

## **Pre-Feasibility Study**

# **Building Climate Resilience of Forest-Dependent Communities through Enhanced Livelihood Opportunities and Local Capacity in Karnali**

*A study report prepared for the submission of a Full Funding SAP  
Proposal to the Green Climate Fund (GCF)*

National Trust for Nature Conservation

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# Acronyms

<b>AE</b>	Accredited Entity
<b>AFOLU</b>	Agriculture, Forestry, and Other Land Use
<b>APR</b>	Annual Performance Report
<b>ASAP</b>	Adaptation for Smallholder Agriculture Programme
<b>ASHA</b>	Adaptation for Smallholders in Hilly Areas
<b>CB-EWS</b>	Community-Based Early Warning Systems
<b>CCKP</b>	Climate Change Knowledge Portal
<b>CDMC</b>	Community-Based Disaster Management Committee
<b>CFOP</b>	Community Forest Operational Plans
<b>CFUG</b>	Community Forest User Group
<b>CRI</b>	Climate Risk Index
<b>DAE</b>	Direct Access Entity
<b>DFO</b>	Division Forest Office
<b>DHM</b>	Department Of Hydrology and Meteorology
<b>EE</b>	Executing Entity
<b>ENSO</b>	El Niño-Southern Oscillation
<b>FAO</b>	Food And Agriculture Organization
<b>FCDO</b>	Foreign, Commonwealth and Development Office
<b>FCU</b>	Field Coordination Unit
<b>FECOFUN</b>	Federation Of Community Forestry Users of Nepal
<b>FIP</b>	Forest Investment Program
<b>FNCCI</b>	Federation Of Nepalese Chambers of Commerce and Industry
<b>FP</b>	Funding Proposal
<b>FUG</b>	Forest User Group
<b>GCF</b>	Green Climate Fund
<b>GESI</b>	Gender Equality and Social Inclusion
<b>GLOF</b>	Glacial Lake Outburst Floods
<b>GoN</b>	Government Of Nepal
<b>GWCP</b>	Good Wild Collection Practices
<b>HVAP</b>	High Value Agriculture Project
<b>ICIMOD</b>	International Centre For Integrated Mountain Development
<b>IPs</b>	Indigenous Peoples
<b>KAP</b>	Knowledge-Attitude-Practice
<b>LAPA</b>	Local Adaptation Plan for Action
<b>LCFMG</b>	Local Community Forest Management Groups
<b>LLCA</b>	Locally-led Climate Action
<b>LNOB</b>	Leave-No-One-Behind
<b>LTS-LEDS</b>	Long-Term Strategy for Net-Zero Emissions
<b>MAP</b>	Medicinal And Aromatic Plants
<b>MoF</b>	Ministry Of Finance

<b>MoFE</b>	Ministry Of Forests and Environment
<b>MoITFE</b>	Ministry Of Industry, Tourism, Forest, And Environment
<b>MPI</b>	Multidimensional Poverty Index
<b>MSME</b>	Micro, Small, And Medium Enterprise
<b>NAP</b>	National Adaptation Plan
<b>NCCSP</b>	Nepal Climate Change Support Programme
<b>NDA</b>	National Designated Authority
<b>NDC</b>	Nationally Determined Contribution
<b>NEFIN</b>	Nepal Federation of Indigenous Nationalities
<b>NOL</b>	No-Objection Letter
<b>NSO</b>	National Statistics Office
<b>NTFP</b>	Non-Timber Forest Product
<b>NTNC</b>	National Trust for Nature Conservation
<b>O&amp;M</b>	Operation and Maintenance
<b>PFS</b>	Pre-Feasibility Study
<b>PSC</b>	Project Steering Committee
<b>PwD</b>	Persons With Disabilities
<b>QDO</b>	Quasi-Decadal Oscillation
<b>RAIN</b>	Resilience, Adaptation and Inclusion in Nepal
<b>SDG</b>	Sustainable Development Goal
<b>SLM</b>	Sustainable Land Management
<b>SSP</b>	Shared Socioeconomic Pathway
<b>SWMO</b>	Soil and Watershed Management Office
<b>TA</b>	Technical Assistance
<b>TA SLU</b>	Technical Assistance and Strategic Learning Unit
<b>TAG</b>	Technical Advisory Group
<b>TNC</b>	Third National Communication
<b>UNDP</b>	United Nations Development Programme
<b>UNDRR</b>	United Nations Office for Disaster Risk Reduction
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>WFP</b>	World Food Programme



# Executive summary

## Project Context

1. The proposed project, Building Climate Resilience of Forest-Dependent Communities through Enhanced Livelihood Opportunities and Local Capacity in Karnali Province, Nepal, will be implemented in one of Nepal's most climate-vulnerable and socio-economically marginalized regions. The project targets four districts—Jajarkot, Dolpa, Jumla, and Dailekh—comprising 31 municipalities (palikas) that span high-mountain, mid-hill, and transitional landscapes. These districts are characterized by rugged topography, geographic isolation, fragile ecosystems, and limited connectivity to markets and public services. Three of the target districts, namely Dolpa, Jumla, and Jajarkot, rank among Nepal's most climate-vulnerable districts for forest and watershed systems, exhibiting high to very-high vulnerability scores. Dailekh scores moderately in terms of vulnerability but shows low adaptive capacity while playing a strategic role as a logistical and market gateway linking remote mountain areas to provincial and national hubs.
2. Forests form the backbone of livelihoods across the project area. As much as 90% of households depend directly on forest resources for fuelwood, fodder, construction materials, and income derived from non-timber forest products (NTFPs), medicinal and aromatic plants (MAPs), and small-scale agroforestry. These forest-dependent livelihood systems are particularly important for women, Indigenous Peoples, Dalits, and remote mountain communities, for whom alternative income opportunities are limited. However, increasing climate stress, combined with poverty, seasonal migration, and weak market access, has intensified pressure on forest ecosystems, contributing to degradation, declining productivity, and reduced ecosystem services.
3. The drivers of forest degradation in Karnali are closely linked to structural vulnerability rather than deliberate overexploitation. Unsustainable harvesting practices, limited regeneration, grazing pressure, forest fires, and climate-induced pest and disease outbreaks are compounded by weak access to climate-resilient livelihood alternatives and limited technical support for sustainable forest management. While Nepal's long-standing Community Forest User Group (CFUG) system provides a strong institutional foundation, many CFUGs in Karnali face capacity constraints related to climate risk management, inclusive governance, value addition, and financial sustainability.
4. Nepal's transition to a federal governance system has devolved mandates for natural resource management, disaster risk reduction, and local development planning to provincial and municipal governments, creating a conducive enabling environment for locally led climate action (LLCA). In Karnali, this decentralization has opened new entry points for embedding climate adaptation within Local Adaptation Plans for Action (LAPAs), municipal planning and budgeting processes, and community-level institutions. However, gaps remain in technical capacity, climate information, financing mechanisms, and coordination across scales. The project responds to this context by strengthening the interface between community institutions, municipalities, and provincial systems to operationalize LLCA at scale.

## Key Climate Change Trends and Impacts

5. Climate change is already altering the biophysical and socio-economic systems of Karnali Province, with observed trends and projected changes expected to significantly intensify risks to forest-dependent communities over the coming decades. Instrumental records and national assessments indicate a clear warming trend, with temperatures in mountain and mid-hill regions rising faster than the national average. This warming is accompanied by increasing climate variability, including more erratic monsoon behavior, shifts in seasonal onset and cessation, and greater inter-annual uncertainty.
6. Precipitation patterns are becoming increasingly unstable. While total annual rainfall shows mixed trends, there is strong evidence of more intense rainfall events over shorter periods, increasing the likelihood of flash floods, landslides, and soil erosion, particularly in steep, degraded catchments. Conversely, extended dry spells and delayed monsoon onset are contributing to seasonal water scarcity, reduced soil moisture, and heightened drought stress. These dynamics place pressure on both forest ecosystems and rainfed agricultural systems that underpin local food security and livelihoods.

7. Climate projections for mid- and long-term periods suggest that these trends will intensify under all emissions scenarios. Rising temperatures are expected to increase evapotranspiration rates, exacerbate moisture stress in forests, and elevate the risk of forest fires and pest outbreaks. Changes in precipitation extremes are projected to amplify compound hazards, where intense rainfall following prolonged dry periods accelerates slope instability, landslides, and downstream flooding. In high-mountain districts, warming also interacts with cryospheric processes, increasing the risk of glacial lake outburst floods (GLOFs) and altering downstream hydrological regimes.
8. These climate hazards have direct and cascading impacts on forest-dependent communities. Degradation of forest cover reduces the capacity of ecosystems to regulate water flows, stabilize slopes, and buffer settlements and infrastructure from climate shocks. Declining forest health undermines the availability and reliability of fuelwood, fodder, and non-timber forest products, increasing the time and labor burdens—particularly for women—and reducing household incomes. At the same time, climate stressors are amplifying disaster risk, with landslides, floods, and forest fires increasingly affecting settlements, agricultural land, and access routes, further isolating remote communities during critical periods.
9. Importantly, climate impacts in Karnali are highly localized and uneven, shaped by elevation, aspect, forest condition, and socio-economic context. Vulnerability is exacerbated by structural factors such as poverty, limited market access, outmigration of working-age populations, and constrained institutional capacity at local levels. These interacting stresses create reinforcing feedback loops in which climate change accelerates ecosystem degradation and livelihood insecurity, which in turn heighten exposure and sensitivity to future climate shocks. Addressing these risks therefore requires integrated, locally led adaptation approaches that simultaneously strengthen ecosystems, livelihoods, and governance systems at the scales where climate impacts are experienced.

### **Project Objective and Theory of Change**

10. The project's objective is to strengthen the climate resilience of vulnerable forest-dependent communities in Karnali Province by enabling locally-led adaptation that integrates climate-resilient forest and landscape management, diversified forest-based livelihoods, and strengthened local and provincial governance systems.
11. The project's theory of change is grounded in LLCA principles and Nepal's federal governance framework. It posits that if climate finance, decision-making, and technical capacity are devolved to empowered local institutions—supported by climate-informed planning, sustainable finance mechanisms, and market access—then forest-dependent communities will be able to restore ecosystems, secure resilient livelihoods, and reduce climate vulnerability in a durable and equitable manner. By embedding adaptation within CFUGs, municipalities, and provincial systems, the project shifts from project-based delivery to institutionalized, scalable climate action. The investment packages presented in this Pre-Feasibility Study correspond directly to the Components and Outputs described in the Funding Proposal.
12. The project is structured around three mutually reinforcing outcomes that together address ecological, livelihood, and institutional dimensions of resilience.

### **Outcome 1: Enhanced resilience of forest ecosystems and forest-based livelihoods.**

13. The project will support climate-resilient sustainable forest management and restoration across priority community forests, improving forest health, productivity, and ecosystem services. These interventions are directly linked to livelihood diversification through the development of climate-smart value chains for NTFPs, MAPs, and agroforestry products. The project will strengthen producer organizations, improve quality control and certification, and facilitate access to tailored financing and markets, ensuring that economic incentives align with sustainable resource use.

### **Outcome 2: Enhanced adaptive capacity and disaster preparedness of communities and local institutions.**

14. The project will strengthen climate awareness, risk assessment, and planning capacity at community and municipal levels through the preparation and updating of LAPAs across all 31 municipalities. Early warning, preparedness, and response capacities will be enhanced through community-based systems and improved

coordination with local disaster management structures. Municipal officials and community leaders will be supported to integrate climate risk into development planning, budgeting, and monitoring frameworks.

### **Outcome 3: Strengthened climate governance, communication, and learning systems.**

15. At the provincial level, the project will facilitate knowledge sharing, policy dialogue, and the integration of climate resilience metrics into planning and budget allocation processes. A provincial-level strategy for sustaining and scaling adaptation investments will be developed, building on project lessons and aligning with national climate priorities. Communication and learning platforms will ensure that successful LLCA models are disseminated and institutionalized beyond the project period.
16. Together, these outcomes deliver landscape-level resilience, improved livelihoods, and strengthened institutions capable of sustaining adaptation over the long term.

### **Sustainability and Exit Strategy**

17. Sustainability is embedded in the project design through institutional anchoring, financial mechanisms, and capacity strengthening. Adaptation actions are integrated into CFUG operations, municipal LAPAs, and provincial planning systems, ensuring continuity beyond project closure. A dedicated sustainable finance mechanism links community-level implementation with municipal and provincial resources, while improved market access and value chain finance reinforce incentives for sustainable forest management.
18. The project's exit strategy is enabled by strengthened local capacity, mainstreamed planning and budgeting processes, and diversified financing sources. By the end of implementation, local and provincial institutions will be positioned to sustain and expand climate-resilient practices without reliance on continued GCF support, allowing for a responsible and confident exit.

### **Impact Potential**

19. The project has strong potential to contribute to the Green Climate Fund's objectives by delivering transformative adaptation outcomes for climate-vulnerable communities in Karnali Province, while also generating measurable mitigation benefits through improved forest and landscape management. By integrating ecosystem-based adaptation, climate-resilient livelihoods, and strengthened governance systems within a locally led climate action framework, the project advances climate-resilient sustainable development in one of Nepal's most climate-exposed regions.
20. The primary impact of the project is increased resilience of forest-dependent communities, ecosystems, and local institutions to climate variability and extremes. The project will directly benefit 109,690 people (53,640 men and 56,050 women) through targeted interventions that reduce exposure to climate hazards, decrease livelihood sensitivity, and strengthen adaptive capacity. An additional 423,218 people (206,940 men and 216,278 women) will benefit indirectly through improved ecosystem services, reduced disaster losses, strengthened climate preparedness, and enhanced governance at municipal and provincial levels.
21. At the community level, restored and sustainably managed forests, nature-based solutions, and diversified forest-based livelihoods reduce vulnerability to floods, landslides, droughts, and forest degradation, while improving income stability and food security. Inclusive approaches ensure that women, Dalits, Indigenous Peoples, and persons with disabilities are actively engaged and benefit equitably from adaptation investments. At the systems level, the project institutionalises climate risk information, local adaptation planning, and community-based early warning systems, enabling a shift from reactive disaster response to anticipatory risk management and more resilient development pathways.
22. While adaptation is the primary objective, the project delivers quantified mitigation benefits through sustainable forest management and restoration. These interventions are expected to generate approximately **119,649 tCO<sub>2</sub>e** of emissions reductions and removals over the first four years, and **1,101,385 tCO<sub>2</sub>e** over a 20-year period. These outcomes contribute to low-emission development pathways by reducing emissions from deforestation and forest degradation and increasing forest carbon stocks.
23. Overall, the project delivers durable, inclusive, and scalable climate impacts aligned with the GCF's result areas, strengthening long-term resilience while contributing to mitigation benefits in Karnali Province.

## Paradigm Shift Potential

24. The proposed project catalyzes a fundamental shift in Nepal's approach to climate adaptation and low-emission development in forested landscapes by institutionalizing LLCA. Through empowering CFUGs, local governments, and marginalized groups—including women, Dalits, Indigenous Peoples (IPs) and Persons with Disabilities (PwD)—the project reorients adaptation from top-down planning to inclusive, community-driven resilience building. It addresses key barriers including weak forest governance, limited technical capacity, poor value chain integration, and fragmented climate information systems (See ToC in Annex 2—Section 4).
25. **Outcome 1** shifts forest use from extractive to regenerative by enabling climate-smart, community-managed landscapes and market-linked forest enterprises. By supporting improved resource management, local value addition, and private sector linkages, the project addresses systemic barriers such as poor forest planning, lack of enterprise capacity, and weak market access—laying the foundation for sustainable livelihoods and long-term resilience.
26. **Outcome 2** builds adaptation leadership at the local level through participatory LAPAs, disaster preparedness, and inclusive planning tools. These interventions directly counter the exclusion of vulnerable groups, strengthen local institutions, and embed adaptation into formal governance and development systems, addressing barriers of low awareness, technical gaps, and fragmented decision-making.
27. **Outcome 3** transforms fragmented climate information into accessible, actionable knowledge through decentralized systems embedded in provincial and municipal governance. This addresses barriers related to poor data usability and integration, enabling informed planning and adaptive management at all levels.
28. The project also supports enabling conditions for sustainability, including the development of locally appropriate financing mechanisms (building financial literacy and connecting CFUGs and MSMEs to financial service providers), market transformation, policy reform (for example, forest license streamlining, climate budgeting), and knowledge platforms for replication. Demonstration sites, advocacy efforts, and alignment with national frameworks will support scaling across other vulnerable regions. By strengthening institutions, markets, and governance systems, the project lays the foundation for long-term climate resilience beyond its implementation period.

## Sustainable Development Potential

29. In addition to its core climate resilience and mitigation objectives, the project will generate a range of sustainable development co-benefits that extend beyond direct climate outcomes—contributing directly to Nepal's SDGs.

### *Economic*

- **Rural employment generation:** Green jobs will be created through forest restoration, NTFP harvesting, and small-scale enterprise development, particularly for landless and resource-poor households.
- **Income diversification:** Support for NTFP value chains and micro-enterprises will enable households to reduce reliance on subsistence farming and biomass collection.
- **Local economic stimulation:** Increased market access and enterprise incubation will strengthen local economies in remote areas and reduce out-migration.

### *Social*

- **Improved food, nutrition and health:** Enhanced access to wild foods, forest-based crops, medicinal plants and reliable clean water sources will support dietary diversity and household food and health stability.
- **Reduced disaster risk:** Nature-based solutions will help stabilize slopes, reduce erosion, and mitigate flash floods and landslides in vulnerable sub-catchments.
- **Increased local knowledge and cohesion:** Climate awareness and inclusive planning will strengthen community institutions and improve cooperative responses to local risks.

### *Environmental*

- **Ecosystem restoration:** Reforestation, enrichment planting, and slope stabilization will improve ecological integrity and reverse forest degradation.

- **Water resource protection:** Restored forest cover will improve water retention, groundwater recharge, and regulation of seasonal flows in degraded catchments.
- **Biodiversity enhancement:** Sustainable forest management will maintain and enhance habitat quality for native flora and fauna.

### **Gender-Responsive and Inclusive Development**

- **Economic empowerment of women and marginalized groups:** Women, Dalits, and Indigenous Peoples will gain skills, access to finance, and ownership in forest-based enterprises.
- **Reduced unpaid labour burdens:** Improved access to fodder, fuelwood, and water will reduce the time and physical burden on women and girls.
- **Leadership in climate decision-making:** Targeted support for participation in LAPAs and CFUGs will strengthen the voice and influence of historically excluded groups.

### **Needs of the Recipient**

30. Nepal is among the world's most climate-vulnerable countries, with mountainous geographies, fragile ecosystems, and a high dependence on climate-sensitive sectors such as agriculture and forests. The country faces a significant adaptation financing gap, with an estimated additional US\$2.4 billion required between 2014 and 2030 to meet priority climate resilience needs (Ministry of Population and Environment (MoPE), 2014). This gap is most acutely felt in remote and underserved regions such as Karnali Province, where limited fiscal space, poor infrastructure, and institutional fragility constrain both the scale and effectiveness of local adaptation efforts.
31. Karnali is Nepal's poorest province, with 28.9% of its population below the poverty line and over 51% classified as multidimensionally poor. Human development indicators—including literacy, life expectancy, and access to water and sanitation—are consistently lower than national averages. Climate risks compound these structural deprivations, as forest-dependent communities face increasing threats from erratic rainfall, prolonged dry spells, landslides, and forest degradation. These impacts disproportionately affect women, Indigenous Peoples, and Dalits, who have limited adaptive capacity and are often excluded from formal decision-making processes.
32. Although Nepal's federal governance model and community forest institutions provide a strong foundation for locally led adaptation, local governments and community groups in Karnali lack the technical, financial, and administrative resources to operationalize climate-resilient development. Access to climate finance at the subnational level remains minimal, and coordination between tiers of government is weak.
33. This project directly addresses these challenges by investing in climate-resilient forest governance, ecosystem restoration, and adaptive livelihoods. It is well aligned with Nepal's NAP, NDC, and provincial priorities. GCF support is essential to overcome the systemic financial, institutional, and socio-economic barriers that prevent vulnerable communities in Karnali from adapting effectively to climate change.

### **Country Ownership**

34. The proposed project is fully aligned with Nepal's climate change priorities and strategic frameworks, including the Third Nationally Determined Contribution (NDC), National Adaptation Plan (NAP, 2021–2050), National Climate Change Policy (2019), Forestry Sector Strategy (2016–2025), National REDD+ Strategy (2025–2034), and Karnali Province's development plans. It supports key national objectives such as enhancing the resilience of climate-vulnerable communities, promoting sustainable forest management, expanding community-based governance, and mainstreaming gender equality and social inclusion (GESI) into climate action. Specific contributions include maintaining forest cover, expanding inclusive community forest management, restoring degraded lands, building adaptive capacity, and promoting green jobs and nature-based solutions. At the provincial level, the project supports Karnali's goals to increase productivity and competitiveness of forest and agricultural products while reducing climate-related risks.
35. The project has been developed in close consultation with Nepal's National Designated Authority (NDA), the Ministry of Finance (MoF). It aligns with the national climate finance programming led by the Ministry of Forests and Environment (MoFE) and supports implementation of Nepal's NAP priorities. The NDA has provided guidance throughout the concept development process and has issued a No-Objection Letter (NOL).

36. The National Trust for Nature Conservation (NTNC) will serve as both the Accredited Entity (AE) and co-Executing Entity (EE). NTNC is a national public institution established by an Act of Parliament with a formal mandate to support Nepal's biodiversity conservation and sustainable development goals. Its Board is chaired by a nominee of the Prime Minister and includes representatives from key government ministries, enhancing national oversight and policy alignment. NTNC is a GCF-accredited Direct Access Entity and has successfully implemented large-scale, multi-stakeholder projects funded by bilateral and multilateral partners. It brings extensive experience in climate adaptation, forest governance, livelihood promotion, and community-based conservation across Nepal, including in Karnali. Internal firewalls will be maintained between NTNC's AE oversight and its co-EE operational roles.
37. A total of 31 extensive consultations were conducted during project preparation to ensure that the design reflects national and local priorities. Consultations were held in all four target districts (Jajarkot, Jumla, Dolpa, and Dailekh), as well as at provincial and national levels. Participants included local governments, Community Forest User Groups (CFUGs), women's groups, Indigenous Peoples' organizations, district forest officials, and civil society representatives. Feedback from these dialogues helped identify priority interventions and informed the locally led climate action (LLCA) approach. Key themes emerging from stakeholders included the need for degraded forest restoration, diversified forest-based livelihoods, early warning systems, and inclusive adaptation planning.
38. The project embeds multi-stakeholder engagement throughout its governance and delivery structure. Local governments and community institutions will lead implementation through participatory planning and decision-making, particularly via LAPA processes, and have endorsed the project. Social audits, public hearings, and community monitoring committees will ensure transparency and accountability. A Technical Advisory Group (TAG) will provide independent technical guidance and foster institutional learning. Through its inclusive design, national execution, and strategic policy alignment, the project reflects strong country ownership and supports the long-term resilience goals of the Government of Nepal and the people of Karnali Province.

### **Efficiency and Effectiveness**

39. The economic modelling demonstrates strong overall cost-effectiveness and financial feasibility of the project portfolio. Discounted (NPV) benefits are US\$63.14 million compared with discounted (NPV) costs of US\$8.51 million, giving a Net NPV of US\$54.63 million, a Benefit–Cost Ratio (BCR) of 7.42, and an Economic Internal Rate of Return (EIRR) of 54%. The modelled beneficiary count (considering beneficiaries per benefit stream rather than unique beneficiaries) is 109,649 people, with weighted discounted benefits of approximately US\$316 per person compared to discounted costs of US\$60 per person, resulting in a net benefit of US\$256 per beneficiary.
40. Unit cost analysis confirms that the project delivers competitive value for money through large-scale, community-based delivery platforms. Improved Sustainable Forest Management (1.1.1) is costed at approximately US\$166/ha, while restoration of priority sites (1.1.2) averages US\$1,106/ha. Targeted nature-based solutions (1.1.3) have a higher intensity cost of approximately US\$10,743/ha, reflecting their focus on a smaller number of high-risk hotspots where per-person avoided-loss benefits are substantial and justify higher unit costs.
41. Two interventions account for the majority of monetised benefits and provide a robust anchor for portfolio performance. Community-Based Early Warning Systems (2.1.4) generate a Net NPV of US\$12.66 million, with a BCR of 43.81 and an EIRR of 153%, benefiting approximately 45,000 people at a low discounted cost of US\$2.75 per person. Forest restoration (Activity 1.1.2) generates a Net NPV of US\$3.74 million (BCR 4.38, EIRR 16%) for approximately 17,500 beneficiaries. Together, these two activities contribute around 60% of total Net NPV, underscoring their importance to portfolio efficiency and scalability.
42. Although adaptation benefits are the primary justification, the project also delivers quantified mitigation benefits of 1,101,385 tCO<sub>2</sub>e. Using the total project cost of US\$9.21 million, the indicative cost is US\$8.4/tCO<sub>2</sub>e, or US\$7.7/tCO<sub>2</sub>e using the GCF contribution alone. These figures are presented as secondary indicators, reinforcing the project's multi-benefit profile.
43. The funding structure is appropriate for an adaptation programme delivering significant public-good value. The model estimates social value of carbon (NPV USD 28.46 million), with avoided losses (NPV USD 20.43 million)

and additional production and income value (NPV USD 14.24 million) as the dominant benefit streams. Because many benefits are diffuse, non-excludable, and not fully captured by private actors, grant financing is justified. This case is further strengthened by conservative modelling assumptions that treat several enabling and institutional activities as costs with no monetised benefits, meaning overall BCR and NPV are likely understated.

44. The model also demonstrates meaningful leverage and catalysation. Non-GCF contributions include US\$0.7 million in government co-financing and US\$1.9 million in community labour, representing 6.3% and 17.1% of total project resources, respectively, alongside US\$8.51 million in GCF financing. High-return, institutionally embedded interventions—particularly CFUG-based SFM and community-based EWS—are well suited for replication and mainstreaming through local and provincial systems.
45. Finally, long-run viability is supported by low per-beneficiary operating costs for high-impact interventions and strong institutional anchoring. While some activities show limited standalone monetised returns, these function as enabling investments that unlock and sustain wider portfolio benefits. Even under conservative assumptions, the portfolio remains strongly positive, indicating a high likelihood of sustained net benefits over the project life.

# 1 Introduction

46. This Pre-Feasibility Study (PFS) has been prepared to provide the technical and analytical foundation for the proposed climate adaptation project in Nepal, with a particular focus on Karnali Province. The PFS serves as a critical step in the project development process, translating the initial concept into a robust, evidence-based design that is aligned with national priorities and the investment requirements of the Green Climate Fund (GCF). It is intended to inform decision-makers, technical reviewers, and financing partners of the rationale, feasibility, and strategic coherence of the proposed intervention, while setting clear expectations for the subsequent stages of project preparation and implementation.
47. The document begins by establishing the broader national and subnational context within which the project will operate. It outlines Nepal's evolving climate risk profile, with specific attention to observed and projected trends in temperature, precipitation, and extreme events, and how these trends translate into compound climate hazards such as floods, landslides, glacial lake outburst floods, ecosystem degradation, and water insecurity. Particular emphasis is placed on Karnali Province, where geographic isolation, fragile mountain ecosystems, high poverty rates, and limited institutional capacity combine to create acute vulnerability to climate change. Through this contextual framing, the PFS clarifies why targeted, locally grounded adaptation investment is both urgent and necessary.
48. Building on this context, the PFS assesses the nature and scale of climate impacts across key systems, including forests, watersheds, livelihoods, and critical infrastructure, and examines how these impacts disproportionately affect vulnerable and forest-dependent communities. The analysis goes beyond hazard identification to explore underlying drivers of vulnerability, such as environmental degradation, socioeconomic marginalisation, and constraints in governance and service delivery. In doing so, the PFS provides a clear articulation of the adaptation challenge the project seeks to address.
49. A central component of the PFS is the assessment of institutional, technical, and policy readiness at both national and provincial levels. This includes an examination of Nepal's climate policy and planning frameworks, the roles and mandates of relevant government institutions, and the capacity of provincial and local authorities in Karnali Province to plan, implement, and sustain climate adaptation measures. The PFS identifies both strengths to build upon—such as decentralised governance structures and community-based natural resource management experience—and gaps that the project must address to enable effective, long-term adaptation.
50. The PFS then sets out the proposed project approach in detail, describing the strategic logic underpinning the intervention, the proposed components and activities, and the pathways through which these will reduce climate vulnerability and build resilience. It outlines implementation arrangements, including institutional roles, coordination mechanisms, and stakeholder engagement processes, with particular attention to locally led and inclusive approaches. The document also explains how the project is aligned with the GCF investment criteria, including impact potential, paradigm shift, sustainable development benefits, needs of the recipient, country ownership, and efficiency and effectiveness.
51. Finally, the PFS establishes the foundation for long-term sustainability by describing how the project will strengthen systems, capacities, and financing mechanisms beyond the project lifetime. This includes consideration of policy integration, institutional ownership, knowledge generation, and the scalability and replicability of successful approaches. Taken together, this PFS provides the reader with a clear understanding of the project's strategic intent, technical basis, and implementation logic, and serves as a comprehensive guide to how the proposed intervention will deliver durable climate resilience outcomes in Nepal and Karnali Province.



## 2 Project Context

### 2.1 Overview of the project area

#### 2.1.1 Geographic scope

52. The Karnali Province is located on the Northern-Western part of Nepal. It borders Sudurpaschim province to the West and Gandaki province and Lumbini to the East. Karnali covers a total of 10 districts, 54 rural and 25 urban municipalities (UNDP, 2024).
53. The Province is geographically the largest (27,984 km<sup>2</sup>) (Ministry of Internal Affairs and Law of Karnali, ICT Foundation Nepal, 2025) but the least populated of Nepal's seven provinces, with over 1.5 million people, accounting for 6% of the national population (UNDP, 2024).
54. It is characterised by remote mountain terrain, limited connectivity, and high exposure to climate hazards such as landslides, drought, glacial lake outburst floods (GLOFs), and riverine flooding.
55. The project targets four of the Province's districts. Jajarkot, Jumla, Dolpa and Dailekh. Each district is composed of rural and urban municipalities, as highlighted in Table 1.

Table 1: Project target districts and municipalities

Districts	Rural municipalities	Urban municipalities
<b>Jajarkot</b>	Barekot Rural Municipality Junichande Rural Municipality Kushe Rural Municipality Shivalaya Rural Municipality	Bheri Municipality Chhedagad Municipality Nalgad Municipality
<b>Jumla</b>	Guthichaur Rural Municipality Hima Rural Municipality Kankasundari Rural Municipality Patarasi Rural Municipality Sinja Rural Municipality Tatopani Rural Municipality Tila Rural Municipality	Chandannath Municipality
<b>Dolpa</b>	Jagadulla Rural Municipality Kaike Rural Municipality Mudkechula Rural Municipality	Thuli Bheri Municipality Tripurasundari Municipality
<b>Dailekh</b>	Bhairawi Rural Municipality Bhagawatimai Rural Municipality Dungeshwar Rural Municipality Gurans Rural Municipality Mahabu Rural Municipality Naumule Rural Municipality Thantikandh Rural Municipality	Narayan Municipality Dullu Municipality Aathbis Municipality Chamunda Bindrasaini Municipality

56. Each district has its own geographic characteristics:
- **Jajarkot:**
57. Jajarkot encompasses approximately 2,230 km<sup>2</sup> of rugged mid- to high-hill terrain in Karnali Province, with elevations from 610 m up to 5,370 m, and the district headquarters at 2,945 m in Khalanga. The district's climate spans subtropical to alpine zones, including a temperate highland (Köppen Cwb) regime at mid-elevations. Average annual temperatures near 23.7 °C, with extremes ranging from 5.4 °C in January to 36 °C in May, and annual precipitation around 183 mm, mostly during monsoon months (e.g., July receives 709 mm) (Weather and Climate - The Global Historical Weather and Climate Data, 2026). Vegetation follows altitudinal zonation: subtropical broadleaf and pine forests at lower elevations; temperate oak–rhododendron woodlands at mid-

slopes; subalpine shrublands above 3,000 m; and alpine meadows and high-altitude scrub in upper zones. Land-use is primarily terraced subsistence agriculture (maize, millet, barley, potatoes), interspersed with rangeland, community-managed forest patches, and seasonal foraging/transhumance up to alpine elevations (United Nations Development Assistance Framework (UNDAF), 2013). Non-timber forest products (e.g., medicinal and aromatic plants, resin) contribute significantly to rural livelihoods and commerce (Lamichhane, et al., 2021).

- **Jumla:**

58. Jumla covers around 2,531 km<sup>2</sup> with elevations between 915 m and 4,679 m, the administrative centre at 2,514 m, and key agriculture zones within 2,400–3,050 m. It features a subtropical highland to alpine climate (Cwb), with cool summers and harsh, dry winters; mean annual temperatures near 7 °C, summer highs ~15–16 °C, and winter lows dropping well below –7 °C. The region receives seasonal precipitation concentrated in the monsoon. Vegetation stratifies altitudinally: chir pine and mixed broadleaf forests at lower elevation; mid-mountain zones host *Quercus*, *Schima*, and *Rhododendron*; subalpine to alpine elevations support *Abies*, *Betula*, *Juniperus*, and grasslands. Land is predominantly used for terraced cereal cultivation (e.g., barley, wheat, maize, Jumli Marshi rice), community forestry, transhumant grazing, and the harvesting of herbal and aromatic species, all heavily influenced by elevation and climate (UNDAF, 2013); (Groklopedia, 2026).

- **Dolpa:**

59. Dolpa is Nepal's largest district (7,889 km<sup>2</sup>), ranging in elevation from 1,525 m to 7,625 m, with glacial valleys (Phoksundo, Tarap), deep gorges, and peaks like Kanjiroba. It lies within the trans-Himalayan rain-shadow, featuring a semi-arid to arid climate: cold, prolonged winters in higher areas, cool temperate conditions (10–11 °C) in valleys, and modest, monsoon-concentrated rainfall. Vegetation belts are sharply zoned: temperate oak–rhododendron–Pinaceae woodlands (2,000–3,000 m); *Abies*, *Betula*, *Rhododendron* subalpine belt (3,000–4,200 m); and trans-Himalayan alpine scrub — dominated by *Juniperus*, *Artemisia*, *Caragana*, and cushion plants — at elevations above 4,200 m. Community forests and protected rangelands dominate land use, alongside pocket cultivation of barley, buckwheat, millet, and potatoes in irrigated valleys, transhumant pastoralism (yak, goats, sheep), and medicinal plant collection; eco-tourism linked with Shey Phoksundo National Park also contributes to land management and conservation activities (Kunwar & Parajuli, 2007).

- **Dailekh:**

60. Dailekh spans 1,505 km<sup>2</sup> in western Nepal's mid- to high-hills, with elevations from 544 m to 4,168 m, and headquarters at approximately 1,128–1,448 m. It experiences a temperate highland (Cwb) climate, with mean annual temperatures near 23.9 °C, seasonal extremes ranging 5–36 °C, and annual rainfall around 185 mm, largely monsoonal (July: ~716 mm; August: ~576 mm) (Weather and Climate - The Global Historical Weather and Climate Data, 2026). Vegetation includes subtropical and temperate forests: *Pinus roxburghii* and *Schima–Castanopsis* at lower elevations; *Alnus* streamside alder; mixed oak and rhododendron woodlands mid-hill; and remnant *Abies–Betula* subalpine forests above ~2,600 m. Land use is characterized by terraced agriculture (rice, wheat, maize, millet), paddy cultivation in valley bottoms, community forestry, and seasonal grazing. Soil-fertility mapping indicates widespread nitrogen sufficiency (~81%), but limited phosphorus and potassium (~56–57%) (Dhakal & Kattel, 2025), while slope and cover-driven landslide risks necessitate contour planting, afforestation, and bioengineering (Helvetas, Nepal, 2014).

## 2.1.2 Biophysical features

### Mountains and Topography

61. Karnali Province, the largest in Nepal, spans a dramatic altitudinal range from approximately 180 m to over 7,300 m above sea level, encompassing diverse physiographic regions from the high Himalayas to the Chure foothills. Notable peaks within the study districts include Churen Himal (7,381 m) and Putha Hiunchuli (7,246 m) in Dolpa; Kanjiroba Himal (6,221 m) also lies in Dolpa. Jumla encompasses elevations from ~915 m in valleys to peaks above 4,600 m. Jajarkot and Dailekh are embedded within the mid-hills and lower Himalayan terrain, featuring steep ridgelines and deeply incised valleys typical of the Mahabharat and mid-hill ranges (Federation of Nepalese Chambers of Commerce & Industry (FNCCI) - Karnali Province, 2026).

62. Karnali Province spans a steep altitude from low foothills up to rugged Himalayan peaks — leading to extreme topographic diversity. These districts have mountainous terrain, steep slopes, deep valleys, variable aspect, and elevation and aspects and exposure create distinct microclimates and soil types, which are critical in guiding afforestation and agroforestry planning. This dynamic landscape is evident across these districts: Jumla's valley-to-peak transitions (915 m to over 4,600 m), Dolpa's soaring peaks — Churen Himal (7,381 m), Putha Hiunchuli (7,246 m), and Kanjiroba (6,221 m) — and the deeply incised mid-hills of Jajarkot and Dailekh are emblematic of these physiographic complexities (Jackson, 1987).

### Forest Types and Vegetation

63. According to the Manual of Afforestation in Nepal provides a comprehensive classification of Nepal's forest and plantation species based on altitude, slope, and climatic zones (Jackson, 1987):
- **Subtropical (Terai-Churia):** *Pinus roxburghii* (chir pine)
  - **Temperate:** *Pinus wallichiana* (blue pine), *Abies spectabilis* (fir), *Quercus* spp.
  - **Himalayan:** higher-altitude conifers and scrub
64. These species mirror those in Dolpa's pine-fir-oak forests (*P. wallichiana*, *A. spectabilis*, *Q. semecarpifolia*, *C. deodara*), with similar density and basal-area ranges used to determine silvicultural performance. The manual further stresses that species-site matching is essential for restoration success, as high-altitude afforestation requires selecting cold-tolerant provenances and managing slope stability.

### Watershed Systems

65. The four districts — Jumla, Dolpa, Dailekh, and Jajarkot — sit within the larger Karnali River basin, Nepal's most extensive watershed system, which originates in the Tibetan plateau and travels over 500 km before joining the Ghaghara in India. This basin is fed by major tributaries like the Sinja, Tila, Bheri, and West Seti rivers, draining over 90% of the sub-basin's area within Nepal and encompassing approximately 1,459 glaciers and 742 glacial lakes (Nepal River Portal, 2019).
66. In **Jumla**, the headwaters lie in glaciated high-altitude zones. The Sinja and Tila sub-basins, critical for irrigation and domestic water, are increasingly susceptible to drying springs and erratic flows, especially during the winter drought season (Nepal River Portal, 2019).
67. Jumla lies in the upper Karnali basin and hosts the headwaters of the Tila and Sinja sub-basins, which are vital for irrigation, drinking water, and local agriculture. The district's watershed is characterized by steep slopes, fragile soils, and snow-fed streams originating from high-altitude zones. Climate change has intensified vulnerabilities, including prolonged winter droughts, declining spring discharge, and erratic rainfall patterns, which threaten water security and increase soil erosion (Dahal, et al., 2020). Sustainable watershed management in Jumla requires interventions such as spring recharge, slope stabilization, and afforestation using native species suited to temperate and alpine zones (Jackson, 1987).
68. **Dolpa** features steep glacial valleys channelling meltwater through tributaries of the Bheri–Karnali systems. Remote villages depend on fragile snow-fed springs and seasonal streams; many hydro-supply systems have failed due to glacier recession, landslides, and maintenance challenges.
69. Dolpa, Nepal's largest district by area, features trans-Himalayan landscapes with elevations exceeding 7,000 m and glacial valleys feeding the Bheri River system. Its watershed is dominated by snowmelt and glacial runoff, making it highly sensitive to climate-induced changes. Accelerated glacial retreat and erratic precipitation have led to reduced water availability and heightened risks of glacial lake outburst floods (GLOFs), posing severe threats to downstream communities (Bajracharya, et al., 2020). Adaptation priorities include ecosystem-based watershed restoration, bioengineering for slope stability, and community-led monitoring of glacial lakes to mitigate disaster risks while ensuring long-term water security.
70. In **Dailekh**, mid-hill catchments such as Parajul sub-watershed reflect the typical hilly terrain hydrology indexed by spring-fed systems. These communities face shrinking flow during dry spells, heightening vulnerability to climate stress and impeding sustainable rural water services (Ministry of Forests and Soil Conservation, 2017).

71. Dailekh is situated in the mid-hill region of Karnali Province and forms part of the Bheri sub-basin. Its watershed system is primarily spring fed, supporting agriculture and domestic water needs for rural communities. However, climate variability has resulted in declining spring flows, prolonged dry spells, and increased soil erosion, which threaten water availability and agricultural productivity (Dahal, et al., 2020). The district's steep slopes and fragile geology make it highly susceptible to landslides during intense rainfall events. Adaptation measures for Dailekh include integrated watershed management, slope stabilization through bioengineering, and spring recharge interventions, complemented by community-based water governance and afforestation using species recommended for mid-hill zones (Jackson, 1987).
72. **Jajarkot's** topography includes high-altitude glacial lakes (e.g., Sankha, Kukur, Thakur Jyu) that are integral to local hydrology but present growing glacial lake outburst flood (GLOF) risk due to accelerated melting and morphological shifts (Rawat, et al., 2025).
73. Jajarkot lies in the mid-hill region and forms part of the Karnali and Bheri river sub-basins. Its watershed system includes numerous small streams and high-altitude lakes such as Sankha and Kukur, which are critical for local water supply and biodiversity. Climate change has increased the frequency of intense rainfall events, leading to flash floods, landslides, and sedimentation in river channels. Additionally, prolonged dry periods have caused spring sources to dry up, impacting drinking water and irrigation systems (Dahal, et al., 2020). Adaptation priorities for Jajarkot include slope stabilization, watershed conservation through afforestation, and the development of climate-resilient water supply systems, alongside community-based disaster risk reduction strategies (Jackson, 1987).

### 2.1.3 Significance of forests for local livelihoods and climate resilience

74. Forests are central to livelihoods, culture, and resilience in Karnali Province, where a large proportion of rural households depend directly on forest resources for subsistence and income. Community forests provide fuelwood, fodder, timber substitutes, leaf litter, and a wide range of non-timber forest products (NTFPs), including medicinal and aromatic plants, wild foods, and fibres that are particularly important for women, Dalits, Indigenous Peoples, and other marginalised groups. In remote mountain and mid-hill areas where access to markets, energy alternatives, and formal employment is limited, forests function as a safety net that buffers households against seasonal shocks, crop failures, and income volatility, and underpin diversified, low-cost livelihood strategies.
75. From a climate resilience perspective, forests in Karnali perform critical regulating functions that directly reduce exposure to climate hazards. Forest cover stabilises steep slopes, reduces soil erosion and landslide risk, moderates surface runoff, and supports groundwater recharge and the regulation of local hydrological cycles. These ecosystem services are increasingly important as the province experiences rising temperatures, changing rainfall patterns, longer dry spells, and more intense precipitation events. Healthy forest ecosystems also reduce vulnerability to forest fires and drought by maintaining soil moisture and microclimatic regulation, while degraded forests amplify climate risks and undermine both ecological and livelihood resilience.
76. Forests also represent a key pathway for climate-resilient development and long-term adaptation in Karnali when managed sustainably and linked to local governance systems. Community-based forest management enables collective stewardship, equitable benefit sharing, and locally led decision-making over restoration, harvesting, and livelihood use, aligning ecological objectives with community priorities. When combined with climate-resilient forest management practices, value addition to NTFPs, and integration into municipal planning processes, forests can simultaneously strengthen livelihoods, enhance ecosystem resilience, and contribute to mitigation co-benefits through increased carbon sequestration and reduced degradation. As such, forests are not only natural assets but foundational infrastructure for climate adaptation and inclusive development in Karnali Province.

## 2.2 Socio-Economic and Livelihood Context

### 2.2.1 Demographic profile of project municipalities

#### 2.2.1.1 Jajarkot District

77. **Barekot Rural Municipality:** Barekot Rural Municipality has a total population of 22,005, with a nearly equal gender distribution — 50.1% male and 49.9% female — resulting in a sex ratio of 100.59 males per 100 females. The municipality has a population density of 38 persons per square kilometre and consists of 3,887 households, reflecting low-density rural settlement characteristics. The literacy rate stands at 78.6%, with male literacy at 84.4% and female literacy at 72.8%, indicating a persistent but narrowing gender gap in educational attainment. Additionally, 5.2% of the population is living with some form of disability, with disability prevalence higher among males (6.1%) compared to females (4.2%). Overall, the demographic profile highlights a balanced population structure with moderate educational achievement and notable social inclusion needs related to disability (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
78. **Junichande Rural Municipality:** Junichande Rural Municipality has a total population of 23,771, with a nearly even gender distribution — 49.8% male and 50.2% female — resulting in a sex ratio of 99.15 males per 100 females. The municipality has a population density of 69 persons per square kilometre and comprises 4,296 households. The overall literacy rate stands at 73%, with male literacy at 77.8% and female literacy at 68.3%, indicating a moderate gender gap in educational attainment. Additionally, 5.4% of the population is recorded as having some form of disability, with disability prevalence slightly higher among males (6%) compared to females (4.8%). These demographic characteristics reflect a relatively balanced population structure with ongoing social and educational development needs (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
79. **Kushe Rural Municipality:** Kuse Rural Municipality has a total population of 23,058, with an almost equal gender distribution — 49.9% male and 50.1% female — resulting in a sex ratio of 99.55 males per 100 females. The municipality has a population density of 84 persons per square kilometer and comprises 4,401 households. The overall literacy rate is 74.5%, with literacy slightly higher among males (79%) compared to females (70.1%), reflecting a modest gender gap in educational attainment. Additionally, 4.7% of the population lives with some form of disability, with prevalence higher for males (5.4%) than females (4%). These demographic indicators show a balanced population structure, moderate literacy levels, and specific social inclusion challenges related to disability (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
80. **Shivalaya Rural Municipality:** Shivalaya Rural Municipality has a total population of 14,776, with 49.4% male and 50.6% female, resulting in a sex ratio of 97.59 males per 100 females. The municipality has a population density of 110 persons per square kilometre and comprises 2,806 households, reflecting a relatively small and moderately dense rural settlement. The literacy rate stands at 78.3%, with male literacy at 85% and female literacy at 71.8%, indicating a notable gender disparity in educational attainment. Additionally, 3.4% of the population lives with some form of disability, with disability prevalence slightly higher among males (3.5%) compared to females (3.2%). Overall, Shivalaya exhibits a balanced population structure with relatively strong literacy levels but continuing gender and social inclusion gaps (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
81. **Bheri Municipality:** Bheri Malika Municipality has a total population of 37,892, with 48.5% male and 51.5% female, resulting in a sex ratio of 94.16 males per 100 females. The municipality has a relatively high population density of 172 persons per square kilometre and comprises 8,874 households, indicating a more concentrated settlement pattern compared to other rural municipalities in the district. The literacy rate stands at 75.1%, with male literacy at 81.6% and female literacy at 69.1%, reflecting a notable gender gap in education. Additionally, 5.4% of the population lives with some form of disability, with disability prevalence higher among males (6.2%) than females (4.7%). Overall, the demographic characteristics of Bheri Malika point to a moderately educated and densely settled population with persistent gender disparities and social inclusion challenges (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).

82. **Chhedagad Municipality:** Chhedagad Municipality has a total population of 37,877, with 49.4% male and 50.6% female, giving a sex ratio of 97.49 males per 100 females. The municipality has a population density of 133 persons per square kilometre and comprises 7,197 households, indicating a moderately dense settlement pattern within the district context. The literacy rate stands at 75.8%, with male literacy at 81.1% and female literacy at 70.7%, reflecting a persistent gender gap in educational attainment. Additionally, 5.1% of the population lives with some form of disability, with prevalence higher among males (6%) than females (4.2%). Overall, the demographic indicators portray a relatively balanced population structure with moderate literacy and continued needs for gender and social inclusion improvements (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
83. **Nalgad Municipality:** Nalgad Municipality has a total population of 28,922, with a nearly even gender distribution — 49.7% male and 50.3% female — resulting in a sex ratio of 98.69 males per 100 females. The municipality has a population density of 75 persons per square kilometre and comprises 5,992 households, indicating moderate settlement concentration. The literacy rate is 73.6%, with male literacy at 80.3% and female literacy at 67.1%, reflecting a significant gender gap in educational attainment. Additionally, 4.9% of the population is living with some form of disability, with disability prevalence higher among males (5.6%) than females (4.1%). Overall, Nalgad's demographic pattern shows balanced population distribution, moderate literacy achievements, and continuing gender and social inclusion challenges (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).

### 2.2.1.2 Jumla District

84. **Chandannath Municipality:** Chandannath Municipality has a total population of 21,036, consisting of 49.4% male and 50.6% female, which results in a sex ratio of 97.76 males per 100 females. With a population density of 206 persons per square kilometre and 5,367 households, the municipality exhibits a relatively concentrated settlement pattern compared to other local units in the region. The literacy rate stands at 77.6%, with a substantial gender gap — male literacy at 87.7% and female literacy at 67.8%. Additionally, 2.9% of the population lives with some form of disability, with a slightly higher prevalence among males (3.4%) than females (2.4%). Overall, Chandannath's demographic profile reflects a moderately literate population with persistent gender disparities and emerging social inclusion needs (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
85. **Guthichaur Rural Municipality:** Guthichaur Rural Municipality has a total population of 10,922, with 49.3% male and 50.7% female, resulting in a sex ratio of 97.11 males per 100 females. The municipality has a population density of 26 persons per square kilometre and consists of 2,444 households, indicating a sparsely populated high-hill settlement pattern. The literacy rate stands at 69.2%, with male literacy significantly higher at 79.1% compared to 59.7% among females, reflecting a persistent gender gap in education. Additionally, 2.1% of the population lives with some form of disability, with a slightly higher prevalence among males (2.5%) than females (1.8%). Overall, Guthichaur's demographic profile reveals a small, dispersed population with notable gender disparities in literacy and continued social inclusion needs (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
86. **Kanakasundari Rural Municipality:** Kanaka Sundari Rural Municipality has a total population of 13,625, comprising 49.4% male and 50.6% female, resulting in a sex ratio of 97.72 males per 100 females. With a population density of 60 persons per square kilometre and 2,754 households, the settlement pattern reflects a sparsely populated rural landscape typical of the high-hill region. The literacy rate stands at 68.3%, with male literacy at 77.8% and female literacy at 59.1%, highlighting a significant gender gap in educational attainment. Additionally, 3.4% of the population lives with some form of disability, with slightly higher disability prevalence among males (3.7%) compared to females (3%). Overall, the demographic structure points to a balanced gender composition but reveals persistent disparities in literacy and social inclusion (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
87. **Hima Rural Municipality:** Hima Rural Municipality has a total population of 12,191, with 50.5% male and 49.5% female, resulting in a sex ratio of 101.94 males per 100 females. The municipality has a population density of 92 persons per square kilometre and comprises 2,176 households, reflecting a moderately populated high-hill settlement. The literacy rate stands at 72.7%, with male literacy at 80.1% and female literacy at 65.4%, highlighting a notable gender gap in educational attainment. Additionally, 2.3% of the population lives with some

form of disability, with a slightly higher prevalence among males (2.7%) compared to females (1.8%). Overall, Hima's demographic structure shows a balanced population with moderate literacy levels and continued gender-based disparities that warrant attention (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).

88. **Patarasi Rural Municipality:** The demographic profile of Patarasi Rural Municipality reflects a small but diverse population structure characterized by a total population of 16,824 individuals, with 49.1% male and 50.9% female, and a sex ratio of 96.36 males per 100 females. The municipality has 3,342 households and a population density of 21 persons per sq. km. Literacy levels indicate moderate educational attainment, with an overall literacy rate of 64.5%, including 73.4% literacy among males and 56.1% among females. The population includes a mix of age groups, showing a typical rural demographic distribution with a relatively young population. Disability prevalence stands at 1.7%, with slightly higher rates among males (2%) than females (1.3%). Birth registration coverage is relatively strong at 86.8%, indicating broad access to civil documentation systems. Overall, Patarasi exhibits demographic characteristics typical of rural Karnali — low density, moderate literacy, and balanced gender distribution, providing an essential foundation for local planning and development initiatives (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
89. **Sinja Rural Municipality:** The Sinja Rural Municipality have a total population of 12,556, with 51.1% male and 48.9% female, yielding a sex ratio of 104.4 males per 100 females. The municipality has 2,354 households and a population density of 82 people per sq. km. The overall literacy rate stands at 61.2%, with a notable gender gap: 68.6% literacy among males compared to 53.6% among females. Around 1.8% of the population lives with a disability, affecting 2.2% of males and 1.4% of females. The population is distributed across all age groups, reflecting a young demographic typical of rural Nepal, and additional indicators such as marital status, age at first marriage, and birth registration patterns further illustrate the municipality's socio-demographic characteristics (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
90. **Tatopani Rural Municipality:** Tatopani Rural Municipality has a total population of 15,575, with 49.4% male and 50.6% female, resulting in a sex ratio of 97.75 males per 100 females. The municipality has a population density of 30 persons per square kilometre and consists of 3,318 households, indicating a sparsely populated high-hill settlement pattern. The literacy rate stands at 70.3%, with male literacy at 78.4% and female literacy at 62.4%, highlighting a notable gender gap in access to education. Additionally, 2.3% of the population lives with some form of disability, with a slightly higher prevalence among males (2.7%) compared to females (1.9%). Overall, Tatopani's demographic structure reflects a small and dispersed population with moderate literacy levels and persistent gender-based disparities (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
91. **Tila Rural Municipality:** Tila Rural Municipality has a total population of 14,539, with 49.5% male and 50.5% female, giving a sex ratio of 98.16 males per 100 females. The municipality has a population density of 83 persons per square kilometre and comprises 2,667 households, reflecting a moderately dispersed high-hill settlement pattern. The literacy rate stands at 71.7%, with male literacy at 79% and female literacy at 64.6%, indicating a noticeable gender gap in educational attainment. Additionally, 2.3% of the population lives with some form of disability, with disability prevalence slightly higher among males (2.6%) than females (1.9%). Overall, Tila's demographic profile depicts a balanced population structure with moderate literacy levels and persistent gender-based disparities (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).

### 2.2.1.3 Dolpa District

92. **Thuli Bheri Municipality:** Thuli Bheri Municipality has a total population of 9,861, with 50.2% male and 49.8% female, resulting in a sex ratio of 100.67 males per 100 females. The municipality has a population density of 23 persons per square kilometre and comprises 2,327 households, reflecting a sparsely populated high-mountain settlement typical of Dolpa. The literacy rate stands at 73.7%, with male literacy at 82.7% and female literacy at 64.6%, highlighting a substantial gender gap in educational attainment. Additionally, 2.3% of the population lives with some form of disability, with prevalence slightly higher among males (2.4%) compared to females (2.1%). Overall, Thuli Bheri's demographic structure reveals a small and dispersed population with

moderate literacy levels but notable gender and social inclusion challenges (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).

93. **Tripurasundari Municipality:** Tripurasundari Municipality has a total population of 12,233, comprising 49.7% males and 50.3% females, resulting in a sex ratio of 98.81 males per 100 females. With a population density of 31 persons per square kilometre and 2,622 households, the municipality reflects a sparsely populated high-mountain settlement typical of Dolpa District. The literacy rate stands at 70.9%, with male literacy at 79% and female literacy at 63.1%, indicating a notable gender gap in educational attainment. Additionally, 2.2% of the population is living with some form of disability, with slightly higher prevalence among males (2.5%) than females (1.9%). Overall, Tripurasundari's demographic profile highlights a small, dispersed population with moderate literacy levels and ongoing challenges related to gender disparities and social inclusion (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
94. **Jagadulla Rural Municipality:** Jagadulla Rural Municipality has a total population of 2,575, making it one of the smallest and most sparsely populated local units in Dolpa. The gender distribution shows 48.9% male and 51.1% female, resulting in a sex ratio of 95.82 males per 100 females. With a population density of 31 persons per square kilometre and only 601 households, the region reflects remote, high-mountain settlement characteristics. The literacy rate stands at 73%, with male literacy at 80.8% and female literacy at 65.7%, indicating a considerable gender gap in educational attainment. Additionally, 4.4% of the population lives with some form of disability, with disability prevalence higher among males (5.2%) compared to females (3.7%). Overall, Jagadulla's demographic profile highlights a small, dispersed population where challenges related to education, gender disparities, and social inclusion remain prominent (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
95. **Kaike Rural Municipality:** Kaike Rural Municipality has a total population of 3,965, with 46.7% male and 53.3% female, resulting in a sex ratio of 87.65 males per 100 females. The area is extremely sparsely populated, with a population density of only 8 persons per square kilometre, spread across 916 households, reflecting its remote high-mountain geography. The literacy rate stands at 58.8%, one of the lowest in the district, with a significant gender gap — male literacy at 70.7% compared to 48.3% for females. Additionally, 2.9% of the population lives with some form of disability, with equal prevalence among men and women. Overall, Kaike's demographic profile reveals a small, geographically isolated population with marked educational and gender-based disparities (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
96. **Mudkechula Rural Municipality:** Mudkechula Gaunpalika have a total population of 5,803, with a sex ratio of 101.14 males per 100 females, suggesting a nearly balanced gender composition. The area has a population density of 23 persons per square kilometre, reflecting its sparsely populated, rural character. There are 1,190 households, and the municipality records a literacy rate of 77%, with literacy higher among males (83.3%) than females (70.5%). About 4% of the population lives with some form of disability, with slightly higher disability prevalence among males (4.9%) compared to females (3.2%). Birth registration coverage is notably high at 91.9%, demonstrating strong civil documentation practices. Additionally, most children live with both parents, indicating stable family structures. Overall, the demographic indicators highlight a small, literate, and moderately balanced population with improving social characteristics (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).

#### 2.2.1.4 Dailekh District

97. **Narayan Municipality:** The Narayan Municipality reveals a total population of 26,111, with 46.7% male and 53.3% female, resulting in a sex ratio of 87.77 males per 100 females. The municipality has a relatively high population density of 236 persons per square kilometre and comprises 6,504 households. The overall literacy rate stands at 78%, with higher literacy among males (86%) compared to females (71.1%). Additionally, 3.6% of the population lives with some form of disability, with disability prevalence being slightly higher among males (3.9%) than females (3.3%). These indicators reflect a moderately dense, socially active municipality with gender gaps in literacy and disability prevalence (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
98. **Dullu Municipality:** Dullu Municipality have a total population of 39,143, of which 46.3% are male and 53.7% are female, resulting in a sex ratio of 86.06 males per 100 females. The municipality has 9,053 households and



a population density of 250 people per sq. km, indicating a comparatively dense settlement pattern for a hilly region. The overall literacy rate stands at 74.3%, with literacy significantly higher among males (82.6%) than females (67.3%), revealing a noticeable gender gap in educational attainment. Additionally, 3.5% of the population lives with a disability, affecting 3.9% of males and 3.2% of females, highlighting the need for inclusive social services. Age distribution data shows population presence across all age cohorts, and indicators such as marital status, birth registration, and living arrangements further illustrate the socio-demographic characteristics of the municipality (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).

99. **Aathbis Municipality:** Aathbis Municipality have a total population of 31,092, comprising 49.0% males and 51.0% females, resulting in a sex ratio of 96.26 males per 100 females. The municipality contains 6,134 households with a population density of 185 people per sq. km, reflecting a moderately populated hilly settlement. The overall literacy rate is 73.2%, with a notable gender difference as 81% of males are literate compared to 65.9% of females. Additionally, 3.2% of the population lives with a disability, including 3.5% of males and 2.8% of females, indicating the need for targeted social and health support services. Age distribution data indicates population presence across all age groups, while indicators such as marital status, birth registration, and household headship patterns provide further insight into the municipality's social and demographic structure (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
100. **Chamunda Bindrasaini Municipality:** Chamunda Bindrasaini Municipality has a total population of 26,559, with 49.0% male and 51.0% female, resulting in a sex ratio of 96.18 males per 100 females. The municipality has a population density of 293 persons per square kilometre and comprises 5,113 households, reflecting a relatively concentrated settlement pattern compared to other municipalities in the region. The literacy rate stands at 74.9%, with male literacy at 81.3% and female literacy at 68.7%, indicating a notable gender gap in educational attainment. Additionally, 2.5% of the population lives with some form of disability, with prevalence slightly higher among males (3%) than females (2.1%). Overall, Chamunda Bindrasaini's demographic structure reflects a moderately large population with improving literacy levels, but ongoing challenges related to gender equity and social inclusion (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
101. **Bhairawi Rural Municipality:** Bhairabi Rural Municipality has a total population of 18,767, with 45.7% male and 54.3% female, resulting in a sex ratio of 84.3 males per 100 females, indicating a significantly higher proportion of females. The municipality has a population density of 170 persons per square kilometre and comprises 4,269 households, reflecting a moderately concentrated rural settlement pattern. The literacy rate stands at 73.9%, with male literacy at 82.1% and female literacy at 67.2%, demonstrating a notable gender gap in educational attainment. Additionally, 4.4% of the population lives with some form of disability, with a slightly higher prevalence among males (5%) compared to females (3.9%). Overall, Bhairabi's demographic profile reflects a predominantly female population with moderate literacy levels and ongoing challenges related to gender equity and social inclusion (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
102. **Bhagawatimai Rural Municipality:** Bhagawatimai Gaunpalika has a total population of 18,206, with a near-balanced gender distribution of 49.5% males and 50.5% females, resulting in a sex ratio of 98.13 males per 100 females. The municipality has 3,550 households and a population density of 120 persons per square kilometre. Literacy levels indicate that 75.8% of residents are literate, with 82.7% literacy among males and 69.1% among females, highlighting a gender gap in educational attainment. Additionally, 3.2% of the population lives with some form of disability, with slightly higher rates among males (3.6%) compared to females (2.8%). Overall, the demographic profile reflects a moderately dense rural municipality with improving literacy and a balanced population structure (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
103. **Dungeshwar Rural Municipality:** Dungeshwar Rural Municipality has a total population of 14,533, with 47.4% male and 52.6% female, resulting in a sex ratio of 90.15 males per 100 females. The municipality has a population density of 138 persons per square kilometre and comprises 3,399 households, indicating a moderately concentrated rural settlement pattern. The literacy rate stands at 79.1%, with male literacy at 87.2% and female literacy at 71.9%, highlighting a significant gender gap in educational attainment. Additionally, 3%

of the population lives with some form of disability, with prevalence higher among males (3.6%) compared to females (2.4%). Overall, DUNGESHWAR's demographic profile reflects a predominantly female population, relatively strong literacy levels, and ongoing challenges related to gender disparities and social inclusion (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).

104. **Gurans Rural Municipality:** Gurans Rural Municipality has a total population of 21,189, with 49.1% males and 50.9% females, resulting in a sex ratio of 96.43 males per 100 females. The municipality has a population density of 129 persons per square kilometre and comprises 4,541 households, indicating a moderately concentrated rural settlement pattern. The literacy rate stands at 79.1%, with male literacy at 86.9% and female literacy at 71.8%, reflecting a notable gender gap in educational attainment. Additionally, 2.5% of the population lives with some form of disability, with disability prevalence slightly higher among males (2.8%) compared to females (2.1%). Overall, Gurans' demographic characteristics point to a balanced gender composition, relatively strong literacy levels, and ongoing challenges related to gender equity and social inclusion (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
105. **Mahabu Rural Municipality:** Mahabu Rural Municipality has a total population of 18,059, with 45.8% males and 54.2% females, resulting in a notably low sex ratio of 84.33 males per 100 females. The municipality has a population density of 163 persons per square kilometre and comprises 3,968 households, indicating moderately concentrated rural settlement patterns. The literacy rate stands at 76.4%, with male literacy at 84.2% and female literacy at 70%, reflecting a clear gender gap in educational attainment. Additionally, 3.2% of the population lives with some form of disability, with disability prevalence higher among males (4.1%) than females (2.5%). Overall, Mahabu's demographic profile highlights a predominantly female population, improving but uneven literacy outcomes, and continuing challenges related to gender equality and social inclusion (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
106. **Naumule Rural Municipality:** Naumule Rural Municipality has a total population of 19,687, with 48.2% male and 51.8% female, resulting in a sex ratio of 93.09 males per 100 females. The municipality has a population density of 86 persons per square kilometre and comprises 4,223 households, reflecting a moderately dispersed rural settlement pattern. The literacy rate stands at 76.3%, with male literacy at 82.3% and female literacy at 70.9%, demonstrating a noticeable gender gap in educational attainment. Additionally, 2.8% of the population lives with some form of disability, with disability prevalence higher among males (3.5%) than females (2.1%). Overall, Naumule's demographic structure reflects a slightly female-dominated population, improving but uneven literacy outcomes, and moderate challenges in social inclusion (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
107. **Thantikandh Rural Municipality:** Thantikandh Rural Municipality has a total population of 18,301, with 48.8% males and 51.2% females, resulting in a sex ratio of 95.29 males per 100 females. The municipality has a population density of 207 persons per square kilometre and comprises 3,840 households, indicating a moderately concentrated rural settlement pattern. The literacy rate stands at 70.5%, with male literacy at 77.5% and female literacy at 63.9%, highlighting a noticeable gender gap in educational attainment. Additionally, 3% of the population lives with some form of disability, with disability prevalence slightly higher among males (3.5%) than females (2.5%). Overall, Thantikandh's demographic profile reflects a slightly female-dominant population, moderate literacy outcomes, and ongoing challenges related to gender equality and social inclusion (Government of Nepal, Office of the Prime Minister and Council of Ministers, National Statistics Office, 2021).
108. An overview of the population per project district, disaggregated by sex, is available in Table 2.

Table 2: Project districts census

District	Municipality	Total population	Male	Female
<b>Jajarkot</b>	Barekot Rural	22,005	11,025	10,980
	Junichande Rural	23,771	11,838	11,933
	Kushe Rural	23,058	11,506	11,552
	Shivalaya Rural	14,776	7,299	7,477
	Bheri Malika	37,892	18,378	19,514
	Chhedagad	37,877	18,711	19,166

	Total	188,301	93,131	95,170
<b>Jumla</b>	Chandannath	21,036	10,392	10,644
	Guthichaur Rural	10,922	5,385	5,537
	Kanakasundari Rural	13,625	6,731	6,894
	Hima Rural	12,191	6,156	6,035
	Patarasi Rural	16,824	8,261	8,563
	Sinja Rural	12,556	6,416	6,140
	Tatopani Rural	15,575	7,694	7,881
	Tila Rural	14,539	7,197	7,342
	Total	117,268	58,231	59,037
<b>Lower Dolpa</b>	Thuli Bheri	9,861	4,950	4,911
	Tripurasandari	12,233	6,080	6,153
	Jagadulla Rural	2,575	1,259	1,316
	Kaike Rural	3,965	1,852	2,113
	Mudkechula Rural	5,803	2,919	2,884
	Total	34,437	17,060	17,377
<b>Dailekh</b>	Narayan	26,111	12,194	13,917
	Dullu	39,143	18,123	21,020
	Aathbis	31,092	15,235	15,857
	Chamunda Bindrasaini	26,559	13,014	13,545
	Bhairawi Rural	18,767	8,577	10,190
	Bhagawatimai Rural	18,206	9,012	9,194
	Dungeshwar Rural	14,533	6,889	7,644
	Gurans Rural	21,189	10,404	10,785
	Mahabu Rural	18,059	8,271	9,788
	Naumele Rural	19,687	9,489	10,198
	Thantikandh Rural	18,301	8,931	9,370
	Total	251,647	120,138	131,509
	Grand Total	591,653	288,560	303,093

## 2.2.2 Structure of forest-dependent livelihoods and associated value chains

109. Beyond broad environmental services such as soil and conservation and eco-tourism, forests are a direct source of livelihood for millions of Nepalese people, providing critical subsistence goods and income opportunities – especially for rural communities. Nepalese society is deeply intertwined with forests, with nearly 90% of Nepalis estimated to rely on forest resources for their livelihoods. Timber and wood have traditionally been used for housing, tools and energy, but equally important are the non-timber forest products (NTFPs) – all the useful materials from forests other than timber, including wild edible fruits and nuts, mushrooms, medicinal and aromatic plants, fibres (like bamboo and cane), resins and oils, fodder grasses, and more (FAO, 1999). Over 51% of households still use firewood as their primary cooking fuel (NSO, 2021), with forests supplying about 90% of Nepal's total fuelwood and over 50% of the fodder for livestock (Piras, 2013). Culturally, forests are also woven into Nepal's heritage – many ethnic groups have traditional knowledge of medicinal plants and consider certain groves and tree species sacred, while community stewardship arrangements include provisions for spiritually significant woodlands.

Table 3 provides an overview of livelihood types per district and municipalities targeted under this project.

Table 3: Overview of livelihood types per district and municipalities (UN-Habitat Nepal, 2026); (Embassy of Japan in Nepal, 2024); (Nepal Structural Diary, 2026); (4S Jumla, 2025); (Adhikari, 2024); (Hem Raj, et al., 2023); (Explore Dolpo Trekking, 2025); (Nepal Structural Diary, 2026); (Chettri, 2024)

Districts	Rural municipalities	Livelihood Types	Urban municipalities	Livelihood Types
<b>Jajarkot</b>	Barekot Rural Municipality	Mixed agriculture (maize, millet), livestock, earthquake-affected livelihood recovery, bee-keeping, small trade.	Bheri Municipality	Agriculture, livestock, small trade, seasonal migration/remittances. (District-wide livelihood patterns).
	Junichande Rural Municipality	Agriculture (maize, millet, barley), livestock, NTFP/herb collection, remittances.	Chhedagad Municipality	Agriculture, livestock, vegetable farming, small markets.
	Kushe Rural Municipality	Agriculture, livestock, forest-based products, small livestock trade.	Nalgad Municipality	Climate-smart agriculture (polyhouses, high-value vegetables, orchards), livestock, small enterprise.
	Shivalaya Rural Municipality	Agriculture, livestock (goat/cattle), wage labour, seasonal migration.	Not Applicable (NA)	NA
<b>Jumla</b>	Guthichaur Rural Municipality	Agriculture (Marsi rice, barley, buckwheat), apple & walnut, livestock.	Chandannath Municipality	Apple value chain, walnut, small trade, micro-enterprises, agriculture.
	Hima Rural Municipality	Agriculture, livestock (sheep/goat), herbs (yarshagumba, jatamansi).	NA	NA
	Kankasundari Rural Municipality	Agriculture (apple, beans, potatoes), livestock, herb collection.	NA	NA
	Patarasi Rural Municipality	High-altitude agriculture, livestock herding, medicinal herbs.	NA	NA
	Sinja Rural Municipality	Agriculture, livestock, heritage-based tourism potential, cereals.	NA	NA
	Tatopani Rural Municipality	Diverse agriculture: rice, barley, buckwheat, potatoes, beans; apple/walnut; crop rotation systems; livestock.	NA	NA
	Tila Rural Municipality	Agriculture, livestock, improved livelihoods from small infrastructure investments (roads, irrigation).	NA	NA
<b>Dolpa</b>	Jagadulla Rural Municipality	High-altitude agro-pastoralism, yak/goat herding, barley, potatoes, medicinal herbs (yarsagumba).	Thuli Bheri Municipality	Agro-pastoralism, trade, service-based livelihoods, small commerce.
	Kaike Rural Municipality	Subsistence crops (barley, millet, buckwheat), yak/cattle herding, yarsagumba.	Tripurasundari Municipality	Agriculture, livestock, trade, local services.
	Mudkechula Rural Municipality	Agro-pastoralism, livestock migration, herb harvesting, traditional trade of herbs and NTFs.	NA	NA
<b>Dailekh</b>	Bhairawi Rural Municipality	Agriculture (rice, maize, wheat), livestock (goat/cattle), small trade.	Narayan Municipality	Agriculture, livestock, small commerce, market hub of district.
	Bhagawatimai Rural Municipality	Agriculture, livestock, NTFP collection, seasonal migration.	Dullu Municipality	Agriculture, climate-resilient vegetable farming, women-led enterprises.
	Dungeshwar Rural Municipality	Agriculture, livestock, herbs, wage labour.	Aathbis Municipality	Agriculture, livestock, trade, small markets and services.
	Gurans Rural Municipality	Agriculture, livestock, NTFPs, rural enterprise.	Chamunda Bindrasaini Municipality	Agriculture, livestock, small trade and services.
	Mahabu Rural Municipality	Agriculture, livestock, forest products; high reliance on farming.	NA	NA

	Naumule Rural Municipality	Agriculture, vegetable farming, climate-resilient practices, women-led farming groups.	NA	NA
	Thantikandh Rural Municipality	Subsistence agriculture, livestock, forest products, seasonal migration to India for seasonal jobs	NA	NA

### 2.2.2.1 Non-timber forest products (NTFPs) and medicinal and aromatic plants (MAPs)

110. Nepal's extensive altitudinal and climatic gradients have resulted in rich biodiversity, with nearly 12,000 floral species identified across the country. Of these, at least 700 plant species are medicinal, 440 provide wild foods, 30 are spices, and 71 are yielding natural fibres (Shrestha, et al., 2020). Table 4 introduces Nepal's non-timber forest products based on their uses in the country. NTFP-based enterprises in Nepal employ thousands of collectors and processors, as well as attracting village investors (some of whom are seasonal). Table 4 lists key NTFPs across different altitudes on Nepal, with the highest diversity present in the hills areas between 1,000m and 3,000m.

Table 4. Categories of non-timber forest products based on their uses in Nepal (Pyakurel & Baniya, 2011)

Category	Terai and Siwaliks (up to 1000 m height)	Hills (1000 to 3000 m height)	Mountains (above 3000 m height)
<b>Medicinal and aromatic plants</b>	Aank, Akashbeli, Amala, Ander, Asuro, Bel, Barro, Batulo Pate, Bhringaraj, Bojho, Chiuri, Curry Leaf, Dhathuro, Dhayaro, Dronpuspi, Ghodtapre, Ghyukumari, Gujro, Harro, Indrajau, Indreni, Kakdsinghi, Kantakari, Kauso, Khas Has, Kurilo, Laghupatra, Museli, Neem, Pipla, Rajbriksha, Sarpagandha, Simal, Sindhure, Tatelo, Ttepati, Tulasi, Tunni	Akarkaara, Akashbeli, Chiraito, Chutro, Bajradanti, Banjira, Batulo Pate, Bhutkesh, Bojho, Budo Okhati, Dalechuk, Devdar, Dhasingre, Dhathelo, Dhathuro, Dhayaro, Dronpuspi, Eklebir, Gamdol, Ghoda Marcha, Ghyu Kumara, Guchichyau, Hadchur, Indren, Jhyau, Jiwanti, Kurilo, Kaladana, Lauthsalla, Malagiri, Pakharved, Pudna, Satuwa, Siltimur, Sugandhakokila, Sugandhawal, Thulo Okhati, Timur, Titepati, Tulasi, Tunni	Attis, Bhutkesh, Bhuinchuk, Bish, Bishma, Dhupi, Dhupjadi, Jatamansi, Jhyau, Kakoli, Kutki, Laghupatra, Lauthsalla, Maharangi, Maikopila, Ninejadi, Nirmasi, Padamchal, Padam Puskar, Panchaaule, Sarmaguru, Somlata, Sunpati, Talispatra, Yarsagumba
<b>Fiber</b>	Bhang, Babyo, Ketuki	Allo, Babiyo, Bhang	NA
<b>Paper</b>		Lokta, Argeli, Furkepat	
<b>Dyes</b>	Bot Dhayaro	Chutro, Jamanemanro, Majitho, Okhar (husk), Kafal, Dalechuk	Padamchal, Bhuinchuk
<b>Bamboos, Rattans, Vines</b>	Bamboos, Bet	Nigalo	Nigalo
<b>Wild food including spices, culinary</b>	Bel, Bayar, Bhyakur, Chiuri, Curry Leaf, Jamun, Kadam, Kurilo, Sajyon, Siplikan, Tejpat	Ainselu, Bhyakur, Gunyalo. Kafal, Katush, Jhuse Til, Koiralo, Kukurdaino, Lapsi, Latte, Lude, Malo, Nigalo, Niuro, Okhar, Siplikan, Sisnu, Tarul, Tejpat, Unyu	Banlasun, Jangali Jira, Jimbu, Padamchal
<b>Resins</b>		Khoye Salla	NA
<b>Soaps/ detergents</b>	Rittha, Sikakai	Sedum spp., Pangar	
<b>Others</b>	Bhorla, Dar, Chhatiwan, Khayar, Pawan, Sajiwan, Sal Seed, Simal, Rudraksha	Bilaune, Kaulo, Amriso, Nagbeli, Rudraksha	Bhojpatra

111. It is notable that the most prevalent category of NTFPs is the medicinal and aromatic plants (MAPs) — key sub-sector in Nepal, especially in the Karnali province. MAPs hold cultural, religious and economic values in Nepalese communities, growing as an important commercial sector that provides livelihood opportunities for low-income households, especially in the Himalayas (Aryal, et al., 2023). The use of MAPs as supplementary food and ethnomedicine is complemented by its potential cash income, making it an extremely important source of livelihoods and resilience for the poor rural people of Nepal (Shrestha, et al., 2020). Given the remoteness of many rural areas in Nepal — compounded by a lack of land for agriculture and limited livelihood diversification opportunities — MAPs have become an integral part of Nepalese health and livelihood systems in rural areas

(Aryal, et al., 2023). It is estimated that more than 75% of the people in Nepal use herbal drugs (Kalauni & Joshi, 2018).

112. A total of 58 species of MAPs have been identified in Karnali Province, including annuals, biennials and perennial plants that are used as medicines, perfumes and food. The collection of MAPs – particularly herbs – in Karnali is a long-standing practice to augment incomes sources — providing livelihood opportunities for local communities. Moreover, given the limited access to modern medical facilities and services, most of the local population rely on medicinal plants for their basic primary health care (Aryal, et al., 2023). Additionally, NTFPs and MAPs provide a vital secondary source of income for rural people in Karnali Province, accounting for 35-50% total household income (Shrestha, et al., 2020).
113. The higher part of the western region (including Karnali) provides a favourable environment for the growth of several high-value MAPs, including Yarsagumba (*Cordyceps sinensis*), Satuwa (*Paris polyphylla*), Guchchi Chyau (*Morchella esculenta*). Yarsagumba is particularly sought after given its considerable medicinal and financial value. In upper part of the Karnali Province, especially in Humla, Jumla and Dolpa, locals involved in collection and gathering Yarsagumba have been found to earn a decent living by selling this valuable medicinal plant, enabling them to diversify away from other livelihoods and focus entirely on this high-value plant. While not all plants are as profitable, communities in rural areas of Karnali Province have been found to be able to sustain their livelihood for 6–8 months of the year through the collection and sale of valuable herbs (Aryal, et al., 2023).
114. While most of the MAPs from Karnali Province are collected from the wild (~85%), there is a growing trend to cultivate maps in community forests and private land — particularly in lower altitude, with cultivated species including Timur (*Zanthoxylum piperitum*), Lemongrass (*Cymbopogon citratus*), Mentha (*Mentha piperita*), Citronella (*Cymbopogon nardus*), Palmarosa (*Cymbopogon martini*), Chamomile (*Matricaria chamomilla*), Tejpat (*Cinnamomum tamala*), Soapnut (*Sapindus mukorossi*) and Kurilo (*Asparagus racemosus*) (Aryal, et al., 2023).
115. Estimates of the quantity of NTFPs collected in Nepal differ greatly by source. In the 1990s, it was estimated that 10,000–15,000 MT of NTFPs are harvested in the Middle Hills and High Mountains of Nepal, roughly 15–20% of which is believed to be from Karnali (Subedi, 1999). More recent studies have shown export numbers to reach 27,000 MT annually (Olsen, 2005), up to 33,000 MT annually (Shrestha, et al., 2020). In the mid-1990s, efforts were made by the Nepal Foresters Association to evaluate and appraise the broader value of NTFPs in Nepal. This included a survey of manufacturers, merchants, and processors of NTFPs around Nepalgunj which found that 100 business-owners managed over 42,000 MT of NTFPs, with more than 100 specific NTFPs products valued at ~US\$26 million.
116. Approximately 90% of the raw materials from NTFPs harvested in Nepal are exported to foreign markets, primarily in India — bringing in significant foreign exchange income into the country, estimated to be at least six times the earnings from timber-related products. The economic value of these exports has also risen substantially in recent decades, from US\$ 27.49 million in 2005 to US\$ 60.09 million in 2014. However, these estimates of the value of NTFPs for the Nepali economy often focus on formal trade, overlooking the value of many of the less formalised goods and services (Shrestha, et al., 2020).
117. Despite the significant potential of these resources to contribute to Nepal's economic growth — supported by strong community forest management strategies (see Section 2.4) — the NTFP sector is not currently being used to its maximum sustainable potential (Shrestha, et al., 2020). The often-raw nature of exported goods provides lesser benefits to the local and national economy compared to its potential benefits if value-adding processing was done within the country (ANSAB & EWW, 2000). However, despite the added benefit of such processing, Nepal lacks the technical, financial, and guaranteed market capabilities to process NTFPs at scale. What processing does happen at the local level entails various levels of cleansing, drying and packaging.
118. The Government of Nepal through its forest policies has identified 30 high-value MAPs that are suited to further economic development (Table 5Table 4). This includes both through sustainable extraction from natural forests and cultivation in private and community forests. Of these, 12 species have been prioritised for cultivation and research in Nepal (Table 6) because of their medicinal benefits, yields of essential oils, or high income-generating potential (Chhetri, et al., 2021).

Table 5. MAPs Species Identified for Economic Development (Chhetri, et al., 2021)

Scientific Name	Local Name	Distribution Range (m)	Major Parts Used	Main Uses
<i>Aconitum heterophyllum</i>	Atis	2400–4100	Rhizome, Roots	Medicine
<i>Aconitum spicatum</i>	Bisjara	3300–4300	Flower, Leaves	Medicine, Scented oil
<i>Acorus calamus</i>	Bojho	200–2300	Roots	Medicine
<i>Asparagus racemosus</i>	Kurilo	150–2100	Roots, New shoots	Medicine, Food
<i>Azadirachta indica</i>	Neem	100–900	Whole plant	Medicine
<i>Bergenia ciliate</i>	Pakhanbed	1600–3600	Rhizome	Medicine
<i>Cinnamomum glaucescens</i>	Suganda kokila	200–2500	Fruit	Medicine, Scented oil
<i>Cinnamomum tamala</i>	Tejpat	450–2100	Bark, Leaves	Medicine, Spice
<i>Dactylorhiza hatagirea</i>	Panchaunle	2800–4000	Rhizome	Medicine
<i>Dioscorea deltoidea</i>	Bhyakur	450–3100	Fruit, Roots	Food
<i>Gaultheria fragrantissima</i>	Dhasingre	1200–2700	Leaves	Scented oil
<i>Juglans regia</i>	Okhar	1200–3000	Fruit, Bark	Medicine, Food
<i>Lichen spp.</i>	Jhau	2500–3400	Whole plant	Medicine
<i>Morchella esculenta</i>	Guchi chyaw	2000–3500	Whole fungus	Food
<i>Nardostachys grandiflora</i>	Jatamansi	3600–5000	Rhizome	Medicine, Scented oil
<i>Neopicrorhiza scrophulariflora</i>	Kutki	3600–4000	Rhizome	Medicine
<i>Ophiocordyceps sinensis</i>	Yarsagumba	4200–5000	Whole fungus, Larvae	Medicine
<i>Phyllanthus emblica</i>	Amala	150–1400	Fruit	Medicine
<i>Piper longum</i>	Pipla	200–800	Fruit	Spice
<i>Podophyllum hexandrum</i>	Laghupatra	2400–4000	Roots, Rhizome	Medicine
<i>Rauvolfia serpentina</i>	Sarpagandha	100–1200	Root	Medicine
<i>Rheum australe</i>	Padamchal	3000–4200	Stem	Medicine
<i>Rubia majith</i>	Majitho	1200–2100	Stem, Root	Coloring
<i>Sapindus mukorossi</i>	Ritha	1000–1400	Fruit, Seed, Bark	Detergent
<i>Swertia chirayita</i>	Chiraito	1500–3000	Whole plant	Medicine
<i>Tagetes minuta</i>	Jangali Sayapatri	1200–2500	Whole plant	Scented oil
<i>Taxus wallichiana</i>	Lauth Salla	2400–3400	Leaves	Medicine
<i>Tinospora sinensis</i>	Gurjo	300–1500	Stem	Medicine
<i>Valeriana jatamansi</i>	Sugandhawal	1500–3600	Root, Rhizome	Scented oil
<i>Zanthoxylum armatum</i>	Timur	1100–2500	Fruit	Spice



Table 6. Price and Policy Arrangement for Cultivation and Research of Selected MAPs (Chhetri, et al., 2021)

Scientific Name	Local Name	Price & Current Policy Arrangement (Forest Regulation, 2051)
<i>Asparagus racemosus</i>	Kurilo	Rs 5/kg
<i>Cinnamomum glaucescens</i>	Sugandha kokila	Rs 7/kg (Banned without processing)
<i>Dactylorhiza hatagirea</i>	Panchaunle	Rs 1000/kg (Banned without permission for collection, trade)
<i>Nardostachys grandiflora</i>	Jatamansi	Rs 20/kg (No trade without processing)
<i>Neopicrorhiza scrophulariflora</i>	Kutki	Rs 15/kg (Protected species, banned for collection)
<i>Piper longum</i>	Pipla	Rs 10/kg
<i>Rauvolfia serpentina</i>	Sarpagandha	Rs 20/kg (dry root)
<i>Swertia chirayita</i>	Chiraito	Rs 15/kg
<i>Taxus wallichiana</i>	Lauth Salla	Rs 25/kg
<i>Tinospora sinensis</i>	Gurjo	Rs 2/kg (Collected from wild)
<i>Valeriana jatamansi</i>	Sugandhawal	Rs 15/kg
<i>Zanthoxylum armatum</i>	Timur	Rs 8/kg

119. While the growing demand for NTFPs and MAPs has significant potential to strengthen rural economies and diversify livelihoods among vulnerable communities, the expansion of the sector needs to be managed sustainably. Several wild plant species have suffered as a result of overharvesting and habitat destruction (Chhetri, et al., 2021). As market demand and market value grows, there are adverse incentives to overharvest wild plants, putting pressures on wild plant stocks. This is exacerbated by unsustainable harvesting practices, particularly related to early-extraction and over-extraction of high-value species, which is cited as one of the key causes of deterioration and scarcity of wild populations (Shrestha, et al., 2020). These pressures are further compounded by competition among harvesters and pressures from traders to increase supply — compelling factors in the context of poverty and food-insecurity.
120. Sustainability is, therefore, a key consideration in expanding the NTFP and MAPs market, particularly in the context of climate change where additional external pressures are not only impacting natural environments but also exacerbating vulnerabilities that underpin unsustainable practices. Efforts to develop NTFP sector should consider the underlying causes of over-exploitation and unsustainable harvesting, including unclear property rights, lack of knowledge about long-term conservation, and market incentives for over-exploitation — all of which require the strengthening of local institutions to regulate sustainable harvesting practices (Shrestha, et al., 2020).

