ponds (out of 129 total targets) across three provinces: 24 in Koshi, 12 in Bagmati, and 19 in Madhesh. These interventions not only secured and enhanced water availability for nearby communities, and wildlifes but also pave the way for long-term, low-cost, nature-based solutions that strengthen ecosystems and safeguard communities.

In an era of climate uncertainty, the conservation ponds stand as a beacon of hope, demonstrating that community-driven, ecosystem-based solutions can create real, lasting change. These ponds do not just hold water—they hold the promise of a more resilient future.

General Information

S.N.	Description	Details
1	Title of the Success Story	Reviving Hope through Conservation in Nepal's Churia Region
2	Location	Koshi, Bagmati, Madhesh Provinces; 55 Sites includingKarjanya-11 (Siraha), Charnath-1 (Dhanusha), Triyuga-8 (Udaypur), Bhadrapur-1,
3	Date/Time Period of Implementation	2023–2025 (as of June 2025) Project period May 2020 to May 2027)

S.N.	Description	Details
4	Name of Implementing Office/ Agency	MoFE/FAO-BRCRN, Project Management Unit (PMU, Provincial Project Management Units (PPMUs-Sindhuli/ Bagmati, Bardibas Mahottari/ Madhesh, Itahari,Sunsari/Koshi)
5	Contact Person (Name/ Designation)	Megh Nath Kafle, National Project Director Project Management Unit, BRCRN Project , Babarmahal, Kathmandu
6	Collaborating Partners	Local governments, Community Forest User Groups (CFUGs)
7	Funding Source/Donor	Green Climate Fund (GCF)
8	Name of user group/committee	Respective Community Forest User Groups in respective sites

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention/Activity	Conservation ponds, check dams, water recharge structures
2	Objective(s) of the Intervention	Rainwater harvesting, Enhance groundwater recharge, improve water security in dry season, water availability for forest fire control, wildlife and agriculture increase community resilience to climate variability
3	Area Conserved/Protected/ Rehabilitated	55 sites across 3 provinces (exact hectares TBD)
4	Duration of the Project	2020 to 2027 (ongoing)
5	Budget Allocated/Utilized	1.91 million USD (Total Budget for 129 Conservation ponds)
6	Major Stakeholders Involved	Ministry of Forests and Environment, FAO, CFUGs, local governments
7	Number of People/HHs Benefited	Indirectly thousands of households; specific CFUG membership engaged
8	Key Activities Conducted	Site selection, pond construction, community mobilization, monitoring
9	Major Challenges Faced	Scientific hydrological monitoring of water infiltration to recharging aquifers, conservation pond maintenance capacity, climate unpredictability /increasing drought

Photos:

Conservation Pond, Karjanha Municipality, Bataha River System, Siraha

Bagaha CFUG, Karjanya-11, Bagaha, Siraha

Conservation pond at Charnath, Municipality 1, Dhanusha

Conservation pond in Triyuga Municipality-8, Udaypur

Conservation pond in Bhadrapur-1

12. Climate-Friendly Agricultural Practices in Kalikot: A Case Study of Janalikot Village

Janalikot, a remote village comprising 49 households, is located in Ward No. 2 of Raskot Municipality in Nepal's Kalikot District. Historically, the village grappled with acute water scarcity, forcing residents to queue for hours sometimes an entire day to collect even a single gallon of water. This chronic lack of reliable water sources, coupled with minimal local economic opportunities, pushed many male members of the community to migrate to India in search of low-wage labor to support their families.

Agriculture in Janalikot was traditionally subsistence-based, characterized by labor-intensive practices and consistently low yields. Farmers had limited exposure to modern techniques and lacked technical knowledge required for cultivating high-value cash crops. These factors exacerbated the community's vulnerability, as confirmed by a vulnerability assessment conducted by the ASHA Project, which classified a significant number of households in the fourth and highest tier indicating "very high vulnerability."

The intervention of the ASHA Project has marked a pivotal shift in Janalikot's socio-economic and environmental trajectory. A cornerstone of the project was the development of *lead farmers* as local champions trained in climate-smart and sustainable agricultural practices. A total of 429 lead farmers, representing diverse backgrounds in age, gender, literacy, and farming experience, were trained and networked for institutional support and peer learning. These lead farmers underwent comprehensive skill development programs, equipping them with knowledge in conservation based agriculture and market-oriented cash crop cultivation. The aim was to enable farmers to generate sustainable livelihoods within their own community, thereby reducing the need for labor migration.

Moreover, the project promoted agroforestry by encouraging farmers to plant fruit-bearing trees such as oranges and pomegranates along the edges of their farmland. This strategy not only enhanced biodiversity and soil conservation but also introduced new streams of income for farming households, contributing to a more resilient and diversified rural economy.

A landmark achievement of the project was the construction of a concrete irrigation canal with a total investment of NPR 1.6 million. This infrastructure development significantly improved water accessibility for agricultural purposes, reducing the community's dependence on erratic rainfall and dramatically enhancing crop productivity and farming reliability. Agroforestry was another major initiative promoted by the ASHA Project. Farmers were encouraged to plant fruit-bearing trees such as oranges and pomegranates along farmland borders. This practice not only enhanced biodiversity and soil conservation but also introduced new income streams for households, contributing to a more diversified and resilient rural economy.

One of the prominent beneficiaries of the initiative, Mr. Kabiraj Neupane, was designated as the coordinator of the lead farmer network in the kalikot district, in recognition of his potential and commitment to agricultural innovation. He underwent comprehensive training in climate-resilient and sustainable farming practices, including permaculture, plastic (shade) farming to reduce moisture loss, drip irrigation systems for efficient water use, and the preparation of organic liquid fertilizer known locally as *jhol mal*. Equipped with these skills, Mr. Neupane has not only improved his own agricultural productivity but has also become a vital resource for knowledge dissemination within the community.

His expertise has significantly influenced fellow villagers, including Ms. Sita Neupane, who adopted these improved techniques and successfully transitioned to commercial vegetable farming. Her increased earnings have enabled her to support her household and finance the education of her four children an important indicator of the project's long-term social impact.

Currently, the village has witnessed a substantial shift in agricultural practices, with many households cultivating a diverse range of vegetables such as tomatoes, cauliflower, cabbage, coriander, potatoes, and onions. These crops are marketed in the nearby town of Raskot, contributing to a steady income stream for locals. Besides, the integration of fruit trees including oranges and pomegranates into farming systems has enhanced both the aesthetic appeal and ecological sustainability of the landscape, helping to combat soil erosion and promote biodiversity.

Beyond the evident economic gains, the initiative has fostered significant social transformation, particularly in the area of women's empowerment. By facilitating access to independent income-generating opportunities, the project has reduced financial dependency among women, enabling them to meet their daily needs without reliance on male family members. This economic autonomy has bolstered their confidence, elevated their status within households, and expanded their participation in community-level decision-making processes paving the way for more inclusive and equitable rural development.

Lead farmer Kabiraj Neupane reflects on the transformative impact of the technical training he received through the ASHA Project. The training included modern agricultural practices such as plastic (shade) farming to minimize moisture evaporation, and efficient irrigation techniques like drum and drip irrigation. As a result of adopting these innovative methods, his living standard has significantly improved. He no longer needs to migrate to India for low-wage manual labor, as he can now sustain a viable livelihood within his own community by cultivating high-value, off-season vegetables using plastic farming techniques.

One of the most significant improvements has been in water accessibility. Previously, villagers had to wait for 2–3 hours to collect water; now, with the new irrigation infrastructure in place, water is available within just 15 minutes. This has drastically reduced the time burden and improved agricultural efficiency.

Before the intervention, male members of the community often migrated to India for labor due to difficulties in meeting their family's subsistence needs, and women had to spend 2–3 hours daily fetching water. After the intervention, seasonal migration has significantly declined, farmers are now earning income through vegetable sales, and water is accessible within just 15 minutes. Additionally, agroforestry practices have helped reduce soil erosion, contributing to enhanced climate resilience and reduced vulnerability.

Mr. Neupane also shares that the income generated from vegetable farming has enabled him to send his children to Kathmandu for better educational opportunities an aspiration that was once beyond reach. His success has earned him the respect and trust of his fellow villagers, who now look to him for guidance as a lead farmer and community resource person.

Furthermore, the project facilitated specialized training for 60 farmers across the district—including Mr. Sankar Neupane—on the preparation of organic inputs such as *Jiwamrit* (a bio-enhancer) and *Jhol Mal* (a liquid organic fertilizer). To support practical implementation, the project also provided plastic drums to participating farmers, enabling them to produce these organic fertilizers using locally available resources like cattle dung and brown sugar (*sakkhar*).

Mr. Sankar Neupane observed a growing shift within the community toward more sustainable farming practices. Farmers have begun moving away from reliance on chemical fertilizers and pesticides, embracing organic alternatives that promote environmental health and restore long-term soil fertility. This holistic transition highlights the transformative potential of climate-smart agriculture not only in enhancing ecological sustainability but also in strengthening both individual livelihoods and community-wide resilience in vulnerable rural settings.

General Information

S. N.	Description	Details
1	Thematic Area	Climate Change Adaptation
2	Proposed Title of the Success Story	Climate-Friendly Agricultural Practices in Kalikot: A Case Study of Janalikot Village
3	Location (Province/District/Local Level/ Ward/Village/ Settlement)	Janalikot village, Ward no. 2, Raskot Municipality, Kalikot, Karnali Province
4	Date of Implementation	2076/77
5	Name of Implementing Office/Agency	District Project Coordination Unit, Kalikot, ASHA Project
6	Collaborating Partners	Local government
7	Funding Source/Donor	IFAD and Government of Nepal

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Training on climate smart agriculture practices, plantation, construction of irrigation canal and livelihood support.
2	Objective(s) of the Intervention	To enhance climate resilience of the local stallholders through sustainable farming
3	Number of People/HHs Benefited	49 Households
4	Key Activities Conducted	Training on drip irrigation, plastic irrigation, preparation of Jhol mal & Jiwamrit, fruit tree plantation, vegetable farming and construction of irrigation canal.
5	Major Challenges Faced	Water access for cultivating crops. At first farmers were reluctant to change their traditional farming practices.

Photos:

Female farmer sharing her story of vegetable cultivation

Farmer showing irrigation canal supporting many households

Preparation of organic and liquid fertilizers

SUCCESS STORIES FROM SOIL AND WATERSHED MANAGEMENT OFFICES OF PROVINCES

1. Addressing Water Stress in a Community of Chuliban, Dhankuta

In the water-stressed community of Chuliban, Ward 7 of Dhankuta Municipality, a pressing need for sustainable water management led to a transformative intervention by the Soil and Watershed Management Office, Dhankuta. Prior to the project, the area was experiencing acute water scarcity. Springs had dried up, recharge systems were absent, and water availability for drinking, irrigation, and daily use was critically low.

To address this, a water recharge pond, popularly referred to as Chandrama Pokhari, was constructed on February 15, 2019 (2075/11/03). With financial support from the Government of Nepal and local contributions, the project focused on building not just a pond, but an entire water retention and conservation system. Key components included a drainage system, support wall, protective wall, fencing, and plantation around the pond.

The impact was remarkable. Several new water springs were identified in the area, improving water availability not only in the immediate community but also in neighboring settlements. The intervention reestablished the hydrological connection between upstream and downstream zones, enhancing soil moisture, supporting vegetation, and conserving the broader 133-hectare watershed area.

The project directly benefited around 200 households (approximately 1,100 people) and generated 240 person-days of local employment. Just as importantly, the active participation of local communities and their ownership of the structure ensured its sustainability. The pond has become a model intervention in the mid-hills, gaining attention from the local government and aligning with national and international frameworks such as the SDGs and NDCs.

This simple yet effective initiative proves that well-designed, community-led water recharge projects can alleviate water shortages, restore ecological balance, and serve as replicable models for similar landscapes across Nepal.

Construction of Water Recharge Pond at Chuliban, Dhankuta

General Information

S. N.	Description	Details
1	Thematic Area	Watershed Management -Nibuwa-Tankhuwa Watershed
2	Proposed Title of the Success Story	Addressing Water Stress in a Community of Chuliban, Dhankuta
3	Location	Koshi, Dhankuta, Dhankuta Municipality-7, Chuliban
4	Date of Implementation	FY 075/076 (2075/11/03)
5	Name of Implementing Office/ Agency	Soil and Watershed Management Office Dhankuta
6	Contact Person (Name/Designation)	Prakash Limbu (Watershed Management Officer)
7	Contact Information (Phone/Email)	9855052639 (prakash.limbupsl@gmail.com)
9	Funding Source/Donor	Nepal Government/Province Government
10	Name of user group/committee	*Chuliban Tomuwa Tole Basti Sangathan* Dhankuta-7

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Construction of Water Recharge Pond
2	Objective(s) of the Intervention	To secure water availability
3	Area Conserved/Protected/ Rehabilitated)	133 ha
4	Duration of the Project	2075/11/03-2076/02/04
5	Budget Allocated/Utilized	Total - 532,662.08 /- (Office Contribution - 502,662.08/- and User Group Contribution - 30,000 /-)
6	Major Stakeholders Involved	Chuliban Tomuwa Tole Basti Sangathan, Dhankuta-7
7	Number of People/HHs Benefited	Around 200 Households benefited (Around 1100 Number of People)
8	Key Activities Conducted	Construction of Water Recharge Pond
		Construction of Drainage
		Construction of Support wall
		Construction of Pond protection Wall
		Fencing and Plantation around the Pond

2. Building Resilience through Climate Smart Village Initiatives in Ghumaune, Dhankuta

In the mid-hill region of Ghumaune, Ward 1 of Mahalaxmi Municipality, communities once struggled with water scarcity, low income, and traditional farming systems that were highly vulnerable to climate change. In response, the Soil and Watershed Management Office Dhankuta, with support from the Nepal Government and Province Government, launched a transformative Climate Smart Village (CSV) program on August 20, 2020 (2077/05/05).

This initiative focused on promoting climate-resilient agriculture and ecosystem-based adaptation. By introducing tunnel houses, constructing recharge/tourism ponds, planting diverse fruit species, and developing a tourism park, the project addressed both ecological and socio-economic challenges. Over time, the intervention revitalized the entire ward area, benefitting around 224 households and over 1,400 people.

The outcomes were remarkable. Water availability improved significantly, enabling diversification in crop production and the adoption of sustainable agricultural practices. These changes not only enhanced food security but also boosted local incomes. The tourism park has become a local attraction, contributing to eco-tourism growth and generating additional livelihoods. In total, the project created around 1,250 person-days of employment.

A key innovation was the introduction of plastic tunnel houses, which increased productivity and resilience to unpredictable weather. Equally important was the strong involvement of local communities and their ownership of the initiative, ensuring long-term sustainability. The project aligns with national priorities under the Sustainable Development Goals (SDGs) and National Adaptation Plans (NAPs), and has strengthened local governance capacities.

The Ghumaune CSV model is a powerful example of how integrated, climate-resilient approaches can transform vulnerable communities into adaptive, productive, and self-sustaining systems. It stands as a replicable model for other regions facing similar climate-related challenges.

General Information

S. N.	Description	Details
1	Thematic Area	Climate Smart Village
2	Proposed Title of the Success Story	Building Resilience through Climate Smart Village Initiatives in Ghumaune, Dhankuta
3	Location	Koshi, Dhankuta, Mahalaxmi Municipality-1, Ghumaune
4	Date of Implementation	FY 077/078 (2077/05/05)
5	Name of Implementing Office/Agency	Soil and Watershed Management Office Dhankuta
6	Contact Person (Name/Designation)	Prakash Limbu (Watershed Management Officer)
7	Contact Information (Phone/Email)	9855052639 (prakash.limbupsl@gmail.com)
9	Funding Source/Donor	Nepal Government/Province Government
10	Name of user group/committee	*Bhu Sanrakshan tatha hariyali upabhokta samiti*

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	CSV Program aims to enhance the resilience of communities to climate change by implementing climate smart agriculture practices and policies.
2	Objective(s) of the Intervention	Promoting water conservation, improving crop diversity, communication and knowledge sharing, focuses on practices that increase sustainable agricultural production while adapting to and building resilience to climate change.
3	Area Conserved/Protected/ Rehabilitated)	Whole 1 no. ward
4	Duration of the Project	2077/05/05-Currently Running
5	Budget Allocated/Utilized	Total - 64,00,000 /- (Office Contribution - 40,00,0000 /- and User Group Contribution - 24,00,000 /-)
6	Major Stakeholders Involved	Bhu Sanrakshan tatha hariyali upabhokta samiti, Mahalaxmi-1
7	Number of People/HHs Benefited	Around 224 Households benefited (Around 1400 Number of People)
8	Key Activities Conducted	Tunnel House Preparation, Construction of Recharge Pond/ Tourism Pond, Plantation of Different type of Fruit Species, Construction and Management of Tourism Park, Fencing and Plantation around the Pond
9	Major Challenges Faced	High Demand but low budget

Pictures:
Before:

After:

Construction and Management of Tourism Park, Fencing and Plantation around the Pond

3. Reviving Lapsekunda-A Model for Eco-Cultural Watershed Management in Dhading

Lapsekunda, a culturally sacred pond nestled in the highlands of Khaniyabas-3, Dhading, was once on the brink of ecological collapse. The site, revered by the local Tamang community for religious gatherings and seasonal festivities, faced rapid degradation due to unstable banks, unchecked water seepage, and dwindling biodiversity. Recognizing its environmental and cultural importance, the Soil and Watershed Management Office Dhading, with support from the Bagmati Province Government, launched a conservation initiative in early 2081.

The intervention combined traditional knowledge with modern engineering, reflecting a unique hybrid approach to Integrated Watershed Management (IWM). Key actions included construction of RCC core walls, dry stone and RRM walls, and bioengineering using local plant species. The involvement of the Lyasekund Tal Samrakshyan Upabhokta Samiti and the broader community played a pivotal role in both design and implementation.

Spanning just under 2,000 square meters, the project successfully stabilized the pond banks and resolved long-standing seepage issues. Beyond physical restoration, it rejuvenated local ecosystems, protected water sources, and revived community faith in nature-based solutions. It also offered employment opportunities to the locals, reinforcing the economic benefits of environmental conservation.

Crucially, the project was sensitive to Indigenous Knowledge (IK) and Traditional Knowledge (TK), which were deeply woven into conservation activities. This not only enhanced the effectiveness of interventions but also strengthened community ownership, leading to long-term sustainability.

The project's alignment with Nepal's National Adaptation Plan (NAP), Nationally Determined Contributions (NDCs), and the Sustainable Development Goals (SDGs) showcases its relevance on both local and global platforms. Its outcomes have already begun to influence eco-tourism, and future plans to link nearby destinations through foot trails and homestay services offer added economic prospects.

The Lapsekunda model stands as a replicable example of how watershed conservation, when integrated with culture, science, and community, can restore ecological balance while honoring local heritage.

It proves that with limited resources but strong community will, even remote natural sites can be transformed into vibrant symbols of resilience and sustainability.

General Information

S. N.	Description	Details
1	Thematic Area	Soil conservation, Improved Governance
2	Proposed Title of the Success Story	Reviving Lapsekunda – A Model for Eco-Cultural Watershed Management in Dhading
3	Location (Province/District/Local Level/ Ward/Village/ Settlement)	Bagmati Province,Dhading,Khaniyabas-3, Kuri
4	Date of Implementation	2081/82
5	Name of Implementing Office/Agency	Soil And Watershed Management Office,Dhading
6	Contact Person (Name/Designation)	Lem Bahadur Tamang
7	Contact Information (Phone/Email)	9749351962
8	Collaborating Partners	Bagamati Province Government(MOFE) and local communities
9	Funding Source/Donor	Bagamati Province Government
10	Name of user group/committee	*Lyasekund Tal Samrakshyan Upbhokta Samiti*

Project/ interventions details.

