

Concept Note

Resilient sub-watersheds generating mitigation co-benefits in the West Seti Basin

Nepal | World Wildlife Fund (WWF) Inc.

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Concept Note

Project/Programme Title:	Resilient sub-watersheds generating mitigation co-benefits in the West Seti Basin
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Notes

- The maximum number of pages should **not exceed 12 pages**, excluding annexes. Proposals exceeding the prescribed length will not be assessed within the indicative service standard time of 30 days.
- As per the Information Disclosure Policy, the concept note, and additional documents provided to the Secretariat can be disclosed unless marked by the Accredited Entity(ies) (or NDAs) as confidential.
- The relevant National Designated Authority(ies) will be informed by the Secretariat of the concept note upon receipt.
- NDA can also submit the concept note directly with or without an identified accredited entity at this stage. In this case, they can leave blank the section related to the accredited entity. The Secretariat will inform the accredited entity(ies) nominated by the NDA, if any.
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- Further information on GCF concept note preparation can be found on GCF website [Funding Projects Fine Print](#).

A. Project/Programme Summary (max. 1 page)			
A.1. Project or programme	<input checked="" type="checkbox"/> Project <input type="checkbox"/> Programme	A.2. Public or private sector	<input checked="" type="checkbox"/> Public sector <input type="checkbox"/> Private sector
A.3. Is the CN submitted in response to an RFP?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, specify the RFP: _____	A.4. Confidentiality¹	<input type="checkbox"/> Confidential <input checked="" type="checkbox"/> Not confidential
A.5. Indicate the result areas for the project/programme	<p>Mitigation: Reduced emissions from:</p> <input checked="" type="checkbox"/> Energy access and power generation <input type="checkbox"/> Low emission transport <input type="checkbox"/> Buildings, cities and industries and appliances <input checked="" type="checkbox"/> Forestry and land use <p>Adaptation: Increased resilience of:</p> <input checked="" type="checkbox"/> Most vulnerable people and communities <input type="checkbox"/> Health and well-being, and food and water security <input checked="" type="checkbox"/> Infrastructure and built environment <input checked="" type="checkbox"/> Ecosystem and ecosystem services		
A.6. Estimated mitigation impact (tCO₂eq over lifespan)	899,399 tons of CO ₂ eq.	A.7. Estimated adaptation impact (number of direct beneficiaries and % of population)	494,116 direct beneficiaries (65% of project area population which is about 1.70% of national population)
A.8. Indicative total project cost (GCF + co-finance)	USD 40 million	A.9. Indicative GCF funding requested	USD 25 million
A.10. Mark the type of financial instrument requested for the GCF funding	<input checked="" type="checkbox"/> Grant <input type="checkbox"/> Reimbursable grant <input type="checkbox"/> Guarantees <input type="checkbox"/> Equity <input type="checkbox"/> Subordinated loan <input type="checkbox"/> Senior Loan <input type="checkbox"/> Other: specify _____		
A.11. Estimated duration of project/ programme:	a) disbursement period: 5 years b) repayment period, if applicable: NA	A.12. Estimated project/ Programme lifespan	5 years
A.13. Is funding from the Project Preparation Facility requested?²	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Other support received <input type="checkbox"/> If so, by who: WWF Inc.	A.14. ESS category³	<input type="checkbox"/> A or I-1 <input checked="" type="checkbox"/> B or I-2 <input type="checkbox"/> C or I-3
A.15. Is the CN aligned with your accreditation standard?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	A.16. Has the CN been shared with the NDA?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
A.17. AMA signed (if submitted by AE)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If no, specify the status of AMA negotiations and expected date of signing:	A.18. Is the CN included in the Entity Work Programme?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
A.19. Project/Programme rationale, objectives and approach of programme/project (max 100 words)	<p>Nepal is highly vulnerable to climate change. Hazards include floods, landslides and irregular precipitation, affecting disaster risk, food security, infrastructure, and ecosystem services including water supplies. This project will build resilience of communities, ecosystems, and infrastructure in the West Seti basin by assessing risk, planning and implementing climate change adaptation in sub-watersheds through local governments while generating mitigation co-benefits through access to clean energy and restoring forest ecosystems. It will be executed by the Ministry of Federal Affairs and General Administration and WWF Nepal; technical partners include the Ministry of Forests and Environment, Alternative Energy Promotion Centre, and non-governmental organizations.</p>		

¹ Concept notes (or sections of) not marked as confidential may be published in accordance with the Information Disclosure Policy ([Decision B.12/35](#)) and the Review of the Initial Proposal Approval Process ([Decision B.17/18](#)).