#### 2.2.2.2 Small enterprises/cooperatives

121. Small enterprises and cooperatives supporting forest-dependent livelihoods in Karnali Province typically operate at a modest scale and are closely embedded within community forest governance systems. Many enterprises are either directly established by, or function in close coordination with, CFUGs, which regulate access to forest resources, define harvesting rules, and oversee benefit sharing. CFUGs often provide the institutional foundation for collective production, nursery management, and primary aggregation of NTFPs and MAPs. However, while CFUGs play a critical role in resource stewardship, they are not always structured or mandated to engage in commercial activities, resulting in a separation between forest management functions and enterprise operations. As a result of these complexities, some off-takers and processors of NTFPs and MAPs noted that they tend to target private landowners, where agreements can be made more rapidly and with less complexity than when engaging community groups, where fair-use and benefit sharing needs complicate transactions.
122. At the enterprise level, production and marketing are frequently mediated by informal or semi-formal intermediaries who link remote communities and private landowners to off-takers and processors located in regional market centres such as Surkhet and Nepalgunj. These intermediaries typically provide aggregation, transport, and market access services that are otherwise unavailable to small producers and may also offer advance payments or in-kind credit. While intermediaries perform an essential logistical role in overcoming



remoteness and scale constraints, their dominance in the value chain often limits price transparency and bargaining power for producers. As a result, small enterprises and cooperatives tend to capture only a small share of the final product value, particularly when products are sold unprocessed or without quality certification.

123. The degree of formality among cooperatives and enterprises in Karnali varies widely. Some producer groups and cooperatives are formally registered, maintain basic financial records, and engage with banks or government support programmes, while others operate informally or under hybrid arrangements linked to CFUG structures. Informal groups often offer flexibility and low transaction costs but face barriers in accessing finance, entering formal contracts, or scaling operations. Conversely, more formal cooperatives can engage with buyers, certification bodies, and public programmes but may struggle with governance capacity, compliance costs, and limited managerial skills. Strengthening linkages between CFUGs, enterprises, and cooperatives — while supporting appropriate levels of formalisation — remains central to improving the performance and resilience of forest-based livelihood systems in Karnali.

### **2.2.2.3 Market linkages and value chain constraints**

124. Forest-dependent livelihoods in Karnali Province are characterised by long, fragmented, and weakly integrated value chains, shaped by remoteness, difficult terrain, and limited physical and institutional connectivity to markets. Many high-value NTFPs and MAPs are harvested in remote mid-hill and mountain areas and sold in raw or semi-processed form to local traders, who aggregate products for onward sale to regional hubs such as Surkhet and Nepalgunj or to cross-border markets. Poor road infrastructure, seasonal inaccessibility, high transport costs, and limited storage and processing facilities significantly reduce producers' bargaining power and increase post-harvest losses, constraining income potential despite strong underlying demand for forest products.
125. Value chain constraints are compounded by limited technical capacity and weak organisation at the producer level. Many Community Forest User Groups and smallholder producers lack access to reliable market information, quality standards, and certification services, and have limited experience with collective marketing, product grading, or contract negotiation. As a result, forest-dependent households are often price takers, reliant on informal intermediaries and exposed to price volatility. Inadequate access to finance further restricts investment in nurseries, sustainable harvesting, processing equipment, and value addition, while regulatory complexity and unclear permitting requirements for NTFP harvesting and trade can discourage formalisation and private sector engagement.
126. At a systemic level, forest-based value chains in Karnali suffer from weak vertical and horizontal linkages, with limited coordination between producers, processors, traders, service providers, and government support programmes. While national and provincial initiatives exist to promote agroforestry, enterprise development, and rural industrialisation, these are not consistently tailored to the realities of remote forest landscapes or aligned with community forest management systems. The absence of locally embedded aggregation nodes, processing centres, and business development services limits opportunities to capture value closer to the source. Addressing these constraints requires targeted interventions to strengthen producer organisations, improve market access and logistics, support sustainable production and certification, and connect forest-dependent livelihoods to resilient and inclusive value chains that can withstand climate and market shocks.
127. Further details on the specific value chains for the target districts are presented below. This analysis synthesizes available evidence on agricultural and forest-based value chains, business promotion initiatives, and the supply chains and trade of NTFPs and MAPs in four Karnali Province districts—Jajarkot, Dolpa, Jumla, and Dailekh. It draws on the High Value Agriculture Project in Hill and Mountain Areas (HVAP) and complementary studies by ANSAB, CECI, academic journals, and development partners. District-specific findings highlight current commodity portfolios, market structures, income contributions, bottlenecks, and feasible enterprise opportunities. Cross-cutting recommendations emphasize inclusive value chains, sustainable harvesting, local processing and certification, market information systems, and enabling policies to unlock the sector's livelihood and fiscal potential.

### **HVAP Overview and Value Chain Approach**

HVAP (2011–2018) operated across Karnali districts including Jumla, applying an inclusive value chain development model that linked producer organizations (POs) with traders, input and service providers, and

finance. Seven priority commodities included apple, ginger, vegetable seeds, off-season vegetables, turmeric, timur (Sichuan pepper), and goats. The project strengthened business literacy, facilitated formal contracts, and improved service market coordination — providing transferable lessons for NTFP/MAP chains (e.g., aggregation, transparent transactions, and logistics).

#### **District Profile: Jajarkot**

128. Commodity Portfolio and Trade: Jajarkot trades a diverse set of NTFPs and MAPs (53 species), with significant roles for medicinal plants and resin tapping. 2015–2020 data indicate average exports of 1.59 million kg of NTFPs annually, generating approximately NPR 3.82 million through royalties — about NPR 2.25 million from MAPs and NPR 1.57 million from resin. Supply chains are characterized by wild collection, local aggregation, and onward trade to national hubs and markets.
129. Bottlenecks: Predominant raw-material trade with limited local processing; variable market information; quality assurance gaps; and seasonal access constraints.
130. Enterprise Opportunities: Establish community-scale resin and MAP processing (grading, drying, essential oils) linked to cooperative aggregation; pilot quality standards and traceability; facilitate trader competition and transparent pricing; targeted business literacy and microfinance for collector groups.

#### **District Profile: Jumla**

131. Commodity Portfolio: Besides HVAP focus commodities (apple, vegetable seeds, ginger), Jumla hosts high-altitude MAPs such as Jatamansi and Sugandhawal. NTFPs constitute a substantial share of household cash incomes ( $\approx 20\%$ ), second to seasonal wage labour. The district has established producer organizations and contracting models under HVAP that can be adapted for NTFP/MAP chains.
132. Bottlenecks: Oligopolistic trader structures along the Nepalgunj corridor; limited sustainable harvesting plans; and weak legal awareness within forest user groups (FUGs).
133. Enterprise Opportunities: Organic apple branding and cold-chain logistics; MAPs sustainable harvest plans with community handover; legal literacy for FUGs; market information systems; exploration of small-scale essential oil distillation where feasible.

#### **District Profile: Dolpa**

134. Commodity Portfolio: Dolpa's high-elevation ecosystems harbour premium MAPs (e.g., Jatamansi) and other high-value NTFPs, with potential but sensitivity around species like *Ophiocordyceps* (Yarsagumba). Forest-based enterprises are constrained by remoteness and regulatory complexities.
135. Bottlenecks: Transport/connectivity limitations; compliance and permitting burdens; variable resource inventories; and limited enterprise services.
136. Enterprise Opportunities: Community forest enterprises focusing on sustainable MAP management, local value addition (cleaning, drying, grading), eco-certification (where applicable), and cluster-based logistics solutions (shared transport and storage).

#### **District Profile: Dailekh**

137. Commodity Portfolio: Ethnobotanical studies (e.g., Gurans area) document rich medicinal plant diversity with community knowledge bases conducive to conservation-linked enterprises. Potential exists for herbal processing and essential oil extraction subject to resource assessments and technical capacity.
138. Bottlenecks: Limited technical know-how, investment capital, and standardized quality control; gaps in market linkage for processed products.
139. Enterprise Opportunities: Establish training programs on processing technologies; pilot community-owned distillation units; integrate ethnobotanical documentation into resource governance; develop branding around locality and sustainable practices.

## Cross-Cutting Findings and Themes

140. Supply Chain Structure: NTFP/MAP chains typically involve wild collection by smallholders, local traders/aggregators, and transport to regional hubs (e.g., Nepalgunj) before export. Margins are often captured by a few downstream traders; collectors face price asymmetries and limited information.
141. Sustainability and Governance: Sustainable harvesting plans, community forest handovers, and legal literacy for FUGs are pivotal to maintain resource bases and improve bargaining power.
142. Business Promotion: Private-sector strategies emphasize enterprise services, standardization, certification, traceability, and finance. HVAP's inclusive value chain framework demonstrates effective producer–trader contracting and service market strengthening.

## Recommendations

- 1) District Enterprise Roadmaps: Develop district-specific MAP/NTFP enterprise plans with resource inventories, sustainable harvest quotas, and investment needs.
- 2) Local Value Addition: Establish community processing units (drying, grading, packaging, and select essential oil distillation) with quality protocols and traceability.
- 3) Market Information & Competition: Deploy price/volume dashboards; encourage multiple buyer entry through transparent tendering at collection centres.
- 4) Financing & Business Literacy: Expand microfinance and cooperative credit lines; provide targeted business literacy modeled on HVAP curricula.
- 5) Certification & Standards: Pilot Good Wild Collection Practices (GWCP) and eco-labels; adopt national quality standards for MAPs.
- 6) Policy & Institutional Support: Streamline permits; clarify FUG rights for NTFP areas; strengthen provincial coordination for trade and exports.

### 2.2.3 Poverty, migration, food security context

143. Karnali Province is widely recognised as one of the most structurally disadvantaged regions in Nepal, with persistent poverty driven by geographic isolation, limited infrastructure, low agricultural productivity, and constrained access to services and markets. The National Planning Commission's Multidimensional Poverty Index 2021 shows that 39.5% of Karnali's population faces multidimensional poverty, highest among all of Nepal's provinces (UNDP, 2024). Livelihoods are predominantly subsistence-based, combining rainfed agriculture, livestock rearing, forest resource use, and seasonal wage labour. High levels of multidimensional poverty are reflected in limited income diversification, low asset ownership, and chronic vulnerability to climatic and economic shocks. These structural conditions are further exacerbated by climate variability, which affects crop yields, water availability, and the reliability of natural resource-based livelihoods.
144. Out-migration is a defining livelihood strategy in Karnali, particularly among working-age men, as households seek to compensate for limited local economic opportunities. Seasonal and longer-term migration to urban centres within Nepal and to neighbouring countries is common, generating remittance income that is critical for household survival but also creating labour shortages in agriculture and community institutions. Migration can weaken local production systems and social cohesion, particularly where women, elderly people, and children are left to manage farms and community responsibilities with limited support. At the same time, reliance on remittances exposes households to external economic shocks and can reduce incentives and capacity for local investment in productive, climate-resilient livelihoods.
145. Food insecurity remains a persistent challenge across much of Karnali Province, with many districts experiencing chronic or seasonal food deficits. WFP reports that Karnali province continues to experience the highest prevalence of food insecurity in the country at 22 percent (WFP, 2024). Short growing seasons, fragmented landholdings, low soil fertility, and limited access to irrigation and agricultural inputs constrain local food production, while poor road connectivity increases the cost and volatility of food supplies from outside the province. Climate-related stresses — such as delayed monsoons, prolonged dry spells, and extreme weather

events — further undermine food availability and stability. As a result, many households depend on food purchases, forest foods, and external assistance to meet basic needs, underscoring the close interlinkages between poverty, migration, food security, and climate vulnerability in Karnali.

#### 2.2.4 Gender, caste, and indigenous inclusion

146. Karnali Province, spanning 30,211 km<sup>2</sup> or 21.6% of Nepal's landmass, supports over 250,000 women farmers who contribute 70% of agricultural labour and drive 30% of provincial GDP, alongside significant Dalit and Indigenous populations. Yet systemic GEDSI gaps persist: women hold less than 10% land titles, PwDs face a 22% health access deficit, and 68% of women remain in informal labour yielding a multidimensional poverty index (MPI) of 0.42 double the national average of 0.18. Karnali's organic potential, including 20,000 MT of Jumla apples and over NPR 500M in Dolpa herbs, risks elite and middlemen capture without targeted inclusion. This assessment demonstrates the feasibility of a USD 9.2M GCF investment to deliver transformative leave-no-one-behind (LNOB) outcomes through land reforms, resilient value chains, and inclusive early warning systems.
147. Key barriers underscore the urgency. Gender disparities exclude women from CIP subsidies (50–15% climate-smart agriculture inputs) due to land tenure gaps, while middlemen draw off 40-60% margins from organic products and women reinvest less than 15% of remittances into assets compared to 35% by men. Caste dynamics overburden Dalit women in informal roles, with elite capture undermining 40% community forest user groups (CFUG) quotas. Indigenous high-altitude communities in Dolpa suffer from weak NTFC rights enforcement, compounded by 2023 shocks like 40% crop losses. PwD women, at 5.3% prevalence, endure 15% higher disaster mortality rates (National Federation of the Disabled - Nepal (NFD-N), 2023).
148. A supportive enabling environment enable integration. Robust policies include the Provincial Gender Equality and Social Inclusion (GESI) Policy mandating 33% women and PwD quotas, the Federal Forest Act 2019 requiring 50% women in CFUGs governing body, and NAP/CIP/LDCRPs allocating 10% gender-responsive agricultural budgets. Capacities feature GESI units in 24 of 35 municipalities and LDCFPs operational in 80% of palikas, strengthened by UNDP data-driven budgeting. Non-state actors provide proven models: Green Karnali trains 73% women for 25% yield increases, FECOFUN Paani reduces water scarcity by 40%, FNCCI expos connect 5,000+ to markets, and NTNC's GCF Readiness build proposal pipelines.
149. Risk demand proactive mitigations, as outlined below: Land exclusion (high risk, <10% women titles) will be addressed through joint titling and 50 cooperatives targeting 20% title increases and 33% quota compliance. Remote PwD barriers (high risk, 22% gap and 15% mortality) require inclusive EWS/roads and training 1,000 responders for 90% reach. Elite capture (high risk, <20% women decisions) calls for NTNC audits and reserved seats to achieve over 40% women leadership. Market failures (medium risk, 40–60% margins) necessitate FNCCI hubs and certification to cut margins below 20%.
150. GEDSI integration demonstrates strong feasibility with full GCF policy alignment, scalable models, and robust mitigations ensuring no regression. The USD 9.2M investment will catalyse transformative change for 250,000+ marginalised producers, averting elite bypass while generating 3 economic returns via resilient organics (Annex 4: GEDSI Assessment Report).

#### Recommendations:

- Commission sex/caste/IP/Pwd disaggregated baseline
- Establish NTNC led FPIC/multi-stakeholder platform
- Embed NTNC for GESI Actin Plan/M&E.
- This positions Karnali as GCF benchmark for intersection climate finance in LDCs.

### 2.3 Climate Change Context

151. The climate change context in Nepal is based on a Vulnerability and Risk Assessment published by the Ministry of Forests and Environment on behalf of the Government of Nepal (MoFE, 2021), supplemented by more recent data from the World Bank's Climate Change Knowledge Portal (CCKP).

152. As a baseline, Nepal experiences substantial geographic variation, particularly with regards to its steep topographical gradients — the extensive elevation span from 67m to 8,848 m above sea level (masl) occurs across a north–south trajectory of only 80 km. The country can be divided into five regions namely: i) the Terai plains; ii) the Siwalik hills; iii) the Middle Mountains; iv) the High Mountains; and v) the High Himalayas. The Terai plains lie below 500 masl with humid tropical climates and average temperatures of 30°C in the summer and 10–15°C in the winter. The more elevated areas, such as the Siwalik hills at 500–1,000 masl, have a moist tropical climate and average annual temperatures of 25°C. A temperate zone features across the Middle Mountains at elevations of 1,000–3,000 masl, with average annual temperatures of 20°C. The High Mountains, located 3,000–5,000 masl, have a cool, sub-alpine climate with average summer temperatures of 5–15°C and winter temperatures below 0°C. Extreme conditions dominate the High Himalayas, which comprise an alpine to arctic zone higher than 5,000 masl with average annual temperatures of <0 to 5°C (Pokharel, et al., 2020).
153. With the Himalayan mountains positioned to the northern extent of the country, this gradient is most notable from north to south with low temperatures in high-altitude areas and high temperatures in the Southern plain. The annual minimum temperature, aggregated by district, varies from -4 to 19°C while the maximum temperature varies from 4 to 30°C. Manang district has the lowest (<5°C) annual average maximum temperature while most of the Southern plain districts have the highest normal annual maximum temperature that is usually above 30°C. In physiographic regions, the High Himalayas have the lowest normal annual maximum temperature (5°C to 10°C) whereas the Tarai region has the highest normal annual maximum temperature above 30°C. The analysis of 44 years (1971–2014) of temperature data reveals that the lowest (<0°C) normal annual minimum temperature is observed in Humla, Mugu, Dolpa, Mustang, and Manang and the highest normal annual minimum temperature (15°C–20°C) in the southern districts including Surkhet, Tanahu, Makwanpur, Sindhuli and Udayapur. The High Himalayas have the lowest normal annual minimum temperature which ranges between -5°C and 0°C. The Siwaliks and the Tarai regions have the highest normal monsoon minimum temperature that lies in between 15°C and 20°C. (MoFE, 2021)
154. Winters are generally dry while, in the summer months (June–September), the monsoons drive the rainfall in Nepal as they migrate through the country. Consequently, much of the country's precipitation occurs in intense events over a short period of time, with 80% of annual precipitation falling during the summer monsoon, characterised by intense lightning and thunderstorms. Given that circulation patterns are unequally distributed over the Nepal Himalaya, precipitation that falls during the monsoon period is not uniform across the country, which results in more rainfall falling in the central-eastern region than in the north-western region. These monsoons bring 250–450 mm of rainfall each month to most of the country — except for the north-western mountains that receive 100–150 mm/month. The annual precipitation is highest in the Hills of Gandaki Province with an aggregated annual precipitation of 2021 mm. The lowest annual precipitation occurs in the high mountain of Karnali with aggregated 622 mm/yr (MoFE, 2021).
155. The volatility of the monsoon is also attributable to the long-term climatic variability driven by the El Niño–Southern Oscillation<sup>1</sup> (ENSO) and Southern Oscillation Index<sup>2</sup> (SOI). During La Niña events of the ENSO, a blockage of the eastward moisture cycle over BOB develops (Sigdel & Ikeda, 2012) and the monsoon precipitation in Nepal becomes more intense as moisture cycles divert towards the north and subsequently interact with the southern Himalayan foothills. This redirection of moisture is controlled through the Pacific Quasi-Decadal Oscillation<sup>3</sup> (QDO), which operates on a longer timescale, which means there is a lagged effect of two years between the precipitation anomalies in Nepal and the extreme phases of the Pacific QDO (Wang & Gillies, 2013). This lagged relationship between the monsoon precipitation and the Pacific QDO is unique to

<sup>1</sup> El Niño and La Niña are opposite phases of a natural climate pattern across the tropical Pacific Ocean that swings back and forth every 3–7 years on average. Together, they form the El Niño–Southern Oscillation (ENSO). The ENSO pattern in the tropical Pacific can be in one of three states: El Niño, Neutral, or La Niña. El Niño (the warm phase) and La Niña (the cool phase) lead to significant differences from the average ocean temperatures, winds, surface pressure, and rainfall across parts of the tropical Pacific. Neutral indicates that conditions are near their long-term average.

<sup>2</sup> The Southern Oscillation Index (SOI) is a standardized index based on the observed sea level pressure differences between Tahiti and Darwin, Australia. The SOI is one measure of the large-scale fluctuations in air pressure occurring between the western and eastern tropical Pacific during El Niño and La Niña episodes.

<sup>3</sup> The Pacific Decadal Oscillation (PDO) is a robust, recurring pattern of ocean–atmosphere climate variability centred over the mid-latitude Pacific basin. The PDO is detected as warm or cool surface waters in the Pacific Ocean, north of 20°N.

Nepal and results in added variability to annual precipitation patterns, which increase the unpredictability of disaster events.

### 2.3.1 Observed climate trends

156. Nepal has already experienced the impacts of climate change, particularly with regards to temperature and frequency and intensity of extreme climate events. The analysis below presents results for observed trends from the national vulnerability and risk assessment (MoFE, 2021), assessing the period from 1971 to 2014, supported by CCKP data for the period 1971 to 2024 (CCKP, 2026).

#### Temperature

157. Trends show that mean annual temperatures across Nepal have risen by 0.17°C/decade over the past half century (1971–2020). For the Karnali Province, the rate of warming is higher than the national average at 0.22°C/decade (CCKP, 2026).
158. Annual maximum temperatures across the country are increasing at a rate of 0.18°C/decade (1971–2020), with minimum temperature increasing faster at 0.24°C/decade, accelerating to 0.35°C/decade for the period 1991–2020. Karnali Province shows trends similar to the national average with regards to minimum temperature increases — 0.23°C/decade for 1971–2020, accelerating to 0.34°C/decade for the period 1991–2020 — while maximum temperatures increased at a faster rate than national average, 0.23°C/decade for 1971–2020 (CCKP, 2026).
159. The minimum temperature is found to be a negative trend in a few mountainous districts like Humla and Manang. However, the increase in temperature trend is the highest in central Tarai of Province two and the Middle Mountainous region across Nepal. The increased maximum temperature is uniformly higher in the mountainous district from east to west and the lowest in the Tarai districts. The Manang district has experienced extreme temperature conditions, as it possesses the highest decreasing rate of minimum temperature and the highest increasing rate of maximum temperature (MoFE, 2021).

#### Precipitation

160. Trends for precipitation are less clear than those for temperature, with trends changing between longer term and more recent decades. At the national level, average figures across the country show no significant trends annual average rainfall for 1951–2020 or 1971–2020 periods — although the direction of the trends shifted over this period. In the most recent period (1991–2020), the trends show a significant increase at the national level. Trends for Karnali province show a similar pattern, with the longer term trends (1951–2020) showing a significant decrease (-22.77mm/decade), inverting in more recent decades, although with no statistical significance (CCKP, 2026).

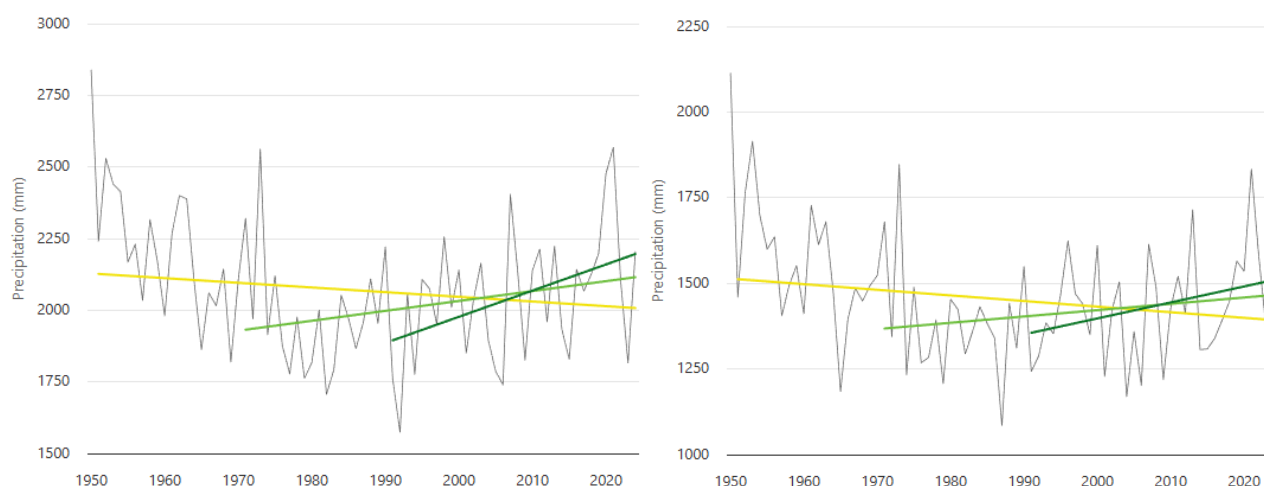


Figure 1: Observed Annual Precipitation for Nepal (left) and Karnali Province (right)

161. The national vulnerability and risk assessment found that observed precipitation trends varied geographically across physiological regions and the Provinces. It found that between 1971 and 2014 the highest precipitation increases were observed in Syangja (8.99 mm/yr), and Bardiya (7.86 mm/yr) districts, while Gulmi, Tanahu, Nawalpur, Parasi, Banke, Dhanusha, and Kanchanpur districts also experienced increases but of a lesser degree, at 4 mm/yr. Decreases were observed in Kaski (-11.44 mm/yr), Ilam (-9.56 mm/yr), Ramechhap (-9.56 mm/yr) districts. A large part of Bagmati Province, northeast of Gandaki Province, west of Province one, and southeastern part of Karnali Province have a decreasing precipitation trend. The rate of change is almost 12 to 9 mm/y across the districts. All the districts of Sudurpaschim Province show an increasing precipitation trend. The Gandaki Province has the highest variation. The Tarai region of all Provinces (if applicable) has increased trend with the highest in the Tarai region of Sudurpaschim and the lowest in Province two. The Chure of Sudurpaschim Province and Gandaki Province observed an increasing trend while it is decreasing in Bagmati Province. The eastern part of the country is receiving less precipitation than before while it is slightly increasing in the western part (MoFE, 2021).

### Extreme events

162. An assessment of changes in extreme climate events was conducted as part of the Vulnerability and Risk Assessment (MoFE, 2021). Observed trends in climate extreme indices indicate that Nepal is experiencing a systematic intensification of temperature- and precipitation-related extremes, with clear implications for climate risk in mountain, hill, and Tarai environments. While some indices show spatial variability, the overall pattern points toward more frequent and more severe extremes that amplify hydrological instability, ecosystem stress, and livelihood vulnerability.
163. Temperature-related extremes show the most consistent upward trends. Warm days and warm nights are increasing across a large proportion of districts, with stronger increases observed in High Mountain, Middle Mountain, and hilly regions. In parallel, warm spell duration is increasing across most of the country, indicating longer periods of sustained high temperatures rather than isolated extreme days. These warming trends are accompanied by a widespread decline in cold-related indices, including decreases in cool days, cool nights, and cold days across most districts.
164. Precipitation extremes exhibit increasing intensity despite mixed trends in rainfall frequency. The number of rainy days shows a mixed pattern nationally, with decreases observed in many districts. However, this is offset by increasing trends in very wet days and extreme wet days in large parts of the country, including hill and Tarai regions. This reflects a shift toward rainfall occurring in fewer but more intense events, rather than evenly distributed precipitation.
165. Dryness-related extremes are increasing in many areas. Consecutive dry days show increasing trends in numerous districts, particularly outside the High Mountain areas of Karnali, indicating longer dry intervals between rainfall events. Conversely, High Mountain districts show a decreasing trend in consecutive dry days, highlighting strong spatial differentiation in moisture regimes.

166. Overall, the observed trends point to increasing climate variability, characterised by stronger warming signals, longer warm periods, and greater rainfall intensity occurring alongside longer dry spells. These patterns demonstrate a transition toward more extreme climatic conditions rather than incremental changes in long-term averages. Table 7 provides an overview of observed changes in extreme events.

Table 7. Changes in the extreme events (MoFE, 2021)

Extreme event	Description
<b>Number of rainy days</b>	The number trend is mixed across the country. It is increasing in the High Mountain district of Karnali, such as Humla with one day/yr of an increasing trend. The other districts such as Mugu, Dolpa, Jumla, Bajura Eastern and Western Rukum, Bhojpur, Khotang, and Tehrathum of Hill, Middle Mountain, and High Mountain also have a higher positive trend. On the other hand, districts from Tarai to High Mountain and east to west receive rain in a fewer number of days. The highest rate of decreasing rainy days is observed in Rasuwa with 1.2 days/yr.
<b>Consecutive dry days</b>	A consecutive dry day trend shows a matching pattern but reverses, with a number of rainy days. Consecutive dry days are decreasing in High Mountain districts, such as Humla, Mugu, Dolpa of Karnali. While in many other districts in the Tarai to High Mountain and east to west have an increasing trend. Rasuwa observes the highest increasing trend (1.6 days/yr) of consecutive dry days, while Nuwakot, Dhading, Manang, and Mustang have the higher increasing rate of consecutive dry days.
<b>Consecutive wet days</b>	The consecutive wet days have a very similar pattern to the number of rainy days but reverse with the consecutive dry days. Humla, a High Mountain district of Karnali Province, observes the highest positive trend with 0.9 days/yr while Rasuwa, another High Mountain district in Bagmati Province, depicts the highest negative trend with 0.8 days/yr. Other districts such as Dolpa, Eastern and Western Rukum, Bajura, Bhojpur, Khotang, Lamjung, and Gulmi have a clear positive trend. A negative trend is observed in many other districts such as Nuwakot, Dhading, Morang, and Sunsari.
<b>Very wet days</b>	There is no clear pattern of very wet days trend. However, most of the districts in Tarai of Lumbini, Province two and Province one, including and the Hill districts of Gandaki Province, Karnali Province, and Sudurpaschim Province have a clear increasing trend. Contrary to that, High and Middle Mountain districts such as Eastern and Western Rukum, Humla, Manang, Dolakha, and Ramechhap experience a decreasing trend.
<b>Extreme wet days trend</b>	Extreme wet days trend shows a very clear pattern of decreasing in High Mountain and Middle Mountain districts while it is near 0, no substantial change, in Hill, Chure, and Tarai. However, Syangja has the highest increasing extreme wet days trend, while Kanchanpur, the only district in the Tarai which observed decreased extreme wet days.
<b>Warm days trend</b>	The increasing warm days trend varies district by district. The highest increasing warm days trend is observed in the High and Middle Mountain and Hilly districts of Taplejung, Panchthar, and Tehrathum. A clear pattern of higher increasing warm days trend is shown in the High mountain and the Middle mountain. In the Hill districts, the warm days trend is moderate while, there is either no or very low increasing trend of warm days in the Tarai and Chure districts.
<b>Cool days trend</b>	A physiographical pattern can be observed in the cool days trend. A number of cool days depict a positive trend in several districts in the Tarai with the highest trend in Saptari 0.2 days/yr. The cool days trend is decreasing in all the High and Middle Mountain districts, except in Kalikot of Karnali Province and in Kaski of Gandaki Province where it is increasing. Tehrathum district depicts the highest negative cool days trend.
<b>Warm duration (WSDI) spell trend</b>	The warm spell duration is an increasing trend across the country except for one exception, Rautahat – a Tarai district of Province two. Many High Mountain districts in Province one, Bagmati Province, and Gandaki Province depict a clear increasing trend. Similarly, Kanchanpur, Baitadi, Darchula, Bajura, Dailekh, and Jajarkot of Sudurpaschim Province and Karnali Province also experience a substantial increasing trend.
<b>Warm trend nights</b>	A mixed pattern of warm nights trend is observed across the country over forty years. The trend is higher in most of the districts in the central part of the country rather than far east and west. The highest negative trend is observed in the Manang while the highest positive trend exists in Tanahu.
<b>Cool nights trend</b>	The cool night shows a mixed pattern of increasing and decreasing trends. The eastern Tarai districts of Province one and two have a clear decreasing trend while it is an increasing trend in the High Mountain with a maximum of 0.7 days/yr in Humla.
<b>Cold duration (CSDI) trend spell index</b>	The cold spell duration is increasing in the west rather than in the eastern part of the country. Seven of eight districts of Sudurpaschim Province have a positive CSDI trend with 0.3 days/yr. Similarly, eight of nine districts of Province two, mostly in the Tarai region, observed the negative CSDI trend. Besides, Rolpa, of Lumbini Province depicts the negative CSDI trend.

### 2.3.2 Projected climate change

#### Temperature



167. The observed increasing temperature trends are expected to continue in the short, medium and long term under all emission scenarios (Table 8). Temperature trends for Karnali show a faster rate of increase than the national average for average, minimum and maximum temperatures; the impact of which is exacerbated by the lower baseline, with averages as low as 4.37°C. Projections also show that increases in temperature over the next century are expected to be greatest in the High Mountain regions, exceeding the average projected increase for the country (Table 9) (MoFE, 2019). The increasing temperature in the high mountains also has an impact on the number of ice days ( $T_{\text{max}} < 0^{\circ}\text{C}$ ), with decreases throughout the non-monsoon months, particularly April and November (CCKP, 2026) — with implications for cryospheric processes, seasonal snow persistence, and the timing and reliability of meltwater flows.
168. Differences are also found in seasonal patterns with the post-monsoon season showing the greatest temperature increase (Table 10), followed by the dry winter season under both the RCP4.5 and RCP8.5 scenarios. The monsoon season has the lowest rise in temperature, with more than a full degree Celsius lower than the post-monsoon season by the end of the century.

Table 8. Temperature projections for Nepal and Karnali Province under the SSP2-4.5 and SSP5-8.5 emission scenarios (CCKP, 2026)

	Historical Reference (2014)	Short term (2040)	Medium term (2070)	Long term (2100)
<b>Average mean temperature</b>	<b>Nepal</b> 12.78°C  <b>Karnali</b> 4.37°C	<b>Nepal</b> SSP2-4.5: 13.51°C (+0.73) SSP5-8.5: 13.96°C (+1.18) <b>Karnali</b> SSP2-4.5: 5.22°C (+0.85) SSP5-8.5: 5.6°C (+1.23)	<b>Nepal</b> SSP2-4.5: 14.46°C (+1.68) SSP5-8.5: 15.84°C (+3.06) <b>Karnali</b> SSP2-4.5: 6.23°C (+1.86) SSP5-8.5: 7.57°C (+3.2)	<b>Nepal</b> SSP2-4.5: 15.16°C (+2.38) SSP5-8.5: 17.96°C (+5.18) <b>Karnali</b> SSP2-4.5: 6.94°C (+2.57) SSP5-8.5: 9.75°C (+5.38)
<b>Average maximum temperature</b>	<b>Nepal</b> 17.9°C  <b>Karnali</b> 9.86°C	<b>Nepal</b> SSP2-4.5: 18.59°C (+0.69) SSP5-8.5: 19.02°C (+1.12) <b>Karnali</b> SSP2-4.5: 10.74°C (+0.88) SSP5-8.5: 11.06°C (+1.2)	<b>Nepal</b> SSP2-4.5: 19.57°C (+1.67) SSP5-8.5: 20.88°C (+2.98) <b>Karnali</b> SSP2-4.5: 11.73°C (+1.87) SSP5-8.5: 13.03°C (+3.17)	<b>Nepal</b> SSP2-4.5: 20.34 °C (+2.44) SSP5-8.5: 23.09°C (+5.19) <b>Karnali</b> SSP2-4.5: 12.5°C (+2.64) SSP5-8.5: 15.44°C (+5.58)
<b>Average minimum temperature</b>	<b>Nepal</b> 7.67°C  <b>Karnali</b> -1.11°C	<b>Nepal</b> SSP2-4.5: 8.37°C (+0.7) SSP5-8.5: 8.86°C (+1.19) <b>Karnali</b> SSP2-4.5: -0.32°C (+0.79) SSP5-8.5: 0.1°C (+1.21)	<b>Nepal</b> SSP2-4.5: 9.34°C (+1.67) SSP5-8.5: 10.73°C (+3.06) <b>Karnali</b> SSP2-4.5: 0.7°C (+1.81) SSP5-8.5: 2.05°C (+3.16)	<b>Nepal</b> SSP2-4.5: 9.99°C (+2.32) SSP5-8.5: 12.94°C (+5.27) <b>Karnali</b> SSP2-4.5: 1.35°C (+2.46) SSP5-8.5: 4.42°C (+5.53)

Table 9. Multi-model ensemble mean change in temperature (in °C) in the medium-term and long-term period for different regions of Nepal. (MoFE, 2019)

Time period	RCP4.5			RCP8.5		
	2016–2045	2036–2065	2071–2100	2016–2045	2036–2065	2071–2100
<b>High Mountain</b>	0.95	1.36	1.79	1.09	1.86	3.61
<b>Middle Mountain</b>	0.89	1.27	1.66	1.04	1.76	3.44
<b>Hill</b>	0.9	1.26	1.69	1.06	1.8	3.56
<b>Siwalik</b>	0.94	1.29	1.72	1.1	1.87	3.66
<b>Terai</b>	0.93	1.29	1.73	1.11	1.87	3.69

Table 10. Multi-model ensemble mean change in temperature (in °C) in the medium-term and long-term periods of different seasons in Nepal (MoFE, 2019)

Time period	RCP4.5			RCP8.5		
	2016–2045	2036–2065	2071–2100	2016–2045	2036–2065	2071–2100
<b>Winter</b>	1.0	1.5	2.1	1.2	2.0	4.0

<b>Pre-monsoon</b>	0.7	1.0	1.2	1.0	1.6	3.4
<b>Monsoon</b>	0.8	1.1	1.4	0.8	1.5	3.0
<b>Post-monsoon</b>	1.3	1.8	2.5	1.4	2.4	4.5

## Precipitation

169. For precipitation, future projections align with more recent observations (1991–2020), with rainfall increasing, particularly under SSP5-8.5. Of particular interest is the distribution of rainfall across the year, with ~10% decreases during the already dry winter months, and 8.19–9.34% increases during the wet monsoon months from June to September under SSP2-4.5 (CCKP, 2026). This results in increases in rainfall intensity, evident through increases in projections for largest 1- and 5-day cumulative precipitation during monsoon months under both SSP2-4.5 and SSP5-8.5 scenarios, particularly through the mid-century.

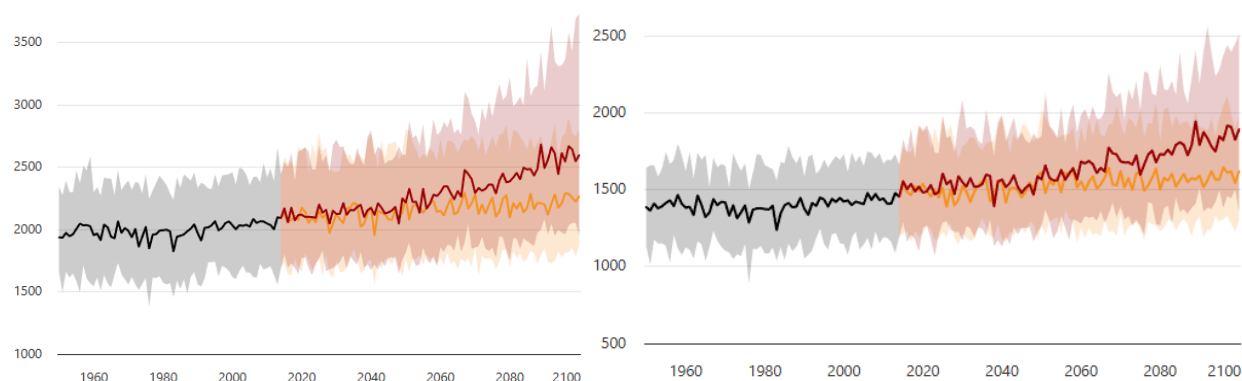


Figure 2. Projected timeseries anomaly of precipitation for Nepal (left) and Karnali (right) (CCKP, 2026)

Figure 3 illustrates projected anomaly of precipitation distribution across the year in Karnali under SSP2-4.5.

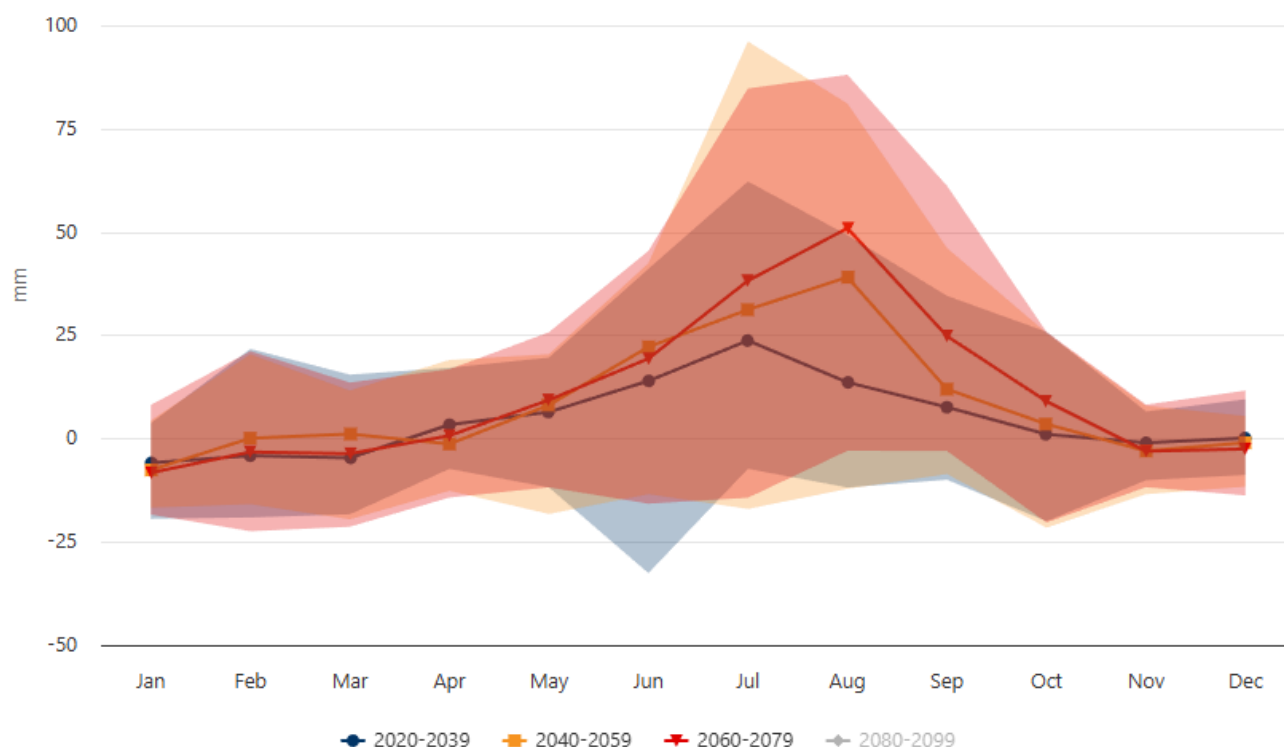


Figure 3. Projected anomaly of precipitation distribution across the year in Karnali under SSP2-4.5 (CCKP, 2026)

Intense precipitation events are likely to increase in frequency, with extremely wet days projected to increase at a higher rate than very wet days (Table 11). The number of rainy days is likely to decrease in the future which, in combination with the increase in precipitation intensity, emphasises that rainfall will tend to fall in fewer but more intense events which will pose increased risks for rainfall-induced landslides, floods and rainfall-triggered GLOF events.

Table 11. Percentage change in precipitation extreme indices in the medium- and long-term periods for Nepal (MoFE, 2019)

Indices	RCP4.5				RCP8.5			
	2016–2045		2036–2065		2016–2045		2036–2065	
	%	Days	%	Days	%	Days	%	Days
Very wet days (P95)	1.5	0.3	12	2.2	12.1	2.2	18.6	3.4
Extreme wet days (P99)	26.3	0.9	41.3	1.4	28	1.0	59.8	2.1
Rainy days	-1.8	-3	-1	-1.7	-0.9	-1.6	-0.5	-0.8
Consecutive dry days	6	2.7	2.4	1.1	-1.6	-0.7	-2.9	-1.3
Consecutive wet days	-4.2	-3.3	-1.3	-1	3.1	2.5	2.2	1.7

### 2.3.3 Climate hazards relevant to forest-dependent communities

170. Nepal is highly exposed to a range of extreme climate-related hazards, including monsoon-induced floods, landslides, and GLOFs. In the 2020 Long-term Climate Risk Index (CRI) <sup>4</sup> assessment, Nepal was ranked 9th among the ten countries most affected by extreme climate impacts between 1998 and 2018 (Eckstein, et al., 2019). During this period, 180 extreme climate events were recorded, resulting in an average of 140 deaths per year and average annual economic losses of approximately US\$225 million (PPP) <sup>5</sup>. Major contributing events include the 2002 monsoon floods and landslides, the 2007 South Asian floods, the 2008 Koshi floods, the Seti Kosi flood in 2012, and the 2014 Sunkoshi landslide, each of which caused substantial loss of life and widespread impacts on livelihoods and infrastructure. Under future climate change scenarios, Nepal is expected to face increasingly severe damages and losses across critical infrastructure, key economic sectors, and the livelihoods of its most vulnerable communities. Further discussion on climate hazards and their impacts on vulnerable communities in Nepal is presented below. Figure 4 illustrates the diversity of natural hazards in the country.

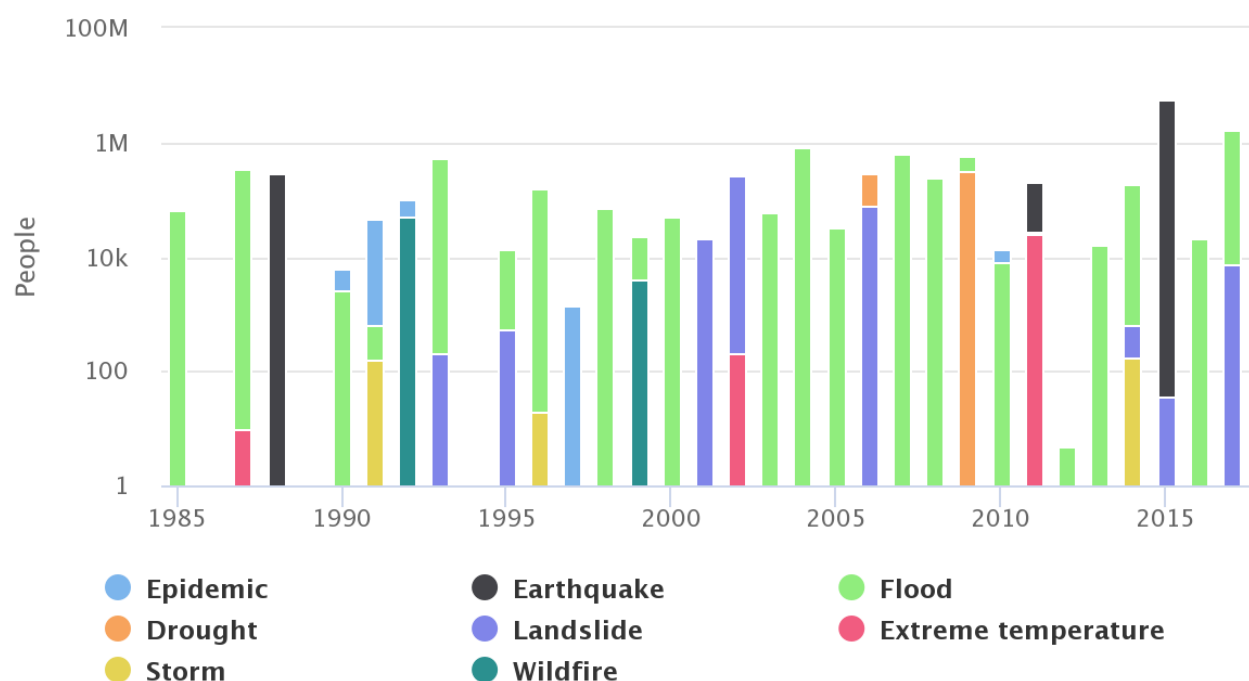


Figure 4. Natural hazards and the number of people affected in Nepal from 1985–2018

#### 2.3.3.1 Floods & extreme rainfall

171. The primary flood risk in Nepal occurs during the monsoon season, when intense and prolonged rainfall generates severe flooding and landslides, often resulting in significant loss of life and extensive damage to infrastructure. Since 1950, a total of 51 flood events have been recorded nationally, with 17 occurring within the last decade alone, making floods a near-annual occurrence between 2016 and 2021. All major flood events recorded since 2010 have been attributed to monsoon rainfall. Over the past decade, these floods have resulted in 1,340 deaths, 476 injuries, and have directly or indirectly affected 2,019,845 people across Nepal (UNDRR, n.d.).

172. Recent events underscore the increasing severity of monsoon-related flood impacts. In 2019, floods and landslides triggered by monsoon rains caused 50 fatalities nationwide. In 2020, extreme rainfall events, including cloudbursts delivering up to 140 mm of rain in a single hour, resulted in 132 deaths due to flooding

<sup>4</sup> The Climate Risk Index quantifies impacts of extreme weather events on individual countries by considering fatalities and economic losses relating to these events over a specific timeframe.

<sup>5</sup> Purchasing power parity (PPP) is a metric used for macroeconomic analysis that compares different countries' currencies through a "basket of goods" approach.

and landslides. These events form part of a longer-term pattern of high mortality associated with extreme climate events, with monsoon flooding and landslides causing 80 deaths in 2017, 53 in 2014, 72 in 2007, 240 in 2003, and 290 in 2002. Records indicate that disaster-related mortality increased between 1971 and 2011, reflecting a growing trend in fatalities. Between 1990 and 2012, approximately 78 major flood and landslide events occurred, resulting in 11,112 fatalities and economic losses estimated at USD 43 million (MoFE, 2021).

173. One of the most devastating flood events in recent history occurred in August 2017, when incessant rainfall between 11 and 14 August caused widespread flooding across 35 of Nepal's 77 districts. Several districts experienced their highest recorded rainfall in over 60 years, leading to the inundation of approximately 80% of land in the Terai Plains. This event resulted in 134 deaths, affected 1,688,474 people, and caused total damages estimated at USD 584.7 million (UNDRR, 2019). The flooding was driven by the monsoon trough — an elongated low-pressure system aligned parallel to the Himalayan foothills — which, combined with moisture inflows from the Bay of Bengal, generated exceptionally heavy rainfall across the southern Churia range and mid-hills. While shifts in the monsoon trough are a common feature of Nepal's climate, this event was characterised by its unusual east–west persistence across the country.
174. Monsoon flooding and landslides continued to cause severe impacts in subsequent years. In 2020, widespread rainfall triggered flooding and landslides across multiple municipalities, with response efforts significantly constrained by limited access to remote, landslide-affected areas, many of which were reachable only by helicopter. The concurrence of these disasters with the Covid-19 pandemic further strained response capacity, particularly through the depletion of personal protective equipment (PPE), which had to be prioritised for frontline workers. These events resulted in 141 deaths, primarily due to landslides in hilly districts, with at least 57 people reported missing. An estimated 15,307 families (76,535 people) were affected, and 7,106 families (35,530 people) were displaced nationwide. In June 2021, floods and landslides in the mountainous districts of Manang and Sindhupalchok caused five deaths and millions of USD in property damage, displacing nearly 1,000 households, fully destroying 400 homes, and partially damaging a further 100 homes. Critical infrastructure was also affected, including damage to 20 bridges, seven roads, and 14 hydropower stations.
175. Beyond physical and economic losses, floods in Nepal have substantial and recurring public health impacts. Disease incidence typically increases following flood events (Kafle, et al., 2016), with affected communities facing heightened risks of diarrhoea, fever, infections — particularly acute respiratory infections (ARI) — as well as skin and sexual diseases in the immediate aftermath (WHO, 2007). Flood conditions also create acute risks of outbreaks of cholera, typhoid, dysentery (*Shigella dysenteriae* type 1), and hepatitis A and E, which are commonly associated with flood disasters and are largely driven by population displacement and overcrowding in temporary shelters (Watson, et al., 2007). These health impacts extend beyond displaced populations to surrounding communities through relocation and mobility processes (Lowe, et al., 2013). Without sustained recovery, reconstruction, and risk reduction measures, the increasing frequency and severity of floods threaten to exacerbate existing socioeconomic inequalities across Nepal.
176. Floods in Nepal are closely linked to a range of public health risks. One of the primary drivers of disease outbreaks during and after flood events is faecal contamination, resulting from the overflow of latrines, inadequate sanitation facilities, and contamination from dead animals (WHO, 2007). Past flood events have been followed by outbreaks of Japanese encephalitis and dengue, as well as faecal contamination with *Vibrio cholerae* (cholera) in affected regions. In addition, *Plasmodium falciparum* and *Plasmodium vivax* malaria are endemic in Nepal's low-lying (<1200 m), flood-prone areas (Kafle, et al., 2016).
177. Communicable diseases are particularly prevalent following flood disasters, as affected populations are often displaced to relief camps for extended periods, where overcrowding and limited access to clean water and sanitation increase transmission risks. Ocular diseases are also common during and immediately after floods due to exposure to sewage-contaminated water, leading to cases of conjunctivitis and keratitis. Beyond physical health impacts, floods have significant and lasting mental health consequences. Many affected individuals experience post-traumatic stress disorder (PTSD) following traumatic flood events (Crabtree, 2013), with assessments conducted two years after the 2008 Koshi flood confirming a high prevalence of PTSD among affected communities (Kafle, et al., 2016). These impacts can persist for years, reducing quality of life, impairing daily functioning, and negatively affecting long-term mental wellbeing.

Taken together, projected changes in precipitation patterns point to a clear intensification of flood risk in the coming decades. Increases in monsoon-season rainfall, coupled with higher rainfall intensity and larger 1- and 5-day cumulative precipitation totals, will substantially raise the likelihood of riverine flooding, flash floods, and rainfall-induced landslides, particularly in already flood-prone and geomorphologically unstable catchments. At the same time, decreases in winter precipitation and a reduction in the total number of rainy days imply longer dry periods punctuated by fewer but more extreme rainfall events, reducing soil infiltration capacity and increasing surface runoff during storms. These dynamics will amplify downstream flood peaks, accelerate erosion and sedimentation, and heighten the probability of rainfall-triggered GLOF events as intense precipitation and rapid meltwater inputs place additional stress on unstable glacial lake dams. Without proactive adaptation measures — such as strengthened early warning systems, climate-resilient infrastructure, catchment-scale land management, and targeted GLOF risk reduction — future climate change is therefore expected to significantly exacerbate flood hazards, associated losses, and cascading impacts across Nepal's vulnerable mountain and riverine communities.

### **2.3.3.2 Landslides & erosion**

178. Nepal experiences frequent landslides, primarily driven by intense monsoon rainfall, steep and fragile topography, and the location of much of the country's mountainous terrain within a tectonically active zone (Dhakal, 2015). Increasingly erratic and intense rainfall patterns have further heightened landslide occurrence. These physical drivers are compounded by human factors, including rapid population growth, informal and illegal settlements in hazard-prone areas, poorly planned road construction, and limited enforcement of land-use planning (Vuillez, et al., 2018), all of which increase landslide risk and transform landslides into recurrent disasters causing loss of life and destruction of housing.
179. The impacts of landslides are severe and long-lasting, as they often result in permanent land loss and prolonged rehabilitation periods (Sudmeier-Rieux, et al., 2013). These impacts are intensified in the remote Middle Hills, where landslides are most prevalent and where high transportation costs significantly increase the expense of delivering relief and recovery services (Jones, et al., 2020). While landslide losses are broadly similar across socioeconomic groups in terms of physical assets, poorer communities are disproportionately affected due to limited coping capacity. Wealthier households are better able to absorb impacts through livelihood diversification, access to external assistance, higher spending capacity for repairs and food, greater technical knowledge, and labour outmigration (Sudmeier-Rieux, et al., 2013). Reducing these disparities requires targeted investment in organisational capacity within poorer communities, alongside the integration of local knowledge and practical skills training on landslide risk reduction within existing rural outreach and extension programmes.
180. Future climate change is expected to significantly exacerbate landslide hazards in Nepal through changes in both the intensity and timing of precipitation. Projections indicate more frequent and intense rainfall events concentrated over shorter periods, particularly during the monsoon season, which will increase slope saturation, reduce soil stability, and raise the likelihood of rainfall-triggered landslides. These climatic pressures will interact with existing structural vulnerabilities — such as steep terrain, fragile geology, deforestation, and expanding infrastructure in hazard-prone areas — resulting in more frequent, larger, and more destructive landslide events. As glacier retreat and GLOF risk increase, compound and cascading hazards involving landslides, floods, and debris flows are also likely to become more common, amplifying risks to lives, infrastructure, and livelihoods, particularly in remote and resource-constrained communities.

### **2.3.3.3 Glacial Lake Outburst Floods (GLOFs)**

181. Glacial Lake Outburst Floods (GLOFs) are sudden, high-magnitude flood events that occur when water stored in a glacial lake is rapidly released following the failure of a natural dam, most commonly a moraine composed of unconsolidated debris and, in many cases, buried ice. Such failures can generate fast-moving floods with extreme peak discharges, transporting large volumes of sediment, debris, and boulders far downstream, with severe consequences for human safety, infrastructure, livelihoods, and riverine ecosystems. In the Himalayas, GLOFs are most frequently triggered by avalanches entering a lake and generating displacement waves that overtop and erode the moraine, although rockfalls, moraine instability, ice-cored moraine degradation, seismic activity, and extreme rainfall can also act as triggering or compounding factors. The remoteness of glacial lakes

and the interaction of multiple triggers make GLOFs inherently difficult to predict and to document comprehensively.

182. Nepal has a long history of GLOF impacts, with at least 26 events recorded historically, and the southern Himalayan region identified as a GLOF hotspot based on documented past events. Several of these floods have had catastrophic consequences, including loss of life, destruction of bridges, hydropower facilities, roads, agricultural land, and long-term disruption of livelihoods. Notable historical events include the Dig Tsho GLOF in 1985 and the Tampokhari GLOF in 1998, both of which caused extensive downstream damage. More recent events — such as the Seti Kosi flood in 2012, the Langmoche lake flood in 2015, and the Langmale GLOF in 2017 — demonstrate that GLOFs continue to pose a significant and recurring hazard, with peak discharges reaching several thousand cubic metres per second and impacts extending many kilometres downstream.
183. While reporting of GLOFs has increased since the 1980s, no statistically significant increase in the recorded annual rate of GLOF occurrence has yet been observed, with estimates suggesting roughly one event per year across the Himalayas. However, this apparent stability is widely understood to reflect limitations in observation rather than a true absence of change. Recent satellite-based analyses have identified numerous previously unrecorded GLOFs, more than doubling earlier event inventories, indicating that historical records substantially underestimate actual occurrence — particularly for smaller or monsoon-season events whose impacts may be masked by intense rainfall flooding. As monitoring improves, the historical baseline of GLOF occurrence continues to be revised upward.
184. Climate change is a fundamental driver of future GLOF risk. Rising temperatures are accelerating glacier retreat, leading to the formation, expansion, and deepening of glacial lakes, many of which are dammed by structurally weak moraines. In Nepal, thousands of glaciers and more than two thousand glacial lakes have been identified, with studies showing significant increases in lake surface area and volume over recent decades. Although increases in GLOF frequency may lag behind climatic warming, the growing number and size of potentially unstable lakes — combined with more intense precipitation and meltwater inputs — strongly suggest a substantial increase in GLOF hazard and impacts over the 21st century.
185. A 2017 study on High Mountain Asia (HMA) glacier mass balance shows that the loss of glacier mass between 2000 and 2016 in Nepal was higher than the total mass loss in the entire HMA (Brun, et al., 2017). Similarly, consistent warming of HMA at a higher rate than the global average combined with a reduction in glacier mass has been reported (Kraaijenbrink, et al., 2017) (Xu, et al., 2009). Glacial lakes tend to grow in response to higher glacier melt, which can increase the hydrostatic pressure that causes structurally weak and unstable dams to suddenly breach. This can result in a sudden, strong discharge of debris and water in a few hours, causing catastrophic floods. GLOFs are likely to occur as a result of these local-level climate change impacts weakening moraines and expanding glacial lakes (Horstmann, 2004).
186. A study prioritising potentially dangerous glacial lakes in the Koshi, Gandaki, and Karnali basins (ICIMOD & UNDP, 2020) showed that Karnali river basin has 1,128 glacial lakes in 2015 — an increase of 23 over the previous decade — with 414 larger than 0.02km<sup>2</sup>. However, only 1 of the 21 potentially dangerous glacial lake in Nepal is found in Karnali, ranking at the bottom of the prioritisation, but listed as Rank I - Large lake and possibility of expansion due to the calving of glaciers; lake close to the loose moraine end; no overflow through the moraine; steep outlet slope; hanging source glacier; chances of snow and/or ice avalanches and landslides in the surroundings impacting the lake and dam.

#### **2.3.3.4 Drought**

187. Studies have found that Nepal experienced higher drought frequency after the 1980s due to the weakening of monsoonal precipitation (Bagale, et al., 2021), with similar decreasing trends in precipitation in various basins, with the dry periods in the pre-monsoon and winter seasons intensifying (Aryal, et al., 2022). significantly, also reported which correlates well with these patterns.
188. A recent study (Aryal, et al., 2025) used 30 years of observational and satellite data to provide a multidimensional drought analysis for the Karnali River Basin — providing a robust view of the drought hazard faced by vulnerable communities in the target area. The study notes that the extreme topographic relief and dependence on monsoon rainfall in the Himalayan region makes it particularly vulnerable to drought-related stress. Mountain communities rely heavily on rain-fed agriculture and ecosystem services, making them highly

sensitive to even minor precipitation anomalies. Within this regional context, Nepal provides a representative case of climate vulnerability in the central Himalayas.

189. The Aryal *et al.* study considered multiple drought types, including ecological, hydrological, and meteorological droughts. In terms of ecological drought, Normalized Difference Vegetation Index (NDVI) showed a positive trend upward trend in greenness of the vegetation, suggesting that an overall improvement in vegetation condition, which may be linked to factors such as favourable climatic conditions, increased atmospheric CO<sub>2</sub> concentrations (fertilization effect), land-use and land-cover changes, agricultural expansion, or enhanced irrigation practices, particularly at lower elevations. It should be noted that the multiple factors influencing NDVI – including increased agricultural intensity, suggest that the trend may not solely being a sign of ecological recovery. However, the trend is, nevertheless, a positive sign for forest communities.
190. In terms of Hydrological drought, Soil Moisture Index (SMI) showed a slight decline in soil moisture between 1995 and 2024, although high interannual variation makes this trend not statistically significant. Overall, the Karnali River Basin was found to have a relatively stable medium-soil moisture condition during the last three decades, with some drier years. Standardized Precipitation Index (SPI) — the meteorological drought indicator used — showed decreases in SPI for 3- 6- and 12-month accumulation timeframes; although only the 12-month series was statistically significant. The authors note that the coexistence of a moderate increase in meteorological drought severity, as indicated by SPI12, and a long-term greening trend (+12% NDVI) illustrates the intricate relationship between climatic and anthropogenic factors. In the lower and mid-hill regions of the Karnali Basin, the availability of snow and glacier meltwater, along with the development of expanded irrigation infrastructure, has likely helped buffer vegetation against decreasing rainfall levels. Additionally, rising temperatures and higher CO<sub>2</sub> may have extended the growing season and enhanced photosynthetic activity in certain elevation zones, resulting in higher NDVI values even during drier years. Agricultural intensification and land-use changes further contribute to this disconnect between greenness and meteorological drought (Aryal, et al., 2025).

### 2.3.3.5 Forest fires

191. Forest fires have become an increasingly frequent hazard in Nepal with clear links to climate change. Studies tracking fire incidences between 2000 and 2017 show a steady upward trend that coincides with rising temperatures and changing precipitation patterns. Climate variability — especially prolonged droughts, heatwaves, and warmer days and nights — has dried vegetation and increased fuel availability, creating conditions more conducive to fire ignition and spread. Declining and more erratic pre-monsoon rainfall, notably in March and April, has further amplified fire risk, with peak wildfire years closely aligned with periods of reduced precipitation (MoFE, 2021).

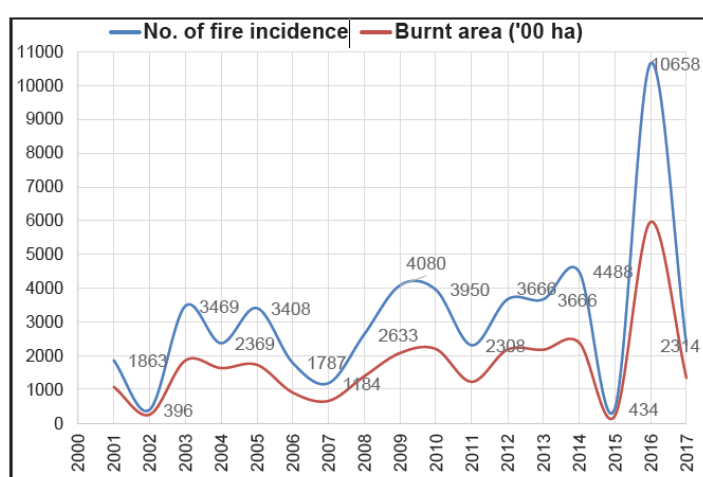


Figure 5: Trend of forest fire incidence in Nepal between 2000–2017 (MoFE, 2021)

192. The impacts of forest fires in Nepal extend well beyond forest degradation. Recurrent fires have caused loss of biodiversity, destruction of wildlife habitat, and depletion of non-timber forest products that support local livelihoods. Severe fire seasons, such as during the prolonged drought of 2009, resulted in significant human



casualties, damage to settlements, and widespread forest loss. Forest fires also disrupt forest-based enterprises by damaging infrastructure and reducing the availability of raw materials, increasing production costs and threatening the sustainability of forest-dependent livelihoods. These impacts highlight forest fires as a critical climate-induced hazard with both ecological and socio-economic consequences (MoFE, 2021).

193. Looking ahead, Nepal's vulnerability to forest fires is expected to intensify as climate change continues to drive higher temperatures, longer dry spells, and more erratic rainfall. These trends are likely to increase both the frequency and intensity of fires, reduce forest productivity, and undermine the long-term provision of forest goods and ecosystem services. Without effective fire preparedness, early warning systems, and climate-informed forest management, future fire risk could escalate, compounding pressures on biodiversity, rural livelihoods, and forest-based enterprises. Climate change, therefore, represents a key driver of Nepal's growing forest fire risk, with implications that are expected to worsen over time (MoFE, 2021).
194. During consultations, several communities in the target districts of Karnali province highlighted forest fires as a major threat to community forests. CFUGs reported growing incidences of forest fire, with considerable impacts on NTFP and MAP productivity, citing major constraints in their capacity to fight the growing intensity of forest fires.

### 2.3.3.6 Community observations on climate hazards

During the development of the project, engagements were held with stakeholders at the community, palinka and district levels across all four target districts in Karnali Province. Table 12 summarises the hazards, risks and challenges identified during consultations. Taken in context of the data-driven assessment above, these consultation-based findings provide additional context on how climate risks are perceived and experienced by those affected on the ground.

*Table 12. Key climate hazards and impacts identified during community consultations. Key: ✓ – Explicitly mentioned; ! – Indirectly mentioned*

Climate Hazard or Impact	Jumla	Dolpa	Jajarkot	Dailekh
Increasing irregularity in rainfall timing and distribution	✓	✓	✓	✓
Increases intensity of rainfall events	✓	!	✓	✓
Increased flooding and landslides	✓	✓		✓
Prolonged dry spells	✓	✓		✓
Reduced Snowfall or shifting snowline	✓	✓		✓
Rising temperatures	✓	✓	✓	
Disruption to agricultural production	✓	✓	✓	✓
Reduced livestock productivity and loss of animals	✓	!	✓	
Reduced productivity of rangelands		✓		✓
Altering growing seasons and crop cycles disrupting traditional farming practices	✓	✓		✓
Treelines shifting to higher altitudes				✓
Declining production of NTFPs/MAPs	!	✓	✓	
Water scarcity and drying water sources	✓	✓	✓	✓
Increased burden on women collecting water and fodder		✓	✓	✓
Loss of life and property from extreme rainfall	✓			
Disruptions to ecosystems and ecosystem services	✓			
Increases in vector borne diseases	✓		✓	✓
Increase in invasive alien plant species	✓	✓		✓
Increased weed growth affecting crops	✓			
Increased prevalence of crop disease				✓
Reduced forest regeneration	!	✓		✓
Increased frequency of forest fires	✓	✓	✓	✓
Decreases road access during rainy season				✓

### 2.3.4 Climate impacts and vulnerabilities relevant to forest-dependent communities

#### 2.3.4.1 Impacts on ecosystems, forest productivity and watershed management

According to the Sectoral Report on Forests, Biodiversity, and Watershed Management under the national Vulnerability and Risk Assessment (MoFE, 2021), Nepal has experienced noticeable impacts of climate change on forest ecosystems, biodiversity, and watershed resources. It notes that climate change is increasingly reshaping forest ecosystems across Nepal through rising temperatures and changing precipitation patterns. One of the most evident impacts is the upward shift of forest tree lines, as warming conditions allow dominant conifer and broadleaf species to expand to higher elevations. This upslope movement is leading to a gradual contraction of alpine ecosystems and altering long-established ecological boundaries. Such shifts have been observed across multiple regions of the Nepal Himalayas and are associated with longer growing seasons, changes in regeneration patterns, and increasing tree density at higher altitudes, indicating a systemic response of forest ecosystems to a warming climate.

Changes in temperature and rainfall variability are also disrupting the phenological cycles of forest species, including the timing of flowering, fruiting, and leaf shedding. In several regions, key tree species are flowering weeks earlier than historically observed. While these changes may represent short-term adaptive responses, persistent phenological shifts can reduce seed viability, alter species composition, and create imbalances in growth patterns. Over time, these processes may reduce forest productivity and resilience, posing significant risks for communities that rely on forests for livelihoods, food security, fuelwood, and non-timber forest products.

At the same time, climate change is facilitating the rapid spread of invasive alien plant species (IAPS), which has become a major challenge for forest management and biodiversity conservation. Warmer temperatures and changing climatic conditions are enabling invasive species that were previously confined to lowland and mid-hill areas to expand into higher elevations, including mountain districts where they were not observed in the past. These species are increasingly invading community forests, government-managed forests, and protected areas, outcompeting native vegetation and degrading habitat quality.

The expansion of invasive species, combined with climate-driven shifts in native forest composition, is placing additional pressure on already stressed ecosystems and wildlife habitats. This degradation reduces the ecological integrity and productivity of forests, with cascading impacts on farming and forest-dependent communities. Collectively, these changes highlight how climate change is not only altering the distribution and functioning of Nepal's forests, but also undermining their role in supporting biodiversity, ecosystem services, and climate-resilient livelihoods.

Building on the observed climate-driven changes in forest ecosystems, climate change is also having profound and cascading impacts on Nepal's water resources, wetlands, and watersheds. A defining challenge is the growing prevalence of both "too much" and "too little" water, driven by rising temperatures, shifting precipitation patterns, and the degradation of upstream ecosystems. Glaciers and glacial lakes, which feed Nepal's major river basins, are melting at accelerated rates, disrupting hydrological cycles and altering the timing and magnitude of river flows. Of the more than 2,000 glacial lakes identified nationwide, several dozen are considered potentially dangerous, and Nepal has already experienced multiple glacial lake outburst floods that have caused loss of life and extensive damage to downstream river basins and watersheds. Local communities consistently highlight that climate-driven extremes—periods of excessive water followed by acute scarcity—are undermining watershed resources, obstructing natural water storage, and triggering flash floods and landslides. (MoFE, 2021)

Changing precipitation patterns present an additional and compounding challenge for watershed conservation. Nepal is inherently prone to floods, landslides, soil erosion, and debris flows due to its steep terrain and fragile geology, but increasingly intense rainfall events are amplifying these processes. Heavy rainfall accelerates soil erosion, slope failures, and sediment transport while simultaneously reducing soil water-holding capacity and degrading watershed functions. Conversely, prolonged winter droughts and declining dry-season precipitation disrupt hydrological and nutrient cycles, increasing soil loss through wind erosion and further degrading watershed conditions. Highly irregular and variable water flows ultimately reduce overall watershed quality and productivity, with direct implications for agriculture, ecosystems, and rural livelihoods. (MoFE, 2021)

The impacts of climate change on hydrology vary across ecological zones but are evident nationwide. Mountain catchments are particularly sensitive to changes in snow and glacier melt, resulting in altered downstream river flows and greater flow variability. In the mid-hills, watersheds are increasingly exposed to erosion, landslides, and mudslides as precipitation intensity increases and streamflow becomes more erratic. In the Terai and Siwalik regions, flash floods, debris flows, and sedimentation are becoming more frequent and damaging, affecting settlements, farmland, and infrastructure.

At the local scale, declining spring flows in upstream and mid-hill watersheds — driven by inter-annual precipitation variability and longer dry periods — are already leading to shortages of water for domestic use, including drinking, cooking, and cleaning. These shortages directly affect household wellbeing and place additional burdens on vulnerable groups. The combined effects of altered rainfall, glacier and snowmelt dynamics, and landscape characteristics such as drainage density and topography are intensifying climate change impacts on watershed resources. Overall, these trends indicate that climate change is progressively undermining the stability, productivity, and resilience of Nepal's watersheds, with far-reaching consequences for water security, ecosystem health, and human development, particularly in highly vulnerable basins such as Karnali. (MoFE, 2021)

#### **2.3.4.2 Impacts on livelihoods and vulnerable groups**

195. Climate change is increasingly affecting forest-dependent populations in Nepal, with the most severe impacts falling on women, Indigenous Peoples, Dalits, and poorer households that rely heavily on forest resources for their livelihoods. According to the Sectoral Report on Forests, Biodiversity, and Watershed Management under the national Vulnerability and Risk Assessment (MoFE, 2021), more than two-thirds of the population depends on forests for income, food, energy, and cultural practices, resulting in climate-driven changes to forest ecosystems weakening a critical social and economic safety net. Indigenous communities such as the Raute, Majhi, and Tharu are already experiencing reduced access to traditional food sources and culturally significant forest products as plant species composition changes and ecosystem productivity declines. High-altitude communities are also facing acute water shortages as climate variability disrupts seasonal water availability.
196. A key social impact of climate change on forest-dependent communities is the increased workload, particularly for women, who are primarily responsible for forest management, collection of fuelwood and fodder, and water fetching. As forest resources become scarcer and water sources more unreliable, women are required to travel longer distances and spend more time on these activities, substantially increasing daily labour burdens. This increased domestic drudgery is directly linked to declining forest product availability and reduced ecosystem services, placing additional pressure on already vulnerable households.
197. Climate change is also contributing to declining forest-based income and employment opportunities. Reduced availability of forest products and the erosion of traditional occupations are disproportionately affecting income-poor households, women, and Indigenous Peoples with limited alternative livelihood options. Increased workloads combined with declining incomes can have cascading social impacts, including reduced educational opportunities for children — particularly girls — and higher school dropout rates. At the same time, existing inequalities in access to quality forest resources are being exacerbated, further marginalising groups that already face structural discrimination.
198. Forest-related infrastructure and enterprises are also increasingly exposed to climate change hazards, including forest fires, floods, and landslides. Many forest-based enterprises are already experiencing shortages of raw materials, raising concerns about resource sustainability and long-term viability. Climate variability and extreme events are undermining the reliability of forest product supply chains, particularly for timber, non-timber forest products, and water-dependent services.
199. While rising temperatures may temporarily enhance forest growth and timber production in some areas, these short-term gains are outweighed by the negative effects of climate extremes. Increased incidence of forest fires, the spread of invasive alien plant species, and more frequent droughts are constraining forest growth, reducing ecosystem services, and diminishing the availability of commercially valuable forest products. As these trends continue, declining forest productivity and increasing uncertainty in raw material supply are likely to raise production costs and limit the ability of forest-based enterprises to operate sustainably. Collectively, these impacts threaten not only forest-based livelihoods but also broader local economies that depend on resilient

and productive forest ecosystems. Impacts on forest-dependent livelihoods in the target areas are discussed in more detail below.

### **2.3.4.3 Key livelihood vulnerabilities to climate change by target district**

#### **Jajarkot: drought stress, fragile rainfed farming, disaster compounding risks and forest-based buffers (NTFPs)**

200. Livelihoods in Jajarkot are predominantly rainfed and highly exposed to erratic rainfall and dry-season water scarcity, which undermine cereal and vegetable yields and livestock watering. Recent recovery and climate-action initiatives in the district explicitly flag high climate vulnerability and the need for drought-smart agriculture (e.g., polyhouses with drip/mist systems, orchard tools), reflecting local exposure to prolonged dry spells and market disruptions following the Nov 3, 2023, earthquake that damaged irrigation, micro-hydro, schools, and community infrastructure—systems critical to agricultural productivity and value chains. Province-level engagements also describe Jajarkot as a priority hotspot for adaptive agriculture, early warning, and resilience building, noting compounding risks from poverty and disasters; the HDI ~0.393 used in public reporting underscores low adaptive capacity and sensitivity of livelihoods to climate shocks (The Himalayan Times, 2024).
201. From a livelihoods lens, three vulnerabilities are particularly salient: (1) unreliable monsoon timing and within-season rainfall variability affecting sowing windows; (2) seasonal out-migration that reduces on-farm labour at peak times; and (3) thin market access, which amplifies post-harvest losses and limits input uptake. Current programmatic responses in Nalgad and Barekot — polyhouse adoption, efficient irrigation, and energy solutions — are designed to buffer these exact stressors, a tacit acknowledgment of water stress and climatic variability as primary livelihood risks in Jajarkot's mixed crop-livestock systems (UNDP Nepal, n.d.).
202. Although Jajarkot is not an alpine MAP hotspot, its mid-hill forests supply NTFPs (wild herbs, fodder, fuelwood, minor MAPs) that act as seasonal income and subsistence buffers — a pattern widely documented across Nepal's mountain communities. Evidence from Himalayan NTFPs studies shows climate change is reducing NTFP availability via extreme events, phenological shifts, and invasive species/pest pressure, narrowing household safety nets where forest dependence is high (Joshi & Joshi, 2019).
203. Post-earthquake damage (2023) to community infrastructure and forests in parts of Jajarkot also disrupted collection routes and forest regeneration, exacerbating existing livelihood vulnerabilities. Although Jajarkot district does not have large-scale commercial MAP collection like Dolpa or Jumla, community forestry user groups (CFUGs) manage significant forest areas, and NTFPs act as a seasonal income buffer, consistent with findings across Nepal where NTFPs are crucial to mountain households for provisioning and supplementary cash income (The Himalayan Times, 2024).

#### **Jumla: shifting cryosphere signals, crop–disease pressure, high-altitude health risks, and NTFP/MAP income at risk**

204. High-altitude agriculture in Jumla is experiencing warmer temperatures, erratic rainfall, and reduced snowfall, which are altering agro-calendars and depressing yields. A 2025 household survey reports 100% of respondents observed warming and rainfall variability and widespread yield declines in apple, potato, and beans, with significant incidence of late blight (potato), papery bark canker (apple), and anthracnose (beans) — a climate-linked disease burden that erodes both food and cash incomes. Statistical analyses of long-run data further show that weather extremes negatively impact production in Jumla, highlighting the district's sensitivity to temperature/rainfall swings during critical growth stages (Gayatree, 2025).
205. Climate change is also expanding vector-borne disease risk at altitude. Since 2024, multiple reports have documented *Aedes aegypti* and *Aedes albopictus* at 2,438 m in Chandannath, alongside locally transmitted dengue cases — an unprecedented elevation for vectors in Nepal — raising concerns about labour availability during peak farm seasons and added household health expenditures that weaken livelihood resilience (Poudel, 2024). Food-security studies in the Karnali region (including Jumla) report low dietary diversity and link perceived climate-induced changes in water availability, season timing, hazards, and crop pest attacks to worse household food security, reinforcing the vulnerability of Jumla's high-mountain farming systems to compound climatic and biological stressors (Shrestha, et al., 2024).

206. Jumla is also NTFP/MAP-rich (e.g., *Zanthoxylum armatum*, *Valeriana jatamansii*, *Nardostachys jatamansi*, wild edibles, fibres). A district study shows NTFPs are integral to livelihood strategies: 57% of food-deficit households used NTFPs income to bridge food gaps, averaging NPR 18,565 per household per year, and >60% of collected NTFPs were exported — yet availability of several commercial species has declined in recent years. Programs such as CAFS-Karnali (Adaptation Fund/WFP) have supported NTFP farming (8 ha) and agro-forestry enterprises to stabilise incomes and reduce wild-harvest pressure under a warming, more variable climate.

#### **Dolpa: rangeland degradation, medicinal NTFP decline, and transhumant pressures**

207. While district-specific quantitative series for Dolpa remain sparse, converging evidence from Karnali highlands indicates that warming and erratic precipitation are degrading alpine rangelands, shortening pasture availability windows and increasing livestock feed gaps — critical for transhumant and pastoral households. High-altitude communities dependent on medicinal and aromatic plants (MAPs) — notably *Ophiocordyceps sinensis* (Yarshagumba) — face declining availability and increased collection uncertainty tied to changing snow/rain regimes and phenology; comparable patterns documented in neighbouring high-mountain districts (e.g., Jumla) directly translate to Dolpa's economy where MAPs and livestock jointly underpin cash income and coping capacity (Lamichhane, n.d.).

208. Dolpa is one of Nepal's most important alpine MAP districts. Yarsagumba (*Ophiocordyceps sinensis*) is the flagship commodity: a 2024 review underscores its exceptional cash value for mountain households and its vulnerability to climatic change (shorter snow cover, altered moisture regimes, uncertain collection windows) and overharvest, both of which threaten long-term income streams. Dolpa's portfolio also includes Jatamansi (*Nardostachys jatamansi*), Kutki (*Neopicrorhiza scrophulariiflora*), Panchaule (*Dactylorhiza hatagirea*), wild mushrooms and aromatic herbs, whose regeneration is sensitive to temperature/rainfall shifts and alpine pasture condition. Synthesis studies across the Nepal Himalaya show NTFP availability is declining due to warming, erratic precipitation, invasive plants, and pest outbreaks — factors acutely relevant to high-elevation Dolpa where market distance and limited services magnify livelihood sensitivity.

209. Rangeland degradation (shorter productive windows, feed/fodder gaps) also affects transhumant livestock, undermining complementary income sources (meat, milk, fibre) and household nutrition — a well-established climate-livestock pathway for Nepal's high mountains.

210. More broadly, national and sectoral syntheses show climate-driven stresses on livestock health (heat/cold stress, parasites/diseases) and on feed/fodder systems that are pronounced in high mountains, where access to veterinary services and markets is limited; these conditions elevate mortality risks and depress productivity for yaks, sheep, and goats, thereby tightening household cashflow and nutrition buffers in remote Dolpa settlements. The combination of pasture degradation, NTFP volatility, and long market chains raises sensitivity to climate shocks and reduces the efficacy of traditional mobility as an adaptation, especially when unseasonal snowfall or late monsoon onset disrupts trekking/marketing windows for animal products and non-timber forest products (Uprety & Bishwokarma, 2016).

#### **Dailekh: rainfed exposure, women's workload, and weak market–infrastructure linkages, and mid-hill NTFP/MAP dependence**

211. In Dailekh's mid-hills, livelihoods remain rainfed and labour-intensive, with frequent droughts, landslides, and water scarcity degrading agricultural reliability and damaging rural infrastructure (irrigation channels, trails/roads, storage). A 2022 feasibility assessment focused on climate-resilient livelihoods for vulnerable and marginalized groups found that communities face compounding climate and disaster risks alongside limited productive assets and services — factors that heighten sensitivity to rainfall variability and reduce adoption of improved practices without targeted support. Complementary field accounts from ICIMOD/GRAPE sites in Dailekh (Dullu, Naumule) document both the constraints — limited water, wildlife depredation, finance gaps, and male out-migration that shifts agricultural burdens to women — and the adaptations emerging (e.g., drip irrigation, diversified vegetables, jholmal bio-fertilizers), which are explicitly framed as responses to climate-induced water stress and labour shortages (Thakur, 2014).

212. Dailekh's forests provide NTFPs/MAPs (e.g., *Timur*, *Bojho*, *Kurilo*, wild vegetables, fodder/fuel species) that supplement subsistence and small-scale trade. Himalayan evidence indicates extreme events, invasive

species, and pests are reducing NTFP yields and predictability — pressures that, together with governance gaps in community forestry, can erode the sustainability of harvests and the reliability of NTFP income in mid-hill districts like Dailekh (Joshi & Joshi, 2019).

213. Regionally, evidence from comparable Karnali districts shows rainfall anomalies (100 mm+ events) damaging fields and canals, underscoring why Dailekh's rainfed systems are highly exposed to both drought and intense downpours; where market access is thin, such shocks translate quickly into income and food-security deficits due to post-harvest losses and input supply interruptions. Together, these patterns depict a district where gendered workloads, infrastructure fragility, and market distance interact with climate stress to constrain livelihood resilience — and where locally led adaptation and climate-smart agriculture (water-efficient practices, protected cultivation, storage) are emerging as practical, scalable buffers (Thapa & Hussain, 2021).
214. Across the four districts, several common vulnerability drivers stand out: (i) increasing intra- and inter-seasonal rainfall variability and warming, which destabilise crop calendars and pasture productivity; (ii) water stress for crops and livestock; (iii) climate-linked pests and diseases (from crop pathogens in Jumla's apple–potato systems to high-altitude dengue risk); (iv) low adaptive capacity due to poverty, thin market links, and weak/damaged infrastructure; and (v) social differentiation, with women and marginalised groups bearing disproportionate burdens. The mounting programmatic emphasis on climate-smart agriculture, protected cultivation, efficient irrigation, and disaster-resilient community infrastructure in Jajarkot and Dailekh reflects an actionable pathway that is also relevant for Dolpa's rangeland–NTFP households and Jumla's horticulture and food security challenges.
215. Table 13 summarizes the key climate risks faced by the NTFPs and MAPs in the target project districts.