S.N.	Description	Detail
1	Type of Intervention	Pond Protection, plantation, soil stabilization, bioengineering, water source protection, livelihood support, etc.
2	Objective(s) of the Intervention	Pond Protection and Integrated Soil Management
3	Area Conserved/Protected/Rehabilitated)	1956 sq. m.
4	Duration of the Project	2081/11/20-2082/03/20
5	Budget Allocated/Utilized	20 lakhs
6	Major Stakeholders Involved	government agencies, local communities
7	Number of People/HHs Benefited	220 Household
8	Key Activities Conducted	RCC Core Wall ,RRM Wall, Stone Dry Wall,Bio-Engineering
9	Major Challenges Faced	Lack of Budget

Photos:

Lapsekunda Pond Conservation initiative implemented in Dhading District, Nepal

4. Safe Disposal of Drain Water through Gabion Cascade Structure

The construction of gabion cascade structures in Lisankhupakhar Rural Municipality ward no. 7 has significantly improved the management of surface drainage and enhanced soil conservation in the area. This bioengineering intervention effectively channels and safely disposes of road drainage water, thereby minimizing erosional processes such as underscouring and toe cutting that previously threatened adjacent agricultural land and residential settlements. Approximately 50 ropani of farmland and 30 households have benefitted from the stabilization and protection provided by this watershed management activity.

By dissipating the energy of flowing water, the gabion cascades reduce soil erosion and promote slope stabilization, contributing to the long-term sustainability of the local ecosystem and agricultural productivity. The project engaged local communities and stakeholders through 610 man-days of employment, fostering ownership and ensuring sustainability through a contractual maintenance mechanism managed by the user group and ward committee. The success of this intervention underscores the importance of integrated planning and community involvement and presents a replicable model for similar soil and watershed management challenges in comparable geographic settings.

General Information

S. N.	Description	Details
1	Thematic Area	Soil Conservation and Watershed Management
2	Proposed Title of the Success Story	Safe Disposal of Drain Water Through Gabion Cascade Structure
3	Location(Province/District/Local Level/Ward/Village/ Settlement)	Lisankhupakhar Rural Municipality ward no.7, Bagamati Province.
4	Date of Implementation	2081/082
5	Name of Implementing Office/Agency	Soil and Watershed Management Office, Sindhupalchok
6	Contact Person (Name/Designation)	Sudeep Shrestha
7	Contact Information (Phone/Email)	9851195124
8	Funding Source/Donor	Bagamati Province Government
9	Name of user group/committee	*Chiudi Thado Kholsa Basti Cutting, Pahiro Niyantran Upabhokta Samiti*

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Construction of Gabion Cascade
2	Objective(s) of the Intervention	To protect households and farmlands
3	Area Conserved/Protected/ Rehabilitated)	Approximately 50 ropani
4	Duration of the Project	2081/082
5	Budget Allocated/Expended	Rs. 10 Lakhs/ Rs. 9.6 lakhs
6	Major Stakeholders Involved	Soil and Watershed Management Office, Sindhupalchok, User committee, Lisankhupakhar rural municipality and respective ward.
7	Number of People/HHs Benefited	Aprox. 30 HHs
8	Key Activities Conducted	Series of gabion cascades

Photos:

Gabion Cascade

5. River Training and Bank Stabilization through Gabion Embankment Construction in Panchkhal Municipality

The implementation of gabion embankment structures along the Jhalkhunga River in Panchkhal Municipality ward no. 3 has successfully addressed the critical issue of riverbank erosion and land cutting, which previously threatened local farmlands and residential areas. This river training intervention facilitated effective channelization of the river flow, thereby protecting approximately 20 ropani of cultivable land and securing the livelihoods of around 12 households in the area.

The use of gabion embankments reinforced with studs and launching aprons has provided durable stream bank protection, significantly reducing erosional forces and preventing further degradation of riverbanks. This not only rehabilitated agricultural lands but also enhanced the safety of surrounding households by mitigating flood and erosion risks. The project generated approximately 300 man-days of employment, involving local communities and promoting a sense of ownership essential for long-term sustainability. Maintenance responsibilities are clearly defined with a retention fund and active participation of the user group and ward committee to ensure structural integrity throughout the defect liability period. The success of this intervention demonstrates the efficacy of integrated planning and community engagement and serves as a model for replication in other erosion-prone riverine environments.

General Information

S. N.	Description	Details
1	Thematic Area	Soil Conservation and Watershed Management
2	Proposed Title of the Success Story	River Training
3	Location (Province/District/Local Level/ Ward/Village/ Settlement)	Paanchkhal Municipality ward no.3, Tamaghat, Bagamati Province.
4	Date of Implementation	2081/082
5	Name of Implementing Office/Agency	Soil and Watershed Management Office, Sindhupalchowk
6	Contact Person (Name/Designation)	Birash Tamang
7	Contact Information (Phone/Email)	9851361794
8	Funding Source/Donor	Bagamati Province Government
9	Name of user group/committee	*Jal Dhungi Ghateko Daha Jhikukhola Nadi Niyantran Upabhokta Samiti*

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Construction of Gabion Embankment
2	Objective(s) of the Intervention	River training and protect surrounding household and land.
3	Area Conserved/Protected/ Rehabilitated)	Approximately 20 ropani
4	Duration of the Project	2081/082
5	Budget Allocated/Utilized	Rs. 10 Lakhs
6	Major Stakeholders Involved	Soil and Watershed Management Office, Sindhupalchok, User committee, Paanchkhal municipality and responsive ward.
7	Number of People/HHs Benefited	Aprox. 12 Households
8	Key Activities Conducted	Construction of gabion embankment with studs

Photos:

Before

During

After

6. Integrated Soil Conservation and Watershed Management in Karmetar Settlement, Nuwakot

Located in Bidur Municipality Ward No. 7 of Nuwakot District, the Trisuli Thulo Khola Karmetar settlement area had long faced the detrimental effects of soil erosion and flood-induced damage. Seasonal flooding from the Trisuli Thulo Khola river caused severe lateral erosion, threatening indigenous communities and leading to significant loss of cultivable land. In response, the Soil and Watershed Management Office Bidur, with financial support from the Ministry of Forests and Environment, Bagamati Province, implemented a targeted soil conservation and watershed management intervention in fiscal year 2080/081. The project was executed in partnership with Ward No. 7 of Bidur Municipality and the Thulo Khola Control User Committee, covering approximately 8.95 hectares.

The intervention comprised the construction of parallel stone masonry RRM (Random Rubble Masonry) retaining walls on both riverbanks, along with a strategically aligned drainage canal in between. This dual-purpose infrastructure aimed to stabilize the soil and enhance surface water management, with direct benefits for agricultural productivity, flood mitigation, and habitat conservation. The project, implemented between 2080/09/04 and 2080/11/15, mobilized NPR 800,000 in total, with NPR 85,944.85 contributed through local participation. Despite challenges such as a shortage of skilled manpower and local disputes, the program effectively achieved its core objectives.

Post-intervention assessments have demonstrated substantial ecological and socio-economic improvements. The retaining walls have halted further riverbank degradation, preserving vital farmland and shielding nearby homes. The drainage canal facilitated controlled water flow, reducing waterlogging and improving irrigation efficiency. These measures collectively restored agricultural potential and promoted the re-establishment of native vegetation, thereby enhancing local biodiversity. The rehabilitation also generated 542 man-days of employment, contributing to immediate livelihood support.

An innovative feature of this project lies in its integrated engineering design that addresses both erosion control and water management through a cost-effective and environmentally sound approach. The use of locally sourced materials and community participation has fostered a strong sense of ownership among residents, ensuring long-term sustainability. Moreover, the initiative aligns with multiple national policies and international frameworks, including the Nationally Determined Contributions (NDC), Forest Sector Strategy (2016–2025), National Adaptation Program of Action (NAP) 2010, and Sustainable Development Goals (SDGs), particularly SDG 13 (Climate Action), SDG 15 (Life on Land), and SDG 11 (Sustainable Cities and Communities).

This success story underscores the importance of integrating engineering, ecological restoration, and community involvement in watershed management. It offers a replicable model for other disaster-prone riverine settlements in Nepal and beyond, emphasizing the need for sustained policy support, inter-agency coordination, and increased investment in climate-resilient infrastructure and landscape restoration.

General Information

S. N.	Description	Details
1	Thematic Area	Watershed Management
2	Proposed Title of the Success Story	Soil Conservation and Watershed Management Program of Trisuli Thulo Khola Karmetar settlement area of Bidur Municipality-7/ Nuwakot (त्रिशुली खोला तटबन्दन कर्मेटार वस्ती संरक्षण बिदुर-०७ नुवाकोट)

3	Location (Province/District/Local Level/Ward/Village/ Settlement)	Bagamati province/Nuwakot District/Bidur municipality -7/ Karmetar GPS location: Latitude: 27.97456° N Longitude: 85.18306° E Elevation: Approximately 610 meters (2,001 feet) above sea level
4	Date of Implementation	2080/2081
5	Name of Implementing Office/ Agency	Soil and Watershed Management Office Bidur, Nuwakot
6	Contact Person (Name/Designation)	Raju Bhakta Dhusuju (Chairperson)
7	Contact Information (Phone/Email)	9851315524 (rbdhusuju@gmail.com)
8	Collaborating Partners	Ward no. 7 of Bidur Municipality
9	Funding Source/Donor	Ministry of Forest and Environment, Bagamati Province, Nepal
10	Name of user group/committee	Thulo Khola Control User Committee (ठूलो खोला नियन्त्रण उपभोक्ता समूह)

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Construction of Stone Masonry RRM walls (Left and Right side), facilitating a drainage canal in between (Soil stabilization, water source protection, livelihood support)
2	Objective(s) of the Intervention	The program's overall objective is to protect the Karmetar settlement area and cultivable lands from flood damage caused by Trisuli Thulo Khola riverside cutting. Specific Objectives are as mentioned below:- • To protect against soil erosion in the rainy season and reduce the impact of floods • To protect cultivable land from degradation. • To support the local livelihood • To conserve the water source for irrigation purposes • To help in a sustainable land use system
3	Area Conserved/Protected/ Rehabilitated)	8.95 ha
4	Duration of the Project	2080/09/04 – 2080/11/15
5	Budget Allocated/Utilized	Rs. 8,00,000 (Allocated) Rs.7,96,126.3648 (Office including Contingency), Rs. 85944.85 (People's participation)
6	Major Stakeholders Involved	Local Communities of Ward No. 7 of Bidur Municipality
7	Number of People/HHs Benefited	35 households (all indigenous) are being benefited
8	Key Activities Conducted	1. Construction of Stone Masonry RRM wall 2. Construction of the Drainage Canal
9	Major Challenges Faced	Lack of a sufficient amount of skilled manpower and local disputes.

Photos:

Constructed Stone Masonry RRM wall and Drainage Canal

7. Climate-Resilient Riverbank Protection in Sole Pul and Salakhu River, Kispang-5, Nuwakot

The Sole Pul (bridge) area and adjacent farmlands along the Salakhu River in Ward No. 5 of Kispang Rural Municipality, Nuwakot District, were under persistent threat due to riverbank erosion, undermining both agricultural productivity and critical infrastructure. The increasing intensity and unpredictability of rainfall patterns — a direct result of climate change — exacerbated the problem, threatening the integrity of the sole connecting bridge and reducing cultivable land.

To address these challenges, the Soil and Watershed Management Office Bidur, in coordination with Ward No. 5 of Kispang Rural Municipality and the Sole Pul Protection and Salakhu River Control User Committee, initiated a climate change adaptation intervention under the fiscal year 2080/081. The intervention was financially supported by the Ministry of Forests and Environment, Bagamati Province, with an allocated budget of NPR 2,000,000, of which NPR 216,118.75 was contributed through community participation.

The project involved the construction of a gabion wall and a plum concrete wall, carefully engineered to match the hydrological and geotechnical conditions of the site. The dual-structure approach ensured enhanced stability, with the gabion wall providing flexibility and the plum concrete wall offering strength and durability. These interventions collectively protected 6.71 hectares of land and generated 670 man-days of employment, directly benefiting 65 households in the area.

Post-intervention evaluations show significant improvements. The reinforced riverbank now ensures the safety and stability of both the Sole Pul and surrounding agricultural fields. The area has witnessed a revival in agricultural productivity and a marked reduction in vulnerability to climate-induced disasters. Furthermore, improved drainage infrastructure has enabled better water management, contributing to resilience against extreme weather events.

Importantly, the intervention has raised awareness about the impacts of climate change among local communities. Residents now recognize the value of proactive measures and have developed a sense of ownership over the project, which is crucial for its long-term sustainability. The user committee has even begun to derive modest economic benefits from associated activities, further embedding the project into the local socio-economic fabric.

From a policy perspective, this initiative aligns with Nepal's national climate policies, including the National Adaptation Plans (NAPs), Forest Sector Strategy (2016–2025), and Nationally Determined Contributions (NDC). It supports the Sustainable Development Goals (SDG 13, 15, and 11), contributing to climate resilience, biodiversity conservation, and sustainable infrastructure.

This success story offers a replicable model for climate change adaptation in similar riverine contexts. It demonstrates how locally tailored engineering solutions, backed by strong community engagement and institutional coordination, can create lasting resilience in the face of a changing climate.

General Information

S. N.	Description	Details
1	Thematic Area	Climate Change Adaptation
2	Proposed Title of the Success Story	Soil Conservation and Watershed Management Program of Sole Pul and Salakhu river area of Kispang Rural Municipality-5/Nuwakot (सोले पुल संरक्षण तथा सलाखु खोला नियन्त्रण , किस्पाङ-५)
3	Location(Province/District/Local Level/Ward/Village/ Settlement)	Bagamati province/Nuwakot District/ Kispang Rural municipality -5/ Sole Pul GPS location: Latitude: 27.98201° N Longitude: 85.18026° E Elevation: Approximately 624 meters above sea level
4	Date of Implementation	2080/2081
5	Name of Implementing Office/ Agency	Soil and Watershed Management Office Bidur,Nuwakot
6	Contact Person (Name/ Designation)	Raju Bhakta Dhusuju (Chairperson)
7	Contact Information (Phone/ Email)	9851315524 (rbdhusuju@gmail.com)
8	Collaborating Partners	Ward no. 5 of Kispang Rural Municipality
9	Funding Source/Donor	Ministry of Forest and Environment, Bagamati Province Nepal
10	Name of user group/committee	Sole pul protection and Salakhu river control User Committee (सोले पुल संरक्षण तथा सलाखु खोला नियन्त्रण उपभोक्ता समूह)

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Construction of Gabion wall and Plum Concrete Wall along Salakhu river (Soil stabilization, water source protection, livelihood support)
2	Objective(s) of the Intervention	The overall objective of the program is to protect the Sole pul (bridge) and cultivated lands from flood damage by riverside cutting. Specific Objectives are as mentioned below:- • To season and reduce impact of flood in rainy season. • To protect agricultural land from degradation • To support the local livelihood • To protect the biodiversity of that area • To protect the source of water in that area • To help in sustainable land use system
3	Area Conserved/Protected/ Rehabilitated)	6.71 ha
4	Duration of the Project	2080/09/04 – 2080/12/05

5	Budget Allocated/Utilized	Rs. 20,00,000 Rs. 19,98,409.2544(Office including contingency) Rs. 2,16,118.75 (People's Participation)
6	Major Stakeholders Involved	Local Communities of ward no. 5 of Kipsang Rural Municipality
7	Number of People/HHs Benefited	65 household are being benefited
8	Key Activities Conducted	3. Construction of Gabion wall 4. Construction of Plum Concrete wall
9	Major Challenges Faced	Lack of skilled man power and local conflicts.

Photos:

Construction of Gabion wall and Plum Concrete wall

8. Soil Conservation and Micro-watershed Management Program of Shiva pokhari Area of Bhimeswor -9 Kharidhunga Dolakha

The micro-watershed management initiative in the Shiva Pokhari area of Bhimeswor-9, Kharidhunga, Dolakha, serves as a compelling example of community-driven watershed restoration for climate resilience and sustainable development. Led by the Soil and Watershed Management Office, Charikot, and supported by the Ministry of Forest and Environment, Bagmati Province, this project began in fiscal year 2075/76 and has continued actively, integrating soil conservation, biodiversity restoration, water source protection, and sustainable livelihoods.

Prior to intervention, the area was heavily impacted by soil erosion and frequent landslides, particularly during monsoons. The Shiva Pokhari pond—an ecologically and culturally significant site—was facing excessive sedimentation, threatening its aquatic biodiversity. Local agricultural lands were degrading, and livelihoods were increasingly vulnerable to natural disasters. In response, a comprehensive micro-watershed plan was implemented, emphasizing both structural and ecological measures. These included the construction of gabion and masonry walls, drainage canals, brushwood and stone check dams, grass waterways, and extensive conservation plantation using native pine and grasses.

A key factor in the project's success was strong community involvement through the Shiva Pokhari Protection Project User Committee. Local residents actively participated in decision-making, labor contributions, and site management. This community-based approach ensured long-term commitment, better monitoring, and stronger local ownership.

The impacts have been transformative. Soil erosion and sediment deposition into the pond have significantly decreased, and the aquatic ecosystem has begun to recover. Improved greenery and forest cover have enhanced the local microclimate, helping stabilize temperatures and humidity. The area has evolved into a popular recreational and religious destination, attracting domestic tourists and creating income-generating opportunities for local people. Boating services, food stalls, and religious gatherings have brought tangible economic benefits, particularly to disadvantaged and marginalized households. Biodiversity has improved, and wildlife presence around the pond is once again common.

Over 500 people have gained employment annually through the program, further enhancing its social value. Innovations such as the construction of grass waterways, integration of traditional knowledge, and focus on upstream–downstream linkages have improved environmental outcomes and demonstrated the replicability of the approach in similar hilly terrains.

Sustainability has been a core feature of the intervention. The use of low-cost, nature-based techniques, such as bioengineering and plantation of indigenous species, combined with strong community motivation, ensures the project's longevity. It also aligns with Nepal's policy priorities under the National Adaptation Programme of Action (NAPA), Forest Sector Strategy, and Nationally Determined Contributions (NDCs), reinforcing its institutional relevance.

Challenges—such as steep terrain and scarcity of local materials—highlighted the need for higher-level coordination and technical support. Yet, the program's outcomes underline its potential as a replicable model of integrated watershed management. With continued support, Shiva Pokhari can serve not just as a conservation success, but as a resilient, eco-friendly rural development hub grounded in environmental sustainability and local stewardship.

General Description

S. N.	Description	Details
1	Thematic Area	1.Soil Conservation 2.Watershed Management 3. Wetland Management
2	Proposed Title of the Success Story	Soil Conservation and Micro-watershed Management Program of Shiva pokhari Area of Bhimeswor -9 Kharidhunga Dolakha
3	Location	Bagmati province Dolakha District/ Bhimeswor municipality -9 Kharidhunga GPS location: 45 R 396200 E, 3065737 N, Elevation: 2595m
4	Date of Implementation	2075/2076-till now
5	Name of Implementing Office/ Agency	Soil and Watershed Management Office, Charikot Dolakha
6	Contact Person (Name/ Designation)	Shankar Shrestha (Chairperson)
7	Contact Information (Phone/ Email)	9864479948
8	Collaborating Partners	Ward no. 9 of Bhimeswor Municipality
9	Funding Source/Donor	Ministry of Forest and Environment, Bagmati Province Nepal
10	Name of user group/committee	Shiva pokhari Protection Project user Committee

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Conservation Plantation, bio-engineering techniques like grass planting, grass waterways, Brushwood check dam, water source protection, livelihood support, Gabion wall, Masonry wall and drainage canal.
2	Objective(s) of the Intervention	Overall objective of the program is to protect soil erosion and to management micro-watershed of Shiva pokhari Area. Specific Objectives are as mentioned below:- 1.To protect soil erosion in rainy season and impact of landslide 2. To protect shiva pokhari from soil deposition. 3. To protect agricultural land from degradation 4. To support the local livelihood 5. To protect the biodiversity of that area 6. To protect the source of water in that area 7. To help in sustainable land use system
3	Area Conserved/Protected/ Rehabilitated)	3.93 ha
4	Duration of the Project	FY 2075/076- FY 2081/2082
5	Budget Allocated/Utilized	70 lakhs
6	Major Stakeholders Involved	Local Communities of ward no. 9 of Bhimeswor Municipality
7	Number of People/HHs Benefited	150 household are being benefited which includes poor, disadvantaged marginalized groups too.
8	Key Activities Conducted	5. Plantation of pine species 6. Construction of Gabion wall 7. Construction of Drainage canal 8. Construction of brushwood Check-dam 9. Construction of Grass waterways 10. Construction of Loose stone Check dam 11. Construction of Masonry wall 12. Involvement of local people in decision making and implementation
9	Major Challenges Faced	Some Area is slopy so that deposition of soil took place even the check dam was constructed. Stone were not locally available.