² See [here](#) for access to project preparation support request template and guidelines

³ Refer to the Fund's environmental and social safeguards ([Decision B.07/02](#))

B. Project/Programme Information (max. 8 pages)

B.1. Context and baseline (max. 2 pages)

Climate vulnerabilities, impacts, adaptation and opportunities for mitigation co-benefits:

Climate change is advancing rapidly in Nepal. Studies indicate that the Himalayas are warming significantly faster than the global average, and maximum and minimum temperature extremes are becoming more frequent. The monsoon is expected to become more erratic; extreme rainfall events are becoming more intense, and are likely to keep increasing in intensity⁴. More extreme precipitation increases the risk of floods, soil erosion and landslides in this rugged, fragile, disaster-prone topography, while more erratic precipitation patterns are leading to increased scarcity of water and crop failure. Glacial melt will reduce future streamflow in the mountains. In the longer term substantial changes to ecosystems are expected in Nepal as climate change continues, including widespread changes in forest types, and shifts in plant and animal species distribution⁵. Already local communities are feeling the effects of increased climate variability: for example, an analysis of vulnerability assessments supported by the Hariyo Ban Program in over 200 communities in the Gandaki basin revealed the most common climate hazards/vulnerabilities were increased drought, invasive species and landslides; followed by diseases/pests, uncontrolled forest fire, and floods⁶.

Many rural communities depend on ecosystem services for disaster risk reduction (DRR) and livelihoods; hence there is good opportunity for using ecosystem services to help vulnerable people to adapt. To be successful, this often also necessitates resilience building of ecosystems themselves. Women, girls, women-headed households, and poor and marginalized people are often particularly vulnerable because of greater exposure to risk due to lack of empowerment, low capital reserves, and sometimes physical location in high-risk sites. Many infrastructure developments such as roads and dams are being constructed without considering climate change or disaster risk, often aggravating climate hazards for the rural poor. Since upstream-downstream linkages are very important in Nepal, there is a risk of isolated adaptation activities in a single location becoming maladaptive (e.g. building a dam on a stream to increase water supplies for nearby communities could affect water for downstream communities and the ecosystems they depend on). Hence the use of watersheds and river basins⁷ as nested units for adaptation is a high priority⁸.

Various projects have assisted communities and village development committees (lowest level of government prior to the Constitution) in Nepal to adapt to climate change over the last decade. A large body of experience has been built through projects including Hariyo Ban (Green Forests) Program and Nepal Climate Change Support Project (NCCSP). However, continuity of support for adaptation beyond the life of donor-funded projects is a major challenge, and some early results may be short-lived as climate change advances.

Incorporation of climate risk management into government planning processes is a key approach to ensure ongoing support for adaptation. This has already been piloted through the Environment Friendly Local Governance (EFLG) Framework under the Ministry of Federal Affairs and General Administration (MoFAGA), which aims to mainstream pro-poor, inclusive, and gender responsive environmental, climate change and DRR criteria into local government plans and systems. As part of this process, the United Nations Environment (UNE)'s Poverty-Environment Initiative (PEI) has provided support to integrate environment and climate change priorities of poor women and men into sub-national planning and budgeting processes. The United Nations Capital Development Fund (UNCDF) through the Local Climate Adaptive Living Facility (LoCAL) has piloted a Performance Based Climate Resilience Grants System (PBCRGS) which ensures programming and verification of climate change expenditures in local government.

Integration of climate risk management in government planning is still at an early stage and needs strengthening into a scalable nation-wide system. Nepal is currently rolling out a new federal government system where many functions will be taken on by local governments⁹. Given this unique opportunity to build capacity from the start to ensure that local planning mainstreams climate adaptation, this project aims to build climate resilience of communities, ecosystems and infrastructure in the West Seti sub-river basin (one of the most vulnerable basins of Nepal) through local governments while generating opportunities for mitigation co-benefits from energy

⁴ Shrestha, A. B., et al. (eds) (2015). The Himalayan Climate and Water Atlas: Impact of climate change on water resources in five of Asia's major river basins. ICIMOD, GRID-Arendal and CICERO.