*Table 13: Key climate risks for the target districts' NTFP/MAPs at a glance (illustrative, non-exhaustive) (Joshi & Joshi, 2019); (Bhattacharya & Bhattacharya, 2025)*

District	Common NTFPs/MAPs (indicative)	Key climate linked risks-linked risks
<b>Jajarkot</b>	Wild herbs, fodder species, bamboo, minor MAPs	Reduced availability from drought/erratic rain; invasive/pest pressure; post earthquake access & regeneration constraints.-earthquake access & regeneration constraints
<b>Jumla</b>	<i>Timur, Valeriana jatamansii, Nardostachys jatamansi</i> , wild edibles nuts/fibre	Declining availability; food deficit HHs rely on NTFP income; initiatives for NTFP farming to adapt. -deficit HHs rely on NTFP income; initiatives for NTFP farming to adapt
<b>Dolpa</b>	Yarsagumba, <i>Jatamansi</i> , <i>Kutki</i> , <i>Panchaule</i> , alpine mushrooms	Warming/precipitation shifts reduce yields; overharvest risk; market dependence heightens sensitivity.
<b>Dailekh</b>	<i>Timur, Bojho, Kurilo</i> , wild edibles, fodder/fuel	Drought & extreme events reduce yields; gendered labour burden; governance and capacity gaps in CFUGs.

*Note:* Species lists are indicative for planning; for implementation, commission/compile CFUG level inventories and municipality wise NTFP/MAP baselines.-level inventories and municipality-wise NTFP/MAP baselines.

#### **Implications for Locally Led Adaptation Programming (district tailored)-tailored)**

- Promote cultivation/enrichment planting of priority MAPs where biophysically suitable (e.g., NTFP plots and agroforestry belts in Jumla, Jajarkot and Dailekh; pilot ex-forestry belts in Jumla, Jajarkot and Dailekh; pilot exsitu trials for pressure species in Dolpa). Pair with wild-situ trials for pressure species in Dolpa). Pair with wildharvest-harvest standards (maturity, quotas, rotation) through CFUG by-laws (Yadav, 2025).
- Strengthen CFUG governance & inventories (resource mapping, phenology monitoring, sustainable harvest protocols, compliance), and link to local monitoring of invasive species and pest outbreaks.
- Value chain competitiveness and quality upgrades: drying, grading, traceability, and negotiated pricing to reduce distress sales and increase benefits to collectors; align with climate smart storage/energy solutions already underway in Jajarkot. -chain -smart storage/energy solutions already underway in Jajarkot.

- Safeguard alpine rangelands (Dolpa) and some part of Jumla via rest-rotation, pasture rehabilitation, and harvest season regulation (Yarsagumba and other MAPs) to maintain-season regulation (Yarsagumba and other MAPs) to maintain both MAP and livestock productivity under warming scenarios (Lamichhane, n.d.).

216. Gender responsive measures (Dailekh/Jajarkot): laboursaving tools, water efficient irrigation, and nearby collection/processing hubs to reduce time burdens and enhance women's income share. -responsive measures (Dailekh/Jajarkot): labo-saving tools, water-efficient irrigation, and nearby collection/processing hubs to reduce time burdens and enhance women's income share.

## 2.4 Forest and Ecosystem Management Context

### 2.4.1 Overview of CFUG systems and forest governance in Nepal

#### 2.4.1.1 System overview and scale

Nepal's community forestry remains one of the world's largest community-based natural resource systems. Drawing on The Federation of Community Forestry Users, Nepal (FECOFUN) and partner updates, the country has 22,760–23,026 CFUGs managing 2.23–2.4 million hectares of forest and engaging 2.9–3.2 million households. The variation reflects (i) different reporting dates and (ii) whether a figure refers to all CFUGs or those federated under FECOFUN. These institutions, legally recognized as autonomous and democratic — prepare constitutions and operational plans, enforce local rules on use, and distribute benefits for livelihoods and community development. Evidence from FAO and long runningreviews attributes forest condition recovery and stronger local stewardship to this model (FAO, n.d.).

**Latest government numbers (MoFE):** The Government of Nepal's 2023/24 progress figures — quoted in a JICA project brief that cites MoFE's Annual Progress Report 2080/81 (FY 2023/24) —report 23,682 Community Forest User Groups (CFUGs) managing about 2.5 million hectares of community forests (out of 6 million ha forest nationwide). The same note highlights a practical governance gap: 30% of CF operational plans have not been updated and need renewal to enable climate smart, active management (harvesting schedules, fire/invasive control, restoration). For system-smart, active management (harvesting schedules, fire/invasive control, restoration). For system level monitoring, MoFE's technical arm FRTC released the National Land Cover Monitoring System (NLCMS) 2020–2022 in Nov 2024, giving annual, satellite-level monitoring, MoFE's technical arm FRTC released the National Land Cover Monitoring System (NLCMS) 2020–2022 in Nov 2024, giving annual, satellite-based landcover maps that provide a robust baseline for MRV and results-cover maps that provide a robust baseline for MRV and resultsbased-based payments in the forest sector (Thapa & Hussain, 2021) (Government of Nepal, 2024).

**MoFE / DoFSC Community Forestry Division guidance:** The Department of Forests & Soil Conservation hosts the updated “Community Forestry Guideline, 2081 (2024)” (*सामुदायिक वनको मार्गदर्शन, २०८१*). This is the current procedural guide for CF handover, operational planning/renewal, harvesting permits, and benefit sharing under federal structures — i.e., the rulebook CFUGs and Division Forest Offices follow today. It should be cited as the operational standard for any proposal that funds CF plan updates and climate smart silviculture in community forests.-sharing under federal structures-smart silviculture in community forests.

**Triangulating government and federation numbers:** FECOFUN's live pages (updated 2024–2025) list 23,026 CFUGs, 3.19 million households, and >2.4 million ha already federated — very close to MoFE's national totals, with differences explained by reporting scope (federated vs. all CFUGs) and timing. Using both the MoFE 2023/24 figures and FECOFUN's registry is standard practice as information documentation and pairing them with NLCMS (2024) allows transparent, annual tracking of area and condition changes for climate action and climate -finance resilience building (Federation of Community Forestry Users Nepal, 2023).

**FECOFUN functions** as a nationwide civic infrastructure for community forestry. It is present across 7 provinces, 77 districts, and 550+ local levels, and describes a membership base of 16 million forest users and 23,000+ CFUGs affiliated. FECOFUN's roles include policy advocacy, legal defence of users' rights, capacity



building and technical support (e.g., for operational plan renewal and harvesting management), and promoting inclusive governance (e.g., women's representation in committees). Recent FECOFUN–FAO engagement highlights scaling forest-based-enterprises, green jobs, and digital data systems to improve transparency and market access (Federation of Community Forestry Users Nepal, 2023).

#### 2.4.1.2 Comparison Table: CFUG Footprint — National and Karnali Province (Community Forest Data Portal (CFDP), n.d.), (Government of Nepal, n.d.)

Note on data availability. Nepal's national counts are published or quoted regularly; however, official consolidated counts by province are not maintained in one central public source and may differ by whether a count is “handedover-over CFs” vs. “CFUGs federated to FECOFUN.” Table 14 therefore combines national totals with best available public provincial references (and flags where current public data are not consolidated-available public provincial references (and flags where current public data are not consolidated).

Table 14: Comparison Table: CFUG Footprint — National and Karnali Province

Geography	Latest public CFUG count	Forest area managed by CFUGs (approx.)	Households involved (approx.)	Notes / Sources
<b>Nepal (national)</b>	22,760–23,026	2.23–2.4 million ha	2.9–3.2 million	Range reflects FECOFUN (2024–2025) and partners; totals vary by inclusion of federated vs. all CFUGs <sup>6</sup> .
<b>Karnali Province</b>	2,900+ CFUGs (public provincial reference)	n/a	n/a	Province level media/FECOFUN chapter reporting (strategy meet, Surkhet) cites “2,900+” CFUGs across Karnali; an authoritative provincewide register is not centrally published. -level media/FECOFUN chapter reporting (strategy meet, Surkhet) cites “2,900+” CFUGs across Karnali; an authoritative province-wide register is not centrally published.

#### 2.4.1.3 FECOFUN's Roles in Practice

- Policy advocacy & rights protection: Coordinates national campaigns, litigates/advocates on tenure and harvesting permissions, and represents CFUGs in policy dialogues (e.g., on Forest Act/Regulation).
- Capacity building & technical support: Assists CFUGs to (re)form committees, reform bylaws, renew operational plans, and improve harvesting/marketing practices; supports inclusive leadership pipelines (women, IPs, marginalized groups).
- Economic empowerment & green enterprises: Joint FECOFUN–FAO actions emphasize forest-based MSMEs, green jobs, and supply chain formalization, including digital data and transparency systems. -based MSMEs, green jobs, and supply-chain formalization, including digital data and transparency systems.
- Democratic forest governance platform: The federation is widely documented as an “innovation in democratic forest governance,” scaling users’ voice from local to national arenas.

#### 2.4.1.4 Federalism's Impacts on CFUGs (Since 2015)

217. Since Nepal's transition to federalism, governance has been reconfigured across federal–provincial–local levels, with new laws — the Constitution (2015), Local Government Operation Act (2017), and Forest Act (2019) with Regulation (2022) — reshaping roles. Evidence shows overlapping mandates and coordination gaps: Division Forest Offices (now under provinces) still approve community forest operational plans and harvesting permits, while local governments seek a stronger hand in monitoring, revenue sharing, and development collaboration with CFUGs — creating jurisdictional friction, multiple taxation points, and sometimes passive



forest management. Studies from early in the federal transition highlight divergent preferences (CFUGs and local political leaders favour local oversight; many forestry officials caution against rapid devolution) and call for clearer benefit-sharing rules and inter-tier cooperation. FECOFUN, for its part, has argued that some recent legal changes remain regressive for devolution (e.g., discretionary powers to withdraw community forests and tighten controls on timber sales), and has launched programs to secure and deepen community forest rights through local government partnerships (Badal, et al., 2025); (Acharya, et al., 2022); (FECOFUN, 2023).

218. Nepal's federal transition reshaped mandates across the federal–provincial–local tiers. In practice, studies show overlapping roles, multiple taxation points, and coordination gaps between Local Governments (LGs) and Division Forest Offices (DFOs, now provincial), slowing approvals for operational plan renewals and harvesting permits and contributing to passive forest management in some areas. At the same time, surveys indicate many CFUGs and local leaders favour stronger local oversight and collaboration, while segments of the forestry administration caution that rapid devolution could risk forest conservation gain signalling the need for clearer, shared rules (Pokharel, et al., 2020).
219. Several policy analyses converge on similar prescriptions: clarify approval authorities, align benefit sharing and revenue provisions, and formalize LG–DFO–CFUG collaboration frameworks with technical, institutional, and financial service pathways for CFUGs. -sharing and revenue provisions, and formalize LG–DFO–CFUG collaboration frameworks with technical, institutional, and financial service pathways for CFUGs.

### Policy Implications Box (Federal Era)

- **Clarify mandates & approvals.** Codify which tier issues/renews operational plans and harvesting permits, with SLAs (service level agreements) and timebound approvals to prevent management paralysis. -level agreements) and time-bound approvals to prevent management paralysis.
- **Harmonize revenue & taxes.** Publish a single revenue/royalty schedule and eliminate double or triple taxation, while ensuring a fair, transparent benefit sharing formula that includes LGs and CFUGs. -sharing formula that includes LGs and CFUGs.
- **Institutionalize LG–DFO–CFUG compacts.** Adopt a partnership framework that specifies technical services, monitoring roles, and joint planning for SFM and resilience
- **De-risk inclusive enterprises.** Scale FECOFUN–FAO pilots (enterprise development, digital data, market platforms), with gender and IPs quotas in enterprise support and access to green finance (FAO, 2025).
- **Rights safeguards-safeguards and grievance redress.** Address FECOFUN's concerns on discretionary withdrawal powers and bottlenecks for timber sale approvals, institute an independent grievance mechanism at provincial level (FECOFUN, 2023).

**2.4.1.5 Karnali Spotlight — Illustrative Municipality Level-Level Practice Notes** (example: Dailekh, Jumla, Jajarkot) (Nepal Government, Ministry of Forests and Environment, Department of Forests and Soil Conservation, 2025); (Pokharel, n.d.); (Pokharel, 2010); (The Social Solidarity Economy resource website, n.d.); (FAO, n.d.); (Ojha, et al., 2007); (Grassroots Justice Network, 2024); (Acharya, et al., 2022); (Pokharel, et al., 2020); (FECOFUN, 2023)

220. Karnali Province is widely reported to host 2,900+ CFUGs, reflecting the depth of community forestry in high hill and mountain settings. Recent FECOFUN provincial convenings in Surkhet focused on forest-based enterprise strategies (e.g., NTFPs like *chiraito*, *yarshagumba*, *chiuri*) and on expanding organizational capacity across Karnali's districts. -hill and mountain settings. Recent FECOFUN provincial convenings in Surkhet focused on forest-based enterprise strategies (e.g., NTFPs like
- Dailekh (e.g., Dullu/Aathbis Municipalities). CFUGs commonly prioritize operational plan renewal, sustainable harvesting, and value addition for timber and NTFPs; coordination with the Dailekh Division Forest Office is essential for permit cycles and compliance. Under federalism, collaboration opportunities with municipalities (e.g., ecotourism trials, seedling programs, fire management) exist but require clearer division of labour and streamlined approvals. -addition for timber and NTFPs; coordination with the Dailekh Division Forest Office is essential for permit cycles and compliance. Under federalism, collaboration

opportunities with municipalities (e.g., ecotourism trials, seedling programs, fire management) exist but require clearer division of labor

- Jumla (e.g., Sinja area). Community forestry interfaces with watershed protection, grazing management, and cultural landscapes. LG–DFO–CFUG joint planning (ward-level) is highlighted in federalism literature as a path to avoid passive management and to mobilize labour for silviculture, fire lines, and trail maintenance. -level) is highlighted in federalism literature as a path to avoid passive management and to mobilize labor
- Jajarkot. CFUGs can leverage post disaster reconstruction and resilience investments (e.g., habitat rehabilitation, slope stabilization through community forests), while standardizing benefit sharing to support vulnerable households. The policy analyses point to formal cofinancing arrangements between LGs and CFUGs to ensure continuity of operations and equitable distribution. -disaster reconstruction and resilience investments (e.g., habitat rehabilitation, slope stabilization through community forests), while standardizing benefit-sharing to support vulnerable households. The policy analyses point to formal co-financing arrangements between LGs and CFUGs to ensure continuity of operations and equitable distribution.

#### **Actionable next steps for Karnali’s municipalities:**

- Create a municipal CF helpdesk to track CFOP renewals, harvesting permits, and local tax/revenue harmonization.
- Establish tripartite MoUs (Municipality–DFO–FECOFUN Chapter) with annual joint workplans.
- Prioritize two value chains per municipality (e.g., timber plus one NTFP) with enterprise incubation and safe harvest protocols; and-harvest protocols; and
- Use public works/Green Jobs windows for silviculture, fire-line maintenance, and restoration. -line maintenance, and restoration.

### **2.4.2 Status of forests in Karnali (degradation, productivity, species trends)**

#### **Forest degradation: climate and anthropogenic drivers**

221. Forests across Karnali Province face compound pressures from climate hazards — including droughts, erratic monsoon rainfall, floods, and landslides — and human drivers such as illegal logging, forest fires, overharvesting, and unsustainable land use. These factors are reducing canopy integrity and fragmenting habitats across the province. Provincial climate risk assessments consistently rank Karnali among Nepal’s most climate-risk assessments consistently rank Karnali among Nepal’s most climate-sensitive regions, with warming projected to exceed global rates and intensifying hazards degrading watershed ecosystems and forest structures; conservation reporting likewise documents illegal logging, fire incidence, and erosion threatening western corridor forests and ecological connectivity. Multistakeholder provincial dialogues similarly identify Karnali as highly vulnerable due to its steep terrain, fragile ecosystems, and low adaptive capacity, calling for climate-stakeholder provincial dialogues similarly identify Karnali as highly vulnerable due to its steep terrain, fragile ecosystems, and low adaptive capacity, calling for climatesmart-smart forest and riparian restoration to slow ongoing decline (WWF, Nepal, n.d.); (Lamsal, et al., 2023).
222. Recent national level biophysical forest data produced by Forest Research and Training Center (FRTC) (2025) shows that forest fragmentation and degradation are substantially elevated in Karnali Province, compared to most other provinces. According to the World Bank–FRTC–ICIMOD analysis, Karnali, Sudurpaschim-level biophysical forest data produced by Forest Research and Training Center (FRTC) (2025) shows that forest fragmentation and degradation are substantially elevated in Karnali Province, compared to most other provinces. According to the World Bank–FRTC–ICIMOD analysis, Karnali, Sudurpaschim, and Bagmati exhibit the highest levels of forest fragmentation, while Nepal’s average canopy cover dropped from 67% (2018) to 64% (2022) — indicating nationwide degradation, including in Karnali. Average tree canopy height also declined from 15.5 m to 14.7 m (2018–2022), pointing to worsening structural degradation. These findings come from FRTC’s municipality level-forest mapping and are publicly accessible as part of the “*May the Forest Be With You*” dataset (World Bank Group, 2025).

#### **Productivity and carbon: declining where exposure is high, higher where protection is strong**

223. Forest productivity across Karnali shows high spatial variability depending on climate exposure and management regime. Research from Surkhet indicates that Protection Forests (PF) maintain significantly higher aboveground carbon stocks and plant abundance than nearby Community Forests (CFs), demonstrating that stricter protection can sustain productivity even under warming. Soil carbon and species diversity remain statistically similar between PF and CF, highlighting the role of management intensity rather than only site conditions. Climate-ground carbon stocks and plant abundance than nearby Community Forests (CFs), demonstrating that stricter protection can sustain productivity even under warming. Soil carbon and species diversity remain statistically similar between PF and CF, highlighting the role of management intensity rather than only site conditions. Climate-risk analyses warn that increased warming and shifting precipitation patterns will alter moisture regimes, slow forest regeneration, and reduce biomass accumulation in exposed landscapes—especially drought-risk analyses warn that increased warming and shifting precipitation patterns will alter moisture regimes, slow forest regeneration, and reduce biomass accumulation in exposed landscapes—especially drought prone mid-prone midhill-hills and slopes prone to landslides—unless watershed and catchment management are strengthened (Lamichhane, et al., 2024); (SathSathai Foundation, 2024).
224. FRTC's 2025 biophysical dataset also documents decline in average canopy height and canopy density nationwide, important proxies for productivity. The drop in canopy height (15.5 m → 14.7 m) and reduced canopy density between 2018–2022 reflect lower structural biomass and slowing regeneration, which apply notably in Karnali because of steeper terrain and higher climate exposure. These degradation signals align with FRTC's permanent sample-sample-plot-based assessments and national land-cover monitoring (NLCMS) (World Bank Group, 2025).

#### **Species composition and trends: upward shifts, invasives, and sensitive alpine taxa**

225. Karnali Province contains ecological zones ranging from subtropical Shorea–Acacia forests to temperate oak–rhododendron belts and high-alpine shrublands. Multiple provincial and regional syntheses show altitudinal species shifts consistent with warming: cold-alpine shrublands. Multiple provincial and regional syntheses show altitudinal species shifts consistent with warming: coldadapted taxa are undergoing habitat contraction, while warm-adapted taxa are undergoing habitat contraction, while warmtolerant species are expanding upward. Invasive plant species are spreading across rangelands and forest edges, driven by climate variability, grazing pressure, and -tolerant species are expanding upward. Invasive plant species are spreading across rangelands and forest edges, driven by climate variability, grazing pressure, and landuse change. Karnali holds ~34% of Nepal's rangelands, and new ecological assessments identify invasives, overgrazing, and reduced pastoral mobility as major pressures that spill over into adjacent forests. These dynamics threaten high-use change. Karnali holds ~34% of Nepal's rangelands, and new ecological assessments identify invasives, overgrazing, and reduced pastoral mobility as major pressures that spill over into adjacent forests. These dynamics threaten highvalue medicinal and aromatic plants (MAPs) and slow-value medicinal and aromatic plants (MAPs) and slow-growing alpine shrubs, whose recruitment and phenology depend on snow and stable moisture regimes (Peerzada, et al., 2022); (Peerzada, et al., 2021).

#### **What this means for forest management in Karnali**

226. Overall, evidence shows that climate change is accelerating forest degradation, lowering productivity in exposed or poorly managed areas, and shifting species assemblages toward warm-tolerant and invasive species. However, well-managed or protected forests maintain higher biomass and carbon even under climatic stress, confirming the value of strengthened governance. Provincial and development assessments recommend:
- Climate smart forest and watershed management, including fire management, erosion control, and assisted natural regeneration.-smart forest and watershed management, including fire management, erosion control, and assisted natural regeneration.
  - Connectivity conservation and corridor protection to maintain ecological flows.
  - Integrated rangeland–forest restoration to control invasives, reduce degradation pressures, and improve regeneration conditions (Khatriwada, et al., 2016); (WWF, Nepal, n.d.).
227. FRTC's 2025 municipal-level forest condition data — covering cover change, fragmentation, canopy height, and degradation signals — should now be treated as the most upto-todate baseline for planning restoration,

MRV, and climate-date baseline for planning restoration, MRV, and climate-finance reporting in Karnali (World Bank Group, 2025).

### 2.4.3 Drivers of degradation / unsustainable use

228. Nepal's forest ecosystems are increasingly affected by a range of anthropogenic pressures that reduce forest quality, diminish ecosystem services, and threaten the sustainability of timber and nontimber forest products (NTFPs/MAPs). These pressures are more acute in remote, resource-timber forest products (NTFPs/MAPs). These pressures are more acute in remote, resource dependent regions such as Karnali Province, where limited infrastructure, high poverty-dependent regions such as Karnali Province, where limited infrastructure, high poverty, challenging terrain, and weak market governance amplify environmental risks (Acharya, et al., 2011). The following summarises the principal drivers relevant for project design and feasibility assessments.
229. **Infrastructure Expansion and Forest Access:** Rapid, unplanned construction of rural roads, hydropower access routes, and other linear infrastructure is a leading cause of forest fragmentation in Nepal. These routes open access to once -remote forests, enabling illegal timber extraction, settlement expansion, and land conversion — accelerating degradation. National landscape-level strategies under the Ministry of Forests and Environment (MoFE) identify-level strategies under the Ministry of Forests and Environment (MoFE) identify poorly engineered infrastructure as a critical driver altering forest structure and ecological corridors (MoFE, n.d.). (Government of Nepal, Ministry of Forests and Environment (MoFE), n.d.), (Ministry of Forests and Environment , 2022), (Timoshyna, n.d.).
230. In Karnali Province, expanded access along the Karnali corridor increases exposure to logging, poaching, and land encroachment, further threatening corridor integrity and ecological connectivity.
231. **Illegal Logging, Timber Overharvesting, and Weak Enforcement:** Illegal harvesting of timber remains pervasive in Nepal, especially in accessible forests. MoFE--linked program reports and REDD+ analyses note that poor enforcement capacity and overlapping policies contribute to chronic canopy loss, erosion, and reduced regeneration (ICEM Asia, IIED and SchEMS, 2014).
232. Similar risks are documented in Karnali, where illegal logging presents a major threat to the Karnali corridor and surrounding community forests.
233. **Overdependence on Fuelwood and Biomass Energy:** Household fuelwood consumption constitutes one of the most persistent drivers of forest degradation in Nepal. UN-REDD and national assessments identify high biomass dependence as a key proximate cause of thinning forests and loss of mature tree stock (ICEM Asia, IIED and SchEMS, 2014).
234. In Karnali, where access to alternative energy sources is limited, fuelwood dependence is significantly higher, sustaining continuous pressure on nearby forests and woodlands.
235. **Overgrazing and Rangeland–Forest Pressure:** Overgrazing by livestock is widely recognised as a major degradation driver in Nepal's hills and mountain regions. REDD+ and sectoral studies identify livestock pressure as a suppressor of forest regeneration, compacting soils and degrading understories (ICEM Asia, IIED and SchEMS, 2014); (Acharya & Paudel, 2020).
236. Karnali Province, which hosts 34% of Nepal's rangelands, faces acute overgrazing, invasive species spread, and pasture–forest interface degradation, prompting the development of a provincial Rangeland Management Strategy and Action Plan (Global Institute for Interdisciplinary Studies, n.d.).
237. **Anthropogenic Forest Fires:** Human--induced forest fires — whether intentional (e.g., to promote fresh pasture) or accidental — remain a recurring source of forest loss in Nepal. National forest and corridor-level- assessments cite fire as a major annual driver of degradation, especially in western Nepal (TRAFFIC, 2019).
238. In the Karnali corridor, forest fire is explicitly noted among the most significant threats to forest health and connectivity.

239. **Overharvesting of NTFPs/MAPs and Unsustainable Value Chains:** Nepal's high-value NTFPs and medicinal and aromatic plants (MAPs) — including Jatamansi (*Nardostachys grandiflora*) and Yarshagumba (*Ophiocordyceps sinensis*) — are increasingly harvested unsustainably due to rising commercial demand. Toolkits, sustainability assessments, and CITES/FairWild initiatives highlight premature harvesting, destructive extraction, and market-driven pressure as leading causes of declining NTFP/MAP productivity (TRAFFIC, 2019).
240. Karnali Province, with extensive alpine and subalpine habitats, is among the national hotspots for MAP harvesting. Provincial biodiversity assessments further confirm high resource dependence and significant anthropogenic pressure on forest flora (WWF, Nepal, n.d.).
241. **Governance, Policy Gaps, and Enforcement Limitations:** National REDD+ studies emphasise governance limitations, including unclear mandates, overlapping institutional roles, and inadequate enforcement, as major underlying drivers of degradation (Paudel, et al., 2014).
242. In Karnali, research shows that policy incoherence among federal, provincial, and local governments reduces conservation effectiveness and contributes to biodiversity loss and forest degradation.
243. **Climate-Linked Hazards Exacerbated by Human Activity:** Human disturbances such as slope destabilization from overgrazing, road cuts, and forest thinning — increases vulnerability to landslides, riverbank cutting, and floods. Corridor-level assessments show these combined pressures are especially severe in western Nepal, including Karnali. This is summarized in Table 15.

Table 15: Summary: Key Anthropogenic Drivers of Forest Degradation in Nepal and Karnali Province

Driver	Impact Mechanism	Nepal (National Evidence)	Karnali Province Evidence	Evidence
<b>Unplanned infrastructure (roads, linear projects, hydropower access roads)</b>	Forest opening, access for illegal extraction, fragmentation, slope instability	National strategies and program documents flag roads as enabling encroachment and illegal logging; calls for landscape-scale corridor protection-scale corridor protection	Access expansion threatens Karnali corridor integrity and increases exposure to logging/poaching	(MoFE, n.d.) (WWF, Nepal, n.d.)
<b>Illegal logging &amp; timber overharvesting</b>	Canopy loss, reduced regeneration, habitat degradation	Recurrent national threat in accessible forests and corridors	Identified as a major threat in the Karnali corridor	(MoFE, n.d.) (WWF, Nepal, n.d.)
<b>Fuelwood/biomass dependence</b>	Chronic thinning, localized degradation around settlements	National REDD+/UN-REDD analyses highlight high fuelwood reliance as a proximate driver	Particularly acute in remote Karnali communities with limited alternatives	(Paudel, et al., 2014)
<b>Overgrazing (forest–pasture interfaces)</b>	Suppressed regeneration, soil compaction, understory loss	High mountains and hills widely affected; cited across REDD+/SESA and studies	Prominent in Karnali; provincial rangeland strategy under preparation	(Baral, et al., 2012) (Global Institute for Interdisciplinary Studies, n.d.)
<b>Anthropogenic forest fires</b>	Stand damage, recruitment failure, carbon loss	Noted as a national and western Nepal corridor risk	Listed among top threats in the Karnali corridor	(MoFE, n.d.) (WWF, Nepal, n.d.)
<b>Overharvesting of NTFPs/MAPs</b>	Stock depletion, premature harvest, destructive extraction methods	National concern in trade chains (e.g., Jatamansi) motivating Fair Wild/CITES compliance and	High livelihood dependence in Karnali's alpine/subalpine zones; pressure on species like Jatamansi, Kutki and Yarshagumba	(TRAFFIC, 2019) (ANSAB, 2022) (Wallrapp, 2019)

		sustainable harvest toolkits		
<b>Governance gaps (policy overlap, weak enforcement)</b>	Reduced deterrence, fragmented planning, limited monitoring	REDD+/CIFOR analyses highlight governance as a central constraint	Policy incoherence and implementation gaps documented specifically for Karnali	(Paudel, et al., 2013) (Paudel, et al., 2014) (Baral, et al., 2022)
<b>Riverbank cutting, floods, landslides (human-linked exposure)</b>	Bank erosion, forest loss along corridors, regeneration failure		Bank erosion, forest loss along corridors, regeneration failure	

244. Table 16 summarises the main anthropologic risks faced by NTFPs and MAPs and how these are compounded by climate change, together with the effective measures that can address such risks.

Table 16: NTFPs/MAPs Risk–Response Matrix

<b>Risk Category</b>	<b>Description of Risk to NTFPs/MAPs</b>	<b>Climate Relevance / Impact Pathway-Relevance / Impact Pathway</b>	<b>Proposed Response Measure (Adaptation + Co-benefits)-benefits)</b>	<b>Supporting Evidence</b>
<b>Overharvesting &amp; Premature Extraction of MAPs</b>	High-value species (e.g., <i>Jatamansi</i> , <i>Yarshagumba</i> ) face unsustainable extraction due to market demand and destructive harvesting techniques.-value species (e.g.,	Reduced plant regeneration lowers ecosystem resilience; overexploitation weakens alpine ecosystems that buffer climate impacts.	<ul style="list-style-type: none"> <li>• Develop &amp; enforce sustainable harvesting protocols (Fair-Wild/CITES-aligned).</li> <li>• Establish MAP conservation zones and rotational harvest blocks.</li> <li>• Train harvesters on sustainable methods and monitoring.</li> </ul>	Overharvesting identified as a major threat in national MAP value chains and Karnali's alpine ecosystems. (Institute of Forestry, Tribhuvan University, 2018) (Ojha, et al., 2001) (Tribhuvan University, Institute of Forestry, 2023)
<b>Habitat Degradation from Overgrazing</b>	Subalpine and alpine rangelands—key MAP habitats—are degraded by unmanaged grazing and trampling.	Climate-induced drought combined with overgrazing accelerates soil moisture loss, reducing MAP productivity and increasing erosion.-induced drought combined with overgrazing accelerates soil moisture loss, reducing MAP productivity and increasing erosion.	<ul style="list-style-type: none"> <li>• Implement rangeland zoning and grazing caps.</li> <li>• Promote stall-feeding and improved fodder systems.</li> <li>• Restoration of degraded pasture–forest interfaces.</li> </ul>	Karnali hosts 34% of Nepal's rangelands; overgrazing and land-use pressures documented as major threats.
<b>Illegal Logging &amp; Forest Structure Degradation</b>	Illegal timber extraction reduces canopy, understory diversity, and microhabitats critical for NTFP/MAP regeneration.	Loss of canopy reduces moisture retention, accelerates warming/drying, and increases MAP yield variability under climate change.	<ul style="list-style-type: none"> <li>• Strengthen community forest governance, monitoring, and surveillance.</li> <li>• Deploy digital forest-use permits &amp; traceability systems.</li> <li>• Corridor-level restoration.-use permits &amp; traceability systems.-level restoration.</li> </ul>	Illegal logging is a major threat in Karnali corridor forests. (MoFE, n.d.)
<b>Anthropogenic Forest Fires</b>	Fires (intentional or accidental) destroy MAP habitats and	Warmer/drier climate increases fire susceptibility; frequent	<ul style="list-style-type: none"> <li>• Community firewatch teams &amp; early warning systems.</li> </ul>	Forest fire is a documented major threat in the Karnali corridor.

	threaten regeneration cycles.	burns eliminate slow-growing MAP species.-growing MAP species.	<ul style="list-style-type: none"> <li>• Fuel-load management and firesafe harvesting zones.</li> <li>• Fire resilient species plantation around MAP hotspots.-watch teams &amp; early-warning systems.-load management and fire-safe harvesting zones.-resilient species plantation around MAP hotspots.</li> </ul>	(MoFE, n.d.)
<b>Policy &amp; Governance Gaps</b>	Fragmented federal–provincial–local coordination leads to weak MAP management, inconsistent permits, and poor enforcement.	Weak governance undermines climate adaptive natural resource planning and increases extraction pressure under climate stress.-adaptive natural resource planning and	<ul style="list-style-type: none"> <li>• Establish a Provincial MAP Governance Platform.</li> <li>• Harmonize harvest permits and monitoring guidelines.</li> <li>• Mainstream MAP climate-risk guidance in provincial policies.-risk guidance in provincial policies.</li> </ul>	Policy incoherence reduces conservation effectiveness in Karnali. (MoFE, n.d.)
<b>Climate Induced Hazards (Floods, Landslides, Riverbank Erosion)-Induced Hazards (Floods, Landslides, Riverbank Erosion)</b>	Slope instability, flood events, and erosion degrade MAP habitats and soil profiles.	Hazards accelerate loss of fragile alpine soils and MAP microhabitats; climate-driven extremes interact with human disturbances.-driven extremes interact with human disturbances.	<ul style="list-style-type: none"> <li>• Ecosystem-based adaptation (EBA): slope stabilization, bioengineering, and watershed restoration.</li> <li>• Diversify livelihoods to reduce pressure on sensitive MAP landscapes.-based adaptation (EBA): slope stabilization, bioengineering, and watershed restoration.</li> </ul>	Karnali corridor is threatened by riverbank cutting, floods, and landslides. (MoFE, n.d.)
<b>Declining Biodiversity &amp; Knowledge Gaps</b>	Limited taxonomic and ecological knowledge hinders sustainable MAP management; species remain understudied.	Lack of data reduces ability to predict climate impacts on MAP productivity and distribution.	<ul style="list-style-type: none"> <li>• Establish MAP research plots &amp; climate impact monitoring.</li> <li>• Support academia collaboration for MAP ecological research.-impact monitoring.</li> </ul>	Provincial biodiversity assessment highlights large information gaps in Karnali flora. (WWF, Nepal, n.d.)
<b>Socioeconomic Dependence &amp; Market Pressures</b>	High dependence on MAP income increases extraction pressure during climate-induced livelihood shocks.-induced livelihood shocks.	Climate shocks (crop failures, drought) push communities toward increased MAP harvesting for coping income.	<ul style="list-style-type: none"> <li>• Promote value addition, community enterprises, and alternative livelihood options.</li> <li>• Climate resilient income diversification (beekeeping, ecotourism, fodder enterprises).-resilient income diversification (beekeeping, ecotourism, fodder enterprises).</li> </ul>	NTFPs/MAPs are critical to mountain livelihoods; overexploitation is widespread. (Jayaswal, n.d.)

## 2.5 Local Governance and Institutional Context

### 2.5.1 Nepal's Federal Governance System

245. Nepal formally transitioned from a unitary to a federal democratic republic in 2015 with the promulgation of the Constitution of Nepal. The shift to federalism was driven by longstanding demands for more inclusive governance, balanced regional development, and the decentralisation of power to ensure that state structures

better reflected Nepal's social, geographic, and ethnic diversity. Federalisation sought to correct historical centralisation in Kathmandu, enhance representation, and enable more responsive, accountable public service delivery across the country.

246. Nepal's federal system comprises three tiers of government—federal, provincial, and local—each with constitutionally protected executive, legislative, and fiscal powers. The country is organised into seven provinces, which have significant autonomy to legislate and implement policies within their jurisdictions. Provinces have their own assemblies and executive councils, with mandates covering areas such as provincial infrastructure, disaster management, environmental management, and economic development. They also play a coordinating role between the federal government and local governments and can develop laws and policies tailored to the environmental and socioeconomic conditions of their territories.
247. At the local level, Nepal has 77 districts and 753 local governments (palikas), including 481 rural municipalities (gaunpalika) and 293 urban municipalities (nagarpalika). These are constitutionally recognised as autonomous governments with authority over local planning, budgeting, service delivery, natural resource management, and disaster preparedness and response. Local governments have elected councils, mayors or chairpersons, and executive committees responsible for decision-making and oversight. Crucially, they hold exclusive powers (e.g., local roads, water supply, land use planning, local environment management) and shared powers with provincial and federal governments, supported by intergovernmental coordination mechanisms.
248. The federal restructuring has substantial benefits for locally led climate action. Devolution of decision-making enables local governments to design and implement climate adaptation and disaster risk reduction measures that reflect localised hazards, geographic diversity, and community priorities—from glacial lake outburst flood (GLOF) risk to landslides, drought, and riverine flooding. Local governments now prepare their own climate-responsive annual plans and can integrate community-identified risks into local disaster and climate resilience strategies. Moreover, constitutional mandates allow provinces and municipalities to mobilise revenue, manage natural resources, and coordinate directly with federal authorities on climate-related investments. This multi-level governance structure enhances responsiveness, accelerates implementation, and strengthens accountability for adaptation outcomes at the community level.

#### **2.5.1.1 Local Governance in Karnali Province**

249. Karnali is administratively divided into 10 districts: *Dolpa, Humla, Jumla, Kalikot, Mugu, Salyan, Surkhet, Dailekh, Jajarkot, and Rukum West*. These districts vary significantly in geography and accessibility — from the high Himalayan districts of Dolpa, Mugu, and Humla to the mid-hills and lower valleys of Surkhet and Salyan. This diversity shapes local risk profiles and service-delivery challenges. Within these districts, the province comprises 79 local governments (palikas), 54 of which are rural municipalities, with a further 25 urban municipalities.

#### **2.5.1.2 Roles and mandates of local governments in adaptation**

250. Under Nepal's federal constitution, palikas are recognised as autonomous spheres of government with significant authority over natural resource management, land use, local infrastructure, planning, and disaster risk reduction. These responsibilities place municipalities at the frontline of climate change adaptation, enabling them to design and execute context-specific measures that respond to local hazard profiles and community needs.
- **Local planning and integration of climate risks:** Municipalities are mandated to prepare annual and periodic development plans that reflect local priorities. They must integrate climate change and disaster-risk considerations into these plans, including land-use zoning, watershed and ecosystem management, agriculture extension, and infrastructure planning. Local governments also prepare Local Disaster and Climate Resilience Plans (LDCRPs), which guide community-level adaptation actions.
  - **Natural resource and land-use management:** Municipalities hold exclusive powers over local forests, water resources, agriculture services, and land registration — all of which are directly relevant to adaptation. They regulate land use to reduce exposure to hazards, manage community forests and wetlands, support soil conservation, and implement local watershed restoration and slope-stabilisation measures.



- Disaster risk reduction and emergency preparedness: Local governments lead hazard mapping, vulnerability assessments, community-based early warning systems, and contingency planning. They coordinate search-and-rescue, evacuation, relief distribution, and emergency shelter during disaster events. Municipalities can allocate emergency funds and mobilise local response teams through Local Disaster Management Committees (LDMCs).
- Climate-resilient infrastructure and public services: Municipalities are responsible for local roads, water supply, sanitation, irrigation, drainage, and public buildings. They play a central role in designing, maintaining, and upgrading infrastructure to withstand climate stressors such as flooding, landslides, heatwaves, drought, and heavy rainfall. They also manage local markets, agricultural services, and rural electrification — key systems for resilience.
- Community engagement and social inclusion: Municipalities ensure that planning and budgeting processes — including Ward Citizen Forums and public hearings — capture community-identified climate risks and priorities. They facilitate participation of women, youth, indigenous groups, and marginalised communities, aligning with constitutional mandates for inclusive governance.
- Local financing and resource mobilisation: With their own revenue authority and constitutional rights to grants and fiscal transfers, municipalities mobilise resources for adaptation activities. They also coordinate with provincial and federal ministries to access sectoral budgets, conditional grants, and disaster-risk funds, and can partner with NGOs, private sector actors, and development partners on adaptation initiatives.
- Coordination across tiers of government: Municipal governments act as the operational interface for localised adaptation, coordinating with provincial ministries, federal agencies (such as MoFE, DoMADRR, and DHM), and community-based institutions. They provide data on local hazards and impacts, support implementation of national adaptation policies, and ensure consistency between federal frameworks and local action.

## 2.5.2 Existing LAPA processes and their effectiveness

251. Nepal is a leader in developing the Local Adaptation Plan of Action (LAPA) framework, recognized as a tool for mainstreaming climate change adaptation into local development plans. The first LAPA framework was developed in 2011, when the Village Development Committee (VDC) was the lowest-level planning unit. After the transition to a federal structure, the VDCs were replaced by local governments (e.g., rural/urban municipalities), which are larger and have far greater autonomy than VDCs. As a result of this structural change in the development planning process, the previous LAPA was revised to be relevant to local governments under the federal system. The government published the new LAPA framework in 2019, drawing on lessons learned from its 2011 implementation. The LAPA process is bottom-up, inclusive, and responsive, designed to strengthen the adaptive capacity of climate-vulnerable households and communities through a series of steps, such as:

- Sensitization and capacity building
- Assessment of risks and vulnerability in the face of the existing context and the future scenarios
- Identification of climate change adaptation, DRR, and management strategies (emphasizing harmonization of local government plans, integrated watershed management plans, and community forestry activities, while formulating the CC adaptation and DRR and management activities)
- Mainstream CC adaptation, DRR, and management strategies into local development periodic plans and development policies (formulation of climate-friendly infrastructure development guidelines)
- Integrate CC adaptation, DRR, and management strategies into the annual plan and M&E framework of local government (consider local government planning and budgeting practices as an entry point to mainstream CC adaptation, DRR, and management strategies in the local planning process).

252. The following are the main features of the 2019 LAPA framework.

- Formulated to integrate climate adaptation and resilience aspects into local and national plans
- Included disaster risk reduction and management as an additional element in the LAPA framework
- Redefined the LAPA objective to mainstream climate change adaptation and disaster risk reduction and management into each process development and resource management at the local level to create a climate-resilient society.

- Emphasized that climate change is part of national policy and underscored the need to mainstream climate change adaptation, DRR, and management activities into each stage of local-level development.
- Designed with lessons learned from the implementation of NAPA, and in line with the spirit of the Climate Change Policy 2019, the Nepal Constitution, and the federal governance structure
- Emphasized mainstreaming climate adaptation and DRR strategies and activities into government planning and periodic and annual plans.

253. In practice, LAPA development is a consultative process led by local governments, which mobilize institutional mechanisms such as the ward committee, the Executive Committee (Karyapalika), and the local government section head. The entire LAPA formulation process is led by the elected official and their mechanism. This approach ensures that elected officials and local-level stakeholders participate in local planning processes. In practice, it involves technical assistance to produce LAPA, with experts involved throughout the data collection and consultation process to maintain document quality. This broad participation has led to endorsements and ongoing implementation, with local governments including prioritized activities in annual plans.

254. The final LAPA report provides a list of priority adaptation actions for climate-vulnerable sectors, risk-prone locations, and highly vulnerable populations that local governments will gradually incorporate into their annual plans. Thus, the development and endorsement of LAPA have strengthened local governments' capacity to systematically mainstream climate change plans for their regular plans. In addition, the involvement of local government personnel in developing LAPA has equipped them with the knowledge and skills to analyze climate risks and identify adaptation options at the local level. This will help update climate risk analysis and plan adaptation actions during the local planning process, even after the project ends.

255. Overall, LAPA serves as a reference document for a bankable project within the local planning process. LAPA actions are identified through the active participation of local people and communities and are grounded in climate vulnerability and risk assessments. To make LAPA a living document, Local Government needs to review the implementation status of LAPA actions, identify their challenges, and explore new financial opportunities for the LAPA adaptation action that remains unimplemented. An institutional mechanism with LG is essential for mainstreaming climate change adaptation into development planning. Therefore, a focal point, unit, or section should be established in line with the expectations of the Climate Change Policy, 2019.

### 2.5.3 Community-level governance structures

256. Community level governance structures play a central role in Nepal's devolved forest management system and are particularly significant in provinces such as Karnali, where -level governance structures play a central role in Nepal's devolved forest management system and are particularly significant in provinces such as Karnali, where forest-dependent communities rely heavily on local institutions to manage forest resources, protect biodiversity, and support the sustainable use of nontimber forest products (NTFPs) and medicinal and aromatic plants (MAPs). Nepal's forestry sector has evolved through several decades of decentralization, with -timber forest products (NTFPs) and medicinal and aromatic plants (MAPs). Nepal's forestry sector has evolved through several decades of decentralization, with community forest management emerging as a globally recognized model for participatory and sustainable resource governance. These structures operate outside the formal local government system but remain closely aligned with national policies and provincial frameworks. Their functions include forest protection, sustainable harvesting regulation, enterprise development, equitable-based forest management emerging as a globally recognized model for participatory and sustainable resource governance. These structures operate outside the formal local government system but remain closely aligned with national policies and provincial frameworks. Their functions include forest protection, sustainable harvesting regulation, enterprise development, equitable benefit sharing, and local enforcement of forest stewardship responsibilities. Governance reviews underscore that these institutions are indispensable for improving conservation outcomes and addressing gaps in policy implementation — particularly in regions such as Karnali, where centralised mechanisms alone have proven insufficient (Paudel, et al., 2014).

#### **Community Forest User Groups (CFUGs): governance architecture, roles and safeguards**

257. CFUGs are the primary community based institutions mandated to manage community forests under -based institutions mandated to manage community forests under government operational plans. They are responsible for forest protection, regulating harvesting levels (including NTFPs/MAPs), maintaining forest health, and

reinvesting income generated from forest activities into community development. CFUGs also serve as the frontline governance mechanism for enforcement, forest fire monitoring, and prevention of illegal activities. They exercise devolved authority over approved operational plans. They are responsible for forest protection, regulating harvesting levels (including NTFPs/MAPs), maintaining forest health, and reinvesting income generated from forest activities into community development. CFUGs also serve as the frontline governance mechanism for enforcement, forest fire monitoring, and prevention of illegal activities. They exercise devolved authority over decision, resource allocation, and rule enforcement, and are widely recognized for their effectiveness in reversing forest degradation in the Middle Hills and strengthening local stewardship. Their institutional role is further validated in national forest governance assessments, which highlight community forestry as a cornerstone of effective local management (Paudel, et al., 2014).

258. **Legal mandate and scope:** CFUGs are statutory user bodies constituted under the Forests Act, 2019 (2076) to which national forest can be “handed over” as a community forest. Once constituted and the operational plan is approved, CFUGs are entitled to develop, conserve, use and manage their forest and sell/distribute products at prices they fix, subject to the plan and applicable rules. The Act also requires minimum earmarking of CFUG income for pro-poor, women’s empowerment and local development (at least 25%), institutionalising social inclusion within CF finances. -poor, women’s empowerment and local development (at least 25%), institutional

**Core governance organs:** Most CFUGs operate through (WWF, 2013):

- a **General Assembly (GA)** of registered users as the supreme decision-making body (approves or amends the operational plan, annual work plan/budget, bylaws, and audits); and-making body (approves or amends the operational plan, annual work plan/budget, bylaws, and audits); and
- an **Executive Committee (EC)** elected by the GA to execute the plan, supervise harvesting and silviculture, manage contracts and finances, maintain records, and convene social audits. This architecture — pioneered since the 1993 Act and consolidated through subsequent rules — underpins Nepal’s globally noted decentralization of forest governance (Baral, et al., 2022).

259. **Operational planning and harvest regulation:** The CF Operational Plan (CFOP) is the principal instrument that codifies silvicultural prescriptions, allowable cut, rotation/closure areas for timber and NTFPs/MAPs, protection measures (fire, grazing), and monitoring routines. Under federalism, Division Forest Offices (DFOs) (provincial line) retain approval and regulatory oversight of CFOPs, annual revisions, and harvesting permits, while CFUGs lead on-ground implementation and compliance; recent policy work stresses the need for clearer procedures and joint planning to avoid “passive management.” (Acharya, et al., 2011)
260. **Financial management and benefit sharing:** In addition to the minimum 25% social earmark, CFUG bylaws and GA resolutions define revenue distribution (e.g., reinvestment in regeneration/restoration, local infrastructure, scholarships, livelihood grants) and pricing/royalty policies for timber and NTFPs/MAPs. Transparent book-keeping, annual financial reporting and third-party audits/social audits are standard practice required by DFO oversight and donor/program norms and are widely cited as success factors of Nepal’s community forestry system — while also being areas that need continuous strengthening (Baral, et al., 2022).
261. **Legal Basis for CFUG Financial Management:** The **Forests Act, 2019** legally empowers CFUGs to “develop, conserve, use and manage their community forest and to sell and distribute forest products by independently fixing their prices.” This authority allows CFUGs to retain and manage all income generated from forest products, both timber and non-timber, within the rules of their approved Community Forest Operational Plan (CFOP).
262. **Mandatory Allocation of CFUG Income:** The Act requires CFUGs to allocate at least 25% of their annual forest income to pro-poor, women’s empowerment, and community development activities, including targeted livelihood support for disadvantaged groups. This mandated earmark ensures that revenues from community forests contribute directly to equity, poverty reduction, and social inclusion — core pillars of Nepal’s decentralized forest governance.
263. **Revenue Generation, Pricing and Distribution Rules:** CFUGs have the authority to fix prices for forest products independently and to determine internal distribution arrangements, subject to their CFOP and General Assembly decisions. Income sources typically include:

- Timber and fuelwood sales
- NTFP/MAP royalties and permit-based collection
- Fines for violations

264. **Enterprise income (e.g., value-added processing-added processing)** autonomy is a defining feature of Nepal's successful community forestry model, enabling CFUGs to reinvest profits into resource management, forest protection, infrastructure, and social services (Baral, et al., 2022).

265. **Budgeting, Planning, and Approval Procedures:** All financial decisions must be anchored in the Community Forest Operational Plan (CFOP) and the annual work plan and budget, both approved by the CFUG General Assembly. As studies highlight, CFOP-linked budgeting is essential for avoiding passive or under-managed forests. Budget items typically include silvicultural operations, fire management, forest road and trail maintenance, NTFP/MAP monitoring, and community grants (Global Institute for Interdisciplinary Studies, n.d.).

266. **Accounting, Recordkeeping, and Audits:** CFUGs are required to maintain **complete financial records**, including registers of income, expenditures, inventories, and bank transactions. Annual **financial audits and social audits** must be conducted and presented to the General Assembly, ensuring transparency and accountability. Academic and policy reviews consistently emphasize that financial transparency is one of the core strengths of Nepal's community forestry system, while also identifying it as an area that requires ongoing capacity support to prevent elite capture. **-Keeping, and Audits:**

267. **Provisions for Equity, Inclusion, and Safeguards:** CFUG financial rules explicitly require fair distribution of forest benefits across user households. This includes:

- Subsidized or free forest products for vulnerable households
- Targeted grants and livelihood support
- Inclusive budgeting for women, Dalit, and Indigenous groups
- Empirical governance studies show that these safeguards help address persistent challenges of social exclusion and uneven benefit-sharing within community forestry systems.

268. **Coordination with Government Authorities Under Federalism:** Although CFUGs manage their finances autonomously, federal restructuring has introduced new coordination requirements. Division Forest Offices (DFOs) retain oversight roles in approving CFOPs and harvest permits, while local governments seek revenue-sharing arrangements. Recent analyses note that unclear taxation and oversight provisions can create conflicts, underscoring the need for formalized coordination and clear Standard Operating Procedures (SOPs) in financial management (Acharya, et al., 2011); (WWF, Nepal, n.d.).

269. **Financial Enforcement and Compliance Mechanisms:** CFUGs may impose fines, sanctions, **and penalties** for violations of harvesting rules, unauthorized extraction, or illegal timber/NTFP trade. Revenues from fines are incorporated into the CFUG account and used according to the financial rules. The General Assembly holds the power to evaluate committee performance and enforce corrective actions if mismanagement is identified (Baral, et al., 2022).

270. **Linking Financial Rules to Forest Sustainability and Enterprise Growth:** CFUG financial rules are designed not only for compliance, but also to support:

- **Reinvestment into forest health** (silviculture, plantation, fire-lines)
  - **Sustainable NTFP/MAP management** (rotational harvesting, monitoring, regeneration plots)
  - **Enterprise development** (cooperatives, value addition, market access)
- These financial mechanisms help ensure that economic gains reinforce ecological sustainability — a dynamic highlighted across multiple governance and community forestry studies (Baral, et al., 2022).

271. **Accountability, transparency and social inclusion:** CFUGs are expected to:

- Hold regular GAs with quorums and disclose minutes, plans, budgets and audit findings.
- Ensure inclusive representation of women, Dalit, Indigenous and ultra-poor users on ECs and sub-committees.

- Operate grievance mechanisms and accessible keeping; and
- Facilitate social audits and public expenditure reviews. Research and practice syntheses highlight both the contribution of these safeguards to equity and the persistent risks (elite capture, multiple taxation, benefit-sharing disputes) that require vigilant enforcement and capacity support (Acharya, et al., 2011).

272. **NTFP/MAP governance within CFUGs:** Given Karnali's high dependence on NTFPs/MAPs, CFUGs are the locus for rotational harvesting blocks, sustainable harvest calendars, species-specific-specific quotas, pre-/postharvest monitoring, and trader compliance (permits/traceability) embedded in the CFOP and enforced by -harvest monitoring, and trader compliance (permits/traceability) embedded in the CFOP and enforced by ECled patrolling. Where value chains require it (e.g., CITES/FairWild for Jatamansi-led patrolling. Where value chains require it (e.g., CITES/FairWild for Jatamansi), CFUGs coordinate with cooperatives/producer groups for quality control, documentation, and buyer contracts to align livelihood gains with resource sustainability<sup>7</sup> (Kant, n.d.)

273. **Coordination with government and local authorities:** Under Nepal's federal arrangement, DFOs provide technical oversight (inventory, silviculture, marking, permit issuance) and compliance checks, while local governments increasingly coplan-plan development interfaces (e.g., ecotourism infrastructure, watershed works). Evidence from field studies and policy briefs shows that overlapping mandates and unclear revenue/tax provisions can hamper CF effectiveness; recommended remedies include memoranda of understanding, joint annual reviews, clarified permit workflows, and -tourism infrastructure, watershed works). Evidence from field studies and policy briefs shows that overlapping mandates and unclear revenue/tax provisions can hamper CF effectiveness; recommended remedies include memoranda of understanding, joint annual reviews, clarified permit workflows, and platform-based coordination among CFUGs, DFOs and municipalities/rural municipalities. (WWF, Nepal, n.d.); (Acharya, et al., 2011)

274. **Linkages to collaborative/protection forests and rangelands:** In corridor or landscape contexts, CFUGs often comanage fire lines, -manage fire lines, antiencroachment patrols, and restoration across boundaries with Collaborative Forest Management (CFM) groups and Protection Forest Committees, and in -encroachment patrols, and restoration across boundaries with Collaborative Forest Management (CFM) groups and Protection Forest Committees, and in high-altitude belts they coordinate grazing regimes with rangeland committees—arrangements that are particularly relevant in Karnali's mosaic of subalpine forests and pastures. (Paudel, et al., 2013); (Ojha, et al., 2026)

275. **Support functions from civil society networks (FECOFUN):** The Federation of Community Forestry Users Nepal (FECOFUN) provides policy advocacy, legal aid, training, and multi-level coordination for CFUGs, helping align local bylaws and CFOPs with evolving national/provincial rules and safeguarding community rights during reforms or external investments. Provincial/district FECOFUN chapters are frequently partners in capacity building, conflict resolution, and social auditing. (Online Notes Nepal, 2025); (Tribhuvan University, Institute of Forestry, n.d.)

#### **Common governance challenges and proposed project responses:**

- *Elite capture and inequitable benefits:* mitigate via inclusive Executive Committee (EC) quotas for marginalized community, participatory budgeting, and third-party social audits.
- *Role ambiguity under federalism:* establish standard operating procedures (SOPs) for CFOP revisions, permit issuance, and joint monitoring with DFOs/LGs (Acharya, et al., 2011).
- *Passive/under-managed forests:* fund inventory refresh, silvicultural operations, fire/risk protocols, and NTFP rotational plans under CFUG leadership (Global Institute for Interdisciplinary Studies, n.d.).
- *Revenue/tax conflicts:* agree tripartite revenue/taxation understandings with municipalities and provinces, anchored in the Forests Act and endorsed in GA resolutions (WWF, Nepal, n.d.).

#### **Collaborative Forest Management Groups and Other Local Forest Management Units**

<sup>7</sup> [https://www.iufro.org/media/fileadmin/spdc/pdf-documents/COMMUNITY\\_FORESTRY\\_IN\\_NEPAL.pdf](https://www.iufro.org/media/fileadmin/spdc/pdf-documents/COMMUNITY_FORESTRY_IN_NEPAL.pdf)

276. In addition to CFUGs, various community-based forest management units — such as collaborative forest management groups, protection forest committees, and rangeland management units — operate in landscapes where forests, grasslands, and protected corridors intersect. These groups coordinate multi-stakeholder management, including grazing regulation, forest restoration, fire prevention, and sustainable extraction of forest products. In Karnali Province, emerging rangeland and pasture management committees have become crucial as overgrazing, invasive species, and climate-driven hazards increasingly threaten subalpine ecosystems. Their responsibilities typically include planning grazing rotations, monitoring pasture health, and supporting provincial efforts to develop rangeland management strategies.

### **Forest Based Cooperatives and Producer Organizations-Based Cooperatives and Producer Organizations**

277. Cooperatives play an important role in strengthening the economic dimensions of NTFP/MAP value chains. They aggregate products, facilitate market access, ensure quality control, and support value addition while promoting sustainable harvesting practices. Cooperatives also function as platforms for inclusive enterprise development, enabling communities — especially women and marginalized groups — to participate in formal value chains. MAP-related enterprise development has been widely documented as a strategic livelihood opportunity in remote regions of Nepal, particularly given the high commercial value of products such as Jatamansi and Yarshagumba. (Institute of Forestry, Tribhuvan University, 2018); (Tribhuvan University, Institute of Forestry, n.d.)

### **Women's Groups and Indigenous/Marginalized Community Organisations**

278. Women's groups, savings and credit associations, and Indigenous community organisations contribute significantly to forest stewardship, NTFP collection, processing, and conservation activities. These groups often lead sustainable harvesting practices, community monitoring, and fire prevention, while also advocating for equitable benefit sharing from forest enterprises. Evidence from NTFP-based livelihood studies indicates that women and marginalized groups are both highly dependent on forest resources and central to sustainable management when provided with institutional space and capacity. (Tribhuvan University, Institute of Forestry, n.d.); (Jayaswal, n.d.)

### **Federation of Community Forestry Users Nepal (FECOFUN)**

279. FECOFUN is a national civil society network representing tens of thousands of CFUGs across Nepal. It provides advocacy, capacity-building, policy engagement, and legal support to community forest institutions. FECOFUN plays a critical role in safeguarding community rights, strengthening accountability, and ensuring that national reforms reflect ground-level realities. Its engagement is particularly important in regions such as Karnali, where governance studies reveal persistent gaps between federal policy directives and local implementation. FECOFUN's provincial and district chapters support communities in operational plan revision, conflict resolution, monitoring of illegal activities, and the promotion of sustainable, climate-adaptive forest management. (MoFE, n.d.); (Paudel, et al., 2014)

280. In summary, community-level governance structures — including CFUGs, cooperatives, local management committees, women's groups, and FECOFUN — collectively provide the institutional foundation for devolved forest governance in Nepal. Their roles encompass decision-making on forest use, enforcement of harvesting rules, safeguarding ecological integrity, and enhancing community livelihoods. In provinces like Karnali, where ecological vulnerability and resource dependence are high, these institutions are essential partners for implementing sustainable forest management, climate-resilient NTFP/MAP value chains, and community-driven adaptation initiatives.

## **2.5.4 Existing budget flows for climate adaptation and forestry**

This section provides an overview of how funds are assigned to and used at the local level for adaptation, livelihood development and forest management in Nepal, as well as related barriers to the devolution of climate finance.

### 2.5.4.1 Public Sector

281. The Government of Nepal follows a federal structure, with multi-level governance, that clearly defines mandates for each sphere of the governments. Additionally, the sectoral mandates are defined for the actors in each sphere (e.g. ministries, departments and/or units), and climate-change is a 'cross-cutting' area - mandate of which is spread across different sectors.
282. Government of Nepal applies climate change markers (Rio Markers) to classify climate significance in their programmes and activities. The recent federal government budget for FY 2025/26 (including conditional grants to provincial and local governments) shows 6.54% of the total budget (NPR 129bn) as 'highly relevant' or budget with climate as principal objective, and 40.06% (NPR 787bn) as 'relevant' or budget with climate as significant objective (Government of Nepal, Ministry of Finance, 2025). This does not cover the provincial and local government activities that are funded by 'discretionary' or unconditional sources. Also, the off-budget or extrabudgetary funding of climate activities are not consolidated by the government, hence not included. For example, in the year 2023/24, NTNC, a special reserve beyond government budgetary system, spent 0.9bn in ecosystem, forestry and wildlife conservation (including administrative costs).
283. Similarly, Community Forests User Group (CFUG), a community-based organisation, operate beyond government budgetary system, which generate their own sources of revenue as well as get government grants for forest management and livelihood activities. FECOFUN is an umbrella organisation of CFUGs operating across 555 local government in 7 provinces, established with an aim of "promoting and protecting the forest users' rights through capacity strengthening, economic empowerment, sustainable natural resource management, technical support, policy advocacy, good governance and learning sharing of best practices (FECOFUN, 2023)".
284. Figure 6 illustrates fund flow across Nepal's three spheres of the government.

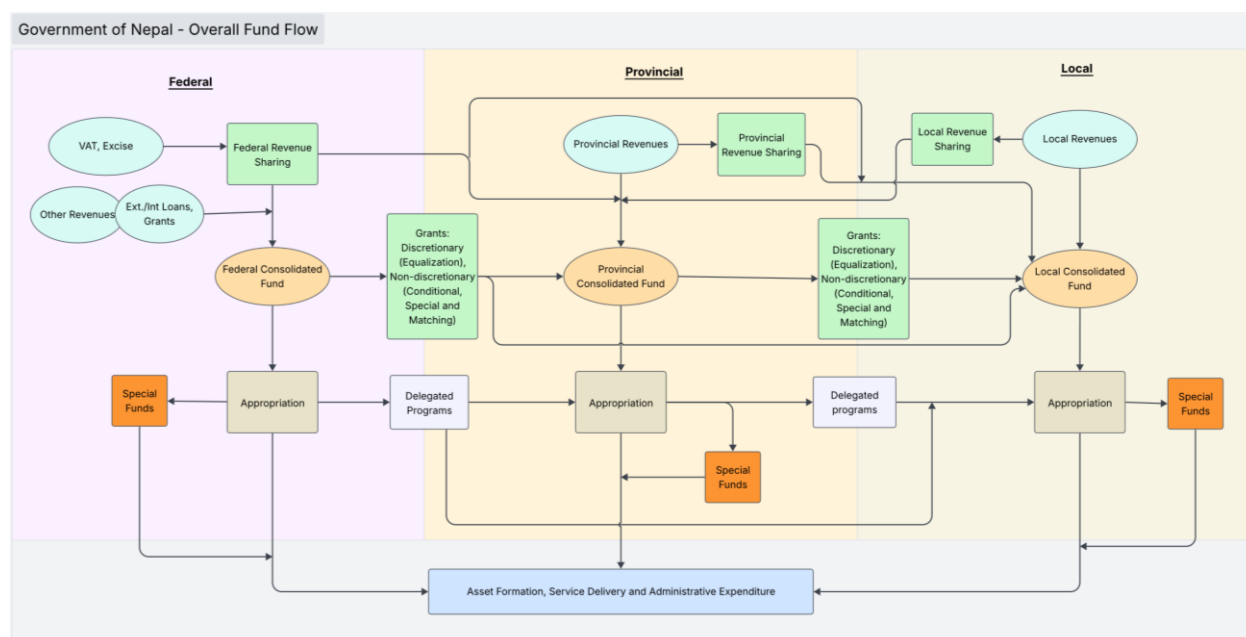


Figure 6: Overview of fund flow across three spheres of the government. Source: Author based on Intergovernmental Fiscal Transfer Management Act, 2017 and general practices

285. The three spheres of the government employ their own source and shared revenues, (discretionary and non-discretionary) grants, delegated programmes, and extra-budgetary reserves to execute their programmes and activities, which includes forest management, climate change mitigation and adaptation, sustainable development, livelihood activities, as per their respective mandates.

The Forest Act, 2019 (MoFE, 2019) largely divides the mandate between federal and provincial governments on forest management, with quite small authority of local government in managing and drawing benefits from forests. Yet, the constitutional mandates and Local Government Operation Act 2017 clearly show local governments role in addressing risks related to climate change and disaster management, and management

roles related to small businesses, agriculture and livestock management, land use planning and land management, water supply and renewable energy (e.g. micro-hydro), mining and minerals, and wildlife conservation. The local governments have a key role in addressing climate change issues, although their work in forest management is limited.

### **Planning and budgeting**

286. The government planning and budgeting includes long-term planning or periodic plans, Medium Term Expenditure and annual planning cycle. The federal, provincial and local government maintain their individual sets of long term to annual plans, following bottom-up and deliberative planning process. The plans and budgets undergo legislative scrutiny and approval before implementation by the executive body. Public financial management system and various accountability and transparency measures are applied to ensure achievement of programme objectives. Fiscal and budgetary regulations and public procurement laws create enabling environment for fiduciary safeguards. Yet there are systemic barriers, capacity gaps and fiduciary risks that are discussed in next section.

Extrabudgetary units, such as NTNC, have their own system of planning and budgeting and budget execution. NTNC has a set of internal by-laws, applied on top of public sector rules to maintain accountability and transparency (NTNC, n.d.).

#### **2.5.4.2 International Climate Finance and Development partners**

The development partners either work through the government budgetary system, or through non-governmental organisations (NGOs), which is not reflected in the budgets. Social Welfare Council (SWC) provides approval to DPs and International NGOs to operate within country. Every year, hundreds of projects are implemented through this channel (Social Welfare Council, n.d.), which mainly operate in humanitarian sector, nevertheless includes climate change and livelihood projects. There is no climate change tracking or quantification done; hence such volumes are not published. As per OXFAM (2024), based on OECD data, USD 5.71bn was received as international climate finance between 2011–2021, which included 70% multilateral sources (including 53% MDBs and 7% UNFCCC mechanisms), and around 30% bilateral sources. The philanthropic and private sector sources was less than 0.1% (EERC Nepal, Oxfam GB & Oxfam in Nepal, 2025).

### **Carbon Trading**

287. Nepal has started showing progress on carbon trading mainly from the forestry, enhancing the access to climate finance (Thakuri, 2025).

#### **2.5.4.3 Private sector**

288. Private sector engagement is visible through enterprises and cooperatives, that depend on ecosystem services (including forestry), for example, non-timber forest products, agro-forestry, eco-tourism, etc. However, there is not a consolidated source to quantify the investments of private sector in forestry or climate adaptation.

#### **2.5.4.4 Barriers to devolution of climate finance (capacity, fiduciary, systems gaps)**

289. The Consolidated Financial Statements of the government (including federal, provincial and local governments) for FY 2023/24, demonstrates that the spending capacity across all spheres of the government remains low, with overall budget outturn for the year being 79%, with capital spending at 62% of budget (Government of Nepal, Ministry of Finance, Financial Comptroller General Office, 2024). The local governments budget outturn remains on lower side. The Office of Auditor General (OAG) annual audit reports policy and system gaps prevalent within budgetary processes that lead to underperformance (OAG, 2024). The public sector climate finance too, is affected from the governance, accountability and transparency gaps, which may lead to fiduciary and performance issues if not monitored.
290. The third Public Expenditure and Financial Accountability (PEFA) assessment of Nepal (April 2024) highlights that despite having a conducive environment, the actual budget outcomes exhibit a notable degree of underperformance (Government of Nepal, Ministry of Finance, Public Expenditure & Financial Accountability Secretariat, 2024).



- It has identified that the government has ‘demonstrated ability’ to control expenditure and prevent unexpected deficits, but there is still room for improvements when it comes of budget outturn. The lower outturn is attributed to factors such as inefficiency in procurement, weakness in project appraisal, and ambitious budget estimates.
- The report suggests that deficiencies in macroeconomic forecasting and limitations in public investment management hinder the strategic allocation of resources, as Medium-Term Expenditure Framework (MTEF) lacks standardised modelling techniques for fiscal forecasting and delivering projections and absence of integrated fiscal consequences of revenue and expenditure policy proposals.
- The performance of the PFM system is ‘notable’ at supporting the delivery of public services. The report suggests that the achievement of service delivery targets is hindered by the restricted capacity of spending units to effectively utilise funds, despite a conducive environment that incorporates performance information into budgeting and ensures the availability of resources. The planning quality is deemed less than optimal, mostly due to a heavy reliance on an incremental approach for recurrent budgets and a deficiency in conducting thorough appraisals for investment projects. The annual procurement plans, despite being a regulatory necessity, are often subject to delays in preparation or lack of updates. The issue of excessive staff turnover and insufficient staffing capacity exacerbates the existing issues.

291. The federal government structure is evolving, with many gaps in legislation, system and coordination, creating risks of overlapping and conflict of mandates in implementing the programmes. The constitution has segregated the mandates for each sphere, with local government’s key role in basic and frontline public service delivery, provincial government’s role in developmental interventions, and federal government focusing on overarching policies and standards. The reviews point out to gaps in legislation, resource redistribution and capacities, leading to shortcomings on level of decentralisation envisaged by the constitution (World Bank Group, 2024).

292. Open Budget Survey (2023) of Nepal ranks Nepal low on public participation and budget oversight criteria (especially audit oversight) and moderate on budget transparency (International Budget Partnership, 2023). Additionally, Corruption Perception Index (CPI) of 2024, ranks Nepal 107 of 180 countries with feeble score of 34/100, indicating potential corruption risks (Transparency International, 2024).

### **Reform Actions**

293. In order to address the PFM gaps, the Government of Nepal has recently approved its third PFM reform strategy (2025–2030) that incorporates reform strategies for all three domains of the government (Ministry of Finance, 2025). Similarly, a collective initiative to enhance capacities at provincial and local government is ongoing as Provincial and Local Governance Strengthening Programme (PLGSP) 2024–2029, a reprogrammed initiative of previous phase that started in 2020.

294. Recent political upheaval for improving governance have demanded for improved political and administrative will for good governance in the country — changes of which are yet to be seen (Britannica, 2025).

295. Nevertheless, an array of climate adaptation programmes is being implemented successfully at provincial and local level, keeping the fiduciary risks at tolerable level. Examples include Nepal Climate Change Support Programme (NCCSP) Phase 2 (MoFE, 2025) — recently completed — Local Adaptation to Climate Change (LACC Project, Nepal, 2025), and Local Infrastructure Support Programme (UK - Foreign, Commonwealth Development Office (FCDO), 2023) implemented by the provincial and/or local governments. These programmes have inbuilt TA facility ensuring effective implementation, as well as reduction in the fiduciary risks.

### **NTNC**

296. NTNC has a set of fiduciary procedures and internal by-laws, applied on top of public sector rules to maintain accountability and transparency (NTNC, n.d.). The OAG audit report does not point to significant issues in case of NTNC accounts for the year 2023/24 (OAG, 2024).

### **Barriers in Private Investment**

297. Forest-based enterprise development depends on permits, harvesting rules, transport requirements, and compliance checks; delays and uncertainty reduce investor appetite and working-capital efficiency. The 16<sup>th</sup> National Plan identifies the gaps in establishing forest-based enterprise and targets to improve policy, reduce

risks and enhance capacities to improve the situation (National Planning Commission, 2024). The awareness on climate change is limited as well as there is high level of vulnerability to climate change, especially to deal with climatic hazards that are more frequent, yet erratic and unprecedented.

### **Private sector potential**

298. Yet there is a huge potential that can be exploited with private sector engagements that has both public and private benefits. Example, sustainable forest management, eco-tourism, sharing carbon trading benefits, conservation of water resources and land management, etc.

## **2.5.5 Nepal's climate change policy and strategy environment**

### **2.5.5.1 Third Nationally Determined Contribution (NDC 3.0) — 2025**

299. Nepal's Nationally Determined Contribution (NDC) 3.0 outlines the country's updated climate action plan under the Paris Agreement, aiming to reduce greenhouse gas emissions, enhance climate resilience, and achieve net-zero carbon emissions by 2045. The plan emphasizes both mitigation and adaptation strategies tailored to Nepal's unique environmental and socio-economic context, with a strong focus on international support for finance, technology, and capacity building to fully implement its commitments.
300. For climate change adaptation, Nepal prioritizes managing climate impacts by increasing adaptive capacities and resilience across sectors. The plan integrates ecosystem-based approaches, sustainable land and water management, resilient infrastructure, and disaster preparedness to reduce vulnerabilities. Key thematic areas include agriculture, forests, water resources, settlements, industry, tourism, and health. Specific initiatives include piloting index-based insurance for farmers, enhancing water availability, conserving wetlands, reducing flood risks, and promoting locally led adaptation efforts to ensure long-term climate security and ecosystem resilience.
301. In terms of mitigation, Nepal's forestry sector plays a central role in its climate strategy. The country aims to enhance the carbon sink capacity of the land-use sector by expanding sustainable forest management (SFM) to cover 50% of Tarai and Inner Tarai forests and 25% of middle hills and mountain forests by 2030, with further expansion to degraded forest lands by 2035. The Forest Development Fund will be operationalized to support plantations and forest restoration, targeting an increase in national average growing stock to 168 m<sup>3</sup>/ha. The plan promotes agroforestry, reforestation, and improved forest monitoring and transparency. By 2035, at least 60% of forests are to be under community-based management with equitable representation of women, Dalits, and Indigenous Peoples, and family-owned and private forests are encouraged to participate in carbon markets through strengthened capacities of the REDD+ Implementation Centre and Forest Research and Training Centre. These efforts are designed to increase high-value forest products, reduce forest fires and biodiversity loss, and support sustainable forest-based livelihoods, contributing significantly to Nepal's overall greenhouse gas emission reduction targets and its pathway to net-zero emissions by 2045.

### **2.5.5.2 National Adaptation Plan (NAP) — 2021**

302. Nepal's National Adaptation Plan (NAP) is a comprehensive strategic framework developed for climate change adaptation from 2021 to 2050. It aligns with Nepal's National Climate Change Policy 2019 and other national development goals and policies. The plan addresses climate risks and vulnerabilities across multiple thematic sectors including agriculture and food security, forests and biodiversity, water resources and energy, settlements, industry and infrastructure, tourism, health, and disaster risk reduction. It also integrates cross-cutting themes such as gender equality, social inclusion, capacity building, research, technology development, and climate finance management.
303. Key objectives include promoting nutrition security, increasing climate-resilient agricultural practices, developing climate risk sharing models for farmers, enhancing forest and ecosystem resilience, and building climate-resilient energy systems. The plan emphasizes decentralized renewable energy, sustainable urban and rural development, disaster risk management, and inclusive adaptation strategies for vulnerable groups.
304. Implementation involves policy reforms, capacity building, technology development, infrastructure investments, and multi-level governance coordination. The plan targets all population groups, with special attention to

marginalized and vulnerable communities, aiming for improved livelihoods, health, and resilience against climate-induced hazards such as droughts, floods, landslides, and extreme weather events. The NAP also promotes early warning systems, insurance mechanisms, and sustainable resource management to support long-term climate adaptation in Nepal.

### **2.5.5.3 Third National Communication (TNC) to the UNFCCC — 2021**

305. Nepal's Third National Communication (TNC) to the UNFCCC presents an integrated climate response that links adaptation and mitigation, recognizing the high vulnerability of the agriculture and forestry sectors to climate change while promoting climate-smart approaches that both enhance resilience and reduce greenhouse gas emissions.
306. Adaptation is therefore highlighted as a national priority in the TNC. Climate change is already affecting key sectors, including agriculture, water resources, energy, urban settlements, and public health, while increasing the frequency and intensity of climate-induced disasters such as floods, landslides, and droughts. Nepal's adaptation response emphasizes integrated, multi-sectoral actions aligned with national development priorities and international frameworks. Priority measures include climate-resilient agriculture and food security, strengthened water resource management and energy resilience, improved disaster risk reduction and response capacity, climate-resilient urban planning and infrastructure, sustainable forest management and biodiversity conservation, and stronger public health systems. Across all sectors, the TNC places strong emphasis on gender equality and social inclusion, acknowledging the disproportionate climate risks faced by women and marginalized groups.
307. In conjunction with these adaptation efforts, Nepal's TNC identifies the Agriculture, Forestry, and Other Land Use (AFOLU) sector as a priority for greenhouse gas mitigation, given projected emissions growth from 3.4 MtCO<sub>2</sub>e in 2010 to 36.7 MtCO<sub>2</sub>e by 2050. The mitigation strategy focuses on climate-smart and conservation agriculture practices, including zero tillage, crop rotation, residue management, and improved nutrient and manure management to reduce emissions from farming systems. Forestry measures aim to enhance carbon sequestration through sustainable forest management, REDD+, agroforestry, and afforestation and reforestation. Livestock-related actions emphasize improved productivity, dietary management, stall feeding, and biogas use. Land-use interventions target improved grazing land and fire management, organic farming, and expansion of protected areas. Overall, the TNC underscores sustainable land management and strong local-level implementation as central to AFOLU mitigation.

### **2.5.5.4 National Climate Change Policy — 2019**

308. The 2019 National Climate Change Policy was formulated to respond to changes in national and international climate change governance that had emerged since the implementation of the 2011 National Climate Change Policy. The policy builds on lessons learned from the earlier framework. Its overarching goal is to contribute to Nepal's socio-economic prosperity by building a climate-resilient society.
309. To achieve this goal, the policy aims to: (i) enhance the climate change adaptation capacity of individuals, households, groups, and communities vulnerable to, or at risk from, climate change; (ii) strengthen the resilience of ecosystems exposed to adverse climate impacts; (iii) promote a green economy through low-carbon development pathways; (iv) mobilize national and international financial resources for climate change mitigation and adaptation in a just and equitable manner; (v) strengthen climate-related research, technology development, and information service delivery; (vi) mainstream climate change considerations into policies, strategies, plans, and programmes across all levels of government and sectors; and (vii) integrate gender equality and social inclusion (GESI) into climate change mitigation and adaptation initiatives. In addition, the policy outlines a range of sectoral and inter-sectoral strategies and implementation measures to support the achievement of these objectives.

### **2.5.5.5 National Adaptation Programme of Action (NAPA) — 2010**

310. Nepal's National Adaptation Programme of Action (NAPA) is a foundational strategy, adopted in 2010, to address urgent climate change needs by identifying priority adaptation activities, especially in vulnerable sectors like agriculture and water, serving as a roadmap for climate resilience. It led to the more comprehensive National

Adaptation Plan (NAP) 2021–2050, which integrates adaptation into long-term development, supported by local plans (LAPAs) for community-level action, under the guidance of the Ministry of Forests and Environment.

311. The purpose of the NAPA was to identify immediate and urgent adaptation needs and actions for Nepal, as a Least Developed Country (LDC), to reduce climate change impacts. Focus areas included health, water resources, agriculture, forestry, and food security, with specific projects identified for urgent implementation. Nepal's NAPA identified nine priority adaptation projects and laid the groundwork for future, more integrated planning through frameworks such as the NAP and NDC. Additionally, the NAPA kick-started efforts to complement national efforts with local leadership through the development of Local Adaptation Plans for Action (LAPAs), empowering communities to develop and implement their own solutions.

#### **2.5.5.6 National Framework on Local Adaptation Plans for Action (LAPAs) — 2011**

312. Nepal's Local Adaptation Plan for Action (LAPA) is a community-driven framework that places vulnerable local populations at the centre of climate adaptation planning. It actively incorporates local knowledge and ensures that diverse voices — including women, youth, and persons with disabilities — shape adaptation strategies. LAPA emphasizes integrated planning by linking local-level actions with broader national climate change policies and frameworks, ensuring coherence across scales. The approach is supported by decentralized funding, with climate finance channelled directly to local governments, and around 80% of resources earmarked for community-level activities. Sectoral entry points such as agriculture, forestry, water, health, and infrastructure guide interventions, which aim to reduce risks from extreme weather events like floods and droughts while building adaptive capacity. Community-led solutions, including river embankments and improved early warning systems, demonstrate its resilience-building focus.
313. LAPA was first piloted in 2010 and formalized nationally in 2011, with technical and financial support from agencies such as UNDP and IFAD. In 2019, it was updated to align with Nepal's federal structure, moving from parallel project approaches to integration within local government planning and budgeting. By empowering communities and local authorities to manage climate risks, LAPA strengthens the sustainability and security of development investments while promoting locally appropriate climate adaptation.

#### **2.5.5.7 16<sup>th</sup> Five-Year Development Plan (2024/25–2028/29)**

314. The Sixteenth Plan (Fiscal Year 2024/25–2028/29) of Nepal is a strategic development framework aimed at promoting economic, social, and environmental progress under the federal democratic system. Building on nearly seven decades of planned development, it emphasizes good governance, social justice, and prosperity with active participation from all three levels of government. The plan focuses on increasing production, generating employment, and structural transformation to graduate Nepal into a developing country by 2026 and a middle-income country thereafter, while achieving the Sustainable Development Goals by 2030. Key priorities include poverty and unemployment reduction, expanding access to education, health, and social security, and strengthening infrastructure like agriculture, roads, and electricity. It promotes gender mainstreaming, use of modern technology, forest conservation, disaster risk reduction, and evidence-based policy-making. The plan also aims to enhance coordination among government tiers, encourage entrepreneurship and private sector growth, develop competitive supply systems, and maintain national security and unity. Overall, it seeks to bring tangible improvements in citizens' lives through inclusive, participatory, and sustainable development efforts.
315. In terms of biodiversity, climate change, and green economy, Nepal's Sixteenth Plan emphasizes environmental protection, climate resilience, and sustainable development as integral to national progress. Nepal aims to leverage its rich biodiversity, forest resources, and clean indigenous energy to build a zero-carbon economy. Key challenges include improving institutional capacity, policy reforms, coordination across government levels, and increasing public awareness of climate impacts. The plan promotes ecosystem-based adaptation, conservation of endangered species, protection of wetlands, and human-wildlife coexistence. It encourages green economy initiatives by boosting forest sector contributions, commercializing herbal products, and expanding clean energy use to reduce fossil fuel dependence. Climate finance mobilization through green bonds, climate funds, and carbon trading is prioritized. Major programs include green finance incentives, sustainable forest management, climate risk infrastructure, and research enhancement. The plan also focuses on mainstreaming climate issues at all government levels and empowering vulnerable communities through

climate-smart agriculture and resource-based income generation. Overall, it aims to build a green, resilient, and inclusive economy that balances ecological conservation with economic growth and social equity.

#### **2.5.5.8 Long-term Low Emissions Development Strategy (LT-LEDS) — 2023**

316. Nepal's Long-term Strategy for Net-zero Emissions outlines the country's ambitious plan to achieve net-zero greenhouse gas emissions by 2045, with potential for negative emissions by 2050. The strategy aligns with international commitments under the Paris Agreement and integrates national policies like the Climate Change Policy 2019 and the Nationally Determined Contributions. It emphasizes transformative sectoral strategies across energy, agriculture, forestry, and waste management, focusing on electrification, clean fuels, sustainable agriculture practices, forest conservation, and waste-to-energy technologies. The plan highlights the need for significant investments, robust institutional coordination across federal, provincial, and local governments, and engagement of private and international stakeholders. Gender and inclusion considerations are integrated into mitigation efforts. A comprehensive Monitoring, Reporting, and Verification (MRV) system will track progress with specific performance and contextual indicators updated biennially. The strategy also addresses adaptation limits and loss and damage frameworks to build resilience. Overall, Nepal's strategy is a holistic, multi-sectoral approach combining policy, finance, technology, and governance to achieve sustainable, low-carbon development while contributing to global climate goals.
317. Specifically, the AFOLU (Agriculture, Forestry, and Other Land Use) sector strategy focuses on sustainable land management and emission reductions. For agriculture, it promotes improved cultivation practices, such as better manure management, soil health enhancement, use of adaptive crop varieties, controlled fertilizer release, and optimized livestock feed and health to reduce methane and other greenhouse gases. Agroforestry and sustainable agriculture systems are encouraged. In forestry, the strategy aims to increase forest cover to 45% by 2030, achieve net-zero deforestation, reduce forest degradation, and scale up sustainable forest management, including afforestation and private forestry. It also targets reducing forest fire incidents and improving monitoring and data systems. These actions are supported by REDD+ funding and aim to enhance carbon sequestration while maintaining forest health. The strategy integrates energy-efficient technologies and robust institutional mechanisms to ensure effective implementation and emission reductions in the AFOLU sector.

#### **2.5.5.9 National Biodiversity Strategy and Action Plan (NBSAP) 2014–2020**

318. The National Biodiversity Strategy and Action Plan (NBSAP) of Nepal (2014–2020) emphasizes community-based forest management programs — community forestry, leasehold forestry, and collaborative forestry — which now cover over 30% of national forests and have helped reduce forest loss and degradation, especially in the Middle Mountains. These programs have positively impacted biodiversity by improving forest conditions and creating habitat corridors. However, challenges remain, including ongoing forest loss in the Tarai and Siwalik regions, inadequate biodiversity focus in community forest plans, poor integration of forestry with livelihoods and poverty alleviation, limited participation of women and disadvantaged groups, and weak technical capacity for REDD+ and scientific forest management. Administrative overlaps between forest and livestock departments, conflicts between traditional tenure systems and modern laws, and low public awareness and incentives for conserving less economically valuable species further hinder effective forest biodiversity management.
319. The Plan aims to bring at least 50% of production forests under sustainable management and 10% of government-managed forests under community management by 2020, with mandatory biodiversity chapters in forest management plans. It also prioritizes controlling illegal timber harvest, promoting alternative energy to reduce firewood demand, and developing management plans for non-timber forest products to conserve threatened species. The Plan seeks to reconcile protected area and participatory conservation approaches through more inclusive buffer zone declarations. Funding and policy gaps are acknowledged, with ongoing efforts to strengthen governance and enforcement.