Photos:

Before Pictures:

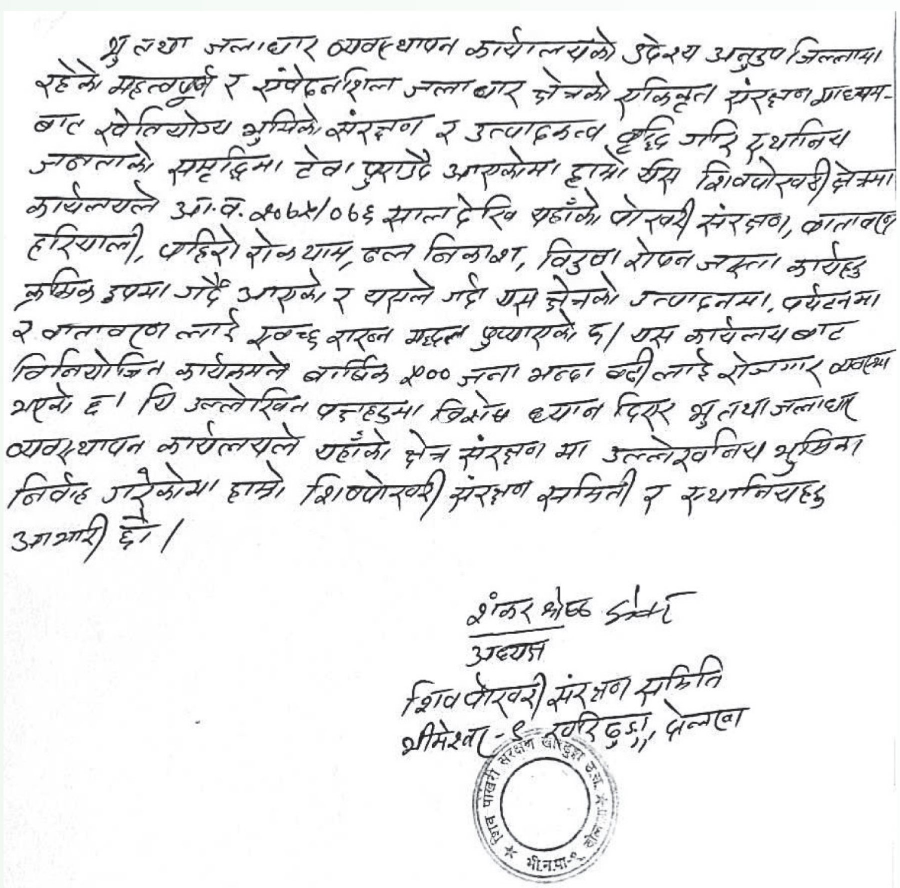
Source: Tourism TV YouTube Channel

After Pictures:

Shivapokhari, Bhimeswor-9, Kharidhunga, Dolakha

Testimonials / Quotes:

Shankar Shrestha, Chair-person, Shivapokhari Samrakshan Samiti, Bhimeswor-9, Kharidhunga, Dolakha



भू तथा जलाधार व्यवस्थापन कार्यालयको उद्देश्य अनुरुप जिल्लामा रहेको महत्वपूर्ण र संवेदनशिल जलाधार क्षेत्रको एकिकृत संरक्षण माध्यम-बाट खेतियोग्य भुमिको संरक्षण र उत्पादकत्व वृद्धि गरि स्थानिय जनताको समृद्धिमा टेवा पुराउँदै आएकोमा हाम्रो यस शिवपोखरी क्षेत्रमा कार्यालयले आ.व. २०६५/०६६ साल देखि यहाँको पोखरी संरक्षण, वातावरण हरियाली, पहिरो रोकथाम, ढल निकाश, विरुवा रोपन जस्ता कार्यहरु क्रमिक रुपमा गर्दै आएको र यसले गर्दा यस क्षेत्रको उत्पादनमा, पर्यटनमा र वातावरण लाई स्वच्छ राख्न मद्दत पुर्‍याएको छ। यस कार्यलय बाट विनियोजित कार्यक्रमले वार्षिक २०० जना भन्दा बढीलाई रोजगार व्यवस्था भएको छ। यि उल्लेखित पक्षहरुमा विशेष ध्यान दिएर भु तथा जलाधार व्यवस्थापन कार्यालयले यहाँको क्षेत्र संरक्षण मा उल्लेखनिय भुमिका निर्वाह गरेकोमा हाम्रो शिवपोखरी संरक्षण समिती र स्थानियहरु आभारी छौं।

शंकर श्रेष्ठ [signature]
अध्यक्ष
शिव पोखरी संरक्षण समिति
भीमेश्वर -९ खरिढुङ्गा, दोलखा

9. Baithok Landslide Control and Settlement Protection in Sarukhola, Parbat

In the steep and hazard-prone terrain of Saraukhola, Paiyun Rural Municipality–06, Parbat, recurring landslides had long endangered the lives and livelihoods of local communities. The unstable slopes frequently caused damage to houses, agricultural land, and critical infrastructure, leaving residents in a constant state of vulnerability. Recognizing the urgency, the Soil and Watershed Management Office, Parbat, initiated a targeted intervention in FY 2081/82 to mitigate these risks.

The project involved the construction of gabion walls coupled with bioengineering techniques to stabilize approximately 2 hectares of severely degraded and landslide-prone area. Despite challenges such as difficult terrain, unstable soil masses, and logistical constraints, the intervention successfully transformed a high-risk zone into a safer, more resilient landscape. Following implementation, landslide incidents were significantly reduced, and the threat to 13 households—comprising 52 individuals—was notably minimized. The protective structures now safeguard both residential areas and vital agricultural land.

Beyond structural safety, the project enhanced local employment through the generation of 680 man-days and promoted sustainable, nature-based solutions by integrating vegetation with engineering. This effort not only improved slope stability but also strengthened the community's adaptive capacity to future hazards. With active local participation and replicable design, the Baithok Pahiro Niyantran initiative stands as a practical model for effective landslide risk reduction in Nepal's fragile mid-hill regions.

General Information

S.N.	Description	Details
1	Thematic Area	Soil Conservation
2	Proposed Title of the Success Story	Baithok Pahiro Niyantran and Basti Protection
3	Location (Province/District/Local Level/Ward/Village/Settlement)	Saraukhola,Paiyun R.M-06,Parbat,Gandaki
4	Date of Implementation	FY 2081/82
5	Name of Implementing Ofiice/Agency	Soil and Watershed Management Office, Parbat
6	Contact Person (Name/Designation)	Sandip Rana/Chairperson
7	Contact Information (Phone/ Email)	9846462213
8	Collaboration Partners	Users committee
9	Funding Source/Donor	Soil and Watershed Management Office, Parbat
10	Name of user group/committee	*Baithok pahiro niyantran thatha basti sanrakshyan ra baithok kaila basti sanrakshyan upabhokta samiti*

Project/Intervention Details

S.N.	Description	Details
1	Type of Intervention	Work of Gabion wall and Bio engineering
2	Objective(s) of the Intervention	To mitigate landslide risks and protect settlements through sustainable land management and structural interventions.
3	Area (Conserved/Protected/Rehabilitated)	2.00 hectare
4	Duration of the Project	1 Fiscal year (81/82)
5	Budget Allocated/Utilized	NPR. 1022470.63
6	Major Stakeholders Involved	Local level (Paiyun R.M)
7	Number of People/HHs Benefited	52 people/13HHs
8	Key Activities Conducted	Construction of Gabion Wall and application of Bio engineering
9	Major Challenges Faced	Difficult terrain and limited community awareness & Difficulty in preparation of foundation surface and unstable soil mass. Also transportation constraints.

Photos:

10. Kuhire Kateni Sundarkhola Landslide Control and Streambank Stabilization in Kusma, Parbat

The communities of Kusma-03 in Parbat district had long faced the challenges posed by recurrent landslides and severe streambank erosion, which threatened both lives and livelihoods. The instability of slopes and high water velocity in Sundarkhola stream caused frequent damage to nearby farmland, disrupted infrastructure, and created a persistent sense of vulnerability among the 50 households residing in the area.

In FY 2081/82, the Soil and Watershed Management Office, Parbat, in collaboration with the local user committee, implemented a focused intervention under the Kuhiri Kateni Sundarkhola Landslide Control initiative. The project combined structural measures—such as the construction of check dams using gabion boxes (1.5x1x1 and 2x1x1)—with vegetative approaches to stabilize approximately 300 ropanis of degraded land. Despite logistical difficulties in transporting construction materials to the remote site and managing the high stream velocity, the intervention significantly reduced soil erosion, protected critical land areas, and restored slope stability.

As a result, local environmental conditions improved, risks of future landslides were minimized, and communities became more disaster-resilient. Additionally, the project created 391 man-days of employment, promoting local engagement and ownership. The success of this integrated effort demonstrates a sustainable and replicable model for landslide-prone regions across Nepal, showcasing the effectiveness of combining engineering solutions with community-led conservation practices.

General Information

S.N.	Description	Details
1	Thematic Area	Landslide control
2	Proposed Title of the Success Story	Kuhiri kateni Sundarkhola landslide control
3	Location (Province/District/Local Level/ Ward/Village/Settlement)	Kusma-03 ,Parbat,Gandaki
4	Date of Implementation	FY 2081/82
5	Name of Implementing Ofiice/Agency	Soil and Watershed Management Office, Parbat
6	Contact Person (Name/Designation)	Sher Bahadur Chhetri/Chairperson
7	Contact Information (Phone/ Email)	9847600155
8	Collaboration Partners	Users committee
9	Funding Source/Donor	Soil and Watershed Management Office, Parbat
10	Name of user group/committee	*Kuhiri kateni sundarkhola pahiro niyantran upabhokta samiti*

Project/Intervention Details

S.N.	Description	Details
1	Type of Intervention	Work of landslide control and stream protection
2	Objective(s) of the Intervention	To stabilize soil erosion and bank protection
3	Area (Conserved/Protected/ Rehabilitated)	300 Ropani
4	Duration of the Project	1 Fiscal year (81/82)
5	Budget Allocated/Utilized	NPR. 586445.34
6	Major Stakeholders Involved	Local level (Kusma M.)
7	No. of People/HHs Benefited	240 people/50HHs
8	Key Activities Conducted	Construction of Check dam and protection from bank erosion
9	Major Challenges Faced	High water velocity and transportation of gabion to site

Photos:

11. Bioengineering Stream Bank Protection Transforms Lives in Jugepani, Nawalparasi East

In the flood-prone settlement of Jugepani in Hupsekot Rural Municipality, Ward No. 1, communities once lived under constant threat of stream bank erosion caused by the Patthar Khola. The banks were barren and degraded, covered with loose sand, stones, and gravel. Frequent erosion not only endangered nearby homes and farmlands but also pushed many to consider migrating away from their ancestral lands. Recognizing the urgent need for intervention, the Soil and Watershed Management Office (SWMO) Tanahun, with active participation from the local user group *Patthar Khola Kinara Samrakshan Upabhokta Samiti*, initiated a three-year bioengineering project from fiscal year 2075/76 to 2077/78. The approach included the installation of gabion spurs, revetments, and bamboo plantations—nature-based solutions that offered long-term protection against erosion while restoring ecological balance.

The results have been transformative. The once-degraded stream bank has turned green, stabilized by bamboo and vegetation, eliminating the previous threat of erosion and flooding. Local households, particularly from the Magar, Tharu, and Biswokarma communities, now feel secure, no longer fearing the monsoon season. Beyond safety, the intervention has brought multiple benefits: bamboo and grasses planted along the bank are now used for fodder, livestock feed, and even vegetable farming, saving valuable time for farmers and improving their livelihoods.

Innovative techniques, such as planting bamboo in sunken pits to retain moisture and trap fertile soil have enhanced the effectiveness of the intervention. Controlled grazing and strong community involvement have ensured the sustainability of the effort. This success not only improved environmental resilience but also boosted the socio-economic wellbeing of around 30 households, proving that well-planned bioengineering can be a replicable solution for similar erosion-prone areas across Nepal.

General Information

S. N.	Description	Details
1	Thematic Area	Soil Conservation, River System management
2	Proposed Title of the Success Story	Bioengineering Stream Bank Protection
3	Location (Province/District/Local Level/Ward/Village/ Settlement)	Hupsekot R.M. Ward no.1, Patthar Khola, Jugepani, Nawalparasi East, Gandaki Province
4	Date of Implementation	F.Y. 2075/76, 2076/77, 2077/78
5	Name of Implementing Office/Agency	Soil & Watershed Management Office, Tanahun
6	Contact Person (Name/Designation)	Janga Bahadur Somai
7	Contact Information (Phone/Email)	9821997142
8	Collaborating Partners	Only user group
9	Funding Source/Donor	SWMO Tanahun of Gandaki Province Government
10	Name of user group/committee	*Patthar Khola Kinara Samrakshan Upabhokta Samiti,* Hupsekot 1, Jugepani

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Bioengineering techniques such as gabion spurs, revetments, and bamboo plantation.
2	Objective(s) of the Intervention	To minimize stream bank cutting during the rainy season and protect nearby settlements and agricultural land.
3	Area Conserved/Protected/ Rehabilitated	About 2.0 hectares
4	Duration of the Project	3 years (F.Y. 2075/76 to 2077/78)
5	Budget Allocated/Utilized	Total approx. NPR 36.7 lakh over three fiscal years (shared between SWMO Tanahun and community/ user group contributions).
6	Major Stakeholders Involved	SWMO Tanahun (provincial government), Patthar Khola Kinara Samrakshan Upabhokta Samiti, and local communities.
7	Number of People/HHs Benefited	30 households (Magar, Tharu, and Biswokarma communities).
8	Key Activities Conducted	Construction of gabion spurs of varying sizes, bamboo rhizome plantation, and community mobilization over three fiscal years. Activities included site preparation, gabion installation, bamboo planting, and awareness for sustainable stream bank protection.
9	Major Challenges Faced	Severe stream bank cutting and high flood risk to nearby settlement and farmland.

Photos:

In F.Y. 2075/76, bamboo plantation and gabion embankment were carried out at Pattharkhola, Hupsekot-1, Jugepani, photo taken on: 2076/04/14 BS

With increased greenery, Jugepani village has become safer and has turned into a model site for conservation, photo taken on: 2081/08/07 BS

The exemplary bioengineering work has successfully controlled flooding. As a result, greenery has increased, and Jugepani village—including its farmlands and roads—has become safer, turning into a model site for conservation, photo taken on: 2082/03/05 BS

12. Natural Hazard Prevention through Gully Plugging and Bamboo Plantation

In the steep landscapes of Bharengwa, Tulsipur-11, Dang, unchecked monsoon runoff had carved a deep U-shaped gully, severely eroding fertile land, threatening nearby forests, and damaging a newly built gabion wall along a rural road. This ongoing degradation had disrupted transportation routes and fragmented agricultural lands, posing serious challenges to both environmental stability and local livelihoods.

To address these threats, the Soil and Watershed Management Office, Dang, in collaboration with the Bharengwa Sota Tatbandhan Nirman Upabhokta Samiti, initiated an integrated gully control project combining civil and bioengineering techniques. Two gabion check-dams were constructed—each spanning 8 meters—with layered gabion boxes and a designed spillway. Between and around these structures, 100 bamboo cuttings were planted to strengthen slope stability and promote ecological regeneration.

The intervention yielded measurable success. Erosion rates in critical gully sections dropped by over 70%, runoff velocity was reduced by more than half, and no further headcut retreat was observed. Sediment deposition zones began forming behind the check-dams, creating fertile pockets for vegetation regrowth. Importantly, 30 meters of rural road and gabion wall—once at risk—are now secure, restoring vital access for the local population. Water quality downstream also improved, protecting forest undergrowth and biodiversity. The bamboo plantation, aside from stabilizing slopes, holds long-term economic potential as a source of shoots, poles, and fiber within 3–4 years.

This project, which engaged local youth for 378 person-days, stands as a model for low-cost, community-led watershed management. It demonstrates how the fusion of traditional knowledge with engineered solutions can control natural hazards, restore degraded land, and support both ecological integrity and rural livelihoods.

General Information

S. N.	Description	Details
1	Thematic Area	Soil Conservation and Watershed Management
2	Proposed Title of the Success Story	Natural Hazard Prevention Through Gully Plugging and Bamboo Plantation
3	Location	Lumbini Province, Dang, Tulsipur Sub-metropolitan-11, Urahari, Bharengwa
4	Date of Implementation	2081/082
5	Name of Implementing Office/ Agency	Soil and Watershed Management Office, Dang
6	Contact Person (Name/ Designation)	Mr. Shivaram Adhikari (Watershed Management Director) Mr. Rakesh Shahi (Senior Solil Conservation officer)
7	Contact Information (Phone/ Email)	9858025725/dscodang02@gmail.com
8	Funding Source/Donor	Lumbini Province Government
9	Name of user group/committee	*Bharengwa Sota Tatbandhan Nirman Upabhokta Samiti,* Tulsipur-11, Dang

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Gully treatment through Gabion Check-dam construction and Bamboo Plantation in between the check-dams and adjoining degraded land
2	Objective(s) of the Intervention	To prevent further degradation of the gully and its watershed through controlled runoff, To prevent soil erosion To protect the rural road
3	Area Conserved/Protected/ Rehabilitated)	0.5 ha
4	Duration of the Project	29th May 2025 to 23rd Jun 2025
5	Budget Allocated/Utilized	Budget Allocated: 560056.03 Budget Utilized: 546043.08
6	Major Stakeholders Involved	Local Communities
7	Number of People/HHs Benefited	Direct Beneficiaries:- 128 No. of People, 25HHs Indirect Beneficiaries:- 260 No. of People, 50 HHs Total Benefitted HHs:- 12 Dalit HHs, 46 Janajati HHs, 17 Others HHs
8	Key Activities Conducted	2 Nos. of Gabion Check-dam Construction A check-dam with span of 8m and three layers of gabion boxes with spillway Other with also 8m of span with two layers of gabion boxes And Plantation of 100 nos, of Single-node bamboo culm cuttings in between the check-dams and adjoining degraded land

Photos:

Situation Before Intervention:

A Deep Unstable V-shaped Gully

Damaged gabion retaining wall

Situation During Intervention:

Repaired gabion retaining wall in Gully head and on-going gabion check-dam construction downstream

Bamboo culm-cuttings plantation

Situation After Intervention:

Completion of gabion retaining wall in Gully head and gabion check-dam construction downstream with bamboo clum-cutting plantation

13. Restoring Slopes and Empowering Schools – A Bioengineering Achievement in Bagnaskali, Palpa

In the mid-hills of Lumbini Province, within Bagnaskali Rural Municipality Ward No. 3 of Palpa District, an innovative community-based intervention has restored a degraded slope while empowering a local school and its surrounding households. The area behind Shree Narayan Lower Secondary School had long suffered from severe soil erosion and gully formation, threatening both the physical safety of students and the stability of nearby farmlands. With technical and financial support from the Soil and Watershed Management Office and the Lumbini Provincial Government, and in collaboration with the school and a local user committee, a bioengineering initiative was implemented in fiscal year 2079/080. Using locally available materials, a 427-meter-long bamboo crib wall was constructed in layers, paired with the plantation of broom grass (*Thysanolaena maxima*), to stabilize the slope and control surface runoff. The project, completed in just two months with a budget of NPR 269,934, directly benefited 90 households and generated 375 mandays of employment.

The transformation of the once-degraded 2-hectare slope was both environmental and economic. The bamboo crib wall effectively halted erosion, while the broom grass anchored the soil and began to generate income through the sale of its flowers and leaves for traditional broom-making and fodder. The community, through active participation and local labor, gained ownership and technical knowledge, enhancing local governance and aligning the effort with Sustainable Development Goal 15 (Life on Land). This approach, rooted in the use of indigenous materials and low-cost techniques, has proven highly sustainable and replicable across similar erosion-prone hilly terrains in Nepal. The project underscores how school-centered conservation can have far-reaching benefits when communities, government agencies, and local institutions collaborate effectively. It is recommended that this model be scaled up in similar fragile landscapes where slope instability threatens both people and nature.

General Information

S. N.	Description	Details
1	Thematic Area	Watershed Management
2	Proposed Title of the Success Story	Restoring Slopes and Empowering Schools – A Bioengineering Achievement in Bagnaskali Rural Municipality of Palpa
3	Location (Province/District/Local Level/ Ward/Village/ Settlement)	Lumbini Province, Palpa district, Bagnaskali Rural Municiality ward number 3
4	Date of Implementation	2079/080
5	Name of Implementing Office/Agency	Soil and watershed management office
6	Contact Person (Name/Designation)	Shivaram Adhikari/Watershed Management Director
7	Contact Information (Phone/Email)	9857062864
8	Collaborating Partners	User committee
9	Funding Source/Donor	Lumbini Provincial Government
10	Name of user group/committee	Shree Narayan Lower Secondary School

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Bamboo crib wall and broom grass plantation
2	Objective(s) of the Intervention	Slope stabilization and soil erosion control
3	Area Conserved/Protected/ Rehabilitated)	2 ha
4	Duration of the Project	2 months
5	Budget Allocated/Utilized	269934.00
6	Major Stakeholders Involved	Local government, local communities
7	Number of People/HHs Benefited	90 households
8	Key Activities Conducted	Bamboo crib wall and broom grass plantation

Photos:

Before:

Site Preparation for Broom Grass Plantation on Bamboo crib wall

After:

Bamboo crib wall and broom grass plantation

14. Sustainable Slope Stabilization through Bamboo Crib Wall and Broom Grass Plantation in Bagnaskali, Palpa

In the landslide-prone slopes of Jhakristhan, Bagnaskali Rural Municipality–7 in Palpa district, local communities had been living under constant threat due to recurrent slope failures. The steep terrain, aggravated by unchecked erosion and gully formation, posed a direct danger to households and a vital rural road situated below the unstable area. These landslides not only disrupted mobility and infrastructure but also instilled fear and insecurity among the nearby residents. To address this critical issue, the Soil and Watershed Management Office, with financial support from the Lumbini Provincial Government and technical collaboration with local government stakeholders, launched a short-term but impactful bioengineering project during Fiscal Year 2079/080.

The intervention employed a combination of bamboo crib wall construction and broom grass plantation across a 0.5-hectare slope. The bamboo crib wall provided immediate structural stability, while the planted broom grass reinforced the soil with its dense root system, helping prevent further erosion. Within just two months, the previously degraded site was stabilized, eliminating the imminent threat to both the household above and the road below. Since completion, the area has not experienced any landslide incidents, marking a clear success in terms of both environmental and community safety.

Beyond slope stabilization, the project delivered significant economic and social benefits. The broom grass, in addition to its ecological function, began yielding income through the sale of its flowers and leaves, commonly used in broom making and as fodder. The project also created 215 mandays of local employment, directly contributing to improved livelihoods and community engagement. Through active community participation, the initiative fostered ownership and commitment to long-term maintenance and monitoring.

This project has emerged as a low-cost, eco-friendly, and replicable model for erosion control in Nepal's hilly regions. Utilizing locally available materials like bamboo and native grasses, it demonstrates that effective slope stabilization does not require heavy machinery or expensive infrastructure. Instead, it builds on nature-based solutions tailored to local contexts. The intervention supports Sustainable Development Goal 15 (Life on Land) by contributing to land restoration and enhancing ecosystem resilience. Moreover, by integrating local knowledge and community involvement, it also strengthened local governance and institutional coordination in natural resource management.

Key lessons learned highlight the effectiveness of bioengineering methods in steep terrain. Their cost efficiency, low technical requirement, and environmental compatibility make them ideal for scaling up in other vulnerable landscapes. Moving forward, it is recommended that such bioengineering practices be mainstreamed across watershed management programs at provincial and local levels, promoting climate resilience, disaster risk reduction, and sustainable land use throughout Nepal's hilly regions.

General Information

S. N.	Description	Details
1	Thematic Area	Soil Conservation
2	Proposed Title of the Success Story	Bamboo Crib Wall and Broom Grass Plantation for Slope Stabilization in Bagnaskali
3	Location (Province/District/Local Level/Ward/Village/ Settlement)	Lumbini Province, Palpa district, Bagnaskali Rural Municiality 7
4	Date of Implementation	2079/080
5	Name of Implementing Office/Agency	Soil and Watershed Management Office

S. N.	Description	Details
6	Contact Person (Name/Designation)	Shivaram Adhikari/Watershed Management Director
7	Contact Information (Phone/Email)	9857062864
8	Collaborating Partners	Local government
9	Funding Source/Donor	Lumbini Provincial Government

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Bamboo crib wall and broom grass plantation
2	Objective(s) of the Intervention	Slope stabilization and landslide treatment
3	Area Conserved/Protected/ Rehabilitated)	0.5 ha
4	Duration of the Project	2 months
5	Budget Allocated/Utilized	201583
6	Major Stakeholders Involved	Local government, local communities
7	Number of People/HHs Benefited	10
8	Key Activities Conducted	Bamboo crib wall and broom grass plantation

Photos:

Before:

After:

15. Bioengineering Techniques to Control Landslide in Rolpa

In the rugged hills of Runtabang, Ward No. 4 of Rolpa Municipality, Lumbini Province, a chronic landslide had long threatened the lives, infrastructure, and livelihoods of local residents. Triggered by human-induced slope disturbances during road construction, the site exhibited visible tension cracks, scarps, and debris accumulation. The instability posed a severe risk to a nearby irrigation canal and motor road, while also contributing to ongoing gully erosion and sediment deposition.

In response, the Soil and Watershed Management Office (SWMO) in Rolpa, with funding from the Ministry of Forests and Environment, Lumbini Province, launched a cost-effective bioengineering intervention. This nature-based approach combined physical structures—such as gabion retaining walls, bamboo crib walls, and wattle fences—with vegetative measures including the planting of Napier grass, broom grass, vetiver, and Nigalo.

A 58-meter-long gabion retaining wall was constructed first, followed by 250 meters of bamboo wattle fencing and 240 meters of crib wall installations. To stabilize the slopes further and enhance ecological recovery, thousands of plant cuttings were embedded, along with jute netting, brush layering, and stone waterways.

The results were transformative. Environmentally, the site stabilized—erosion was curbed, invasive species like *Ageratina adenophora* (catweed) were removed, and biodiversity improved. Socially, local communities expressed relief and satisfaction, as the fear of landslides and casualties dissipated. With the restoration of the blocked irrigation canal, farmers resumed regular cultivation of rice and wheat, thus regaining their agricultural productivity. Moreover, the planted Napier grass not only anchored the soil but also provided nutritious fodder for livestock, linking environmental conservation to economic benefit via dairy income.

The intervention generated approximately 1,300 man-days of employment and reinforced the importance of community-led, low-cost watershed management. Built with local materials and traditional knowledge, the structures are low maintenance and gain strength over time as the vegetation matures. This approach has since inspired policy-level support, with the Lumbini Province government allocating additional funding for similar interventions across other districts such as Pyuthan.

This success story illustrates that bioengineering is not only environmentally sustainable and economically viable but also scalable. It offers a replicable model for landslide-prone regions throughout Nepal, combining resilience, restoration, and rural empowerment.

General Information

S. N.	Description	Details
1	Thematic Area	Watershed Management
2	Proposed Title of the Success Story	Implementation of Bioengineering Techniques to control Landslide
3	Location (Province/District/Local Level/Ward/Village/ Settlement)	Lumbini Province, Rolpa District, Rolpa Municipality, Ward No. 4, Runtabang. Geospatial location: 28.296960, 82.646957
4	Date of Implementation	FY 2078/2079 and 2079/2080
5	Name of Implementing Office/ Agency	Soil and Watershed Management Office, Rolpa
6	Contact Person (Name/Designation)	Robert Mahara, Senior Soil Conservation Officer
7	Contact Information (Phone/Email)	9856034770, mahara.robert@gmail.com

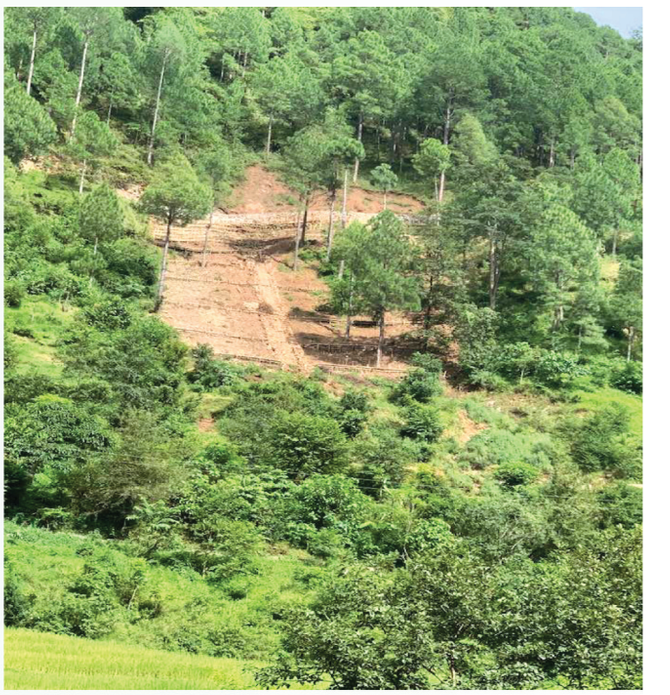
S. N.	Description	Details
9	Funding Source/Donor	Government of Province, Ministry of Forest and Environment, Lumbini Province, Nepal
10	Name of user group/committee	Shree Laharikhola Samrakshan Upabhokta Samiti, Rolpa-2, Rolpa

Project/Intervention Details

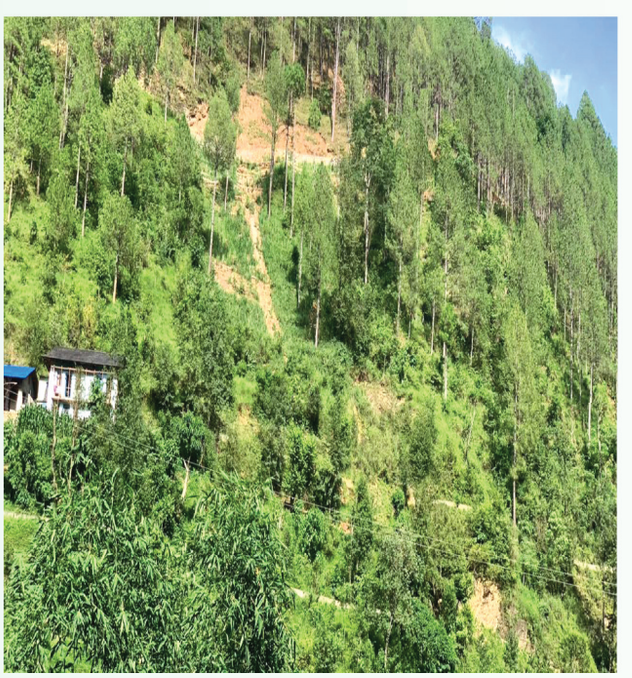
S.N.	Description	Detail
1	Type of Intervention	The intervention type is Bioengineering low-cost method where the physical structures (Gabion Retaining Wall, Bamboo Crib Wall, Bamboo Wattle Fence, Jute Netting, Waterways, Brush layering) are constructed with vegetation (Plantation: Nigalo, Broom grass, Napier grass, Vetiver).
2	Objective(s) of the Intervention	The main objectives of the intervention were Landslide treatment, Erosion control, Irrigation canal and road protection and Income generation/Livelihood support
3	Area Conserved/Protected/ Rehabilitated)	1.5 ha
4	Duration of the Project	2078/11-2079/5
5	Budget Allocated/Utilized	NRs. 1500000
6	Major Stakeholders Involved	Soil and Watershed Management Office, Local User group.
7	Number of People/HHs Benefited	Direct Beneficiaries: 15 households Indirect beneficiaries: More than 20000 people (passengers-motor road, foot walkers, local people)
8	Key Activities Conducted	▪ Gabion retaining wall construction ▪ Bamboo crib wall construction ▪ Bamboo wattle fence ▪ Jute netting ▪ Waterways construction ▪ Palisade ▪ Plantation (Nigalo, Amriso, Napier, Vetiver)
9	Major Challenges Faced	Office: Faced the challenges in cost estimation because of the unavailability of the low-cost bioengineering norms related to the crib wall and wattle fence. Field: Faced the challenges in direct supervision of fieldwork frequently by technical persons/experts from the office. Office has insufficient number of technicians.

Pictures:
Whole Landslide Area

Landslide treatment with bioengineering techniques (After) – 2079/6



Landslide treatment with bioengineering techniques (After) – 2082/3



Gabion Retaining wall construction & eroded landslide area covered with invasive species Catweed *(Ageratina adenophora)* (Before)

Gabion Retaining wall + Bamboo Crib wall, wattle fence etc. construction (During)

Upper parts of the landslide

Landslide (2078/11) - Before

Gabion Retaining wall (2079/2)-During

Retaining wall + Bamboo wattle fence (2079/4)
- During Work

Retaining wall + Bamboo wattle fence (2079/6)
- After Work

Retaining wall + Bamboo wattle fence (2082/3/1) - After Work

Body part of the landslide

During (2079)

After (2082)

During (2079)

After (2082)

During (2079)

After (2082)

During (2079)

After (2082)

During (2079)

After (2082)

16. Water Security through Community-Led Water Source Protection and Supply in Remote Bajura

In the remote village of Padi, located in Himali Municipality Ward No. 6, Bajura district of Sudurpashchim Province, access to safe and reliable drinking water had long been a major challenge. With no piped water system, villagers—especially women and children—were compelled to walk long distances to fetch water from natural sources using gallons, often compromising their time, health, and overall well-being. The lack of a water supply also posed sanitation risks and limited opportunities for community development.

To address this pressing issue, the Soil and Watershed Management Office (SWMO), Doti, implemented a comprehensive water source protection and supply intervention during Fiscal Year 2081/82. Despite the village's remoteness—requiring nearly three days of travel from Doti and involving high transportation costs for construction materials—the intervention was successfully completed through local participation and determination. The project, funded by the Government of Nepal, was implemented in collaboration with the local water user group "Tikhijur Dekhi Chamladi Samma Khanepani Upabhokta Samiti."

The intervention involved the construction of an intake structure, reservoir tank (RVT), pipelines, and taps across the village, complemented by water source protection activities such as gully control. These integrated measures now serve approximately 120 residents of 30 households, providing them with clean and accessible drinking water directly in their village. This has dramatically reduced the physical burden of water collection and improved overall sanitation, hygiene, and public health. The community now experiences enhanced quality of life and expressed notable satisfaction with the change.

All construction activities were carried out by local laborers, providing short-term employment and reinforcing community ownership. The project's sustainability is rooted in the villagers' strong sense of responsibility—since clean water is a daily necessity, they have committed to maintaining the infrastructure themselves. Despite the absence of formal institutional partnerships, the initiative has shown that community-driven, needs-based interventions in even the most isolated regions can achieve impactful and lasting results.

Key lessons from this project highlight the effectiveness of demand-driven planning, especially in under-served regions. This success story from Padi underscores the need to prioritize water source protection and supply systems in similar remote settlements across Nepal, where drinking water remains a fundamental yet unmet necessity. Going forward, it is crucial to replicate such integrated approaches in comparable rural and mountainous areas, ensuring equitable access to safe drinking water as a basic human right.

General Information

S. N.	Description	Details
1	Thematic Area	Water source protection and water supply
2	Proposed Title of the Success Story	Construction of Intake, RVT, Taps in padi village.
3	Location (Province/District/Local Level/Ward/ Village/ Settlement)	Himali Municipality ward no.6, Bajura, Sudurpashchim Province.
4	Date of Implementation	2081/082
5	Name of Implementing Office/Agency	SWMO Doti, Silgadhi
6	Contact Person (Name/Designation)	Amar Bahadur Rawal
7	Contact Information (Phone/Email)	9860367107
8	Collaborating Partners	no any
9	Funding Source/Donor	GON.
10	Name of user group/committee	Tikhijur Dekhi Chamladi samma khanepani user group

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Construction of Intake, RVT, pipeline and Taps with protection of water source by gully control with local people's participation. different works integrally facilitate water supply to whole village.
2	Objective(s) of the Intervention	Water source protection to insure water quality and quantity for the villagers water security.
3	Area Conserved/Protected/ Rehabilitated)	Approximately 3 ha area village facilited
4	Duration of the Project	2081/082
5	Budget Allocated/Utilized	1000000
6	Major Stakeholders Involved	Soil and watershed management office doti
7	Number of People/HHs Benefited	Aprox. 120 people of 30Hs
8	Key Activities Conducted	Water souce protection, Intake, pipeline, RVT and Taps
9	Major Challenges Faced	Its nearly 3 days to reach padi village from doti. Construction materials are very costly dur to transportation.

Photos:




Construction of Intake, RVT, pipeline and Taps with protection of water source by gully control with local people's participation.

17. Enhancing Agricultural Productivity through Irrigation Pond Construction in Jayaprithvi Municipality, Bajhang

In Jayaprithvi Municipality Ward No. 7 of Bajhang District, upland agricultural productivity had long remained constrained due to the absence of reliable irrigation. Despite having cultivable land, farmers were limited to seasonal, low-yield crops and faced persistent water scarcity, leading to poor returns and increasing trends of land abandonment and outmigration, particularly toward the Terai. In response to this challenge, the Soil and Watershed Management Office, Dadeldhura, in collaboration with local communities, implemented a small-scale irrigation intervention during fiscal year 2080/81. The core activity involved the construction of the *Maantola Pairet Sichai Pokhari*, a strategically located irrigation pond designed to supply water to previously barren upland plots.

Maantola Pairet Sichai Pokhari, Jayaprithvi Na.Pa 7 Bajhang

Following the completion of the pond, approximately six hectares of land were brought under year-round irrigation, enabling the introduction and expansion of off-season vegetable cultivation, fruit farming, and commercial crops. This transition not only reversed land abandonment but also encouraged a shift toward more intensive and market-oriented agriculture. Farmers began adopting modern techniques such as tunnel farming, with some, like Pramila Devi Mahar, generating up to NPR 5 lakh in annual income from vegetable production alone. These changes fostered renewed interest in farming among local households, demonstrating that even modest water infrastructure can yield transformative outcomes in remote upland areas.

The intervention brought multiple benefits. Environmentally, it enabled the productive use of previously fallow land, reducing land degradation. Socially, it revitalized farming culture and reduced the pressure to migrate by enhancing local livelihood options. Economically, the initiative improved household income levels, supported small-scale enterprise development, and stimulated reinvestment in agriculture through farmer-led innovations. Although employment data was not formally tracked, increased on-farm activities and income reinvestment into tunnel structures suggest notable improvements in local labor demand and livelihoods.

This case highlights how access to water remains a decisive factor in revitalizing hill agriculture. The success of the Bajhang irrigation pond underscores the replicability of such small-scale, community-driven infrastructure projects in other dry upland regions of Nepal. It also emphasizes the importance of pairing infrastructure development with technical guidance and market access to maximize long-term impacts.

General Information

S. N.	Description	Details
1	Title of the Success Story	Enhancing Agricultural Productivity through Irrigation Pond Construction in Bajhang
2	Location (Province/District/Local Level/ Geospatial location)	Sudurpaschim Province, Bajhang District, Jayaprithvi Municipality – Ward No. 7
3	Date/Time Period of Implementation	Fiscal Year 2080/81
4	Name of Implementing Office/Agency	Soil and Watershed Management Office, Dadeldhura
5	Contact Person (Name/Designation)	Sandip Ghimire, Ranger
6	Contact Information (Phone/Email)	Not mentioned
7	Collaborating Partners	Local farmers and communities
8	Funding Source/Donor	Government of Nepal
9	Name of User Group/Committee	Not specified (informal farmer group in Ward 7)

Project/Intervention Details

S. N.	Description	Detail
1	Type of Intervention/Activity	Construction of irrigation pond (Maantola Pairet Sichai Pokhari)
2	Objective(s) of the Intervention	• Improve irrigation access • Enhance productivity of barren uplands • Enable cultivation of vegetables, fruits, and cash crops • Reduce outmigration by increasing agricultural income
3	Area Conserved/Protected/Rehabilitated	Approx. 6 hectares of irrigated farmland
4	Duration of the Project	FY 2080/81 (specific start/end dates not mentioned)
5	Budget Allocated/Utilized	Not specified
6	Major Stakeholders Involved	Soil and Watershed Management Office, local farmers
7	Number of People/HHs Benefited	Around 10 households
8	Key Activities Conducted	• Construction of Maantola Pairet irrigation pond • Promotion of off-season and cash crop cultivation • Farmer awareness and training on modern agricultural practices
9	Major Challenges Faced	• Prior land abandonment due to water scarcity • Low agricultural income leading to migration

Photos:

Maantola Pairet Sichai Pokhari, Jayaprithvi Na.Pa 7 Bajhang

Production of Leading Farmer

SUCCESS STORIES FROM BASIN MANAGEMENT CENTERS OF DEPARTMENT OF FORESTS AND SOIL CONSERVATION (DOFSC)

1. Construction of Pond in Jor Pokhari Community Forest - A Model for Wetland Management in Triyuga, Udaypur

In the heart of Koshi Province in Triyuga Municipality Ward No. 3 of Udaypur District, a once-degraded and dry landscape has been transformed into a vibrant wetland and eco-tourism site through an integrated watershed management approach. With the support of the Government of Nepal and coordination by BMC Koshi, Gaighat, the Jor Pokhari Community Forest User Group successfully undertook the construction of a catchment pond, green embankments, and check dams, alongside the establishment of a shade house within the forest area.