## **2.6 Alignment with and Lessons from Past and Ongoing Initiatives**

This section situates the proposed project within the broader landscape of past and ongoing climate, forestry, and livelihood interventions in Karnali Province and across Nepal, demonstrating coherence with existing

investments and national priorities while avoiding duplication. It reviews relevant initiatives implemented by government, development partners, and civil society, highlighting how the project builds on proven approaches, addresses documented gaps, and incorporates lessons learned related to forest management, forest-dependent livelihoods, devolved decision-making, and locally led implementation. The section further synthesises cross-cutting lessons from Nepal's experience with community forestry, adaptation planning, and decentralised delivery to explain how these insights have directly informed the project's design, sequencing, and institutional arrangements.

## 2.6.1 Past and Ongoing Initiatives

Table 17 summarizes the main relevant initiatives that have been taking place in Nepal, and bring valuable lessons learnt to this project.

*Table 17: Past and ongoing related projects accounted for in the project design*

Project Overview	Lessons Learned and Alignment
<p><b>Protecting livelihoods and assets at risk from Glacial Lake Outburst Floods (GLOFs) and climate change-induced flooding in glacial river basins of Nepal</b></p> <ul style="list-style-type: none"> <li>• GCF – FP 272</li> <li>• 2026-2033</li> <li>• USD 49 M</li> <li>• UNDP</li> </ul> <p>The national GLOF risk reduction project was designed to reduce the likelihood and impacts of catastrophic Glacial Lake Outburst Floods by addressing high-risk glacial lakes in Nepal's high-mountain regions. Its core objective was to shift Nepal from reactive disaster response toward proactive, pre-emptive GLOF risk management through a combination of physical risk reduction, hazard monitoring, and early warning systems targeting priority glacier lakes across major river basins.</p> <p>To achieve this, the project adopted an integrated approach combining lake-level lowering at four critically unstable glacial lakes, ecosystem-based disaster risk reduction in downstream mountain landscapes, establishment of end-to-end early warning systems, and strengthening of technical and institutional capacity within Department of Hydrology and Meteorology. Implemented over seven years, the project focused on safeguarding downstream populations, infrastructure, and economic assets exposed to low-probability, but high-impact flood risks linked to accelerated glacial retreat and climate change.</p>	<p>The proposed project is complementary to, but clearly distinct from, the national GLOF risk reduction project, and has been designed to avoid duplication in both geographic focus and intervention approach. The GLOF project concentrates on high-altitude glacier lake systems in the Gandaki and Koshi river basins, delivering large-scale, hazard-specific risk reduction through lake-level lowering, hydrometeorological monitoring, and national early warning systems led by central technical agencies. In contrast, the Karnali project operates primarily in mid-hill and forested landscapes within Karnali Province, addressing chronic climate stresses and systemic vulnerability through ecosystem restoration, forest-based livelihoods, and strengthened local governance, rather than through upstream, infrastructure-intensive hazard mitigation.</p> <p>While the two projects share an overarching objective of reducing climate risk and strengthening resilience, they differ fundamentally in their delivery model and governance logic. The GLOF project is predominantly institution- and technology-led, with implementation centred on national agencies and technical systems designed to manage low-probability, high-impact hazards. The proposed project demonstrates an LLCA approach, embedding decision-making authority, planning, and implementation within municipal governments and community-level institutions such as Community Forest User Groups. By prioritising devolved decision-making, participatory planning, and locally owned adaptation measures, the project complements the GLOF project by strengthening the resilience of downstream socio-ecological systems and livelihoods that are not directly addressed by hazard-focused interventions, thereby reinforcing Nepal's overall climate adaptation architecture without overlapping mandates or activities. During implementation, NTNC will engage with UNDP to gather lessons from the EcoDRR measures, as well as community EWS.</p>
<p><b>Climate-Resilient Landscapes and Livelihoods Project (CRLLP)</b></p> <ul style="list-style-type: none"> <li>• ADB</li> <li>• 2024-2029</li> </ul>	<p>CRLLP's focus on locally led adaptation and nature-based livelihoods in Karnali closely complements the proposed Karnali Forest and Livelihood Resilience project. Both aim to bolster community resilience</p>

<ul style="list-style-type: none"> <li>• USD32 M</li> <li>• MoFE with ADB support</li> </ul> <p>CRLLP is an ongoing project targeting Karnali and Sudurpaschim Provinces, aimed at building climate-resilient rural communities. It helps 24 municipalities prepare participatory catchment management plans and invests in nature-based solutions — including 200 community drinking water schemes, 160 small irrigation systems, and catchment restoration (e.g., agroforestry, small ponds). The project addresses water insecurity and livelihood vulnerability by empowering communities in sustainable water management, agroforestry, silviculture, and community forest management. By improving water access and forest/land management, CRLLP enhances local resilience to erratic rainfall, droughts, and floods in these climate-vulnerable provinces.</p>	<p>through sustainable resource management. CRLLP's experience promoting community-driven catchment/forest plans and engaging local governments provides valuable lessons for the LLCA approach (e.g., effective community mobilization and integrating water, land, and forest management).</p> <p>The proposed project can build on CRLLP's synergies by coordinating activities in overlapping areas and ensuring that improved water security and agroforestry efforts under CRLLP reinforce forest-based livelihood resilience. Unlike the proposed project, CRLLP has a strong water infrastructure emphasis; thus, the new project can fill gaps by focusing more on forest governance, biodiversity, and livelihood diversification, while leveraging CRLLP's successes in community adaptation and scaling them across Karnali.</p>
<p><b>Climate Change Adaptation through Sustainable Forest Management Project</b></p> <ul style="list-style-type: none"> <li>• JICA</li> <li>• 2022-2027</li> <li>• MoFE, with JICA experts</li> </ul> <p>The JICA-supported project is the first in Nepal to explicitly link climate change adaptation with sustainable forest management practices. It focuses on strengthening the institutional capacity of government at national and subnational levels to implement climate adaptation through the forestry sector. At the federal level, the project is helping MoFE develop and roll out policies, guidelines, and training programs that integrate adaptation into forest management and planning. At the provincial and local levels, it pilots activities in Gandaki Province (as a model) — enhancing the Provincial Forest Directorate's capacity to guide and supervise adaptation actions by Division Forest Offices and Soil and Watershed Management Offices, in coordination with local governments.</p> <p>The project delivers two major outputs: (1) improved policy implementation for climate adaptation in forestry (e.g., incorporating adaptation targets in forest management plans, and developing curricula on climate-smart forestry); and (2) demonstration of community-level forest-based adaptation measures. These include activities such as community forest user groups implementing ecosystem-based adaptation — for example, planting climate-resilient tree species on degraded land, enhancing water retention in forest watersheds, and diversifying forest livelihoods (like fodder banks or mushroom cultivation) to reduce climate risks. By building on JICA's long history in community forestry in Nepal, this project ensures that climate adaptation is integrated into ongoing forestry programs, rather than treated separately. It ultimately aims to institutionalize adaptive forest management so that forest authorities at all levels routinely plan for climate impacts and local communities can proactively adapt their forest use practices.</p>	<p>The JICA project aligns very closely with the objectives of the proposed Karnali resilience project, particularly in its emphasis on integrating adaptation into forest management and community forestry. One direct synergy is in policy and capacity building; the LLCA project can adopt and apply the tools, training modules, and guidelines that JICA/MoFE are developing (e.g., climate adaptation checklists for forest plans, community training manuals) to the Karnali context. The proposed project also stands to benefit from the demonstration sites created under the JICA project — by replicating successful community-based adaptation interventions in Karnali's forest user groups.</p> <p>Additionally, both projects highlight the role of local institutions (provincial forest offices, community forest user groups) in driving adaptation, so coordination can ensure consistent messaging and avoid overlap in training or support. A difference is that the JICA project's pilot is in a different province (Gandaki), but this is complementary; it provides tested approaches that can be transferred to Karnali, which faces similar climate vulnerabilities in its forests.</p> <p>By liaising with JICA and MoFE, the proposed project can champion the rollout of those approaches in Karnali's specific context (e.g., high-elevation forests and remote communities). In essence, the JICA project lays a foundation for climate-smart forestry at the national level, and the Karnali LLCA project can be a vehicle to implement and localize that in Karnali Province — ensuring that national policy meets provincial practice, and that Karnali's forest-dependent communities are early beneficiaries of this enhanced adaptation capacity.</p>
<p><b>Forests for Prosperity Project (FFPP)</b></p> <ul style="list-style-type: none"> <li>• Climate Investment Fund, administered by the World Bank</li> <li>• 2020-2025</li> <li>• USD24 M</li> <li>• MoFE, with implementation through provincial and local governments</li> </ul> <p>The FFPP is a national initiative that seeks to unlock the economic potential of Nepal's forests for sustainable development and climate mitigation. It operates in selected municipalities of Madhesh and Lumbini provinces — mainly in the Terai plains and Churia hills — which are not in Karnali, but its strategic</p>	<p>Although focusing on different geographic regions, the FFPP provides valuable insights and a complementary approach for Karnali. Both projects share a vision of linking forests with livelihoods and climate goals — in effect, demonstrating that well-managed forests can yield economic prosperity for communities while delivering climate benefits. The proposed Karnali project can learn from the FFPP's efforts to engage local governments in forest management under federalism, an area that will also be crucial in Karnali. For instance, any provincial</p>



approach is relevant. The project's development objectives are to improve sustainable forest management, increase benefits from forests and contribute to net greenhouse-gas emission reductions in the target areas. To do so, it works across several components: (1) Policy and capacity building — supporting provincial and local governments to enact and implement new forest regulations under federalism (e.g., provincial forest acts, guidelines for forest product taxation, and revenue-sharing); (2) Community-based sustainable forest management (SFM) — providing grants and technical assistance to community forest user groups to prepare and implement SFM plans that allow productive harvesting of timber and Non-Timber Forest Products (NTFPs) while maintaining forest health; (3) Smallholder forest plantations and private forestry — helping farmers and cooperatives establish plantations on underutilized public/private lands with fast-growing species for timber, fodder, or fuel, thereby increasing forest cover and carbon stocks; and (4) Forest enterprise development and finance — improving the enabling environment for forest-based businesses and facilitating access to finance for entrepreneurs (through an apex loan facility via a national bank) to invest in wood processing, furniture, essential oils, and other value chains. A Dedicated Grant Mechanism (DGM) for indigenous peoples and local communities runs in parallel to ensure these groups benefit from project activities. Expected outcomes include thousands of hectares of forests under active sustainable management, a significant increase in legal wood supply (reducing timber imports), creation of green jobs, and reduction of CO<sub>2</sub> emissions through avoided deforestation and forest expansion.

#### **Nepal Climate Change Support Programme — Phase 2 (NCCSP2)**

- UK Aid
- 2019-2023
- USD30 M
- MoFE, with technical assistance by UNDP/Mott MacDonald

NCCSP2 was a flagship climate adaptation program pioneering Locally Led Adaptation (LLA) across vulnerable rural municipalities. It worked in 42 local governments of Karnali, Sudurpaschim, and Lumbini Provinces, directly helping over 550,000 climate-vulnerable people adapt to rising temperatures, erratic rainfall, droughts, and landslides. The programme financed 477 community-defined adaptation interventions — such as small irrigation schemes for drought-prone farms, gravity-fed drinking water systems, slope stabilization and nature-based infrastructure, climate-smart agriculture and livelihood diversification, and local disaster risk reduction measures. A strong focus was on building capacity of local governments to plan, budget, and implement adaptation, while ensuring inclusive, bottom-up participation (women and marginalized groups led many user committees).

NCCSP2's success prompted the Nepali government to commit to scaling the LLA approach nationwide, integrating climate resilience into all 753 local governments' planning processes. It also strengthened public finance management for climate funds at the local level and improved knowledge sharing (climate profiles, vulnerability assessments) to inform local decision-making.

#### **Green Resilient Agricultural Productive Ecosystems (GRAPE) Project**

- EU, Government of Finland (Ministry of Foreign Affairs), Government of Germany (BMZ/GIZ)
- 2019-2024
- USD13 M

policies or model municipal bylaws developed in for Madhesh and Lumbini provinces could be adapted for Karnali's context. Likewise, the financing mechanisms piloted (e.g., revolving credit lines for forest businesses) could be replicated to promote livelihood enterprises in Karnali's forest sector.

There is also a mitigation co-benefit synergy: while the Karnali project will emphasize adaptation, ensuring complementarity with Nepal's REDD+ efforts (which FFPP supports) could open future carbon finance opportunities for Karnali's community forests. A key difference is that FFPP's current target areas are more commercially accessible forests (Terai lowlands), whereas Karnali has more remote, upland forests with subsistence use. Thus, the strategies will differ — Karnali may focus more on subsistence products, ecotourism, and resilience — but the core principles of sustainable use, community empowerment, and private-sector linkage remain relevant. By coordinating with the FFPP team and the national REDD+ Implementation Centre, the Karnali project can avoid duplication and instead create a network of projects that together cover Nepal's diverse regions. In essence, Forests for Prosperity is tackling the forest-livelihood nexus in Nepal's south; the Karnali project will tackle it in the northwest, and both can share knowledge on what works best in their respective contexts to ensure Nepal's forest-dependent communities thrive.

NCCSP2 is highly complementary as it essentially operationalized locally led climate adaptation in Karnali. The proposed Karnali forest and livelihood resilience project will benefit from the institutional groundwork NCCSP2 established. For instance, leveraging the trained local governments and community groups in Karnali that now have experience implementing climate adaptation plans. Synergies include using NCCSP2's proven models for community engagement, its established mechanisms for channelling climate finance to local levels, and the climate-resilient infrastructure it put in place (e.g., irrigation and water systems that benefit forest-dependent communities).

While NCCSP2 broadly addressed infrastructure and services, the new project can add depth in forest and ecosystem-based adaptation, ensuring that the livelihood resilience of forest-dependent households is strengthened alongside infrastructure. By coordinating with MoFE's scale-up of LLA, the project can ensure its forest-focused activities align with local adaptation plans and avoid duplication. In short, NCCSP2 provides a ready platform of local capacity, governance systems, and lessons that the LLCA approach can build upon to achieve durable, community-driven climate resilience in Karnali.

Although GRAPE is agriculture-focused, it strongly complements a forest-livelihood resilience initiative by addressing the climate vulnerability of farming communities who are often also forest-dependent. The proposed Karnali project can align with GRAPE by

- Ministry of Agriculture and Livestock Development, with components led by GIZ and partners GRAPE is a multi-donor project advancing climate-resilient, green economic growth in Sudurpaschim and Karnali Provinces. It specifically targets rural agricultural livelihoods, aiming to increase farmers' profitable participation in value chains while improving the climate resilience and sustainability of agricultural ecosystems. The project works through four 'Fields of Action': (1) Economic governance — strengthening municipal and provincial capacity to plan for climate-smart value chain development; (2) Action research — testing and validating innovative climate-resilient farming techniques; (3) Roll-out — piloting proven climate-smart practices with farmers' groups; and (4) Scaling up — disseminating knowledge and informing policies for broader adoption.

On the ground, GRAPE has introduced agroecological farming methods to over 2,500 farmers across 19 municipalities, emphasizing reduced chemical inputs, soil health, water-efficient irrigation (e.g., drip systems), and cultivation of diverse, climate-hardy crops. It also promotes digital advisory services and market linkages to ensure farmers benefit economically from climate-adaptive practices. By project completion, GRAPE is expected to enhance local food security and incomes (through value-added products) while making farming systems more resilient to erratic rainfall and temperature extremes. An example outcome is the establishment of learning platforms between research institutions and farming communities to co-create adaptive solutions (such as bio-fertilizers, drought-tolerant crop varieties, and integrated pest management), which can then be scaled by provincial agencies.

integrating its climate-smart agriculture lessons for communities living near forests — for instance, encouraging agroforestry, which GRAPE also supports, and promoting alternative incomes (beekeeping, NTFPs, organic farming) that reduce pressure on forests.

There is a synergy in governance and knowledge as well: GRAPE's work with provincial governments on climate-informed economic planning and its action-research approach can inform the LLCA project's own capacity-building components. The new project can collaborate with GRAPE's networks (farmers' groups, cooperatives, local researchers) in Karnali to disseminate climate adaptation practices that span both farm and forest landscapes. A difference is that GRAPE is centred on market-oriented agriculture and value chains, whereas the proposed project will focus more on community forestry and ecosystem services. However, these approaches meet in the middle when considering integrated landscape management. By ensuring coordination, the two projects together can cover the full spectrum of rural resilience — GRAPE strengthening crop and income resilience on farmland, and the new project enhancing resilience of the surrounding forests and biodiversity that underpin those farming systems. In summary, GRAPE's climate-smart agriculture innovations and local governance improvements will provide valuable support to the LLCA approach in Karnali, ensuring that livelihood resilience is holistic across both agricultural and forest domains.

#### **Provincial and Local Governance Support Programme (PLGSP)**

- Government of Nepal and a donor basket fund — supported by DFID/FCDO, EU, Norway, Switzerland, UNDP, and others
- 2019-2023
- USD130 M
- Ministry of Federal Affairs and General Administration, with Province Coordination Units

PLGSP is a nationwide governance-strengthening program that, while not sector-specific, has significant implications for natural resource management and community livelihoods. Launched after Nepal's federal transition, PLGSP's aim was to build the capacities of the new provincial and local governments to deliver services, promote development, and uphold good governance. Across all seven provinces (including Karnali), the program provided training, technical assistance, and block grants to 753 municipalities and 7 provincial governments to establish robust administrative systems, planning and budgeting processes, public financial management, and citizen engagement mechanisms.

Key aspects included: formulating local laws and procedures (many local governments, for instance, formulated their own forestry and environmental conservation bylaws with support from PLGSP technical advisors), developing inclusive planning guidelines (ensuring community participation through Ward Citizen Forums), and strengthening inter-governmental coordination in each province. In Karnali Province specifically, PLGSP helped the provincial government set up its planning commission and sectoral policies, and in many remote municipalities it facilitated basic governance infrastructure (like office buildings and IT systems) and human resource development.

For forest-dependent communities, these governance improvements mean local governments are better equipped to implement community development projects — e.g., construct small infrastructure, support cooperatives, and respond to disasters — in a transparent and accountable way. By program's end,

The PLGSP provides the governance foundation upon which thematic projects (like a forest and livelihood resilience project) can succeed. In Karnali, the proposed project will rely on effective local governments and provincial bodies to implement activities sustainably — which is exactly what PLGSP has been strengthening. Thus, the new project aligns by capitalizing on PLGSP's results; for example, using the improved planning and budgeting systems to integrate the LLCA project's activities into local development plans (ensuring local buy-in and co-funding).

Synergy can also be found in leveraging PLGSP-trained personnel — many local governments now have climate and environment officers or planning officers who have undergone training; the Karnali project can coordinate with these officials rather than creating parallel structures. Moreover, PLGSP emphasized accountability and community engagement (e.g., public hearings and social audits), which the LLCA approach can adopt to maintain transparency in project-funded activities at community level.

One difference is that PLGSP did not provide sector-specific investments — it was broad support — so the proposed project will bring in the content focus on forests and livelihoods. However, thanks to PLGSP, Karnali's local institutions are far more prepared to absorb and effectively utilize such sectoral support. The proposed project will complement governance strengthening by demonstrating how these

<p>PLGSP had trained thousands of newly elected local officials and civil servants, improved development planning (all 753 local units now produce annual plans and budgets with some climate/environmental considerations), and established a framework for 'functional assignment' so that sectors like forestry have clarity on the roles of local vs provincial vs federal authorities.</p>	<p>improved systems can deliver tangible benefits in climate adaptation and livelihoods. In summary, PLGSP has paved the way by creating functional local governments in Karnali; the LLCA project will walk that path by working through these governments to reach forest-dependent people, ensuring that resilience-building measures are locally led, institutionally embedded, and likely to sustain beyond the project — exactly as both the LLCA principles and PLGSP's legacy envisage.</p>
<p><b>Adapting to Climate-Induced Threats to Food Security in Karnali (CAFS-Karnali)</b></p> <ul style="list-style-type: none"> <li>• Adaptation Fund</li> <li>• 2018-2022</li> <li>• USD9.5 M</li> <li>• WFP in partnership with Ministry of Agriculture and Livestock Development</li> </ul> <p>Commonly known as "CAFS-Karnali," this project enhanced climate resilience of vulnerable farming communities in Karnali Region by addressing climate risks to food production and livelihoods. It implemented climate actions in remote climate-vulnerable villages, focusing on quick-win adaptation measures to boost household food security. Key interventions included climate-smart agriculture training, community asset creation (e.g., irrigation, water storage, and greenhouses), and livelihood diversification for women's groups. The project created short-term rural jobs (e.g., in resilient infrastructure) and improved year-round food availability for households, while promoting equal wages for women and men.</p> <p>An evaluation found over 80% of output targets achieved, with notable increases in women's empowerment (formation of women's groups, many women in decision-making roles) and household incomes. By project's end, communities had greater awareness and capacity to implement local climate adaptation and the groundwork to sustain activities via local governments' adaptation plans.</p>	<p>As a locally led climate adaptation initiative in Karnali, CAFS-Karnali offers strong synergies for the new project. It pioneered community-based adaptation models — empowering local user groups (with high women's participation) to implement livelihood and natural resource measures. The proposed Karnali resilience project can leverage CAFS-Karnali's lessons on enhancing food security and incomes via climate-smart farming and community assets. In particular, integrating successful practices (e.g., water harvesting ponds, drought-resilient crops, women-led livelihood groups) can enrich the LLCA approach.</p> <p>The new project will also complement CAFS-Karnali by scaling up its interventions across a broader landscape and longer term. One key difference is that CAFS-Karnali was narrowly focused on immediate food security and quick adaptation wins at household level, whereas the proposed project has a wider forest and landscape resilience scope. Nonetheless, both share the goal of strengthening community adaptive capacity, and coordination with local governments (who now implement LAPAs) will ensure continuity and institutionalization of the successful approaches initiated by CAFS-Karnali.</p>
<p><b>Adaptation for Smallholders in Hilly Areas (ASHA) Project</b></p> <ul style="list-style-type: none"> <li>• IFAD, co-financed by IFAD's Adaptation for Smallholder Agriculture Programme (ASAP)</li> <li>• 2015-2022</li> <li>• USD37 M</li> <li>• Department of Forests and Soil Conservation, in partnership with MoA</li> </ul> <p>The ASHA project strengthened the climate resilience of smallholder farmers in mid-hill and mountain districts of western Nepal. Initially focusing on 6 climate-vulnerable districts (e.g. Jajarkot, Kalikot, Dailekh in Karnali Province, and Rolpa, Salyan, Rukum in adjoining provinces), it later expanded to up to 12 districts. ASHA helped communities formulate Local Adaptation Plans of Action (LAPAs) in ~200 Village Development Committees, identifying local priorities for climate adaptation. It then funded and facilitated two main components: (1) Climate-resilient community infrastructure, such as water storage and irrigation systems, erosion control structures, and rural energy (solar, improved stoves) to reduce climate risks; and (2) Climate-smart agricultural and livelihood practices, including training and grants for drought-tolerant crop varieties, diversification into high-value crops and NTFPs, small-scale irrigation and livestock improvements, and market linkages for farmers.</p> <p>The project also built capacity in government institutions — establishing GIS-equipped district units for climate planning and training local officials and service providers to support climate adaptation in agriculture and forestry. By project end, ASHA had directly improved at least 100,000 rural households' resilience, through higher farm incomes, more reliable water access, and strengthened community</p>	<p>ASHA offers a rich source of experience in integrating climate adaptation into local livelihoods and community forestry in the Karnali hills. The proposed project can align with ASHA by adopting its successful strategies: for example, continuing support for small-scale rural infrastructure that buffers climate shocks (water schemes, irrigation) and promoting sustainable livelihood diversification (NTFPs, agroforestry) for forest-dependent communities. A key lesson from ASHA is the importance of participatory planning — the new project can utilize the LAPA frameworks already introduced in Karnali to ensure community-driven identification of needs. Synergies also lie in policy influence: ASHA worked across ministries (forests, agriculture) to mainstream climate adaptation, which complements the inter-sectoral LLCA approach.</p> <p>The proposed project can build on these institutional links, ensuring that provincial and local governments continue to receive technical support to implement climate-smart forestry and farming initiatives. While ASHA focused on farm-level adaptation and small infrastructure, the new project will place additional emphasis on landscape-scale forest management and governance. Thus, it will be complementary —</p>

organizations for ongoing adaptation. It also achieved co-benefits, including sequestering an estimated 560,000 tons CO<sub>2</sub>e via community forestry and agroforestry initiatives.

#### **USAID Paani (Water) Program**

- USAID
- 2016-2021
- USD25 M
- DAI Global LLC, with WWF Nepal and other local partners; overseen by the Ministry of Energy and Irrigation

The USAID Paani Program was a landscape-scale project to improve integrated water resource management in Nepal's mid- and far-western river basins, with a strong focus on climate change adaptation and freshwater biodiversity. Centred largely on the Karnali and Mahakali River Basins (which span Karnali and Sudurpaschim Provinces), Paani worked from the watershed level up to the national level. At the community scale, it formed and strengthened Watershed User Groups and Committees to identify issues like water scarcity, floods, and fisheries decline, and implement local solutions. These solutions included conservation of water sources (springs and wetlands), construction of recharge ponds and small irrigation schemes, sustainable fishing practices and riverbank restoration, and promotion of climate-resilient agricultural techniques in watershed communities.

Paani also had a significant livelihoods component — for example, training river-dependent communities (including marginalized fisher groups) in alternative incomes like aquaculture, tourism, or handicrafts, reducing pressure on aquatic resources. At policy level, Paani supported local governments to develop Aquatic Biodiversity Conservation Acts – notably helping Dailekh District in Karnali enact Nepal's first law protecting river habitats and species. It facilitated three National River Summit events to elevate river conservation and climate adaptation issues. The project additionally established the Karnali River Basin Conservation Foundation, a local entity to sustain efforts beyond the project. By closure, Paani had improved water security and management across 12 critical watersheds, benefitting an estimated 200,000 people with more reliable water supply and reduced disaster risk. It also increased the capacity of local governments and user groups in those basins to plan and budget for watershed management in their development plans.

extending the climate-resilient practices from farms to forests — and can use ASHA's achievements (e.g., beneficiary groups with increased adaptive capacity, trained local resource persons, and demonstration sites) as a springboard for broader forest and livelihood resilience outcomes in Karnali.

While Paani's focus was water and aquatic systems, it directly intersects with forest and land management because healthy upstream forests are critical for watershed resilience. The proposed Karnali forest-livelihood project can thus find strong synergies with Paani's outcomes. Many Karnali communities simultaneously rely on forests and rivers, so approaches are complementary — e.g., Paani's work on spring source protection and soil conservation in watersheds aligns with the forest conservation goals of the LLCA project.

The new project can collaborate with the Watershed Committees formed by Paani in Karnali, ensuring that forest management actions (like reforestation, slope stabilization) are coordinated with watershed plans created under Paani. There's also an opportunity to utilize the local institutions and bylaws Paani left in place: for instance, Karnali local governments that passed aquatic conservation laws and formulated watershed management plans can be engaged to broaden their scope to forest conservation and climate adaptation on land.

Another synergy is livelihood diversification — Paani provided alternatives to fishing or rain-fed farming (some of which involved forest-based products and tourism), which complements the proposed project's aim to improve forest-dependent livelihoods. One difference is sectoral emphasis: Paani was led through an energy/water governance lens, whereas the new project will be led through a forestry lens. Nevertheless, this difference is advantageous — it means the two efforts cover the full natural resource base of Karnali (waters and forests). In practical terms, the LLCA project can avoid duplicating any community-level work Paani already did in the same watersheds and instead focus on gaps (perhaps upland areas or forest governance aspects Paani did not cover). By partnering with the Karnali Basin Conservation Foundation and local governments mentored by Paani, the forest resilience project can ensure an integrated approach where upstream forests and downstream waters are managed together, delivering a more robust climate adaptation approach for Karnali Province as a whole.

## 2.6.2 Lessons Learned on Forest Management, Restoration, Forest-Dependent Livelihoods and Value Chain Development in Nepal

**Lessons learned from Nepal's experience:** Four decades of community forestry demonstrate that devolving rights to organized user groups, grounding decisions in approved operational plans, and ring-fencing community revenues for pro-poor actions can reverse local forest degradation and strengthen stewardship — but only when transparency, inclusion, and technical backstopping are maintained. Community forestry has expanded forest cover and improved local governance in many landscapes; at the same time, persistent risks — elite capture, fragmented planning, and under-managed forests — emerge where roles and operating procedures are unclear or capacities are thin. These mixed outcomes underscore the need for clear mandates, inclusive representation, regular social audits, and continuous technical support to keep community institutions effective under a changing climate (Paudel, et al., 2014); (Baral, et al., 2012).

**Sustainable forest management (SFM), protection regimes and Nature-based Solutions (NbS):** Evidence from western Nepal shows that management intensity and landscape connectivity matter. In Karnali, for example, protection-oriented regimes (e.g., Kakrebiyar Protected Forest) exhibit higher carbon stocks and greater plant abundance than neighbouring multi-use forests, signalling that targeted protection, active silviculture, and corridor thinking can deliver measurable ecological gains when applied in the right places. At the corridor scale, integrating NbS — slope bio-engineering, riparian buffers, and watershed restoration — reduces exposure to floods, landslides and fire while supporting biodiversity and livelihoods, but uptake is uneven where engineering-only mindsets prevail and community co-design is limited (Paudel, et al., 2013); (Aryal, et al., 2013).

### Examples of successful CFUGs and what they show

- **Four CFUGs in Chitwan (Sustainable Forest Management case study):** Selected CFUGs in Chitwan broadened livelihoods (e.g., revolving funds for poor households), reduced fire and encroachment, and improved biodiversity by enforcing grazing control — illustrating how accountable groups pair forest protection with pro-poor investments (Sedhain, et al., 2022).
- **Tanahun District (Mid-Hills) community forests:** A 2020 remote-sensing study showed that, after handover to community management in the early 1990s, forest cover rebounded, with average annual increases of ~0.63% (1991–2015) after earlier decline — evidence that CFUG stewardship can reverse degradation at landscape scale when management and community oversight are active (Tripathi, et al., 2020).
- **Performance review of four CFUGs in central Nepal (2024):** A recent case study evaluated 22 indicators across management, finance, livelihoods, and collaboration. It found strong positive results in collaboration/networking and moderate performance in internal governance, underscoring where social accountability needs regular attention (e.g., user management, financial procedures) to sustain gains (Dhungana, et al., 2024).
- **Kajipauwa CFUG and the Tinjure-Hattisar NTFP Network (IDRC/CIFOR):** Action-research documents how these CFUG-linked groups used self-monitoring indicators, targeted pro-poor funds (e.g., goat programs), and adaptive, collaborative management to improve equity and livelihoods — illustrating the value of structured social audits and participatory tracking in enterprise development (CIFOR, NewERA, ForestAction & ERI, 2007).
- **Governance cases from Surkhet (Karnali):** A district study highlights variation among CFUGs — naming Chetana Janjagriti CFUG as a stronger governance performer and Kundali CFUG as weaker — while recommending regular public audits and inclusive representation to curb elite capture. This is a practical reminder that accountability tools must be applied consistently, not just written into bylaws (Thakur, 2011).



## What has worked

- Devolution with accountability: CFUGs that apply approved operational plans, practice open accounting/social audits, and invest a mandated share of income in inclusion and restoration show durable improvements in forest condition and social legitimacy (Paudel, et al., 2014).
- Landscape-scale thinking: Where Forest management moves beyond stand-by-stand actions to connect habitats and manage risks (fire, erosion) across corridors and watersheds, resilience and ecosystem services improve (Grassroots Justice Network, 2024).
- Standards-based value chains: For high-value MAPs such as Jatamansi, CITES/FairWild-aligned practices, traceability, and cooperative aggregation have enabled better prices and compliance, reducing pressure for destructive harvesting.

## What has not worked — and why

- Fragmented governance: Under federalism, overlapping mandates and unclear SOPs between Division Forest Offices, local governments, and user groups slow permits, joint planning, and enforcement, producing “passive management” and delaying risk-reduction operations (Paudel, et al., 2014).
- Drivers left unaddressed: National diagnostics show that fuelwood dependence, overgrazing, and ad-hoc road building continue to degrade forests where alternatives and controls are missing; project designs that ignore these drivers underperform (Dahal & Chapagain, 2012).
- Engineering without NbS and co-design: Hard infrastructure alone often fails under extreme events; projects that bypass community-led NbS lose maintenance ownership and the co-benefits of restored ecosystem functions (Aryal, et al., 2013).

### 2.6.3 Lessons Learned on Devolved Decision-Making and LLCA

**Evidence from Nepal on decentralisation, CFUGs, LAPAs, and municipal leadership:** Nepal’s Constitution (2015) gives local governments clear powers over environment protection, biodiversity, watershed and wildlife protection, disaster management, local roads/irrigation, and small hydropower (Schedule 8). This creates a direct legal basis for local government/municipalities to plan and deliver climate-related actions close to citizens.

The Local Government Operation Act (2017) turns these powers into day-to-day duties, asking local governments to integrate climate and disaster risk into annual and periodic plans and to coordinate with provincial and federal agencies. In the forest sector, the Forests Act (2019) recognises Community Forest User Groups (CFUGs) as local institutions that “develop, conserve, use and manage” community forests under approved operational plans, and requires CFUGs to spend at least 25% of annual income on poverty alleviation and women’s empowerment.

Nepal’s Local Adaptation Plans of Action (LAPA) Framework provides a simple, bottom-up process (sensitisation → vulnerability assessment → prioritisation → plan → integration → implementation → monitoring) that municipalities taking action to localise national climate policy. The National Climate Change Policy (2019) and the National Adaptation Plan (2021–2050) tell all levels of government to mainstream climate change in sector plans and budgets, and they encourage municipalities to lead implementation aligned to national targets (Baral, et al., 2012); (Paudel, et al., 2014); (Online Notes Nepal, 2025); (Government of Nepal, Ministry of Forests and Environment, 2026); (Dahal & Chapagain, 2012).

### Institutional Strengths of CFUGs

- **Strong local stewardship and proven forest restoration capacity.**  
Over four decades, CFUGs have shown that communities can successfully restore degraded forests, improve forest cover, and strengthen biodiversity when granted devolved rights under approved operational plans. Multiple studies — including Pokharel et al. (FAO paper on community forestry) and long-term analyses by ForestAction — show that CFUGs have rehabilitated thousands of hectares of community forests and significantly improved forest condition in Nepal’s mid-hills and mountain regions (The Social Solidarity Economy resource website, n.d.).

- **Ability to mobilise labour, funds, and voluntary action:** CFUGs are known for strong mobilisation capacity, particularly for patrolling, fire control, and silvicultural operations. Evaluations show that CFUGs often undertake community development works beyond forestry (e.g., local infrastructure and livelihood support) using group funds, demonstrating institutional flexibility .
- **Social accountability practices in place:** CFUGs regularly conduct general assemblies, disclose budgets, and practice social audits, which are important for transparency and trust-building. Governance assessments (e.g., Surkhet case studies) show that groups with functioning public audits and inclusive committees have higher governance scores and more equitable benefit distribution (Thakur, 2011).
- **Experience with NTFP/MAP enterprise development:** Some CFUGs — such as Kajipauwa CFUG and Tinjure-Hattisar NTFP Network — have successfully adopted participatory monitoring, quality control and cooperative marketing systems, improving livelihoods and enterprise governance. Action research by CIFOR/IDRC documents these successes and their contribution to pro-poor outcomes (Lamsal, et al., 2023).

### Institutional Capacity Constraints of CFUGs

- **Governance gaps and elite capture:** Although CFUGs have strong democratic structures on paper, several studies report persistent challenges in representation, financial transparency, and accountability. Governance assessments show “moderate” internal governance in user management and financial procedures, indicating a need for regular oversight.
- **Limited technical capacity for forest and ecosystem management:** Studies highlight that CFUGs often have weaker technical enforcement than social/institutional performance. Compliance gaps appear in inventorying, silviculture, regeneration monitoring, and technical aspects of harvesting — especially for NTFPs/MAPs .
- **Uneven benefit-sharing and inclusion:** Research by FAO and ForestAction notes that poorer and disadvantaged groups may still have less influence in decision-making and fewer livelihood benefits — indicating that inclusion, while improving, requires continued strengthening.
- **Unclear coordination under federalism:** After federal restructuring, unclear roles between Division Forest Offices, municipalities, and CFUGs have slowed permit issuance, OP implementation, monitoring, and rule enforcement. This institutional ambiguity contributes to “passive management.”

### Institutional Strengths of Local Governments

- **Constitutionally mandated authority over climate-relevant functions:** Nepal’s Constitution (Schedule 8) gives municipalities powers over environment, biodiversity, disaster management, water, irrigation, and local infrastructure — providing a strong legal foundation for climate action, planning, and enforcement.
- **Growing experience with climate planning (LAPAs and LDCRPs):** Under the LAPA Framework (2011/2012 and updated 2019), many municipalities have gained experience conducting vulnerability assessments, prioritising adaptation actions, and integrating them into annual plans. The NAP (2021–2050) reinforces these responsibilities.
- **Demonstrated LLCA performance through NCCSP-2:** The Nepal Climate Change Support Programme Phase II (NCCSP-2) reinforced municipal leadership and demonstrated strong delivery capacity — supporting 477 climate-resilient schemes across 42 municipalities, especially in Karnali and Sudurpaschim. Municipalities adopted LAPAs, implemented climate-resilient water and land management works, and strengthened public finance management through the programme.
- **Formal procedures for local-level climate implementation:** MoFE’s NCCSP-2 Local-Level Implementation Procedure (2078) provides structured guidance for how municipalities prepare LAPAs, integrate them into annual plans, and manage climate funds using fiduciary safeguards—strengthening consistency and institutionalisation.

## Institutional Capacity Constraints of Local Governments

- **Technical skill gaps in climate risk, forest governance, and NbS:** Although municipalities have constitutional mandates, many lack technical capacity for climate-risk assessment, forest and watershed management, ecosystem restoration, NTFP/MAP regulation, fire management, and monitoring—an issue noted in decentralisation studies and NCCSP-2 implementation reports.
- **Weak inter-governmental coordination:** Role ambiguities between municipal governments, provincial Division Forest Offices, and CFUGs cause delays in permitting, joint planning, and enforcement of forest and watershed rules—especially under federalism.
- **Public finance and fiduciary challenges:** Municipalities often struggle with budget coding for climate actions, expenditure tracking, procurement procedures, and timely reporting. NCCSP-2 identified PFM bottlenecks as major reason climate funds are under-utilized without targeted support.
- **Limited capacity for inclusion and social accountability:** Social audits, grievance handling, gender pathways, and transparent decision-making remain inconsistent across municipalities. Evidence from governance reviews shows uneven inclusion of women, Dalits and Indigenous communities in climate decision-making processes.

### How the project operationalises LLCA principles to address these realities.

- **Subsidiarity and shared mandates:** The project will co-design forest- and watershed-risk measures with CFUGs, municipalities and provincial forestry agencies under written SOPs for planning, permits and joint monitoring, so actions sit clearly within constitutional powers and LGOA duties.
- **Transparency and accountability:** Funding for local actions will be tied to public disclosure, annual social audits and grievance handling, reflecting community-forestry lessons that open books and inclusive representation build trust and durable stewardship.
- **Capacity and evidence:** Targeted support will strengthen the **technical side** (forest inventory, silviculture, restoration, compliance monitoring) and make **LAPA/LDCRP** the routine front-end of municipal planning and budgeting — consistent with the national framework and the NCCSP-2 procedure.
- **Inclusion and benefit-sharing:** Women, Dalit and Indigenous representatives will hold decision seats in CFUG and municipal committees. **CFUG social allocations (≥25%)** and municipal pro-poor spending will be tracked through the same social-accountability routines—linking LLCA equity goals with everyday governance.
- **Illustrative LLCA example:** Nepal Climate Change Support Programme Phase 2 (NCCSP 2), a FCDO funded programme addressed municipal skill gaps through embedded technical assistance, structured PFM strengthening, LAPA-based planning support, inclusive community capacity-building, and formalised local-level procedures. These interventions collectively enabled local governments — especially in remote Karnali — to deliver climate-resilient services more effectively and to institutionalise LLCA within their regular planning and budgeting systems.

## 2.7 Problem and Barrier Analysis

### 2.7.1 Problem Statement

320. Forest-dependent communities in Karnali Province face intensifying and intersecting climate risks that threaten the ecological systems they rely on for their well-being and livelihoods. Rising temperatures, erratic rainfall, prolonged dry spells, and increasing frequency of extreme events such as droughts, forest fires, and landslides are disrupting forest regeneration cycles, degrading watershed functions, and reducing the availability of forest-based goods and services. These climate-induced pressures are compounded by persistent anthropogenic stressors — such as unsustainable harvesting, encroachment, overgrazing, and poorly regulated resource extraction — that weaken forest ecosystem resilience. Meanwhile, despite Nepal's federal governance framework enabling devolved management, many local institutions still lack the technical, financial, and administrative capacities needed to plan for and respond to climate change. The results is a reinforcing cycle



of ecological degradation and institutional underperformance, where limited adaptive capacity at the community and municipal levels undermines both forest stewardship and livelihood security.

321. The compounding impacts of climate change and unsustainable forest use are having profound effects on the lives and livelihoods of rural communities across Karnali. Reduced forest productivity, loss of biodiversity, and declining water availability are eroding the natural safety nets that poor and marginalized households — particularly women, Dalits, and Indigenous Peoples — depend on for fuel, fodder, food, and income. Disrupted seasonal cycles and diminished forest ecosystem services are driving increased food insecurity, deepening poverty, and accelerating out-migration, especially among youth. Moreover, the erosion of traditional forest governance systems and the absence of coordinated, locally tailored adaptation responses leave communities exposed to both slow-onset and acute climate hazards, without the institutional scaffolding to adapt. In this context, strengthening forest ecosystem resilience and empowering local institutions to lead climate action is not only critical for ecological sustainability — it is essential for safeguarding the long-term well-being and adaptive capacity of Karnali's most vulnerable populations.
322. Figure 7 illustrates the impacts resulting from climate drivers on forest ecosystems and vulnerable communities in Karnali, and how these may be compounded by non-climate drivers.

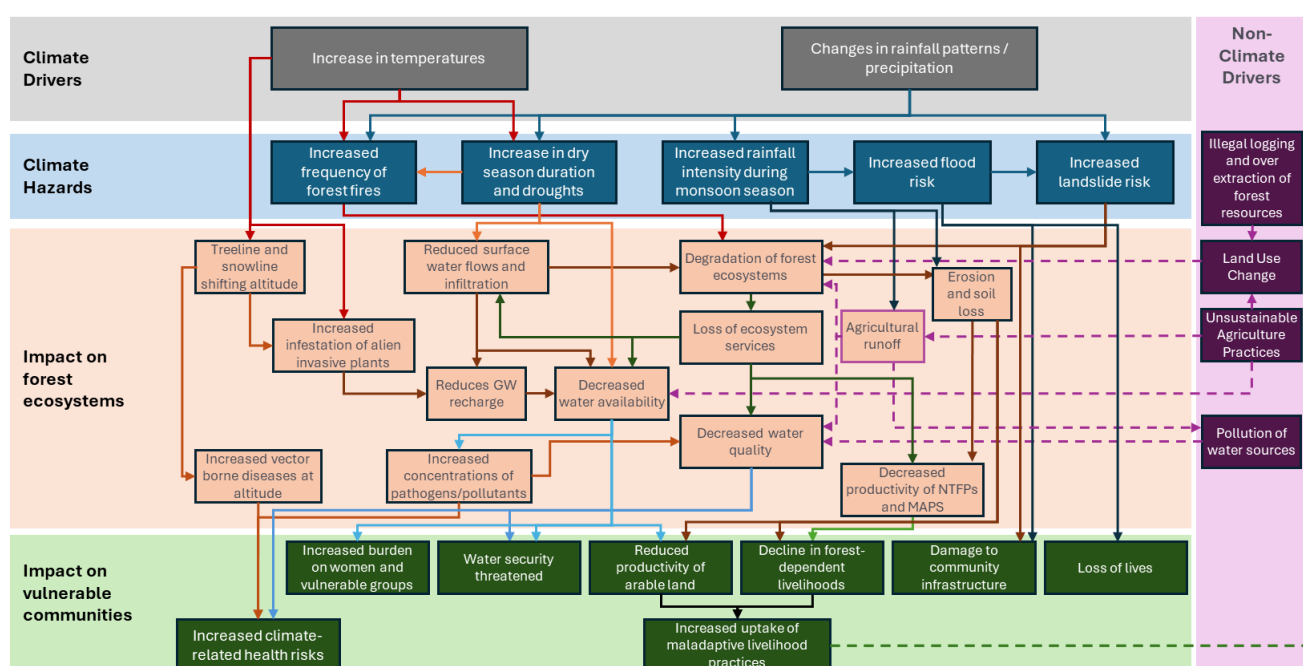


Figure 7: Climate drivers and hazards and impacts on forest ecosystems and vulnerable communities

## 2.7.2 Barriers

323. The main barriers identified in Karnali province which limits building climate resilience of forest-dependent communities in Karnali Province include:
- Lack of climate-resilient infrastructure and use of nature-based approaches.** Infrastructures (roads, bridges, irrigation canals, and power plants) are particularly critical to the vulnerable communities as their livelihoods are tied with them. Increased high rainfall, landslides and floods are the main threats to this infrastructure, which is not designed to withstand extreme climate anomalies, and they need to be made more climate resilient. At the same time, there is not a widespread uptake of nature-based solutions to improve the climate resilience of infrastructure, which could offer a win-win solution as it also provides additional co-benefits, such as protection of vital ecosystems, sustain natural resources and increase human safety.
  - Poor awareness among communities and local authorities of essential functions of forests and watersheds in disaster control and building climate resilience.** Local communities and authorities in Karnali Province and its selected communities still have inadequate knowledge and low awareness levels of climate change and its associated risk and impacts on their livelihood and development, vis a vis the degrading state of forest

and watersheds due to climate change and poor management practices. There are gaps in the level of sensitization and understanding among decision-makers that hinders the speed and scale of climate-focused actions. There is limited awareness at a system level on the impacts of climate change and negative implications for economic development, political and policy priorities focus on economic development without integrating climate change considerations on decision making. Additionally, local government bodies have inadequate capacity to integrate climate issues in development planning. There is limited understanding on the importance of forest ecosystems to increase resilience to climate impacts and vital functions at landscape level; instead, they are generally seen as a resource-base of utility. For example, currently the forest management practice in Nepal focuses on the stand level or forest management units' e.g., within Community Forest, Leasehold forest, National Forest, operating as islands of management. There is limited connectivity across forest landscapes, with fragmentation, lost habitats (forest types), and limited ecological corridors.

- (iii) Limited technical and financial capacity of local communities. Climate-affected communities and households have inadequate access to knowledge about climate change adaptation, which are limited by inadequate awareness, data, and information to inform grassroot level adaptation measures. This limited capacity also reduces their ability to manage ecosystems, including their restoration as a response to climate challenges. For example, there are around 70 different types of medicinal and aromatic plants (e.g. *Orchis incarnata*, *Delphinium elatum*, *Parnassia nubicola*, and *Picrorhiza scrophulariifolia*) that are found in Karnali Province, but local communities remain behind in using sustainable practices and modern technologies in production of these NTFPs.

Additionally, forests are the source of energy for people residing in Karnali province, with almost 89.5 % of energy consumption in the province derived from burning fuelwood for cooking and other uses. The high dependency of the communities on forest for fuelwood is the principal driver of forest degradation. In some cases, cattle dung burning is also prevalent, which poses some risks such as heavy smoke because of incomplete combustion.

Local governing bodies are newly formed, where most of the ward level authorities lack the knowledge, technology and finance to bring climate change adaptation into practice. Communities are currently lacking access to resilient agroforestry practices, including drought and flood mitigation, and nature-based solutions to improve forests, watersheds and water resources in the context of climate change.

- (iv) Poor governance and coordination between line agencies and local institutions regarding climate change interventions. Implementation of climate-related policy is poorly coordinated between line agencies, as political transition to federalism has created some uncertainty in terms of who has authority and responsibility for climate action. Limited local level presence of key institutions in the province acts a barrier to ownership and implementation of national adaptation priorities. Lack of adaptive management of forests and watersheds, and the required regulatory framework and institutional structures are among major barriers to bringing the management of natural resources within the objectives of climate change adaptation. Forest and agriculture sectoral strategies recognizes climate change risks but have inadequate climate change adaptation measures. Coordination, assessment and recommendations are not taken uniformly at administrative, physiographic and landscape levels for broad oversight into climate change impacts, mitigation and adaptation. Information at different levels of impacts need to be streamlined to make better sense of adaptation strategies and actions, which are important for enhanced governance on climate change. Currently there is a segregated, site-specific approach which hinders the capacity to have a fully integrated way of operating amongst development stakeholders and prevents having the governance architecture to enable the design and implementation of management plans, which integrate climate change and its impacts.
- (v) Limited inclusive participation in decision-making process. Women, Dalits and Indigenous Peoples (IPs) have been disadvantaged in terms of access to information, knowledge, technologies, services, and support networks as a result of socio-structural inequalities, and are often excluded from decision-making process, limiting their ability to respond to climate-related challenges (Ministry of Forests and Soil Conservation, 2009). As women, Dalits, and poor ethnic groups are dependent on forests for their livelihoods, they are more vulnerable as compared to others. Cultural norms, as well as gender disparities in access to assets, financial capital, and livelihood options, have also hindered their adaptive capacity (*ibid*). Gender related barriers are also result of higher climate change impacts faced by women as they have added responsibility in livelihood activities and tend to employ more labour in absence of men who migrate for work. It is therefore

critical that these groups are included in the decision-making processes, conditional to their equal access to data and information.

## 3 Technical Assessments

### 3.1 NTFP Value Chains: Clustering Idea Compilation

This district-wise clustering plan links upstream, midstream, and downstream municipalities to promote forest and agroforestry-based enterprise development in Jajarkot, Dailekh, Jumla, and Dolpa. It draws on lessons from high-value agricultural product (HVAP) value chains, evidence on NTFPs and MAPs, and existing trade corridors. Where municipality-level resource data are indicative, the targeting is based on altitude bands, known species ranges, and documented trade routes. A rapid field inventory for each cluster is recommended before making investments decision.

#### 3.1.1 Clustering logic & criteria (how municipalities were selected)

- **Resource ecology & elevation bands:** High-altitude MAPs (e.g., *Nardostachys jatamansi*, *Valeriana jatamansii*) cluster above ~2,500 m; mid-hill NTFPs (e.g., timur *Zanthoxylum armatum*, resin tapping, chiraito) at ~900–2,500 m; temperate horticulture (apple) in valley floors and mid-slopes; ginger/turmeric in mid-hills (Subedi, 1999); (Aryal, et al., 2023).
- **Existing value-chain corridors:**
  - Nepalgunj ↔ Surkhet ↔ Jumla,
  - Nepalgunj ↔ Surkhet ↔ Dailekh
  - Nepalgunj ↔ Surkhet/Chhinchu ↔ Jajarkot
  - Nepalgunj ↔ Dolpa (by air) and Nepalgunj ↔ Jajarkot ↔ Dolpa
  - Export consolidation via Nepalgunj Customs for many NTFPs/MAPs. (Government of Nepal, Ministry of Agriculture and Livestock Development, 2026); (Government of Nepal, Ministry of Agricultural Development, 2011)
- **Market segmentation & processing potential:** Shift part of raw export into lightly processed personal care and Ayurvedic/traditional medicine segments — aligned with World Bank guidance — to capture value locally (World Bank Group, 2018).
- **Enterprise enabling conditions:** Community Forest enterprise models, permitting/royalties, quality infrastructure and certification constraints considered for sitting midstream processing. (IFAD, Ministry of Agriculture, Land Management and Cooperatives, Lattanzio Monitoring and Evaluation, Italy, and Full Bright Consultancy, Nepal, 2023); (World Bank Group, 2018) <https://microdata.worldbank.org/index.php/catalog/5743/pdf-documentation>

#### 3.1.1.1 District clusters: municipalities mapped to upstream–midstream–downstream roles

- **A. Jajarkot** (Urban: Bheri, Chhedagad, Nalgad (Triveni Nalgad); Rural: Junichande, Kushe, Barekot, Shivalaya) (City Population, 2021).

##### A.1 Upstream (resource/production) clusters

- Barekot, Junichande, Kushe, Shivalaya → NTFPs/MAPs wild collection (chiraito, sugandhawal), resin tapping, and timur hedgerows in agroforestry; altitude fits sub-tropical/temperate bands (Government of Nepal, Ministry of Agriculture and Livestock Development, 2026).
- Chhedagad & Nalgad (mixed elevation pockets) → honey, ginger/turmeric production blocks and timur cultivation pilots near roads to Surkhet/Chhinchu (Government of Nepal, Ministry of Agriculture and Livestock Development, 2026); (Government of Nepal, Ministry of Agricultural Development, 2011).

## A.2 Midstream (aggregation/primary processing)

- Bheri (Khalanga/Rimna belt): collection centres for MAPs/resin & ginger (grading, drying, basic Quality Assurance), cooperative token-based trade models (HVAP precedent) (Government of Nepal, Ministry of Agriculture and Livestock Development, 2026).
- Chhedagad: satellite aggregation for northern VDCs; introduce traceability and quality standards per private-sector promotion strategy (Koirala & Khaniya, 2009).

## A.3 Downstream (district/provincial trade nodes)

- Surkhet provincial hub; Nepalgunj Customs for export to India; timur and NTFPs traditionally shipped via this route (monthly export tracked at Nepalgunj) (Government of Nepal, Ministry of Agricultural Development, 2011).

## A.4 Enterprise focus & justification

- Timur PPCP model (women/landless engagement), resin value addition, MAPs drying/grading; expand ginger value chain using HVAP lessons (contracting, business literacy) (Government of Nepal, Ministry of Agriculture and Livestock Development, 2026); (Government of Nepal, Ministry of Agricultural Development, 2011).
- Evidence points: Jajarkot exported ~1.59 million kg/year of NTFPs (2015–2020), with NPR 3.82 M royalty; MAPs and resin are major contributors — validating aggregation/processing potential at Bheri/Chhedagad hubs (Lamichhane, et al., 2021).

**B. Dailekh** (Urban: Narayan, Dullu, Aathabis, Chamunda Bindrasaini; Rural: Thantikandh, Bhairabi, Mahabu, Naumule, Dungeshwar, Gurans, Bhagawatimai) (City Population, 2021).

## B.1 Upstream clusters

- Thantikandh, Bhairabi, Gurans, Naumule, Mahabu → timur (900–2,500 m), MAPs pockets; ethnobotanical documentation around Gurans supports MAP enterprise mapping (Government of Nepal, Ministry of Agriculture and Livestock Development, 2026); (Shrestha, et al., 2016).
- Aathabis, Chamunda Bindrasaini → ginger/turmeric blocks and goat (HVAP commodity) in mid-hills for diversified enterprise (IFAD, 2019); (Government of Nepal, Ministry of Agriculture and Livestock Development, 2026).

## B.2 Midstream hubs

- Narayan (HQ): district-level collection & primary processing (drying, cleaning, grading), business literacy and finance desks (HVAP approach).
- Dullu: secondary aggregation; pilot essential oil micro-distillation (sugandhawal/jatamansi where sustainably available); align with World Bank's "lightly processed personal care" segment (World Bank Group, 2018).

## B.3 Downstream linkages

- Nepalgunj ↔ Surkhet ↔ Dailekh corridor for bulk shipments; onward to **Nepalgunj** for customs/export (Government of Nepal, Ministry of Agriculture and Livestock Development, 2026).

## B.4 Enterprise focus

- Timur oil feasibility (market lists & companies exist), **MAPs QA**, and **cooperative branding**; strengthen permits & FUG rights per EnLiFT2 to reduce transaction frictions (Government of Nepal, Ministry of Agricultural Development, 2011); (IFAD, Ministry of Agriculture, Land Management and Cooperatives, Lattanzio Monitoring and Evaluation, Italy, and Full Bright Consultancy, Nepal, 2023).
- Allo (natural fiber) processing, Lokta processing (Nepali handmade paper) : Kathmandu ↔ Nepalgunj ↔ Surkhet ↔ Dailekh.

**C. Jumla** (Urban: Chandannath; Rural: Kankasundari, Sinja, Hima, Tila, Guthichaur, Tatopani, Patarasi) (City Population, 2021).

### C.1 Upstream clusters

- Sinja, Tila, Patarasi, Hima: high-altitude MAPs (e.g., jatamansi, sugandhawal) plus apple orchards (HVAP commodity) and select ginger pockets in lower valleys (Government of Nepal, Ministry of Agriculture and Livestock Development, 2026).
- Guthichaur, Tatopani, Kankasundari: mixed NTFPs, horticulture, and community forestry areas suited to MAPs drying/grading.

### C2. Midstream hubs

- Chandannath (HQ/Jumla Bazaar): aggregation & processing for apples (sorting/cold-chain) and MAPs primary processing; leverage HVAP producer organizations & contracting templates.

### C3. Downstream linkages

- Nepalgunj ↔ Surkhet ↔ Jumla corridor (road + airport) to Nepalgunj; outward trade of NTFPs via Nepalgunj and Nepalgunj customs observed in Timur and other NTFPs (Government of Nepal, Ministry of Agricultural Development, 2011).

### C.4 Enterprise focus

- Organic apple branding, MAPs sustainable harvest plans with FUG handovers, small-scale oil distillation feasibility checks; deploy market information systems to counter trader oligopoly historically noted along Nepalgunj channel (MoFE, Lumbini, 2024).

**D. Dolpa** (Urban: Thuli Bheri, Tripurasundari; Rural: Dolpo Buddha, Shey Phoksundo, Jagdulla, Mudkechula, Kaike, Chharka Tangsong) (City Population, 2021).

### D.1 Upstream clusters

- Shey Phoksundo, Dolpo Buddha, Chharka Tangsong: very high-altitude MAPs (jatamansi/others); strict sustainability protocols given national park & fragile alpine ecosystems (Wikipedia, 2025).
- Mudkechula, Kaike, Jagdulla: mixed NTFPs with potential for community-led resource monitoring and graded raw-material production.

### D.2 Midstream hubs

- Thuli Bheri (Dunai): primary collection & quality/testing node (moisture, purity), packaging for high-altitude MAPs; invest in shared logistics (storage/transport) due to remoteness (IFAD, Ministry of Agriculture, Land Management and Cooperatives, Lattanzio Monitoring and Evaluation, Italy, and Full Bright Consultancy, Nepal, 2023) .
- Tripurasundari: secondary aggregation; partner on eco-certification pathways (GWCP/FairWild-style practices as feasible) targeting personal care segments (World Bank Group, 2018).

### D3. Downstream linkages

- Dolpa ↔ Jumla/Mugu ↔ Surkhet ↔ Nepalgunj, overland; onward via Nepalgunj Customs; use cold/dry chain for high-value MAPs to prevent loss & fungus (Government of Nepal, Ministry of Agricultural Development, 2011).

### D4. Enterprise focus

- Community forest enterprises for sustainable MAPs management, local value addition (cleaning/drying/grading), and traceable lots aimed at discerning buyers (per World Bank segmentation) (World Bank Group: Open Knowledge Repository, 2018).

### 3.1.1.2 Commodity-wise cluster priorities (across districts)

- Timur (*Zanthoxylum armatum*): Dailekh, Jajarkot (mid-hills) as core production; aggregation at Narayan/Dullu and Bheri/Chhedagad; downstream via Surkhet → Nepalgunj; explore timur oil for EU perfumery markets and PPCP models for inclusive livelihoods (Government of Nepal, Ministry of Agriculture and Livestock Development, 2026); (Government of Nepal, Ministry of Agricultural Development, 2011).
- Ginger: production pockets in Dailekh & Jajarkot (and within HVAP districts including Jumla pockets); apply HVAP VCA lessons on input access, post-harvest, and contract farming; aggregation at Bheri/Narayan; target regional spice processing (Government of Nepal, Ministry of Agriculture and Livestock Development, 2026); (Government of Nepal, Ministry of Agricultural Development, 2011).
- Apples (Jumla): Chandannath cold-chain & branding node; link to provincial markets and Kathmandu; integrate MAPs side-streams (e.g., herbal teas) in mixed enterprise co-ops.
- High-altitude MAPs (Dolpa/Jumla): eco-certified lots with rigorous harvest plans; Dolpa's Shey Phoksundo buffer municipalities to keep sustainability central (World Bank Group: Open Knowledge Repository, 2018).

### 3.1.1.3 Downstream architecture (district → provincial → export)

- District nodes: Jajarkot (Bheri), Dailekh (Narayan/Dullu), Jumla (Chandannath), Dolpa (Thuli Bheri/Dunai). These host collection, grading, drying, and packaging under cooperative governance (HVAP precedent) (Government of Nepal, Ministry of Agriculture and Livestock Development, 2026).
- Provincial hub: Surkhet — service market strengthening (agrovets, QA labs, finance desks), bulk consolidation, and logistics coordination (Government of Nepal, Ministry of Agriculture and Livestock Development, 2026).
- Export gate: Nepalgunj Customs—dominant channel for NTFPs/MAPs exports; prices & monthly export tracking used in HVAP/ANSAB Timur analytics; quality infrastructure gaps (testing/certification) must be addressed per World Bank (Government of Nepal, Ministry of Agricultural Development, 2011); (World Bank Group, 2018).

### 3.1.1.4 Enablers & governance (what to invest where)

- Quality & certification: District QA rooms (moisture, adulteration), GWCP/FairWild-style SOPs, and provincial lab partnerships; aligns with the World Bank call for stronger testing/certification to access discerning markets (World Bank Group, 2018).
- FUG legal literacy & handovers: Replicate CECI/ANSAB recommendations — handover of NTFP areas to FUGs, legal awareness, and market information systems — to shift bargaining power upstream (MoFE, Lumbini, 2024); (Government of Nepal, Ministry of Agricultural Development, 2011).
- Inclusive value chains (HVAP lessons): Producer organizations, formal PO–trader contracts, business literacy, and service-market strengthening (agrovets, para-vets) across cluster municipalities (IFAD, 2019).
- Enterprise viability & permitting: EnLiFT2 highlights permitting, compliance, and institutional hurdles for small forest enterprises — district facilitation cells at Narayan, Bheri, Chandannath, Dunai to unblock licenses/royalties (IFAD, Ministry of Agriculture, Land Management and Cooperatives, Lattanzio Monitoring and Evaluation, Italy, and Full Bright Consultancy, Nepal, 2023).

### 3.1.1.5 District-wise cluster tables summary (municipality roles)

324. **Note:** Roles reflect altitude/commodity ecology and documented corridors. Final species mapping per ward requires rapid inventory (2–4 weeks per district).

#### Jajarkot

- Upstream: Barekot, Junichande, Kushe, Shivalaya → MAPs/NTFPs & resin; Chhedagad, Nalgad → ginger/timur blocks (Government of Nepal, Ministry of Agriculture and Livestock Development, 2026);

(Government of Nepal, Ministry of Agriculture and Cooperatives, 2011); (Government of Nepal, Ministry of Agricultural Development, 2011).

- Midstream: Bheri (Khalanga) primary aggregation; Chhedagad satellite.
- Downstream: Surkhet → Nepalgunj Customs (Government of Nepal, Ministry of Agricultural Development, 2011).

#### **Dailekh**

- Upstream: Thantikandh, Bhairabi, Gurans, Naumule, Mahabu → timur/MAPs; Aathabis, Chamunda Bindrasaini: ginger/goat (Government of Nepal, Ministry of Agriculture and Livestock Development, 2026).
- Midstream: Narayan main hub; Dullu secondary with small distillation pilots.
- Downstream: Surkhet → Nepalgunj Customs (Government of Nepal, Ministry of Agriculture and Livestock Development, 2026).

#### **Jumla**

- Upstream: Sinja, Tila, Patarasi, Hima → MAPs & apples; Guthichaur, Tatopani, Kankasundari → mixed NTFPs,
- Midstream: Chandannath aggregation (cold-chain + MAPs).
- Downstream: Surkhet → Nepalgunj Customs (Government of Nepal, Ministry of Agriculture and Livestock Development, 2026).

#### **Dolpa**

- Upstream: Shey Phoksundo, Dolpo Buddha, Chharka Tangsong → high-altitude MAPs; Mudkechula, Kaike, Jagdulla: mixed NTFPs.
- Midstream: Thuli Bheri (Dunai) QA & logistics; Tripurasundari secondary aggregation (IFAD, Ministry of Agriculture, Land Management and Cooperatives, Lattanzio Monitoring and Evaluation, Italy, and Full Bright Consultancy, Nepal, 2023).
- Downstream: Dolpa → Jumla/Mugu → Surkhet → Nepalgunj Customs.

### **3.1.2 Phased investment roadmap (12–24 months): example**

#### **Phase 1 – Diagnostic & quick wins (0–6 months)**

- Municipality - Ward-level resource inventory (species, volumes, harvest windows) in upstream municipalities; integrate MAPs GDP baselines to set targets (Aryal, et al., 2023).
- Stand up collection centres and basic QA at Bheri, Narayan, Chandannath, Dunai; adopt PO–trader contracts; start price/volume dashboards.

#### **Phase 2 – Processing & certification (6–18 months)**

- Pilot timur oil micro-units (Narayan/Dullu; Bheri/Chhedagad), MAPs drying/grading lines (Chandannath/Dunai); certify handlers against GWCP; connect to personal care buyers per World Bank segmentation (Government of Nepal, Ministry of Agricultural Development, 2011); (World Bank Group, 2018).

#### **Phase 3 – Market deepening (12–24 months)**

- Formalize Nepalgunj export routines with batch traceability; onboard testing labs (moisture, GC-MS where feasible via partnerships); expand e-commerce for branded products (per World Bank recommendations) (World Bank Group, 2018).

325. Following is the structured overview categorizing the four districts — Jajarkot, Dailekh, Dolpa, and Jumla — based on their altitude zones and the availability of high-value medicinal & aromatic plants (MAPs) and non-timber forest products (NTFPs).



### 3.1.3 Altitude & MAPs/NTFPs by District

#### Dolpa & Jumla (High Himalayan; 3000–5200 m)

- Key MAPs: Yarsagumba (*Cordyceps sinensis*); Kutki (*Neopicrorhiza scrophulariiflora*); Jatamansi (*Nardostachys jatamansi*); Sugandhawal (*Valeriana jatamansi*)' Bish (*Aconitum* spp.), Satuwa (*Paris polyphylla*); Padamchal (*Rheum australe*)
- High-value NTFPs: *Morchella conica* (morel mushroom) — traded globally; wild honey, wild nuts, wild oils seeds, grasses and *Nigalo bans* (*Drepanostachyum falcatum*); *Setakchini* (*Polygonatum* spp)

#### Jajarkot & Dailekh (Mid-High Hills; 1500–3500 m)

- Although high-altitude MAPs are fewer here than Dolpa/Jumla, some species still occur in Barekot Jajarkot and Naumule Dailekh: Kutki (*Neopicrorhiza scrophulariiflora*); Jatamansi (*Nardostachys jatamansi*); Sugandhawal (*Valeriana jatamansi*), Pashanved (*Bergenia ligulate*)
- NTFPs: Edible mushrooms and plants for local use (e.g., Chhiuri plant (*Diploknema butyracea*) based Honey, wild nuts, *Nigalo bans* (*Drepanostachyum falcatum*), grasses, wild seeds oils, Lokta (*Daphne bholua*); Ritha (*Sapindus mukorossi*); pine resin

326. These clusters help guide **resource management**, **climate adaptation**, and **value-chain strategies** for medicinal plant conservation and sustainable livelihood enhancement in these Himalayan districts.

## 3.2 Financial and Economic Viability

A financial and economic analysis is presented in Annex 10 of the Funding proposal package.

## 3.3 Environmental and social assessment

327. Nepal's Karnali Province is highly vulnerable to climate change due to its reliance on rain-fed agriculture, forestry, and other climate-sensitive livelihoods, increasingly affected by landslides, droughts, and floods. The project strengthens forest ecosystem resilience and reduces climate vulnerability through small-scale, community-led nature-based solutions (NbS) under the Locally Led Climate Action (LLCA) framework, including sustainable forest management, forest restoration, climate-resilient Non-Timber Forest Products (NTFP)/Medicinal and Aromatic Plants (MAP) value chains supporting Micro, Small, and Medium Enterprises (MSMEs), Local Adaptation Plan for Action (LAPA) implementation, Community-Based Early Warning Systems (CB-EWS), and capacity building, awareness, and communication. It prioritizes inclusive participation, directly benefiting women, Dalits, Indigenous Peoples, local governments, and forest user groups.

328. The project avoids land acquisition, involuntary resettlement, ecosystem degradation, unsustainable resource use, introduction of invasive species, hazardous chemicals, prohibited trade, impacts on protected or cultural sites, child or forced labour, Gender-Based Violence (GBV)/ Sexual Exploitation, Abuse, and Harassment (SEAH) risks, or actions causing significant environmental, social, or health harm. Environmental and Social Risk Screening confirms minimal to negligible adverse impacts and substantial positive outcomes, supporting a **Category C**/low level of intermediation (I3) classification under the Green Climate Fund (GCF) Revised Environmental and Social Policy (RESP).

329. The Environmental and Social Action Plan (ESAP; Annex 12), developed through policy reviews, field surveys, risk analyses, stakeholder consultations and expert assessments, aligns with International Finance Corporation (IFC)'s Performance Standard (PS), (which is also the standard used by GCF on its interim Environmental and Social Safeguard (ESS) Standards) to identify, manage, and mitigate potential risks such as minor ecosystem disturbances, biodiversity impacts, occupational health and safety issues, inequitable benefits, limited participation, maladaptation, weak institutional capacity for LAPA, CB-EWS and Disaster Risk Reduction (DRR), low climate knowledge uptake, GBV/SEAH, community grievances, and impacts from NbS and MSMEs interventions.

330. An impact and risk assessment using a risk matrix evaluated the likelihood and severity of potential risks, confirming that all activities are low-risk even before applying mitigation measures, in line with GCF RESP



criteria. Mitigation measures are in place to further minimize potential impacts on labor practices, biodiversity, SEAH prevention, and community health and safety. Combined with ongoing monitoring, adaptive management, and a functional Grievance Redress Mechanism (GRM), these measures ensure that risks remain proportionate and effectively managed. Clear institutional roles and responsibilities across the Project Management Unit (PMU), Field Coordination Unit (FCU), Division Forest Offices, local governments, User Committees, MSMEs, and GCF technical oversight ensure full integration of ESAP measures into project design, budgeting, and reporting.

### 3.3.1.1 Part A: Risk Factors

331. Please indicate your answers to the questions below and provide an explanation on the response selected. In cases when the TBD response has been selected, please explain briefly why you are not able to determine now and when in the project cycle the question will be addressed.

332. If the criteria is not applicable to the project you may write N/A in the justification box.

Risk Factors	YES	NO
Will the activities involve associated facilities and require further due diligence of such associated facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Please provide a justification of your answer:</i> No major associated facilities will need to be constructed and upgraded. Project will use existing facilities such as trainings halls, forest nurseries, etc.		
Will the activities involve trans-boundary impacts including those that would require further due diligence and notification to affected states?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Please provide a justification of your answer:</i> Project areas lie inside Nepal's boundaries. Hence no transboundary impacts of any magnitude, extent and duration is expected to arise as a result of project implementation.		
Will the activities adversely affect working conditions and health and safety of workers or potentially employ vulnerable categories of workers including women and children?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Please provide a justification of your answer:</i> Project activities are designed to enhance the livelihoods of vulnerable communities, including Indigenous Peoples (IPs), women, and children, through climate change adaptation interventions. Since the project does not involve major construction activities, it will not pose significant occupational health and safety risks to workers nor employ vulnerable categories of workers such as women and children in hazardous conditions. Additionally, all activities will adhere to national labour laws and international labour standards to ensure fair working conditions and prevent exploitative labour practices.		
Will the activities potentially generate hazardous waste and pollutants including pesticides and contaminate lands that would require further studies on management, minimization and control and compliance to the country and applicable international environmental quality standards?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Please provide a justification of your answer:</i> No, the project activities will not generate hazardous waste or pollutants, including pesticides, that would require further studies. It will adopt nature-based solutions to enhance land productivity, improve water quality, and		

support green enterprises. Agroforestry and livelihood activities will prohibit synthetic pesticides and fertilizers, promoting organic practices and integrated pest management, using synthetic pesticides only as a last resort per national and international standards.

Will the activities involve the construction, maintenance, and rehabilitation of critical infrastructure (like dams, water impoundments, coastal and river bank infrastructure) that would require further technical assessment and safety studies?

☐
☒

*Please provide a justification of your answer:*

Project will not have the construction, maintenance and rehabilitation of critical infrastructure such as dams and water impoundments works. Therefore, it will not require further assessment and safety studies.

Will the proposed activities potentially involve resettlement and dispossession, land acquisition, and economic displacement of persons and communities?

☐
☒

*Please provide a justification of your answer:*

No, the project will not involve resettlement, dispossession, land acquisition, or economic displacement. It focuses on community forest management and NTFP promotion (especially MAPs) with active local participation. Some activities may occur on private lands with landowner consent. While communities may voluntarily impose temporary resource use restrictions-without affecting customary or traditional access to resources these measures are intended to enhance ecosystem services and will not significantly impact local livelihoods as guided by their own implementation plan.

Will the activities be located in or in the vicinity of protected areas and areas of ecological significance including critical habitats, key biodiversity areas and internationally recognized conservation sites?

☒
☐

*Please provide a justification of your answer:*

The project will not take place in the core zones of the protected areas in Karnali Province. Activities will be conducted in buffer zones, in accordance with regulations that allow sustainable resource use by local communities. These zones are not classified as critical habitats or key biodiversity areas. The project will focus on reforestation, unforested, or previously converted lands, ensuring no net biodiversity loss, in line with IFC PS6 Guidelines (Paragraph 26). Mitigation measures, including screening, risk assessment, and management, will be outlined in the ESAP to prevent biodiversity impacts.

Will the activities affect indigenous peoples that would require further due diligence, free, prior and informed consent (FPIC) and documentation of development plans?

☐
☒

*Please provide a justification of your answer:*

The project will benefit Indigenous Peoples (IPs) and local communities by implementing activities they have identified to enhance their well-being. As a Simplified Approval Process (SAP) project, Free, Prior, and Informed Consent (FPIC) is generally not applicable, and the project does not require FPIC under Section 7.2 of the GCF's IP Policy, as it does not have adverse impacts on IPs. Therefore, additional due diligence, FPIC agreements, or documentation of development plans are not necessary.

For instance, the project will foster business opportunities for Indigenous and local communities, including agro-product processing and NTFP-based MSMEs, with their active participation in co-design. If these activities take

place on private land, landowner concurrence will be required. Additionally, prior informed consultations will be held throughout the project cycle, including for site selection, stakeholder engagement, and the selection of native species for agroforestry to improve IPs' livelihoods.

Will the activities be located in areas that are considered to have archaeological (prehistoric), paleontological, historical, cultural, artistic, and religious values or contains features considered as critical cultural heritage?

☐
☒

*Please provide a justification of your answer:*

Project activities will not be located in areas with archaeological, paleontological, historical, cultural, artistic, or religious value, nor will they disturb critical cultural heritage sites, including tangible cultural resources such as monuments and artifacts. Local beliefs and practices regarding culturally significant trees, animals, and natural features-intangible cultural resources-will be respected, with measures in place to minimize impacts and ensure alignment with IPs' cultural values.

### 3.3.1.2 Part B: Specific environmental and social risks and impacts

Assessment and Management of Environmental and Social Risks and Impacts	YES	NO	TBD
Has the E&S risk category of the project been provided in the concept note?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the rationale for the categorization of the project been provided in the relevant sections of the concept note?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there any additional environmental, health and safety requirements under the national laws and regulations and relevant international treaties and agreements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

*Please provide a justification of your answer:*

The project will not involve any large-scale construction activities. It is a low-risk project. It does not trigger any social and environmental risks as prescribed in the national laws of Nepal.

Are the identification of risks and impacts based on recent or up-to-date information?

☒
☐
☐

*Please provide a justification of your answer:*

Risk and impact identification and assessment drew on recent studies, primary and secondary data, multi-level stakeholder consultations, and the Ministry of Forests and Environment's sectoral and overall Vulnerability and Risk Assessment Report (2021).

Labour and Working Conditions	YES	NO	TBD
Will the activities potentially have impacts on the working conditions, particularly the terms of employment, worker's organization, non-discrimination, equal opportunity, child labour, and forced labour of direct, contracted and third-party workers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

*Please provide a justification of your answer:*

The project does not involve major works or labour-intensive activities that could adversely affect working conditions. All direct, contracted, and third-party workers will be engaged in accordance with national labour legislation and the executing agency's environmental and social management policies, covering terms of employment, workers' organization, non-discrimination, equal opportunity, and the prohibition of child and forced labour.

Will the activities pose occupational health and safety risks to workers including supply chain workers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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*Please provide a justification of your answer:*

Project activities, including Micro, Small, and Medium Enterprises (MSME) operations; nature-based solutions (NbS) such as terrace formation, slope stabilization, and check dams; and early warning systems, are not expected to pose significant occupational health and safety (OHS) risks to workers, including supply chain personnel. The scale, footprint, and average landholding size of these interventions are relatively small, and they are designed to minimize physical and chemical hazards, with agroforestry and other value chains excluding harmful chemicals. Nevertheless, all MSME investments will be assessed for potential OHS risks, and appropriate mitigation measures will be implemented through the Environmental and Social Action Plan (ESAP). Vulnerable groups, including women and children, will not be employed under unsafe conditions, and all activities will comply with national labour laws, international labour standards, and best practices to ensure equitable treatment.

Resource Efficiency and Pollution Prevention	YES	NO	TBD
Will the activities generate (1) emissions to air; (2) discharges to water; (3) activity related greenhouse gas (GHG) emissions, (4) noise and vibration; and (5) wastes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

*Please provide a justification of your answer:*

Project activities will generate minimal emissions, discharges, noise, or waste, posing no climate or environmental risks, while contributing to greenhouse gas reduction and improved water quality through forest restoration, watershed protection, and other nature-based solutions.

Will the activities utilize significant amount of natural resources including water and energy?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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*Please provide a justification of your answer:*

Project activities, including MSME operations, agro-processing, and nature-based solutions, will use minimal natural resources such as water, energy, and forests. Rainfed agroforestry and sustainable forest management, including NTFP value chains and enrichment plantations, will maintain forest cover, protect water sources, and support regeneration. The interventions are not resource intensive, pose low resource-use risks for MSMEs and agro-processing plants, and will promote efficient and sustainable natural resource management.

Will there be a need to develop detailed measures to reduce pollution and promote sustainable use of resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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*Please provide a justification of your answer:*

There will be no need to develop detailed measures to reduce pollution or promote sustainable use of resources, as the project activities do not pose significant environmental risks. The project will not generate pollution and will support local communities and stakeholders in the sustainable management of forests.

Community Health, Safety, and Security	YES	NO	TBD
Will the activities potentially generate risks and impacts to the health and safety of the affected communities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

*Please provide a justification of your answer:*

The project activities will not pose any health or safety risks, nor cause adverse impacts, to the affected communities.

Will there be a need for an emergency preparedness and response plan that also outlines how the affected communities will be assisted in times of emergency?

☐
☒
☐

*Please provide a justification of your answer:*

There is no need for an emergency preparedness and response plan, as the project activities do not pose risks requiring such measures or community assistance, and no emergency events are expected during the project's lifetime.

Will there be risks posed by the security arrangements and potential conflicts at the project site to the workers and affected community?

☐
☒
☐

*Please provide a justification of your answer:*

The project poses no conflict or security risks, either between beneficiary communities or between communities and project workers. No migrant workers will be hired, and employment opportunities and benefits will be shared equitably among local community members, ensuring a safe and harmonious environment.

#### Land Acquisition and Involuntary Resettlement

YES

NO

TBD

Will the activities likely involve land acquisition and/or physical or economic displacement?

☐
☒
☐

*Please provide a justification of your answer:*

There will be no land acquisition and/or physical and economic displacement as the project activities will be carried out through active engagement of the stakeholders and local communities. Project activities will help in the livelihood enhancement of local communities.

#### Biodiversity Conservation and Sustainable Management of Living Natural Resources

YES

NO

TBD

Will the activities potentially introduce invasive alien species of flora and fauna affecting the biodiversity of the area?

☐
☒
☐

*Please provide a justification of your answer:*

The project will not introduce or promote invasive alien species of flora or fauna, and all plantation and restoration activities will use native species. Agroforestry, NTFPs/MAPs value chains, and nature-based solutions (NbS) are designed to enhance biodiversity, minimize risks from monocropping or intensive forestry, and preserve existing flora, fauna, and ecosystem functions.

Will the activities have potential impacts on or be dependent on ecosystem services including production of living natural resources (e. g., agriculture, livestock, fisheries, forestry)?

☐
☒
☐

*Please provide a justification of your answer:*

Project activities will not harm ecosystem services or living natural resources and aim to enhance them through sustainable management.

#### Indigenous Peoples

YES

NO

TBD

Will the activities potentially have any indirect impacts on indigenous peoples, ethnic minorities, or vulnerable and marginalized groups?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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*Please provide a justification of your answer:*

Although the project area includes multi-ethnic communities, including Indigenous Peoples and vulnerable and marginalized groups, the proposed activities are not expected to result in any direct or indirect adverse social impacts on these groups.

Cultural Heritage	YES	NO	TBD
Will the activities restrict access to the cultural heritage sites and properties?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

*Please provide a justification of your answer:*

No cultural heritage sites or assets have been identified as potentially affected. The project activities will not restrict access to, cause damage to, or otherwise adversely impact cultural heritage sites or their associated properties.

Will there be a need to prepare a chance-find procedure in case of the discovery of cultural heritage assets?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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*Please provide a justification of your answer:*

There will be no need to prepare chance-find procedure as the project activities are not expected in the discovery of cultural heritage assets.

Stakeholder engagement and grievance	YES	NO	TBD
Will the activities include a continuing stakeholder engagement process and a grievance redress mechanism and integrated into the management/implementation plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Please provide a justification of your answer:*

The project includes a strong and continuous stakeholder engagement process and a grievance redress mechanism (GRM). A Stakeholder Engagement Plan (SEP) and GRM have been developed, integrated into the feasibility report, and will be implemented through active stakeholder engagement throughout the project lifecycle.

### 3.3.1.3 Part C: Additional SEAH-related considerations

Risks and Impacts	YES	NO	TBD
Will the responsible party for the measure receive project-supported training on SEAH-related issues (awareness, avoidance, responses)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Please provide a justification of your answer:*

The project implementation team will be equipped on issues of gender, gender-based violence, sexual exploitation and abuse, etc.

Will all participants involved in, or affected by, the measure have full access to the project SEAH-related grievance redress mechanism?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Please provide a justification of your answer:

Absolutely.

Will there be an influx of male workers into the measure area (as opposed to using local labour)?

☐
☒
☐

Please provide a justification of your answer:

These are small investments that will not mobilize a large workforce from elsewhere.

Will migrant workers be employed to undertake the measure, especially those who may not speak local language?

☒
☐
☐

Please provide a justification of your answer:

There will be no discrimination at work even if migrant workers are employed.

Will workers associated with the measure all have formal contracts?

☐
☒
☐

Please provide a justification of your answer:

It will depend on the nature of the activities e.g. some on-the-ground actions in community forests may be developed and implemented as part of CFMG activities on a voluntary basis. Any workers hired directly by the project to provide a service will be provided formal contracts.

#### 3.3.1.4 Part D: Summary risk categorization

E&S + SEAH risk category	YES	NO
Considering the responses in the checklist and the associated exclusion criteria, do you consider the proposed measure to be Low Risk?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The risks are 'low'		

### 3.4 Exclusion List

333. The project's Category C classification reflects that its activities are expected to have minimal or no adverse environmental and social impacts. To maintain this low-risk profile, a clear **Exclusion List** has been established as a safeguard to ensure all project interventions remain within the Category C threshold and comply with national regulations and international environmental and social standards.

334. The following activities are therefore strictly excluded from project funding and implementation:

- Large-scale infrastructure or construction works, including dams, roads, industrial facilities, and major earthworks.
- Land and forest management causing soil/water degradation, biodiversity loss, or disruptions of ecosystem functions.
- Degradation of critical ecosystems such as wetlands, rangelands, primary forests, or areas of high ecological value.
- Commercial logging, clear-felling, unsustainable harvesting of NTFPS/AMPs or the introduction/use of invasive or non-native species.
- Procurement, use, storage, or disposal of hazardous chemicals including pesticides, herbicides, or insecticides not authorized or banned under national or international regulations.

- f. Trade in animals, plants, or any other natural products that not comply with the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
- g. Activities involving land acquisition, involuntary resettlement, or the physical or economic displacement of individuals or communities.
- h. Activities adversely affecting natural or critical habitats, protected areas, or cultural heritage sites, including actions that lead to deforestation.
- i. Production or trade in tobacco.
- j. Introduction, cultivation, or use of genetically modified organisms (GMOs), including their release into the environment.
- k. Child labour, forced labour, human trafficking, or practices that exacerbate gender inequalities and GBV, or SEAH risks.
- l. Interventions within sites of cultural, historical, or archaeological significance.
- m. Restriction of involuntary access to natural resources for Indigenous Peoples and Local Communities (IPLCs) without mitigation and Free, Prior, and Informed Consent (FPIC).
- n. Any business prohibited by laws and regulations.
- o. Any project activity likely to cause serious environmental, social, or health impacts that contravene national regulations or international obligations to which Nepal is a party.

### 3.5 Project-level Grievance Redress Mechanism

The project-level Grievance Redress Mechanism (GRM) is available in Annex 12 “Environmental and Social Action Plan” of the funding proposal package.



## 4 Project Rationale

### 4.1 Objectives

335. The objective of the project is to strengthen climate resilience of vulnerable communities in Karnali Province by enabling locally-led adaptation that integrates climate-resilient forest and landscape management, diversified and sustainable forest-based livelihoods, and strengthened local and provincial governance systems. The project aims to reduce the vulnerability of climate-exposed communities by restoring and sustainably managing forest ecosystems, establishing viable and inclusive value chains for non-timber forest products, medicinal and aromatic plants, and agroforestry commodities, enhancing adaptive capacity and disaster preparedness through local planning, learning, and early warning services, and institutionalising climate knowledge, communication, and finance mechanisms within devolved government structures. By embedding adaptation actions within community institutions and municipal and provincial systems, the project seeks to deliver durable, scalable, and equitable climate outcomes that are aligned with Nepal's federal governance framework and the GCF's locally-led climate action principles.