Prior to intervention, the area appeared bare, dry, and ecologically degraded. Today, it has been revived into a green forest and wetland zone, now frequented seasonally by a variety of migratory birds. The catchment pond harvests and retains rainwater, helping to recharge groundwater and raise the water table downstream. The check dam, constructed in the western gully, effectively controls soil erosion and filters debris, contributing to slope stability. Additionally, the area now supports fish farming and offers a recreational space for visitors, including a shade house that facilitates picnics and gatherings.

Jor Pokhari at Triyuga Municipality ward no. 3, Udaypur, Koshi Province.

The ecological transformation has yielded significant socio-economic benefits. The intervention not only enhanced biodiversity and local ecology but also promoted livelihood opportunities through fish farming and eco-tourism. Seasonal bird watching has become a unique attraction, offering both educational and recreational experiences. Although only around 10 individuals were directly employed during the construction phases, the long-term economic uplift of approximately 125 households—benefiting around 500 people—has been notable. The proximity of the site to Gaighat market (just 2 km away) ensures its accessibility and boosts its potential for sustainable community-led tourism.

Institutionally, the Jor Pokhari Community Forest has developed and implemented an operational plan and policies to ensure long-term conservation and responsible resource utilization. The success of this project demonstrates how even modest investments in nature-based solutions can rejuvenate degraded lands and contribute to biodiversity protection, ecotourism, and community well-being. Replication of such models across the Chure region and similar ecological zones is not only desirable but essential for broader environmental resilience and sustainable development.

General Information

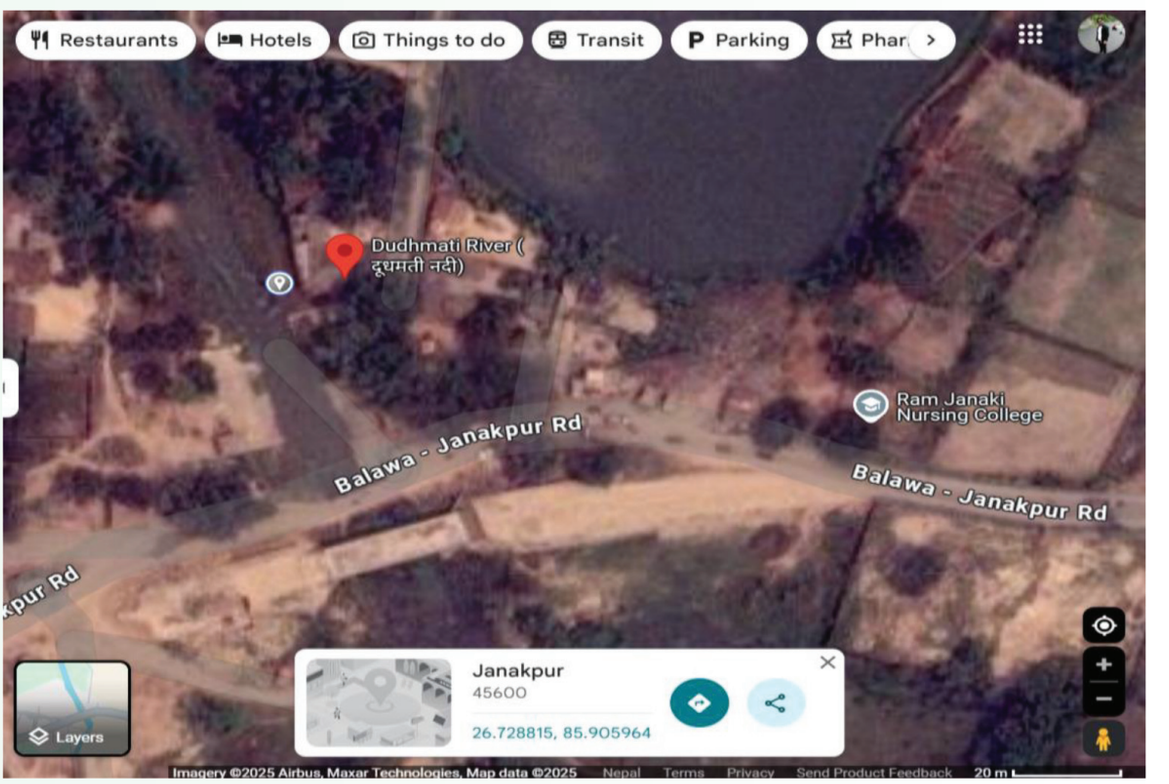
S. N.	Description	Details
1	Thematic Area	Wetland Management
2	Proposed Title of the Success Story	Construction of pond in Jor Pokhari Community Forest .
3	Location (Province/District/ Local Level/Ward/Village/ Settlement)	Triyuga Municipality ward no.3, Udaypur, Koshi Province.
4	Date of Implementation	2076/077 and 2081/082
5	Name of Implementing Office/Agency	BMC Koshi, Gaighat
6	Contact Person (Name/ Designation)	Ganga Bahadur Khatri
7	Contact Information (Phone/Email)	9866687176
8	Funding Source/Donor	GoN.
9	Name of user group/ committee	Jor pokhari community forest user group

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Construction of catchment pond with green embankment of different Bio-engineering species, Construction of Check dam in the catchment Gully from west side. Construction of shade house near the pond in the forest area. These all-different works integrally converted the area as a picnic spot and eco-touristic area.
2	Objective(s) of the Intervention	Rain water harvesting to ensure recharge, reduction in erosion and landslide, recreation opportunities, etc.
3	Area Conserved/Protected/ Rehabilitated)	Approximately 3 ha.
4	Duration of the Project	2076/077-2081/082
5	Budget Allocated/Utilized	3500000/
6	Major Stakeholders Involved	Division Forest Office Udaypur, Ex.District soil conservation office Udaypur, Present BMC Koshi Udaypur, Jor Pokhari Community Forest,Triyuga municipality and responsive ward.
7	Number of People/HHs Benefited	Aprox.500 people of 125 Hs
8	Key Activities Conducted	Water catches, retain and recharge, fish farming, picnic and biodiversity conservation.
9	Major Challenges Faced	No road facilities, lack of awareness, no proper users Contribution etc.

2. Wetland Revival through Water Harvesting and Riverbank Protection in Dudhmati, Janakpur

In an ambitious effort to rejuvenate a naturally dried wetland area, a multi-stakeholder initiative in Dudhmati, Janakpurdham Sub-Metropolitan City Ward No. 22, Dhanusha district, has successfully constructed a water harvesting dam with complementary riverbank protection and embankment structures. The intervention transformed a degraded site into a functional wetland, with a newly prepared lake now serving both cultural and agricultural needs. Rooted in the local Hindu religious tradition, the lake provides a designated bathing space, while simultaneously contributing to irrigation and agricultural productivity for the surrounding communities.



The project—implemented by BMC Koshi in collaboration with the Dudhmati Nadi Sarokar Samaj and other local partners—conserved approximately 5 hectares of land and directly benefited nearly 300 households. The dam and embankment system, enhanced by stepping features and green infrastructure around a temple area, not only support flood regulation and water storage but also promote social cohesion and wetland ecosystem restoration. Sustainability has been ensured through community-based management, with local NGOs and temple committees taking charge of maintenance. The project exemplifies how integrated wetland management, when aligned with cultural practices and community ownership, can deliver resilient, multifunctional landscapes that are replicable across similar regions of Nepal.

General Information

S. N.	Description	Details
1	Thematic Area	Weland management
2	Proposed Title of the Success Story	Construction of water harvesting dam and river bank protection
3	Location (Province/District/Local Level/ Ward/Village/ Settlement)	Janakpurdham sub-metropolitan city ward no.22 Dhanusa, madesh Province.
4	Date of Implementation	2079/2080 to 2081/2082
5	Name of Implementing Office/Agency	BMC Koshi & DCRL
6	Contact Person (Name/Designation)	Sudip Mandal
7	Contact Information (Phone/Email)	9854010999
8	Collaborating Partners	Bmc Koshi ,Rastapati chure programme, Local NGOS
9	Funding Source/Donor	GoN
10	Name of user group/committee	*Shree Dudhmati Nadi Sarokar Samaj*

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Construction of dam, embankment by stepping, plantation around temple, shade house
2	Objective(s) of the Intervention	Catch runoff water & prepare lake for bathing based on Hindu religion system. People can use water in agriculture production.
3	Area Conserved/Protected/ Rehabilitated)	Aproximatly 5 ha.
4	Duration of the Project	2081/2082
5	Budget Allocated/Utilized	BMC cost Rs 10,00000,00
6	Major Stakeholders Involved	GoN & NGO
7	Number of People/HHs Benefited	300 HH
8	Key Activities Conducted	Constructruction of dam by BMC & Stepping with recreaton sport by other agencies
9	Major Challenges Faced	Lack of awareness, no proper users Contribution etc. Limited resource & unlimited wants of people.

Photos:

3. Phewa Watershed Conservation–A Model of Integrated Watershed Management in Nepal

Phewa Lake, the second-largest lake in Nepal and a Ramsar-designated site, is not only an iconic landscape of Pokhara Valley but also a vital resource for tourism, biodiversity, and local livelihoods. However, the Phewa watershed has faced escalating threats due to unsustainable land use, weak governance, and climate-induced hazards. The shrinking lake area—from 10 km^2 in 1956 to just 4.4 km^2 in 1998—illustrates the severity of sedimentation, erosion, and encroachment pressures.

In response, the Government of Nepal declared the Phewa Watershed (123 km^2) a protected watershed in 2022. Since fiscal year 2075/76, the Basin Management Center (BMC), Gandaki, has taken the lead in implementing integrated conservation measures with multi-stakeholder support. These include landslide treatments, gully stabilization, stream bank protection, trail improvements, and eco-tourism promotion, with substantial contributions from local communities.

From FY 075/76 to 080/81, major accomplishments include the construction of gabion and bioengineering structures, pond development, foot trail enhancements, and the promotion of sustainable tourism infrastructure. Over 2,600 households have directly benefited, with more than 10,000 person-days of employment generated. Activities like stream bank protection (worth NPR 9.37 million) and landslide treatment (NPR 5.6 million) have enhanced disaster resilience and safeguarded livelihoods.

A notable innovation was the aerial seeding of *Alnus nepalensis* (Nepali-Uttish) via drone at the Ratopahiro landslide site, a remote and hazardous area where traditional interventions were not feasible. In parallel, local Jalari communities have been mobilized to run monthly Phewa Lake cleanup programs, backed financially and logistically by BMC Gandaki—an exemplary case of community-based stewardship.

Despite limited funding and increased vulnerability from road construction and climate change, the interventions showcase how integrated, participatory watershed management can achieve tangible ecological and socioeconomic outcomes. This model is highly replicable across other degraded lake systems in Nepal.

1. General Information

S.N.	Description	Details
1	Title of the Success Story	Phewa Watershed Conservation – A Model of Integrated Watershed Management in Nepal
2	Location	Gandaki Province / Kaski District / Pokhara Valley / Phewa Watershed (123 km^2)
3	Date/Time Period of Implementation	FY 2075/76 to FY 2080/81
4	Implementing Office	Basin Management Center (BMC), Gandaki
7	Collaborating Partners	Local Municipalities, Jalari Community, DCRL Project (in aerial Seedings), Governments
8	Funding Source	Government of Nepal, Community Contributions, DCRL
9	Name of User Group/ Committee	Jalari Fisher Community, Local Conservation Groups/ Committee

2. Benefit/Impact Assessment

S.N.	Description	Details
1	Situation Before Intervention	High erosion, shrinking lake size, sedimentation, unmanaged trails, weak governance, and increasing landslide risk
2	Situation After Intervention	Stabilized slopes and streambanks, improved foot trails, increased greenery, regular lake cleanups, and aerial restoration of remote degraded areas
3	Key Benefits Achieved	- Protected infrastructure and livelihoods - Boosted eco-tourism potential - Improved community engagement and employment - Revived degraded land with drone-based aerial seeding - Increased environmental awareness
4	Employment Generated	Approx. 10,000 person-days across all activities
5	Innovations/Unique Features	- Drone-based aerial seeding - Community-led monthly lake cleanups - Cost-sharing model and eco-tourism integration
6	Sustainability	Maintained through local ownership, regular cleanup drives, government policy backing, and nature-based solutions
7	Challenges Faced	Climate change impacts, road-induced landslides, limited budget for large-scale intervention, inaccessibility in some steep sites

Photos:

Activities Conducted in Fewa Lake Watershed

Phewa Lake Watershed

Phewa Lake Cleanup Program, Pokhara 6, Kaski

Ratomate Landslide, Annapurna 3, Kaski

Drone Seeding, Annapurna 3, Kaski

Landslide Treatment, Annapurna 4, Bhadaure, Kaski

Stream Bank Protection in Bamdi Tora Khola Watershed, Pokhara 23, Kaski

Stream Bank Protection in Pokhara 23, Bamdi, Kaski

Stream Bank Protection in Pokhara 23 Bamdi, Kaski

Stream Bank Protection in Pokhara 23, Bamdi, Kaski

Tora Khola Stream Bank Protection, Pokhara 23, Bamdi, Kaski

4. From Erosion to Abundance: Green Solutions for Rice and Resilience

In the remote hills of Salyan district within Nepal's Karnali Province, the Sallekhola area had long suffered the consequences of unchecked riverbank erosion. The relentless cutting of the riverbanks and associated land degradation not only stripped away fertile agricultural land but also left nearby settlements vulnerable, threatening livelihoods and food security for the 27 households residing in the area—many of whom belonged to marginalized Dalit and Janajati communities.

Recognizing the urgent need for intervention, the Basin Management Center (BMC), Karnali, Jajarkot, in partnership with the Sallekhola Tarkari Utpadan Krisak Samuha, initiated a river training program in FY 2079/80. With limited but strategic investment—NPR 10.76 lakh, including local cost-sharing—the project focused on implementing gabion walls, bioengineering interventions, and native vegetation plantations to stabilize the riverbanks and reclaim degraded land.

The impacts were both immediate and transformative. Riverbank erosion, once a chronic threat, was significantly reduced through the construction of sturdy gabion walls, reinforced by rows of vegetation that anchored the soil and mitigated further degradation. Where fertile lands had once been lost to erosion, stability was restored. This allowed local farmers to resume rice cultivation and other agricultural practices, leading to increased crop yields and food availability.

The resurgence in agricultural productivity had cascading effects: household incomes improved, economic uncertainty declined, and food security was strengthened. By regaining control over their land, farmers began to rebuild not only their farms but their dignity and confidence. What was once a landscape of risk and erosion had been reshaped into a patchwork of resilient agricultural plots.

Importantly, the intervention also elevated community participation. Marginalized households were mobilized not just for labor but also in the planning and decision-making processes. The result was more than physical change—it was social transformation. Empowered through awareness-raising and practical involvement, local people gained knowledge about sustainable watershed management and bioengineering practices, paving the way for long-term stewardship and environmental resilience.

The success of this initiative lies in its low-cost, high-impact approach, which harmonized ecological, structural, and social strategies. The use of native plant species ensured ecological compatibility, while the combination of gabion structures and vegetation exemplified an effective blend of engineering and green infrastructure. A total of 447 man-days of employment was generated during the short project period (Magh to Chaitra 2080), offering critical livelihood support in a region often burdened by underemployment.

Despite challenges such as limited funding, low initial public contribution due to poverty, and manpower constraints, the project demonstrated how community-based, nature-friendly interventions can build resilience where conventional methods fall short. The inclusive model, grounded in local ownership and knowledge, ensured that benefits extended beyond land restoration to social empowerment.

As a result, this modest yet strategic intervention in Salyan stands today as a model for replicable, sustainable watershed management in Nepal's mid-hill regions. Its success underlines the value of bioengineering techniques, participatory governance, and the use of native species in building climate-resilient rural communities. With deeper local government collaboration and continued capacity building, such models can be scaled across the Karnali Basin and beyond—ensuring that rivers no longer take land and livelihoods, but help communities flourish.

General Information

S. N.	Description	Details
1	Thematic Area	River Training Work
2	Proposed Title of the Success Story	From Erosion to Abundance: Green Solutions for Rice and Resilience.
3	Location (Province/District/Local Level/ Ward/Village/ Settlement)	Karnali province, Tribeni rural municipality ,4 Salyan
4	Date of Implementation	F/Y: 2079/80
5	Name of Implementing Office/Agency	Basin Management Office, Karnali ,Jajarkot
6	Contact Person (Name/Designation)	Chairperson :Resham Rawat
7	Contact Information (Phone/Email)	9847910076
8	Collaborating Partners	Government partnership with people)
9	Funding Source/Donor	Government funding
10	Name of user group/committee	*Sallekhola Tarkari Utpadan Krisak Samuha*

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Gabion wall for riverbank protection, plantation, soil erosion control and increase in agricultural products.
2	Objective(s) of the Intervention	To reduce river bank erosion and promote agriculture products.
3	Area Conserved/ Protected/ Rehabilitated)	5 ha. area (approximately)
4	Duration of the Project	(2080 Magh – 2080 Chaitra)
5	Budget Allocated/ Utilized	*Total estimated budget: NPR 11.22 lakh (Office: NPR 10 lakh; User: NPR 1.22 lakh). Utilized cost: NPR 10.76 lakh (Office: NPR 9.54 lakh; User: NPR 1.22 lakh).*
6	Major Stakeholders Involved	Ward Office and User group.
7	Number of People/HHs Benefited	27 households (Dalit: 2, Janajati: 2, Others: 23)
8	Key Activities Conducted	▪ Construction of gabion walls along the riverbank to control erosion and prevent flooding. ▪ Implementation of bioengineering technique by plantation of native vegetation and trees to restore greenery and improve soil stability. ▪ Mobilization of local user groups and communities for participation and labour contribution for plantation. ▪ Awareness-raising programs to locals on sustainable watershed management.
9	Major Challenges Faced	▪ Limited fund availability ▪ Low public contribution due to poverty. ▪ Limited resource and manpower.

Photos:

Before:

After:

5. Disaster Risk Reduction and Natural Hazard Management through Gully Treatment in Sigas-9, Baitadi

In Sigas Rural Municipality-9 of Baitadi District, Sudurpaschim Province, a critical intervention was carried out during fiscal year 2081/82 to address escalating land degradation and natural hazard risks caused by severe gully erosion. The targeted site in Mayapur, located at an elevation of 1,364 meters, had been facing intense runoff, loss of fertile topsoil, expanding gullies, and declining land productivity, posing serious threats to nearby homes, footpaths, and agricultural livelihoods. Responding to this urgent situation, the Basin Management Centre, Mahakali, based in Patan, Baitadi, implemented an integrated gully treatment program in collaboration with the local user group, Mayapur Khola Kinara Samrachan Upabhokta Samiti.

The intervention covered approximately 30 hectares of degraded land and was designed to stabilize the gully system, control runoff, reduce erosion, and ultimately enhance ecological and community resilience. Key activities included site assessment and planning, construction of runoff diversion channels and stone masonry check dams, and the application of vegetative measures such as planting grasses, shrubs, and live check dams. Gully head control and ongoing monitoring were also prioritized. The project mobilized both government resources and significant community contributions, with the user group providing around 12 percent of the total cost in the form of labor and local support. In total, the effort generated roughly 400 man-days of employment during the construction phase.

The results of the intervention were visible and encouraging. The gully was successfully stabilized, surface runoff was managed, and vegetative cover began to regenerate, contributing to improved soil fertility, water retention, and biodiversity. This not only helped reclaim previously unproductive land for cultivation but also protected local infrastructure from further damage. The combination of structural and vegetative techniques proved to be an effective and innovative solution in the given context. The initiative also demonstrated strong community ownership, as the beneficiaries actively engaged in maintenance efforts and expressed commitment to sustaining the improvements. Lessons from this intervention underscore the importance of participatory planning, use of local materials, and continuous maintenance in ensuring the long-term success of such watershed-based risk reduction projects. With high potential for replication across similar contexts, the project serves as a practical example of nature-based solutions contributing to climate-resilient land and water management in Nepal's fragile hill ecosystems.

General Information

S. N.	Description	Details
1	Title of the Success Story	Disaster Risk Reduction and Natural Hazards Management through Gully Treatment
2	Location	Sudurpaschim Province, Baitadi District, Sigas Rural Municipality-9, Mayapur Geo-coordinates: 80.46733°E, 29.30225°N, Elevation: 1364 m
3	Date/Time Period of Implementation	FY 2081/82 Start Date: 2081/09/19 End Date: 2081/11/15
4	Name of Implementing Office/ Agency	Basin Management Centre, Mahakali, Patan, Baitadi
5	Contact Person (Name/ Designation)	Khim Raj Oli, Watershed Management Officer
6	Contact Information (Phone/Email)	Phone: 9858780004 Email: basinoffice.mahakali@gmail.com

7	Collaborating Partners	Local beneficiaries
8	Funding Source/Donor	Government of Nepal
9	Name of User Group/Committee	*Mayapur Khola Kinara Samrachan Upabhokta Samiti,* Sigas-9, Mayapur, Baitadi Chairperson: Gautam Bahadur Chand (9843039311) Secretary: Double Bahadur Chand (9865837265)

Project/Intervention Details

S. N.	Description	Detail
1	Type of Intervention/Activity	Gully Control
2	Objective(s) of the Intervention	• To prevent further degradation of the gully and its watershed • To control runoff and erosion • To improve water quality and flow regimen
3	Area Conserved/Protected/ Rehabilitated	30 hectares
4	Duration of the Project	Start: 2081/09/19 End: 2081/11/15
5	Budget Allocated/Utilized	NPR 961,161.12 (Office) + NPR 131,067.43 (User Committee – 12%)
6	Major Stakeholders Involved	Government agencies, local communities
7	Number of People/HHs Benefited	Dalit: 5 HHs Ethnic groups: 0 Others: 30 HHs
8	Key Activities Conducted	8.1 Site assessment and planning 8.2 Runoff management (diversion channels, check dams) 8.3 Structural measures (stone masonry check dams) 8.4 Vegetative measures (grasses, shrubs, live check dams) 8.5 Gully head control 8.6 Maintenance and monitoring
9	Major Challenges Faced	• High runoff and rainfall • Insufficient skilled labor and community involvement • High cost and resource needs

Photos

Photos of Intervention of Gully Control from BMC, Mahakali

6. Development Infrastructure Protection through Irrigation Canal Construction in Dadeldhura

In the remote agricultural landscape of Alital Rural Municipality–4, Seurad, in Dadeldhura district of Sudurpaschim Province, farmers were facing significant challenges due to an unreliable irrigation system. The traditional earthen canal frequently suffered from seepage and damage caused by landslides, especially during the monsoon season, resulting in poor water delivery to the fields. This led to low agricultural productivity, food insecurity, and a high dependency on erratic rainfall, making local livelihoods increasingly vulnerable to climate variability.

To address this long-standing issue, the Basin Management Centre, Mahakali (Patan, Baitadi), implemented a targeted irrigation canal construction project during the fiscal year 2081/82, with funding from the Government of Nepal. The intervention aimed to develop a reliable and well-managed irrigation system that could sustainably supply water to 200 ropani of farmland, benefitting 32 households—of which 10 belonged to Dalit communities. The project was executed in partnership with the Seurad Sinchai Kulo Nirman Upabhokta Samiti and actively involved local communities in planning, labor, and monitoring. Key activities included site surveys, land preparation, excavation, and the construction of durable lining and water control structures.

After the intervention, the newly built canal significantly improved water availability to agricultural fields, enhancing soil moisture, allowing multiple cropping, and boosting crop yields. Environmental benefits were evident in the form of reduced land degradation, minimized erosion, and more efficient water use, which collectively contributed to improved microclimatic conditions. Socially, the intervention strengthened food security, improved household incomes, and reduced the pressure of outmigration by making farming a more viable livelihood. Economically, the project created approximately 400 person-days of employment during construction and opened opportunities for diversified farming and allied activities such as horticulture and livestock rearing.

A notable feature of this initiative was its emphasis on sustainability and community-led management. The user committee developed mechanisms for equitable water distribution, regular maintenance, and conflict resolution. Local contributions—both in-kind and financial—have ensured long-term ownership and upkeep of the infrastructure. The project also aligned with several national and global commitments, including Nepal's National Action Plans (NAPs), Nationally Determined Contributions (NDCs), the Loss and Damage framework, and Sustainable Development Goals (SDGs 2, 6, and 13).

Lessons learned from the intervention highlight the importance of active community involvement, regular maintenance, and climate-resilient designs. The success of this initiative demonstrates a replicable model that can be scaled in other water-scarce hilly regions of Nepal through integrated planning and inter-agency collaboration. Moving forward, efforts should focus on institutionalizing user group capacity-building, embedding maintenance protocols, and aligning such projects with broader climate adaptation strategies to ensure sustained rural development.

General Information

S.N.	Description	Detail
1	Thematic Area	Development Infrastructure Protection (Irrigation Canal Construction and Maintenance)
2	Proposed Title of the Success Story	Development Infrastructure Protection (Irrigation Canal Construction and Maintenance)
3	Location	Sudurpaschim Province, Dadeldhura District, Alital Rural Municipality–4, Seurad (80.32225E, 29.06465N, Elevation: 797m)
4	Date of Implementation	Fiscal Year 2081/82
5	Name of Implementing Office/ Agency	Basin Management Centre, Mahakali, Patan Baitadi
6	Contact Person	Khim Raj Oli, Watershed Management Officer
7	Contact Information	Phone: 9858780004; Email: basinoffice.mahakali@gmail.com
8	Collaborating Partners	Beneficiaries
9	Funding Source/Donor	Government of Nepal
10	Name of User Group/ Committee	Seurad Sinchai Kulo Nirman Upabhokta Samiti, Alital–4, Seurad, Dadeldhura Chairperson: Tulsikumari Kapadel Bohora (9865918914) Secretary: Dal Bahadur Bohora (9864200716)

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Construction of irrigation canal
2	Objective(s) of the Intervention	To enhance crop production and support sustainable land and water management.
3	Area Conserved/Protected/ Rehabilitated	200 ropani
4	Duration of the Project	Start: 2081/09/19; End: 2082/03/15
5	Budget Allocated/Utilized	Office: NPR 961,161.12; User Committee: NPR 131,067.43 (12% contribution)
6	Major Stakeholders Involved	Government agencies and local communities
7	No. of People/HHs Benefited	Dalit: 10 HHs; Others: 22 HHs
8	Key Activities Conducted	• Site survey and design • Land clearing and preparation • Excavation and earthworks • Construction of canal lining and control structures
9	Major Challenges Faced	• Site preparation and alignment design • Managing excavation in landslide-prone areas • Ensuring structural integrity of lining materials and control structures • Labor management and timely execution

Photos:





Irrigation Canal Construction at Dadeldhura

7. Low-Cost Soil Conservation Techniques for Sustainable Slope Management

In the steep and erosion-prone landscapes of Indrasarowar Rural Municipality-1, Kulekhani, Makwanpur, persistent soil erosion and slope instability had long posed a serious threat to local livelihoods and the ecological health of the Kulekhani watershed. Heavy monsoon rains would frequently trigger surface runoff, leading to gully formation, sediment deposition in the reservoir, and a gradual decline in land productivity. To address this issue, the Federal Watershed Management Resource Center (FWMRC), with support from the Government of Nepal and in collaboration with Namaste Krishak Samuha and the local rural municipality, implemented a demonstration-based bioengineering intervention in Jestha 2081 (May–June 2024).

The intervention focused on slope stabilization using low-cost, eco-friendly soil conservation measures such as bamboo crib walls, palisades, and wattling structures—methods highlighted in Nepal's Green Book/White Book (2015). These structures were constructed using locally available materials, integrating traditional knowledge with scientific best practices. Covering a core area of 0.2 hectares, the benefits extended to approximately 0.5 hectares of adjacent terrain. The project not only enhanced slope stability but also improved vegetative cover and soil cohesion, significantly reducing surface runoff and erosion. These physical improvements translated into a visible reduction in sedimentation downstream, contributing to the longevity and efficiency of the Kulekhani reservoir.

Beyond environmental benefits, the project had notable social and economic impacts. It generated short-term employment, creating around 10–20 person-days of work for local laborers, and served as a training site for local user groups, researchers, and students. The demonstration area now functions as a living classroom, where sustainable land management techniques are taught and disseminated. The production of a video documentary, now accessible on the FWMRC website, has further enhanced the project's visibility and potential for replication.

One of the unique strengths of this initiative lies in its replicability and sustainability. Its reliance on low-cost, natural materials and community participation ensures minimal maintenance requirements and long-term viability. The approach aligns with national climate and disaster risk policies (NAP, NDC, SDG 13) and strengthens institutional capacity at both federal and local levels. The guidance of former Soil and Watershed Conservation Department Director General Mr. Kesharman Sthapit ensured the technical robustness of the intervention.

This initiative reinforces the importance of local engagement, knowledge-sharing, and policy alignment in promoting effective and resilient watershed management. The success in Kulekhani sets a strong precedent for integrating bioengineering into future watershed and climate adaptation efforts across Nepal's mid-hill and mountain regions.

General Information

SN	Description	Detail
1	Thematic Area	Soil Conservation
2	Proposed Title of the Success Story	"Low-Cost Soil Conservation Techniques for Sustainable Slope Management" (*Aligned with the activities and techniques published in the Green Book/White Book Version 3, 2015.*)
3	Location (Province/District/ Local Level/Ward/Village/ Settlement)	Bagmati Province, Makwanpur District, Indrasarowar Rural Municipality-1, Kulekhani (FWMRC Office Area) (*Geospatial Location: approximately 27°36'44"N 85°09'20"E.*)
4	Date of Implementation	Jestha, 2081 (Fiscal Year 2080/81)

SN	Description	Detail
5	Name of Implementing Office/Agency	Federal Watershed Management Resource Center (FWMRC), Kulekhani, Makwanpur
6	Contact Person (Name/ Designation)	Nischal Regmi, Soil Conservation Assistant
7	Contact Information (Phone/ Email)	Phone: +977-9849273316 | Email: info@fwmrc.gov.np
8	Collaborating Partners	Namaste Krishak Samuha, Indrasarobar RM-1, Makwanpur (Local User Group) Indrasarobar Rural Municipality (Local Government Support)
9	Funding Source/Donor	Government of Nepal, Ministry of Forests and Environment (Annual Program Budget)

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Bioengineering (bamboo crib walls, palisades, wattling), soil stabilization, and erosion control
2	Objective(s) of the Intervention	To reduce soil erosion and landslide risk, stabilize slopes using low-cost, eco-friendly engineering methods, and build resilience against climate-induced heavy rains. The intervention aims to control soil erosion that contributes to sedimentation in the Kulekhani watershed, thereby reducing siltation and maintaining reservoir efficiency.
3	Area Conserved/Protected/ Rehabilitated)	0.2 hectare area directly treated, with benefits extending to approximately 0.5 hectare area in the vicinity
4	Duration of the Project	Started: Jestha 2081 (May–June 2024) Ended: As per annual program timeline (Fiscal Year 2080/81)
5	Budget Allocated/Utilized	NPR 2,00,000 (for site preparation, materials, and local labor)
6	Major Stakeholders Involved	• Federal Watershed Management Resource Center (FWMRC) • Namaste Krishak Samuha (local user group) • Indrasarobar Rural Municipality-1 • Local communities
7	Number of People/HHs Benefited	Direct Beneficiaries: ~30–50 households Indirect Beneficiaries: A larger area of approximately 0.5 hectare and its adjacent communities, including farmers, researchers, and students
8	Key Activities Conducted	• Installation of bamboo crib walls and palisades for slope stabilization • Construction of wattling structures • Soil and site preparation • Planting of grass and native species for long-term stabilization • Capacity building and on-site training for local user groups
9	Major Challenges Faced	• Heavy rains during the construction period caused delays • Limited availability of skilled local labor for bioengineering installations • Need for ongoing maintenance and monitoring for long-term sustainability

Photos:

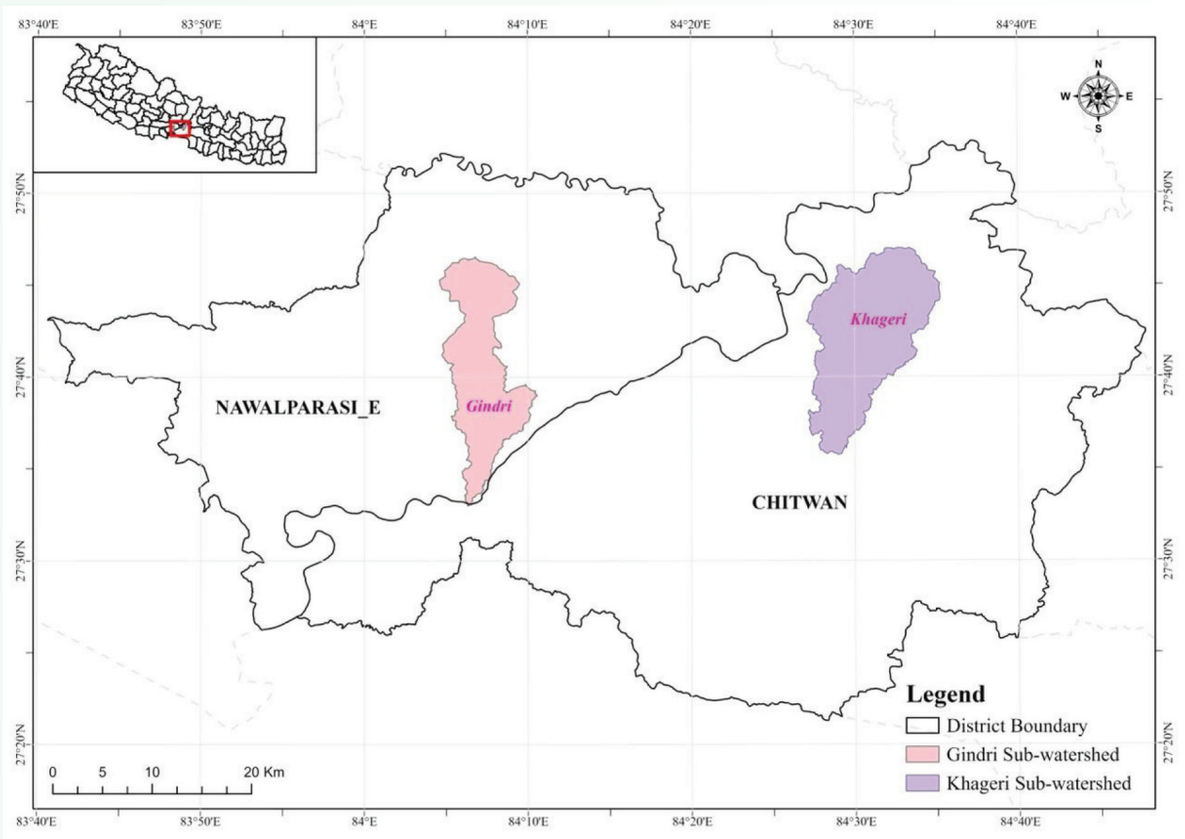
Before

After

SUCCESS STORY FROM INSTITUTION WORKING IN THE FIELD OF SOIL AND WATERSHED CONSERVATION

1. Nature-Based Solutions for Resilient Watershed

The "Nature-Based Solutions for Resilient Watershed" initiative in the Khageri and Gindri watersheds of Chitwan and Nawalpur districts stands as a landmark effort in demonstrating how integrated, eco-friendly interventions can safeguard Nepal's vulnerable ecosystems while uplifting the livelihoods of the local communities. Executed by WWF Nepal, in partnership with the Department of Forests and Soil Conservation and the Department of National Parks and Wildlife Conservation, with financial support of DANIDA and with the support of local municipalities and local implementing partner- SAHAMATI, this project has embraced the true essence of watershed management principles in Nepal. It combined scientific planning with traditional ecological knowledge and participatory implementation approaches, resulting in the rehabilitation and protection of 309 hectares of land across two of the country's critical watersheds.



Location Map of the Project Area

Prior to the intervention, these areas were frequently impacted by severe riverbank erosion, flash floods, and sedimentation, particularly during the monsoon season. Farmlands, homes, and public infrastructure were constantly at risk. Many sites, such as Chaturmukhi, Amalachuli, and Somari, were visibly degraded and unstable, lacking vegetation cover or protective measures. Communities, though deeply dependent on natural resources, lacked awareness and technical capacity to adopt sustainable solutions. The use of hard infrastructure had proven expensive, unsustainable, and ill-suited to the region's dynamic riverine geography. It was in this context that the project introduced a series of carefully tailored, low-cost nature-based interventions designed to work with nature rather than against it.

The intervention involved a series of activities co-designed with local communities and executed through a cash-for-work model that directly supported livelihoods. Over 450 meters of biodykes were constructed using bamboo wattles, reused sandbags, and local vegetation such as Vetiver grass to stabilize riverbanks and mitigate flood damage. Approximately one kilometer of green belts was established along erosion-prone stretches using native plant species to enhance natural resistance to erosion and improve habitat quality. Fourteen recharge ponds and over 3.7 hectares of wetlands were constructed inside forested areas to enhance groundwater recharge, improve soil moisture, and support biodiversity. Critical spring sources—essential lifelines for downstream communities—were not only protected but revived in three locations through water augmentation techniques. These measures improved year-round water availability and ecological stability in the region.

The project began with a series of stakeholders consultation meetings with IPLCs, local governments, local CSOs and the government line agencies to identify key societal challenges and the potential Nature-based Solutions (NbS). The key challenges identified were water insecurity, disaster risks, environmental degradation, and limited socio-economic opportunities. Frequent riverbank cutting and erosion during monsoon seasons threatened settlements and farmlands, worsened by the limited adaptive capacity of the local communities.

To address these challenges, the project implemented nature-based solutions including other supporting interventions, while strengthening local capacity and ownership through a bottom-up, inclusive approach. The impacts were profound. Riverbank erosion and sedimentation during monsoon seasons declined noticeably through the restoration of riverbanks, green belt development and construction and restoration of conservation ponds and recharge ponds. This has enahnced ecosystem services benefitting biodiversity, local people and climate adaptation. The protection and revival of degraded spring sources enhanced the availability of water to 591 households. Similarly, maintenance of traditional community-based irrigation canals improved access to irrigation water for over 59 hectares of agricultural land, reducing farmers' dependence on rain-fed agriculture and improving their agriculture productivity, contributing to enhanced food security. Multiple income generating activities and skill-based training to the local communities diversified livelihood options and increased income of over 200 households. In total, the project directly benefited 4,909 households and generated over 11,000 person-days of employment in nature-based solutions, more than 6,000 person-days of which were performed by women, reflecting a strong emphasis on gender inclusion.

Innovative aspects of the project included blending of the traditional and indigenous people's knowledge with technical designs, using locally available materials like bamboo, sand and gravel, and actively engaging communities at every stage, from planning to implementation and monitoring. The cash-for-work approach not only created jobs but also enhanced community stewardship, ensuring sustainability of the interventions. The adaptive management approach allowed flexibility across complex terrains, while community contributions in labor and materials fostered stewardship and reduced costs

By rooting solutions in indigenous knowledge, using locally available materials, and embedding capacity within community institutions, the project ensured that outcomes would persist beyond the project period. Forest and water user groups, municipal staff, and local CSOs received hands-on training on nature-based solutions and green infrastructure maintenance. Municipal governments have started integrating these approaches into their own annual development plans. The project's alignment with national and international frameworks—such as Nepal's National Biodiversity Strategy and Action Plan, the SDGs (particularly Goals 6, 13, and 15), and the Kunming-Montreal Global Biodiversity Framework, underscored its scalability and relevance.