#### 4.1.1 Goal Statement

336. **IF** climate finance and decision-making are devolved to the lowest appropriate level and local institutions are meaningfully engaged and empowered with locally-relevant, accessible, and integrated climate risk information and decision-support, **THEN** climate-vulnerable communities in Karnali Province will strengthen their resilience and secure sustainable forest-based livelihoods, while contributing to reduced emissions from deforestation and forest degradation and increased carbon sequestration, **BECAUSE** locally led, inclusive, and knowledge-informed planning and implementation ensures context-appropriate, equitable, and sustainable climate adaptation solutions.

#### 4.1.2 Target Sites

The proposed project is targeting 4 districts in Karnali Province, namely Jajarkot, Dolpa, Jumla and Dailekh; with a total of 31 municipalities (Table 18 introduces the project's target districts and associated urban and rural municipalities).

Table 18). Target district selection was informed by a 2021 vulnerability and risk assessment for Nepal (MoFE, 2021), which found that all of the districts in the province are ranked high to very high on their climate vulnerability. The mid-hills and mountain districts of the province exhibit very high (including Dolpa) to high (including Jajarkot and Jumla) climate vulnerability for the forest and watershed sector. While the fourth target site, Dailekh, only shows moderate overall vulnerability in the forest and watershed sector, the district's high sensitivity and low adaptive capacity was considered alongside its strategic position as a gateway between high-mountain districts and key regional market and service hubs such as Surkhet and Nepalgunj; with comparatively better road connectivity, shorter travel times, and more reliable year-round access. As a result, Dailekh can function as a logistical gateway and aggregation node, enabling more efficient movement of goods, services, technical support, and learning between remote high-mountain districts (e.g. Dolpa and Jumla) and downstream markets, and serving as a scalable demonstration and coordination hub that would be difficult to replicate in more isolated districts not included in the project.

Table 18 introduces the project's target districts and associated urban and rural municipalities.

*Table 18. Target Districts and Municipalities (Palikas)*

District	Urban Municipalities	Rural Municipalities
<b>Jajarkot District</b>	Bheri Municipality Chhedagad Municipality Nalgad Municipality	Barekot Rural Municipality Junichande Rural Municipality Kushe Rural Municipality Shivalaya Rural Municipality
<b>Dolpa District</b>	Thuli Bheri Municipality Tripurasundari Municipality	Jagadulla Rural Municipality Kaike Rural Municipality Mudkechula Rural Municipality
<b>Jumla District</b>	Chandannath Municipality	Guthichaur Rural Municipality Hima Rural Municipality Kankasundari Rural Municipality Patarasi Rural Municipality Sinja Rural Municipality Tatopani Rural Municipality Tila Rural Municipality
<b>Dailekh District</b>	Narayan Municipality Dullu Municipality Aathbis Municipality Chamunda Bindrasaini Municipality	Bhairawi Rural Municipality Bhagawatimai Rural Municipality Dungeshwar Rural Municipality Gurans Rural Municipality Mahabu Rural Municipality Naumule Rural Municipality Thantikandh Rural Municipality

## 4.2 Theory of Change

### 4.2.1 Why LLCA is appropriate for the Karnali context

337. Locally Led Climate Action (LLCA) is particularly well suited to the context of Karnali Province, where climate risks are highly localized, livelihood systems are closely tied to natural resources, and Nepal's federal governance system has explicitly devolved decision-making authority to sub-national and local levels. The Government of Nepal's transition to federalism has established a constitutional and institutional framework that aligns strongly with the Green Climate Fund's vision for devolved, country-driven, and accountable climate action, creating a conducive enabling environment for LLCA to be operationalized at scale.
338. Karnali Province faces compound and differentiated climate risks — including glacial lake outburst floods (GLOFs), landslides, drought, forest degradation, and increasing climate variability — that manifest at community and landscape levels. These risks interact with entrenched structural vulnerabilities such as geographic remoteness, limited market access, high dependence on subsistence agriculture and forest resources, and historic underinvestment in public services. In such contexts, centrally designed and uniform interventions risk misalignment with local priorities and capacities. Consistent with GCF guidance, LLCA responds to this challenge by placing local actors in the driving seat of climate risk identification, prioritization, and solution design, ensuring that interventions are context-specific, equitable, and resilient over time.
339. Nepal's federal system provides a strong institutional foundation for LLCA. Constitutionally empowered provincial and local governments—particularly municipalities (palikas) — hold formal mandates for local development planning, natural resource management, disaster risk reduction, and adaptation-relevant service delivery. These mandates are operationalized through established local planning and budgeting processes, including periodic and annual municipal plans, which create direct entry points for devolved climate decision-making. This governance architecture closely aligns with Parameter 1 of the GCF LLCA Framework: devolved decision-making and finance, under which climate finance reaches the lowest appropriate level and local actors drive needs assessments and resource allocation.

340. Importantly, Karnali already hosts dense networks of community-level institutions — such as Community Forest User Groups (CFUGs), cooperatives, water user associations, and women-led savings and producer groups — that possess long-standing experience in collective resource management, benefit sharing, and participatory decision-making. These institutions represent trusted intermediaries between households and government and are well positioned to support local ownership and implementation, corresponding to Parameter 2 of the GCF LLCA Framework. Their embedded social legitimacy and operational presence enable climate investments to be implemented through local actors across the project lifecycle, from planning and implementation to monitoring, evaluation, and adaptive management.
341. The LLCA approach is further justified by Karnali's need for sustained capacity strengthening rather than short-term project delivery. While decentralization has transferred mandates, capacity gaps remain in climate risk analysis, safeguards, fiduciary management, and climate-informed planning — particularly in remote municipalities (see Section 2.7.2 - Barriers). The GCF guidance explicitly recognizes such contexts and emphasizes Parameter 3: sustainable local capacity and enabling environments, whereby investments build the institutional, technical, and financial systems required for local actors to lead climate action beyond the lifetime of individual projects. In Karnali, this entails strengthening municipal systems, community institutions, and intergovernmental coordination mechanisms so that devolved climate action becomes institutionalized rather than project-dependent.
342. Crucially, LLCA in Karnali is not proposed as an isolated or ad hoc approach, but as a means of localizing national climate priorities and ensuring vertical integration between community, municipal, provincial, and national levels. This reflects GCF's emphasis on collaborative, transparent, and accountable systems that balance bottom-up decision-making with national policy coherence. By leveraging Nepal's devolved governance structure and existing community institutions, the LLCA approach directly advances GCF's paradigm-shifting mandate to enhance country ownership, equity, and effectiveness in climate finance, while ensuring that climate action responds to the lived realities of the most vulnerable populations in Karnali Province.

#### **4.2.2 Rationale for integrating forest restoration, livelihoods and governance**

343. Resulting from extensive engagements with local actors and drawing on Nepal's experience in the field, the project approach is centred around the integration of forest restoration, livelihood development, and governance strengthening to achieve sustainable and transformative reliance for local communities in Nepal. This approach responds to the context-specific and interlinked climate, environmental, and socioeconomic challenges facing the highly vulnerable people of Karnali Province. In this setting, forests are not only ecological assets but provide foundational natural infrastructure that underpins watershed stability, disaster risk reduction, food and energy security, and rural livelihoods. Fragmented interventions that treat forest restoration, livelihoods, and institutional capacity as separate domains risk addressing symptoms rather than the underlying drivers of vulnerability and environmental degradation.
344. From a biophysical perspective, Karnali's forested landscapes play a critical role in regulating hydrological flows, stabilizing slopes, maintaining soil fertility, and buffering communities against climate-induced hazards such as landslides, floods, and prolonged dry periods. Degradation of forest cover directly undermines these regulating services, amplifying downstream risks and eroding the resilience of agricultural and settlement systems. Forest restoration therefore represents a core adaptation intervention; however, without parallel investments in livelihoods and governance, restored ecosystems remain vulnerable to re-degradation driven by subsistence pressures, market incentives, and weak enforcement.
345. Livelihood dependency on forests in Karnali is both a strength and a risk. Forests provide fuelwood, fodder, timber substitutes, and a wide range of non-timber forest products (NTFPs) that support household incomes, particularly for women, Indigenous Peoples, Dalits, and remote mountain communities. Yet, in the absence of diversified, climate-resilient livelihood pathways and value addition opportunities, forest use often remains extractive and low-return, reinforcing poverty–degradation feedback loops. Integrating forest restoration with livelihood development allows ecological recovery to be directly linked to improved household welfare through sustainable forest management, enterprise development, and nature-based income streams. Technically, this alignment improves the durability of restoration outcomes by internalizing opportunity costs and creating positive incentives for conservation at the local level.

346. Governance integration is the third and indispensable pillar of this approach. Forest restoration and livelihood investments operate within complex institutional landscapes that determine access rights, benefit sharing, enforcement, and long-term stewardship. In Karnali, the effectiveness of forest-based interventions is shaped by the functionality of Community Forest User Groups (CFUGs), municipal planning systems, and coordination between local, provincial, and federal authorities. Weak governance can lead to elite capture, unclear tenure, fragmented planning, and misalignment between restoration objectives and local development priorities. Strengthening governance systems — through improved planning, accountability mechanisms, and institutional coordination—ensures that ecological and livelihood gains are embedded within formal decision-making processes and sustained beyond the project lifecycle.
347. From a climate finance and implementation perspective, integrating forests, livelihoods, and governance also responds to the inherently cross-sectoral nature of climate risk. Climate impacts in Karnali manifest across ecosystems, infrastructure, agriculture, and social systems simultaneously. Addressing these risks through isolated sectoral investments increases transaction costs and limits systemic impact. An integrated design enables the project to address multiple risk pathways in parallel: restoring ecosystem functions, reducing livelihood vulnerability, and improving institutional capacity to manage uncertainty and adapt over time. This systems-based logic is particularly important in mountainous and remote regions, where absorptive capacity is limited and interventions must deliver multiple benefits per unit of investment.
348. The integration of forest restoration, livelihoods, and governance reflects evidence that durable adaptation outcomes require simultaneous attention to ecological processes, economic incentives, and institutional arrangements. In Karnali Province — where forests sit at the nexus of climate risk, livelihoods, and governance — this integrated approach offers the most credible pathway to achieving sustained resilience, avoiding maladaptation, and ensuring that climate investments generate lasting environmental and socioeconomic returns.

### 4.2.3 Theory of Change causal pathways

349. The project's theory of change is grounded in the recognition that climate vulnerability in Karnali Province is driven by the intersection of climate hazards, forest and landscape degradation, fragile forest-based livelihoods, and limited institutional capacity to plan for and respond to climate risks under Nepal's devolved governance system. Forest-dependent communities face increasing exposure to climate-induced shocks — such as droughts, floods, landslides, and forest degradation—which undermine ecosystem services, reduce livelihood security, and increase disaster risks. These impacts are compounded by structural barriers, including limited access to climate information and finance, weak value chains, exclusion of women, Dalits, and Indigenous Peoples from decision-making, and constrained coordination between community, municipal, and provincial institutions.
350. The project is structured around three mutually reinforcing outcomes that together disrupt these climate impact pathways by strengthening ecosystem resilience, livelihood security, and governance systems through a locally-led adaptation approach. Rather than addressing climate risks through isolated interventions, the project deliberately links forest and landscape management, sustainable livelihoods, and institutional strengthening into a coherent results chain that enables communities and local governments to plan, invest, and act on climate risks in an integrated and sustained manner.
351. **Outcome 1** focuses on restoring and strengthening forest ecosystems and ecosystem services that underpin both climate resilience and livelihoods. Climate-resilient forest management practices, nature-based solutions, and targeted restoration activities are expected to improve forest health, enhance watershed regulation, and increase carbon sequestration. These changes represent a critical intermediate state: healthier forests reduce exposure to climate hazards, stabilize ecosystem services, and create the ecological foundation necessary for sustainable forest-based livelihoods. By embedding these actions within community forest user groups and local institutions, the project directly addresses barriers related to weak climate-resilient infrastructure, limited uptake of nature-based approaches, and sustainability risks arising from top-down or short-term interventions.
352. The second Output under Outcome 1 builds on this ecological foundation by strengthening forest-based livelihoods and adaptive capacity. Through value chain development, enterprise support, improved harvesting and processing practices, and enhanced market and financial access, the project enables forest-dependent

households to diversify income sources and reduce sensitivity to climate shocks. These interventions improve household income, strengthen incentives for sustainable forest management, and increase community readiness for climate-related disasters. Intermediate outcomes include improved producer organization, strengthened market linkages, and enhanced financial and technical capacities — conditions that directly counter barriers such as limited technical capacity, poor access to finance, and weak participation of women, Dalits, and Indigenous Peoples in economic decision-making.

353. In parallel, **Outcome 2** strengthens local adaptive capacity and disaster preparedness by integrating climate risk information, learning, and early warning services into local planning and institutional processes. Local adaptation plans, climate awareness and training, and the establishment of community-level early warning and learning systems reduce loss of life and assets from climate shocks. These measures shift communities and institutions from reactive to anticipatory risk management, addressing governance challenges that currently constrain devolved decision-making and undermine climate-responsive planning.
354. **Outcome 3** consolidates and scales these gains by strengthening climate awareness, communication, and governance systems at municipal and provincial levels. By institutionalising climate communication strategies, advocacy mechanisms, and coordination platforms, the project ensures that climate knowledge, lessons from implementation, and community priorities are embedded within devolved government systems. This outcome directly addresses barriers related to fragmented governance, limited coordination between agencies, and low awareness of climate risks and adaptation options. The resulting intermediate state is a more enabling institutional environment in which locally-led adaptation can be sustained, scaled, and replicated beyond the project lifetime.
355. Across the three outcomes, the project's results chain operates through a set of clearly defined causal pathways that link on-the-ground actions to systemic resilience outcomes. Climate-resilient forest management, restoration, and nature-based solution activities implemented by community forest user groups first lead to measurable improvements in forest condition, ecosystem health, and the provision of regulating services such as slope stabilisation, water regulation, and biomass accumulation. These ecological changes reduce exposure to climate hazards and create the enabling conditions for sustainable forest-based production. In parallel, targeted value chain development activities — such as improved harvesting and processing practices, enterprise incubation, market access support, and financial linkage mechanisms — translate improved ecosystem productivity into diversified and more stable household incomes. Increased incomes and strengthened producer organisations, in turn, enhance households' capacity to absorb climate shocks, invest in adaptive practices, and maintain sustainable forest management over time. Concurrently, the integration of climate risk information, local adaptation planning, training, and early warning services increases community preparedness and institutional readiness, directly reducing loss of life and assets during climate-related disasters. These changes are reinforced through strengthened municipal and provincial governance systems, including climate communication strategies, devolved decision-making processes, and coordination mechanisms, which institutionalise climate knowledge and enable sustained investment in locally-led adaptation. Together, these linked pathways move the system from short-term outputs — improved forest management, livelihood services, and climate information — through intermediate states of improved ecosystem services, income security, and preparedness, toward medium- and long-term outcomes of enhanced resilience of forest ecosystems and forest-dependent communities in Karnali Province.
356. Across all three outcomes, beneficiaries are not treated as passive recipients, but as active agents of adaptation, with ongoing and active engagement with vulnerable groups throughout implementation as outlined in the Environmental and Social Action Plan, Indigenous Peoples Planning Framework and Gender Action Plan. By devolving climate finance, decision-making, and knowledge to the lowest appropriate level, and by meaningfully engaging local institutions and vulnerable groups, the project creates the conditions under which locally appropriate, equitable, and sustainable adaptation solutions can emerge and endure. The cumulative effect of healthier ecosystems diversified and resilient livelihoods and strengthened governance systems contributes directly to the project's overarching goal: enabling climate-vulnerable communities in Karnali Province to secure sustainable forest-based livelihoods while reducing emissions from deforestation and forest degradation and increasing carbon sequestration.

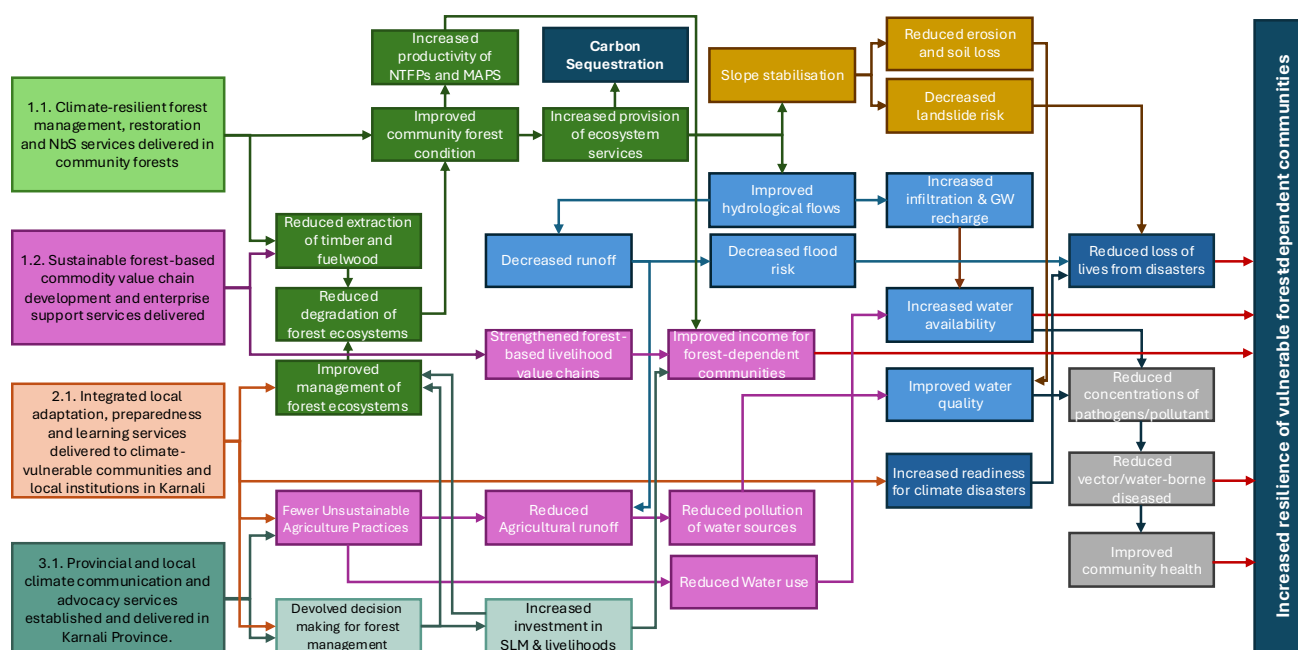
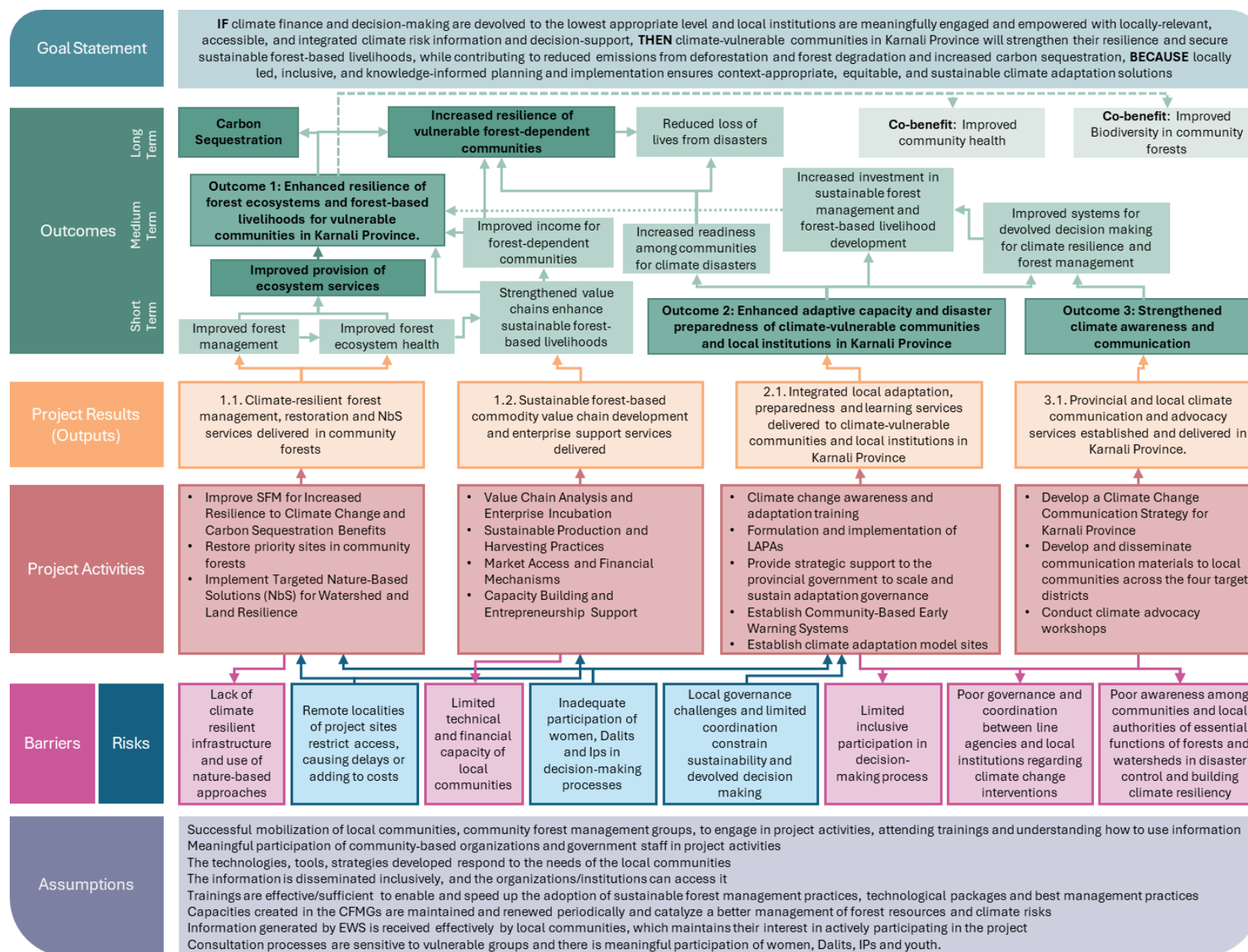


Figure 8. Solution tree demonstrating the casual pathways for the project outputs to achieve the intended outcomes.

#### Assumptions

- Successful mobilization of local communities, community forest management groups, to engage in project activities.
- Meaningful participation of community-based organizations and government staff in project activities.
- The technologies, tools, strategies developed respond to the needs of the local communities. The information is disseminated, and the organizations / institutions are able to access it.
- Trainings are effective/sufficient to enable and speed up the adoption of sustainable forest management practices, technological packages and best management practices.
- The capacities created in the community forest management groups are maintained and renewed periodically and catalyze a better management of forest resources and climate risks.
- Information generated by EWS is received effectively by local communities, which maintains their interest in actively participating in the project. Local users attend trainings and understand how to use the information.
- Full coordination with other projects, so inputs and feedback are provided when needed.
- Consultation processes are sensitive to vulnerable groups and there is meaningful participation of women, Dalit, IP and youth.
- Field activities are not delayed.

Figure 9:  
Theory of  
Change  
diagram



## 4.3 Project Description

### 4.3.1 Outcome 1. Enhanced resilience of forest ecosystems and forest-based livelihoods for vulnerable communities in Karnali Province.

357. This outcome strengthens the resilience of forest-dependent communities in Karnali Province by addressing the interconnected vulnerabilities of degraded ecosystems, climate-exposed livelihoods, and limited adaptive capacity within local institutions. It recognises that sustainable livelihoods and ecosystem resilience are mutually reinforcing, and that climate adaptation in forest landscapes requires integrated action across ecological restoration, livelihood transformation, and community-level capacity.
358. Through Output 1.1, the outcome builds the ecological foundation for resilience by improving the condition, functionality, and adaptive management of community forests and climate-sensitive landscapes. Climate-informed forest planning, targeted restoration, and locally led nature-based solutions stabilise degraded watersheds, reduce exposure to climate hazards such as landslides and erosion, and enhance the provision of critical ecosystem services, including water regulation and carbon sequestration. These interventions address underlying drivers of vulnerability by restoring ecosystem integrity and strengthening the natural systems on which forest-dependent communities rely.
359. Complementing this ecological foundation, Output 1.2 translates improved forest health into resilient and inclusive livelihood opportunities through a structured, stepwise enterprise development pathway. By sequencing value chain analysis, sustainable production and harvesting practices, market and finance access, and entrepreneurship support, the outcome ensures that forest-based enterprises are climate-resilient, economically viable, and environmentally sustainable. This approach reduces livelihood sensitivity to climate shocks, diversifies income sources, and strengthens incentives for long-term forest stewardship, particularly for women, Dalits, Indigenous Peoples, and other vulnerable groups.
360. Together, the two outputs operate through a reinforcing causal pathway in which healthier, better-managed forest ecosystems enable sustainable production, while resilient livelihoods generate the economic and social incentives needed to maintain and protect forest resources. By embedding these interventions within community forest institutions and aligning them with municipal and provincial systems, the outcome delivers durable adaptation benefits that extend beyond individual activities. The result is a measurable enhancement of ecosystem resilience and livelihood security, contributing directly to reduced climate vulnerability and strengthened adaptive capacity of forest-dependent communities across Karnali Province.

#### 4.3.1.1 Output 1.1: Climate-resilient forest management, restoration and nature-based solution (NbS) services delivered in community forests.

361. This output establishes the ecological and institutional foundations for climate resilience in Karnali Province by strengthening the condition, functionality, and adaptive management of community forest and landscape systems. Through an integrated package of climate-informed forest assessment and planning, targeted restoration, and locally-led nature-based solutions, the output improves forest quality, stabilises climate-sensitive landscapes, and enhances the delivery of critical ecosystem services such as water regulation, erosion control, and carbon sequestration. By embedding these interventions within community forest management groups and aligning them with municipal and provincial forestry systems, the output addresses key barriers related to forest degradation, climate exposure, and limited adaptive capacity, while creating the enabling conditions for sustainable forest-based livelihoods and long-term, locally owned climate adaptation.

##### *Activity 1.1.1. Improve Sustainable Forest Management (SFM) for Increased Resilience to Climate Change and Carbon Sequestration Benefits*

362. This activity establishes the ecological and institutional foundation for climate-resilient forest landscapes in Karnali by strengthening the quality, functionality, and adaptive management of community forests. It begins with a landscape-level diagnostic of forest condition, ecosystem services, and climate-related degradation patterns, providing an evidence base to move beyond generic forest management toward context-specific, climate-informed interventions. The development of a standardised forest quality assessment manual ensures



that this analytical capacity is not confined to the project but embedded within local forest authorities and community institutions to support ongoing decision-making.

363. Using this evidence, 80 community forests (CF) with established community forest management groups (CFMGs)<sup>8</sup> will be selected, targeting CFs that are relatively degraded, climate-impacted and institutionally ready, ensuring that investments are targeted where climate risks, ecological potential, and governance capacity intersect. A subset of 50 of the most vulnerable CFMGs will be identified for intensified restoration support (see Activity 1.1.2), enabling differentiated responses that reflect varying levels of degradation and adaptive capacity rather than a uniform treatment across sites.
364. Participatory co-development of Community Forest Operational Plans (CFOPs) and management plans then translates assessment findings into actionable, locally owned management frameworks. These plans — which will be formally registered with the Division Forest Office (DFO)— integrate climate risk considerations into forest zonation, restoration priorities, and land-use practices, explicitly addressing erosion-prone areas, landslide risks, and critical water sources. By anchoring these plans within existing governance structures and aligning them with DFO oversight, the development of CFOPs strengthens devolved forest management while ensuring technical coherence and regulatory legitimacy. The resulting CFOPs will underpin further investments at the community level under Activities 1.1.2, 1.1.3, 1.2.1, 1.2.2, 1.2.3, and 2.1.5.
365. Capacity development is a central pillar of this activity, recognising that climate-resilient forest management depends on both ecological practices and social inclusion. Training on nursery management, sustainable harvesting, and production practices builds the technical skills needed to restore and manage forests sustainably, while targeted engagement of women, Dalits, and Indigenous Peoples addresses persistent participation and equity barriers in forest governance. These capacities are operationalised through the implementation of sustainable forest management measures identified in the plans, including support for forest protection, fire management, and restoration activities, thereby converting planning into tangible on-the-ground change.
366. Finally, participatory forest monitoring strengthens adaptive management by enabling CFMGs to track forest condition, regeneration, and climate impacts over time. This feedback loop reinforces learning, accountability, and long-term stewardship, ensuring that improved forest management translates into sustained ecosystem services, enhanced resilience to climate shocks, and increased carbon sequestration.

#### Sub-activities

- Conduct a landscape level assessment of the state of forest ecosystems, forest quality, and forest ecosystem services and develop a manual for forest quality assessments for local forest authorities to identify and implement measures to accelerate natural recovery and regeneration of forests.
- Based on forest assessments, identify and select 80 natural community forests in the mid-hill districts that have established CFMGs and are highly impacted by climate change, identifying a sub-set of 50 of the most vulnerable CFMGs for additional direct restoration support.
- Through a participatory, community-led process — supported by Division Forest Office and project technical advisors — co-develop Community Forest Operational Plans (CFOPs) for 80 CFMGs, promoting climate-resilient land use practices in community forests. Management plans will target an average area of 125ha per CFMG, and will include identification of priority sites for restoration (high-erosion zones, landslide risk areas, critical water source areas) and revising community forest zonation<sup>9</sup>
- Train existing CFMGs on nursery management, sustainable production and harvesting practices for forest resources, specifically targeting women, Dalits and indigenous communities.

<sup>8</sup> A Local Community Forest Management Group is a community-based entity established under the Forest Act of 1993 to manage parcels of national forest handed over by the GoN, based on a collaboratively developed forest management plan with the District Forest Office. For this project, CFMG is used as a collective term for any community-based entity registered under the forest act, primarily consisting of Community Forest User Groups, but also including other special interest groups such as Religious Forest User Groups and Buffer Zone Community Forest User Groups, among others.

<sup>9</sup> Forest zonation in Nepal includes the following common zones: i) Core conservation; ii) Sustainable use; iii) NTFP/MAP; iv) Plantation/restoration; v) Buffer / Eco-DRR; vi) Community Infrastructure and Use Zone; and vii) Cultural and Religious Zone.

- Implement Sustainable Forest Management practices identified in CFOP, procuring equipment, inputs, or labour for forest patrols and fire management.
- Train CFMGs on participatory forest monitoring

*Activity 1.1.2. Restore priority sites in community forests, prioritizing species that can be integrated into sustainable NTFP supply chains*

367. This activity translates improved forest management planning into targeted ecological restoration actions that simultaneously strengthen climate resilience and livelihood opportunities. Building on the forest assessments and CFOPs developed under Activity 1.1.1, the activity focuses on identifying and rehabilitating priority degradation hotspots within community forests—such as erosion-prone slopes, landslide-affected areas, and degraded production zones—where restoration can deliver the greatest combined benefits for ecosystem stability, climate adaptation, and local livelihoods.
368. Technical assistance and training support will be provided to the 50 CFMGs selected for restoration support under 1.1.1, focusing on refining site-level restoration strategies and selecting species that are both ecologically appropriate and economically viable. By prioritising native and climate-resilient species with proven or potential value in non-timber forest product (NTFP) and agroforestry value chains, the activity deliberately aligns restoration objectives with livelihood diversification goals. This approach strengthens incentives for long-term forest stewardship, reduces pressure on natural forests, and enhances household resilience by integrating productive species into restored landscapes rather than treating restoration as a purely protective measure.
369. Following the development of site-specific restoration plans, restoration will be implemented at scale through assisted natural regeneration and targeted enrichment planting across degraded community forest areas. Assisted natural regeneration accelerates recovery where natural seed sources and regeneration potential exist, improving forest structure and ecosystem services while minimising costs and disturbance. Enrichment planting complements this by reintroducing priority species in areas where regeneration is constrained, enhancing biodiversity, structural diversity, and future NTFP supply potential. Together, these methods restore forest cover and functionality while increasing carbon sequestration and improving microclimatic conditions. Seedlings for enrichment planting will be provided by community nurseries, including those being established/strengthened under Activity 1.2.1.
370. Through this combination of ecological restoration and livelihood-oriented species integration, the activity creates an intermediate state in which restored forest areas provide improved regulating services, reduced climate hazard exposure, and a sustainable resource base for future forest-based enterprises. This directly reinforces the project's broader theory of change by linking ecosystem recovery to resilient livelihoods and long-term climate adaptation outcomes.

#### Sub-activities

- Provide technical assistance and training to 50 CFMGs to identify priority sites for forest rehabilitation, as well as to optimize species selection to enable livelihood diversification and resilience through agroforestry and NTFP production.
- Restore 1,000ha of degraded community forests through assisted natural regeneration and enrichment planting (~20ha per CF).

*Activity 1.1.3. Implement Targeted Nature-Based Solutions (NbS) for Watershed and Land Resilience*

371. This activity applies a focused, risk-informed nature-based solutions (NbS) approach to address climate-induced land and watershed degradation across Karnali's most climate-sensitive landscapes. Building on forest management planning and restoration interventions, it targets 200 specific sites where climate impacts such as soil erosion, slope instability, and degraded hydrological function are undermining ecosystem services and increasing downstream vulnerability. Site selection is undertaken through a participatory process that brings together CFMGs, local forestry authorities, and municipal leadership, ensuring that NbS investments are grounded in local knowledge, aligned with municipal priorities, and integrated within devolved governance structures.

372. Technical assistance supports CFMGs will be provided to translate site-level climate risks into locally appropriate NbS designs. This includes identifying suitable interventions that work with natural processes to restore landscape functionality while minimising maintenance and long-term costs. Potential NbS could include watershed and wetland protection and restoration; conservation agriculture (low/no till systems, mulching, crop rotation, maintenance of vegetation cover) combined with terrace formation and structural improvement to lessen flooding and stabilize slopes (SALT technology); gully protection through bamboo check dams; slope stabilization; protection of water sources, springs, and wetlands; and reducing grazing pressure in rangelands and forests. Environmental and social screening is embedded within the planning process to ensure that selected NbS options are low-risk, socially inclusive, and compliant with safeguard requirements, reinforcing community ownership and institutional confidence in NbS implementation. The project Environmental Social Action Plan provides the screening framework and includes an exclusion list for interventions that fall outside the project safeguard classifications.
373. Implementation support then enables these locally led designs to be realized at scale through the procurement of services, inputs, and equipment required to operationalise NbS across priority sites. By supporting implementation rather than prescribing solutions, the activity strengthens local capacity to deliver and maintain NbS interventions, while ensuring technical quality and consistency across municipalities. The resulting improvements in watershed function, slope stability, and land productivity represent a critical intermediate state: reduced exposure to climate hazards, enhanced regulating ecosystem services, and increased resilience of both forest ecosystems and downstream communities. In combination with sustainable forest management and restoration efforts, these NbS interventions reinforce an integrated, landscape-scale pathway toward climate resilience and long-term adaptation outcomes.

#### Sub-Activities:

- Facilitate the selection of 200 climate-sensitive sites across the 31 target municipalities, engaging local forestry departments, CFMGs, and local leadership.
- Provide TA to CFMGs responsible for target sites to identify and plan locally-appropriate NbS including the application of ESS screening processes to ensure all selected NbS options are low-risk.
- Procure services, input and equipment to implement NbS across 150 hectares at the selected sites, in line with locally-led designs.

#### **4.3.1.2 Output 1.2. Sustainable forest-based commodity value chain development and enterprise support services delivered.**

374. This output establishes a structured, stepwise pathway for the development and scaling of climate-resilient forest-based livelihoods in Karnali Province, ensuring that enterprise growth is both economically viable and ecologically sustainable. Rather than providing isolated or premature market support, the output deliberately sequences analytical, technical, financial, and institutional interventions to reduce risk, strengthen adaptive capacity, and maximise long-term impact across NTFP and agroforestry value chains.
375. The pathway begins with rigorous value chain analysis, resource vulnerability assessment, and early-stage enterprise incubation, which together validate market demand, identify climate and sustainability risks, and translate opportunities into robust, climate-responsive business models. Only enterprises with credible production, processing, and marketing plans — grounded in sustainable resource management — progress to subsequent phases of support. This ensures that downstream investments are anchored in realistic commercial logic and aligned with ecosystem limits.
376. Building on this foundation, the output strengthens sustainable production, harvesting, and post-harvest practices to stabilise supply, improve quality, and reduce pressure on forest ecosystems. Targeted capacity development, technology uptake, and partnership facilitation enable producers and enterprises to adopt climate-smart and low-carbon practices, creating a reliable resource and production base capable of meeting market requirements under climate uncertainty.
377. The pathway then addresses systemic market and finance barriers by enabling access to tailored financial mechanisms, certification and quality assurance systems, and government support programmes. By de-risking investment, rewarding sustainable practices, and streamlining regulatory and institutional interfaces, the output

enables validated enterprises to access premium markets and appropriate finance while reinforcing incentives for long-term forest stewardship.

378. Finally, dedicated capacity building and entrepreneurship support consolidates local ownership and managerial capability, while replication and scaling mechanisms ensure that successful models can be adapted and extended beyond initial beneficiaries. Together, these interlinked phases create an enabling ecosystem in which climate-resilient forest-based enterprises can emerge, mature, and scale — contributing to diversified livelihoods, reduced vulnerability to climate shocks, and sustained ecosystem integrity in Karnali Province.

#### *Activity 1.2.1. Value Chain Analysis and Enterprise Incubation*

379. This activity lays the analytical and institutional groundwork for developing viable, climate-resilient forest-based enterprises by strengthening understanding of NTFP value chains and supporting early-stage enterprise development. It begins with targeted value chain and feasibility analyses to validate existing knowledge and address information gaps related to production potential, market demand, processing constraints, and governance risks across the 31 target districts. These analyses move beyond market diagnostics to explicitly incorporate climate risks, logistics constraints, and inclusivity considerations, ensuring that downstream enterprise support is grounded in both economic viability and climate resilience.
380. To safeguard the ecological sustainability of NTFP-based livelihoods, the activity integrates a vulnerability assessment of the NTFP resource base in climatically sensitive mid-hill and high mountain forests. This assessment identifies climate pressures, over-harvesting risks, and regeneration constraints, and directly informs sustainable harvesting thresholds and low-carbon production practices. By aligning enterprise development with resource sustainability, the activity addresses a critical barrier in NTFP value chains — namely, the risk that short-term income generation can undermine long-term ecosystem health and climate resilience.
381. Building on this evidence, targeted technical assistance will be provided to support local communities to translate value chain opportunities into bankable, context-appropriate business plans for 10 selected NTFP-based micro, small, and medium enterprises (MSMEs). These plans integrate production, processing, and marketing components and explicitly connect producers and processors to identified markets, strengthening the commercial logic of forest-based enterprises. The activity prioritises the participation of women, Dalits, Indigenous Peoples, and persons with disabilities, addressing entrenched inclusion barriers and ensuring that enterprise development contributes to equitable livelihood outcomes. Each enterprise will encompass a range of community stakeholders, with an estimated 50 households participating in each enterprise in varying capacities (i.e. producers, harvesters, processors etc).
382. Selection will be conducted through a transparent, criteria-based process informed by the value chain and feasibility studies. Preliminary selection criteria include:
- location within project-supported community forest landscapes;
  - dependence on NTFP/MAP resources and alignment with sustainable harvesting thresholds;
  - market viability and scalability potential; and
  - willingness to adopt climate-resilient and low-carbon practices.
383. Rather than providing capital grants at this stage, the activity focuses on early-stage, non-capital incubation support, including technical mentoring, operational guidance, and market linkage facilitation. This approach reduces investment risk, strengthens enterprise readiness, and builds managerial capacity prior to scaling or external financing. Complementing enterprise incubation, the establishment and support of NTFP nurseries promotes the cultivation of high-value species within agroforestry systems, reducing pressure on wild stocks, increasing climate resilience of production systems, and securing a sustainable resource base for future enterprise growth. At least two new nurseries will be established per district, with an additional two existing nurseries per district supported to increase their seed-production capacity for climate-resilient, high-value species. Collectively, these interventions create an intermediate state in which climate-resilient, inclusive NTFP enterprises are technically viable, ecologically sustainable, and positioned for scale within the project's broader adaptation framework.

Sub-Activities:

- Conduct baseline value chain and feasibility studies to validate existing and gather additional information for sustainable NTFP/MAP value chains in the 31 target districts.
- Conduct a vulnerability assessment of the NTFP resource base in the NTFP-rich forests in the mid-hill and high mountain areas of Karnali Province to inform sustainable harvesting practices and low-carbon production systems.
- Provide Technical assistance to local communities for the preparation of comprehensive production, processing, and marketing business plans for 10 NTFP-based Micro, Small, and Medium Enterprises (MSMEs), explicitly linking producers and processors with target markets — particularly targeting women, Dalits, and Indigenous Peoples (IPs) and PwD households as producers and processors.
- Provide early-stage, non-capital assistance to targeted MSMEs for the implementation of NTFP Business Plans.
- Establish and support NTFP nurseries to promote the cultivation of high-value NTFPs within agroforestry practices, ensuring a sustainable and resilient resource base.

*Activity 1.2.2. Promote Sustainable Production and Harvesting Practices*

384. This activity operationalises climate-resilient value chain development by strengthening production, harvesting, and post-harvest practices across community forest systems. Building on the analytical groundwork and enterprise incubation support under Activity 1.2.1, it focuses on translating improved value chain understanding into changes in how NTFPs are produced, harvested, processed, and brought to market, thereby addressing both ecological sustainability and livelihood resilience.
385. Targeted training will be provided to 60 CFMGs to strengthen their technical capacity to apply climate-smart and sustainable harvesting practices that align extraction levels with regeneration rates and seasonal climate variability. By reducing premature harvesting and over-exploitation, these practices directly mitigate risks of forest degradation and resource depletion, while stabilising supply volumes and quality for downstream processing and markets. This shift represents a critical intermediate state in which forest-based production becomes both ecologically sustainable and economically predictable under changing climate conditions. Training will also include principles of business management (for example financial literacy and record keeping) to improve bankability of forest-based enterprises, as well as awareness for FMG members of the value and importance of sustainable practices and certifications—linking with the market access interventions under Activity 1.2.3.
386. The activity further addresses post-harvest vulnerabilities by facilitating partnerships and coordination among producers, processors, private sector actors, service providers and financial institutions to adopt climate-friendly, low-carbon processing systems. Engagement workshops and networking events (in coordination with Activity 1.2.3) will be conducted to enable knowledge exchange and collaboration around appropriate technologies, operational models, and market requirements, including shared or decentralized processing facilities such as essential oil distillation plants. These partnerships reduce post-harvest losses, improve product quality, and lower the carbon intensity of processing, while creating local value addition opportunities that strengthen rural economies.
387. To support uptake at scale, the activity provides targeted input packages that reduce technical and financial barriers to adopting improved production and processing practices. Access to climate-resilient planting material, appropriate equipment for drying and processing, and improved packaging enables producers and enterprises to implement climate-responsive, higher-yielding practices without compromising sustainability. Together, these interventions reinforce a causal pathway in which improved skills, partnerships, and enabling inputs lead to more resilient NTFP supply chains, increased incomes, and reduced pressure on forest ecosystems, directly contributing to the project's adaptation and mitigation objectives.

Sub-activities:

- Train 60 community forest user groups on climate-smart, sustainable NTFP production and harvesting techniques to reduce over-exploitation and premature collection, thereby mitigating deforestation and degradation risks.

- Host engagement workshops, meetings and networking events to facilitate partnerships for the adoption of climate-friendly, low-carbon post-harvest processing systems, including establishing agro-product processing plants (e.g., essential oil distillation plant).
- Provide input packages for technologies, inputs, and services that enable the uptake of climate-responsive and high-yielding NTFP production practices, including climate-resilient seeds/seedlings, processing/drying equipment, packaging, etc.

### *Activity 1.2.3. Facilitate Market Access and Financial Mechanisms*

388. This activity addresses structural market and finance barriers that constrain the scalability and sustainability of forest-based livelihoods by strengthening linkages between producers, enterprises, financial institutions, and government support systems. Building on improved production practices and enterprise readiness under Activities 1.2.1 and 1.2.2, it focuses on enabling the flow of finance, reducing risk, and improving market competitiveness for NTFP and MAP value chains under climate uncertainty.
389. First, the project will conduct a series of stakeholder engagements with actors across the NTFP value chain and its supporting institutions, including producers, processors, private sector actors, service providers, local government entities and financial institutions. Through these engagements and drawing on the market analysis from Activity 1.2.1, the project will identify context-appropriate finance and risk management mechanisms to facilitate improved access to finance and investment in sustainable forest-based enterprises across the value chain. These options may include public–private–community partnerships (PPCPs), cost-sharing arrangements, and tailored value chain financing models that reflect the seasonal, climate-sensitive nature of forest-based production. The outcomes of these engagements will be compiled into an NTFP-investment roadmap, outlining practical steps to operationalise the identified financial mechanisms and risk-sharing models, mapping each model to specific NTFP/MAP value chains across the target districts, as well as outlining more broadly how mechanisms may be scaled to other districts in Karnali and across Nepal. Specific attention will be given to identifying mechanisms that are responsive to the specific needs of vulnerable groups, including women, youth, Dalits, IPs and PWDs.
390. By engaging financial institutions alongside producers and processors, the activity helps de-risk lending and investment, addressing a key constraint faced by community enterprises and MSMEs that lack collateral, credit histories, or familiarity with formal financial systems. These mechanisms strengthen the financial viability of enterprises and enable reinvestment in climate-resilient production and processing practices.
391. Second, drawing on the outputs of the investment roadmap, the project will select and operationalise one viable financing mechanism at the local level, providing an accessible interface between producers, processors, and financial service providers. This mechanism will simplify access to appropriate financial products, aligns repayment structures with production cycles, and strengthen financial literacy and trust between communities and financial institutions. The result is an intermediate state in which climate-resilient enterprises are less impacted by fragmented or informal financing arrangements.
392. Third, to enhance market competitiveness and secure long-term demand, the activity will co-develop systems that recognise and reward sustainable production practices through quality assurance, certification (for example Forest Stewardship Council certification), and geographic indication mechanisms — focussing on systems that promote sustainable forest management practices. This will be underpinned by an assessment of available certifications and quality control mechanisms available in Nepal or regionally, considering their viability for specific high-value NTFPs and MAPs in the local context, as well as the barriers to their uptake. Once suitable certifications have been identified, a user-friendly manual for CFMGs and forest-dependent MSMEs on how to access these certifications, including the production and processing requirements, the quality control requirements, and the practical steps required to become certified. At the provincial level, a quality control mechanism will be integrated into the DFO systems to support communities in maintaining certification standards, as well as the establishment of a PPCP working group> these mechanisms will be backed by a training-of-trainers programme to enhance literacy around value of the process and application of the manual (to be conducted in parallel with training under Activities 1.2.2 and 2.1.1).
393. By supporting communities and enterprises to navigate certification requirements, establish quality control systems, and build local capacity through training-of-trainers approaches, the activity enables access to

premium and niche markets while reinforcing incentives for sustainable resource management. The establishment of multi-stakeholder working groups further embeds these mechanisms within local institutional ecosystems, supporting long-term niche market access as part of the project's exit strategy.

394. Finally, the activity strengthens alignment between forest-based enterprises and existing government programmes by developing practical tools and facilitation mechanisms that bridge administrative and information gaps. This will include establishing a provincial-level programme facilitation unit (PFU) to spearhead engagements with community enterprises — with regular mandated meetings to assess applications — backed by a digital platform to streamline registration and licensing processes — reducing transaction costs, improving regulatory compliance, and enabling enterprises to access public support for mechanisation, infrastructure, and market development. This platform will provide actionable information related to available programmes as well as online application systems; updated regularly to ensure alignment with the latest criteria of available government programmes. The PFU will provide ongoing support to DFOs to train and accredit field officers to support in efficient field survey processes where needed — ultimately bridging the gap between enterprise and government entities.
395. Together, these interventions consolidate a causal pathway in which improved finance, certification, and institutional linkages translate into resilient, competitive, and scalable NTFP value chains that contribute to sustained livelihoods and long-term climate adaptation outcomes.

#### Sub-activities:

- Identify context-appropriate finance and risk management mechanisms to facilitate improved access to finance and investment in sustainable forest-based enterprises across the value chain.
- Establish and operationalize a functional financing mechanism that links local producers and processors with accessible local financial institutions.
- Co-develop a functional mechanism to promote the recognition of sustainable production practices, quality control, certification services (e.g., FSC), and Geographic Indications (GI) to enhance market competitiveness.
- Co-develop tools to sustainably link producers and processing MSMEs with relevant government programs (e.g., Prime Minister Agriculture Modernization Programme, Prime Minister Self Employment Programme) for small-scale mechanization technology and market infrastructure.

#### *Activity 1.2.4. Capacity Building and Entrepreneurship Support*

396. This activity strengthens the human and institutional capacities required to sustain and scale climate-resilient forest-based enterprises beyond initial incubation and market entry. Building on the technical, financial, and market foundations established under Activities 1.2.1–1.2.3, it focuses on consolidating local ownership, managerial capability, and entrepreneurial leadership across NTFP- and agroforestry-based value chains beyond the CFMGs and MSMEs targeted directly under these activities.
397. A structured technical assistance programme will be established to support producers, MSMEs, and public–private–community groups to strengthen enterprise ownership and management capacities. This will involve targeted, hands-on technical workshops addressing practical gaps in sustainable production planning, quality control, processing efficiency, business management, and market integration — at least two workshops per palika. By engaging a mix of community actors, private sector partners, and service providers, the activity reinforces collaborative business models and peer learning, while ensuring that technical skills are directly aligned with real market requirements and climate-responsive production systems.
398. To ensure that successful approaches do not remain isolated, the activity also develops a deliberate replication and scaling strategy. This strategy systematically captures lessons, business models, and operational practices emerging from supported enterprises and value chains, with a focus on identifying which elements are transferable across ecological zones, market contexts, and institutional settings. By documenting enabling conditions, risks, and adaptation requirements, the strategy provides a practical roadmap for scaling climate-smart agroforestry and NTFP initiatives within Karnali Province and beyond. Together, these interventions create an intermediate state in which locally led enterprises are not only viable, but capable of growth, replication, and long-term contribution to resilient livelihoods and climate adaptation outcomes.

#### Sub-Activities:

- Establish a technical assistance programme to scale up local entrepreneurship (ownership and management) and build capacity in sustainable production, processing, and market integration of high-value agroforestry products through targeted technical workshops for public-private-community groups, producers and MSMEs.
- Develop a replication and scaling strategy to collate and replicate successful climate-smart initiatives identified in the region.

### **4.3.2 Outcome 2. Enhanced adaptive capacity and disaster preparedness of climate-vulnerable communities and local institutions in Karnali Province**

399. The second outcome reflects a measurable shift in how communities and institutions in Karnali Province understand, anticipate, and manage climate risks. As a result of strengthened knowledge, planning, and governance systems, climate vulnerability is reduced not through isolated actions, but through enduring changes in behaviour, decision-making, and institutional practice across community, municipal, and provincial levels.
400. At the community level, households — particularly women, Dalits, Indigenous Peoples, and other vulnerable groups — demonstrate increased climate literacy, confidence, and agency to take early and appropriate action in response to climate stresses and shocks. Climate risks are better understood, adaptation options are locally owned, and preparedness is strengthened through clear roles, shared protocols, and trusted communication channels. This results in earlier responses to hazards, reduced losses, and improved capacity to recover from climate-related events.
401. At the municipal level, adaptation priorities are systematically embedded within local development planning, budgeting, and monitoring processes. Municipalities increasingly plan and invest based on forward-looking climate risk information, coordinate responses across administrative boundaries, and track adaptation outcomes in a transparent and results-oriented manner. These changes reduce reliance on ad hoc or reactive responses and enable sustained, programmatic adaptation aligned with local needs.
402. At the provincial level, climate resilience is institutionalised as a core development consideration. Locally led adaptation principles, resilience metrics, and lessons from implementation inform planning frameworks, budget allocation, and climate finance strategies. This enables the province to sustain and scale adaptation efforts beyond the project period, mobilise resources more effectively, and provide consistent support to municipalities and communities.
403. Together, these shifts create an integrated and self-reinforcing system in which communities are prepared and proactive, local governments are capable and coordinated, and provincial institutions enable continuity and scale. The resulting change in state is one of enhanced preparedness, reduced climate-related losses, and strengthened long-term resilience for vulnerable populations across Karnali Province.

#### **4.3.2.1 Output 2.1: Integrated local adaptation, preparedness and learning services delivered to climate-vulnerable communities and local institutions in Karnali Province.**

404. The single output under Outcome 2 provides direct support services to strengthen the adaptive capacity of vulnerable communities and local institutions by embedding climate knowledge, planning, preparedness, and learning within devolved governance systems. It recognises that effective adaptation requires more than awareness or isolated interventions; it depends on the ability of communities, municipalities, and provincial institutions to anticipate climate risks, plan collectively, act early, and sustain learning over time.
405. The output follows a deliberate progression from individual and community capacity development, through institutionalised planning and coordination, to anticipatory risk management and replication of proven solutions. It begins by building locally grounded climate literacy and applied adaptation skills among forest-dependent households, particularly women, Dalits, and Indigenous Peoples, enabling communities to understand climate risks and take practical action across livelihoods, infrastructure, water, health, and forest management. This foundational capacity is then translated into formal adaptation action through the preparation and



implementation of inclusive Local Adaptation Plans of Action (LAPAs), supported by strengthened municipal planning, public financial management, and monitoring systems.

406. At the same time, the output addresses the need for preparedness and early action by establishing community-based early warning systems that are locally owned, operationally sustainable, and embedded within local governance structures. These systems shift communities from reactive response to anticipatory risk management, reducing disaster-related losses and strengthening confidence in collective action. Demonstration of climate-resilient practices through model adaptation sites further reinforces learning by providing tangible, context-specific examples that can be observed, tested, and replicated across communities.
407. Finally, the output ensures sustainability and scale by strengthening provincial-level governance systems, integrating locally led climate action principles and resilience metrics into planning and budgeting frameworks, and supporting long-term climate finance strategies. Together, these interventions create an enabling system in which climate knowledge, planning, preparedness, and finance are mutually reinforcing—allowing locally led adaptation to be sustained, scaled, and institutionalised beyond the project period.

*Activity 2.1.1. Develop and deliver climate change awareness and adaptation training.*

408. This activity strengthens community-level adaptive capacity by equipping forest-dependent households with practical knowledge and skills to anticipate, respond to, and recover from climate-related shocks and stresses. Recognising that climate vulnerability in Karnali is shaped not only by exposure to hazards but also by limited access to relevant information and skills, the activity focuses on building locally grounded climate literacy and applied adaptation competencies, particularly among women, Dalits, and Indigenous Peoples.
409. Training modules will be co-developed with communities and local institutions to ensure that content is context-specific, accessible, and directly applicable to everyday livelihood and risk management decisions. Rather than treating climate change as an abstract concept, the modules translate climate risks into concrete actions across key domains of vulnerability, including maintenance of community infrastructure, climate-resilient agricultural practices, sustainable forest management, water harvesting and use, and basic health and sanitation. This integrated framing reflects the interconnected nature of climate impacts on livelihoods, ecosystems, and well-being, and ensures that adaptation knowledge supports both immediate risk reduction and longer-term resilience.
410. Delivery of the training is undertaken in close collaboration with local governments and relevant non-governmental institutions, embedding learning within existing community and municipal systems. By targeting community forests as focal points for training delivery, the activity leverages established collective structures and reinforces the role of community institutions as hubs for adaptation learning. This approach also enables the learning process to be integrated into local systems, enabling scaling of training through DFOs and other local institutions. The resulting intermediate state is one in which communities possess improved awareness of climate risks, practical adaptation skills, and stronger confidence to apply these skills, collectively laying the foundation for enhanced preparedness, reduced climate-related losses, and more effective engagement in subsequent planning and early warning activities under Outcome 2.

**Sub-Activities:**

- Co-develop modules with local communities and institutions for climate change awareness and adaptation trainings. The content of the Modules, which will be targeted towards women, Dalits and IPs, will cover various topics including skills for repair and maintenance of the community infrastructures (Module 1), skills for climate resilient agriculture (Module 2), sustainable forest management (Module 3), sustainable water harvesting and use (Module 4), basic health and sanitation (Module 5).
- Organize trainings in collaboration with local governments and relevant non-government institutions in 80 community forests.

*Activity 2.1.2. Formulation and implementation local adaptation plans for action (LAPA).*

411. This activity translates enhanced climate awareness and community-level capacities into structured, institutionalised adaptation action by strengthening local planning and implementation systems. It recognises

that sustained climate resilience requires adaptation priorities to be embedded within formal municipal decision-making, budgeting, and coordination processes, rather than remaining at the level of stand-alone community initiatives.

412. Technical support will be provided to all 31 target municipalities to prepare or update Local Adaptation Plans of Action (LAPAs) through inclusive, participatory processes that actively engage women, Dalits, and Indigenous Peoples. These processes ensure that local adaptation priorities reflect differentiated climate risks, livelihood dependencies, and social vulnerabilities, while grounding proposed actions in community knowledge and locally identified needs. Table 19 shows the status of LAPAs in each of the target municipalities – accounting for the efforts of other initiatives. The table also highlights the nature of support needed for each municipality to either develop, update, or support implementation of the LAPAs. By aligning LAPAs with community forest and livelihood interventions under Outcome 1, the activity strengthens coherence between ecosystem-based adaptation measures and local development planning.
413. In parallel, targeted training will be provided to build the technical capacity of municipal officials, strengthening the enabling environment for effective LAPA implementation. Training will cover the climate integration into local development planning, public financial management for climate actions, and adaptation-focused monitoring and evaluation systems, addressing key institutional barriers related to limited technical capacity and weak accountability. This equips municipalities to prioritise, finance, track, and adapt climate investments over time, moving from ad hoc responses toward programmatic and results-oriented adaptation planning.
414. Recognising that many climate risks transcend administrative boundaries, the activity also facilitates inter-municipal collaboration to develop a Joint Action Plan addressing shared vulnerabilities. This coordinated approach enables municipalities to pool resources, align investments, and implement cross-boundary solutions for issues such as watershed management, disaster risk reduction, and climate-resilient infrastructure. Together, these interventions create an intermediate state in which municipalities possess both the planning instruments and institutional capacity to implement locally led, coordinated, and scalable adaptation actions under changing climate conditions.

#### Sub-Activities:

- Provide technical support to all the 31 municipalities of the project districts to prepare/update LAPAs through a participatory approach that includes women, Dalits and IPs.
- Provide technical training for municipal officials on climate integration into local development planning processes, robust public financial management for climate actions, and effective Monitoring & Evaluation (M&E) systems for adaptation initiatives.
- Facilitate collaboration of the municipalities to develop a Joint Action Plan to address shared vulnerabilities.

*Table 19. Status of LAPAs in each of the target municipalities, and specific actions to be taken under the project to develop, strengthen or implement LAPAs.*

District	Municipalities	LAPA Status	Needs for strengthening the LAPA Process
<b>Jajarkot</b>	Bheri Municipality	<b>LAPA Developed:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <sup>10</sup> <input type="checkbox"/> Update Needed <input type="checkbox"/> Supported under NCCSP-2	<input checked="" type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <ul style="list-style-type: none"> <li><input type="checkbox"/> Site-specific implementation action plans</li> <li><input type="checkbox"/> TA for LAPA Monitoring and Evaluation</li> <li><input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA</li> </ul>

<sup>10</sup> A comprehensive LAPA would meet all the requirements of the 2019 Climate Change Policy, have been developed in a participatory and transparent manner, and clearly outline priority adaptation actions for climate-vulnerable sectors, risk-prone locations, and highly vulnerable populations that local governments will gradually incorporate into their annual plans.

Chhedagad Municipality		<b>LAPA Developed:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input type="checkbox"/> Update Needed <input type="checkbox"/> Supported under NCCSP-2	<input checked="" type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <input type="checkbox"/> Site-specific implementation action plans <input type="checkbox"/> TA for LAPA Monitoring and Evaluation <input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
Nalgad Municipality		<b>LAPA Developed:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If Yes (tick relevant):</i> <input checked="" type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input checked="" type="checkbox"/> Update Needed <input checked="" type="checkbox"/> Supported under NCCSP-2	<input type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input checked="" type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input checked="" type="checkbox"/> LAPA implementation support <input checked="" type="checkbox"/> Site-specific implementation action plans <input checked="" type="checkbox"/> TA for LAPA Monitoring and Evaluation <input checked="" type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
Barekot Rural Municipality		<b>LAPA Developed:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If Yes (tick relevant):</i> <input checked="" type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input checked="" type="checkbox"/> Update Needed <input checked="" type="checkbox"/> Supported under NCCSP-2	<input type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input checked="" type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input checked="" type="checkbox"/> LAPA implementation support <input checked="" type="checkbox"/> Site-specific implementation action plans <input checked="" type="checkbox"/> TA for LAPA Monitoring and Evaluation <input checked="" type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
Junichande Municipality	Rural	<b>LAPA Developed:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input type="checkbox"/> Update Needed <input type="checkbox"/> Supported under NCCSP-2	<input checked="" type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <input type="checkbox"/> Site-specific implementation action plans <input type="checkbox"/> TA for LAPA Monitoring and Evaluation <input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
Kushe Rural Municipality		<b>LAPA Developed:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input type="checkbox"/> Update Needed <input type="checkbox"/> Supported under NCCSP-2	<input checked="" type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <input type="checkbox"/> Site-specific implementation action plans <input type="checkbox"/> TA for LAPA Monitoring and Evaluation <input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
Shivalaya Rural Municipality		<b>LAPA Developed:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If Yes (tick relevant):</i> <input checked="" type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input checked="" type="checkbox"/> Update Needed <input checked="" type="checkbox"/> Supported under NCCSP-2	<input type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input checked="" type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input checked="" type="checkbox"/> LAPA implementation support <input checked="" type="checkbox"/> Site-specific implementation action plans <input checked="" type="checkbox"/> TA for LAPA Monitoring and Evaluation

			<input checked="" type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
<b>Dolpa</b>	Thuli Bheri Municipality	<b>LAPA Developed:</b> Yes <input type="checkbox"/> No <input type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input type="checkbox"/> Update Needed <input type="checkbox"/> Supported under NCCSP-2	<input type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <input type="checkbox"/> Site-specific implementation action plans <input type="checkbox"/> TA for LAPA Monitoring and Evaluation <input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
	Tripurasundari Municipality	<b>LAPA Developed:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input checked="" type="checkbox"/> Update Needed <input checked="" type="checkbox"/> Supported under NCCSP-2	<input type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input checked="" type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input checked="" type="checkbox"/> LAPA implementation support <input checked="" type="checkbox"/> Site-specific implementation action plans <input checked="" type="checkbox"/> TA for LAPA Monitoring and Evaluation <input checked="" type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
	Jagadulla Rural Municipality	<b>LAPA Developed:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input checked="" type="checkbox"/> Update Needed <input checked="" type="checkbox"/> Supported under NCCSP-2	<input type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input checked="" type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input checked="" type="checkbox"/> LAPA implementation support <input type="checkbox"/> Site-specific implementation action plans <input type="checkbox"/> TA for LAPA Monitoring and Evaluation <input checked="" type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
	Kaike Rural Municipality	<b>LAPA Developed:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input type="checkbox"/> Update Needed <input type="checkbox"/> Supported under NCCSP-2	<input checked="" type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <input type="checkbox"/> Site-specific implementation action plans <input type="checkbox"/> TA for LAPA Monitoring and Evaluation <input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
	Mudkechula Municipality Rural	<b>LAPA Developed:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input checked="" type="checkbox"/> Update Needed <input checked="" type="checkbox"/> Supported under NCCSP-2	<input type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input checked="" type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input checked="" type="checkbox"/> LAPA implementation support <input checked="" type="checkbox"/> Site-specific implementation action plans <input checked="" type="checkbox"/> TA for LAPA Monitoring and Evaluation <input checked="" type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
<b>Jumla</b>	Chandannath Municipality	<b>LAPA Developed:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive	<input type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input checked="" type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input checked="" type="checkbox"/> LAPA implementation support

		<input checked="" type="checkbox"/> Update Needed <input checked="" type="checkbox"/> Supported under NCCSP-2	<input checked="" type="checkbox"/> Site-specific implementation action plans <input checked="" type="checkbox"/> TA for LAPA Monitoring and Evaluation <input checked="" type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
Guthichaur Rural Municipality		<b>LAPA Developed:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input type="checkbox"/> Update Needed <input type="checkbox"/> Supported under NCCSP-2	<input checked="" type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <input type="checkbox"/> Site-specific implementation action plans <input type="checkbox"/> TA for LAPA Monitoring and Evaluation <input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
Hima Rural Municipality		<b>LAPA Developed:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input type="checkbox"/> Update Needed <input type="checkbox"/> Supported under NCCSP-2	<input checked="" type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <input type="checkbox"/> Site-specific implementation action plans <input type="checkbox"/> TA for LAPA Monitoring and Evaluation <input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
Kankasundari Municipality	Rural	<b>LAPA Developed:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input checked="" type="checkbox"/> Update Needed <input checked="" type="checkbox"/> Supported under NCCSP-2	<input type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input checked="" type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input checked="" type="checkbox"/> LAPA implementation support <input checked="" type="checkbox"/> Site-specific implementation action plans <input checked="" type="checkbox"/> TA for LAPA Monitoring and Evaluation <input checked="" type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
Patarasi Rural Municipality		<b>LAPA Developed:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input checked="" type="checkbox"/> Update Needed <input checked="" type="checkbox"/> Supported under NCCSP-2	<input type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input checked="" type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input checked="" type="checkbox"/> LAPA implementation support <input checked="" type="checkbox"/> Site-specific implementation action plans <input checked="" type="checkbox"/> TA for LAPA Monitoring and Evaluation <input checked="" type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
Sinja Rural Municipality		<b>LAPA Developed:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input checked="" type="checkbox"/> Update Needed <input checked="" type="checkbox"/> Supported under NCCSP-2	<input type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <input type="checkbox"/> Site-specific implementation action plans <input type="checkbox"/> TA for LAPA Monitoring and Evaluation <input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
Tatopani Rural Municipality		<b>LAPA Developed:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed	<input checked="" type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA

		<input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input type="checkbox"/> Update Needed <input type="checkbox"/> Supported under NCCSP-2 Supported by WFP	<input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <ul style="list-style-type: none"> <li><input type="checkbox"/> Site-specific implementation action plans</li> <li><input type="checkbox"/> TA for LAPA Monitoring and Evaluation</li> <li><input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA</li> </ul>
	Tila Rural Municipality	<b>LAPA Developed:</b> Yes <input type="checkbox"/> No <input type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input type="checkbox"/> Update Needed <input type="checkbox"/> Supported under NCCSP-2	<input type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <ul style="list-style-type: none"> <li><input type="checkbox"/> Site-specific implementation action plans</li> <li><input type="checkbox"/> TA for LAPA Monitoring and Evaluation</li> <li><input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA</li> </ul>
Dailekh	Narayan Municipality	<b>LAPA Developed:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input checked="" type="checkbox"/> Update Needed <input checked="" type="checkbox"/> Supported under NCCSP-2	<input type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input checked="" type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input checked="" type="checkbox"/> LAPA implementation support <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Site-specific implementation action plans</li> <li><input checked="" type="checkbox"/> TA for LAPA Monitoring and Evaluation</li> <li><input checked="" type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA</li> </ul>
	Dullu Municipality	<b>LAPA Developed:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input type="checkbox"/> Update Needed <input type="checkbox"/> Supported under NCCSP-2 Supported under IPAS/	<input checked="" type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <ul style="list-style-type: none"> <li><input type="checkbox"/> Site-specific implementation action plans</li> <li><input type="checkbox"/> TA for LAPA Monitoring and Evaluation</li> <li><input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA</li> </ul>
	Aathbis Municipality	<b>LAPA Developed:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input checked="" type="checkbox"/> Update Needed <input checked="" type="checkbox"/> Supported under NCCSP-2	<input type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input checked="" type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input checked="" type="checkbox"/> LAPA implementation support <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Site-specific implementation action plans</li> <li><input checked="" type="checkbox"/> TA for LAPA Monitoring and Evaluation</li> <li><input checked="" type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA</li> </ul>
	Chamunda Bindrasaini Municipality	<b>LAPA Developed:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input type="checkbox"/> Update Needed <input type="checkbox"/> Supported under NCCSP-2	<input checked="" type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <ul style="list-style-type: none"> <li><input type="checkbox"/> Site-specific implementation action plans</li> <li><input type="checkbox"/> TA for LAPA Monitoring and Evaluation</li> <li><input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA</li> </ul>
	Bhairawi Rural Municipality	<b>LAPA Developed:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Full LAPA development

		<i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input type="checkbox"/> Update Needed <input type="checkbox"/> Supported under NCCSP-2	<input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <input type="checkbox"/> Site-specific implementation action plans <input type="checkbox"/> TA for LAPA Monitoring and Evaluation <input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
Bhagawatimai Municipality	Rural	<b>LAPA Developed:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input type="checkbox"/> Update Needed <input type="checkbox"/> Supported under NCCSP-2	<input checked="" type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <input type="checkbox"/> Site-specific implementation action plans <input type="checkbox"/> TA for LAPA Monitoring and Evaluation <input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
Dungeshwar Municipality	Rural	<b>LAPA Developed:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input type="checkbox"/> Update Needed <input type="checkbox"/> Supported under NCCSP-2	<input checked="" type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <input type="checkbox"/> Site-specific implementation action plans <input type="checkbox"/> TA for LAPA Monitoring and Evaluation <input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
Gurans Rural Municipality		<b>LAPA Developed:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input type="checkbox"/> Update Needed <input type="checkbox"/> Supported under NCCSP-2	<input checked="" type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <input type="checkbox"/> Site-specific implementation action plans <input type="checkbox"/> TA for LAPA Monitoring and Evaluation <input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
Mahabu Rural Municipality		<b>LAPA Developed:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input type="checkbox"/> Update Needed <input type="checkbox"/> Supported under NCCSP-2	<input checked="" type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <input type="checkbox"/> Site-specific implementation action plans <input type="checkbox"/> TA for LAPA Monitoring and Evaluation <input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
Naumule Rural Municipality		<b>LAPA Developed:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input checked="" type="checkbox"/> Update Needed <input checked="" type="checkbox"/> Supported under NCCSP-2	<input type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input checked="" type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input checked="" type="checkbox"/> LAPA implementation support <input checked="" type="checkbox"/> Site-specific implementation action plans <input checked="" type="checkbox"/> TA for LAPA Monitoring and Evaluation



			<input checked="" type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA
Thantikandh Municipality	Rural	<b>LAPA Developed:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>If Yes (tick relevant):</i> <input type="checkbox"/> Fully endorsed <input type="checkbox"/> Valid beyond 2030 <input type="checkbox"/> Comprehensive <input type="checkbox"/> Update Needed <input type="checkbox"/> Supported under NCCSP-2	<input checked="" type="checkbox"/> Full LAPA development <input type="checkbox"/> LAPA Revision to align with policy requirements <input type="checkbox"/> Revision of expired LAPA <input type="checkbox"/> Support for LAPA Endorsement <input type="checkbox"/> LAPA implementation support <input type="checkbox"/> Site-specific implementation action plans <input type="checkbox"/> TA for LAPA Monitoring and Evaluation <input type="checkbox"/> Direct investments in priority climate-responsive actions identified in the LAPA

**Activity 2.1.3. Provide strategic support to the provincial government to scale and sustain adaptation governance beyond the project period.**

415. This activity strengthens the institutional conditions required to sustain and scale locally led adaptation beyond the project lifetime by embedding climate resilience principles within provincial governance systems. It recognises that while adaptation actions are implemented at community and municipal levels, their long-term viability depends on supportive policy frameworks, planning instruments, and financing mechanisms at the provincial scale.
416. The activity facilitates structured knowledge sharing and policy dialogue to capture lessons from locally led adaptation practices and translate them into actionable insights for provincial decision-makers. By convening provincial institutions, municipalities, community representatives, and technical partners, these exchanges elevate successful models emerging from the project — such as inclusive planning processes, ecosystem-based adaptation approaches, and integrated livelihood interventions—into the provincial policy discourse. This helps bridge the gap between local innovation and higher-level governance, addressing a common barrier to scaling locally driven solutions.
417. Targeted technical assistance<sup>11</sup> will then support the integration of climate resilience metrics and locally led climate action (LLCA) principles into provincial planning and budget allocation frameworks. By strengthening the use of climate-relevant indicators and decision-support tools within formal planning processes, the activity enhances the province's ability to prioritise, track, and allocate resources for adaptation in a transparent and results-oriented manner. This institutionalisation of climate resilience considerations reduces reliance on project-based financing and strengthens alignment with national climate and development priorities.
418. Finally, the activity supports the development of a provincial-level strategy for long-term climate finance mobilisation and mainstreaming. Building on evidence and partnerships generated through the project, this strategy identifies pathways to diversify and scale adaptation financing, including alignment with national funding mechanisms and external climate finance opportunities. Together, these interventions create an intermediate state in which provincial systems are better equipped to sustain, coordinate, and expand locally led adaptation, ensuring that resilience gains achieved during the project are maintained and amplified over time.

**Sub-Activities:**

- Facilitate knowledge sharing and policy dialogue on successful LLCA models and project lessons.
- Provide technical assistance for integrating climate resilience metrics and LLCA principles into provincial planning frameworks and budget allocation processes.
- Support the development of a provincial-level strategy for long-term climate finance mobilization and mainstreaming, building on project successes and aligning with national priorities.

<sup>11</sup> TA will vary depending on the needs of each specific entity, but will include various support modalities, for example: orientation workshops for decision makers; technical expert support; developing user-friendly guidelines/SOPs for integrating climate priorities into planning and budgeting processes; review meetings; and training for municipal finance and planning staff



#### *Activity 2.1.4. Establish Community-Based Early Warning Systems (CB-EWS)*

419. This activity strengthens anticipatory capacity and disaster preparedness by enabling communities to detect, interpret, and respond to climate-related hazards before impacts escalate into losses. It recognises that, while Nepal has broad national level systems, early warning systems are most effective when they are locally owned, context-specific, and embedded within existing governance and social structures, particularly in remote and climate-exposed areas of Karnali Province. To this end, the project will support the establishment of six palinka level community-based early warning systems (CB-EWS). Target communities will be selected based on their vulnerability and exposure to climate risks, as well as the status of their baseline readiness to engage in effective CB-EWS.
420. The activity begins by establishing Community-Based Disaster Management Committees (CDMCs) in selected palikas, ensuring representation from local leadership alongside women, Dalits, Indigenous Peoples, and other marginalised groups. These committees provide an institutional anchor for early warning functions at the community level and ensure that risk identification, decision-making, and response actions reflect diverse perspectives and vulnerabilities.
421. Through facilitated, community-led processes, CDMCs identify priority climate hazards, assess existing coping mechanisms, and articulate locally relevant early warning needs. This participatory risk analysis grounds early warning design in lived experience and local knowledge, ensuring that warning systems respond to the hazards that matter most — including the needs of the most vulnerable groups—and align with realistic response capacities. Based on this analysis, CDMCs define locally appropriate warning thresholds, roles, and response actions, creating clear, actionable protocols that link hazard signals to community-level decisions and behaviours.
422. To operationalise these systems, the activity equips communities with low-maintenance, context-appropriate tools for hazard monitoring and warning dissemination, alongside training for local operators to manage, interpret, and maintain the systems without external dependence. Local communication networks will be established to ensure that warnings are disseminated rapidly and reach vulnerable households in accessible and trusted formats. Finally, by embedding CB-EWS within local governance structures and strengthening community-based monitoring and learning processes, the activity enables continuous refinement of early warning systems over time. As this activity matures, the lessons will be used at the provincial level to help establish and operationalize a province level Climate Information System. The resulting intermediate state is one in which communities are better prepared, informed, and able to act early, reducing disaster-related losses and strengthening overall adaptive capacity under a changing climate.

#### **Sub-Activities:**

- Establish a community-based disaster management committee (CDMC) at each of six target palikas, comprising stakeholders from local leadership as well as representatives of vulnerable and marginalized groups.
- Facilitate community-led processes to identify priority climate hazards, existing coping mechanisms, and locally appropriate early warning needs.
- Support CDMCs to define locally owned warning thresholds, roles, and response actions linked to priority hazards.
- Equip communities with context-appropriate, low-maintenance tools to support hazard monitoring and warning dissemination, and train local community members to operate, maintain, and interpret early warning systems without external reliance.
- Embed community early warning systems within local governance structures and enable iterative learning and adaptation, including training on community-based monitoring.
- Establish a communication network at the local level.

#### *Activity 2.1.5. Establish climate adaptation model sites*

423. This activity operationalises locally led adaptation by creating tangible demonstration sites that translate plans, knowledge, and innovation into visible, replicable practice. It recognises that peer learning and practical demonstration are critical for accelerating uptake of climate-resilient solutions, particularly in contexts where communities face uncertainty about the effectiveness or feasibility of new adaptation approaches.
424. The activity begins with structured local-level engagements involving provincial, district, and palika leadership to identify and prioritise innovative adaptation practices with high potential for replication and alignment with Local Adaptation Plans of Action (LAPAs). By grounding site selection in both community priorities and formal planning frameworks, the activity ensures that model sites respond to real climate risks while reinforcing institutional coherence. The selection of 10 model sites across multiple districts further enables learning across diverse ecological and socio-economic contexts.
425. Once selected, the activity establishes demonstrations of climate-resilient adaptation practices at each model site. These demonstrations showcase practical solutions — such as climate-resilient livelihood practices, ecosystem-based adaptation measures, or integrated risk reduction approaches — in operational settings, allowing communities and local authorities to observe performance under real-world conditions. This practical evidence base reduces perceived risk and builds confidence in adoption.
426. To ensure sustainability and local ownership, the activity prioritises training for community-based organisations, with particular emphasis on women-led groups, to manage and operate the model sites over time. These organisations are also supported to act as knowledge multipliers, sharing lessons and technical insights with neighbouring communities. Guided study tours then facilitate structured peer-to-peer learning for community forest management group members from surrounding areas, ensuring inclusive participation of women, persons with disabilities, Dalits, and Indigenous Peoples. Together, these interventions create an intermediate state in which proven adaptation practices are visible, trusted, and transferable — accelerating replication and strengthening adaptive capacity across Karnali Province.

#### Sub-Activities:

- Facilitate local-level engagements with provincial, district and palika leadership across to identify and prioritize innovative, climate-resilient adaptation practices with high scalability potential and alignment with LAPAs and select 10 model sites distributed across the four target districts.<sup>12</sup>
- Establish demonstrations of innovative adaptation practices at the 10 selected model sites.<sup>13</sup>
- Train local community-based organizations (priority given to women led organization) on the sustainable operation of the model sites, as well as how to share their knowledge with surrounding communities.
- Organise guided study tours<sup>14</sup> for CFMG members (ensure 50% women, PwD, Dalit and IPs) from 15 surrounding communities to the model sites, enabling shared learning and replication.

### 4.3.3 Outcome 3. Strengthened climate awareness and communication.

427. This outcome represents a shift in how climate change is understood, discussed, and acted upon across Karnali Province. Climate risks, responses, and responsibilities are no longer perceived as abstract or externally driven, but are increasingly recognised as shared, locally relevant development priorities that inform everyday decisions, institutional practices, and public discourse.
428. At the community level, climate information is more accessible, relevant, and trusted, enabling individuals and groups — particularly those previously marginalised — to better understand climate impacts and engage meaningfully in adaptation and mitigation actions. Awareness evolves into informed participation, strengthening social buy-in for climate-resilient practices and locally led adaptation initiatives.
429. At institutional levels, climate knowledge and lessons from implementation are more consistently communicated and internalised within planning, coordination, and investment processes. Provincial and municipal actors

<sup>12</sup> Site selection will consider the vulnerability of target communities at the model sites, as well as accessibility of sites to surrounding communities for scaling and replication.

<sup>13</sup> targeting 100 direct beneficiaries per site

<sup>14</sup> Facilitated through direct technical assistance and material support from NTNC and its implementing partners

increasingly draw on shared evidence, common narratives, and locally grounded experience to justify and prioritise climate action across sectors. Advocacy capacity is strengthened, enabling climate considerations to be articulated more clearly within policy dialogue, budget discussions, and inter-sectoral coordination.

430. Together, these changes create an enabling environment in which climate action is reinforced through shared understanding, informed leadership, and sustained public engagement. The resulting change in state is one of improved coherence, legitimacy, and continuity of climate action in Karnali Province — supporting long-term resilience and the scaling of locally led adaptation beyond the project period.

#### **4.3.3.1 Output 3.1. Provincial and local climate communication and advocacy services established and delivered in Karnali Province.**

431. This output establishes an integrated and durable climate communication and advocacy function within Karnali Province, enabling climate information, lessons, and priorities to be consistently generated, translated, and disseminated across governance levels and social groups. Through a province-wide communication strategy, locally tailored communication products, and structured advocacy platforms, the output provides the services needed to ensure that climate risks, adaptation options, and demonstrated solutions are communicated in accessible, culturally appropriate, and actionable ways. Communication services are designed to reach diverse audiences — including women, persons with disabilities, Dalits, and Indigenous Peoples — using trusted languages, formats, and channels aligned with local contexts.
432. In parallel, the output strengthens advocacy and knowledge exchange functions by creating spaces where evidence from implementation is synthesised, shared, and translated into policy-relevant messages. Cross-sectoral engagement platforms support dialogue between communities, local governments, provincial institutions, and technical actors, ensuring that locally generated knowledge informs planning, budgeting, and investment decisions. Collectively, these services create a coherent communication and advocacy ecosystem that reinforces transparency, learning, and alignment across climate action efforts in Karnali Province.

##### *Activity 3.1.1: Develop a Climate Change Communication Strategy for Karnali Province*

433. Through targeted technical assistance, the activity supports the co-development of a ten-year Climate Change Communication Strategy (CCCS) for Karnali Province, recognising that durable climate action depends not only on technical solutions and institutional capacity, but also on the ability of governments and communities to consistently communicate climate risks, response options, and shared responsibilities in ways that are accessible, trusted, and actionable. The strategy is designed as an enabling framework rather than a one-off product, providing clear guidance on how climate information related to both mitigation and adaptation is framed, tailored, and delivered to different audiences over time. Particular attention is given to ensuring that communication approaches reach and resonate with women, persons with disabilities, Dalits, and Indigenous Peoples, addressing structural barriers to access, representation, and participation in climate discourse.
434. The strategy draws on regional and South Asian experience to integrate proven communication approaches, behavioural insights, and culturally appropriate methods into the provincial context. By aligning climate messaging with local realities, governance priorities, and community knowledge systems, the CCCS strengthens the consistency, credibility, and effectiveness of climate communication across sectors and administrative levels. This results in a coherent, long-term foundation for climate communication in Karnali Province using a systematic, inclusive, and strategically aligned approach.

##### **Sub-Activities**

- Provide TA for the co-development of a 10-year Climate Change Communication Strategy (CCCS) to implement a systematic and effective approach to communicate climate change in the Karnali province.

##### *Activity 3.1.2. Develop and disseminate communication materials to local communities across the four target districts*

435. This activity operationalizes the provincial CCCS by translating its principles and priorities into accessible, locally relevant communication products that reach communities across Karnali's diverse social and linguistic contexts. It recognizes that awareness and behavior change depend not only on the availability of information, but on how that information is framed, contextualized, and delivered to different audiences.

436. Guided by the CCCS, communication materials will be co-developed with local communities and authorities to ensure relevance, cultural appropriateness, and credibility. Content focuses on the locally observed impacts of climate change on biodiversity, ecosystems, livelihoods, gender dynamics, and development outcomes, drawing explicitly on local experiences, case studies, and lessons from within Karnali. The use of Nepali alongside locally appropriate Indigenous languages reduces exclusion and ensures that climate messages are accessible to groups that are often marginalized from formal information channels. Written word will be complemented by visual and audio materials, increasing accessibility for people with disabilities and low literacy individuals.
437. Dissemination is tailored to local communication ecosystems and delivered through a mix of print, audio, visual, and digital media, as well as community-based platforms such as local radio and public information boards. By aligning dissemination modalities with those identified in the CCCS for each palika, the activity ensures that messages are delivered through trusted channels and reach women, persons with disabilities, Dalits, and Indigenous Peoples effectively.

#### Sub-Activities

- Based on the CCCS, develop communication materials (in consultation with local communities and authorities) in multiple languages — including Nepali and any locally appropriate indigenous languages — to raise awareness and knowledge on the impacts of climate change on biodiversity, the environment, livelihoods, gender and development, as well as drawing on lessons and case studies in the local context.
- Disseminate communication material through various media, including print, audio and video mediums, e-platforms, radio stations, hoarding boards, among others (as defined in the CCCS for each palika), ensuring that dissemination modalities reach the most vulnerable groups, including women, PwD, Dalits and IPs.

#### *Activity 3.1.3. Conduct climate advocacy workshops*

438. This activity strengthens the enabling environment for sustained climate action by building shared understanding, leadership, and advocacy capacity across institutions and sectors in Karnali Province. It recognises that effective climate adaptation and mitigation require not only informed communities, but also decision-makers and practitioners who can champion climate priorities, coordinate across sectors, and translate evidence into policy and investment decisions.
439. National experts with experience across regional, national, and grassroots contexts are engaged to synthesise evidence, lessons, and best practices emerging from the project and comparable initiatives. These inputs are used to develop advocacy-oriented materials that distil complex technical insights into clear, actionable messages tailored to the policy and operational realities of provincial and local governments.
440. A series of climate advocacy workshops will then be convened across the four target districts, bringing together cross-sectoral representatives from provincial institutions, municipalities, and supporting organisations — including representatives from successful community enterprises to showcase their lessons and success stories. By showcasing concrete lessons and outcomes from forest and livelihood resilience interventions under Outcome 1, and governance, preparedness, and anticipatory action under Outcome 2, the workshops strengthen participants' ability to articulate the value of integrated, locally led adaptation approaches. This shared learning process enhances cross-sectoral dialogue, builds consensus around effective climate responses, and strengthens institutional confidence to prioritise climate action within planning, budgeting, and coordination processes.

#### Sub-Activities:

- Identify and procure services of national experts with knowledge, experience and research at regional, national and grass root levels to prepare materials for and facilitate climate advocacy workshops.
- Host two climate advocacy workshops showcasing lessons learned and best practice from Outcomes 1 and 2 in each target district (8 total) targeting cross-sectoral<sup>15</sup> representatives from provincial government, local governments and supporting organizations to build capacity on climate change adaptation.

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<sup>15</sup> Including water management, agriculture, forestry, and disaster preparedness

## 4.4 Alignment with GCF Investment Criteria

### 4.4.1 Impact potential

441. The project has strong potential to contribute to the Green Climate Fund's objectives by delivering transformative adaptation outcomes for climate-vulnerable communities in Karnali Province, while also generating measurable mitigation benefits through improved forest and landscape management. By integrating ecosystem resilience, climate-resilient livelihoods, and strengthened governance systems under a locally led adaptation framework, the project advances climate-resilient sustainable development in one of Nepal's most climate-exposed and economically marginalised regions.

#### Adaptation Impact

442. The primary impact of the project is increased resilience of forest-dependent communities, ecosystems, and local institutions to climate variability and extremes. The project directly benefits **109,690 people** (53,640 men and 56,050 women) through targeted interventions that reduce exposure to climate hazards, decrease sensitivity of livelihoods, and strengthen adaptive capacity. A further **423,218 people** (206,940 men and 216,278 women) are expected to benefit indirectly through improved ecosystem services, strengthened governance systems, reduced disaster losses, and enhanced climate preparedness at municipal and provincial levels.
443. At the community level, the project improves resilience by restoring and sustainably managing forest ecosystems, stabilising climate-sensitive landscapes, and enabling diversified, climate-resilient forest-based livelihoods. These interventions reduce vulnerability to floods, landslides, droughts, forest degradation, and climate-related livelihood shocks, while improving income stability and food security for vulnerable households. Particular emphasis is placed on women, Dalits, Indigenous Peoples, and persons with disabilities, ensuring that adaptation benefits are inclusive and equitably distributed.
444. At the systems level, the project strengthens adaptive capacity by institutionalising climate risk information, planning, and preparedness within devolved governance structures. Community-based early warning systems, inclusive local adaptation planning, and strengthened municipal and provincial coordination enable a shift from reactive disaster response to anticipatory risk management. These changes reduce loss of life and assets, improve recovery outcomes, and support sustained climate-resilient development beyond the project period.
445. Together, these outcomes contribute directly to GCF adaptation result areas by:
- Reducing climate vulnerability of people, livelihoods, and ecosystems;
  - Strengthening adaptive capacity of communities and local institutions; and
  - Enhancing long-term resilience of forest and landscape systems critical to rural development in Karnali Province.

#### Mitigation Benefits

446. While the project is primarily adaptation-focused, it delivers quantified mitigation benefits through improved sustainable forest management, restoration of degraded forest areas, and application of nature-based solutions. These interventions reduce emissions from deforestation and forest degradation and increase carbon sequestration in forest and landscape systems.
447. The project is expected to deliver approximately **119,649 tCO<sub>2</sub>e** of emissions reductions and removals over the first **four years** of project implementation, and a cumulative **1,101,385 tCO<sub>2</sub>e** over a **20-year** period. These mitigation outcomes support low-emission development pathways by strengthening forest carbon stocks while maintaining ecosystem services and livelihood benefits, consistent with Nepal's national climate and forestry objectives.
448. Importantly, these mitigation benefits are achieved without compromising adaptation goals. Instead, they arise from the same interventions that enhance resilience — such as improved forest condition, reduced pressure on natural resources, and sustainable forest-based value chains — demonstrating strong alignment between adaptation and mitigation outcomes.

#### Contribution to GCF Objectives

449. By combining ecosystem-based adaptation, locally led climate action, strengthened governance, and inclusive livelihoods, the project delivers durable and scalable climate impacts. It contributes to the GCF's mandate by addressing climate risks that cannot be managed through market mechanisms alone, generating substantial public-good benefits, and enabling a transition toward climate-resilient, low-emission development pathways for vulnerable communities in Karnali Province.

#### **4.4.1.1 Beneficiary Calculation**

450. Beneficiaries were calculated on an activity-by-activity basis, enabling a comprehensive assessment of beneficiaries across all benefit pathways. Each benefit stream was assessed to be either direct or indirect; with some cases involving both direct and indirect benefits.

451. However, as the project targets CFMGs as the basis for structured, community-led support, there is considerable overlap between benefit streams (for example beneficiaries of community forest management support may also benefit from restoration/NbS investments, or from market development). To account for this, each activity was scaled on an assumed level of unique beneficiaries, providing a final estimate of total unique beneficiaries—thereby avoiding double counting.

452. Within each benefit stream, a set of assumptions were used, drawing on local statistical/demographic data, and previous experiences in implementing similar initiatives with CFMGs. Where interventions targeted household-heads but would accrue benefits for the entire household (for example livelihood interventions that increase household income), the number of household-heads targeted was multiplied by average household size (5.4 people). Where specific gender targets were not otherwise identified, or where benefits accrue to entire householder or communities, a gender ration of 0.511 was used, based off census data.

453. The details and assumptions are presented in Table 20 below.

Table 20: Beneficiary Calculations

Activity	Assumptions for beneficiary targets	Direct							Indirect						
		Target	Unit	Total	% Unique	Unique Total	Unique Women	Unique Men	Target	Unit	Total	% Unique	Unique Total	Unique Women	Unique Men
<b>Activity 1.1.1. Improve Sustainable Forest Management (SFM) for Increased Resilience to Climate Change and Carbon Sequestration Benefits</b>	Assuming 100 households per CFMG for a total of 80 CFMGs supported for improved operational planning and implementation	8,000	HH*	43,200	100%	43,200	22,077	21,123							
	Assuming 20 individuals trained on participatory forest monitoring per CFMG	1,600	Ind**	1,600	0%										
<b>Activity 1.1.2. Restore priority sites in community forests, prioritizing species that can be integrated into sustainable NTFP supply chains</b>	Assuming 65 households benefiting from improved ecosystems per CFMG for a total of 50 CFMGs	3,250	HH	17,550	0%										
<b>Activity 1.1.3. Implement Targeted Nature-Based Solutions (NbS) for Watershed and Land Resilience</b>	Assuming four households benefitting per NbS site	800	HH	4,320	50%	2,160	1,104	1,056							
<b>Activity 1.2.1. Value Chain Analysis and Enterprise Incubation</b>	Assuming 10 MSMEs supported, each comprising 50 CFUG members	500	HH	2,700	0%				440	HH	2,376	0%			
	Assuming 16 nurseries, with 10 staff each	160	HH	864	0%										
<b>Activity 1.2.2. Promote Sustainable Production and Harvesting Practices</b>	Assuming 65 households per CFMG trained and provided inputs for climate-smart, sustainable NTFP production and harvesting techniques, for a total of 60 CFMGs	3,900	HH	21,060	0%										
<b>Activity 1.2.3. Facilitate Market Access and Financial Mechanisms</b>	Assuming 60 CFMG engage in recognized sustainable practices, with 50 households getting certified per CFMG	3,000	HH	16,200	0%				118,331	Ind	118,331	0%			
	Indirect benefits to CFMGs and MSME that will access sustainable finance and government programmes, assuming 20% of forest dependent communities														
<b>Activity 1.2.4. Capacity Building and Entrepreneurship Support</b>	Assuming 2 workshops per Palika (62 total), each targeting 50 people	3,100	Ind	3,100	0%										
	Assumes awareness modules reach 30% of community forest	4,000	HH	21,600	10%	2,160	1,104	1,056							

<b>Activity 2.1.1. Climate change awareness and adaptation training.</b>	users across 80 community forests; 10 % of which are assumed to have not received direct support from CF management planning															
<b>Activity 2.1.2. Formulation and implementation of local adaptation plans for action (LAPA).</b>	Indirect benefits to forest dependent communities across the 31 target municipalities. Assumes 90% dependency on forest resources (FAO 1999).								532,488	People	532,488	79%	423,218	216,278	206,940	
<b>Activity 2.1.3. Provide strategic support to the provincial government to scale and sustain adaptation governance beyond the project period.</b>	Assuming 10 beneficiaries receiving capacity building per sector, for 5 sectors.	50	Ind	50	100%	50	25	25								
<b>Activity 2.1.4. Establish Community-Based Early Warning Systems (CB-EWS).</b>	Assuming indirect benefits reaching an average of 15,282 people per target rural municipality, scaled down to a 70% impact rate across 6 municipalities.	64,185	Ind	64,185	91.5%	58,730	30,013	28,717								
<b>Activity 2.1.5. Establish climate adaptation model sites.</b>	Assuming 10 model sites, each serving 20 households.	200	HH	1,080	50%	540	276	264								
	Assuming 30 people per study tour, for a total of 15 tours.	450	HH	2,430	100%	2,430	1,242	1,188								
<b>Activity 3.1.1: Develop a Climate Change Communication Strategy for Karnali Province.</b>	Assuming 20 provincial and district level staff receive technical capacity development support through the TA.	20	Ind	20	100%	20	10	10								
<b>Activity 3.1.2. Develop and disseminate communication materials to local communities across the four target districts.</b>	Indirect benefits from access to communication materials to all 31 municipalities, assuming a reach of 50% of the populations								295,827	Ind	295,827	0%	-	-	-	
<b>Activity 3.1.3. Conduct climate advocacy workshops.</b>	Assuming 8 total climate advocacy workshops, each targeting 50 people	400	Ind	400	100%	400	200	200								
<b>Total Direct</b>						109,690	56,050	53,640	<b>Total Indirect</b>			423,218	216,278	206,940		

- HH = Household-Heads
- Ind = Individual



#### 4.4.2 Paradigm shift potential

454. The proposed project is designed to catalyse a systemic shift in how climate adaptation is planned, financed, and implemented in Nepal's forest landscapes, particularly in the climate-vulnerable Karnali Province. Through institutionalizing principles of Locally Led Climate Action (LLCA), the project transforms adaptation from a reactive, top-down approach into a proactive, inclusive, and community-driven process. The project's Theory of Change envisions that by equipping local institutions with the tools, resources, and authority to manage forests, develop adaptation plans, and engage in climate-resilient enterprises, long-term resilience and low-carbon development pathways will become self-sustaining.
455. At the core of the paradigm shift is the empowerment of Community Forest User Groups (CFUGs), local governments, and marginalized populations—including women, Dalits, and Indigenous Peoples — to lead climate action. The project addresses baseline challenges of ecosystem degradation, economic exclusion, fragmented governance, and limited access to climate information by enabling transformative change with community-driven forest restoration, localized planning, and sustainable market engagement.
456. **Outcome 1** transforms forest use from extractive to regenerative by supporting community-led forest management, enrichment planting, and the development of climate-smart value chains. By formalizing community enterprises and linking producers with private sector buyers and processors, the project strengthens quality, traceability, and value-addition across priority NTFP and MAP supply chains. This shift improves income for vulnerable households while incentivizing sustainable resource use. Importantly, this approach addresses structural barriers such as weak forest governance, poor market linkages, and the absence of inclusive benefit-sharing systems by embedding accountability and co-management into forest planning, and by providing CFUGs and MSMEs with the technical, organizational, and business skills needed to participate equitably in emerging green value chains.
457. **Outcome 2** builds community leadership in adaptation through participatory LAPAs, early warning systems, and targeted capacity development. These tools institutionalize bottom-up planning and ensure adaptation efforts reflect the unique risks, needs, and knowledge of local communities. By engaging marginalized groups — especially women, Dalits, and Indigenous Peoples — as planners and decision-makers, the project counters exclusion and strengthens social cohesion. At the same time, it addresses key barriers such as low technical capacity, limited climate literacy, and weak institutional links between communities and local governments. By anchoring adaptation planning within formal governance mechanisms and building long-term skills, the project ensures that climate responses are both durable and locally owned.
458. **Outcome 3** decentralises climate information systems, transforming data into actionable knowledge at the community, municipal, and provincial levels. Climate information is embedded in planning, awareness campaigns, and enterprise decision-making, making it central to long-term resilience strategies. This directly addresses barriers around the inaccessibility, poor usability, and weak institutional integration of climate data, which have historically undermined the effectiveness of adaptation planning. By equipping local institutions to interpret and apply climate information — and embedding these systems into governance structures — the project transforms climate information from fragmented inputs into practical tools for risk reduction, resource management, and economic resilience.
459. **Enabling Environment for Sustainability** To ensure long-term impact beyond the project period, the intervention focuses on strengthening the enabling environment across financial, institutional, and policy domains:
- **Financial Sustainability:** The project will support the development of tailored financing mechanisms suited to the rural forest context — such as small-scale instruments or cooperative-managed funds — that unlock local investments in climate adaptation and enterprise. While these mechanisms will be developed during implementation as part of the LLCA approach, the project will simultaneously build financial literacy and connect CFUGs and MSMEs to financial service providers through technical assistance.
  - **Market Transformation:** Through improving producer practices, on-site processing, and enterprise management, the project addresses core value chain bottlenecks. Private sector actors already engaged have signalled strong interest in partnering but require more reliable, quality-controlled supply. The project

will help formalize these linkages while laying the groundwork for sustainable growth in forest-product markets.

- **Policy and Institutional Reform:** The project supports the integration of LLCA principles and resilience metrics into provincial planning and budget frameworks. It will strengthen the LAPA process, streamline forest license renewals, and help design a provincial strategy for climate finance mobilization aligned with national policies.

#### 460. Scaling, Replication, and Knowledge Transfer

Demonstration sites in each ecozone will serve as scalable models of community-led adaptation. These will be complemented by cross-provincial learning exchanges and the development of a Climate Change Communication Strategy for Karnali Province. The project will also host climate advocacy workshops targeting cross-sectoral officials, creating a platform for institutional learning and replication within and beyond Karnali. Alignment with national programs such as the LAPA framework, REDD+, and green enterprise strategies enhances prospects for scale-up across Nepal's other climate-vulnerable provinces.

461. By transforming institutions, financing pathways, and market systems, the project will embed adaptive capacity into core governance and economic structures — ensuring the gains made extend far beyond the project's lifecycle and contribute meaningfully to Nepal's long-term climate resilience goals.

#### 4.4.3 Sustainable development

462. In addition to its core objectives of building climate resilience and enhancing carbon sinks through improved forest governance and ecosystem-based adaptation, the project will generate a range of sustainable development co-benefits that extend well beyond direct climate outcomes. These co-benefits reinforce the project's transformational impact by strengthening household economies, restoring ecosystem services, empowering marginalized groups, and supporting social cohesion in climate-vulnerable areas. Importantly, they also contribute directly to Nepal's progress toward several Sustainable Development Goals (SDGs), particularly those related to poverty reduction, gender equality, sustainable livelihoods, food and water security, and ecosystem restoration. The following outlines the expected co-benefits across the four dimensions of sustainable development defined by the GCF: economic, social, environmental, and gender-responsive development.

463. The project's alignment with the Sustainable Development Goals (SDGs) is summarized in Table 21.

Table 21: Project alignment with Sustainable Development Goals (SDGs)

SDG	Relevance to Project	Indicator
<b>SDG 1 (No Poverty)</b>	Income diversification through NTFPs and microenterprises	# of households with increased income from climate-resilient forest products
<b>SDG 2 (Zero Hunger)</b>	Increased availability of wild foods and water for agriculture	# of households reporting improved food availability
<b>SDG 5 (Gender Equality)</b>	Participation of women, Dalits, and IPs in decision-making and enterprise	% of women-led forest enterprises; % of women in LAPA processes
<b>SDG 6 (Clean Water and Sanitation)</b>	Forests' role in water regulation and quality	# of sub-catchments with improved water flow due to ecosystem restoration
<b>SDG 8 (Decent Work &amp; Economic Growth)</b>	Rural green jobs via forest and NTFP-based value chains	# of jobs created through forest-based SMEs
<b>SDG 13 (Climate Action)</b>	Directly tied to adaptation/mitigation	Area (ha) under climate-resilient forest management
<b>SDG 15 (Life on Land)</b>	Forest ecosystem restoration and biodiversity protection	Hectares of degraded forest restored; forest biodiversity indicators

#### 464. Economic Co-Benefits

- **Rural employment generation:** Green jobs will be created through forest restoration, NTFP harvesting, and small-scale enterprise development, particularly for landless and resource-poor households.
- **Income diversification:** Support for NTFP value chains and micro-enterprises will enable households to reduce reliance on subsistence farming and biomass collection.

- **Local economic stimulation:** Increased market access and enterprise incubation will strengthen local economies in remote areas and reduce out-migration.

#### 465. Social Co-Benefits

- **Improved food, nutrition and health:** Enhanced access to wild foods, forest-based crops, medicinal plants and reliable clean water sources will support dietary diversity and household food and health stability.
- **Reduced disaster risk:** Nature-based solutions will help stabilize slopes, reduce erosion, and mitigate flash floods and landslides in vulnerable sub-catchments.
- **Increased local knowledge and cohesion:** Climate awareness and inclusive planning will strengthen community institutions and improve cooperative responses to local risks.

#### 466. Environmental Co-Benefits

- **Ecosystem restoration:** Reforestation, enrichment planting, and slope stabilization will improve ecological integrity and reverse forest degradation.
- **Water resource protection:** Restored forest cover will improve water retention, groundwater recharge, and regulation of seasonal flows in degraded catchments.
- **Biodiversity enhancement:** Sustainable forest management will maintain and enhance habitat quality for native flora and fauna.

#### Gender-Responsive and Inclusive Development

- **Economic empowerment of women and marginalized groups:** Women, Dalits, and Indigenous Peoples will gain skills, access to finance, and ownership in forest-based enterprises.
- **Reduced unpaid labour burdens:** Improved access to fodder, fuelwood, and water will reduce the time and physical burden on women and girls.
- **Leadership in climate decision-making:** Targeted support for participation in LAPAs and CFUGs will strengthen the voice and influence of historically excluded groups.

#### 4.4.4 Needs of recipient

467. Nepal is among the most climate-vulnerable countries in the world, ranking consistently high in global vulnerability indices due to its fragile ecosystems, high exposure to climate-induced hazards, and widespread dependence on natural resources for livelihoods. Despite this, the country faces a severe adaptation financing gap. It has been estimated that Nepal will require an additional US\$2.4 billion in adaptation investments between 2014 and 2030 to meet its priority climate resilience needs (Ministry of Population and Environment (MoPE), 2014) — resources that far exceed available domestic and international funding. This structural deficit severely constrains the government's ability to scale up locally led, ecosystem-based adaptation measures, particularly in geographically remote and economically marginalized areas.
468. Karnali Province exemplifies these intersecting climate and development challenges. It is Nepal's poorest and most underserved province, with 28.9% of its population living below the poverty line and a gross per capita income of only US\$606 — well below the national average. More than half the population (51.2%) is classified as multidimensionally poor, with critical deprivations in education, health, and access to basic services. The provincial Human Development Index (HDI) stands at just 0.427, the second lowest in the country. The literacy rate is 62%, with a stark gender gap (72% for males and only 53% for females). Life expectancy in Karnali is the lowest among Nepal's provinces at 67 years. Malnutrition affects 58% of children under five, and large portions of the population lack access to safe drinking water (35.9%) and improved sanitation (only 50% of households).
469. These chronic socio-economic vulnerabilities are further compounded by climate stressors — rising temperatures, erratic rainfall, droughts, floods, and forest degradation — which disproportionately affect forest-dependent rural households, especially women, Dalits, and Indigenous Peoples. Despite Nepal's progressive policies on federalism and community-based natural resource management, local governments and community institutions in Karnali lack the technical, financial, and administrative capacity to plan, finance, and implement

climate adaptation at scale. Access to climate finance at the local level remains extremely limited, and coordination across governance levels is weak.

470. The proposed project directly addresses these structural barriers by enabling locally led climate action through inclusive forest governance, resilience-building infrastructure, and targeted livelihood support for vulnerable groups. It is well aligned with Nepal's National Adaptation Plan (NAP), Second Nationally Determined Contribution (NDC), and Karnali's provincial development priorities, and will deliver high-impact, scalable adaptation benefits in one of the country's most underserved and climate-sensitive regions. Given the province's low fiscal capacity, acute exposure to climate risks, and the urgent need for capacity strengthening at the local level, GCF support is essential to overcome the entrenched financing, institutional, and socio-economic barriers that prevent forest-dependent communities from adapting to climate change.

#### **4.4.5 Country ownership**

##### **4.4.5.1 Alignment with Nepal's Priorities**

471. The project is strongly aligned with Nepal's climate change priorities to enhance the adaptive capacity of vulnerable groups, build resilient forest ecosystems, strengthen climate information and governance systems, and mainstream Gender Equality and Social Inclusion (GESI) in climate action. It responds directly to national and subnational policy frameworks, including the National Climate Change Policy (2019), Third Nationally Determined Contribution (NDC), National Adaptation Plan (NAP, 2021–2050), Forestry Sector Strategy (2016–2025), and Karnali Province's development priorities.

##### **National Climate Change Policy (2019)**

472. The project supports the implementation of multiple sectoral strategies, including:

- Forest, biodiversity and watershed conservation: It promotes sustainable forest management to increase carbon sequestration, develops agroforestry in low-grade forests, enhances community adaptation capacity through best practices in watershed and landscape management, and contributes to reducing drought, forest fire risk, and the spread of invasive species.
- Disaster risk reduction and management: It supports local-level disaster preparedness by establishing monitoring and early warning systems, integrating disaster risk reduction into adaptation plans, and mobilizing communities for climate-induced disaster management.
- GESI: The project addresses the concerns of women, Dalits, Indigenous Peoples, and other marginalized groups by supporting climate-resilient livelihoods, mainstreaming climate adaptation into socio-economic development and poverty alleviation efforts and ensuring inclusive participation in planning and implementation.
- Awareness raising and capacity development: Activities include public awareness campaigns, dissemination of knowledge-based materials, and capacity building of government, non-government, and community institutions to integrate resilience into development planning.
- Research, technology development and expansion: The project promotes the application of nature-based technologies and practices.
- Local-level implementation: It supports local governments to formulate and implement Local Adaptation Plans for Action (LAPAs), raise public awareness, and strengthen institutions for climate-induced disaster management.

##### **Nepal's Third NDC (2025):**

473. The project supports the AFOLU-related targets of the NDC by contributing to:

- Maintaining 46% of national land area under forest cover;
- Bringing at least 60% of forest area under community-based management, with 50% women and proportional representation of Dalits and Indigenous Peoples in key roles;
- Ensuring equitable benefit-sharing from sustainable forest management;
- Upgrading watershed health and vitality in at least 20 districts;

- Increasing the national average growing stock to 168 m<sup>3</sup>/ha;
- Promote agroforestry and reforestation, and strengthen the system for forest monitoring and transparency;
- Restoring and managing degraded forest land.

474. It also contributes to the NDC's GESI commitments by:

- Ensuring full, equal, and meaningful participation of women, Dalits, and Indigenous Peoples in planning and implementation processes at the local level;
- Ensuring the use of GEDSI-disaggregated data when reporting on project outcomes.

National Adaptation Plan (NAP, 2021–2050):

475. The project supports the NAP's goals to:

- Build the adaptive capacity and resilience of vulnerable natural, social, and economic sectors;
- Integrate climate change into local development plans and programs;
- Ensure equitable mobilization and distribution of resources through international finance, technology access, and extension services.

476. In the forest sector specifically, the project contributes to:

- Improving forest health and restoring rare, endangered, endemic, and threatened species to build resilient ecosystems;
- Reducing climate-induced disasters through nature-based interventions;
- Promoting green jobs and sustainable forest-based economic opportunities.

### **Forestry Sector Strategy (2016–2025)**

477. The project supports key strategic climate objectives in the forestry sector:

- Increasing awareness and capacity of stakeholders, particularly community-based forest management groups, to respond to climate change;
- Climate-proofing forest management plans to maintain ecosystem functions and resilience;
- Promoting income diversification for vulnerable groups, including women, Dalits, Indigenous Peoples, and disadvantaged households;
- Strengthening the capacity of local forest user groups to engage in and implement LAPAs.

### **Karnali Province Development Priorities**

478. At the provincial level, the project supports Karnali's goal of increasing production and competitiveness of forest and agricultural products while reducing climate change impacts. This includes:

- Conserving and promoting agro-biodiversity by protecting indigenous plant, animal, and bird species;
- Developing and expanding environment-friendly, research-based agro-technologies to minimize adverse climate impacts;
- Engaging diverse institutions and communities, including cooperatives, in defining and implementing mitigation and adaptation responsibilities.

479. Through its design and implementation, the project integrates technical, institutional, and socio-economic dimensions of vulnerability in Karnali's forest landscapes. Its outcomes directly support national and provincial climate strategies while advancing inclusive, locally led climate resilience.

#### **4.4.5.2 Engagement with NDA and Government Endorsement**

480. The project has been developed in close consultation with Nepal's National Designated Authority (NDA), the Ministry of Finance. The NDA has formally endorsed the project and implementation arrangements, confirming the project's consistency with Nepal's climate strategies and institutional frameworks. A No-Objection Letter (NOL) will be issued in line with the GCF's requirements prior to submission of the full funding proposal. The project contributes directly to the national climate finance programming priorities led by the Ministry of Forests

and Environment (MoFE) and aligns with its implementation roadmap for the NAP. Local stakeholders are fully engaged in the project development.

#### **4.4.5.3 Executing Entity and Accredited Entity Capacity**

481. The National Trust for Nature Conservation (NTNC) will serve as both the Accredited Entity (AE) and co-Executing Entity (EE) for this project. NTNC is Nepal's leading conservation institution and a GCF Direct Access Entity, with extensive field presence from the Terai to the high Himalayas. It has over four decades of experience in delivering landscape-scale conservation, climate adaptation, and sustainable livelihoods projects in partnership with national and subnational government agencies.
482. NTNC was established by an Act of Parliament and operates under a national mandate to support the Government of Nepal in biodiversity conservation, sustainable development, and climate-related programming. Its Governing Board is chaired by a nominee of the Prime Minister and includes senior representatives from multiple ministries, which reinforces its legitimacy and ensures strategic alignment with national priorities. This institutional structure enhances country ownership of the project and embeds national oversight in its implementation.
483. NTNC has successfully implemented multi-million-dollar projects funded by the World Bank, UNDP, GEF, and bilateral partners, and has deep relationships with CFUGs, Indigenous Peoples' organizations, and rural cooperatives. It has managed forest-based enterprise initiatives, landscape restoration efforts, and disaster risk reduction programs, many in the Karnali region. Its internal fiduciary, safeguards, procurement and M&E systems are well established, and clear institutional firewalls will be maintained between its AE and EE functions for this project.

#### **4.4.5.4 Stakeholder Consultations and Activity Selection**

484. Over 30 extensive stakeholder consultations were carried out during project preparation to ensure that the proposed design reflects the needs and aspirations of communities and institutions across the target region. Consultations were conducted in all four project districts (Jumla, Jajarkot, Dolpa, and Dailekh), as well as at provincial and national levels.
485. Participants included local governments, CFUGs, cooperatives, women's groups, Indigenous Peoples' organizations, district forest offices, and civil society stakeholders. Methods included community workshops, key informant interviews, and focus group discussions, with particular emphasis on inclusion of marginalized voices. Feedback informed the selection of target interventions and shaped the locally led approach to adaptation, forest governance, and enterprise support. Stakeholder engagement details are available in the Consultation report section, as well as in Annex 10.1.
486. Stakeholders emphasized the need for restoration of degraded forests, expanded livelihood options linked to NTFPs, early warning systems, and more inclusive planning processes. The project has been structured to directly respond to these local priorities while ensuring strong alignment with national strategies.

#### **4.4.5.5 Multi-Stakeholder Engagement Plan**

487. The project embeds participatory governance and multi-stakeholder engagement throughout its design and delivery. Local governments and CFUGs will lead activity prioritization and planning under the LLCA approach. Institutional arrangements — including Local Adaptation Plan for Action (LAPA) processes, grievance redress mechanisms, and participatory M&E — will ensure two-way accountability between communities, implementers, and government partners.
488. During implementation, periodic learning exchanges and social audits will be held in target districts. A Technical Advisory Group (TAG) composed of government and non-government experts will provide quality assurance and promote knowledge-sharing across institutions. Engagement will also extend to relevant national ministries (e.g., MoFE, Ministry of Agriculture), research bodies, private sector actors, and civil society.

#### 4.4.6 Efficiency and effectiveness

489. **Overall portfolio cost-effectiveness.** The completed modelling indicates strong economic feasibility. Discounted (NPV) benefits are US\$63.14 million compared with discounted (NPV) costs of US\$8.51 million, giving a Net NPV of US\$54.63 million, a Benefit–Cost Ratio (BCR) of 7.42, and an Economic Internal Rate of Return (EIRR) of 54%. The modelled beneficiary count (considering beneficiaries per benefit stream rather than unique beneficiaries) is 109,649 people. On a per-beneficiary basis, weighted discounted benefits are approximately US\$316/person, compared with weighted discounted costs of approximately US\$60/person (net US\$256/person).
490. **Cost per hectare.** For area-based interventions where unit costs are specified, the modelling implies competitive unit costs for large-scale delivery through community platforms. Improved SFM (Activity 1.1.1) is costed at approximately US\$166/ha, while restoration at priority sites (Activity 1.1.2) is higher at approximately US\$1,106/ha. Targeted NbS (Activity 1.1.3) shows a higher intensity cost of approximately US\$10,743/ha, consistent with a smaller set of hotspot/engineering-type measures that deliver high per-person benefits in priority risk locations.
491. **Cost per beneficiary and value drivers.** The results are not marginal: two interventions drive most monetised value and scale. Community-Based EWS (Activity 2.1.4) generates a net NPV of US\$12.66 million (BCR 43.81, EIRR 153%) for approximately 45,000 beneficiaries, with a low discounted cost of US\$2.75/person. Forest restoration (Activity 1.1.2) generates a Net NPV of US\$3.74 million (BCR 4.38, EIRR 16%) for approximately 17,500 beneficiaries. Together these two lines account for approximately two-thirds (~63%) of total Net NPV when excluding the social value of carbon, providing a robust portfolio anchor for cost-effectiveness. The social value of carbon generates a NPV of US\$28.46 million; ~52% of total NPV.
492. **Cost per tCO<sub>2</sub>e reduced (mitigation benefit).** While this is an adaptation project, the model includes a quantified mitigation benefit of 1,101,385 tCO<sub>2</sub>e. Using the total project cost of US\$9.21 million, the indicative cost is US\$8.4/tCO<sub>2</sub>e, and using the GCF contribution of US\$8.51 million the indicative cost is US\$7.7/tCO<sub>2</sub>e.
493. **Benchmarking vs similar Nepal projects.** The above metrics—including BCR (7.42), EIRR (54%), and low cost per beneficiary—provide a strong basis for benchmarking against comparable adaptation and Nature-Based Solutions programmes in Nepal. In particular, the strong cost-effectiveness of community-based Early Warning Systems is consistent with the broader evidence base showing that warning systems deliver large avoided-loss benefits at relatively low unit cost.

#### Financial Adequacy

494. **Suitability of grants for adaptation.** The quantified benefits demonstrate that the funding structure is appropriate for an adaptation programme that delivers significant public-good value (avoided losses, ecosystem service protection, and resilience). The portfolio achieves a large positive Net NPV (US\$54.63m) with strong returns (EIRR 54%), supporting that the scale of funding is commensurate with the value of expected benefits.
495. **Justification of funding amount and structure.** The composition of benefits further supports the adequacy of a grant-financed structure. The model estimates social value of carbon (NPV USD 28.46 million), with avoided losses (NPV USD 20.43 million) and additional production and income value (NPV USD 14.24 million) as the dominant benefit streams. Because a large share of benefits accrues as public goods and is not fully captured by private actors, concessional grant finance is appropriate and justified.

##### 4.4.6.1 Minimum Concessionality

496. **Market failures and low private incentives.** The model confirms that a substantial share of benefits arises from avoided losses and ecosystem/public-good outcomes rather than directly monetisable private returns. These benefits are diffuse and non-excludable (e.g., reduced disaster impacts, watershed regulation, improved preparedness), creating classic under-investment risk.
497. **Conservative treatment strengthens the grant case.** Several enabling/institutional activities are conservatively treated in the model as costs with zero monetised benefits (i.e., not credited in the benefits stream). This means the portfolio BCR is conservative: public-good and institutional strengthening benefits are

under-counted relative to the full theory of change, reinforcing the appropriateness of concessional grant finance.

#### 4.4.6.2 Leveraging and Catalysation

498. **Co-financing ratio and local contributions.** The model records non-GCF contributions including government co-funding (US\$0.7m; 6.3%) and a substantial community labour contribution (US\$1.9m; 17.1%), against GCF costs of US\$9.3851m (76.6%), for a total project cost (not discounted) of US\$11.11m. Non-GCF contributions therefore represent approximately 23.4% of total project resources in the model, demonstrating meaningful domestic/community leverage.
499. **Catalysation mechanism.** The results also demonstrate that value is achieved through scalable institutional platforms (notably CFUG-based SFM and community-based EWS) that can be sustained and expanded through local systems. The highest-return lines (EWS; SFM) are precisely those most amenable to replication and mainstreaming by local/provincial institutions, supporting the project's catalysation rationale.

#### 4.4.6.3 Long-Run Viability

500. **Operation and maintenance (O&M) and sustainment logic.** The modelled results indicate that key high-return interventions deliver strong value at low unit cost per beneficiary (e.g., EWS discounted cost US\$6.6/person with very high avoided-loss benefits). This supports long-run viability provided O&M responsibilities and financing streams are defined (e.g., municipal budgets, CFUG mechanisms, and community DRM structures).
501. **Institutional sustainability.** The portfolio's strongest-performing activities are institutionally grounded (CFUG-delivered SFM; community-based EWS) and therefore more likely to persist beyond project completion. Where an activity shows weak standalone returns (e.g., value chain analysis/incubation treated narrowly), it should be interpreted as an enabling investment whose primary function is to unlock and sustain benefits in other lines rather than to generate immediate, directly attributable monetised returns. Overall, the portfolio remains strongly positive even under conservative assumptions, indicating a high likelihood of sustained net benefits over the project life.

## 4.5 Sustainability and Exit Strategy

The project has been designed, and will be implemented, so as to ensure that its benefits and paradigm shift potential (as described in section 4.4.2) are maintained after project closure, in support of the local communities and governments.

### 4.5.1 Overall sustainability

502. **Locally-led design and implementation ensuring local multistakeholder long-term ownership** The project is underpinned by the **locally-led climate action (LLCA)** approach (Section 4.2.1), building long-term sustainability by embedding decision-making, resource management, and accountability within local institutions that will continue to function beyond the project's lifespan. By strengthening the capacity, ownership, and leadership of communities — particularly marginalized groups — the approach ensures that climate adaptation practices are locally driven, context-responsive, and durable.
503. **The project emphasizes ownership from its inception via Inclusive Planning and Design** by engaging provincial and local governments, community forest user groups (CFUGs), community-based organizations (CBOs), and the private sector to meet their needs and ensure buy-in. Local consultations during project preparation ensured the design of activities addressing adaptation needs of stakeholders.
504. **Alignment with Stakeholder Needs and Priorities:** Community buy-in will be explicitly secured and maintained through consistent, participatory co-design and co-implementation processes from project inception, guaranteeing that interventions are directly responsive to identified local needs and priorities articulated through CFOPs, LAPAs and community-level vulnerability assessments. This deep engagement fosters genuine local ownership and a shared sense of responsibility for the long-term success and maintenance of project outcomes.



## 505. Improved governance, institutional and policy processes fostering the continuation of adaptation action

- **Mainstreaming and Operationalizing the Local Adaptation Plan for Action (LAPA) Framework (Activity 2.1.2.):** The LAPA framework provides a robust mechanism for integrating climate change adaptation into local and national planning. The project adopts and evolves the LAPA framework to: (a) identify climate-vulnerable wards and communities, including their adaptation needs and priorities and, (b) expand scope by moving beyond individual municipal levels to interconnected ecological units, potentially leveraging larger funding sources such as a Karnali-wide Adaptation Plan.
- **Co-developing a digital platform to streamline registration and licensing processes:** this activity (**Activity 1.2.3.**) involves establishing a provincial-level program facilitation unit (PFU) to spearhead engagements with community enterprises—with regular mandated meetings to assess applications, reducing transaction costs, improving regulatory compliance, and enabling enterprises to access public support for mechanisation, infrastructure, and market development. This ensuring that local entrepreneurship involved in the sustainable forestry-based activities promoted by the project can continue their activities without disruption.

## 506. Strengthened Capacity and Institutional Systems sustaining project interventions in the long run

- **Capacity Building activities, including training components, are multi-layered to maximize impact:** these aim to improve local communities' adaptation actions and adaptive capacity (**Activity 1.1.1, 1.1.2., 1.2.2., 2.1.1., 2.1.4., 2.1.5.**), including for the most vulnerable ones, but also to enable the provincial and local governments to provide a propitious environment for adaptation governance and frameworks (**Activity 2.1.1., 2.1.2., 2.1.3., 3.1.3.**). The locally-led and designed training programs will involve a training-the-trainer approach, ensuring the continuity of such context-relevant programs. Besides, the project supports the long-term growth of businesses involved in sustainable forestry practices (**Activity 1.2.4.**), which themselves are key to Karnali's long-term climate resilience.
- **Strengthened community institutions and local governments will enable the continuation of adaptation actions via the devolution of decision-making and enhanced coordination:** Enhanced capacity of sectoral ministries for sectoral adaptation planning and integration enables local governments to sustain adaptation initiatives independently. In terms of disaster preparedness, the related tools (**Activity 2.1.4.**) will be transferred to local authorities to support ongoing disaster management efforts. Further, enhancing coordination among government levels and stakeholders for collective climate adaptation actions will result in strengthened relationships (**Activity 2.1.1., 2.1.2., 2.1.3.**).

## 507. Knowledge-Sharing for Replicability and Scaling up

- **The project's successes and lessons will be shared with other mountainous landscapes in Nepal and globally.** Tools, guidance, and experiences from the sub-river basin adaptation approach will be made available to other countries, promoting broader adoption of effective practices. The Climate Change Communication Strategy (**Activity 3.1.1**) will be a key guiding document for provincial governments, enabling integration of adaptation and mitigation measures.
- **The efficient dissemination of successful models and practices (e.g. to other provinces and countries with similar conditions) will support the project's replicability potential.** Documenting successful activities, such as the model sites (**Activity 2.1.5**) will be a powerful vector to demonstrate successful innovative adaptation practices, while development of a replication and scaling strategy will collate successful climate-smart initiatives identified in the region (**Activity 1.2.4**) and climate advocacy workshops (**Activity 3.1.3**) will showcase lessons learned and best practice from Outcomes 1 and 2 to cross-sectoral representatives from provincial government, local governments and supporting organizations. Further, the Ministry of Industry, Tourism, Forest, and Environment (MoITFE) of the Karnali Province, has expressed commitment to monitor the project's impacts and replicate successful approaches efficiently. This will ensure continued advocacy and support for climate change interventions.

## 508. Adaptive management

- **The project will implement continuous feedback mechanisms,** including established grievance redress mechanisms, and engage local actors in participatory monitoring and evaluation, allowing for adaptive

management that ensures ongoing alignment with evolving stakeholder needs and priorities beyond project implementation.

- **Overall project Monitoring and Evaluation (M&E) will allow for adjustment of implementation as needed and will demonstrate the impact of the project activities.** The NTNC M&E Officer will coordinate with the project coordination committee and national steering committee for periodic monitoring and reporting activities. A mid-term review and final evaluation will be conducted by an independent institution. The M&E officer, Project Officer and Gender Equality and Social Inclusion (GESI) Officer will prepare periodic monitoring reports (annual reports). Evaluation of project performance, documentation of results, and recommend corrective measures as required will be concurrent throughout the project period.
- **The capacity-building activities mentioned above will strengthen systems for planning, implementation, and monitoring (Activity 2.1.1., 2.1.2. 2.1.4.),** enabling stakeholders to assess results and adapt strategies as needed.

#### 4.5.2 Financial sustainability

509. The project's financial sustainability will be achieved through a combination of improved resource management and mobilization, strengthened value chains and private sector engagement.

#### 510. Securing post-project financing:

- **Early and consistent engagement with provincial and municipal finance and planning departments to co-develop detailed post-project financial commitment plans,** which will be formally integrated into their annual budgeting cycles based on demonstrated project success and alignment with national LAPA priorities.
- **Leveraging the LAPA framework to finance future adaptation actions (Activity 2.1.2.):** By using the LAPA framework as a foundation for landscape management, the project demonstrates a paradigm shift, creating a model for hybrid and scalable adaptation planning. The framework's operationalization ensures financial resources are channeled effectively from federal and provincial governments to local levels for future adaptation actions. The framework will also align with funding mechanisms such as National Park Buffer Zone Funding and provincial funding, enabling sustainable financing.
- **Improved provincial and local government planning processes, including providing technical assistance for the adoption of climate budget coding and tracking systems within government entities (Activity 2.1.3.),** will enable targeted and transparent allocation of public funding for climate activities enabling transparent allocation and monitoring of climate finance.
- **Co-creating joint investment proposals and resource mobilization strategies with local and provincial governments,** targeting other national and international funding sources. These efforts will be supported by demonstrated co-financing from the government and complementary funding sources during the project period.
- **Institutionalising training programs:** the project will ensure the continuity of locally-led and designed training programs through government and NGO funding.

#### 511. Improved Forest and Resource Management leads to sustained supply for forest-dependent and community-led businesses:

- Under **Activity 1.1.1** (sustainable forest management practices) and **Activity 1.1.2** (forest restoration), the project will enhance the long-term viability of forest resources. These activities will create a sustainable foundation for the supply chains supported under **Activity 1.2.1.**
- Incentives will be provided to CFUGs to maintain forest resources, ensuring economic motivation aligns with sustainable practices.

#### 512. Enhanced finance and market access for forest-dependent and community-led businesses:

- The project will facilitate access to finance for producers and processors, from local financial institutions, public-private-community partnerships (PPCPs), cost-sharing arrangements, and tailored value chain financing models that reflect the seasonal, climate-sensitive nature of forest-based production, helping them finance activities aligned with climate adaptation and mitigation goals.

- **Activity 1.2.3.** will encourage private sector investment in climate-smart value chains, including agroforestry, non-timber forest products (NTFPs), and sustainable forestry. Value chain financing models will provide producers and processors access to additional financial resources.
- Strengthened institutional frameworks at the provincial, municipal, and community levels (e.g., CFUGs, farmer groups, MSMEs) will ensure a continuous flow of financial resources.
- Strengthened access to quality control and certification services for public-private-community groups will improve their ability to establish viable business models, inspired by successful examples from NTNC-led initiatives.

A proposed sustainable financial mechanism accounts for resources at provincial, municipal, and sub-local levels, including ward committees, CFUGs, farmer and watershed groups, and MSMEs. This holistic approach ensures that benefits are equitably distributed and sustained, empowering local stakeholders and institutions to maintain and scale project outcomes beyond its lifespan.

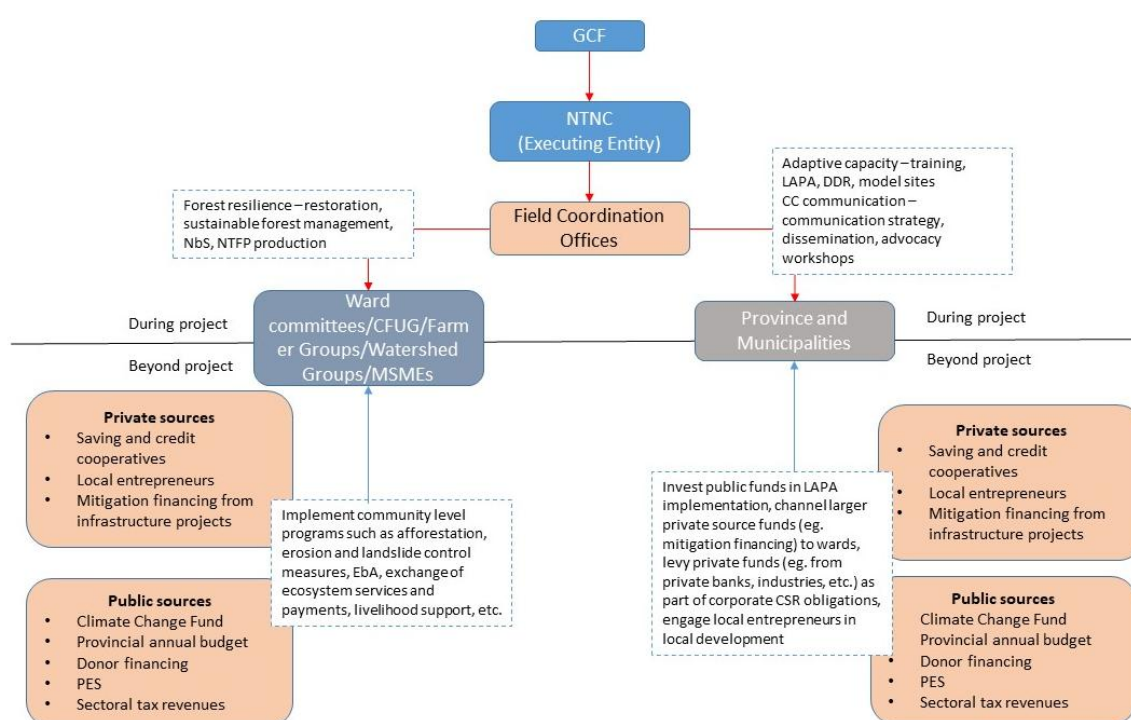


Figure 10: Sustainable financial mechanism (arrows indicate flow of funds)

### 4.5.3 Project Exit Strategy

513. The comprehensive sustainability systems outlined above provide a clear and credible pathway for the GCF to responsibly exit at the close of the implementation period. By embedding adaptation responsibilities within local governance frameworks, aligning project interventions with existing national and provincial strategies, and establishing financing mechanisms suited to the Karnali context, the project creates the institutional, financial, and social conditions needed for long-term continuity. Capacity strengthening of local governments, CFMGs, and MSMEs ensures they are equipped not only to sustain core activities but also to innovate and expand them independently. The formal integration of LAPA-driven planning and budgeting processes alongside strengthened climate-smart value chains and enabling policies and coupled with a dedicated sustainable finance mechanism, positions stakeholders to sustain impact without reliance on continued external funding, leveraging additional finance to enable continued climate investments from public, private, and blended sources beyond the project period. Strengthened governance frameworks and knowledge dissemination platforms will support adaptive planning and implementation by local institutions; integration of adaptation measures into formal development planning and budget cycles will anchor long-term climate responsiveness; and enhanced access to markets and financing will allow forest-based enterprises to grow, increasing incomes and reinforcing

incentives for sustainable resource use. These interlinked systems — grounded in LLCA principles — allow the GCF to exit with confidence that the adaptive capacities, institutional platforms, and financial channels required to maintain and scale the project's benefits will remain active, accountable, and locally led.

## 5 Logical Framework

### LOGICAL FRAMEWORK

#### 1. GCF Impact level: Paradigm shift potential (max. 300 words)

Assessment Dimension	Current state (Baseline)		Potential target scenario (Description)	How the project/programme will contribute (Description)
	Description	Rating		
Scale	In Karnali Province, climate adaptation and resilience interventions are largely implemented as discrete, project-based activities with limited geographic reach and short implementation horizons. While community forest management groups, municipalities, and local organisations actively engage in forest management, livelihood support, and disaster preparedness, these efforts are typically confined to individual sites or communities. The absence of coordinated, province-wide approaches that cut cross district and municipal levels, with limited integration into public planning and financing systems constrains the ability of locally led initiatives to address climate risks that operate at landscape and watershed scales.	<u>Low</u>	By project completion, locally led climate-resilient forest management, nature-based solutions, and adaptation practices are implemented at sufficient scale to influence development trajectories across the Karnali Province. Coordinated action across multiple municipalities, community forests, and value chains enables landscape-level resilience outcomes, while alignment with provincial planning and budgeting processes allows these approaches to inform broader public investment decisions. Scale is demonstrated not only through geographic coverage, but through institutional uptake and sustained implementation across systems.	The project contributes to scale by moving beyond isolated pilots and applying a consistent LLCA framework across 31 municipalities, 80 community forests, and multiple climate-sensitive sectors. By embedding community-level actions within municipal and provincial planning, regulatory, and financing systems, the project creates pathways for expansion through local public institutions rather than reliance on stand-alone projects. Landscape-level forest management, NbS implementation, and coordinated adaptation planning enable cumulative impacts that address climate risks at the scale at which they occur.
Replicability	A wide range of local knowledge, coping strategies, and adaptation practices exist within communities and local institutions, shaped by diverse ecological and socio-economic conditions and traditional practices. However, these practices are rarely documented in a structured way, and learning remains largely informal and localised. The lack of standardised tools, shared methodologies, and institutional learning mechanisms limits the ability of successful approaches to be replicated across communities, municipalities, or other provinces facing similar climate challenges. Moreover, underdeveloped markets and inadequate access to finance constrains opportunity for replicating best practices for climate-resilience at scale.	<u>Low</u>	By project completion, the approaches piloted and implemented in Karnali — particularly those related to locally-led forest management, NbS, value-chain development, and community-based preparedness — are documented, validated, and accessible for replication in other contexts. Replication is enabled through clear methodologies, adaptable tools, and institutional channels that support uptake beyond the original project sites, underpinned by strengthened markets and financial integration. Knowledge generated is widely communicated through the project informing policy, planning, and practice at multiple levels, supporting transferability across geographies and sectors.	The project enhances replicability by translating locally grounded practices into codified yet flexible models, including climate-responsive forest operational planning, NbS design and screening processes, CB-EWS methodologies, and LAPA integration approaches. Through model sites, peer-to-peer learning, and structured knowledge dissemination platforms, the project facilitates horizontal replication between communities and municipalities. Market development and financial integration create enabling environments for adopting sustainable forest-based livelihoods and incentivise uptake of SFM. Vertical replication is supported by integrating lessons into provincial strategies, guidelines, and communication systems, enabling uptake through government-led programmes and future investments.

<b>Sustainability</b>	Climate adaptation and resilience efforts in Karnali are often constrained by limited institutional capacity, fragmented financing, and dependence on time-bound external support. While community institutions such as CFMGs play a critical role in resource management, they face challenges in sustaining interventions once project funding ends, particularly where economic incentives or formal governance linkages are weak, and markets remain underdeveloped. This limits the long-term durability of climate resilience outcomes.	<u>Low</u>	By the end of the project, climate-resilient forest management, livelihood systems, and adaptation mechanisms in Karnali are institutionally embedded, economically viable, and socially owned. Communities and local governments have the capacity, incentives, and resources to maintain and adapt interventions over time, ensuring that resilience benefits persist beyond the project lifecycle. Sustainability is reflected in continued implementation, learning, and financing without reliance on external project support.	The project strengthens sustainability by anchoring LLCA approaches within formal governance systems, strengthening local institutional capacity, and linking climate-resilient livelihoods to functioning markets and financial mechanisms. By improving the economic viability of forest-based value chains, embedding adaptation planning into municipal and provincial systems, and fostering community ownership through participatory processes, the project reduces dependency on external funding. These combined institutional, financial, and social foundations support the long-term continuation and evolution of climate resilience outcomes.
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## 2.1. GCF Outcome level: Reduced emissions and increased resilience (IRMF core indicators 1-4, quantitative indicators)

GCF Result Area	IRMF Core Indicators (1-4) <sup>16</sup>	Means of Verification (MoV)	Baseline	Target		Assumptions / Note
				Mid-term	Final <sup>17</sup>	
<u>Total Adaptation Beneficiaries</u>	<u>Core 2: Direct and indirect beneficiaries reached</u>	MoFE Annual Reports Community Surveys  Quarterly Monitoring Reports Annual Progress Reports	No beneficiaries prior to implementation  Direct: 0 (Male: 0, Female: 0)  Indirect: 0 (Male: 0, Female: 0)	Direct: 50,000 (Male: 24,450, Female: 25,550)  Indirect: 423,218 (Male: 206,940, Female: 216,278)	Direct: 109,690 (Male: 53,640, Female: 56,050)  Indirect: 423,218 (Male: 206,940, Female: 216,278)	100 households per CFMG for a total of 80 CFMGs benefit directly from revised/new Community Forest Operational Plans that enable coordinated adaption action in their communities.  Forest-dependent communities in the 31 target palikas indirectly benefit from revised LAPAs (90% of population)
<u>ARA1 Most vulnerable people and communities</u>	<u>Supplementary 2.1: Beneficiaries (female/male) adopting improved and/or new climate-resilient livelihood options</u>	MoFE Annual Reports MoITFE Annual Reports CFUG Annual Reports CFUG surveys	No beneficiaries prior to implementation	10,000 (Male: 4,890, Female: 5,110)	21,060 (Male: 10,298, Female: 10,762)	65 households per CFMG for a total of 60 CFMGs receive training and support to adopt sustainable production and harvesting practices

<sup>16</sup> The IRMF Indicators are set out in the [Integrated Results Management Framework](#)

<sup>17</sup> The final target means the target at the end of project/programme implementation period. However, for core indicator 1 (GHG emission reduction), please also provide the target value at the end of the total lifespan period which is defined as the maximum number of years over which the impacts of the investment are expected to be effective.

		Quarterly Monitoring Reports Annual Progress Reports				
	<u>Supplementary 2.4: Beneficiaries (female/male) covered by new or improved early warning systems</u>	Implementation reports for CB-EWS Community Surveys BIPAD Portal Quarterly Monitoring Reports Annual Progress Reports	No beneficiaries prior to implementation  Populations living in mid- and high-mountain areas highly exposed to climate hazards, with limited adaptive capacity or access to early warnings to reduce to the impacts of extreme climate events.	0 (Male: 0, Female: 0)	64,185 (Male: 31,384, Female: 32,801)	Early warnings are effectively disseminated through the entities responsible for the coordination of disaster response  Communities the ownership of the CBEWS and local CDMCs are sustained and continue to operate the system and implement disaster preparedness actions  At least 70% of people in each of the 6 target municipalities are reached by the CBEWS.
<u>ARA2 Health, well-being, food and water security</u>	<u>Supplementary 2.2: Beneficiaries (female/male) with improved food security</u>	MoLMAC Annual Reports Household Food Security and Nutrition Surveys CFUG and Community Enterprise Records	No beneficiaries prior to implementation	10,000 (Male: 4,890, Female: 5,110)	21,060 (Male: 10,298, Female: 10,762)	CFUG members supported to adopt climate-resilient practices will have increased agricultural production.  Improved ecosystem services will increase productivity of agriculture and NTFPs.  Market development will increase household income and ability to buy staple foods.
<u>ARA4 Ecosystems and ecosystem services</u>	<u>Core 4: Hectares of natural resources brought under improved low-emission and/or climate-resilient management practice</u>  <u>Supplementary 4.1: Hectares of terrestrial forest, terrestrial non-forest, freshwater and coastal marine areas brought under resoration and/or improved ecosystems</u>	MoFE Annual Reports CFUG Annual Reports  Forest condition assessments (canopy cover, regeneration density, fire/drought damage proxies) Implementation Reports  Quarterly Monitoring Reports	0	600ha restored  5,000ha under improved management	1,000ha restored  10,000ha under improved management	CFMG members participate in restoration activities and maintain interventions in the long term.  50% of targeted CFMGs adopt SLM practices by mid-point.

		Annual Progress Reports				
<u>MRA4 Forestry and land use</u>	<u>Core 1: GHG emissions reduced, avoided or removed/sequestered</u>	MoFE Annual Reports CFUG Annual Reports  Remote sensor data Forest condition assessments (canopy cover, regeneration density, fire/drought damage proxies) Implementation reports  Quarterly Monitoring Reports Annual Progress Reports	0	2 yr: -25,119 t CO <sub>2</sub> e.	4 yr: -119,649 t CO <sub>2</sub> e. 20 yr: -1,101,385 t CO <sub>2</sub> e.	The mitigation potential was estimated using the FAO NEXT tool with reference values from the 2026 Nepal FRL  1,000ha of degraded forest restored, split equally across middle and high mountain areas  10,000ha of community forest under improved management



## 2.2. GCF Outcome level: Enabling environment (IRMF core indicators 5-8 as applicable)

IRMF Core Indicators (5-8)	Baseline context (Description)	Rating for current state (Baseline)	Target scenario (Description)	How the project will contribute	Coverage
<u>Core Indicator 5: Degree to which GCF investments contribute to strengthening institutional and regulatory frameworks for low emission climate-resilient development pathways in a country-driven manner</u>	In Karnali Province, climate-relevant policies and regulatory frameworks are in place at national and provincial levels, but their translation into locally actionable legislation, guidelines, and decision-making processes remains limited. Local governments and community institutions, including forest user groups, have formal mandates under Nepal's federal system, yet face constraints in systematically integrating climate risk, ecosystem-based approaches, and low-emission considerations into routine planning, budgeting, and implementation. As a result, locally led climate actions are often implemented in isolation rather than embedded within coherent institutional frameworks.	<u>medium</u>	By the end of the project, institutional and regulatory frameworks in Karnali Province enable locally-led, climate-resilient and low-emission development, with climate risk, ecosystem-based approaches, and community priorities systematically integrated into municipal and provincial planning, budgeting, and forest governance processes. Community forest management groups and municipalities operate within clearer, more coherent frameworks that support climate-responsive decision-making and implementation.	The project strengthens the enabling environment by embedding climate-responsive forest management, NbS, and LLCA principles into Community Forest Operational Plans, LAPAs, and provincial planning and budgeting frameworks, supported by targeted technical assistance and capacity building. Streamlining regulatory processes (e.g. forest harvesting license renewal), integrating climate resilience metrics into provincial systems, and facilitating structured policy dialogue ensure that locally-led actions are formally recognised, institutionally anchored, and sustained beyond the project period.	<u>Single sub-national area within a country</u>
<u>Core indicator 7: Degree to which GCF Investments contribute to market development/transformation at the sectoral, local, or national level</u>	Climate-relevant markets—particularly those linked to forest-based livelihoods, nature-based solutions, and climate-resilient production—remain small-scale, fragmented, and largely informal. Community producers and enterprises face limited access to finance, weak linkages to buyers and processors, and high transaction costs due to remoteness and underdeveloped value chains. These constraints limit the ability of locally led initiatives to move beyond subsistence or pilot activities toward sustainable, market-oriented climate-resilient enterprises.	<u>low</u>	By project completion, forest-based and NbS-linked markets in Karnali Province demonstrate increased functionality and resilience, with improved value-chain integration, greater participation of community producers and MSMEs, and emerging financial mechanisms that support climate-resilient and low-emission production. Locally-led enterprises move beyond subsistence activities toward more stable, market-oriented operations.	The project catalyses market transformation by strengthening the full ecosystem around forest-based value chains, including value-chain and feasibility analyses, enterprise incubation, climate-smart production and processing, and market and certification access. By facilitating public-private-community partnerships, linking producers to finance and government programmes, and promoting sustainable production standards, the project lowers entry barriers and enables locally-led enterprises to participate competitively in climate-resilient markets.	<u>Single sub-national area within a country</u>
<u>Core indicator 8: Degree to which GCF investments contribute to effective knowledge generation and learning processes, and use of good practices, methodologies and standards</u>	Local knowledge and experience exist within communities, CFUGs, and local governments on climate impacts and coping strategies, but these are rarely systematically documented or shared beyond the local level. Learning from past adaptation efforts is often project-specific, with limited mechanisms to capture lessons, standardise approaches, or feed evidence into provincial and municipal decision-making. As a	<u>low</u>	By the end of the project, Karnali Province has functioning systems for generating, documenting, and sharing climate knowledge and good practices, with lessons from locally led adaptation, forest management, and NbS systematically informing community, including the most vulnerable ones, municipal, and	The project operationalises learning by combining participatory forest and ecosystem assessments, training activities, community-based monitoring, adaptation model sites, CB-EWS, and structured communication and advocacy platforms under a provincial Climate Change Communication Strategy. Through guided learning exchanges, policy dialogue, and dissemination of locally grounded evidence, the	<u>Single sub-national area within a country</u>

result, locally-led climate actions are constrained by weak horizontal learning and limited institutional uptake of good practices.

provincial decision-making. Knowledge flows horizontally between communities and vertically into institutional planning processes.

project ensures that good practices and LLCA methodologies are documented, shared, and institutionalised rather than remaining project-specific.

*Choose an item. Choose an item.*

### 3. Project/programme specific indicators (project outcomes and outputs)

Project/programme results (outcomes/ outputs)	Project/programme specific Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions / Notes
				Mid-term	Final	
<b>Outcome 1: Enhanced resilience of forest ecosystems and forest-based livelihoods for vulnerable communities in Karnali Province.</b>	Percentage of targeted CFMGs demonstrating improved forest ecosystem condition under climate-resilient management practices	CFMG Operational Plans and annual progress reports  Forest condition assessments (canopy cover, regeneration density, fire/drought damage proxies)  Quarterly Monitoring Reports Annual Progress Reports	Baseline forest condition score for each targeted CFMG will be established at inception as part of forest quality assessments (Year 0 = 0% of CFMGs showing improvement)	50% of CFMGs showing improvement	100% of CFMGs showing improvement	<ul style="list-style-type: none"> <li>CFUGs retain secure tenure and legal authority to implement approved forest management plans throughout the project period</li> <li>No major disasters occur during the monitoring period (e.g. forest fire or landslide)</li> <li>Division Forest Offices continue to approve and support adaptive forest management approaches</li> <li>No significant increase in external pressures (illegal harvesting, encroachment) undermining forest condition gains.</li> </ul>
Output 1.1: Climate-resilient forest management, restoration and nature-based solution (NbS) services delivered in community forests.	Number of CFMGs adopting updated climate-responsive forest management plans	CFMG Operational Plans and annual progress reports Implementation reports  Quarterly Monitoring Reports Annual Progress Reports	Only 45% of CFMGs active and most CMOPs outdated or soon to expire.	80 CFMGs with updated CMOPs	80 CFMGs with updated CMOPs	<ul style="list-style-type: none"> <li>A formal adoption act (e.g. CFMG resolution, endorsed CFOP, or approval letter) exists and is required for a CFMG to be counted.</li> <li>The approval authority and procedure for forest management plans remains unchanged during the project period, allowing adoption to be completed and verified.</li> </ul>
	Number of climate-sensitive sites implementing new locally appropriate NbS	CFMG annual progress reports Implementation reports Site inspections  Quarterly Monitoring Reports Annual Progress Reports	0 new NbS sites	50 sites implementing NbS	200 sites implementing NbS	<ul style="list-style-type: none"> <li>Forest dependent communities select sites through CFOP processes and take ownership of NbS interventions.</li> <li>NbS interventions implemented at a site are new (i.e. not pre-existing or previously funded), ensuring additionality.</li> <li>Site boundaries remain sufficiently stable to allow unambiguous counting of sites.</li> </ul>

Output 1.2: Sustainable forest-based commodity value chain development and enterprise support services delivered.	Number of forest-based MSMEs or cooperatives receiving project support and achieving operational status	MSME registration documents Business plans and technical assistance records Production and sales records	0 entities supported by the project	5 enterprises supported 8 nurseries established	10 enterprises supported 8 nurseries established	<ul style="list-style-type: none"> <li>• Technical assistance, provision of tangible inputs and market/financial integration lead to fully operational enterprises.</li> <li>• Assuming two nurseries per district established in the first two years.</li> </ul>
<b>Outcome 2: Enhanced adaptive capacity and disaster preparedness of climate-vulnerable communities and local institutions in Karnali Province</b>	Percentage of targeted communities with improved adaptive capacity scores	Baseline, midterm and endline adaptive capacity assessments  Community self-assessment tools <sup>18</sup>	Very low <sup>19</sup> A quantitative baseline score based on the project-developed assessment scorecards will be established at inception.	30% of communities showing increased adaptive capacity	90% of communities showing increased adaptive capacity	<ul style="list-style-type: none"> <li>• Communities remain willing and able to engage in collective planning and implementation processes</li> <li>• Local leadership structures (CFUGs, ward committees) remain functional and inclusive</li> <li>• No major conflict, political instability, or governance disruptions undermine community cohesion</li> <li>• Climate information and services provided remain credible and trusted by communities</li> </ul>
Output 2.1: Integrated local adaptation, preparedness and learning services delivered to climate-vulnerable communities and local institutions in Karnali Province.	Number of LAPAs developed/revised and adopted	LAPA documentation Municipality annual progress reports Implementation reports  Endorsement by ward/municipal authorities  Quarterly Monitoring Reports Annual Progress Reports	0 LAPAs developed/revised by the project.	31 LAPAs developed/revised	31 LAPAs developed/revised and formally adopted	<ul style="list-style-type: none"> <li>• Municipal governments retain sufficient staffing and mandate to integrate preparedness measures into local systems</li> <li>• Political wiliness to support revision of LAPAs remains in place.</li> <li>• Provincial and federal policy frameworks continue to support decentralised disaster risk reduction and adaptation</li> <li>• Inter-agency coordination (e.g. forestry, disaster management, agriculture) remains functional</li> <li>• No extreme disaster overwhelms institutional capacity beyond recovery thresholds during the project period</li> </ul>
	Number of individuals trained (disaggregated by gender and social group) on climate adaptation and preparedness	Training attendance records Post-training evaluation forms  Quarterly Monitoring Reports Annual Progress Reports	0	200 (50% women, 30% IP or Dalit)	450 (50% women, 30% IP or Dalit)	<ul style="list-style-type: none"> <li>• Participant registration systems capture sex, social group, and unique identifiers in a consistent format at the time of training.</li> <li>• Individuals are counted once only across multiple sessions, using a deduplication method to avoid double counting.</li> <li>• Training records (attendance sheets, completion certificates, or digital logs) are complete, legible, and verifiable for all reported participants.</li> </ul>

<sup>18</sup>Assessment tools to be developed at project inception by the project M&E officer

<sup>19</sup> According to Nepal's Vulnerability and Risk Assessment and Identifying Adaptation Options (2001)

<b>Outcome 3:</b> Strengthened climate awareness and communication.	Percentage of surveyed beneficiaries demonstrating increased climate risk awareness	Baseline, midterm and endline knowledge-attitude-practice (KAP) surveys Focus group discussions	Baseline awareness score (%) to be determined at inception	20% of beneficiaries showing increased awareness	50% of beneficiaries showing increased awareness	<ul style="list-style-type: none"> <li>• Social group categories are locally agreed and ethically collected, allowing disaggregation without exclusion or misclassification.</li> <li>• Survey respondents can be sampled in a way that is comparable over time (panel or repeated cross-section with consistent stratification).</li> <li>• Awareness questions are locally understandable (language/culture) so changes reflect real awareness, not misunderstanding or enumerator effects.</li> </ul>
Output 3.1: Provincial and local climate communication and advocacy services established and delivered in Karnali Province.	Number of climate communication products produced and disseminated	Published materials (radio scripts, briefs, infographics) Dissemination logs	0	31 communication products	62 communication products	<ul style="list-style-type: none"> <li>• Assuming two locally-appropriate products per target municipality</li> <li>• A product is counted only once it has been both produced and disseminated, with dissemination defined by an agreed minimum criterion (e.g. broadcast aired, materials distributed, content published).</li> <li>• Verifiable evidence of dissemination (broadcast logs, distribution records, publication links, screenshots, or copies) is available for each product counted.</li> <li>• Minor adaptations or translations of the same core content or repeated broadcasts within the same municipality are counted as one product.</li> </ul>

### Project/programme co-benefit indicators

Co-benefit 1: Improved community health	Percentage reduction in reported cases of climate-sensitive illnesses (e.g. waterborne or vector-borne diseases) among beneficiary communities	Municipal health post records District/provincial health statistics Household health surveys (baseline/endline)	Average annual incidence rate (cases per 1,000 people) in target communities to be established at project inception	10% reduction	20% reduction	<ul style="list-style-type: none"> <li>• Improved ecosystem services improve water quality, reduce stagnant water, thereby reducing the prevalence of waterborne diseases and increased food security.</li> <li>• Improved forest-productivity increases access to medicinal plants for traditional healthcare.</li> <li>• Health facilities consistently record cases using comparable diagnostic categories</li> <li>• No major disease outbreaks unrelated to climate (e.g. pandemics) distort trends</li> </ul>
Co-benefit 2: Improved biodiversity in community forests	Average increase in native plant species richness in restored or sustainably managed community forest areas	Participatory biodiversity assessments Forest inventory and ecological survey reports Quarterly Monitoring Reports Annual Progress Reports	Baseline average number of native species per monitoring plot be established at project inception	5% increase	15% increase	<ul style="list-style-type: none"> <li>• Monitoring plots remain consistent across measurement periods</li> <li>• Species identification capacity is adequate and consistent</li> <li>• No large-scale disturbance events invalidate plots</li> </ul>

#### 4. Project/programme activities and deliverables

Output	Activities	Description	Deliverables
Output 1.1: Climate-resilient forest management, restoration and nature-based solution (NbS) services delivered in community forests.	Activity 1.1.1. Improve Sustainable Forest Management (SFM) for Increased Resilience to Climate Change and Carbon Sequestration Benefits	<ul style="list-style-type: none"> <li>• Conduct a landscape level assessment of the state of forest ecosystems, forest quality, and forest ecosystem services and develop a manual for forest quality assessments for local forest authorities to identify and implement measures to accelerate natural recovery and regeneration of forests.</li> <li>• Based on forest assessments, identify and select 80 natural community forests in the mid-hill districts that have established CFMGs and are highly impacted by climate change, identifying a sub-set of 50 of the most vulnerable CFMGs for additional direct restoration support.</li> <li>• Through a participatory, community-led process — supported by Division Forest Office and project technical advisors — co-develop Community Forest Operational Plans (CFOPs) for 80 CFMGs, promoting climate-resilient land use practices in community forests. Management plans will target an average area of 125ha per CFMG, and will include identification of priority sites for restoration (high-erosion zones, landslide risk areas, critical water source areas) and revising community forest zonation.</li> <li>• Train existing CFMGs on nursery management, sustainable production and harvesting practices for forest resources, specifically targeting women, Dalits and indigenous communities.</li> <li>• Implement Sustainable Forest Management practices identified in CF management plans, procuring equipment, inputs, or labour for forest patrols and fire management.</li> <li>• Train CFMGs on participatory forest monitoring.</li> </ul>	<p>1 forest quality assessment manual</p> <p>80 CFs assessed</p> <p>80 revised CFOPs</p> <p>50 SFM implementation packages based on CFOPs</p> <p>50 participatory forest monitoring training workshops</p>
	Activity 1.1.2. Restore priority sites in community forests, prioritizing species that can be integrated into sustainable NTFP supply chains	<ul style="list-style-type: none"> <li>• Provide technical assistance and training to 50 CFMGs to identify priority sites for forest rehabilitation, as well as to optimize species selection to enable livelihood diversification and resilience through agroforestry and NTFP production.</li> <li>• Restore 1,000ha of degraded community forests through assisted natural regeneration and enrichment planting (~20ha per CF).</li> </ul>	<p>50 CFMG restoration prioritisation and training workshops</p> <p>1,000 ha of restored forest</p>
	Activity 1.1.3. Implement Targeted Nature-Based Solutions (NbS) for Watershed and Land Resilience	<ul style="list-style-type: none"> <li>• Facilitate the selection of 200 climate-sensitive sites across the 31 target municipalities, engaging local forestry departments, CFMGs, and local leadership.</li> <li>• Provide TA to CFMGs responsible for target sites to identify and plan locally-appropriate NbS — including the application of ESS screening processes to ensure all selected NbS options are low-risk.</li> <li>• Procure services, input and equipment to implement NbS across 150 hectares at the selected sites, in line with locally-led designs.</li> </ul>	<p>200 NbS solutions (as identified in CFOPs)</p>
Output 1.2: Sustainable forest-based commodity value chain development and enterprise support services delivered.	Activity 1.2.1. Value Chain Analysis and Enterprise Incubation	<ul style="list-style-type: none"> <li>• Conduct baseline value chain and feasibility studies to validate existing and gather additional information for sustainable NTFP/MAP value chains in the 31 target districts.</li> <li>• Conduct a vulnerability assessment of the NTFP resource base in the NTFP-rich forests in the mid-hill and high mountain areas of Karnali Province to inform sustainable harvesting practices and low-carbon production systems.</li> <li>• Provide Technical assistance to local communities for the preparation of comprehensive production, processing, and marketing business plans for 10 NTFP-based Micro, Small,</li> </ul>	<p>1 value chain assessment and feasibility study</p> <p>1 NTFP/MAP vulnerability assessment</p> <p>10 forest-based MSME business plans</p> <p>8 community nurseries</p>

		<p>and Medium Enterprises (MSMEs), explicitly linking producers and processors with target markets — particularly targeting women, Dalits, and Indigenous Peoples (IPs) and PwD households as producers and processors.</p> <ul style="list-style-type: none"> <li>• Provide early-stage, non-capital assistance to targeted MSMEs for the implementation of NTFP Business Plans.</li> <li>• Establish and support NTFP nurseries to promote the cultivation of high-value NTFPs within agroforestry practices, ensuring a sustainable and resilient resource base.</li> </ul>	
	Activity 1.2.2. Promote Sustainable Production and Harvesting Practices	<ul style="list-style-type: none"> <li>• Train 60 community forest user groups on climate-smart, sustainable NTFP production and harvesting techniques to reduce over-exploitation and premature collection, thereby mitigating deforestation and degradation risks.</li> <li>• Host engagement workshops, meetings and networking events to facilitate partnerships for the adoption of climate-friendly, low-carbon post-harvest processing systems, including establishing agro-product processing plants (e.g., essential oil distillation plant).</li> <li>• Provide input packages for technologies, inputs, and services that enable the uptake of climate-responsive and high-yielding NTFP production practices, including climate-resilient seeds/seedlings, processing/drying equipment, packaging, etc.</li> </ul>	<p>60 training workshops</p> <p>Introductory meetings and workshops</p> <p>60 NTFP enterprise input packages</p>
	Activity 1.2.3. Facilitate Market Access and Financial Mechanisms	<ul style="list-style-type: none"> <li>• Identify context-appropriate finance and risk management mechanisms to improve access to facilitate improved access to finance and investment in sustainable forest-based enterprises across the value chain.</li> <li>• Establish and operationalize a functional financing mechanism that links local producers and processors with accessible local financial institutions.</li> <li>• Co-develop a functional mechanism to promote the recognition of sustainable production practices, quality control, certification services (e.g., FSC), and Geographic Indications (GI) to enhance market competitiveness.</li> <li>• Co-develop tools to sustainably link producers and processing MSMEs with relevant government programs (e.g., Prime Minister Agriculture Modernization Programme, Prime Minister Self Employment Programme) for small-scale mechanization technology and market infrastructure.</li> </ul>	<p>1 finance and investment analysis report and roadmap</p> <p>1 functional financing mechanism</p> <p>1 assessment of available certifications and quality control mechanisms available in Nepal</p> <p>1 user-friendly certification manual,</p> <p>1 quality control mechanism</p> <p>4 PPCP working groups</p> <p>1 provincial-level programme facilitation unit (PFU)</p> <p>1 digital registration and licensing platform</p>
	Activity 1.2.4. Provide Capacity Building and Entrepreneurship Support	<ul style="list-style-type: none"> <li>• Establish a technical assistance programme to scale up local entrepreneurship (ownership and management) and build capacity in sustainable production, processing, and market integration of high-value agroforestry products through targeted technical workshops for public-private-community groups, producers and MSMEs.</li> <li>• Develop a replication and scaling strategy to collate and replicate successful climate-smart initiatives identified in the region.</li> </ul>	

Output 2.1: Integrated local adaptation, preparedness and learning services delivered to climate-vulnerable communities and local institutions in Karnali Province.	Activity 2.1.1. Develop and deliver climate change awareness and adaptation training.	<ul style="list-style-type: none"> <li>• Co-develop modules with local communities and institutions for climate change awareness and adaptation trainings. The content of the Modules, which will be targeted towards women, Dalits and IPs, will cover various topics including skills for repair and maintenance of the community infrastructures (Module 1), skills for climate resilient agriculture (Module 2), sustainable forest management (Module 3), sustainable water harvesting and use (Module 4), basic health and sanitation (Module 5)</li> <li>• Organize trainings in collaboration with local governments and relevant non-government institutions in 80 community forests.</li> </ul>	<p>5 training modules</p> <p>80 training workshops</p>
	Activity 2.1.2. Formulate and implement local adaptation plans for action (LAPA).	<ul style="list-style-type: none"> <li>• Provide technical support to all the 31 municipalities of the project districts to prepare/update LAPAs through a participatory approach that includes women, Dalits and IPs.</li> <li>• Provide technical training for municipal officials on climate integration into local development planning processes, robust public financial management for climate actions, and effective Monitoring &amp; Evaluation (M&amp;E) systems for adaptation initiatives.</li> <li>• Facilitate collaboration of the municipalities to develop a Joint Action Plan to address shared vulnerabilities.</li> </ul>	<p>31 revised LAPAs</p> <p>1 Joint Action Plan</p>
	Activity 2.1.3. Provide strategic support to the provincial government to scale and sustain adaptation governance beyond the project period.	<ul style="list-style-type: none"> <li>• Facilitate knowledge sharing and policy dialogue on successful LLCA models and project lessons.</li> <li>• Provide technical assistance for integrating climate resilience metrics and LLCA principles into provincial planning frameworks and budget allocation processes.</li> <li>• Support the development of a provincial-level strategy for long-term climate finance mobilization and mainstreaming, building on project successes and aligning with national priorities.</li> </ul>	<p>3 provincial level policy dialogues</p> <p>1 report outlining the integration of climate resilience metrics and LLCA principles into provincial planning frameworks and budget allocation processes</p> <p>1 report outlining a mechanism for fast-tracking Forest Harvesting License renewal</p> <p>1 provincial-level strategy for long-term climate finance mobilization and mainstreaming</p>
	Activity 2.1.4. Establish Community-Based Early Warning Systems (CB-EWS).	<ul style="list-style-type: none"> <li>• Establish a community-based disaster management committee (CDMC) at each of six target palikas, comprising stakeholders from local leadership as well as representatives of vulnerable and marginalized groups.</li> <li>• Facilitate community-led processes to identify priority climate hazards, existing coping mechanisms, and locally appropriate early warning needs.</li> <li>• Support CDMCs to define locally owned warning thresholds, roles, and response actions linked to priority hazards.</li> <li>• Equip communities with context-appropriate, low-maintenance tools to support hazard monitoring and warning dissemination, and train local community members to operate, maintain, and interpret early warning systems without external reliance.</li> <li>• Establish a communication network at the local level.</li> <li>• Embed community early warning systems within local governance structures and enable iterative learning and adaptation, including training on community-based monitoring.</li> </ul>	<p>6 functional CB-EWS</p> <p>1 local-level communication network</p> <p>1 guideline and policy brief for embedding CB-EWS</p>

	Activity 2.1.5. Establish climate adaptation model sites.	<ul style="list-style-type: none"> <li>• Facilitate local-level engagements with provincial, district and palika leadership across to identify and prioritize innovative, climate-resilient adaptation practices with high scalability potential and alignment with LAPAs, and select 10 model sites distributed across the four target districts.</li> <li>• Establish demonstrations of innovative adaptation practices at the 10 selected model sites</li> <li>• Train local community-based organizations (priority given to women led organization) on the sustainable operation of the model sites, as well as how to share their knowledge with surrounding communities.</li> <li>• Organise guided study tours for CFMG members (ensure 50% women, PwD, Dalit and IPs) from 15 surrounding communities to the model sites, enabling shared learning and replication.</li> </ul>	<p>10 model sites</p> <p>15 study tours</p>
Output 3.1: Provincial and local climate communication and advocacy services established and delivered in Karnali Province.	Activity 3.1.1: Develop a Climate Change Communication Strategy for Karnali Province.	<ul style="list-style-type: none"> <li>• Provide TA for the co-development of a 10-year Climate Change Communication Strategy (CCCS) to implement a systematic and effective approach to communicate climate change in the Karnali province.</li> </ul>	1 10-year Climate Change Communication Strategy
	Activity 3.1.2. Develop and disseminate communication materials to local communities across the four target districts.	<ul style="list-style-type: none"> <li>• Based on the CCCS, develop communication materials (in consultation with local communities and authorities) in multiple languages — including Nepali and any locally appropriate indigenous languages — to raise awareness and knowledge on the impacts of climate change on biodiversity, the environment, livelihoods, gender and development, as well as drawing on lessons and case studies in the local context.</li> <li>• Disseminate communication material through various media, including print, audio and video mediums, e-platforms, radio stations, hoarding boards, among others (as defined in the CCCS for each palika), ensuring that dissemination modalities reach the most vulnerable groups, including women, PwD, Dalits and IPs.</li> </ul>	62 communication material packages
	Activity 3.1.3. Conduct climate advocacy workshops.	<ul style="list-style-type: none"> <li>• Identify and procure services of national experts with knowledge, experience and research at regional, national and grass root levels to prepare materials for and facilitate climate advocacy workshops.</li> <li>• Host two climate advocacy workshops showcasing lessons learned and best practice from Outcomes 1 and 2 in each target district (8 total) targeting cross-sectoral<sup>20</sup> representatives from provincial government, local governments and supporting organizations to build capacity on climate change adaptation.</li> </ul>	8 climate advocacy workshops

## 5. Monitoring, reporting and evaluation arrangements (max. 300 words)

Monitoring, reporting and evaluation (MRE) for the project will be managed by **NTNC**, through a dedicated project management and M&E function integrated into its existing project oversight systems. MRE arrangements are designed to be proportionate to a micro-sized SAP project and focused on tracking delivery of climate results, locally led processes, and safeguards compliance.

<sup>20</sup> Including water management, agriculture, forestry, and disaster preparedness



Project monitoring will be structured around the Results Framework (RF) and IRMF indicators, as well as the gender action plan (GAP) and the environmental and social action plan (ESAP). At the community and municipal level, data will be collected through multiple sources, including primary and secondary sources, using a combination of project developed and independent means of verification. Georeferenced evidence, field verification, and photographic records will be used to confirm implementation of NbS and restoration activities.

In addition to direct monitoring by NTNC, coordinating partners and service providers will be contractually responsible for routine data collection related to their assigned implementation roles. These additional monitoring data will be submitted to NTNC using standardised reporting templates aligned to each indicator across the RF and GAP (to be developed by the project's M&E Officer at project inception). NTNC will consolidate and quality-assure data through desk reviews, periodic field monitoring missions, and technical validation by its forestry, climate adaptation, and safeguards specialists. Monitoring findings will be reviewed internally on a quarterly basis to support adaptive management.

Reporting to the GCF will follow AMA requirements, including Annual Performance Reports (APRs) that cover performance against all RF, GAP and ESAP indicators/targets. NTNC will also provide regular progress updates to Nepal's National Designated Authority (NDA), including notification of key milestones, implementation challenges, and evaluation results, in line with national coordination arrangements. And changes to the RF, GAP or ESAP will be communicated to the GCF as part of the APRs.

A final independent evaluation at project completion will assess project outcomes against the project's Logical Framework, as well as the effectiveness of LLCA approaches. Evaluation findings will be documented, disclosed, and used to inform provincial learning, replication, and future climate finance programming.

## 6 Timetable

Outcomes/Outputs	2026		2027				2028				2029				2030			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Pre-inception <sup>21</sup>																		
Inception <sup>22</sup>																		
<b>Outcome 1 - Enhanced resilience of forest ecosystems and forest-based livelihoods for vulnerable communities in Karnali Province</b>																		
Output 1.1 - Climate-resilient forest management, restoration and nature-based solution (NbS) services delivered in community forests																		
Activity 1.1.1					D.1.		D.2.				D.3.		D.4.	D.5.				
Activity 1.1.2									D.6.				D.7.					
Activity 1.1.3														D.8.				
Output 1.2 - Sustainable forest-based commodity value chain development and enterprise support services delivered																		
Activity 1.2.1					D.9./ D.10.		D.11. D.12.											
Activity 1.2.2						D.13.				D.14./ D.15.								
Activity 1.2.3							D.32.			D.33./ D.34.	D.35./ D.36.		D.37/ D.38.	D.39.				
Activity 1.2.4								D.40.				D.41.		D.42.				
<b>Outcome 2 - Enhanced adaptive capacity and disaster preparedness of climate-vulnerable communities and local institutions in Karnali Province</b>																		
Output 2.1 - Integrated local adaptation, preparedness and learning services delivered to climate-vulnerable communities and local institutions in Karnali Province																		
Activity 2.1.1						D.16.				D.17.								
Activity 2.1.2							D.18.		D.19.									
Activity 2.1.3										D.21./ D.22.		D.20.		D.23.				
Activity 2.1.4							D.24.			D.25.		D.26.						
Activity 2.1.5												D.27.		D.28.				
<b>Outcome 3 - Strengthened climate awareness and communication</b>																		
Output 3.1 - Provincial and local climate communication and advocacy services established and delivered in Karnali Province																		
Activity 3.1.1						D.29.												
Activity 3.1.2													D.30.					
Activity 3.1.3																	D.31.	
Project Monitoring		Inception Report			APR				APR				APR				Completion Report	Final Evaluation

### Key:

Implementation

Deliverable (D.)

APR = Annual Performance Report

<sup>21</sup> Preparatory work prior to FAA coming into effect. Actions include drafting of ToRs for key positions on the PMU and PSC, drafting of MoUs with key partners, among others.