The key lessons learned included the value of early engagement of IPLCs, CBOs, local governments and other government line agencies, which fostered smooth implementation and enhanced ownership of

the interventions. Participatory co-design and strong engagement during implementation helped the interventions to be technically effective and also socio-culturally appropriate. Inclusion of marginalized groups—women, Indigenous Peoples, and low-income households—resulted in more equitable and resilient outcomes. The cash-for-work model proved to be both a social safety net and a catalyst for ecological restoration. Institutional buy-in from local and provincial government agencies were critical for scalability and long-term impact.

Looking ahead, the model established by this project is highly replicable across Nepal's flood and erosion-prone chure and terai watersheds. Its cost-effectiveness, community engagement, and ecological grounding make it suitable for diverse socio-economic and ecological contexts. To scale such interventions, future programs should institutionalize local CSO participation from the planning phase, strengthen technical capacity of local actors, and integrate indigenous knowledge systems. Dedicated resources for policy advocacy are also essential to mainstream NbS into provincial and national climate adaptation and development strategies.

The project not only restored ecological health of the two vulnerable watersheds but also demonstrated the power of nature to protect people—to build climate resilience, enhance livelihoods, and foster adaptive, inclusive development.

General Information

S. N.	Description	Details
1	Thematic Area	• Soil Conservation • River System Management • Wetland Management • Climate Change Adaptation
2	Proposed Title of the Success Story	Nature-based Solutions for Resilient Watershed
3	Location (Province/ District/Local Level/Ward/ Village/ Settlement)	Khageri watershed, Chitwan & Gindri watershed, Nawalpur
4	Date of Implementation	FY80/81 & FY81/82
5	Name of Implementing Office/Agency	WWF Nepal
6	Contact Person (Name/ Designation)	Rajesh Sada- Head of Freshwater Programs Karun Dewan- Freshwater Program Officer
7	Contact Information (Phone/Email)	9801150859
8	Collaborating Partners	DoFSC, DNPWC, SAHAMATI
9	Funding Source/Donor	Ministry of Foreign Affairs, Denmark (DANIDA)

10	Name of user group/ committee	**Khageri watershed:** • Chaturmukhi Community Forest Users Group (CFUG), Kalika – 1 • Amalachuli CFUG, Kalika – 7 • Udaypur CFUG, Kalika – 7 • Ranikhola CFUG, Icchakamana- 7 • Kalikhola Deurali CFUG, Icchakamana - 7 • Somari CFUG, Ichhakamana – 7 • Tinkanya CFUG, Ichhakamana – 7 • Chandisthan CFUG, Ichhakamana - 7 • Milijuli CFUG, Ratnanagar – 9 **Gindri watershed:** • Shanti CFUG, Kawasoti – 13 • Gundrehidhaka CFUG, Kawasoti – 15 • Akaladevi CFUG, Kawasoti – 5 • Joltepokhari CFUG, Hupsekot - 4 • Sankadev Hasaura CFUG, Hupsekot – 4 • Daitegaira Leasehold Forest Users Group, Hupsekot 5

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	• Construction/Restoration of conservation ponds and wetlands • Green belt development • Bio-dykes construction along the riverbanks • Irrigation canal improvement, protection and repairing • Protection and revival of critical spring sources • Livelihood support
2	Objective(s) of the Intervention	• Improve watershed management practices • Capacitate and support to implement Nature-based Solutions • Riverbank stabilization and protection • Conservation of traditional spring sources • Water storage and groundwater recharge
3	Area Conserved/ Protected/ Rehabilitated	309 ha
4	Duration of the Project	Jan 2023 – Dec 2026
5	Budget Allocated/ Utilized	The Triple Benefit Program (TBP) Nepal – NPR 1,82,00,000 Community Leverage – NPR 25,00,000
6	Major Stakeholders Involved	• Icchakamana and Hupsekot Rural Municipality • Kalika, Kawasoti and Ratnanagar Municipality • Lamichaur, Amaltari and Mrigakunja Buffer Zone Users Committee • Division Forest Office, Chitwan and Nawalpur • Chitwan National Park • President Chure Terai Madhesh Conservation Development Board, PIU, Chitwan • Barandabhar Forest Conservation Area Council • TAL Program
7	Number of People/ HHs Benefited	Direct beneficiaries – 4909 HHs

8	Key Activities Conducted	First, the project focused on building the capacity of local CSOs, Forest User Groups, Water User Groups, and government authorities to implement Nature-based Solutions (NbS) for resilient watershed management. Next, the key activities followed was on-ground implementation of bioengineering solutions. The bio-dyke involves closely spaced bamboo stakes interwoven with horizontal bamboo strips to form a wattle fence, reinforced with sand and gravel bags (in reused sacks) placed behind or between the fences to absorb wave action—in some sites supplemented with brush layering—and is further stabilized by planting fast-growing, deep-rooted perennial grasses or shrubs like *Vetiver*, *Jatropha* and others to bind the soil and prevent erosion). Forest watchers were mobilized for site monitoring, and hoarding boards were installed to raise awareness. In addition, the project supported the construction and restoration of conservation ponds and wetlands inside forest areas to enhance soil moisture, support biodiversity and recharge groundwater. Irrigation canals were improved, protected, and repaired to enhance access to irrigation water. Critical spring sources protected and revived to improve water yield and sustain downstream ecosystems. The key activities include - • Bioengineering- 700 m • Green belt establishment- 1 km • Irrigation canal improvement- 1.4 km • Construction of new wetlands- 3.76 ha • Construction of 14 recharge ponds • Protecting and reviving 8 spring sources • Livelihood diversification and improvement of 200 hhs
9	Major Challenges Faced	• There is a limited coherent understanding of Nature-based Solutions (NbS) specially at local level. • Traditional skills like bamboo wattle construction are fading, leading to delays during bio-dyke construction. • Skilled human resources with knowledge of field-based engineering design for bio-dykes/ bioengineering was difficult to mobilize locally. • Many eroded riverbanks were heavily silted and unstable, complicating site preparation and construction efforts.

Additional Information:

The Triple Benefit Program (TBP) is being implemented in Lower Narayani Basin, particularly in Khageri and Gindri watershed with the support of WWF Denmark and under the aegis of Ministry for Foreign Affairs, Denmark. The project followed IUCN global standard on NbS from the very beginning of the designing phase of the project. The priority of the project is to implement nature-based solutions including supporting interventions to address the societal challenges with triple benefits namely, human well-being, biodiversity conservation and climate benefits.

Testimonials/Quotes:

Bio-dykes Bring Hope to Khageri and Gindri Communities

*When the idea of using **bio-dykes** for riverbank stabilization was first introduced in the Khageri and Gindri watersheds, many community members were doubtful. Years of erosion and failed interventions had hardened beliefs that **only large and concrete structures** could protect them.*

*Min Bahadur Gurung, former chairperson of the **Amalachuli Community Forest User Group (CFUG)**, of Gairibari, Kalika -7 recalls the doubt. "We'd thought only cemented or concrete structures could stop the riverbank erosion. But those are expensive and out of reach for communities like us. When NbS-TBP Nepal introduced the idea of using bamboo and sandbags, we weren't convinced but we had little to lose, so we tried." The bio-dyke was constructed using **locally available materials and local community input**, based on **designs adapted to the terrain**. Then came the 2024 monsoon, the heaviest in memory. To everyone's relief, the bio-dyke held. The land remained safe. "That moment changed our thinking," said Min Bahadur. "Now we know nature can protect us, too—if we work with it properly."*

*Some believed it a bit earlier. Hari Bahadur Gurung, Chairperson of **Chaturmukhi CFUG** and a resident of Kalika-1, had witnessed riverbank erosion eat away up to three meters of land each year. "Every monsoon, I would stay awake at night, fearing the riverbank might break through and reach our settlement," he said. "But this approach made sense, it was logical, low-cost, and use the power of nature." "This year, I finally slept peacefully. The bio-dyke worked."*

Changing Mindsets and Building Resilience

*Beyond individual stories, the project has started to **shift long-standing institutional beliefs**. Prakash Nepal, Head of the Chitwan Program Implementation Unit of the **President Chure-Tarai Madhesh Conservation Development Board (PCTMCDB)**, explains: "Nature-based Solutions (NbS) challenge the old belief that only large, costly infrastructure can protect us from floods and erosion. This project shows that community-led, eco-friendly approaches can be effective as well."*

*Nabin Shrestha, **Watershed Conservation Officer of the same office**, highlights the deeper impact: "What we've achieved here is not just an erosion control—it's a transformation on how local communities perceive conservation. By involving them directly, and relying on natural systems, we've built not just embankments but also knowledge, ownership, and resilience."*

Photos:

Biodyke at Amaltari, Gindri (before - left, after - right)


Biodyke at Shanti, Kawasoti -13




Wetland construction at Milijuli, Ratnanagar


Recharge pond construction Joltepokhari, Hupsekot – 4


Protection of spring source at Kawasoti


Revival of spring source at Ranikhola, Ichhakamana -7


Improved irrigation canal at Ranikhola, Ichhakamana – 7


2. Agroforestry as a Livelihood and Land Rehabilitation Strategy in Gadawa-7, Dang

In the riverine stretch of Lakshinpur, located in Gadawa Rural Municipality Ward No. 7 of Dang district, a significant portion of raised riverbank land had long remained barren, underutilized, and vulnerable to encroachment. This unproductive landscape not only posed a land degradation risk but also represented a missed opportunity for improving local livelihoods through sustainable land use.

To address this, the President Chure-Terai Madhesh Conservation Development Board (PCTMCDB), Program Implementation Unit, Butwal, initiated an agroforestry promotion program in Fiscal Year 2080/81 with funding from the Government of Nepal. The intervention aimed to rehabilitate degraded land while simultaneously enhancing the livelihood options of local communities. With active involvement from the Krisi Ban User Committee and coordination with Gadhawa Rural Municipality and Ward Office, the program successfully converted approximately 5 hectares of river-raised wasteland into a productive agroforestry zone.

Key activities included repairing 825 meters of fencing, planting 1,325 seedlings of diverse species such as lemon, mango, jackfruit, litchi, amala, neem, and bamboo, and distributing 1,050 fruit seedlings to local households. Additionally, direct sowing of 10 kg each of Mendula and Khair seeds was carried out to support soil stability and biodiversity enhancement. Despite some delays due to the monsoon planting season, the intervention was completed effectively, generating 520 person-days of local employment in the process.

The impact of this initiative was transformative. The once-barren land is now green, providing fruit, fodder, and a protective cover that resists erosion and deters encroachment. Local farmers have begun to benefit from agroforestry outputs, thus strengthening their livelihoods and food security. The presence of fodder species has supported livestock farming, and the plantation itself has begun contributing to ecological restoration in the fragile Chure region.

A key lesson learned during implementation was the necessity of larger planting pits in the Chure area to accommodate nutrient-rich soil and manure mixes. The initiative also demonstrated that when technical expertise is combined with strong community participation and inter-agency coordination, degraded landscapes can be successfully restored and transformed into productive assets.

This project is not only sustainable but highly replicable, offering a practical model for other areas facing similar land-use and livelihood challenges. Going forward, such agroforestry-based interventions should be scaled up across the Chure-Terai region, ensuring both land rehabilitation and rural prosperity in an integrated manner.

General Information for the success story

S. N.	Description	Details
1	Thematic Area	Agro forestry Promotion
2	Proposed Title of the Success Story	Agro Forestry Promotion Program in Gadawa-7, Lakshinpur, Dang
3	Location (Province/District/ Local Level/Ward/Village/ Settlement)	Gadhawa Rural Municipality ward no. 7, Lakshinpur, Dang, Lumbini Province.
4	Date of Implementation	2080/081
5	Name of Implementing Office/ Agency	President Chure-Terai Madhesh Conservation Development Board ,Program Implementation unit Butwal, Rupandehi

S. N.	Description	Details
6	Contact Person (Name/ Designation)	Bhagat Narayan chaudhary
7	Contact Information (Phone/ Email)	9844930484
8	Funding Source/Donor	Government of Nepal
9	Name of user group/committee	*Krisi ban User committee*

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Agroforestry Promotion Program, Gadawa-7, Dang
2	Objective(s) of the Intervention	Promoting agroforestry programs in ususued river raised land along riverside. To promote the livelihood of local peoples.
3	Area Conserved/Protected/ Rehabilitated)	5 ha
4	Duration of the Project	2080/081
5	Budget Allocated/Utilized	Rs. 7,74,771/53
6	Major Stakeholders Involved	President Chure-Terai Madhesh Conservation Development Board, Program Implementation unit Butwal Rupandehi, Gadhawa Rural Municipality Ward no.7 office, Gadawa R.M
7	Number of People/HHs Benefited	Approx. 68 Households
8	Key Activities Conducted	Repairment of fence (Length=825 meters) Plantation of total 1325 numbers of seedlings of various species (Lemon, mango, Jackfruit, Litchi, Amala, Neem, Badahar, Taki, Moringa, Simal, Rajbriksha and Bamboo) . Distribution of total number of 1050 seedlings of Mango, Lemon and Litchi (350 each) to local people. Direct sowing of 10 kg of Mendula and 10 kg of Khair seeds in the plantation site.
9	Major Challenges Faced	Since, the plantation is to be done in the month of ashar, it was difficult to complete the program on time.

Photos:

Agro Forestry Promotion Program in Gadawa-7, Lakshinpur, Dang

3. Bamboo/Crib Wall for Landslide and Soil Erosion Control – A Sustainable Best Practice

Bamboo and timber crib walls—locally known as crib walls—have emerged as effective and environmentally friendly solutions for controlling landslides and soil erosion in steep and fragile landscapes. These nature-based structures use locally sourced bamboo or timber, making them cost-effective and contextually appropriate. They offer a promising approach to slope stabilization, particularly in remote and economically challenged areas where modern engineering solutions may not be viable. By relying on natural materials and community labor, crib walls integrate traditional knowledge with bioengineering techniques, making them an inclusive and sustainable intervention.

Crib walls help stabilize slopes by holding soil in place, controlling surface runoff, and preventing further erosion. Over time, these structures become stronger as vegetation grows, roots penetrate the soil, and the slope ecosystem is restored. This living barrier not only reduces landslide risk but also enhances local biodiversity and ecosystem services. However, the successful application of this method requires detailed site analysis, including assessments of slope angle, soil texture, subsurface water flow, rainfall patterns, and grazing pressure. Tailoring interventions to landslide depth is essential—shallow slips under 100 mm may be stabilized with grasses, 100–250 mm with vegetative terraces, 250–1,000 mm with crib walls, and anything beyond 1,000 mm may require engineered drainage and stone masonry walls, possibly combined with crib wall support in upper slope zones.

The construction process involves several critical steps. It begins with detailed site assessments and drainage design to ensure both surface and groundwater flows are managed properly. A sturdy foundation bench is prepared at the toe of the slope, where live bamboo cuttings are planted to sprout roots. Vertical bamboo stakes are driven about 80 cm into the ground at approximately 50 cm intervals, and horizontal bamboo logs—about two meters long—are woven through the stakes and fastened with rope or wire. Diagonal posts are then inserted for additional reinforcement. The internal space is filled with soil, fast-rooting plant cuttings, and grasses to anchor the structure and restore vegetation. As the slope is built upward, additional layers of crib wall are added. Finally, bioengineering techniques like wattling and brush layering are applied to the upper slope, followed by irrigation and maintenance.

Materials used include bamboo poles (ranging from 5 to 15 cm in diameter), live cuttings of native species such as kimbu, amriso, and simali, grasses like Napier and kans, natural fibers for binding, stones for base reinforcement, and basic tools. Optional geotextile or jute mats may be used to retain moisture and stabilize the soil in vulnerable spots.

The advantages of this method are numerous. Crib walls are low-cost, require no heavy machinery, and promote local employment and skill development. They become stronger over time as vegetation grows and root systems mature. Being biodegradable and non-polluting, they offer an environmentally sound alternative to concrete or steel structures. The design also supports biodiversity by creating new habitat niches for plants, insects, and small animals. However, there are limitations: the structure is vulnerable to heavy rainfall in its early phase before root systems are fully established. It may not be suitable for large-scale or high-intensity landslides, where civil engineering measures might be appropriate. Moreover, unsustainable extraction of bamboo or timber can damage the environment, so resource harvesting must be community-managed and ecologically sound.

To ensure long-term effectiveness, certain principles should be followed: select sites with moderate slope risk and reliable drainage potential, harvest materials sustainably, control grazing post-installation, and conduct regular monitoring—especially after heavy rains. When applied properly, crib walls provide not just slope stabilization but also enhance resilience, build local capacity, and conserve natural resources.

In conclusion, bamboo and timber crib walls offer a community-based, low-tech, and scalable solution for controlling landslides and soil erosion in Nepal's mountainous regions. Rooted in traditional ecological knowledge and reinforced by modern bioengineering techniques, these structures exemplify how nature-based solutions can align with local realities to address pressing environmental challenges sustainably.

General Information

S.N.	Description	Details
1	Thematic Area	Soil Conservation / Landslide & Erosion Control
2	Proposed Title	Bamboo Timber Crib Walls for Slope Stabilization – A Green Best Practice
3	Location (Province/District/ Local Level/Ward/Village)	Sudur Paschim & Karnali Provinces; Surkhet, Dailekh,Jumla & Mugu Districts; Aathbish, Thatikandh, Dullu, Tila, Chhayanath Rara & Barahtal
4	Date of Implementation	Fiscal Year 2020 to 2024
5	Name of Implementing Office/ Agency	Rupantaran
6	Contact Person (Name/ Designation)	Shankar Paudel(Executive Director/Rupantaran) Pramod Subedi(Specialist/Rupantaran)
7	Contact Information (Phone/ Email)	[rupantaran2012@gmail.com/ +977-1-4154949/9857010453
8	Collaborating Partners	Local community groups, technical support from Rupantaran
9	Funding Source/Donor	➢ USAID / Mercy Corps/ Bhakari ➢ UNDP-GEF-SGP-BILDSP6/KP Project

Project/Intervention Details Table

S.N.	Description	Detail
1	Type of Intervention	Bioengineering and soil stabilization through bamboo/ timber crib wall construction
2	Objective(s) of the Intervention	- To control landslides and soil erosion on steep and vulnerable slopes - To promote nature-based, low-cost, and eco-friendly slope stabilization
3	Area Conserved/Protected/ Rehabilitated	Approximately 1.5–2 hectares (site-specific areas in Surkhet, Jumla, Mugu, Dailekh, and Achham districts)
4	Duration of the Project	July 2020 – December 2024
5	Budget Allocated/Utilized	Approx. NPR 5,000,000 Sources: - USAID/Mercy Corps/Bhakahri Project - UNDP/GEF/SGP/BILDSP Project - Local community in-kind contribution
6	Major Stakeholders Involved	- USAID/Mercy Corps Bhakari Project - UNDP/GEF/SGP/BILDSP-KP Project - Local Governments (Rural Municipalities) - Local Communities

S.N.	Description	Detail
7	Number of People/HHs Benefited	Direct: ~300 individuals (60 households) Indirect: ~1,000 people (Including women, elderly, and marginalized groups in target areas)
8	Key Activities Conducted	- Site assessment and slope mapping - Community mobilization and awareness - Crib wall design and construction - Plantation and grassing - Irrigation and maintenance - Capacity building and training
9	Major Challenges Faced	- Initial vulnerability of crib wall to intense rainfall - Limited availability of bamboo in high-altitude areas like Jumla5 &Mugu - Need for community awareness and grazing control
10	Replicability & Implications	Highly adaptable in slopy landscapes, landslide-prone terrain across Churia and Himalaya regions, especially where bamboo/round timber is available.
11	Recommendation/Way Forward	Monitor walls after monsoon, train communities on repair, integrate sustainable bamboo harvest, scale up in other vulnerable hillside communities.

Photos:

Aathbiskot Municipality, Dailekh (Under USAID/Mercy Corps/Bhakari Project)



Thatikadh Rural Municipality, Dailekh (Under USAID/Mercy Corps/Bhakari Project)



Jumla (Under USAID/Mercy Corps/Bhakari Project)



Chhayanath Rara Rural Municipality, Mugu (Under USAID/Mercy Corps/Bhakari Project)



Dullu Municipality, Dailekh (Under UNDP/GEF/SGP/BIDLSP-KP Project)

Panchadewal Binayak Municipality, Achham (Under USAID/Mercy Corps/Bhakari Project)

Barahatal Rural Municipality, Surkhet (Under USAID/Mercy Corps/Bhakari Project)

4. Restoring Life to the Springs: The Story of Patalko Dhara's Revival

Springs and ponds are vital components of the Himalayan water system, sustaining both ecosystems and human livelihoods. In Nepal's mid-hills alone, over 10 million people depend on springs as their primary water source, especially in terrains where piped or river water is inaccessible. These perennial water sources are central to drinking water access, irrigation, livestock care, and groundwater recharge. However, the region has been experiencing a severe decline in spring discharge over the past three decades, posing a direct threat to sustainable development and community well-being.