<sup>22</sup> Focused on laying out the structure required for project implementation (e.g. setting up PMUs, preparing baseline assessments and monitoring tools)

## 514. Deliverables

<b>D.1.</b>	1 forest quality assessment manual	<b>D.32.</b>	1 finance and investment analysis report and roadmap
<b>D.2.</b>	80 CFs assessed	<b>D.33.</b>	1 functional financing mechanism
<b>D.3.</b>	80 revised CFOPs	<b>D.34.</b>	1 assessment of available certifications and quality control mechanisms available in Nepal
<b>D.4.</b>	50 SFM implementation packages based on CFOPs	<b>D.35.</b>	1 user-friendly certification manual
<b>D.5.</b>	50 participatory forest monitoring training workshops	<b>D.36.</b>	1 quality control mechanism
<b>D.6.</b>	50 CFMG restoration prioritisation and training workshops	<b>D.37.</b>	4 PPCP working groups
<b>D.7.</b>	1,000 ha of restored forest	<b>D.38.</b>	1 provincial-level programme facilitation unit (PFU)
<b>D.8.</b>	200 NbS solutions (as identified in CFOPs)	<b>D.39.</b>	1 digital registration and licensing platform
<b>D.9.</b>	1 value chain assessment and feasibility study	<b>D.40.</b>	1 technical assistance programme
<b>D.10.</b>	1 NTFP/MAP vulnerability assessment	<b>D.41.</b>	8 market development workshops (two workshops per palika).
<b>D.11.</b>	10 forest-based MSME business plans	<b>D.42.</b>	1 replication and scaling strategy.
<b>D.12.</b>	8 community nurseries		
<b>D.13.</b>	Introductory meetings and workshops		
<b>D.14.</b>	60 training workshops		
<b>D.15.</b>	60 NTFP enterprise input packages		
<b>D.16.</b>	5 training modules		
<b>D.17.</b>	80 training workshops		
<b>D.18.</b>	31 revised LAPAs		
<b>D.19.</b>	1 Joint Action Plan		
<b>D.20.</b>	3 provincial level policy dialogues		
<b>D.21.</b>	1 report integration climate resilience and LLCA into provincial planning and budget		
<b>D.22.</b>	1 report outlining a mechanism for fast-tracking Forest Harvesting License renewal		
<b>D.23.</b>	1 provincial-level strategy for long-term climate finance mobilization and mainstreaming		
<b>D.24.</b>	6 functional CB-EWS		
<b>D.25.</b>	1 local-level communication network		
<b>D.26.</b>	1 guideline and policy brief for embedding CB-EWS		
<b>D.27.</b>	10 model sites		
<b>D.28.</b>	15 study tours		
<b>D.29.</b>	1 10-year Climate Change Communication Strategy		
<b>D.30.</b>	62 communication material packages		
<b>D.31.</b>	8 climate advocacy workshops		

## 7 Institutional Arrangements

### 7.1 Project Governance

#### 7.1.1 Accredited Entity

515. The National Trust for Nature Conservation (NTNC) will serve as Accredited Entity (AE) for the project. NTNC is a Direct Access Entity accredited to the GCF and has the full support of the Nepal's National Designated Authority (NDA) to implement this project on behalf of the Government of Nepal.
516. **NTNC comparative advantage in Nepal.** NTNC is well placed to implement the proposed project as it is the premier conservation institution in Nepal with a clear mandate and authority to complement and supplement the Government efforts on climate change interventions related to nature conservation and sustainable development. At a Governance level, the Governing Board of Trustees of NTNC includes the Prime Minister of Nepal as its Patron and is chaired by the nominee of the Prime Minister. From an operational point of view, NTNC has a deep integration and direct engagement with local communities with well positioned and well-equipped field offices from terai to mountain, which gives NTNC an unmatched capacity to deliver project activities at the local level at the highest quality level. NTNC has worked with MAPs such as chamomile and mentha, and promoting the cultivation and harvesting of MAPs, establishing distillation units, forming functional groups, and providing support for savings, credit, and cooperatives. These initiatives have specifically targeted pro-poor groups residing in the Buffer Zone, offering them livelihood options and addressing the challenges of human-wildlife conflict, and disasters in lowland areas. Additionally, NTNC has successfully worked with medicinal plants and tea plantations in mid-hills and high-altitude regions, where degraded fallow land has been reclaimed. The user group associated with these initiatives exports the products to international markets, revitalizing livelihood options for them. See NTNC's [Annual Reports](#) for further details.

#### 7.1.2 Executing Entity

517. The project will be co-executed by NTNC and two entities from the Government of Nepal (GoN), specifically:
- The Ministry of Industry, Tourism, Forest and Environment (MoITFE) of Karnali Province - which will be responsible for implementation and serve as NTNC's executing partner.
  - The Ministry of Finance - which will play an intermediary role in distributing the funds to the respective local government partners through the appropriate channels/systems.
518. The implementation structure will be grounded in the principles of LLCA by embedding local leadership, inclusive decision-making, and accountability mechanisms across all levels of project governance, planning, and delivery. To ensure transparency and maintain accountability in project implementation, clear firewalls will be put in place between the senior management holding the AE role and the operational teams holding the co-EE role and overseeing the day-to-day implementation.
519. While NTNC will maintain full fiduciary, financial, and procurement management control, they will be supported to execute the project by several strategic coordinating partners—including provincial, district and palinka authorities—with presence on the ground that will be responsible for specific interventions, enabling effective support for devolved decision making under the LLCA approach. To this end, MoITFE, as co-executing entity, will lead the local implementation of specific activities, as shown in Table 22, operating through the participating provincial government (Karnali) and local government entities in close coordination with NTNC. Local partners under MoITFE include:
- Provincial and municipal governments will primarily serve as key coordinating partners, integrating project activities into their local planning and budgeting cycles and receiving direct capacity building support for climate mainstreaming.
  - Community institutions, such as CFUGs, farmer groups, and watershed groups, will act as direct implementing partners for specific, localized activities co-designed with the project.

520. Local partners will receive technical assistance, essential materials, and, crucially, direct financial transfers for activities such as nursery establishment, sustainable forest management practices, and enterprise development through MoITFE. This direct financial flow empowers these local groups with greater agency and strengthens their own financial management capacities, moving beyond merely receiving services from NTNC. Overall oversight responsibility remains with NTNC as the AE. An MoU will be signed by NTNC and MoITFE, representing participating government agencies, to ensure the activities are implemented as per the project funding proposal and in discretion of NTNC as the AE. The fund transfer modality followed will be 'conditional' fiscal transfer, ensuring no changes to activities can be made without NTNC's prior approval.

Table 22. Responsible entities for the implementation of each project sub-activity.

Activity	Sub-Activity	Responsible Entity
Activity 1.1.1. Improve Sustainable Forest Management (SFM) for Increased Resilience to Climate Change and Carbon Sequestration Benefits	<ul style="list-style-type: none"> <li>Conduct a landscape level assessment of the state of forest ecosystems, forest quality, and forest ecosystem services and develop a manual for forest quality assessments for local forest authorities to identify and implement measures to accelerate natural recovery and regeneration of forests.</li> </ul>	MoITFE - Provincial Government
	<ul style="list-style-type: none"> <li>Based on forest assessments, identify and select 80 natural community forests in the mid-hill districts that have established CFMGs and are highly impacted by climate change, identifying a sub-set of 50 of the most vulnerable CFMGs for additional direct restoration support.</li> </ul>	
	<ul style="list-style-type: none"> <li>Through a participatory, community-led process — supported by Division Forest Office and project technical advisors — co-develop Community Forest Operational Plans (CFOPs) for 80 CFMGs, promoting climate-resilient land use practices in community forests. Management plans will target an average area of 125ha per CFMG, and will include identification of priority sites for restoration (high-erosion zones, landslide risk areas, critical water source areas) and revising community forest zonation.</li> </ul>	
	<ul style="list-style-type: none"> <li>Train existing CFMGs on nursery management, sustainable production and harvesting practices for forest resources, specifically targeting women, Dalits and indigenous communities.</li> </ul>	
	<ul style="list-style-type: none"> <li>Implement Sustainable Forest Management practices identified in CF management plans, procuring equipment, inputs, or labour for forest patrols and fire management.</li> </ul>	
	<ul style="list-style-type: none"> <li>Train CFMGs on participatory forest monitoring.</li> </ul>	NTNC
Activity 1.1.2. Restore priority sites in community forests, prioritizing species that can be integrated into sustainable NTFP supply chains	<ul style="list-style-type: none"> <li>Provide technical assistance and training to 50 CFMGs to identify priority sites for forest rehabilitation, as well as to optimize species selection to enable livelihood diversification and resilience through agroforestry and NTFP production.</li> </ul>	MoITFE - Provincial Government
	<ul style="list-style-type: none"> <li>Restore 1,000ha of degraded community forests through assisted natural regeneration and enrichment planting (~20ha per CF).</li> </ul>	
Activity 1.1.3. Implement Targeted Nature-Based Solutions (NbS) for Watershed and Land Resilience	<ul style="list-style-type: none"> <li>Facilitate the selection of 200 climate-sensitive sites across the 31 target municipalities, engaging local forestry departments, CFMGs, and local leadership.</li> </ul>	MoITFE - Local Government
	<ul style="list-style-type: none"> <li>Provide TA to CFMGs responsible for target sites to identify and plan locally-appropriate NbS — including the application of ESS screening</li> </ul>	NTNC

	processes to ensure all selected NbS options are low-risk.	
	<ul style="list-style-type: none"> <li>Procure services, input and equipment to implement NbS across 150 hectares at the selected sites, in line with locally-led designs.</li> </ul>	MoITFE - Local Government
Activity 1.2.1. Value Chain Analysis and Enterprise Incubation	<ul style="list-style-type: none"> <li>Conduct baseline value chain and feasibility studies to validate existing and gather additional information for sustainable NTFP/MAP value chains in the 31 target districts.</li> </ul>	NTNC
	<ul style="list-style-type: none"> <li>Conduct a vulnerability assessment of the NTFP resource base in the NTFP-rich forests in the mid-hill and high mountain areas of Karnali Province to inform sustainable harvesting practices and low-carbon production systems.</li> </ul>	NTNC
	<ul style="list-style-type: none"> <li>Provide Technical assistance to local communities for the preparation of comprehensive production, processing, and marketing business plans for 10 NTFP-based Micro, Small, and Medium Enterprises (MSMEs), explicitly linking producers and processors with target markets — particularly targeting women, Dalits, and Indigenous Peoples (IPs) and PwD households as producers and processors.</li> </ul>	MoITFE - Local Government
	<ul style="list-style-type: none"> <li>Provide early-stage, non-capital assistance to targeted MSMEs for the implementation of NTFP Business Plans.</li> </ul>	NTNC
	<ul style="list-style-type: none"> <li>Establish and support NTFP nurseries to promote the cultivation of high-value NTFPs within agroforestry practices, ensuring a sustainable and resilient resource base.</li> </ul>	MoITFE - Local Government holds primary responsibility, supported by TA from NTNC
Activity 1.2.2. Promote Sustainable Production and Harvesting Practices	<ul style="list-style-type: none"> <li>Train 60 community forest user groups on climate-smart, sustainable NTFP production and harvesting techniques to reduce over-exploitation and premature collection, thereby mitigating deforestation and degradation risks.</li> </ul>	MoITFE - Provincial Government
	<ul style="list-style-type: none"> <li>Host engagement workshops, meetings and networking events to facilitate partnerships for the adoption of climate-friendly, low-carbon post-harvest processing systems, including establishing agro-product processing plants (e.g., essential oil distillation plant).</li> </ul>	
	<ul style="list-style-type: none"> <li>Provide input packages for technologies, inputs, and services that enable the uptake of climate-responsive and high-yielding NTFP production practices, including climate-resilient seeds/seedlings, processing/drying equipment, packaging, etc.</li> </ul>	
Activity 1.2.3. Facilitate Market Access and Financial Mechanisms	<ul style="list-style-type: none"> <li>Identify context-appropriate finance and risk management mechanisms to improve access to facilitate improved access to finance and investment in sustainable forest-based enterprises across the value chain.</li> </ul>	NTNC
	<ul style="list-style-type: none"> <li>Establish and operationalize a functional financing mechanism that links local producers and processors with accessible local financial institutions.</li> </ul>	NTNC
	<ul style="list-style-type: none"> <li>Co-develop a functional mechanism to promote the recognition of sustainable production practices, quality control, certification services (e.g., FSC), and</li> </ul>	NTNC

	Geographic Indications (GI) to enhance market competitiveness.	
	<ul style="list-style-type: none"> <li>Co-develop tools to sustainably link producers and processing MSMEs with relevant government programs (e.g., Prime Minister Agriculture Modernization Programme, Prime Minister Self Employment Programme) for small-scale mechanization technology and market infrastructure.</li> </ul>	NTNC
Activity 1.2.4. Provide Capacity Building and Entrepreneurship Support	<ul style="list-style-type: none"> <li>Establish a technical assistance programme to scale up local entrepreneurship (ownership and management) and build capacity in sustainable production, processing, and market integration of high-value agroforestry products through targeted technical workshops for public-private-community groups, producers and MSMEs.</li> </ul>	NTNC
	<ul style="list-style-type: none"> <li>Develop a replication and scaling strategy to collate and replicate successful climate-smart initiatives identified in the region.</li> </ul>	NTNC
Activity 2.1.1. Develop and deliver climate change awareness and adaptation training.	<ul style="list-style-type: none"> <li>Co-develop modules with local communities and institutions for climate change awareness and adaptation trainings. The content of the Modules, which will be targeted towards women, Dalits and IPs, will cover various topics including skills for repair and maintenance of the community infrastructures (Module 1), skills for climate resilient agriculture (Module 2), sustainable forest management (Module 3), sustainable water harvesting and use (Module 4), basic health and sanitation (Module 5)</li> </ul>	MoITFE - Local Government
	<ul style="list-style-type: none"> <li>Organize trainings in collaboration with local governments and relevant non-government institutions in 80 community forests.</li> </ul>	MoITFE - Local Government
Activity 2.1.2. Formulate and implement local adaptation plans for action (LAPA).	<ul style="list-style-type: none"> <li>Provide technical support to all the 31 municipalities of the project districts to prepare/update LAPAs through a participatory approach that includes women, Dalits and IPs.</li> </ul>	MoITFE - Local Government
	<ul style="list-style-type: none"> <li>Provide technical training for municipal officials on climate integration into local development planning processes, robust public financial management for climate actions, and effective Monitoring &amp; Evaluation (M&amp;E) systems for adaptation initiatives.</li> </ul>	MoITFE - Local Government
	<ul style="list-style-type: none"> <li>Facilitate collaboration of the municipalities to develop a Joint Action Plan to address shared vulnerabilities.</li> </ul>	NTNC
Activity 2.1.3. Provide strategic support to the provincial government to scale and sustain adaptation governance beyond the project period.	<ul style="list-style-type: none"> <li>Facilitate knowledge sharing and policy dialogue on successful LLCA models and project lessons.</li> </ul>	NTNC
	<ul style="list-style-type: none"> <li>Provide technical assistance for integrating climate resilience metrics and LLCA principles into provincial planning frameworks and budget allocation processes.</li> </ul>	MoITFE - Provincial Government
	<ul style="list-style-type: none"> <li>Support the development of a provincial-level strategy for long-term climate finance mobilization and mainstreaming, building on project successes and aligning with national priorities.</li> </ul>	
Activity 2.1.4. Establish Community-Based Early Warning Systems (CB-EWS).	<ul style="list-style-type: none"> <li>Establish a community-based disaster management committee (CDMC) at each of six target palikas, comprising stakeholders from local leadership as well as representatives of vulnerable and marginalized groups.</li> </ul>	MoITFE - Local Government

	<ul style="list-style-type: none"> <li>• Facilitate community-led processes to identify priority climate hazards, existing coping mechanisms, and locally appropriate early warning needs.</li> <li>• Support CDMCs to define locally owned warning thresholds, roles, and response actions linked to priority hazards.</li> <li>• Equip communities with context-appropriate, low-maintenance tools to support hazard monitoring and warning dissemination, and train local community members to operate, maintain, and interpret early warning systems without external reliance.</li> <li>• Establish a communication network at the local level.</li> <li>• Embed community early warning systems within local governance structures and enable iterative learning and adaptation, including training on community-based monitoring.</li> </ul>	
Activity 2.1.5. Establish climate adaptation model sites.	<ul style="list-style-type: none"> <li>• Facilitate local-level engagements with provincial, district and palika leadership across to identify and prioritize innovative, climate-resilient adaptation practices with high scalability potential and alignment with LAPAs, and select 10 model sites distributed across the four target districts.</li> <li>• Establish demonstrations of innovative adaptation practices at the 10 selected model sites</li> <li>• Train local community-based organizations (priority given to women led organization) on the sustainable operation of the model sites, as well as how to share their knowledge with surrounding communities.</li> <li>• Organise guided study tours for CFMG members (ensure 50% women, PwD, Dalit and IPs) from 15 surrounding communities to the model sites, enabling shared learning and replication.</li> </ul>	
Activity 3.1.1: Develop a Climate Change Communication Strategy for Karnali Province.	<ul style="list-style-type: none"> <li>• Provide TA for the co-development of a 10-year Climate Change Communication Strategy (CCCS) to implement a systematic and effective approach to communicate climate change in the Karnali province.</li> </ul>	MoITFE - Provincial Government
Activity 3.1.2. Develop and disseminate communication materials to local communities across the four target districts.	<ul style="list-style-type: none"> <li>• Based on the CCCS, develop communication materials (in consultation with local communities and authorities) in multiple languages — including Nepali and any locally appropriate indigenous languages — to raise awareness and knowledge on the impacts of climate change on biodiversity, the environment, livelihoods, gender and development, as well as drawing on lessons and case studies in the local context.</li> <li>• Disseminate communication material through various media, including print, audio and video mediums, e-platforms, radio stations, hoarding boards, among others (as defined in the CCCS for each palika), ensuring that dissemination modalities reach the most vulnerable groups, including women, PwD, Dalits and IPs.</li> </ul>	MoITFE - Provincial and Local Government
Activity 3.1.3. Conduct climate advocacy workshops.	<ul style="list-style-type: none"> <li>• Identify and procure services of national experts with knowledge, experience and research at regional, national and grass root levels to prepare</li> </ul>	NTNC



	materials for and facilitate climate advocacy workshops.	
	<ul style="list-style-type: none"> <li>• Host two climate advocacy workshops showcasing lessons learned and best practice from Outcomes 1 and 2 in each target district (8 total) targeting cross-sectoral<sup>23</sup> representatives from provincial government, local governments and supporting organizations to build capacity on climate change adaptation.</li> </ul>	MoITFE - Provincial Government

### 7.1.3 Project Steering Committee

A **Project Steering Committee (PSC)**, chaired by Ministry of Industry, Tourism, Forest and Environment (MoITFE), Karnali Province will provide strategic guidance and coordination, in line with the details laid out in the GCF funding proposal. The NTNC, serving as both the AE and co-EE will act as Member Secretary to the Committee and will retain the authority to oversee adherence to GCF funding proposal, including fiduciary and financial controls. The PSC will comprise representatives from key local institutions, including Provincial Ministry of Economic Affairs and Planning (MoEAP), Ministry of Land Management, Agriculture and Cooperatives (MoLMAC), Ministry of Social Development (MoSD), Provincial Emergency Operation Centre (PEOC) and Provincial Office of Hydrology and Meteorology (PoHM), Karnali Province-level Chambers of Commerce and Industry (CCI), and Province municipal associations. To strengthen federal-provincial-local collaboration and reinforce local ownership, the PSC will also include nominated representatives from federal ministries/departments as needed, including MOFE (who will hold a supervisory role), Ministry of Finance, Department of National Parks and Wildlife Conservation, Department of Forests and Soil Conservation, National Disaster Risk Reduction and Management Authority (NDRRMA). Moreover, FECOFUN will be invited as a permanent observer to the PSC, ensuring that the needs and interests to civil society are fully met in line with the LLCA approach. An additional revolving observer position will also included as an ad-hoc position, enabling additional civil society representation as needed based on the status of the project. The PSC will meet at least annually to review progress, approve annual work plans and budgets, and ensure alignment with national policies and GCF-approved objectives.

### 7.1.4 Project Implementation

521. In alignment with LLCA principles, the project will institutionalize local participatory governance throughout planning, budgeting, implementation, and monitoring. LAPA processes will serve as the foundation for prioritizing investments at the municipal and ward levels. Women, Dalits, Indigenous Peoples, youth, and other marginalized groups will be meaningfully engaged in activity design, benefit targeting, and performance monitoring through structured mechanisms such as public hearings, social audits, and community monitoring committees.
522. In direct alignment with GCF guidance, the project's implementation sequence prioritizes comprehensive capacity building activities and foundational training for all relevant local actors prior to the commencement of large-scale, on-the-ground interventions. This strategic sequencing ensures that municipal governments, Local Community Forest Management Groups (LCFMGs), Micro, Small, and Medium Enterprises (MSMEs), and cooperatives possess the requisite absorptive capacity, knowledge, and technical skills to effectively design, deliver, and sustain adaptation and mitigation activities under Output 1 and beyond. For instance, intensive trainings on sustainable forest management, agroforestry practices, and financial literacy will be initiated before significant tree planting or enterprise development efforts, thereby fostering deep local ownership and long-term sustainability.
523. Day-to-day project implementation will be managed by a centralized Project Management Unit, with local support from Field Coordination Units, with local governments and community-level institutions leading the devolved decision-making processes for the LLCA approach.

<sup>23</sup> Including water management, agriculture, forestry, and disaster preparedness

524. Details on the specific roles and responsibilities are provided below.



Figure 11: Project partners

#### 7.1.4.1 Project Management Unit

525. NTNC will host the Project Management Unit (PMU), led by a Project Team Leader and supported by a multidisciplinary team encompassing programmatic, fiduciary, administrative, and technical staff. The PMU will include a Gender Specialist, and an Environmental, Social Safeguards Specialist, together responsible for overseeing gender equality, social inclusion, environmental and social safeguards compliance, stakeholder engagement, and SEAH risk management, ensuring effective implementation of the GAP and ESAP. This function will be delivered through dedicated PMU consultancy support — ensuring that the incumbents hold the necessary background in safeguard implementation, as well as gender, SEAH and GBV — complemented by NTNC institutional expertise. The PMU will be responsible for overall coordination, financial and procurement management, preparation of annual work plans and budgets, compliance assurance, and timely reporting to MoFE and GCF. The PMU will ensure that decisions and resources are aligned with community priorities and informed by participatory LAPAs and other relevant local level plans.

#### 7.1.4.2 Field Coordination Unit

526. To strengthen decentralized implementation and enhance responsiveness at the field level, a Field Coordination Unit (FCU) will be established in Surkhet. The FCU will coordinate closely with the PMU, relevant sectoral line agencies, and provincial governments to facilitate project delivery across target municipalities, while executing project activities in Jajarkot and Dailekh districts. It will ensure continuous two-way accountability through feedback loops with communities and stakeholders, conduct technical monitoring, capture lessons learned, and report regularly to the PMU.

527. Additionally, a Field Coordination Sub-Unit, located in Jumla district, representing the mid-hill and mountain ecozones, will work in close collaboration with local governments and community-level institutions such as ward offices, Community Forest User Groups (CFUGs), farmer cooperatives, watershed committees, and other locally rooted bodies in Jumla and Dolpa districts. FCU and its sub-unit will work closely with local governments and community institutions, providing continuous technical backstopping and ensuring that capacity building and sustainability are embedded throughout the project lifecycle while executing day-to-day project functions.

### 7.1.4.3 Local governments and Community-level institutions

528. Under the LLCA approach, municipal governments and community-level institutions are the primary decision-makers and drivers of implementation, ensuring that climate investments respond directly to locally identified risks, priorities, and capacities. Municipalities lead the planning, prioritisation, and coordination of adaptation actions through participatory Local Adaptation Plans for Action (LAPAs), integration into municipal development plans and budgets, and oversight of implementation within their jurisdictions. Community-level institutions—such as Community Forest User Groups (CFUGs), cooperatives, watershed committees, and ward structures—play a central role in identifying needs, co-designing solutions, managing natural resources, and implementing site-level activities, including forest management, restoration, livelihood interventions, and community-based early warning systems. Together, municipalities and community institutions exercise devolved decision-making authority over activity selection, sequencing, and local resource allocation, while the PMU and FCU provide enabling support, fiduciary oversight, technical backstopping, and upward reporting. This arrangement ensures subsidiarity in practice, anchors accountability at the local level, and institutionalises LLCA within existing governance systems in Karnali Province, rather than creating parallel project structures.

### 7.1.5 Technical Advisory Group

529. NTNC, in consultation with the Chair of the PSC, will establish a Technical Advisory Group (TAG) to provide strategic technical guidance and quality assurance to the PMU, FCU, and the PSC. The TAG will be chaired by a senior national expert and will include the Technical Advisor, alongside selected technical specialists from relevant government agencies, research institutions, and organisations with expertise in climate adaptation, community forestry, forest and landscape restoration, nature-based solutions, forest-based livelihoods, disaster risk reduction, and locally led climate action. Potential contributors may include specialists from line ministries and departments responsible for forests, environment, federal and local governance, hydrometeorology and disaster risk management, as well as national and regional research and technical organisations.

530. The TAG will provide technical advice in line with international best practice on key assessments, methodologies, and implementation approaches developed under the project, and support learning and adaptive management. Including the Chair, TAG membership will be limited to a maximum of eleven members. The TAG will meet up to twice per year, with additional meetings convened on an ad hoc basis as required.

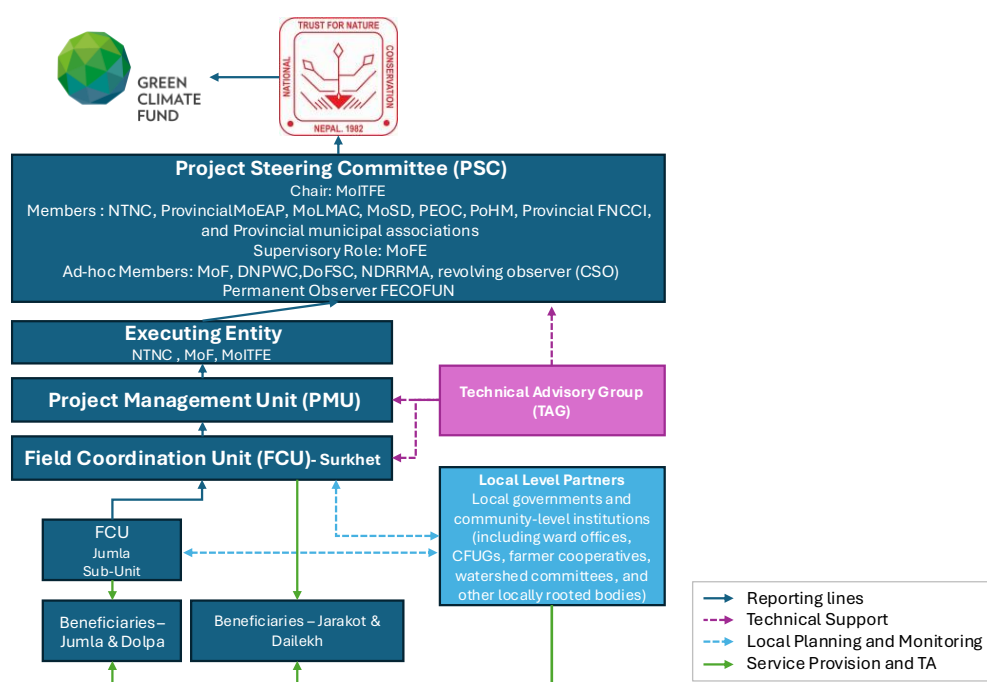


Figure 12. Project Implementation Arrangements.

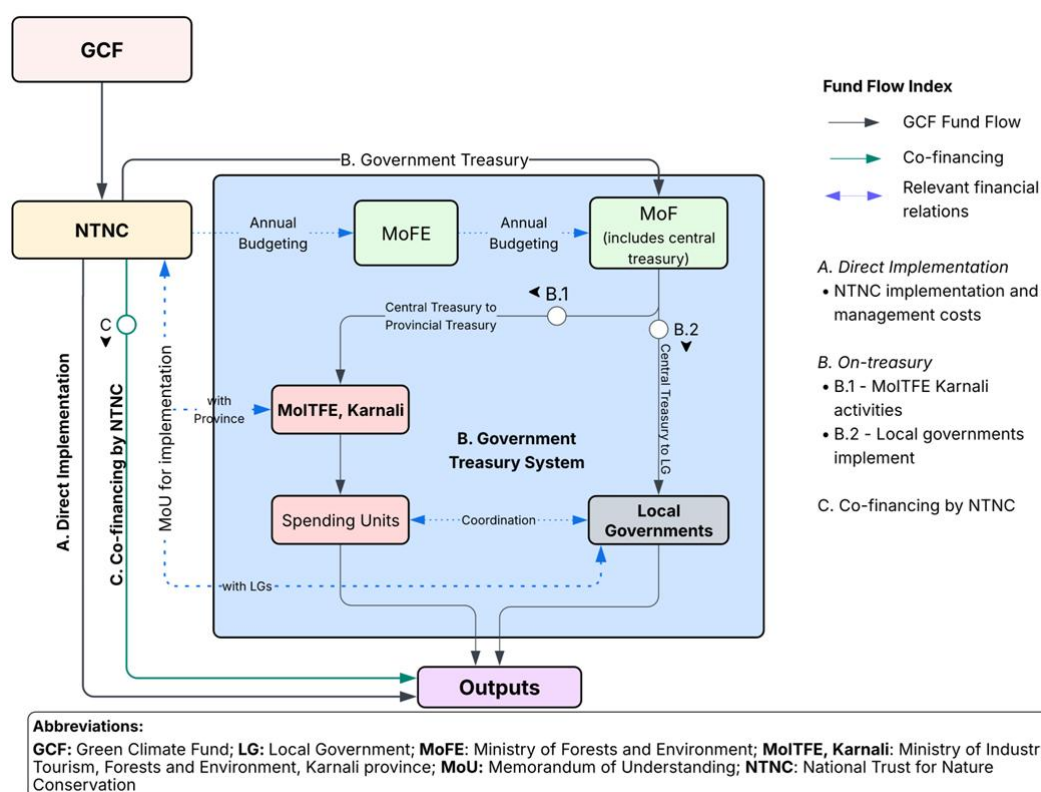


Figure 13. Project Flow of Funds.

531. The fund flow mechanism will combine modalities of NTNC implementation and Government treasury, as per Figure above.

### 532. Direct Implementation:

- The Governing Board of Trustees of NTNC approves the budget. NTNC operates through the central office, field offices, and as required contracts CSOs (e.g. FECOFUN) or others for implementation of the activities that are under NTNC mandate and require flexibility.
- TA and program management: Program management is carried out by NTNC. NTNC can deploy Technical Assistance (TA) to provincial and local governments.
- This component remains off-budget, not reflected in the government's Redbook.

### 533. Government Treasury:

- NTNC will enter an overarching MoU with Ministry of Finance (MoF) to detail the fund flow, budgeting, and oversight roles in relation to the government treasury-based modality.
- NTNC will have a key role in the annual planning/budgeting process and budget allocation for the participating provincial/local governments, in coordination with MoFE - which has access to Line Ministry Budget Information System (LMBIS). Intergovernmental Fiscal Transfers (conditional grants approach) will flow to the MoITFE in Karnali Province and selected local governments (LGs) following Ministry of Finance (MoF) channel. This modality will ensure the agreed activities are not changed as per the provincial or local discretion, which authority will be retained by EE.
- NTNC will have an MoU<sup>24</sup> with the MoITFE and respective LGs to establish NTNC's AE oversight role, MoITFE's EE role, and define the TA provision on their activities.

<sup>24</sup> MoU will be legally binding and enforceable, as the parties are government entities bound by the Government of Nepal's laws, which will be reinforced through MoU.

- The provincial ministry (MoTFE) will host the steering committee and lead monitoring and coordination role within the province.
- In line with the activities defined by LMBIS, MoTFE will have direct engagement with the PMU office at Surkhet for TA and program management activities.
- MoTFE will allocate/flow the activity budget through the Provincial Line Ministry Budget Information System (PLMBIS) to its respective Spending Units (SUs), such as the Division Forest Offices, for project implementation.
- NTNC will make advanced payment (annually) to the MoF treasury system, which will be channelised to the provincial and local activities through treasury function, following MoF processes.
- The funds flow through the government channel are tracked separately, through two features, simultaneously, a) project's unique budget code, and b) source code, which will be unique too (GCF/NTNC). The government entities use financial management information systems (e.g. Computerized Government Accounting System-CGAS at the provincial level, and Subnational Treasury Regulatory Application-SuTRA at the local level) facilitate the accounting and reporting process. Monthly expenditure reports (including activity-wise budget utilization reports) are generated by the entities which facilitate internal and external reporting. The budget classifications allow project-wise or source-wise reporting, that will be useful for NTNC to track and monitor the progress of the project activities.

#### **534. Co-financing and parallel financing**

- NTNC will carry out co-financing to the project, following two modalities, a) in cash, and b) in kind. Such support will follow the direct implementation modality, that is NTNC will implement such activities directly without channelizing to government treasury.

Local governments are interested in providing parallel financing to the project interventions in their respective locality, through their own sources along with executing entities.

## 8 Consultation Report

The preparation of the FP relied on extensive, meaningful and inclusive stakeholder consultations to ensure all perspectives were adequately captured for this LLCA project. The consultations also enabled the collection of primary data to feed into the project development.

A total of 31 consultations were organised at the different governance levels of Nepal, namely federal, provincial, districts and the local level (municipality/palika, local communities), and took the form of either interviews, workshops or focused group discussions.

Major group engagement has included a Karnali province-wide consultation workshop, as well as five district-level workshops.

While Table 23 provides an overview of all consultations that took place, the annex “Consultation notes” summarizes the content of the discussions, clustered by consultation level.



*Photo 1: January 2026 consultations with local communities*



*Photo 2: Meeting with Community Forestry User Groups (CFUGs)- Bairakhe Pani CFUG, 25th November 2025*



Table 23: Overview of stakeholder consultations held for project preparation

Date	Organization	Consultation level	Format	Objective	Number of people consulted (M & F)
23 November 2025	Ministry of Industry, Tourism, Forestry and Environment	Provincial	Interview	Understanding the main institutional or policy barriers to implementing LLCA in Karnali and in forest management	M: 2
23 November 2025	Federation of Community Forest User Groups (FECOFUN)	District (Surkhet)	Interview	Understanding the local context of CFUGs and how the project could best assist them.	M: 4
24 November 2025	Federation of Nepalese Chambers of Commerce and Industry (FNCCI)	District (Surkhet)	Interview	Obtaining more background on the district's status of forest-based enterprises	M: 3
24 November 2025	Federation of Community Forest User Groups (FECOFUN)	Federal	Interview	Introducing the project to FECOFUN to obtain their initial feedback and buy-in.	M: 4 F: 1
25 November 2025	Nalgad Urban Municipality / municipal officials	Local (municipality)	Interview	Understanding local climate adaptation challenges, climate governance and relevant adaptation practices.	M: 6 F: 3
25 November 2025	Nalgad Urban Municipality / Sub-Division Forest Office	Local (municipality)	Interview	Understanding local forest management issues and forest-based entrepreneurship context.	M: 3
25 November 2025	Bairakhe Pani CFUG	Local (forest area)	Interview	Understanding the climate-related issues suffered by the CFUG, their adaptation needs and most profitable forest products.	M: 7 F: 2
25 November 2025	Nepal Federation of Indigenous Nationalities (NEFIN)	Federal	Interview	Introducing the project to NEFIN to obtain their initial feedback and buy-in.	M: 2 F: 1
25 November 2025	Ministry of Finance (MoF) / National Designated Authority (NDA)	Federal	Interview	Reviewing project preparation timeline and NDA priorities for the project.	M: 2
26 November 2025	Chamber of Commerce	District (Jajarkot)	Interview	Understanding issues related to the local production of forest-based resources.	M: 1
27 November 2025	Private business owner	Local (private property in Surkhet)	Interview	Understanding how a forest-based resources business operates.	M: 1
27 November 2025	Agriculture and Livestock Promotion Centre	District (Surkhet)	Interview	Understanding their work and the constraints for people to attend their training events. Obtaining suggestions on project activities.	M: 2 F: 1
27 November 2025	NEFIN	District (Surkhet)	Interview	Understanding local climate impacts and how the project can support IPs.	M: 4
27 November 2025	Private business owner	Local (private property in Nepalgunj)	Interview	Understanding how an herbal processing business operates.	M: 2

<b>27 November 2025</b>	Bee-keeping cooperative and CFUG	Local (Nalgad Municipality)	Focused group discussion	Understanding climate impacts on apiculture and forest resources, review governance and market linkages, and to identify practices & opportunities for nature-based solutions and livelihoods.	M: 18 F: 8
<b>27 November 2025</b>	Barekot Rural Municipality	Local (municipality)	Focused group discussion	Understanding climate change impacts, governance and coordination gaps and potential project support.	M: 6 F: 1
<b>28 November 2025</b>	Shivalaya Rural Municipality	Local (municipality)	Focused group discussion	Understanding climate change impacts, governance and coordination gaps and potential project support.	M: 3 F: 1
<b>30 November 2025</b>	Ministry of Forests and Environment (MoFE)	Federal	Interview	Explaining status of project development process and understanding MoFE's expectations regarding involvement and project design.	M: 3 F: 1
<b>29 December 2025</b>	District Coordination Committees (DCCs), Municipal Chairpersons and Vice-Chairpersons, Chief Administrative Officers of Municipalities, Relevant municipal sections (Agriculture, Labor and Employment, and Disaster Risk Reduction focal persons), NEFIN, FECOFUN, CFUGs, Divisional Forest Offices (DFOs), Soil and Watershed Management Offices (SWMOs), Journalists and media representatives, Non-Governmental Organizations (e.g., KIRDARC, ANSAB, WWF, etc.), Buffer Zone User Groups, research and academic institutions	District (Jumla)	Workshop	Gathering a multi-stakeholder platform to obtain primary data on key climate-related challenges, LAPA's activities and traditional adaptation practices, Livelihoods, Value chains, Marketing, as well as project design recommendations for the districts on priority adaptation actions and their upscaling and social Inclusion and Participation.	M: 36 F: 9
<b>31 December 2025</b>	Bayaldhunga CFUG groups in Aathbis Municipality, Dailekh	Local (communities)	Focused group discussion	Obtaining more information on community forests, forest management and governance and forest-based enterprises sectors locally, as well as understanding local climate impacts.	M: 13 F: 26
<b>31 December 2025</b>	Vulnerable groups (Badi community), Aathbis Municipality, Dailekh	Local (communities)	Focused group discussion	Understanding the perspective and needs of vulnerable community groups engaged in forest-related activities. The interactions focused on identifying entry points for climate-resilient, inclusive, and nature-positive livelihood interventions.	M: 8 F: 5
<b>1 January 2026</b>	District Coordination Committees (DCCs), Municipal Chairpersons and Vice-Chairpersons, Chief Administrative Officers of Municipalities, Relevant municipal sections (Agriculture, Labor and Employment, and Disaster Risk Reduction focal persons), NEFIN, FECOFUN, CFUGs, Divisional Forest Offices (DFOs), Soil and Watershed Management Offices (SWMOs), Journalists and media representatives, Non-Governmental Organizations (e.g., KIRDARC, ANSAB, WWF, etc.), Buffer Zone User Groups, research and academic institutions	District (Bindrasaini, Western Dailekh)	Workshop		M: 27 F: 4
<b>2 January 2026</b>		District (Narayan, Eastern Dailekh)	Workshop		M: 34 F: 4



<b>28 December 2025</b>	CFUG visits, Jumla	Local (communities)	Focused group discussions	Obtaining more information on community forests, forest management and governance and forest-based enterprises sectors locally, as well as understanding local climate impacts.	M: 18 F: 22
<b>28 December 2025</b>	Consultation with a private entrepreneur, Jumla	Local (communities)	Interview	Understanding ground-level realities, operational challenges, and market dynamics related to forest-based enterprises, with the objective of informing realistic and scalable project interventions.	M: 1
<b>3 January 2026</b>	CFUG and indigenous groups, Naumule, Dailekh	Local (communities)	Focused group discussions	Obtaining more information on community forests, forest management and governance and forest-based enterprises sectors locally, as well as understanding local climate impacts.	M: 8 F: 5
<b>5 January 2026</b>	DCC Jajarkot, Bheri Municipality officials, Chhdegadh M., Shivalaya RM, DFO PTYSM, KTV, Basin management center, FNJ, FECOFUN, news reporter, MMN  District Coordination Committees (DCCs), Municipal Chairpersons and Vice-Chairpersons, Chief Administrative Officers of Municipalities, Relevant municipal sections (Agriculture, Labor and Employment, and Disaster Risk Reduction focal persons), NEFIN, FECOFUN, CFUGs, Divisional Forest Offices (DFOs), Soil and Watershed Management Offices (SWMOs), Journalists and media representatives, Non-Governmental Organizations (e.g., KIRDARC, ANSAB, WWF, etc.), Buffer Zone User Groups, research and academic institutions	District (Jajarkot)	Workshop	Gathering a multi-stakeholder platform to obtain primary data on key climate-related challenges, LAPA's activities and traditional adaptation practices, Livelihoods, Value chains, Marketing, as well as project design recommendations for the districts on priority adaptation actions and their upscaling and social Inclusion and participation.	M: 26 F: 1
<b>7 January, 2026</b>	Devi Fruits and Seed Producers Group and Devasthan CFUG, Dolpa	Local (communities)	Interview	Assessing forest governance, livelihood systems, market linkages, climate change impacts, and opportunities for nature-based solutions and MSME development.	M: 16 F: 8
<b>8 January, 2026</b>	Maluna Himal Buffer Zone Community Forest User Group, Dolpa	Local (communities)	Interview		M: 12 F: 4

<b>9 January 2026</b>	DCC, Municipality officials, Chhdegadh M., Shivalaya RM, DFO PTYSM, KTV, Basin management center, FNJ, FECOFUN, news reporter, MMN District Coordination Committees (DCCs), Municipal Chairpersons and Vice-Chairpersons, Chief Administrative Officers of Municipalities, Relevant municipal sections (Agriculture, Labor and Employment, and Disaster Risk Reduction focal persons), NEFIN, FECOFUN, CFUGs, Divisional Forest Offices (DFOs), Soil and Watershed Management Offices (SWMOs), Journalists and media representatives, Non-Governmental Organizations (e.g., KIRDARC, ANSAB, WWF, etc.), Buffer Zone User Groups, research and academic institutions	District (Dolpa)	Workshop	Gathering a multi-stakeholder platform to obtain primary data on key climate-related challenges, LAPA's activities and traditional adaptation practices, Livelihoods, Value chains, Marketing, as well as project design recommendations for the districts on priority adaptation actions and their upscaling and social Inclusion and participation.	M: 31 F: 9
<b>14 January 2026</b>	Provincial government, Department of Forests and Soil Conservation (DoFSC), Divisional Forest Officers (DFOs), NEFIN, FECOFUN, DANAR, mass media	Provincial	Workshop		M: 37 F: 9

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# 10 Annexes

## 10.1 Consultation notes

### 10.1.1 Federal-level consultations

#### 10.1.1.1 Federation of Community Forest User Groups (FECOFUN)

Date of meeting: 24 November 2025

Participants:

- Thakur Bhandari (Chair)
- Brikha Bahadur Shahi (Vice-Chairperson)
- Dilli Giri (Secretary)
- Sita Aryal (Executive Director)
- Tulsiram Oli (Program Coordinator)



*Photo 3: Meeting with Federation of Community Forest User Groups (FECOFUN), 24 November 2025*

Key discussion points:

#### Introduction to FECOFUN

It is a CSO gathering 23 000 CFUGs, 2.3 million households, with 2,5 million hectares under management. A total of 60 million people are engaged in CFUGs. In Karnali, there are CFUGs in each community, district and local and provincial FECOFUND. Their role is to protect forests, resources, timber species. They engage in policy preparation, facilitation for forest management activities.

It is a GESI pioneer organization: constitutional provision of more than 50% of women, disadvantaged people, all castes, IPs, youths. There is a quota system in the executive committees, local and federal and leadership to consider gender. They also have a gender secretary.

#### Has FECOFUN had conversations with NTNC to date on this project?

It was the first time they saw the project. They need to be involved from the beginning, otherwise they do not know what is happening with CFUGs that they need to support, and do not want to come in too late in the project.

#### Which role does FECOFUN want to play in the project?

- Being on Project steering committee as CSO representation.
- Implementation level. If the project is implemented via FECOFUND, long-run implementation will occur, even after funding ends.

- Activity design with FECOFUN at district and Federal level, leveraging their experience.
- Actions done to date in partnership with LCFMGs (incl. in Karnali) on climate resilience and adaptation: sustainable forest management, low-cost bioengineering in eroded areas, using local materials (e.g. bamboo), forest restoration, NbS, Agroforestry support (apples, walnuts oil: edible production plants, olive oil.) and Sustainable Commodity Value Chains for NTFP in Dailekh Jumla, Dolpa, Kalikot and Jajarkot.

Recommendation to change in the project “LCFMGs” to “CFUGs and other local community forest management groups”

They have experience developing community adaptation plans (CAPA) and LAPAs. They have worked on climate adaptation guidelines coordinating with local governments in Karnali.

### **What lessons learnt can be shared with the project?**

FECOFUN highlighted the tension in Nepal between conservation and CFUGs: when an area is under conservation, CFUGs cannot operate or barely.

Issue around top-down imposed practices from international projects. Communities should have their voice incorporated into the activities (LLCA approach). GCF projects do not work currently in Nepal. CFUG with own operational plans and constitutions: large projects impose their activities without looking at these plans.

Karnali has potential for NTFP support (incl. medicinal plants), but it is a costly area because of its geography.

Rural people need capacity building in this area.

It is essential to incorporate NTFPs and climate adaptation into the CFUG’s operational plans and constitution. Without an operational plan they cannot implement the activities, and the enterprise does not work.

It is important to consider the risk of forest fire in Karnali.

Suggest using FECOFUN’s online marketing portal (FECOFUN Bazaar, see below) for the products we will support.

They are worried about the fund flow and how the money will eventually reach the communities.

### **What are the market access barriers for NTFPs?**

Currently running a DARWIN Initiative with five partners, and Traffic International leading. There are 3 types of activities: sustainable forestry management, market side, and NTFPs are sold in neighbouring countries. It supports 10 species (fungi and flora), in the Karnali region. Barriers identified include: policy, lack of skills to sustainably manage, develop products and establish enterprises, lack of technology for semi processing, transportation cost is high, absence of road. The initiative provides distillation units to support 3-4 types of essential oil, as well as juice, candies. They have developed an online market system: FECOFUN Bazaar, for products after packaging and quality control.

### **How governance arrangements work in CFUGs?**

CFUGs use a constitution and operational plans as legal documents. They use 5 to 10-year operational plans. Operational plans guide what happens in the forest areas: how much exist, how much is extracted and what to do. They include resources, timber, annual harvest rate, what type of NTFPs, how they can operate/how much they can collect annually. What type of enterprise CFUGs can run. Provisions in these plans on water pond maintenance, fire management. Plans are revised by the government.

CFUG governance: autonomous body. When forming CFUGs: forest identification (forest inventory, boundary survey, quantity of timber to be extracted.) and household identification. Second step, every household should be aware of their rights on forestry sources and how to manage them, including human rights, IP rights, casts and classes. Then small group discussions to focus on common interest: e.g. Dalit production, women production. Some on timber production. All that information is discussed at mass CFUG assembly. Then constitution/operational plan made. This is community information.

CFUG has an executive committee. Chair people. 13-19 people. With the inclusion of 50% of vulnerable communities. They meet during monthly meetings and can also do urgent meetings. There is a 6-month assembly. They use a notice board and have an auditing system. They report to local government and to the divisional forest office.

CFUG are independent from government and autonomous, as the governments cannot impose in their plans.

Budget:

- CFUGs are self-funded. they have their own funds, some pay a membership (not in mountainous regions). Terai: timber production is high and migration (new household pays a membership at the beginning).
- Timber production and NTFPs bring funding to CFUG.
- Ecotourism. 25% of annual income goes to forest development activities

Funding is spent on social, ecological and economic aspects: CFUGs protecting the forest areas to maintain traditional knowledge and restoring. Remaining, 50% goes to poor, women, capacity-building for income-generation activities. The rest to social community development and institutional strengthening. Funds are used based on their own decisions.

### **What resources could FECOFUN share with the project development team?**

Studies on value chains of NTFPs (medicinal aromatic plants): demand value chain margins.

They have 2 products in timber (not finalised) in the south pine species and soria robusta. And other NTFPs studies that they can share.

#### **10.1.1.2 Nepal Federation of Indigenous Nationalities (NEFIN)**

Date of meeting: 25 November 2025

Participants:

- Tunga Bhadra Rai: Director
- Ashoka Pariyar: Administration and Finance Manager
- Bhutla Sherpa: GESI and Safeguard Officer



*Photo 4: Meeting with Nepal Federation of Indigenous Nationalities (NEFIN), 25 November 2025*

Key discussion points:

Introduction to the Karnali LLCA project.

### **Could you introduce NEFIN and the governance structure of IP organisations?**

- IPs are organized in different ways than CFUGs. NEFIN is a Federation of all IP organizations with 59 IP groups recognized by the government. NEFIN has provincial chapters and member organizations, and is also present at district and municipality level.
- NEFIN has one constitution and the Province coordination council has to follow it. NEFIN can connect the project team with the correct local IP groups.
- Outside of Karnali, there are customary institutions for IPs. They are key actors on the ground for territory management.

### **What key points we should be considered in the project?**

- NEFIN stressed it was the first time they were consulted on the concept.
- They required the project to be more specific about who falls under forest-dependent communities, beyond CFUGs.
- The project should consider the spiritual connection with the forests to consider in forest conservation, and adaptive capabilities.
- CFUGs and IPs: they don't work with CFUGs, and there is not IP representation among CFUGs. Some indigenous peoples might be part still but in their individual household capacity.
- IP groups present in Karnali: many are in Dolpa. The project team can follow up with them to know about exact groups, otherwise there is such data in Nepal's census by district.
- CFUGs can contribute differently to IP organizations, which might need distinct recognition as actors on the ground for them to contribute in a distinct way.
- The Project should map partners on the ground and implementing partners, and link these with activities' design.

### **How would NEFIN like to be engaged in the project?**

- Participation in governance: being on Steering Committee, as they are GCF observers, as well as province level committees with PMUs (local and federal level).
- IPs should be partners and not only beneficiaries, and local organizations should be engaged as executing entities.

### **What is the entrepreneurship status of IPs in the region?**

- IPs bring different knowledge than modern CFUGs: they incorporate their knowledge into product development. CFUGs do mainstream initiatives e.g. timber processing. IPs might do more aromatic, medicinal herbs processing.
- The Intellectual property of IPs needs to be considered: branding, marketing and connection to value chains and protecting their patent rights and link to climate. Capacity building can be on this.
- NEFIN has worked in indigenous-based entrepreneurship with GEF: in Gandaki and can share with us if they become project partners.

### **Could you confirm that Dalits face separate issues from Indigenous Peoples?**

Indeed. IPs to be considered for E&S aspects, Dalits and gender aspects to be considered under GEDSI aspects (gender annexes).

### **Could you elaborate on IPs land'/forest ownership, and any potential challenge/conflict for holding on to those**

- A lot of customary lands were converted into community forests. IPs are not happy with CFUGs, which are in place due to regulations. Community forests were introduced to eliminate forest or land tenure (community, leaseholds, religious forests, national parks). IP's customary land has been converted into community forests. There is a tension. The government knows that fact, which is clearly recognized by international law. International conventions signed by Nepal cover customary land rights. Nepal has obligations and cannot eliminate customary land rights. There is a clash between international regulations and national forest regulations.
- Respecting customary rights under the project: customary lands managed by IP groups. Invite customary leaders to meetings in conservation initiatives. Not imposing hard measures in customary land. To handle this: do not introduce something new in customary tenure areas. Do not convert something into community area. Include customary institutions and leaders in activities and governance. NTNC has village chiefs in community structures.



### 10.1.1.3 Ministry of Finance (MoF) / National Designated Authority (NDA)

Date of meeting: 25 November 2025

Participants: Om Prakash Bhattarai, (Undersecretary), Bishnu Hari Poudyal (GCF Liaison officer)

Key discussion points:

NDA requested the project is submitted as soon as possible. They will provide the NOL at the end of the process. The NDA expects to be engaged in the project's development and oversight, and that at least 80% of the funding goes towards implementation.

**What would the NDA like the project to consider when dealing with the connection of the local and provincial levels with the Federal level?**

Proper consultations during project preparation will be key to support such connection.

**How to ensure via the fund flow mechanism that GCF funding flows to local communities?**

- NTNC finance will go to government Treasury, and then to local governments. To the Provincial government as conditional grants. Communities could apply to provinces and local governments for grants. No money will flow directly to the communities. CFUGs belong to provincial government.
- GCF funding to be reflected in Treasury for all work involving government (not technical assistance-TA work, 80% of FP funding) then transferred to provincial or local level. TA part may not go through Treasury. Remaining 20% stay with NTNC for execution.
- Under the NCCSP model, money went to provincial ministry, forest division, local government. The fund flow was with the local government, then there was a mechanism to reach Palikas that requested funding and prepared a project, submitted to MoFE. The TA part was not reflected in Federal Treasury. Province government asked to explore a mechanism to do LLCA. To achieve more financial progress. Forest government system or MOFAGA mechanism. All CFUs are under municipalities. They are governed by Forest Division.
- Local governments claim that all CFUGs under them, but this has not materialized. Some local governments are trying to develop guidelines, but the relation is difficult.

**The accreditation of NTNC will expire in September 2026, is this an issue?**

The GCF confirmed it would not. NTNC can connect the project development team with the GCF Task officer.

**Do you have additional comments and requests?**

It is critical for MoFE to be engaged, as well as a smooth coordination with Government across all levels.

### 10.1.1.4 Ministry of Forests and Environment (MoFE)

Date of meeting: 30 November 2025

Participants: 1. Naresh Sharma (Undersecretary), Santosh Kati, Laxmi Adhikari

Key discussion points:

[illegible]

*Photo 5: Meeting with Ministry of Forests and Environment (MoFE), 30 November 2025*

## 10.1.2 Provincial-level consultations

### 10.1.2.1 Meeting with Ministry of Industry, Tourism, Forestry and Environment, Karnali Province (MoITFE)

Date of meeting: 23<sup>rd</sup> November 2025

Participants: Sher Bahadur Shrestha- Province Forest Director; Moon Bahadur Rawat- DFO, Bheri



*Photo 6: Meeting with Ministry of Industry, Tourism, Forestry and Environment, Karnali Province (MoITFE), November 2025*

#### Key discussion points:

**What are the main institutional or policy barriers to implementing locally led climate actions in Karnali and in forest management? What coordination mechanisms are in place for effective collaboration? What governance structures exist? What mechanisms are used to channel funds to the community?**

Various policies are in place, such as NAP, the Federal Forest Act of 2076 BS, the Provincial Forest Act of 2078 and 80 BS, and LAPA and CAPs. These are also included in the annexes of operational plans. Technical support is necessary to implement these policies. While policies exist, their effective implementation is limited due to shortages of human and financial resources.

#### **Gaps/challenges:**

- People are moving to cities, local economies are changing, and socio-economic needs are evolving. Dependency on CF has decreased in this shifting landscape.
- Mobilizing CFUGs has become more challenging than before. Forest, people, and financial activities now occur independently. CFUGs have managed their forests for 30 years, resulting in highly productive forests, yet they are not receiving the full benefits they deserve. They are not gaining direct advantages. About 55% of CFUGs remain passive or inactive, no enterprises have been established, and no general assembly has taken place. The community does not receive benefits as expected, causing disappointment. Poor accounting systems, elite capture, and limited shared benefits have reduced overall interest. Although Operational Plans are supposed to be revised every five years, they have not been updated.
- Similarly, 45% of CFUGs are active. In areas where enterprises are established, those CFUGs are also active.

- Forest fires are a major issue in this area, especially in Dailekh and Jajarkot. Their livelihoods are also changing due to migration and decreased interest in forest and agricultural work. In the past, people collected leaf litter from the forest for bedding and farming, but now, with less cattle rearing and farming, the excess leaf litter has led to more forest fires. It's crucial to invest in training for forest fire prevention and to support collectors in gathering leaf litter to make compost and manure, rather than only focusing on fire prevention training.
- CFUG's poor accounting system of income and expenditure; there is no transparency. There are also challenges to establishing community enterprises.

#### **Recommendations and suggestions:**

- Need to implement the CF guideline 2081, which contains different provisions for establishing enterprises.
- Need to materialize the potential of a forest-based enterprise targeting pro-poor communities: It's important to promote income-generating opportunities and explore other options, such as agroforestry within CF, oil extraction from invasive alien plant species, rosin and turpentine, timber, etc. There is much potential, and numerous opportunities can be derived from community forestry. However, communities struggle to establish enterprises, and how resources can be utilized to develop them is another key aspect. Therefore, technical support from either the government or NGOs is needed to help establish enterprises by mobilizing communities and raising awareness.
- Need an early warning system, especially for thunderstorms.
- To introduce the provision of community insurance to farmers
- Need to think about the operationalization of different policies and acts.
- To design and focus on Nature-Based Solution interventions.

#### **Regional prioritization in Natural Resource Management:**

There is potential for wood-based enterprises, agroforestry, rosin and turpentine production, moringa powder, natural fibers, furniture manufacturing, organic manure, and river belt farming, especially in five lower districts such as Surkhet, Jajarkot, Rukum, Dailekh, and Salyan. There is an opportunity to establish organic manure enterprises using leaf litter collected from forests. These activities have a multiplier effect on the community.

Problems: There is an issue of desertification in lower areas. Water sources are drying up, and forest fires are occurring. The forest fire problem is mainly in Dailekh and Jajarkot. Previously, community members used to bring leaf litter to make manure. Now, they don't bring leaf litter because people no longer rear cattle and livestock. There is also a problem with lightning and thunderstorms.

Karnali province comprises 34% of the country's rangeland and pastureland located in the upper part of Karnali. It functions as a center for medicinal plants, natural and aromatic herbs, ecotourism, sheep, yak, and jadibuti. The area holds significant potential. Coordinated efforts among multiple stakeholders and investments are crucial for development. Water resource conservation initiatives can be implemented here, and an integrated NBS approach would be advantageous for this region.

#### **10.1.2.2 Provincial-level workshop**

Date of meeting: 14 January 2025

Participants:

- Secretary, Ministry of Industry, Tourism, Forest and Environment, Karnali Province
- Hon. Mr. Madhav Prasad Chaulagain, Minister for Forests and Environment, GoN
- Head, Climate Change Department, NTNC Liaison Officer, Green Climate Fund (GCF)
- Representative from the Federal Government (Department of Forests and Soil Conservation – DoFSC)
- Representatives from provincial ministries and relevant line agencies
- Divisional Forest Officers (DFOs) and their representatives
- Representatives from the Nepal Federation of Indigenous Nationalities (NEFIN)
- Representatives from the Federation of Community Forestry Users Nepal (FECOFUN)
- Representatives from DANAR



- Representatives from mass media



Photo 7: Provincial level workshop in Karnali, 14 January 2025

#### Key discussion points:

**Media Group**

**A. Policy and institutional Barriers**

- Resilience: Cross cutting subject
- <sup>Roles</sup> SOPs of institutions at local level (Lack)
- Institutional arrangement
  - need to strengthen institutions in (Palika, wards)
  - NGOs / Private sectors
- Finance Access: - Knowledge Gap - capacity / experience
- B. Multi-Sectoral Coordination
- clear coordination mechanism should be there (Actionable)
- Cross-border coordination (Mol's)

**A. Policy and institutional barriers**

- Disconnect between National and local plans and policies.
- Weak local institutions.
- Limited budget

**B. Multi-sector coordination**

- Low coordination chain (local level and provincial government) on budget allocation and activities implementation
- Coordinating body is missing.

**C. Long-term priorities**

- Ownership to local government
- Technical support from governmental institutions.

**D. GEDSI Consideration**

-

**Policy & Institutional Barriers** Presentation by - Rami...

**Gaps:**

**Mandates:**

- 1) Lack of clear institutional mechanism
- 2) Unclear integration of LAPAs.

**Coordination**

- 1) Poor coordination & collaboration between 3-tier governments & other stakeholders.
- 2) Power imbalance

**Budgeting Process**

- 1) Insufficient resource & its allocation
- 2) Ineffective climate finance tracking
- 3)

**Regulatory Hurdles**

- 1) Inadequate Legislation & weak implementation
- 2) Lack of coordination between stakeholders
- 3) Limited alignment between national goals & local realities & demands

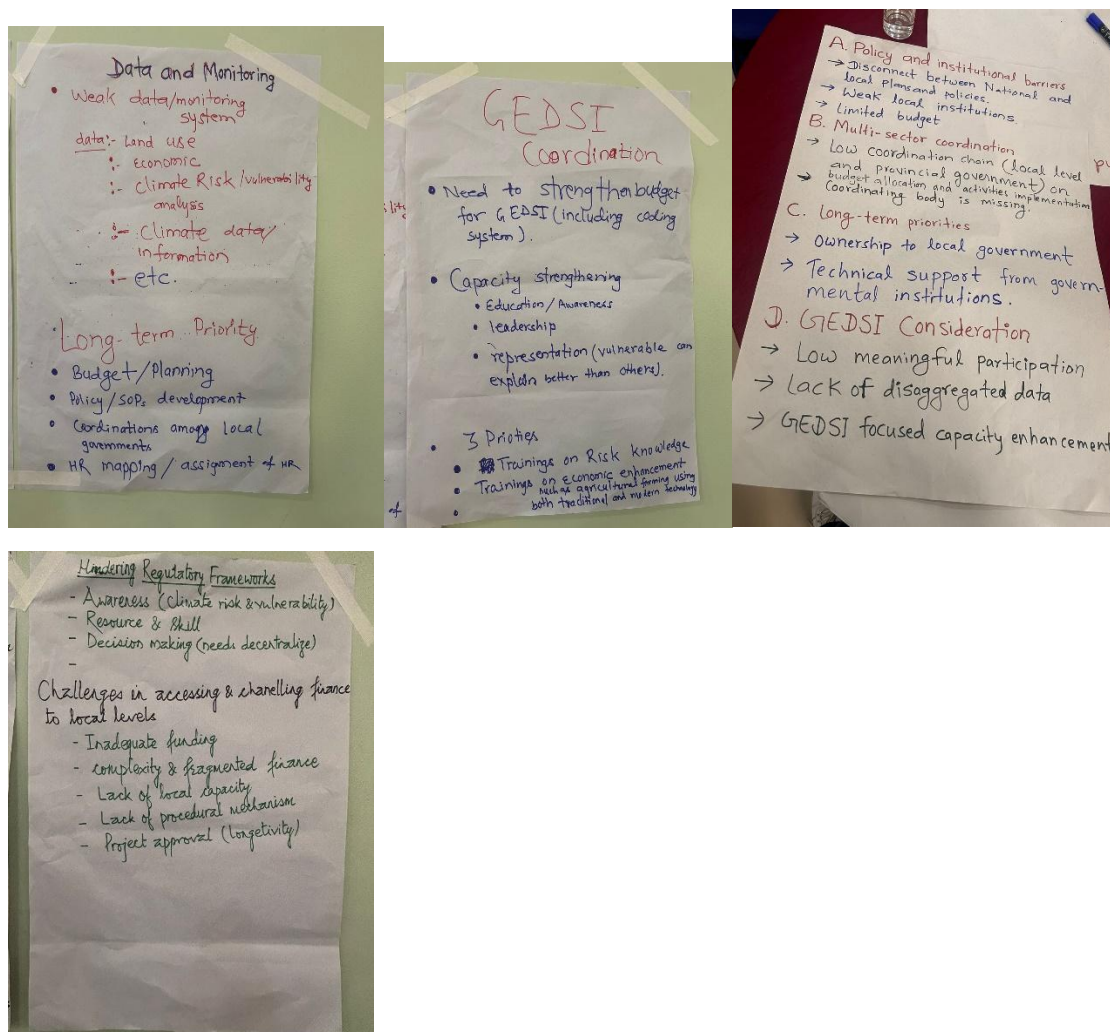


Photo 8: Notes from Provincial workshop in Karnali, 14 January 2025

### 10.1.3 District-level consultations

#### 10.1.3.1 Federation of Community Forestry Users, Nepal (FECOFUN), District (Surkhet)

Date of the meeting: 23rd November 2025

Participants from FECOFUN:

- Chandra Thani – Chairperson, FECOCUN; Ganesh Kumar Thapa.
- Dipak Thapa, Surya Bahadur Shahi (positions attached in the meeting minutes prepared by NTNC)

Key discussion points:

The meeting started with participant introductions and an overview of the visit's purpose. NTNC initiated the consultation by presenting the project's background and NTNC's role in developing the GCF proposal. They emphasized the two main objectives of the consultation: i. to identify the two most resourceful and promising CFUGs with potential for forest-based enterprises within Jajarkot for consultation while traveling to the municipality, and ii. to discuss which community is most vulnerable, including the status of CF, governance, the progress of the operational plan, forest products and NTFPs, and the relationships between municipalities.

**How does the governance structure of CFUGs operate? How are they organized, who is involved, and how formalized are these arrangements from a governance perspective at the community level?**

Response: Surkhet is known for its productive forests; valuable timber is found here.

There are 445 Community Forests in Surkhet, with about 125 CFUGs active, capable, and financially stable. CFUGs have policies and regulations and follow governance systems. Although the Forest Act mandates full independence in resource use, this is not fully realized due to gaps and the failure to implement forest resource management policies.

There are 21 members on the CF executive committee. However, because they receive no incentives and serve voluntarily, they are compelled to migrate to India for seasonal work. This makes it hard to say that proper institutional governance is happening, highlighting the need for improvement. Executive members are forced to go to India because there are limited income opportunities within the CFUG, even for members.

The revised Forest Act 2076 BS is progressive, with FECOFUN involved in its development. However, implementing it, especially revising operational plans, is challenging. An OP outlines the current growing stock, annual harvesting limits, and calculations. CFUGs need an updated OP to operate effectively. The issue is that government regulations cap OP revision costs at NRs 25000, but consultants usually charge at least NRs 100,000, which communities can't afford. Also, getting approval from the District Forest Officer is required for harvesting to begin.

1st difficulty is the revision of the operational plan, and the second difficulty is that even after the OP revision, it remains hard to allocate the proper or eligible annual harvest. Another challenge is that they must formally request technical support from DFO to measure and determine the harvest. The community is also compelled to pay hidden fees. FECOFUN is advocating for change, and progress is being made, but implementing the plan has still been difficult.

New Forest Act provisions allow CFUGs to create ecotourism, agroforestry (must maintain a 50% canopy), green enterprises, and timber activities such as sawmills. Restrictions of 3-3.5 km in hills and Terai now been reduced to 500 meters for sawmills. Communities can also plan climate adaptation measures aligned with the Act. Setting up enterprises needs a separate plan, which can be burdensome, as FECOFUN's chairperson notes.

Similarly, there is another provision with the CFUG that permits fallow land to be allocated to pro-poor individuals for income generation and enterprise development. However, a procedural gap exists regarding the next steps.

There was a provision for Scientific Forest Management after the new Forest Act of 2075 BS, which involved implementing a clear-felling system. The money earned from selling valuable trees like Shorea Robusta was misused, and the District Forest Office did not maintain transparency. The funds were not used in accordance

with the OP provisions. Nearly 1 crore NRs was generated from clear felling but was not used properly. As a result, unethical practices began in the name of scientific forest management. Later, the provision for sustainable forest management was introduced.

Similarly, some loopholes exist—many communities buy timber at very low prices but sell the same timber at higher prices to others. Likewise, elites take over forest land and collect royalties. This demonstrates that these actions do not benefit the poor. FECOFUN protested against the government, leading to the cancellation of the scientific forest management practice. They even stated that if the government wants to implement scientific forest management, it should only do so in national or government forests, not in community forests. Additionally, communities are dealing with a dual tax system, and FECOFUN is working to oppose it as well.

There is also a provision that 25% of the income be allocated to forest development and 10% to the local government. Of the total income, 25% is to be assigned to activities that generate revenue for women and poor people, and the remaining portion must be spent on office operational costs.

Although there is a provision for including women in executive committees and key positions, their participation is often limited to meeting the quota in name only.

### **What practical steps are necessary to improve CF management approaches besides funding?**

- It's crucial to increase awareness among CFUGs regarding their roles, responsibilities, and authorities.
- To facilitate the joint policy dialogue among DFO, local government, FECOFUN, and CFUGs for improved implementation of the provision.
- Need to Improve Communication Gap: For example, sometimes FECOFUN is farsighted and implements new initiatives or forest management practices, but DFO initially advises against them. However, after 4-5 years, DFO acknowledges that the practice implemented by FECOFUN was beneficial. This results in a mismatch and communication gap.
- Public and private partnerships are essential for the effective implementation of various enterprises like timber, agroforestry, and NTFP-based businesses.
- A goat-keeping microenterprise serving pro-poor groups failed because of the lack of a business plan, input services, and market linkages. Therefore, strengthening the institutional capacity of community members, along with planning, input services, and market linkages, is essential.

#### **10.1.3.2 Meeting with Federation of Nepalese Chambers of Commerce and Industry (FNCCI), Surkhet District**

Date of meeting: 24<sup>th</sup> November 2025

Participants: Harsa Bikram Khadka- Chairperson; Ganesh Karki- Acting Executive Director; Bijaya Dallakoti; Chatra KC

Key discussion points:

#### **What is the status of forest-based enterprises and those run by women groups in Surkhet district?**

In Surkhet and the broader Karnali region, there is significant potential for forest-based enterprises, especially small-scale ventures that rely on simple technologies. These include Timur/Sichuan Pepper, bamboo furniture making, pickle production, and agricultural enterprises such as ginger and turmeric farming. The focus is on herbs and medicinal plants like Yarsagumba/Himalayan caterpillar fungus (*Cordyceps sinensis*), Pachaule/Himalayan marsh orchid (*Dactylorhiza hatagiera*), Chino/Proso millet (*Panicum miliaceum*), Kaguno/Foxtail millet (*Setaria italica*), and others. Recently, products from this area have gained popularity, such as Allo/Himalayan nettle (*Girardinia diversifolia*) processing, Sisno/Stinging nettle (*Urtica dioica*) processing, Bhango/hemp (*Cannabis sativa*), and more.

Local traders deliver these to Nepalgunj. From there, the raw materials are directly exported to India. A MAPs collection center is located in Surkhet. They mentioned that technical expertise is necessary to develop a proper roadmap.



Karnali Province lacks large-scale industries or enterprises. It does have a furniture-making industry within the forest-based sector.

A help desk has been established to support any groups, including women's groups, if they want to register and start any type of enterprise.

### **10.1.3.3 Meeting with Chamber of Commerce, Jajarkot**

Date of meeting: 26<sup>th</sup> November 2025

Participant: Secretary of Chamber of Commerce, Jajarkot

Key discussion points:

In Jajarkot district, there is potential for Allo, Chutro, Timur, and Khoto. Similarly, on a small scale, some Simal and Salla used for making plywood have been exported to Surkhet and Nepalgunj. Currently, production is limited and primarily consumed within Jajarkot. The district does not have major large-scale forest-based enterprises. Instead, they facilitate local people and connect local farmers with the government. They have also identified suitable sites for Allo production and supported a few entrepreneurs with business plans.

**Is it caused by limited production of forest-based resources like NTFP and MAPs or by a lack of marketing in this area?**

There is limited marketing. People are not very interested because they don't want to take risks; once they collect it, it might be hard to sell, and if they do sell, the buyer will want to pay a low price.

Jajarkot is well known for various types of stones and quartz. In the past, they used to mine and sell these, but now they can't because of government restrictions.

Others:

They have good coordination with the provincial chamber of commerce, but their coordination with other provincial line agencies is lacking. Similarly, they also asked some municipalities in Jajarkot to support entrepreneurs and poor people who want to start local businesses, but they feel the municipalities haven't provided the support as requested.

He also suggested that it would be better to make Jajarkot a hub for organic manure production. This would help farmers by reducing their dependence on chemical fertilizers, as it would convert forest leaf litter and organic waste into useful products. It would also help keep forest areas clean, reduce fire hazards from dry leaves, and create economic opportunities for farmers and local people, who could sell the organic fertilizer and generate income.

### **10.1.3.4 Agriculture and Livestock Promotion Centre, Surkhet District**

Date of meeting: 27<sup>th</sup> November 2025

Participant: Dhan Khatayat- Undersecretary, MoALD

Key discussion points:

Provide training to officers, non-officers, and farmers on various climate-resilient agriculture topics. The training for officers and non-officers includes advanced courses such as sustainable farming practices, climate-resilient agriculture, and sessions on climate change impacts on agriculture and livestock.

Farmers attend training at research centers and on farms. For example, for apple farming training, they go to Mustang area; for citrus farming, they visit Palpa and Dhankuta research centers. The training includes one- or two-day theory classes at the center, followed by practical sessions at the research sites. They also run farmers' field schools, bringing together farmers from 10 districts for training.

**What are the costs and logistics for people attending the training? Is it funded by an organization, or do individuals pay for it themselves? Or is it covered by a donor or the government?**

So far, all training has been managed by this training center. There are very limited resources from the government side. If the training duration is short, then district agriculture offices or district veterinary offices will conduct it, but if the training lasts longer, then it is the responsibility of this center.

Training cost: For a 6-day training package for farmers with 20-22 participants, the cost is approximately 0.4 million NRs. For non-officers, it is about 0.45 million NRs, while for officers, the cost is around 0.5 million NRs.

There is a subject matter specialist for training. Some interdisciplinary trainings, such as agroforestry-related training, are organized jointly by the forestry training center and the agriculture promotion center, which means they are merged.

**Other plans and suggestions:**

They are also planning to develop their own research training center by leasing land and creating a demo plot or training center.

They also suggested including activities such as the concept of one community forestry initiative or one compost-making enterprise so that locals can collect leaf litter to produce organic manure and earn income. He also mentioned the potential of wild fruits and vegetables such as niuro, bamboo, kafal, etc.

### **10.1.3.5 Meeting with NEFIN, Surkhet**

Date of meeting: 27<sup>th</sup> November 2025

Attendees: Hasta Bahadur Gurung- Chairperson, NEFIN; Bikram Kumale- Vice chairperson; Bhupendra Thapa Magar- Secretary, NEFIN; Ashok Tharu- Treasurer, NEFIN, Surkhet.

Key discussion points:

NEFIN is the national umbrella organization representing indigenous peoples in Nepal. NEFIN offices are located throughout Nepal and in nearly all districts. These offices operate in areas with larger indigenous communities.

**How does climate change affect your daily life and livelihood differently compared to others in the community?**

They are more vulnerable than other groups, and climate change impacts them more. This is because indigenous people are mostly poor and often live near hazard-prone areas. Those living in rural areas close to climate hazard hotspots, such as hills prone to landslides and forests, face greater risks.

Most of their work is related to water, forests, and natural resources, and their livelihoods depend on climate-sensitive sectors. In the past, their livelihoods relied heavily on these resources, but now, because they are only allowed to collect leaf litter from community forests once or twice a year, it's not enough. Additionally, due to climate change, water sources have dried up, no fish are found, rivers have dried out, and their traditional occupation—relying on these resources—has faced serious challenges. They also mentioned that the increasing use of chemical fertilizers has led to a decline in fish populations.

My observation was that the decline in fish in the river isn't solely caused by climate change; other factors like increasing population and higher demand for fish also contribute. Similarly, it's not only the Tharu people who eat fish — others want fish too, so it seemed like a ready-made answer.

Likewise, they also provided another example of the Kumal people, one of the indigenous communities. Traditionally, they used to make clay pots, but now they have almost stopped doing that due to increasing population, urbanization, the construction of houses and infrastructure, and the difficulty in finding mud.

**What role do they play in forest management and climate change adaptation?**

Planning, policy preparation, and advocate for forest rights and promote climate justice. NEFIN helps to ensure indigenous peoples voices are included in policies and push for recognition of their customary practices.

### **How could the project ensure your priorities and perspectives are integrated into adaptation planning?**

They should be involved in budget planning and have to be included and invited to crucial meetings. Furthermore, they suggested that all vulnerable people be consulted. E.g., the cement factory opened to nearby communities has to be consulted, but they were not consulted.

### **What training, resources, or financial mechanisms would help you lead or co-manage adaptation activities?**

- More sensitization programs are necessary. They need support with technology and financial assistance. Likewise, they should be informed about their constitutional rights concerning indigenous peoples.
- NGOs working with such groups, including vulnerable populations, should be located in rural or local areas where activities can be effectively communicated and implemented.

#### **10.1.3.6 District-level workshop, Jumla**

Date of Meeting: 28 December 2025

#### Participants:

Chief including representatives from District Coordination Committees (DCCs)  
 Municipal Chairpersons and Vice-Chairpersons  
 Chief Administrative Officers of Municipalities  
 Relevant municipal sections (Agriculture, Labor and Employment, and Disaster Risk Reduction focal persons)  
 Nepal Federation of Indigenous Nationalities (NEFIN)  
 Federation of Community Forestry Users Nepal (FECOFUN)  
 Community Forest User Groups (CFUGs)  
 Divisional Forest Offices (DFOs)  
 Soil and Watershed Management Offices (SWMOs)  
 Journalists and media representatives  
 Non-Governmental Organizations (e.g., KIRDARC, ANSAB, WWF, etc.)  
 Buffer Zone User Groups  
 Research and academic institutions



*Photo 9: District-level workshop in Jumla*

### Key discussion points:

#### **Key climate-related challenges: - Jumla**

- Erratic Rainfall Patterns - Increasing irregularity in rainfall timing and distribution, disrupting agricultural production, causing water scarcity, and leading to loss of life and property. The traditional monsoon season has become unpredictable, with rainfall often occurring in intense bursts followed by dry spells. Intense, heavy rainfall triggers landslides and flooding.
- Rising temperatures have altered growing seasons and crop cycles, caused earlier flowering, and shifted seasons, disrupting traditional farming practices. Key crops such as rice, wheat, and maize have seen decreased productivity, affecting food security.
- Fluctuations in Rainfall Amount - heavy and intense rainfall, dry spells, prolonged drought, and insufficient rainfall.
- Reduced Snowfall - Noticeably declined over recent years.
- Prolonged Drought Periods - Increased frequency and duration of droughts. Extended dry periods have reduced agricultural productivity, diminishing native crops and NTFPs.
- Drying of water sources- Water sources are drying, affecting water supply for HHs.
- Impact on Biodiversity and Ecosystems - disrupting ecological balance and reducing biodiversity, which in turn affects ecosystem services.
- Impact on livestock and agricultural productivity, loss of wild animals
- Increased Disease Risks - Rising temperatures and changing rainfall patterns create favorable conditions for vectors like mosquitoes, leading to diseases such as dengue. These diseases are now common in mountainous areas, where they were not found earlier.
- Increase in invasive alien plant species and increased weed growth affecting crops.
- Forest fires- The frequency of forest fires has increased. Forest fires lead to the loss of forest cover, degrade biodiversity, destroy wildlife habitat, and disrupt local ecosystems.
- Key climate hazards: flooding and landslides, forest fires, and drought/dry spells – the suggestion is to prepare LAPA and implement the actions.
- Forest status - CFUGs have played a crucial role in improving the status of forests. However, the CC has affected biodiversity, including a decrease in biodiversity and diminished production of NTFP and medicinal herbs.

#### **LAPA's activities and traditional adaptation practices:**

- Local government has prepared LAPA
- Plantation
- Sensitization and awareness-raising activities are conducted by CFUG members.
- Coordination with different relevant SHs and agencies for flood and landslide control activities
- Improved Cooking Stoves
- Awareness-raising programs, including plantings, conducted in schools and on public lands
- Bioengineering, such as the construction of gabion and retaining walls.
- Water conservation pond, recharge pond, plantation, snow pond
- Lift irrigation, use of organic manure and fertilizer, off season vegetation farming
- Forest management done through CFUGs
- Irrigation canals, Micro hydro lift irrigation system
- Construction of snow collection pond, water collection pond
- Plantation, including bioengineering and retaining walls
- Municipal-level forest and environment committee
- Establishment and operation of a high-tech nursery

### **Livelihoods, Value chains, Marketing**

- There is high potential for NTFPs, including medicinal plants such as Yarsagumba (*Cordyceps sinensis*), Ban lasun/Wild garlic (*Allium wallichii*), Satuwa/Caterpillar fungus (*Ophiocordyceps sinensis*), Chiraito/Himalayan Gentian (*Swertia chirayita*), Jatamasi (*Nardostachys jatamansi*), and Morel Mushroom (*Morchella esculenta*). These products have high local and international market demand.
- The collection of forest-based raw materials is done by local community collectors, and these materials are mostly sold raw or without processing at lower prices. There remain challenges such as limited processing facilities, weak market linkages, and limited information on pricing and demand. These factors result in lower returns for collectors. There is potential for income generation and economic benefit through value addition, such as processing, grading, and packaging.
- Potential to establish and operate small-scale enterprises such as essential oil processing and herbal tea production. There are very few forest-based enterprises in Jumla, but there is potential for more, and they lack technology and processing facilities.
- Marketing of NTFPs in Jumla is constrained by poor infrastructure, difficult terrain, and limited access to transportation. Most local collectors rely on middlemen, which reduces profits and hampers price negotiation.

### **Further suggestions:**

- At the local level, a technical staff position is necessary for registering and managing private forests.
- Gaps: Lack of a technical person.
- The presence of forest technical expertise is essential for local governments to draft and implement their own forest acts, regulations, and environment-related laws.
- Due to the lack of technical personnel/expertise and data, the transfer of authority and decision-making rights to the local level is constrained.
- For climate-smart forest-based enterprises to be sustainable, it is essential to provide skills development training that enables them to continue beyond the project period.
- Although there are abundant NTFPs and medicinal herbs, the lack of value addition and processing units, along with a lack of transparent marketing and low awareness among collectors about NTFP commercialization, processing opportunities, and enterprise development, suggests that support is required for establishing modern processing units and introducing technology for grading, packaging, and extracting essential oils.

### **Priority Adaptation Actions identified during consultation:**

- Eco-tourism promotion
- Support to establish forest enterprises- tea, juice
- Promotion of Agroforestry
- Promotion of livestock rearing
- Conservation and promotion of native crops
- To develop climate-resilient crop varieties/seeds
- To conduct farming by using IPM technology
- Lift irrigation is essential in drought areas

### **Institutional System, Planning and Coordination**

- The Division Forest Office is working to facilitate and implement the CFUG operational plan.
- There are gaps in the policies and programs of stakeholder institutions in adequately addressing community needs.
- Policies and programs have not been implemented in line with identified needs.
- Local governments, community forest user groups, and institutions lack the capacity to effectively deliver their mandates.
- There is limited authority at the local level.
- There is limited understanding of policies, regulations, legal frameworks, and scientific forest management.
- Inadequate funding to implement the activities

- Lack of skilled human resources

### **Social Inclusion and Participation**

- There is strong participation of women, including disadvantaged and minority groups, in CFUG-related activities, including committee meetings.
- At the local level, there is good participation across all levels, from planning to implementation.

### **Institutional system, planning, and coordination**

- Forest: The Forest Act and Regulation are not operated effectively
- The coordination mechanism is weak.
- Agriculture: Limited knowledge; production and use of organic/biological manure are low. Lack of research
- Programs are planned and requested based on access rather than on actual community needs.
- The EIA study was not conducted effectively.
- There is a lack of meaningful participation in activity and budget planning.
- No budget allocation as per the activity
- There is a lack of coordination between the three tiers of government.
- Weak information management system.

### **Suggestions for upscaling the best practices of adaptation measures**

- Beekeeping
- Production of organic manure
- Plantation
- Development and Promotion of NTFP farming
- Adoption of agricultural insurance
- Establishment of a high-tech nursery
- Expansion of flood control embankment
- Plantation in riverbanks and roadside
- Activities for water source recharge and restoration.

### **Key take-away messages:**

- Stakeholders were oriented on the project's overall concept, objectives, and implementation approach, with clear articulation of their roles and responsibilities in project formulation and execution.
- The importance of inter-organizational coordination among federal, provincial, district, and local-level institutions was strongly emphasized to ensure coherence, avoid duplication, and enhance implementation effectiveness.
- Environmental and Social Safeguards (ESS) considerations were highlighted, with collective commitment from stakeholders to proactively identify, mitigate, and minimize potential risks throughout the project lifecycle.
- The need to systematically integrate Nature-based Solutions (NbS) into local development planning was stressed, including forest landscape restoration, watershed management, and ecosystem-based adaptation measures.
- Plantation and forest restoration activities using climate-resilient and locally appropriate species were identified as priority interventions to enhance ecosystem services and livelihood resilience.
- Strong emphasis was placed on promoting micro, small, and medium enterprises (MSMEs) linked to forest-based and nature-positive livelihoods, with required support in both infrastructure development and access to capital/finance.
- The necessity of capacity-building and training programs on forest fire prevention, preparedness, and control was highlighted, particularly in the context of increasing climate-induced fire risks.
- Additional capacity development needs were identified, including sustainable forest management practices, value chain development, market linkages, and climate-resilient livelihood diversification.
- Overall, strong ownership and commitment were demonstrated by all stakeholders toward collaborative project formulation and effective implementation.

### 10.1.3.7 District-level workshop, Dolpa

Date of Meeting: 9 January 2026

Participants: Chief District Coordination Committee (DCC), other representatives from DCC, District Forest Officer, DFO representatives, Under Secretary/MoFE, GCF Liaison officer, representative from Jagadulla RM, Representatives from Kaike RM, Representatives from ANSAB, Conservation Officer from Sheyphoksundo National Park, Deputy Mayor of Thuli Bheri Urban Municipality, Dolpa, NEFIN Dolpa, Newsreporter, NTNC team, RAIN TA.



*Photo 10: District-level workshop, Dolpa*

#### Key discussion points:

##### **Key climate risks and hazards affecting the district**

- Rise in temperature - Higher temperatures are altering weather and rainfall patterns, shifting the snow line, and affecting ecosystems and livelihoods in Dolpa
- Drought/dry spells- Water sources drying, plants wilting due to drought.
- Women have to travel long distances to fetch water, and their workload has increased. Besides, these women must be involved in other HHS' chores.
- Landslide/soil erosion and dry landslides/rockfall
- Forest Fire- wildlife extinction
- Erratic rainfall combined with declining snowfall is leading to water scarcity and drying springs, increasing landslides and soil instability, increasing flooding, and impacting agriculture, with declines in productivity, such as dry soil at planting time, lower yields of barley, potatoes, apples, etc. Likewise, pasture degradation and livestock stress are occurring, including threats to high-value medicinal plants and NTFPs such as Yarsagumba.
- Cascading effects- difficult to travel due to heavy rainfall, increased gender-based violence, increased pressure on natural resources, declining soil fertility, long-term decline in agricultural productivity, etc.
- Increasing invasive alien plant species.

##### **How climate hazards impact ecosystems and forests:**

- Plants dried and died due to the dry area and drought conditions

- Less regeneration
- Some species, such as Loth Salla, Khasru/Himalayan Oak, have declined/disappeared.
- Limited/Low production of medicinal plants.
- 4 CFUGs are passive out of the total 72 CFUGs.

#### **Impact of climate change on Agriculture:**

- Crops are not ripening on time, agricultural production has declined, the plants are not flowering at the usual time, disease has reduced crop production, and the harvested crop is of poor quality.
- Decrease in agricultural production due to less rainfall and a lack of rainfall on time, resulting in lower production of potatoes and apples.
- Early fruiting and flowering, an increase in pests and diseases,

#### **Impact of climate change on Rangeland:**

Vegetation, grass, and leaves show signs of dryness, and forest rhododendrons are not flowering. Due to dry land, grass is not growing.

#### **Current Adaptation Practices and Local Knowledge: Existing adaptation interventions/practices, institutional mechanisms in use**

- LAPA has been developed and is operational. Budget allocated for activities. 30% of the total budget of LAPA has been mobilized to support the operational plan of CFUG and to implement activities such as planting, building gabion walls, and constructing waste drainage.
- Construction of water collection ponds for drinking purposes
- Use of wooden materials in houses for protection against the cold.
- Construction of a gabion wall and check dams to control landslides and river cutting.
- Construction of irrigation canals
- Plantations
- Establishment of Community Forests
- Use of Improved Cooking Stoves
- Use of solar as an alternative energy source

#### **Suggestions from participants on climate adaptation interventions and the need for support:**

- Skill development training for women and targeted groups.
- Increase women's participation in planning and implementation
- Women health program
- Providing support to buy an ambulance
- Mobile doctor
- Program against gender-based violence
- Promote marketization of NTFP and medicinal plants
- Water source protection
- Support establishing forest-based enterprises
- Support laptops and computers in school
- Institutional development/institutional strengthening in community forests
- Water conservation ponds
- To minimize the use of pesticides in fruits and vegetables
- Implement measures to control soil erosion on slopy and landslide-prone areas.
- Minimize deforestation and undertake reforestation/afforestation.
- Proper management of manure produced by livestock in the farmyard.
- To increase the investment in climate change adaptation interventions.
- Plantation
- Climate change awareness-raising activities
- Bioengineering for riverbed cutting
- Irrigation canals



- Tunnel for agricultural production
- Income generation activities
- Relief fund
- Climate change education program
- Formation of green climate committees/groups
- Agricultural production improvement program
- Waste drainage management
- Natural resource management/Biodiversity conservation program, including forest fire control, soil conservation, plantation, and wildlife conservation
- Water resource management, including pond construction
- NTFP conservation, establishing NTFP processing units

#### **Market Access:**

- The market is far
- The quality of raw materials is low
- No certification

#### **Access to Public Services:**

- Reduced employment.
- Long distance to access the social security allowance.

#### **Social Inclusion and Participation:**

- Decisions are made by involving different people, such as elected representatives, literate persons, males, females, Dalits, minority.
- There is good participation from women, Dalit groups, ethnic groups, and targeted people.

#### **Livelihoods, Value chain, and marketing**

- There is high potential for NTFPs, including medicinal herbs, but geographical challenges, limited availability of forest-based raw materials, and difficulties in transporting, processing, and accessing markets hinder development. Medicinal plants and fruits are abundant in the district; however, collection and commercialization remain challenging.
- Collectors are not directly involved in sales and distribution. Interference by middlemen creates problems. Absence of a proper marketing mechanism/poor market linkage system, no designated medicinal plant collection center, lack of value chain/processing facilities, and difficulty with transportation.

#### **Status of Forest-based Enterprises:**

- There is Shilajit/Mineral pitch (Asphaltum) and a timber processing enterprise in this region.
- Forest status is declining, and local people are less interested in Forest conservation.

#### **Challenges in Marketing of NTFPs:**

- Geographical challenge; Transportation problem; Small medicinal/herbal plant collectors do not have market access.
- People lack knowledge of legal provisions governing wildlife, forests, and protected areas.
- Early Warning System, Data, Access to Information: Weather, Information related to climate risks/disaster-related information is communicated through radio, social media, and TV.
- Suggestion: To establish climate stations, increase access to communication and the Internet.
- Institutional System, Planning and Coordination:
- There are gaps in capacity, coordination, and finance. Gaps in knowledge, politicization, and communication gap
- Status of Natural Resource Management, including the ecosystem and forests
- The forest has deteriorated, becoming degraded and sparse. The number of birds has decreased. Water sources have dried up, reducing the production of medicinal herbs.

### Why are women more vulnerable than men?

- During extreme climate events such as landslides and floods, women are more affected by mobility constraints imposed by traditional clothing, such as a saree, and by the additional responsibilities of pregnancy or childcare.

### Key Takeaways

- Stakeholders were informed about the project's concept, objectives, and implementation modalities, with clear definition of roles and responsibilities.
- Environmental and Social Safeguards (ESS) were underscored as integral to project implementation, with commitment to risk management and inclusive benefit-sharing.
- A range of priority activities aligned with forest conservation, livelihood enhancement, and climate resilience were identified and documented.
- Participants expressed strong commitment to supporting the formulation and execution of project activities through coordination and facilitation at the district level.
- Key challenges, opportunities, and local needs were discussed to ensure project interventions are context-specific and responsive to community priorities.
- Emphasis was placed on promoting nature-based solutions, sustainable forest management, and ecosystem restoration as central components of project strategies.
- The importance of strengthening local governance, institutional linkages, and capacity building for effective project delivery was highlighted.
- Stakeholders recommended establishing monitoring and feedback mechanisms to track progress, ensure accountability, and adapt project actions as needed.
- Opportunities for integrating youth, women, and marginalized groups in project activities were explored to enhance inclusivity and social equity.

#### 10.1.3.8 District-level workshop, Bindrasaini, Western Dailekh

Date of meeting: 1 January 2026

Participants: Chamunda Bindrasaini Municipality (M), Dullu M, Aathbis M, Bhairavi Rural Municipality (RM), Thatikadh RM, CFUG, Entrepreneurs, Agriculture Forest University (AFU), Sub division forest office (SDFO), NTV, MMN, senior citizens.



Photo 11: District-level workshop, Bindrasaini, Dailekh, 1 January 2026

### Key discussion points:

The district level consultation was done specifically via two approaches:

- Power point presentation
- Group work

### **Group: Women Groups**

- Objective: Capture gender-differentiated climate impacts, workloads, vulnerabilities, adaptive capacity, and leadership gaps.
- Climate Impacts: women groups shares that climate change has been observed and felt since last 10-12 years. it has severely impacted in many ways:
  - The climate sources been depleted
  - change in rainfall pattern: It has severely affected in agriculture sectors, resulted low productivity and quality loss
- Vulnerability and Risks: The women groups share in comparison to male, women are mostly engaged with household chores and for it, they need to travel distantly for water additionally they share there are inadequate fodder and forage availability in community forest.
- Access and Participation in CF and cooperative: They share they are the members of CF and cooperatives and they participate in the meetings, furthermore they share they feel difficult in managing time for participation in meetings.
- Adaptation Practices: They share the following adaptation practices are adapted locally:
  - Sky water collection
  - plantation
  - water sources protection
- Priority Needs (Resilience): Increase in participation for mass awareness, Reduce in gender discrimination, Allocate GESI accountable budget

### **Group: Marginalized (Dalits, IPs, Excluded Groups):**

- Objective: Capture differentiated vulnerability, exclusion mechanisms, and Indigenous knowledge.
- Climate impacts: The socially excluded groups share:
  - Heavy rainfall in short period
  - Drought
  - displacement of houses due to landslides
  - Human and economic loss from flood
  - Additionally, they shared that due to geographic constraints, socially excluded communities and individuals experience disproportionate impacts. Furthermore, they expressed that their economic status, livelihood insecurity, and limited access to mitigation and adaptation opportunities exacerbate these impacts, resulting in varying levels of vulnerability.
- Access to Rights and Resources (Forest products, Water, Land CFUG benefits): Less access in water and land property, less access in Vital post in CFUG
- Traditional Knowledge (Manage climate risks): The groups shared that although they possess traditional knowledge to manage climate-related risks, the increasing magnitude and intensity of shocks have exceeded their capacity to cope
- Institutional Barriers (Planning and program: The groups shared that there are no formal restrictions or barriers in planning and programming, and they feel free to express themselves. However, due to the open-floor nature of discussions, they often face difficulties in effectively voicing their concerns.
- Priorities (adaptation systems fair and accessible)
  - effective and meaningful participation Forest group committee, communities' group
  - There should be Equality in project activities implementation and climate change mitigation actions

- interlink socially excluded communities with enterprises business who contributed and played vital role in conservation of water sources, land and forest resources.

#### **Group: CFUG and Farmers group:**

- Objective: Capture ecological change, governance capacity, and NbS potential.
- Ecosystem Trends: The CFUG shared that, compared to the past, forest condition and coverage have improved. However, they also noted that due to climate change, some valuable NTFPs are at risk of extinction, and water sources within forest blocks have been depleted. Similarly, farmers shared that the introduction and spread of invasive species have severely affected fodder grasses.
- Climate impacts (forests, crops, grazing): They shared that climate change has severely affected forest species, crops, and grazing lands due to drought, forest fires, invasive species, the emergence of agricultural diseases, and other climate-related events.
- Governance and Inclusion: They share some of the CFUGs are active and some are partially active. Mostly the communities who are near to forest area participate in forest related activities.
- Adaptation Actions (Restoration and conservation actions)
  - Plantation
  - removal of unwanted species
  - mobilization of forest guard
  - Monitoring
  - The removal of unwanted activities has been working well and plantation survival do not go well.
- Support Needs (scale of adaptation): They expressed the climate smart agriculture, enterprises support (income generation actions) and water sources protection can scale up adaptation

#### **Group: Local Government (Municipalities and Ward):**

- Objective: Assess planning, capacity, finance, and LLCA readiness.
- Climate impacts Priorities:
  - Heavy rainfall in short period
  - Increasing temperature (e.g. declining of an orange plants and productivity)
  - Drought
- Planning and Budgeting (LAPA): The municipality express though LAPAs are in place but not implemented effectively. Further CFUG shares the problematic issues are planned in Municipal planning. Further they share the LAPA do not fall under the high priorities of CFUG.

Coordination: The municipality express they coordinate/connect three tiers of government through workshop, plan formulation, meetings and ward actions.

Capacity Gap (technical, data, or financial gaps exist): The municipality expressed that ineffective result delivery and weak data management have led to inadequate financial investment. Additionally, they shared that budget limitations and financial constraints and capable human resources are major challenges contributing to capacity gaps.

LLCA Readiness: The LG express unavailability of climate funds and rights to decision making prevents devolving funds and decisions locally.

#### **Group: District and provincial institution:**

- Objective: Identify systemic barriers, regulatory constraints, and scaling pathways.
- Policy Barriers (regulations limit local action or finance flow):
  - Legal ambiguity and uncertainty
  - Coordination Systems:
  - Provincial development coordination council, district coordination committee (DCC), thematic offices does not seem functioning effectively.
- Data and Evidence: data overlapping, inadequate data and management missing for decision-making
- Scaling and Sustainability: The proper and meaningful decision and local priority actions can scale up and bring sustainability.

### Group: Cooperatives, MSMEs, and Enterprises:

- Objective: Capture climate risks to value chains and economic resilience.
- Climate Risks (events affect supply, processing, transport): The group shares the following climate risks are felt and observed:
  - Inadequate rural road access and blockage of road during rainy season
  - problem in transportation and travel
- Market Access (distance, quality, certification):
  - inadequate access of road
  - unavailability of products quality assurance/measurement body
- Finance (Access to loans, insurance, working capital): Small scale of institutions are available in ground for access to loans, insurance and working capital.
- Resilience Needs (investments would improve resilience):
  - The groups share the followings actions should be undertaken for the improvement of resilience:
  - NTFP processing enterprises development/establishment
  - Value addition for NTFPs
  - Forest based enterprises should be established
  - Strengthen of skill -based activities
  - Handicraft training
  - Watershed conservation and protection
  - School based awareness
  - Bio-engineering
  - Research and climate funding

### Group: District Scenario:

- Observed Climate Changes and Impacts: Fire, floods, landslides, and epidemics are major climate impacts. These events severely affect natural resources through ecosystem degradation, forest fires, and the spread of invasive species. Additionally, they shared that such climate events have adversely affected agricultural crops by introducing various agricultural diseases, leading to reduced crop quality and production and ultimately impacting local livelihoods.
- Local Adaptation Practices and Knowledge: The people have well practiced the following traditional adaptation practices:
- Plantation, Bioengineering, river training works, conservation of recharge pond, awareness program.
- The plantation, environment friendly green infrastructure should be scaled up
- Institutions, Planning, and Coordination: The group expressed the institution and planning has partially incorporated communities' priorities. The major gaps for these are inadequate technical capacity, resources as human, financial.
- Inclusion and Participation: There is inclusion participation in decision making (elected bodies, institutions, representatives) However, there is less active and meaningful participation of local public in decision making.
- Livelihoods, Value Chains, and Markets: the climate change has adversely affected the forest resources which are directly interlinked with local communities. According to group the various forest-based enterprises has been established by individual and institutions as mentioned below:
  - Furniture
  - Allo clothes production
  - Bamboo handicraft
  - Nursery establishment
  - Timber handicraft

- Urtica dioica (Sisnoo) power
- Fruits garden
- NTFP collection
- Daphnes spp. (Lokta) paper

Altogether 106 (individual / institutions) have established the above-mentioned enterprises

(Source: Annual report, 2024-025 DFO Dailekh)

- Early Warning, Data, and Information Access: They receive the climate and disaster information through radio, mobile SMS and communication. The early warning can be strengthened through proper management and digitization of climatic data and development of inclusive EWS.
- District-Level Resilience Priorities: They expressed to build resilient communities and institutions, income-generation activities should be promoted through forest-based enterprises. Additionally, they emphasized the need for market linkage and access assessments along with value chain analysis

### **Key take-aways**

- Stakeholders were oriented on the project concept, objectives, and implementation framework, with clear delineation of their roles in project formulation and execution.
- Strong commitment was expressed toward co-financing project activities, where feasible, through local government resources and complementary programs to enhance project sustainability and ownership.
- Environmental and Social Safeguards (ESS) were emphasized as a core component of project implementation, with collective agreement to proactively manage risks and ensure inclusive, equitable benefits.
- Significant emphasis was placed on the sustainable use and management of forest resources, balancing conservation objectives with livelihood enhancement.
- The importance of effective coordination among Community Forest User Groups (CFUGs), local governments, and the Divisional Forest Office (DFO) was strongly highlighted to ensure coherent planning, implementation, and monitoring of forest-based interventions.
- A range of project-relevant activities were identified and documented, including forest restoration, climate-resilient livelihood options, MSME promotion, and capacity-building initiatives.
- Participants stressed the need to strengthen institutional capacity of CFUGs for governance, financial management, and compliance with operational plans.
- Overall, strong ownership and commitment were demonstrated by all stakeholders toward collaborative project formulation, co-financing, and effective execution of project activities.

#### **10.1.3.9 District-level workshop, Narayan, Eastern Dailekh**

Date: 2 January 2026

Participants: DCC Dailekh, Narayan Municipality (M), Mahabu RM., Dhungeshwor RM, Guras RM, Bhagawatimai RM DFO, FNJ, FECOFUN, news reporter, NTNC, MMN



Photo 12: District-level workshop, Narayan, Dailekh, 2 January 2026

#### Key discussion points:

##### **Group: Women Group**

- Climate Impacts: **Objective:** Capture gender-differentiated climate impacts, workloads, vulnerabilities, adaptive capacity, and leadership gaps.
  - The women group responded in terms of climate change impacts:
  - Climatic hazards: flood, landslide, fire, drought, impact on seasonal agriculture, less productivity, direct impact to old aged and child, epidemics outburst
  - Agriculture sectors: Decline in production, Native/indigenous crops lost,
  - Water sources: water sources drying up and decline, change in rainfall pattern,
  - Forest product: environmental hazards risk, wildlife crop depredation conflict,
  - The women's group shared that their workload has increased significantly as water sources have dried up and been depleted, forcing them to travel long distances to collect water. Moreover, changes in rainfall patterns have severely affected agricultural crops.
- Vulnerability and Risks: The workload of women has been increased due to water source depletion, agriculture crisis and daily activities.
- Access and Participation in CF and cooperative:
  - decisions are made in participatory approach but no meaningful
  - access to all in meeting
  - Males are highly prioritized in meeting in comparison to female
  - less women participate in meeting as they are unfamiliar with agenda
  - Females are responsible to overlook children
- Adaptation Practices:
  - Climate-resilient agriculture practice
  - water source protection
  - production of organic fertilizer from forest resources
  - Recharge pond construction/conservation next skill based training with equipment support the water source protection went well whereas the fruit farming did not go well.
- Priority Needs (improve resilience)
  - Climate-resilient agriculture practice
  - water source protection
  - production of organic fertilizer from forest resources

**Group: Marginalized (Dalits, IPs, Excluded Groups):**

Objective: Capture differentiated vulnerability, exclusion mechanisms, and Indigenous knowledge.

- Climate Impacts: Flood, landslide, soil erosion and fire are the major climate induced hazards.
- Access to Rights and resources Forest products Water, Land, CFUG benefits): They responded equal access and rights on above mentioned resources. No discrimination is done. no equitable benefit sharing
- Traditional Knowledge (manage climate hazards): They share the plantation and river training works are the traditional knowledge to adapt with climate hazards, such activities are partially recognized by LG and projects
- Institutional Barriers planning/programs)
  - institutional constraints
  - no access in information and notice
  - no responsible and accountable made
  - occupied with households' chores
- Priorities (adaptation systems fair and accessible):
  - increase in participation
  - inclusive and equitable in planning
  - conserve, protect and promote traditional adaptation practices

**Group: CFUG and Farmers group:**

Objective: Capture ecological change, governance capacity, and NbS potential.

- Ecosystem Trends: The forest condition has been improved (75%), NTFP decline and depleting,
- **Climate Impacts:**
  - Drought in forest area
  - less agriculture productivity and quality decline
  - Less forest generation
  - narrowing grazing area due to invasive species coverage.
- Governance and Inclusion: CFUG are partially active. Political women and educated participate actively while indigenous, vulnerable groups (Dalit, Janjati) less participation.
- Adaptation Actions: currently plantation and forest protection works exists. Where as the adaptation plans, policy fails in incorporation of CF plans. Also conserve, protect and promote traditional adaptation practices.
- Support Needs (scale up adaptation)
  - -policy formulation and budget allocation
  - Support from GCF required (long term)
  - CF activities integrate in plan and policies of local government
  - Forest related activities should be directly linked up with CFUG and should be in CFUG program bank.
  - -Empowerment of groups on forest act, policies and other laws.

**Group: Local Government, Municipalities and wards:**

Objective: Assess planning, capacity, finance, and LLCA readiness.

- Climate Priorities (top 3 climate risks): Landslide, Soil erosion, Drought additional, Thunderbolt
- Planning and Budgeting (Climate plans):
  - LAPA is in place and is on implementation but not effective
  - Incorporated CFUG awareness program in plans and policies of local government
- Coordination: (provinces, CFUGs, line agencies): While formulating plans and policies coordinate with CFUG but it's not been effective.
- Capacity Gaps (technical, data, or financial gaps exist):



- No climatic data collected and managed properly
- inadequate capable human resources
- No budget in the sectors of forest and environment
- LLCA Readiness (prevents devolving funds and decisions locally): No workplan, No data, No capable human resources.

#### **Group District & Provincial Institutions:**

- Objective: Identify systemic barriers, regulatory constraints, and scaling pathways.
- Policy Barriers: inadequate legal advisor, inadequate knowledge on laws
- Coordination Systems: in the field of community forest, FECOFUN coordinate with district and Province.
- Data and Evidence: inadequate climate events data is missing for decision making
- Scaling and Sustainability (local actions scaled up): The local actions can be scale up through policy provision and integrating/mainstreaming in plans and policies of local government.

#### **Key takeaways:**

- Stakeholders were clearly informed about the project concept, objectives, and implementation approach, with explicit clarification of their roles in project formulation, preparation, and execution.
- Commitment was expressed toward providing co-financing on a need basis, particularly through alignment with local government plans, sectoral budgets, and complementary programs.
- Participants demonstrated strong support for the overall project preparation and execution process, including data sharing, coordination, and facilitation at the district and municipal levels.
- Environmental and Social Safeguards (ESS) considerations were emphasized, with consensus on proactively managing risks and ensuring inclusive and equitable project benefits.
- The Divisional Forest Officer stressed the critical importance of inter-agency cooperation, particularly among local governments, CFUGs, DFOs, and relevant line agencies, to ensure effective and harmonized implementation.
- A range of project-relevant activities were identified and systematically documented, including sustainable forest management, restoration, MSME development, and capacity-building interventions.
- Participants highlighted the need for strengthened institutional coordination mechanisms and regular multi-stakeholder platforms for planning, monitoring, and learning.
- Overall, strong ownership and collective commitment were demonstrated by all stakeholders toward collaborative project formulation, co-financing, and successful implementation.

#### **10.1.3.10 District-level workshop, Jajarkot**

Date of meeting: 5 January 2026

Participants: DCC Jajarkot, Bheri Municipality (M), Chhdegadh M., Shivalaya RM, DFO PTYSM, KTV, Basin management center, FNJ, FECOFUN, news reporter



Photo 13: District-level workshop, Jajarkot, 5 January 2026

#### Key discussion points:

#### Details of Group Works

#### **Group: Women Group**

Objective: Capture gender-differentiated climate impacts, workloads, vulnerabilities, adaptive capacity, and leadership gaps.

- Climate impacts: The groups share they have closely felt and realized climate has been change they have noticed different parameters as: snowfall, drought, heat waves, rainfall pattern, shifting of orange tree etc.
  - Fluctuation of temperature results heavy rainfall, Fire, introduction of invasive species)
  - Agriculture: New diseases outburst in agriculture crops, low productivity, shifting of crops (lower-higher),
  - Water source: Drought, depletion of water sources
  - Forest: invasive species in forest, forest fire
- Vulnerability and Risks: Women mainly face difficulties in fetching water, as climate change has caused most nearby water sources to be depleted and dried up, forcing them to travel long distances to collect water
- Access and Participation (CFUGs/cooperatives):
  - They share they are the members of CF and participate in meeting called by CF
  - The voices are heard partially in meeting and decision making
  - The household chores, responsibility, geographical constraints prevent them participation
- Adaptation Practices: plantation, tunnel for vegetable farming and river training works like adaptation practices are used by women. They share FBE enterprises is the best to generate income as of climate change induced hazards it has enormously impacted agriculture sectors.
- Priority Needs (Improve resilience): They share forest-based enterprises and supporting in climate smart agriculture practices will be the best initiatives for improving the resilience for women and men

#### **Group: Marginalized (Dalit, IPS, exclude groups):**

Objective: Capture differentiated vulnerability, exclusion mechanisms, and Indigenous knowledge.

- Climate impacts: They share the following climate induced hazards are the major extreme events which extremely impact the marginalized groups
  - Flood, Landslide, Heavy rainfall, drought, fire and geographical constraints.
  - Access to Rights and Resources (Forest products, water, land, CFUG benefits):
  - There is equal opportunity for all marginalized groups. However, though there are equal opportunities but they have felt and realized their voices are not heard meaningfully and partially discriminated.
- Traditional Knowledge (manage climate risks): water source protection and plantation are the major adaptation practices.
- Institutional Barriers (Participating in planning and programmes):
  - Information/notice dissemination and access
  - Lack of time as mostly works on daily wages and workload

- Low education and awareness
- Priorities (adaptation systems fair and accessible): unity of diversity (rights on sources)

### **Group: CFUGs and Farmers**

Objective: Capture ecological change, governance capacity, and NbS potential.

- Ecosystem Trends (forest condition improved or degraded):
  - Comparatively forest conditions are improved
  - traditional/native NTFPs are in the condition of extinct like (Jamun, Kurilo, chuturo etc)
  - Water sources are being dried up
- Climate impacts (Forest, crops and grazing)
  - Increment in invasive species
  - Increase in temperature
  - Change in agriculture crops harvest time
  - introduction of newly agriculture diseases, pests etc.
  - Negative impact on wildlife habitat
  - increase in flood and landslide
  - lost of valuable flora and fauna
  - Acid rain and chain in rainfall pattern
- Governance and Inclusion: inadequate and ineffective coordination and collaboration between CFUG, LG, DFO and agriculture groups
- Adaptation Actions:
  - Recharge pond construction and management
  - Improved cooking stoves (ICS)
  - plantation
  - NTFP and forest products nursery establishment
  - River training works (embankment), irrigation etc.
- Support Needs (scale adaptation)
  - -Effective adaptation plan
  - -Water source protection
  - Livelihood improvement programs (LIP)
  - -Alternative energy and fuel management.
  - plans and policies at local govern on adaptation
  - -Awareness program on CCA.

### **Group: District scenario:**

- Observed Climate Changes and Impacts: Landslide, flood, cold waves, drought, heavy rainfall, raise in temperature, thunder are the major climate induced hazards
- Impacts:
  - Reduction on production of agriculture products, settlement migration.
  - water sources depletion and dry up, scarcity on clean and hygienic water, loss of flora and fauna as well valuable NTFP, ecosystem depletion
  - Increase in temperature induces diseases (Diarrhea, Pneumonia, back fever.
  - Economic loss due to thunder and storm
  - increase in invasive species covered the grassland and fodder species resulting impact in livestock feeding.
- Local Adaptation Practices and Knowledge: Agriculture farming, livestock farming, handicraft are the major are the traditional community-based adaption. Depending upon the nature of climate events the adaptation practices will be adapted.

- Institutions, Planning, and Coordination: There is inadequate coordination between three tiers of government and CFUG in planning process. Additionally, there is duplication of budget in local and provincial
- Inclusion and Participation:
  - -There is participation on planning process of adaptation
  - Access in information of socially excluded groups
  - Policy tries to include all castes, ethnicity, groups but still excluded
  - The locally led adaptation should be locally owned and flexible, replicable as well demand.
- Livelihoods, Value Chains, and Markets
  - There is great opportunity of NTFP (Tmur, Allo, sisnoo, Jatamasi, Chiraito), and other forest based/handicraft enterprises. Additionally, valuable stones are also available in district as Kaitait, Turmalin etc.
  - Though there are many enterprises but no enterprises-based support or program available at district level
  - There is good market access for all types of resources produced.
- Some issues of NTFP and Forest products
  - No plan for collection and production
  - insufficient awareness on NTFP
  - lack of Collection center and transportation
- Early Warning, Data, and Information Access
  - FM, Radio, Facebook, WhatApps, Viber is the local medium for the early warning
  - Where there is no internet access there should be offline data/information access
  - The early warning system should be inclusive
  - The awareness program should be prioritized
  - Local emergency operation system should be strengthened at LG level as well it should be interlinked with LEOC-DEOC-PEOC and NEOC
- District-Level Resilience Priorities:
  - All local government should revise/review the LAPA and integrated and prioritize in annual plans and policies
  - locally led adaptation actions should be prioritized
  - The local communities, CFUG, local government envision Green Jajarkot Clean Jajarkot and resilient communities

#### **Group: District and province institutions**

- Objective: Identify systemic barriers, regulatory constraints, and scaling pathways.
- Policy Barriers (regulations limit local action or finance flow):
  - weak role on coordination on policy development
  - Lack of local scenario suitable policy, programs and implementation
  - According to forest act and regulation the forest sectors is not under LG. Additionally, lack in sectoral right in implementation.
- Coordination Systems (platforms exist and effectiveness: They shared coordinate with following institutions:
  - District Administration office
  - Division forest office (DFO) and province forest ministry
  - Watershed management center
  - Federation of community forest and user group network (FECOFUN)
  - District coordination committee (DCC)

- Local government
- Community forest user groups
- Data and Evidence (decision making): Lack of research and study there is no data evidence for decision making
- Scaling and Sustainability (successful local actions be scaled):
  - collect evidence-based data through research and study
  - Coordinate with local level stakeholders for scaling the adaptation actions and other actions

### **Group: Cooperative, MSMEs and Enterprises**

Objective: Capture climate risks to value chains and economic resilience.

- Climate Risks (Supply, processing and transportations): the climate risks have enormously affected all they systems as supply, processing and transportation
  - Heavy rainfall: it directly damages the rural road resulting impact in transportation
  - Drought and landslide: direct impact on production and supply.
  - Invasive species: impact on NTFP and other forest resources essential for operation of enterprises.
  - Not well implemented activities according IEE and EIA result having impact in processing, supply and transportation
- Market Access:
  - local and district market are the bottleneck for supply of product
  - lack certification and quality ensure mechanism.
  - Additionally, they share they could not produce product as per market demand as of lack of capable human resources and economic resources.
- Finance: FBE enterprises receives loan, insurance through government mechanism Furthermore, they share climate fund should be established.
- Resilience Needs: climate fund on the following activities can improve resilience:
  - Water source protection
  - promotion and protection of native agriculture crops
  - Establishment of forest-based enterprises (FBE) can improve resilience through income generation and livelihood support.

### **Key Takeaways**

- Stakeholders were oriented on the project concept, objectives, and implementation approach, with clear articulation of their roles in project formulation and execution.
- Environmental and Social Safeguards (ESS) considerations were emphasized, with collective commitment to proactively identify, mitigate, and minimize potential environmental and social risks.
- Participants jointly identified and documented a range of project-relevant activities, including sustainable forest management, climate-resilient livelihoods, MSME promotion, and capacity-building interventions.
- Strong ownership and commitment were demonstrated by all stakeholders toward collaborative project formulation and effective implementation of proposed activities.

## 10.1.4 Local level

### 10.1.4.1 Meeting with the Mayor, Deputy Mayor, and municipal officials of Nalgad Urban Municipality

Date of Meeting: 25<sup>th</sup> November 2025

Participants: Dambar bahadur Rawat- Mayor; Devaka Lamichanne- Deputy Mayor; Khadak Bahadur Pariyar- Chief Administrative Officer; Dhan Bahadur Mahat- Chairperson, ward no-1; Jyoti Rawal- Women and Environment Development Section; Bhumika Biswokarma- Enterprise Development Section; Kiran Thapa- Administrative office; Tej Bahadur B.K.- Office of the Chief Secretary



*Photo 14: Meeting with the Mayor, Deputy Mayor, and municipal officials of Nalgad Urban Municipality, 25th November 2025*

Key discussion points:

#### **Climate challenges in this area?**

Climate change has impacted various sectors in this region, especially water resources and agriculture. We can see water sources are drying up and agricultural productivity has declined.

#### **Is there a LAPA in this area?**

Yes, LAPA was formulated in 2079 B.S with technical support from NCCSP 2.

#### **How do you identify and prioritize the climate change adaptation measures? how is budgeting done?**

Plantation, awareness-raising activities, and soil stabilization measures involve community participation. People are involved in the planning process of LAPA. Activities are selected from the settlement level up to the ward level and are ultimately approved at the municipal level. Discussions occur at the settlement level. Awareness and sensitization activities are carried out, with selections based on community needs and discussions. Once the plans are developed, they are shared along with the budget, ensuring community involvement throughout the planning process.

#### **Any suggestions for effective CCA plans implementation?**

The necessary technical and financial resources are limited, and capacity building is essential. Additionally, water sources have dried up due to the earthquake. LAPAs have been prepared, but additional human resources are needed to carry out the activities outlined in the LAPA. Relying solely on the municipal budget is not enough. Therefore, more human resources and technical training are required.

They also asked if there would be support for rebuilding the buildings damaged by the earthquake, since the government hasn't allocated enough budget for this. In response, we said it's not possible to support this area because it isn't related to climate change or climate hazards.

**While distributing the benefits from the forest, what is the process, and how do people living in urban and rural areas benefit from and utilize the resources?**

CFUGs are responsible for managing community forest resources. They hold sole authority and make all decisions from planning to implementation and resource use. They manage the forest according to their operational plan. Sometimes, the municipality assists when needed; otherwise, CFUGs manage the resources independently. There is no clear distinction between urban and rural areas. Similarly, the local body is not the authorized entity; the authorized body is the DFO, along with the federal and provincial governments in managing CFUGs. CFUGs create the rules and regulations, but oversight is provided by the DFO, not the local government.

**How do you coordinate with national and provincial government on CCA related matter?**

Coordinate with the provincial government on CCA and CFUG-related matters; wildlife and conservation issues are overseen by the federal government.

**Any good practices/lessons learnt for replication on CCA?**

Construction of gabion walls in hazard prone areas, plantation in barren lands.

**How do you ensure accountability and transparency on CCA?**

Public hearing, public audit, and a provision of at least 33% representation in the committee. There might be fraudulent cases if the committee has only male members, so it's crucial to include women on the committee.

**Data system?**

The data system is connected to the federal government and is monitored by it. Sectoral data management exists, with each sector having its own data system linked to the central system. They also maintain information related to agriculture and climate change.

**Any forest-based enterprises in this area?**

Allo/Himalayan nettle (*Girardinia diversifolia*) processing enterprise is operational. It has recently started, and one machine is run by a group of 10 women and 5 men from CFUG. CFUG has a constitution, and decisions are made according to that constitution.

**10.1.4.2 Meeting with Subdivision Forest Official**

Date of meeting: 25<sup>th</sup> November 2025

Participants: Santosh Shrestha- District Forest Officer at Sub-Division Forest Office, Nalgad Urban Municipality; Surendra Pun Magar- Forester, Nalgad Urban Municipality; Prem Bahadur Batala- Entrepreneur.

Key discussion points:

**What are the biggest challenges caused in Forest management?**

Difficult terrain, less resourceful forest, inactive CFUGs, and no economic value from the forest, resulting in fewer economic resources.

**What is the condition of forest?**

Rocky and hilly topography.

**Have you felt that the forest has been impacted by climate change?**

Climate change has affected the forest resources. Previously, NTFPs and MAPS, which were harvested in larger quantities, have now declined due to the loss of herbs and other resources. The district has steep terrain, making forests especially vulnerable to slope instability during heavy or erratic rainfall.

#### **What alternate mechanisms are CFUGs doing?**

Plantation, programs introduced by DFO. Training programs for capacity building. Encouraging them to involve the CFUG in organizing skilled training programs.

#### **Is there any maladaptive practices people practice causing more forest degradation? Impact on community on environment.**

Most older people don't understand or recognize the importance of forests. Usually, communities have used the forests for generations, and when we ask them not to cut trees at random, they say they have been using the forest since their ancestors' time and refuse to obey. We can't monitor everywhere.

They derive forest products especially for HHs purpose and fuel purpose.

#### **Do you think providing income opportunities from the forest will make young people want to stay here?**

Yes, if a strong enterprise is built and the community is involved in these ventures to generate sources of income, I believe they wouldn't need to seek work elsewhere. In Cheda, the forest is a valuable resource; people are conserving it, and they have developed a sense of ownership. Enterprises have also been established.

#### **Challenge of forest productivity. Is it due to rugged physical terrain and low productivity? Is there strong potential to increase productivity?**

Yes, there is potential to boost the forest's productivity. For instance, Bayalghari CFUG has been conserving and managing the forest for nearly 6.5 years, and the forest condition is quite good there. They primarily focus on conservation efforts, which are likely to yield impactful results.

#### **Is grazing uncontrolled at the moment? Goat? Any alternative for sustainable practice?**

People in CFUGs try to regulate grazing, but other villagers ignore this. They also impose penalties according to the Operational Plan. Still, many continue to ignore these rules. DFO staff have punished and fined those who graze illegally. However, most people do not cooperate with CFUG committee members. In many CFs, a separate area is designated for grazing and collecting fodder, but controlling grazing remains challenging in most places.

#### **Are there any successful examples of forest-based enterprises in this area?**

Many enterprises involved in medicinal plants are quite successful. Some people also earn income through Timur from their private lands. There is a strong market for Timur, and reports of good income from it have been received. Packaging isn't done here, so the raw product is sent directly to other locations at a lower price.

From CF, they are also harvesting MAPs. The main market for them is to export to India from Nepalgunj. For wood, they export it to the furniture and sawmill industries. They export to major cities like Kathmandu, Chitwan, and Pokhara. Processing occurs outside this district, and the products are then brought back here, where locals buy them at higher prices.

#### **Women's participation and their engagement in CFUG, what's their role in forest management?**

At least 50% of women should be included in the CFUG executive committee. The provision for women in key positions states that if the leader is male, then the deputy or secretary must be a woman. There is a community forestry called Bayalghari CF, and all members of its committee are women. Women are very active in this CF. They are busy with household chores and don't attend meetings like men do.

**Entrepreneur: Prem Bahadur Patala- local entrepreneur/middleperson**



He primarily supplies wood he collects from private land by purchasing from landowners, then supplies it to the company. Most of his shipments go to Kathca and Cutch industries in Nepalgunj. The products include pan, among others. A vehicle is used to pick up the products for transportation. He acts as a middleman.

Wood-based enterprises such as Khayer/Cutch (*Acacia catechu*), Rosin, and Turpentine. Not all wood is used. Khayera (*Acacia catechu*) is sold in the turpentine industry.

While collecting materials from community forestry, the process is quite lengthy and complicated, which might take 2-3 months, so he prefers to collect from private landowners.

#### **How did you establish a relationship with the company?**

People came from the company looking for local traders, and that's how I got connected.

#### **Is there a formal long-term relationship, either formalized or ad hoc? Is there any contract with the company?**

We can supply as much as we have; there is no strict rule to supply based on company demand—it's dependent on how much they can supply. He collects everything from Jajarkot and supplies it to the company.

#### **Any priority climate adaptation interventions useful for this area?**

Watershed management, slope stabilization measures.

#### **10.1.4.3 Meeting with Community Forestry User Groups (CFUGs)- Bairakhe Pani CFUG**

Date of meeting: 25<sup>th</sup> November 2025

Participants: Santosh Shrestha- DFO, Jajarkot; Tek Bahadur Shahi- CFUG executive committee member; Santosh Shahi- CFUG executive committee member; Karun Shahi- CFUG member; Lila Kumari Shahi- CFUG member; Parbati kumari Shahi; Chandra Bahadur Shahi; Janak Bahadur Shahi



Photo 15: Meeting with Community Forestry User Groups (CFUGs)- Bairakhe Pani CFUG, 25th November 2025

#### Key discussion points:

#### **Have you noticed changes in climate or weather patterns in your community? If yes, what changes have you experienced?**

Climate is changing, and we have been noticing that it is now hotter than in previous years. Precipitation has fluctuated, and rainfall is often delayed. Likewise, water sources have been drying up compared to before.

#### **What are the most significant environmental challenges your community faces today — including those related to water, agriculture, livestock, and forest-based livelihoods?**

How have recent climate events (e.g., droughts, floods, landslides) affected the environment, your livelihoods, and income sources?

Communities have been affected, and agricultural crops have suffered. Rainfall used to occur in June or July, but now it happens in August or September. As a result, farmers are unable to plant crops on time. Previously, there were three crop cycles, but now there is only one.

Landslides are increasing and impacting forests. The weather is becoming hotter, and new epidemic diseases like dengue are emerging. Additionally, forests are degrading due to population growth and water resource depletion, which reduces groundwater recharge. With water sources near homes drying up, especially women have to travel farther to fetch water. Therefore, climate change has made women more vulnerable. Forest fires are also on the rise.

Decisions on forest management are made in monthly meetings, general assemblies, and public audits.

**Are there established Community Forest User Groups (CFUGs) in your surrounding area? If yes: What types of activities does your CFUG currently manage (e.g., forest protection, harvesting rules, restoration activities)?**

Yes, CFUG currently manages silviculture operations including plantations, fighting forest fires, creating fire control lines, and various capacity-building activities such as technical trainings and nursery management. However, they lack firefighting equipment.

**Which forest products (e.g., NTFPs, medicinal plants, timber, etc.) are most important to your household's income?**

There is potential for various forest products such as Chiuri/Indian butter tree (*Diploknema butyracea*), Lokta/Daphne plant (*Daphne papyracea*), pine resin, and Timur/Sichuan pepper (*Zanthoxylum armatum*) in this area.

**How many of the CFUG members are completely dependent on community forestry?**

100% of the CFUG members are completely dependent on the forest, particularly for collecting fuelwood and fodder for their livelihoods. None of the households have Improved Cooking Stoves (ICS) installed in their homes.

**Are there any households that have no other sources of livelihood and rely solely on the forest?**

There is only one HH who depends entirely on the forest, while 8-9 HHs out of 72 do not have any land, and they work as laborers earning daily wages.

**Have you tried any adaptation interventions in your community? Have you heard about LAPA?**

No, not any. Plantation done by the District Forest Office. They wait for rain to start planting.

Although they were not aware of the climate change adaptation interventions, there are some interventions such as embankment protection, plantation, water source protection, and irrigation systems conducted through NCCSP2.

There is now a planned intervention, such as the solar lift irrigation system through the Bheri River. This project is funded through the provincial government budget.

**Other suggestions and requests:**

They have requested firefighting tools and equipment. As forest fires are very common in this area, they go to fight fires without any equipment or safety gear. They extinguish forest fires using green leaves and tree branches. The community also constructs fire control lines, and these are built under the supervision of DFO officials.

Key CCA interventions for this community include plantation activities especially in degraded sites, firefighting equipment with safety gear, nursery establishment and management support, including skill development training and necessary equipment, and water source protection.

There is potential for Chiuri/Indian butter tree (*Diploknema butyracea*) in this area. Similarly, there is potential for Lokta/Nepali paper plant (*Daphne papyracea*), whose bark is used to make handmade Nepali paper. However, there are no processing machines, so acquiring such machines would be beneficial.

**One of the CFUG user's own words...** Regarding the sustainability of the nursery, we need a forest guard (Ban Heralu) to take care of it. We don't have the financial resources to pay the forest guard; the person will care for these plants. The nursery can be managed with technical support from DFO. Then we will be able to supply plants to other areas, which would help generate income. Likewise, to protect the seedlings and care for them, we make pits, collect leaf litter, put it inside the pits, and leave it to decay. After it decays, we add manure to grow high-quality plants.

#### 10.1.4.4 Meeting with Business Owner, Surkhet

Date of meeting: 27<sup>th</sup> November 2025

Participant: Krishna Dhakal



Photo 16: Meeting with Business Owner, Surkhet, 27th November 2025

He owns a KP business service. It was initially supported by ANSAB, which helped establish the business in 2063 B.S. The goal of this service is to set up a business center in the local area and provide support to the community. It began with NTFP marketing and expanded to other ventures such as improved cooking stoves, micro-hydro, biogas, and waste-to-energy projects. This is the only one in Karnali that uses leaf litter, cattle dung, and waste materials or biological resources to produce various products through German technology, including organic manure and compressed natural gas.

He creates various products from forest-based raw materials and waste, such as plates made from Duna tapari leaves, corn cobs, bamboo, and Nigalo (Nepali Hog Plum or *Spondias pinnata*) furniture. He also produces biogas and organic fertilizers from forest waste like leaf litter and animal dung. Dust is used in fertilizer and biogas. He claims nothing goes to waste. All materials, including leaf litter, corn cobs, sal leaves, and animal waste, are fully utilized.

Karnali has potential for various natural resources, mainly forest-based resources like bamboo and Nigalo, which are found at both the household and community forestry levels. We have six startups supported by the Business Incubation Centre (BIC). BIC has different units for business development, marketing, branding, agriculture, technical production, and more. It serves as a common platform to support startups, where new entrepreneurs receive assistance in establishing enterprises through training, seed support, networking, technology, and marketing linkages.

Eighty percent of the raw material supplies come from local people, and twenty percent come from CFUG members.

**How far do you go to collect the raw materials? Within this district or other districts within this province?**

First, we collect with CFUG, especially from nearby communities. Especially women gather leaf litter and collect it in one place, and our vehicle goes there to pick it up. Until now, we have been collecting from nearby areas. If we collect from farther locations or other districts, transportation costs will be higher. Therefore, we are considering establishing some technology, like in Jumla, Dailekh, etc., so they can bring the compressed dust, which would make transportation easier.

Average cost of establishing biogas- NRs 90,000 per plant of 6-8 cubic meter. This one plant is for 1 Household; this seems expensive because it also includes the labour cost and additional toilet is added and safety tank is not needed. However, if the local people themselves involve in making biogas plant, then the tentative cost of establishing 1 biogas will take around NRS 50-60000.

Biogas helps reduce the workload for women as well; they no longer need to go to the forest to fetch fuelwood, which decreases their collection time. Similarly, people are aware of and understand the importance of using biogas, so there is no reluctance to adopt it.

Starting this year, they plan to open an enterprise development center to provide skill development training to people. However, it has not been used effectively to engage and employ them, despite supporting it with technology.

In his own words, investing in training and inputs for farmers at the private level makes the effort sustainable through private sector involvement. If training and inputs are provided to NGOs, it won't be sustainable, so involving the private sector is crucial. The government must encourage private entrepreneurship so they will continue to establish enterprises after skill development training. While providing training to the private sector, operational costs will be reduced, which is not the case with NGOs.

#### **10.1.4.5 Meeting with herbal processing business owner, Nepalgunj**

Date of meeting: 28<sup>th</sup> November 2025

Participant: Rajesh Kumar Jain





*Photo 17: Meeting with herbal processing business owner, Nepalgunj, 28<sup>th</sup> November 2025*

#### Key discussion points:

Sanjaya Kumar Jain owns Bahubali Herbal Essence and Extracts Pvt. Ltd., located in Nepalgunj. He runs a business involved in herbal processing, trading, and exporting. He purchases raw materials from many producers or farmers in large quantities. He states they don't buy directly from farmers but through middlemen who collect the products from farmers. These products undergo quality checks and grading by the middlemen. About 95% of the products are exported to India. The company has two processing units for medicinal plants: 1. Distillation unit 2. Static unit.

#### **How easy is it to get the forest-based products?**

The good thing is that he buys all the products farmers are willing to sell. The most demanded products include such as Kutki, timur, and bojho. There is no supply issue as well.

#### **How does he find supplies? What level of preprocessing do they do? Do they do sorting?**

He buys raw materials through a middleperson. It's not possible to contact individual farmers, and they rely on the middleperson. They perform quality checks on products received from the middleperson. There are different middlepersons or local traders for various products. For example, there are 25 middlepersons in Jumla from whom they take supplies.

#### **If new communities would like to supply the product, would you buy?**

There is no market problem. If they can supply the product, they will take any quantity.

#### **What's the role of middleperson?**

It's the middleman's responsibility to find farmers, collect from them, and supply to them. The middleman sells to them by calculating and including all the costs incurred and supplies accordingly.

### What type of technologies and skills do farmers need so that farmers can send the raw materials of better quality?

- In his own words, it is important to support good-quality seeds and seed varieties that adapt to a changing climate, along with training and awareness programs about value-added products. Encourage farmers to cultivate high-value NTFPs, including MAPs, rather than rice and wheat.
- there is no proper technology for processing of yarsagumba and mushrooms.

### Processing

S.N.	Local name	English name	Scientific name
1	Jatamasi	Spikenard, Muskroot	<i>Nardostachys jatamansi</i>
2	Sugandhawal	Indian valerian	<i>Valeriana jatamansi</i>
3	Sugandhakokila	Camphor tree	<i>Cinnamomum glaucescens</i>
4	Bojho	Sweet Flag	<i>Acorus calamus</i>
5	Timur	Sichuan Pepper	<i>Zanthoxylum armatum</i>
6	Shilajit	Mineral Pitch	<i>Asphaltum punjabianum</i>

### Exporting raw materials

S.N.	Local name	English name	Scientific name
1	Tejpat	Indian Bay leaf	<i>Cinnamomum tamala</i>
2	Ritha	Soapberry	<i>Sapindus mukorossi</i>
3	Chiraito	Indian getian	<i>Swertia chirayita</i>
4	Kutki	Himalayan Picrorhiza	<i>Picrorhiza kurroa</i>

### Extractions:

S.N.	Local name	English name	Scientific name
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1	Chutro	Indian barberry, tree turmeric	Berberis aristata
2	Lovang		

#### 10.1.4.6 Bee-keeping cooperative and CFUG, Nalgad Municipality

Date of meeting: 27 November 2025

Participants:

Cooperative and CFUG Representatives

- Gramin Moureepalan Sahakari Sanstha (Bee-keeping Cooperative) — Chair: Bhavi Lal Pun (not present); Executive Committee: 11 members (4 female); Members: 86 (~50% female); Current Savings: NPR 900,000.
- Balche Salghari CFUG — Area: 88 ha; Members: 239 (including cooperative members); Chair: Keshav Bahadur Pariyar [REDACTED]; Secretary: Mahendra Singh [REDACTED].

*This portion has been redacted in accordance with the GCF Information Disclosure Policy, as the portion is confidential under the disclosure policy of the Accredited Entity.*

Key discussion points:

Nalgad's warm-temperate zone (1150–1300 m) with abundant butyracea (Chiuri) supports strong apiculture, yet climate variability—especially prolonged October rains—reduces nectar availability and honey yields. Cooperative governance is participatory with regular monthly meetings and a loan cap of NPR 50,000; market demand exceeds supply (doorstep sales at ~NPR 1,000/L). CFUG rules (block-based restrictions, protection of Chiuri) are challenged post-earthquake by haphazard forest use and open grazing. Opportunities include mustard intercropping, Chiuri enrichment planting, improved honey processing, and stronger LG/DFO collaboration. Immediate actions focus on capacity-building, infrastructure rehabilitation (cooperative building), and standardizing operational plans with sustainable harvest protocols.

#### Climate Change Impacts on Apiculture and Livelihoods

- Community members report long dry spells, unseasonal rainfall, and rising temperatures affecting bee health and nectar flow. In particular, extended rainfall in October washes nectar and diminishes yields; brief, mild rains are beneficial.
- Beekeepers currently rear a honeybee noted as “serena” in discussions (local usage).

#### Environment Degradation and Conservation Status

- Haphazard forest use and open grazing have increased, with earthquake recovery cited as a driver (e.g., timber for housing).
- CFUG has prohibited felling of butyracea (Chiuri) and designed forest blocks to regulate entry and use; enforcement effectiveness has declined post-disaster.
- Local wildfire incidents are reportedly infrequent in CFUG areas, though recent disruptions have weakened adherence to community rules.

#### Cooperative Governance, Finance, and Market Linkages

- Cooperative established in 2071 BS; monthly general meetings occur on the 17th; debt disbursement committee caps loans at NPR 50,000 with NPR 500 member contributions per month.

- Market demand is high: households sell ~NPR 1,000 per liter at the doorstep; surplus volumes are channeled to a partner cooperative (Jwala Sana Kishan Krishi Sahakari, Kalimati, Nalgad-1). Supply often fails to meet demand.

#### **Production, Scale, and Value Addition**

- Every household keeps bees; 20–25 households manage >40 hives each. Reported seasonal production reaches 700–800 liters per household per month.
- Processing is largely manual (single-stage), and sales are primarily raw honey; value addition (filtering, grading, branding, packaging) is limited.

#### **CFUG Operational Planning and Compliance**

- Resource extraction and sales are not consistently guided by the CFUG operational plan; earthquake-related rebuilding has created more problem.
- Species diversity includes butyracea (Chiuri), paiyu/paiyur, sungava, kurillo; local species “miro” reported as endangered and less available.
- 4.6 Inclusion and GEDSI
- Membership is largely indigenous and Dalit; female participation is present in the loan sub-committee.
- Cooperative leadership notes the need for continued administrative and financial management training, especially for women leaders.

#### **Early Warning and Anticipatory Actions (EW/AA)**

- Local Disaster Management Committee (LDMC) and Community Disaster Management Committee (CDMC) structures are in place and meet regularly.

#### **Way Forward**

- Strengthen apiculture climate resilience: establish flowering calendars, promote mustard intercropping for October blooms, and pilot Chiuri enrichment planting with DFO support.
- Upgrade honey processing: introduce hygienic multi-stage filtration, moisture checks, and standardized packaging/branding; explore cooperative-level processing equipment.
- Rehabilitate cooperative infrastructure: develop a small building reconstruction plan which was destroyed earlier by earthquake (design, BoQ, funding sources).
- Standardize CFUG operational plan compliance post-earthquake: reaffirm block rules, sustainable harvest protocols, and controlled grazing measures.
- Formalize market and quality assurance: set cooperative quality standards, maintain batch records, and negotiate stable offtake with partner cooperatives.
- Capacity-building (GEDSI-focused): train women leaders and committee members on finance, record-keeping, procurement, and grievance handling.
- Enhance LG–CFUG–DFO coordination: monthly coordination meetings; integrate EW/AA for forest fire season with clear communication chains.
- Monitor ecosystem health: track key forage species (Chiuri, paiyu, miro), and discourage unsanctioned extraction; explore nursery development for endangered/local species.

#### **10.1.4.7 Barekot Rural Municipality**

Date of meeting: 27 November 2025

Participants:

- Bir Bahadur Giri (Chairperson)
- Nar Bahadur Giri (Deputy Chair)
- Mohan Prakash Giri (Chief Administrative Officer)
- Tika Kandel (Women Development Section)



- Hridayman Shah (Enterprises Section)
- Khagendra Bohora (PEMP/DRR focal person)
- Shram Singh (Planning Section)

### Key discussion points:

- Local leadership emphasized visible climate change impacts, governance and coordination gaps—particularly around shared forestry mandates—and the need for integrated watershed management and community-focused, nature-friendly development. The CFUG showed potential for diversified forest-based enterprises but faces challenges in transparency, regular governance, and wildlife-related risks. Immediate actions include strengthening LG–CFUG collaboration, updating LAPA, instituting conservation cost lines in municipal estimates, and building the capacity of female office bearers.

### **Climate Change Impacts and Local Priorities**

- Leaders reported changes in phenology, precipitation patterns, and temperature that affect livelihoods and ecosystems; integrated watershed management (IWSM) was highlighted as a strategic response.
- Increased mosquito prevalence and altered snowfall patterns were noted; concerns were also raised about potential threats to Nalgad hydropower (417 MW) due to changing hydrology.

### **Governance, Coordination, and Policy**

- Municipal officials referred to constitutional annexes on exclusive and concurrent powers, noting ambiguity in shared forestry mandates that hampers effective LG–CFUG coordination.
- Provincial coordination was described as improving but still inconsistent with the constitutional intent of cooperation, coexistence, and coordination (Article 232).

### **LAPA Status and Budgeting**

- LAPA is treated as a living document requiring periodic updates; resource constraints limit full implementation.
- The municipality plans to introduce a dedicated “conservation cost” in all infrastructure estimates to promote nature-friendly development.

### **GEDSI and Inclusion**

- Disaggregated beneficiary data are limited; many cases of gender-based issues are settled informally, reducing formal reporting.
- Female participation is high due to male outmigration, but capacity gaps exist—especially among treasurers—requiring targeted training.

### **CFUG Engagement and Resource Management**

- Gauda Bhoraiee Ghareli CFUG (Tolkhana, Barekot-5) manages 177 ha serving ~585 households. Meetings occur irregularly (every 2–3 months); annual assemblies are held.
- Transparency concerns were raised due to loss of a primary revenue slip book; current balances reportedly approach NPR 0.5 million.
- Major forest resources include oak (*Quercus*), pine (*Pinus*), bamboo, prunus (*Painyu*), and rhododendron, with potential for medicinal plants (*Paris polyphylla*, *Swertia*, *Berberis*, *Rheum*) and fiber/paper species (*Girardinia*, *Daphne*) and hemp (*Cannabis*).
- Demand for pine timber is high; agroforestry, leasehold fruit farming, rangeland-based tourism, and honeybee potential (via *Painyu* and *Chyuri* expansion) were identified.

### **Risks and Environmental Concerns**

- Road excavation has introduced invasive *Lantana* species.
- The area borders national forest and is a hotspot for wildlife; issues of poaching and trafficking are reported near the Jumla boundary.

### **Way Forward**

- Clarify LG–CFUG roles under shared forestry mandates; develop a local coordination MoU and joint annual workplan.

- Advance IWSM planning: rapid watershed assessment, erosion control, native species restoration, and slope stabilization near critical infrastructure.
- Update LAPA with recent hazard/climate trends; embed “conservation cost” in all municipal estimates and track outcomes.
- Strengthen GEDSI: collect disaggregated data; train female office bearers (finance, procurement, record-keeping); provide safe reporting pathways.
- Improve CFUG governance: reinstate transparent accounting (digital or bound slipbooks), regular monthly meetings, and public audits.
- Develop forest-based enterprise packages: pine timber value chain, resin (if applicable), medicinal plant cultivation with sustainable harvest protocols.
- Launch invasive species management targeting Lantana and monitor wildlife crime in coordination with DFO and enforcement agencies.
- Establish EW/AA linkages: municipal alerts integrated with CFUG communication trees; conduct pre-season fire preparedness drills.

#### **10.1.4.8 Shivalaya Rural Municipality**

Date of meeting: 28 November 2025

Participants:

- Sher Bahadur Shahi (Chairperson)
- Geeta Shahi (Deputy Chair)
- Gopal Shahi (Chief Administrative Officer)
- Dipendra Rana (PMEP Officer)

Key discussion points:

Leadership highlighted unplanned road construction, forest thinning, lifestyle changes (e.g., dry fodder accumulation) and resultant forest fire risks. Governance gaps exist in formal CFUG–LG coordination and provincial contracting processes. Community engagement through seven-step planning and transparency mechanisms is strong, but women in user committees require administrative capacity-building. Ward disaster committees and phone-based alerts are used for EW/AA; agro-met advisories from the Paaila project are being transitioned to LG ownership. Opportunities include bamboo (including moso bamboo), resin and timber from pine. Timber for the medicinal value and fibre nettle and allo value chains, cheer pheasant conservation. Better-designed recharge ponds under an integrated watershed approach.

#### **Climate Change Observations and Environmental Concerns**

- Unplanned road works and dumping spoil in water bodies are degrading aquatic ecosystems; forest thinning increases human–wildlife conflict.
- Lifestyle changes (reduced fodder use) leave dry biomass in forests, elevating fire risk; sustainable harvesting and scientific forest management are needed.

#### **Governance and Coordination**

- No obligatory mechanism exists for CFUG–LG coordination; monitoring and evaluation frameworks are limited.
- Provincial contracting is perceived as unilateral and misaligned with LG priorities.

#### **LAPA and Project Leverage**

LAPA (developed under NCCSP2) helps to align external projects (e.g., Sahash Nepal’s Paaila project).

#### **Community Engagement, Transparency, and GEDSI**

- Strong engagement via seven-step planning; transparency through website postings, public/social audits, and UC payment systems.
- Outmigration has led to female-dominant user committees; administrative capacity gaps persist—particularly for documentation and payments.
- Wage issues in contractor-run projects are addressed through the judicial committee; LG is increasing monitoring and replicating LISP-style direct payment models in the account of the labor.

#### **Early Warning / Anticipatory Actions (EW/AA)**

- Forest fire is a major hazard; ward disaster committees are operational. Alerts and coordination are commonly shared by phone.
- Agro-met advisories established by the Paaila project are being transitioned to LG ownership to sustain services for farmers.

#### **Resources, Conservation, and Livelihood Opportunities**

- Pine resources support resin and timber production; potential for bamboo (including moso) and timur; wildlife includes wild boar and cheer pheasant.
- LG-constructed recharge ponds in community forests aim to harvest rainwater and revive springs; design can be strengthened under integrated watershed management.
- Santi Aerali CFUG (Ward 3) manages 264 ha serving ~100 households; key wildlife: fox, deer, monkey, wild boar; cheer pheasant abundant.
- CFUG requirements include plantation, rainwater harvesting, sawmill, timber production protocols, fencing to control open grazing, women's tools (fodder cutter/thresher), and administrative capacity-building.
- Resin extraction agreement with Manakamana Resin & Chemicals (Nepalgunj) reportedly offers NPR 80/kg; industry support also include supports in formulation of CFUG operational planning.

#### **Way Forward**

- Establish a formal CFUG–LG coordination framework with joint monitoring and evaluation.
- Adopt scientific forest management and sustainable harvesting plans; reduce fire risk by managing dry biomass and reinstating fodder use/alternatives.
- Strengthen design and siting of recharge ponds under an integrated watershed approach; monitor spring revival outcomes.
- Build administrative capacity of female-dominant UCs (documentation, payments, grievance handling).
- Formalize contractor wage safeguards and scale LISP-style direct payment systems.
- Develop value chains: pine resin/timber, bamboo (moso), timur, nettle/allo products; explore cheer pheasant conservation-linked eco-tourism.
- Operationalize EW/AA protocols for forest fire season with clear communication trees and triggers.
- Review and standardize CFUG operational plans; pilot fencing to manage open grazing.
- and establish simple monitoring indicators.

#### **10.1.4.9 Bayaldhunga CFUG groups consultation, Aathbis Municipality, Dailekh**

Date of meeting: 31 December 2025

Participants: local Communities (Bajhkatiya), Community Forest User Groups (CFUGs), and forest-based entrepreneurs (FBE)



*The majority of women are engaged in Allo thread production, which they consider one of the best employment opportunities for generating income and sustaining their livelihoods.*

Photo 18: CFUG groups consultation, Aathbis Municipality, Dailekh, 31 December 2025

#### Key discussion points:

#### **Community Forest background:**

- Community Forest (CF): Bayaldhunga CF
- Area: 489.62 ha
- CF users: 2083 (M- 1001, F-1082)
- CF Committee: 11 (F-4, M-7): 36% female
- Total HHs: 360
- Handed over date: 13 Jan 2009
- Ecotourism activities: No
- Major tree species: *Alnus nepalensis* (Uttis), *pinus roxburghii* (Khote salla), *prunus cerasoides* (payau)
- Major NTFP: *Girardinia diversifolia* (Allo), *Zanthoxylum armatum* (Timur), *Daphne* spp. (Lokta), *Urtica dioica* (Sisnu) and others: (Samaya, Bankachur expelled in native language)
- Location: Aathbis Municipality, Ward No. 6, Baajhkatiya, Singhasain
- Beneficiary Households: 260 HHs

(Source: Annual report, 2024-025 DFO Dailekh)

#### **Forest Management and Governance**

The forest is managed and restored based on demand they carry out removal of unwanted species like invasive species, non-timber etc. To safeguard and oversee the forest, two forest guards are deputized. During the forest fire in forest, they extinguish manually with application of traditional knowledge as beating with bushes, spraying wet mud etc. The information or notice related to community forest is transmitted through communication multiplication and decisions are made inclusively and meaningfully. Furthermore, PHPA is done annually for financial discipline. Currently CF have saving of two lakh ninety-six thousand in their account and eighty-six thousand from resin collection Royalty.

#### **Forest Based Enterprises sectors:**

At the initial phase of the Multi-Stakeholder Forestry Programme (MSFP) in Nepal, members of the Community Forest User Groups (CFUGs), with support from SUDEC Nepal, initiated forest based *Girardinia diversifolia* (Allo) enterprises. During those period, small-scale Allo enterprises was established by achieving training, exposure and distributing 35 thread-cutting machines to 35 individuals. But in mean time the project support was withdrawn and ultimately the enterprises stopped functioning effectively and smoothly.

#### **Current issue of Allo enterprises:**

- No benefit as per the labor
- Most of the thread cutting machines are damaged
- Unable to produce Allo clothes for high benefits
- Due to open grazing the Allo plants are damaged
- Direct linkage to market (contractor collect the product)

#### **Opportunity and possibility:**

- Good availability of Allo in community forests (Note among 4 blocks of CF Allo is available in 1 block)
- Allo thread are sold @NPR 700.00 / kg but when it will be converted to clothes, it can be sold in handsome price.
- Best opportunities for women employment and good source for income generation as observed most of the women involved and engaged in producing Allo thread manually.
- Good access to local and district market
- High demand of Allo clothes in market.
- No dispute in Allo collection
- Allo enterprises committee is in place.

#### **Forest-Based enterprises prioritization and community demand:**

Although various NTFPs are available in the community forest, it was observed that community members were highly interested in two NTFP-based enterprises, namely Allo<sup>1</sup> and Timur<sup>2</sup>. Furthermore, the communities shared that, to operationalize and run these enterprises smoothly and effectively, they require

- Skill based full package training
- Direct market access and value chain
- Need machines for producing Allo clothes
- Need long term support

**Climate Change rationale:** Local communities share their observation and feelings in terms to climate change. they express:

- An orange tree line shifting (they share previously there used to be high production of an orange in existing altitude but nowadays it has been shifted to a bit high altitude)
- Induction and spread of Various invasive species in community forest
- Prolonged drought and forest fire incident increased
- No snow fall
- Water sources depletion
- Outburst of new diseases

#### **Adaptation actions:**

- Water source protection and no markable adaption initiatives practiced.
- Forest protection and management
- Note: Community adaptation plan (CAP) has not been prepared at community level.
- (No scientific and reliable data available at community level regarding the climate and weather. However, the above mentioned are expressed based on community consultation and their observation)

#### **Information access on disaster and climate events:**

- Community express they receive early information through radio and mobile sms.
- CFUG engagement with LG planning:
- Community shared they won't engage in planning process neither LG allocate budget for CF management and protection. Further they shared sometimes DFO Dailekh allocate budget for CF management and CFOP renew

## Key Observations

- Bayaldhunga CFUG demonstrates strong potential for NTFP-based MSMEs, particularly those benefiting women, but faces capacity and infrastructure constraints.
- Allo (*Girardinia diversifolia*) is the major harvested Non-Timber Forest Product (NTFP), with women as the primary beneficiaries.
- Processing activities mainly involve thread extraction, supported initially by SODEC Nepal through training and provision of equipment.
- Following project completion, processing activities declined significantly due to lack of follow-up support and fragile machinery. Of approximately 35 machines provided, only about half remain operational.
- Raw Allo thread is sold at around NPR 700 per kg; however, further local value addition (e.g., cloth production) is feasible with improved technical and equipment support.
- On average, households earn NPR 15,000–20,000 per year, which is considered low relative to labor input.
- The CFUG has 11 executive committee members (4 female, 7 male), indicating moderate gender representation.
- The forest is managed through a four-block rotational system, supporting sustainable harvesting.
- Two male forest watchmen are employed, each earning NPR 6,000–7,000 per month.
- Annual revenue of approximately NPR 86,000 is generated from permits (resin, timber, fuelwood), with total savings of NPR 2.96 lakh.
- The presence of invasive species (e.g., Lantana, Kuro) and frequent forest fires poses ecological risks.
- CFUG members reported limited technical support and monitoring from the Sub-Divisional Forest Office.

## Identified MSME Opportunities and Support Needs

- Expansion of value chains for Allo, Sisno, and Timur through local processing and product diversification.
- Technical capacity-building trainings on processing, quality control, and enterprise management.
- Provision of durable and appropriate machinery to reduce operational downtime.
- Improved financial and fund management mechanisms for sustainable enterprise operation.
- Plantation and enrichment planting to ensure sustainable raw material supply.
- Addressing water scarcity, as current water availability is barely sufficient for drinking and inadequate for processing activities.
- Training on forest fire management, fire-line construction, and disaster preparedness.
- Support for updating CFUG Standard Operating Procedures (SOPs) and operational plans.

### 10.1.4.10 Community Consultation with vulnerable groups (Badi community), Aathbis Municipality, Dailekh

Date: 31 December 2025

Participants: Badi communities and ward chairperson



*Photo 19: Community Consultation with vulnerable groups (Badi community), Aathbis Municipality, Dailekh, 31 December 2025*

### Key discussion points:

They shared that they are the most vulnerable communities in all aspects and are highly dependent on nature and the river for their livelihoods. The devastating 2015 (2072) earthquake caused significant losses and displaced several households. Furthermore, they stated that their settlements are located close to the Karnali River and during periods of heavy rainfall their communities are inundated, as the riverbed has risen, leading to repeated displacement. The local government allocated some budget to address settlement displacement; however, the amount was insufficient for proper relocation and management. In addition, they mentioned that extraction of river resources (sand), wage labor, and making traditional Nepali folk drums (Madal) are their main sources of income and livelihood. (Note in FY 2023-024, The flooding damaged 4 houses, 1 school and 4 toilets)

### **Community Forest details:**

The Kalika community forest and Sallerichaur lies in ward no.1 of Aathbis Municipality. Badi communities are the user groups of this community forest and is the main source of income generation for entire Badi communities.

#### **Kalika CF:**

- Community Forest: Kalika CF
- Address: Aathbis Municipality-1, Ramagar
- Handover Date: 2009
- Total HHs: 385
- Total Users: 1793 (F-849, M-944)
- CF area: 485.61 ha
- Ecotourism activities: No

#### **Salleri CF:**

- Community Forest: Sallarichaur CF
- Address: Aathbis Municipality-1, Ramagar
- Handover Date: 29 April 2008
- Total HHs: 321
- Total Users: 1659 (F-809, M-850)
- CF area: 479.53 ha
- User committee: 15(F-6, M-9) (40% female)
- Major tree species (Kalika and Sallerichaur): *Alnus nepalensis* (Uttis), *Dalbergia sissoo* (Sissoo), *Phyllanthus emblica* (Amala), *pinus roxburghii* (Khote sala), *prunus cerasoides* (payau)
- Major NTFP on both Community Forests: *Zanthoxylum armatum* (Timur), *Daphne* spp. (Lokta), *Urtica dioica* (Sisnu) and others: (Samaya, Bankachur expelled in native language)

(Source: Annual report, 2024-025 DFO Dailekh)

### **Community forest Governance:**

The Badi community shared that their voices are not adequately heard during Community Forest (CF) meetings. Although some budget is allocated through the CF, they do not receive any direct support. Furthermore, they stated that they rarely participate in CF meetings.

### **Forest Baase Enterprises (FBE) possibility and opportunity:**

- Currently, the majority of Badi communities are engaged in making Madal. They express there is good possibility of establishing Madal enterprises. Furthermore, they express:
- Normally, one Madal is sold in market for up to NPR.3000.00 (its price varies depending upon materials quality and size)
- Abundant species as *Toona ciliata* (Tooni), *Gmelina arborea* (Khamari) *Sapium insigne* (Khirro) are available for making Madal and operating FBE.



- It consumes 3-4 days to produce 1 Madal.
- There is good access of market for product supply

#### **Badi Community demand and priority:**

- Promotion and strengthen Forest based enterprises (Madal)
- Support of Madal making machine
- Strengthen current skills of Madal producing
- Establish small scale of Madal enterprises.
- Furthermore, they shared that they are currently producing Madal manually. If they receive support from any organization, they would be able to promote this activity and establish it as an enterprise, which would become a good source of income generation and livelihood support.
- Despite Madal enterprises they are involved in resin (Khoto) extraction too from both CF. Annually, they extract resin 1000-1200 boxes and supply through Sawastin Rosin tarpitain company.

#### **Key Observations**

- The Badi community is a highly marginalized and vulnerable group with strong dependence on forest and water resources for subsistence and livelihoods.
- Livelihoods are primarily dependent on forest resources and river systems, with timber traditionally used for crafting musical instruments such as Madal and Sarangi.
- Two Community Forest User Groups—Salleri CFUG and Chamunda CFUG—are relevant to the community; however, participation in CFUG meetings remains irregular.
- The community is highly vulnerable to climate-induced disasters, including floods and landslides, due to their location in flood-prone areas and lack of secure land tenure.
- The majority of households fall below the poverty line, resulting in increased out-migration for foreign employment.
- Each handcrafted Madal is sold at approximately NPR 3,000 per piece, indicating potential for value addition if skills, tools, and market access are improved.
- Currently, sand mining has become the primary source of income, posing environmental risks and livelihood insecurity.
- The community is landless, and significant property loss was reported during the 2079 BS floods, further exacerbating vulnerability.
- There has been limited or no targeted support from local government for livelihood enhancement or disaster risk reduction.

#### **Identified Needs and Opportunities**

- Skills development and training on handicrafts and MSME-based enterprises linked to traditional knowledge.
- Inclusion of the Badi community in CFUG governance and benefit-sharing mechanisms.
- Support for climate-resilient livelihood diversification and disaster risk reduction measures.
- Institutional linkage with local governments for social protection, livelihood support, and housing security.

#### **10.1.4.11 Community Consultation with CFUG and indigenous groups, Naumule, Dailekh**

Date of meeting: 3 January 2026

Participants: CFUGs



Photo 20: Community Consultation with CFUG and indigenous groups, Naumule, Dailekh, 3 January 2026

Key discussion points:

Community Forest Background:

- CF name: Jharana CF
- Address: Naumule RM-3, Bhitra khola
- Total area: 367.29 ha
- Total users: 297 (F-142, M-155)
- Total HHS: 51
- Users committee: 7 (F-3, M-4) (Female 43%)
- Treasurer, vice chairperson and member- Female
- CF hand over date: 2008
- Tourism activities: No
- Major tree species: *Alnus nepalensis* (Uttis), *pinus roxburghii* (Khote salla), *prunus cerasoides* (payau), *Rhododendron arboreum* (Laliguras)
- Major NTFP: *Girardinia diversifolia* (Allo), *Zanthoxylum armatum* (Timur), *Daphne* spp. (Lokta), *Urtica dioica* (Sisnu) and others: (Samaya, Bankachur expelled in native language)

(Source: Annual report, 2024-025 DFO Dailekh)

Parameter	Details
CF Name	Jharana CF
Address	Naumule RM-3, Bhitrikhola
Total Forest Area	367.29 ha
Total Users	297 (F: 142, M: 155)
Total Households Benefited	51
User Committee Members	7 (F: 3, M: 4; 43% female representation; Treasurer, Vice-Chairperson, and Member are women)
CF Handover Date	2008
Tourism Activities	None

Parameter	Details
Major Tree Species	<i>Alnus nepalensis</i> (Uttis), <i>Pinus roxburghii</i> (Khote Salla), <i>Prunus cerasoides</i> (Payau), <i>Rhododendron arboreum</i> (Laliguras)
Major NTFPs	<i>Girardinia diversifolia</i> (Allo), <i>Zanthoxylum armatum</i> (Timur), <i>Daphne</i> spp. (Lokta), <i>Urtica dioica</i> (Sisnu), Samaya, Bankachur (local species)
Forest Management & Conservation	Plantation activities, mobilization of forest guards, removal of unwanted species
Governance	43% women in committee; PHPA conducted annually; cheques signed by Chairperson, Secretary, and Treasurer; notices circulated via 3 Tol Committees; CFOP renewed timely; audits conducted as required
Observed Climate Change Impacts	Prolonged droughts, changes in rainfall patterns, absence of snowfall, no hailstones

- Forest Management and conservation: CFUG manage the forest through plantation, mobilization of forest guards, removing unwanted species.
- Governance: 43% women in users committee, PHPA is done annually, the cheque is signed by chairperson, secretary and treasurer. The notice is circulated through tol committee (in 3 tol), CFOP is renewed timely. Conduct audit as required.
- Climate change impact: They share they observed and felt climate has been changed as felt prolonged drought, change in rainfall pattern, no snow fall, no hailstone etc.
- Forest-Based Enterprises opportunity:
  - They share there is great opportunity for forest based enterprise mainly (Allo)<sup>1</sup>, *Himalayacalamus asper* (Nigalo)<sup>2</sup> as well *Dhanphe* spp (Lokta)<sup>3</sup> and Timur<sup>4</sup>. They express most of the women are engaged in producing Allo thread. Furthermore, express annually they harvest 43 quintal (Four thousand three hundred kg) Allo from their community forest. Additionally, they harvest Lokta 30 quintal annually which is sold @ NPR 85/kg.
  - Besides it, they expressed 11 women obtained skilled based training on Allo from enterprises with support of 11 thread cutting machine. Moreover, good market demand and linkage.
  - The women group shares the Allo enterprises are the good source and opportunity for women to generate income and support for livelihood
- **Issue and challenges of Forest Based Enterprises**
  - cooking Allo is difficult
  - The contractor collects the Allo thread in low rate
  - No budget is allocated for FBE from local government
  - Hailstones damages Allo
- **Demand and priority:**
  - Skill based training on Allo products production with equipment support for women groups
  - Timur plants to plant in their private land as it goes (1 pati @NPR 600.00)
  - The Nigalo handicraft enterprises support with training for Men to produce Nigalo products.
  - Value chain on products

#### Forest-Based Enterprise (FBE) Opportunities:

- High potential for Allo-based enterprises, with most women engaged in producing Allo thread
- Harvesting details: Allo: 43 quintals (4,300 kg) annually; Lokta: 30 quintals
- annually, sold at NPR 85/kg
- Eleven women trained in Allo processing with support of 11 thread-cutting machines
- Potential for Nigalo (*Himalaya Calamus asper*) and Timur-based handicraft enterprises for men
- Market demand is strong, and linkage opportunities exist for scaling FBE

#### Key Issues and Challenges:

- Processing Allo is labor-intensive
- Contractors pay low prices for Allo thread
- No budget allocated for FBE support from local government
- Crop/NTFP damage from hailstones

**Identified Needs and Priority Support Areas:**

- Skill-based training for women on Allo product production, with equipment support
- Promotion of Timur plantation on private land (approx. 1 pati @ NPR 600)
- Support for Nigalo handicraft enterprises, including training for men

### 10.1.4.12 Community Consultation with CFUGs in Jumla

Date of meeting: 28 December 2025

Participants: CFUGs



Photo 21: Community consultation with CFUGs in Jumla

#### Key discussion points:

Community-level engagements were conducted through visits to Community Forest User Groups (CFUGs) to understand their institutional functioning, benefit-sharing mechanisms, forest condition, governance practices, and enterprise development potential. These interactions provided critical insights into ground realities and informed the design of context-specific, nature-positive livelihood interventions.

#### Overview of Visited Community Forest User Groups

S.N.	Parameters	Furke Salla CFUG (Chairperson: Mr. Suk Bahadur Bohora)	Napani CFUG (Chairperson: Mr. Dal Bahadur Basnet)	Mathachaur CFUG (Chairperson: Mr. Kali Prasad Basnet)
1	Registration Date	2053 BS	—	—
2	Address	Patarasi-02, Talki	Guthichaur-01, Gadhi Gau	Guthichaur-01
3	Forest Area	—	290 ha	90 ha
4	Major MAPs Species	Jatamasi, Walnut, Wild Garlic, Yarsagumba, Katki	Jatamasi, Walnut, Padamchal, Seto Chini, Sunpati, Dhupi, Katki, Satuwa, Uttis, Wild Garlic	Jatamasi, Walnut, Padamchal, Seto Chini, Sunpati, Dhupi, Katki, Satuwa, Uttis, Wild Garlic
5	Annual Income	NPR 1.5–2.0 lakh (NPR 6.0 lakh in last FY)	—	—
6	Savings (Bank Account)	NPR 6.69 lakh	NPR 8,000	NPR 2.08 lakh
7	Expenditure Details	• Salary of school teachers • Salary of forest watchman <i>All expenditures approved by General Assembly</i>	—	—
8	Total Beneficiary Households	277 HHs	160 HHs	140 HHs

#### Key Observations

- The executive committee of Furke Salla CFUG consists of 25 members; however, female representation remains low, with only one woman holding a key position.
- Women's participation in Annual General Meetings (AGMs) is limited, primarily due to household workload and social responsibilities.
- Issues related to forest encroachment were reported but have been effectively resolved through coordination with local governments and the Sub-Divisional Forest Office.
- Forest access is regulated through block-wise management (eight blocks), ensuring controlled and sustainable resource use.
- Distribution of timber and fuelwood is based on need, with priority given to economically vulnerable households.
- No significant presence of invasive alien species was observed in the visited forests.
- In Napani and Mathachaur CFUGs, oil extraction machines provided by the DFO remain non-operational due to missing parts and lack of technical know-how.
- Forest fire remains a recurring challenge and is currently managed using traditional and local response mechanisms.
- Plantation activities, though included in operational plans, have not been implemented due to resource and capacity constraints.
- AGMs of Napani and Mathachaur CFUGs are conducted jointly, and beneficiary households largely overlap between the two CFUGs.

#### **Identified Interests and Priority Support Areas**

- Establishment and operation of MSMEs based on Medicinal and Aromatic Plants (MAPs), particularly wild garlic, Jatamasi, and Dhatelo.
- Training on forest fire management, including fire-line construction, preparedness, and rapid response mechanisms.
- Capacity building on oil extraction technologies, processing, and quality control for MAP-based products.
- Support for nursery establishment to facilitate plantation and forest restoration activities.
- Assistance for updating CFUG Standard Operating Procedures (SOPs) and operational plans.
- Strengthening market access and value chain linkages, as previous MAP oil products (e.g., Dhatelo oil previously sold at NPR 1,300/litre) currently lack sustainable markets.

#### **10.1.4.13 Consultation with a private entrepreneur in Jumla**

Date of meeting: 28 December 2025

Participants: Mr. Sur Bahadur Rawat



Photo 22: Consultation with a private entrepreneur in Jumla

#### Key discussion points:

#### **Entrepreneur Profile**

- Name: Mr. Sur Bahadur Rawat
- Address: Tila Rural Municipality, Ward No. 5, Dungri, Jumla
- Enterprise Name: *Malika Oil Processing Industry*
- Year of Registration: 2072 BS
- Registering Authority: District Domestic and Small Industries Office  
(Renewable every two years)

*This portion has been redacted in accordance with the GCF Information Disclosure Policy, as the portion is confidential under the disclosure policy of the Accredited Entity.*

#### **Enterprise Objectives and Operations**

The enterprise is engaged in the extraction of essential oils from forest- and agro-based raw materials, including leaves and sawdust of Fir, Deodar, Dhupi, Marigold (non-Sayapatri), Titepati, and Gobresallo, among others.

#### **Sources of Raw Materials:**

Raw materials are collected by local community members from nearby Community Forest User Groups (CFUGs), including Samakhuli, Kalika, and Gairathanti CFUGs. The purchase price of raw materials varies significantly depending on availability and seasonality.

#### **Market and Production Details**

*This portion has been redacted in accordance with the GCF Information Disclosure Policy, as the portion is confidential under the disclosure policy of the Accredited Entity.*

- Local Government Royalty/Revenue:
  - NPR 5 per kg of raw material
  - NPR 5 per litre of extracted oil
- Market Prices of Extracted Oils:
  - Titepati: NPR 1,400 per litre
  - Sayapatri: NPR 2,200 per litre

- Dhupi: NPR 5,000 per litre
- Deodar: NPR 5,000 per litre
- Gobresallo: NPR 2,200 per litre
- Primary Buyer: Himalayan Biotech Company, Basundhara, Kathmandu

Production has the potential to increase significantly if market demand, financial resources, and technical support are enhanced, particularly through collaboration with local governments (Palikas) and development partners.

### **Key Takeaways**

- The enterprise contributes to local government revenue generation through royalty payments on both raw materials and finished products.
- Current production levels are demand-driven, indicating strong potential for scale-up under improved market conditions.
- Stable financial and technical support could enhance production efficiency and value addition.
- Forest-based enterprises present a viable MSME model for climate-resilient and nature-positive livelihoods in Jumla.

### **Key Issues and Challenges**

- Difficulty in timely sale of products due to irregular market access.
- Inconsistent supply of raw materials and limited working capital.
- Shortage of skilled human resources for production and processing.
- Gaps in packaging, branding, and marketing, limiting competitiveness.
- Sales are conducted on an ad-hoc basis, with no formal or long-term purchase agreements.
- Declining availability of useful plants and herbs, indicating a strong need for plantation and resource regeneration.
- Production and sales were significantly affected during the COVID-19 pandemic due to reduced market demand.

#### **10.1.4.14 Devi Fruits and Seed Producers Group and Devisthan CFUG, Dolpa**

Date of meeting: 7 January, 2026

Participants: Devisthan CFUG: Mr. Kale Bohora, Devi Fruits and Seed Producers Group: Mr. Baale Bohora





Photo 23: Devi Fruits and Seed Producers Group and Devisthan CFUG, Dolpa

#### Key discussion points:

- Beneficiary Households: 105 HHs
- Executive Committee: 9 members (6 male, 3 female); one female serves as Secretary
- Dalit Representation: 2 members, including one female

#### **Key Observations**

- The CFUG manages diverse NTFPs, including Katuko, Bhulke, Padamchal, Uttis, Chutro, Nigalo, Deodar, Chiraito, Panchaule, Seto Chini, Dhatelo, among others.
- Major fruit crops include Apple, Walnut, Peach, Plum, Pear, Grapes, and Kiwi.
- NTFPs are collected by CFUG members and sold individually to traders, indicating potential for collective marketing and value addition.
- In the previous fiscal year, approximately NPR 4 million worth of apples and NPR 2–2.5 million worth of MAPs were sold.

*This portion has been redacted in accordance with the GCF Information Disclosure Policy, as the portion is confidential under the disclosure policy of the Accredited Entity.*

- Monthly executive committee meetings are held with full participation.
- CFUG funds are used to pay salaries of two forest watchmen (NPR 15,000/month each) and one drinking water scheme watchman (NPR 3,500/month).
- Resource-use conflicts are resolved through mediation involving the Sub-Divisional Forest Office and elected representatives.
- Priority in resource utilization is given to women, Dalits, and marginalized groups.

- There is a strong need for forest fire management training and equipment.
- Landslides within forest areas were reported, requiring treatment through Nature-based Solutions (NbS) such as bioengineering.
- Climate change impacts include reduced snowfall and increased pest and disease incidence in apple orchards.
- Presence of water sources and water holes in forest areas provides opportunities for ecosystem-based adaptation.

#### 10.1.4.15 Maluna Himal Buffer Zone Community Forest User Group, Dolpa

Date of meeting: 8 January 2026

Participants: CFUG



Photo 24: Consultation with Maluna Himal Buffer Zone Community Forest User Group, Dolpa

Key discussion points:

- Address: Jagadulla Rural Municipality–03, Thapa Gaun, Dolpa
- Chairperson: Mr. Chandra Bahadur Thapa [REDACTED]

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- Executive Committee: 9 members (3 female, 6 male); Treasurer is female
- Savings: Approximately NPR 80,000

#### Key Observations

- Major NTFPs include Bhango, Walnut, Dale Chuk, Allo, Jatamasi, Katuko, Panchaule, Yarsagumba, Padamchal, Kurilo, Seto Chini, and Uttis.
- MAPs collection is regulated and permitted only after approval from the National Park authorities.
- No commercial cultivation of medicinal plants is currently practiced.
- Dale Chuk is collected and sold to traders, with only one individual currently engaged in processing activities.
- Limited market access has constrained sales of processed products, including juice.
- Due to market and financial constraints, particularly women are unable to mechanize thread-processing MSMEs, resulting in high labor costs and low profitability.
- Women in the community have received training from the Government of Nepal, and some have formally registered MSMEs that are currently operational.

- The settlement lies along a strategic trade route connecting Jumla and Dolpa, presenting strong potential for processing, trade, and enterprise development.
- There is high demand for Allo and woolen garments produced by women; however, production costs remain high.
- Introduction of mechanization through cooperative models could significantly reduce costs and increase competitiveness, supported by abundant local and neighboring raw material supplies.