In Kavrepalanchok district alone, more than 25% of springs have already dried, while nearly two-thirds are reporting reduced discharge. The crisis is further compounded by unsustainable land use, deforestation, and increasing climate variability. Amid this alarming backdrop, the Patalko Dhara spring in Namobuddha Municipality had nearly dried up, affecting the daily life of 35 households, including 13 Dalit families. These communities were forced to wait hours to collect water, skip meals, or purchase expensive water for their needs. This critical water insecurity triggered the launch of a community-led, science-informed intervention in 2019 under ICIMOD's Himalayan Resilience Enabling Action Programme (HI-REAP), with the goal of reviving the spring and ensuring long-term water security.

Intervention and Implementation

The intervention at Patalko Dhara followed a six-step springshed management protocol that combined community participation with hydrogeological science. The core objective was to implement a Gender Equality and Social Inclusion (GESI)-responsive approach to ensure equitable water access and long-term ecological resilience. The main activities included hedgerow plantation, recharge pond construction, fencing of the spring source, trenching, and establishment of water storage and distribution facilities.

Community members received extensive training and capacity-building support, including Training-of-Trainers (ToT) and exposure visits. Women and marginalized groups were prioritized in governance roles, leading Water User Groups and participating in monitoring, planning, and implementation. Through collaboration with CEAPRED, Namobuddha Municipality, SCWMO-Kavre, and Nepal Water Conservation Foundation (NWCF), the project established a model pilot that has since been replicated in several municipalities.

Impact and Benefits

Before the intervention, Patalko Dhara had almost completely dried up. As one resident, Fulmaya Tamang, recalled, the spring had reduced to the point where "an ant walking could be seen from a distance." The impact was especially harsh on Dalit women, who spent 3 to 5 hours daily fetching water, often affecting children's schooling and household meals.

After the intervention, the spring's flow was revived and has remained reliable year-round. The municipality supported the community with a 5,000-litre collection tank, tap stands, and a hilltop storage system. Water collection time dropped drastically, saving approximately 30 person-hours per day. The revived spring now supplies over 3,000 litres even in lean seasons and more during peak periods, meeting the needs of all 35 households.

Environmentally, the project restored groundwater recharge and reversed ecological decline. Socially, it freed women from domestic water-fetching burdens, improving their participation in decision-making and livelihoods. Economically, it eliminated household water purchase costs (Rs 3,000–15,000 annually) and enabled income generation through vegetable farming, livestock rearing, and small enterprises. Women now earn Rs 600–1,200 daily through these activities, demonstrating how water security can directly translate into economic empowerment.

Sustainability and Resilience

Over the three years post-implementation, the recharge structures remained fully operational under normal conditions. The true test came on 28 September 2024, when a flash flood severely damaged the primary recharge area and swept away key structures. Despite the destruction, the community's resilience was evident: trained community resource persons quickly repaired minor damages using local resources, while the municipality

mobilized support for larger restoration work. This rapid recovery was possible due to the decentralized governance model and pre-existing institutional collaboration.

The spring's natural flow was not disrupted, highlighting the effectiveness of eco-based design in maintaining core function even during climate shocks. Additionally, institutional frameworks, such as the GESI-inclusive water committees and local policy support, proved vital in facilitating disaster recovery and ensuring long-term sustainability.

Policy Strengthening and Scaling

The intervention significantly strengthened local governance. Namobuddha Municipality institutionalized GESI-responsive springshed management in its annual planning and budget allocations since 2023. The project's success also inspired other municipalities in Kavre and Dhankuta districts to adopt the same model. Namobuddha is now considered a learning hub for sustainable springshed management in Nepal, supporting the achievement of Sustainable Development Goal 6 (Clean Water and Sanitation).

At the national level, policy advocacy efforts—such as "Paani Satsang" dialogues, grassroots policy briefs, and consultations with parliamentary committees—helped integrate springshed management into local and national development frameworks.

Lessons Learned and Way Forward

The Patalko Dhara project revealed key lessons: (1) Integrating hydrogeology with local knowledge ensures more practical and effective interventions. (2) GESI inclusion in water governance strengthens sustainability. (3) Single-spring efforts should evolve into aquifer-level strategies for broader impact. (4) Disaster risk reduction must be incorporated into all water infrastructure planning.

To scale up these impacts, recommendations include: expanding from individual spring sites to aquifer-based management, institutionalizing women-led water governance, promoting inter-municipality learning networks, and mainstreaming SSM into national adaptation strategies. Encouraging citizen science, merging traditional practices with scientific methods, and embedding SSM into policy will be essential for building long-term climate resilience in the Himalayan region.

General Information

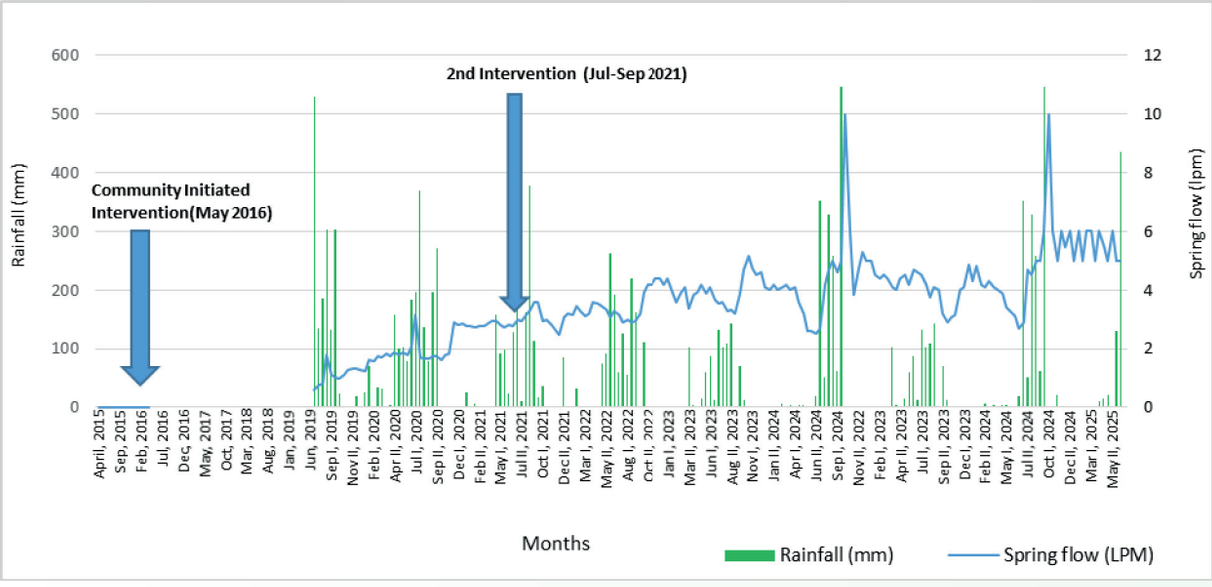
S. N.	Description	Details
1	Thematic Area	Watershed /Springshed Management
2	Proposed Title	Restoring Life to the Springs: The Story of *Patalko Dhara*'s Revival
3	Location	27^0 34' 17" N; 85^0 37' 28" E Bagmati Province/ Kavrepalanchowk District/ Namobuddha Municipality/ Ward no 2/ Kuikel Thumka
4	Date of Implementation	2019
5	Name of Implementing Office/Agency	ICIMOD
6	Contact Person (Name/ Designation)	Madhav Dhakal, Watershed and Springshed Specialist/ Anju Pandit, Springshed Management Analyst
7	Contact Information (Phone/Email)	9841517663/ mdhakal@icimod.org 9841016413/ apandit@icimod.org
8	Collaborating Partners	CEAPRED, Namobuddha municipality and SCWMO – Kavrepalanchowk, and Nepal Water Conservation Foundation (NWCF).
9	Funding Source/Donor	UKID through Himalayan Resilience Enabling Action Programme (HI-REAP) SIDA and NORAD through the Resilient Mountain Solutions Programme (How does RMS work? - ICIMOD)
10	Name of user group/ committee	*Patalko Dhara* Spring User Committee

Project/Intervention Details

S.N.	Description	Detail
1	Type of Intervention	Vegetative Measures (Hedgerow plantation), Recharge Pond, Trenches, Spring source protection by fencing, Establishment of water collection and distribution facilities.
2	Objective(s) of the Intervention	Gender Equality and Social Inclusion (GESI) Responsive Springshed management for ensuring water security
3	Area Conserved/ Protected)	1 hectare (up and downstream)
4	Duration of the Project	May 2019 – to the present
5	Budget Allocated/ Utilized	Budget Allocated- 4,00,000 (ICIMOD projects) Municipality allocation - 1,45,372
6	Major Stakeholders Involved	Springshed management committees; WUG. Local community, local representatives (ward chair & members) Namobuddha Municipality
7	Number of People/ HHs Benefited	Total beneficiaries 157 (M-85: F-72), Total HHs benefited 35; Direct Beneficiaries (21), Indirect Beneficiaries (14); Ethnic Composition: Dalit HHs (37%), BCTS (42%), Tamang (20%)
8	Key Activities Conducted	**1. Capacity building and awareness** • Conducted training events, ToT (Training of Trainers) for community resource persons on springshed management. • Organized information-sharing sessions at village/municipal levels. • Facilitated local and district-level interaction events. • Conducted number of exchange visits for local community, local representatives, and federal decision-makers to influence policy. **2. Implementation and piloting** Applied the 6-step protocol for springshed management in pilot projects. Strengthened Gender Equality and Social Inclusion (GESI) in governance by promoting women in leadership roles (monitoring, training, and project implementation). Collaborated with partner organizations for effective execution. **3. Policy advocacy and institutional support** Produced policy briefs based on grassroots policy dialogues to support implementation. Organized policy dialogue events for parliamentary committees (Agriculture, Cooperatives, and Water Resources) in Nepal. Hosted "Paani Satsang" programmes for local government officials to discuss best practices and hydrogeology for springshed management. Supported Namobuddha Municipality in institutionalizing springshed management (SSM) in local plans and policies for three consecutive years. **4. Scaling and expansion** Upscaling and out scaling successful approaches to other areas, including 7 municipalities in Kavre and two municipalities in Dhankuta. Providing technical assistance to these municipalities to strengthen their capacity for springshed management (SSM). Encouraged local ownership by empowering municipalities to lead SSM initiatives, ensuring a sustainable and long-term approach.

S.N.	Description	Detail
9	Major Challenges Faced	The project initially faced difficulties in building community trust and aligning activities with local schedules. These were managed by training local Community Resource Persons and adapting materials and timelines. A major post-implementation challenge was a flash flood on 28 September 2024, which damaged recharge structures, agricultural land, and water systems. Though spring flow remained, concerns grew about long-term water availability.

Supporting Material:



Hydrograph of Patalko Dhara discharge (2016–present) showing the impact of spring revival interventions. Initial community-led efforts in 2016 (small recharge ponds) were followed by a systematic six-step protocol implemented in 2019, resulting in a sustainable increase in discharge.

Photos:

Patalko Dhara Before Intervention

Patalko Dhara Before Intervention

CONTRIBUTORS OF SUCCESS STORIES AND BEST PRACTICES

S.N.	Success Story Title	Contributors Name / Organization
Success Stories From Projects		
1.	Bamboo crib walls: A nature based solution for stabilization brings hope and safety to a landslide prone village	NCCSP Project
2.	Transforming water access from scarcity to adequacy in Fungra	NCCSP Project
3.	Reviving Water Sources in Nepal's Hills: Ecosystem-based Adaptation in Salyan District	EbA II Project
4.	Integrated Land-Use Management for Community Resilience	EbA II Project
5.	Sustainable Water Source Protection in Bhadaure: A Community's Journey to Self-Reliance	DCRL Project + *SWMO Okhaldhunga*
6.	Sustainable Watershed Management Practices: Introduction Contour Trenches	DCRL Project + *SWMO Okhaldhunga*
7.	Empowering Women Farmers Through Climate-Resilient Irrigation and Vegetable Farming in Kalayam	BCRWME Project
8.	Transforming Rural Livelihoods through Climate-Smart Agriculture and Water Access in Rittha, Dadeldhura	BCRWME Project
9.	Icon of Resilience – How Bardanda Turned the Tide with BRCRN's Riverbank Intervention	BRCRN PPMU Bardibas
10.	Rooted in Respect-Empowering Communities through BRCRN's Field Schools in Nepal's Chure Region	BRCRN Project
11.	Reviving Hope through Conservation Ponds in Nepal's Churia Region	BRCRN Project
12.	Climate-Friendly Agricultural Practices in Kalikot: A Case Study of Janalikot Village	ASHA Project
Success Stories From Soil and Watershed Management Offices of Provinces		
1.	Addressing Water Stress in a Community of Chuliban, Dhankuta	SWMO, Dhankuta
2.	Building Resilience through Climate Smart Village Initiatives in Ghumaune, Dhankuta	SWMO, Dhankuta
3.	Reviving Lapsekunda – A Model for Eco-Cultural Watershed Management in Dhading	SWMO, Dhading
4.	Safe Disposal of Drain Water through Gabion Cascade Structure	SWMO, Sindhupalchok
5.	River Training and Bank Stabilization through Gabion Embankment Construction in Panchkhal Municipality, Sindhupalchok	SWMO, Sindhupalchok
6.	Integrated Soil Conservation and Watershed Management in Karmetar Settlement, Nuwakot	SWMO, Nuwakot
7.	Climate-Resilient Riverbank Protection in Sole Pul and Salakhu River, Kispang-5, Nuwakot	SWMO, Nuwakot
8.	Soil Conservation and Micro-watershed Management Program of Shiva pokhari Area of Bhimeswor -9 Kharidhunga Dolakha	SWMO, Dolakha

9.	Baithok Landslide Control and Settlement Protection in Sarukhola, Parbat	SWMO, Parbat
10.	Kuhire Kateni Sundarkhola Landslide Control and Streambank Stabilization in Kusma, Parbat	SWMO, Parbat
11.	Bioengineering Stream Bank Protection Transforms Lives in Jugepani, Nawalparasi East	SWMO, Tanahu
12.	Natural Hazard Prevention through Gully Plugging and Bamboo Plantation	SWMO, Dang
13.	Restoring Slopes and Empowering Schools – A Bioengineering Achievement in Bagnaskali, Palpa	SWMO, Palpa
14.	Sustainable Slope Stabilization through Bamboo Crib Wall and Broom Grass Plantation in Bagnaskali, Palpa	SWMO, Palpa
15.	Implementing Bioengineering Techniques to Control Landslide in Rolpa	SWMO, Rolpa
16.	Water Security through Community-Led Water Source Protection and Supply in Remote Bajura	SWMO, Doti
17.	Enhancing Agricultural Productivity through Irrigation Pond Construction in Jayaprithvi Municipality, Bajhang	SWMO, Dadeldhura
Success Stories From Basin Management Centers (BMCs) and Federal Watershed Management Resource Center (FWMRC), Kulekhani		
1.	Construction of Pond in Jor Pokhari Community Forest - A Model for Wetland Management in Triyuga, Udaypur	BMC, Koshi
2.	Wetland Revival through Water Harvesting and Riverbank Protection in Dudhmati, Janakpur	BMC, Koshi
3.	Phewa Watershed Conservation – A Model of Integrated Watershed Management in Nepal	BMC, Gandaki
4.	From Erosion to Abundance: Green Solutions for Rice and Resilience	BMC, Karnali
5.	Disaster Risk Reduction and Natural Hazard Management through Gully Treatment in Sigas-9, Baitadi	BMC, Mahakali
6.	Development Infrastructure Protection through Irrigation Canal Construction in Dadeldhura	BMC, Mahakali
7.	Low-Cost Soil Conservation Techniques for Sustainable Slope Management	FWMRC, Khlekhani
Success Stories From Institutions working in the field of Soil and Watershed Conservation		
1.	Nature-Based Solutions for Resilient Watershed Management in Khageri and Gindri Watersheds	WWF Nepal
2.	Agroforestry as a Livelihood and Land Rehabilitation Strategy in Gadawa-7, Dang	PCTMCDB, PIU, Butwal
3.	Bamboo/Crib Wall for Landslide and Soil Erosion Control – A Sustainable Best Practice	Rupantaran
4	Restoring Life to the Springs: The Story of Patalko Dhara's Revival	ICIMOD

ANNEXES

Annex 1: Criteria for Considering Best Practices or Success Stories of Watershed Management and Climate Change Adaptation

S. No.	Criteria	Description
1.	**Achieved Goals and Objectives**	- The intervention has successfully fulfilled its stated objectives, like controlling soil erosion, restoring degraded ecosystems, or enhancing the livelihoods of locals. - The goals align with broader conservation priorities and policy frameworks.
2.	**Positive Environmental Impact**	- Significant improvements in ecological health, such as increased vegetation cover, restored habitats, enhanced water retention, or improved biodiversity. - Long-term environmental benefits that contribute to the resilience of the watershed.
3.	**Community Involvement and Ownership**	- Active participation of local communities in the planning, implementation, and monitoring of the intervention. - Capacity-building efforts to empower community members to take ownership of the project. - Inclusion of marginalized groups, ensuring equitable access to benefits and decision-making.
4.	**Social and Economic Benefits**	- Tangible improvements in the lives of local people, such as increased agricultural productivity, improved access to clean water, or enhanced income-generating opportunities. - Reduction in poverty levels and enhancement of overall well-being in the community.
5.	**Innovation and Adaptability**	- Use of innovative techniques, tools, or methodologies that address local challenges effectively. - Flexibility of the intervention to adapt to changing environmental or social conditions. - Integration of traditional knowledge with modern scientific approaches as well as nature based solutions.
6.	**Replication and Scalability**	- Shows evidence of potential replication in other regions with similar ecological and socio-economic contexts. - Develops models at small scales that are suitable for expansion to medium or large-scale implementation.
7.	**Policy and Institutional Strengthening**	- Contribution to strengthening local and national governance systems related to watershed management. - Alignment with government policies, frameworks, and international commitments, such as the Sustainable Development Goals (SDGs). - Establishment or reinforcement of institutions to support long-term watershed management.
8.	**Evidence and Documentation**	- Comprehensive records of the intervention, including technical reports, progress documents, photos, and maps. - Before-and-after comparisons to demonstrate measurable progress and achievements. - Testimonies or feedback from stakeholders and beneficiaries.

9.	**Sustainability**	- Environmental Sustainability: Practices ensure long-term ecological balance and resilience to environmental changes. - Social Sustainability: Continued participation and ownership by local communities to maintain and expand the intervention. - Economic Sustainability: Adequate financial planning and resource allocation to sustain activities without external support over time.
10.	**Partnership and Collaboration**	- Effective collaboration among various stakeholders, including government agencies, non-governmental organizations, local communities, academic institutions, and international donors. - Demonstration of coordinated efforts to achieve shared goals.

Annex 2: Thematic Areas

S. No.	Thematic Areas	Description
1.	**Soil Conservation**	Implementing bio-engineering measures such as palisade cuttings, Watling, eyebrow pit terraces to prevent soil erosion and enhance land productivity.
2.	**Watershed Management**	Utilizing micro-watershed treatments to improve water availability and resource sustainability.
3.	**River System Management**	Implementing sustainable river basin management strategies, such as eco-friendly embankments, sediment management, and riparian zone restoration, to maintain ecological integrity and reduce flood risks.
4.	**Wetland Management**	Restoring and conserving wetlands through catchment area restoration, floodplain management, and sustainable water use practices to enhance biodiversity, maintain water quality, and support ecological balance.
5.	**Improved Governance**	Enhancing institutional frameworks, policy implementation, and local governance mechanisms to ensure sustainable watershed and natural resource management.
6.	**Climate Change Adaptation**	Strengthening the resilience of the community by integrating climate-smart agriculture, nature-based solutions, and community-driven adaptation measures to mitigate climate-induced risks and enhance long-term environmental sustainability through watershed management.

Annex 3: Photos from Various Meetings


Stakeholders' Identification Meeting


Stakeholders' Engagement Meeting


Success Stories Sharing Meeting

Government of Nepal
Ministry of Forests and Environment

Department of Forests and Soil Conservation

Babarmahal, Kathmandu