⁵ Thapa, G.J., Wikramanayake, E., Jnawali, S.R.; Oglethorpe J. and Adhikari, R. (2016). Assessing climate change impacts on forest ecosystems for landscape-scale spatial planning in Nepal. *Curr. Sci.*, 110, 345.

⁶ WWF Nepal (unpublished). Community Based Climate Change Adaptation; Best Practices and Learning Documentation. WWF Nepal.

⁷ In Nepal terminology for the different scales is: river basin (the largest); sub-basins; watersheds; sub-watersheds (typically 15-25 km²); and catchments (the smallest unit, often equating to a single village). There are normally several sub-watersheds within one municipality.

⁸ WWF Nepal (2015). The value of a river basin approach in climate adaptation. WWF Nepal, Hariyo Ban Program.

⁹ Under the new Constitution Nepal is a federal democratic republic with three levels of government – federal, state and local. There are seven states. Local government comprises metropolitan cities, sub-metropolitan cities, municipalities and rural municipalities based on population and geographical area. A municipality has a Mayor, Deputy Mayor, nine or more ward chairpersons and 6 to 20 members, with at least 40% women. In the rest of this document, unless otherwise specified, 'local government' is used to refer collectively to the local level government structure (cities, municipalities and rural municipalities).

access and sustainable management of forest ecosystems as climate change advances. Please see Annex 1 for details on project area.

Project fit with Nepal's national priorities:

The proposed project contributes to implementation of several national climate change policies and plans:

Nepal's Climate Change Policy (2011)¹⁰: the adaptation part of the Policy's goal of *improving livelihoods by mitigating and adapting to the adverse impacts of climate change ... and supporting and collaborating in the spirit of the country's commitments to national and international agreements related to climate change*; and to the following policy objectives:

- *To implement climate adaptation-related programmes and maximize the benefits by enhancing positive impacts and mitigating the adverse impacts;*
- *To enhance the climate adaptation and resilience capacity of local communities;*
- *To develop capacity for identifying and quantifying present and future impacts of climate change, adapting to climate risks and adverse impacts of climate change;*
- *To reduce GHG emissions by promoting the use of clean energy, such renewable energies.*

National Adaptation Programme of Action (NAPA)¹¹: the project contributes to major areas of the NAPA (agriculture and food security; water resources and energy; climate-induced disasters; forests and biodiversity; and urban settlements and infrastructure), and its cross-cutting sectors including gender.

Nationally Determined Commitment (NDC)¹²: the project will contribute to achieving the commitments in the NDC listed below (please see Annex 2 for more details).

- *Nepal places climate change adaptation at the centre of its development plans and policies. It aims to strengthen implementation of Environment-Friendly Local Governance Framework in Village Development Committees and municipalities to complement climate change adaptation, promote renewable energy technologies, water conservation and greenery development.*
- *Nepal will undertake scientific (physical and social sciences) approaches to understand and deal with the impacts of climate change in mountains, hills and low-land ecosystems and landscapes. It will develop and implement adaptation strategies for climate change affected sectors.*
- *By 2050, Nepal will achieve 80% electrification through renewable energy sources having appropriate energy mix. Nepal will also reduce its dependency on fossil fuels by 50%.*
- *Nepal aims to achieve targets under the National Rural and Renewable Energy Programme, reducing its dependency on biomass and making it more efficient through: mini- and micro-hydropower; solar systems in homes and institutions; improved water mills; improved cook stoves; and biogas.*
- *Nepal will maintain 40% of the total area of the country under forest cover and forest productivity and products will be increased through sustainable management of forests. Emphasis will equally be given to enhance carbon sequestration and forest carbon storage and improve forest governance.*

Local Adaptation Plans for Action (LAPA) Framework¹³: the project will follow Nepal's LAPA Framework.

Main root causes and barriers to be addressed:

Social: little or no knowledge of climate change in many local communities; reactive coping actions are often inadequate and may be maladaptive; low level of disaster preparedness and adaptive capacity; women, marginalized and poor people are disproportionately affected by climate change due to lack of capital to tide them over shocks; low empowerment; and exclusion from community decision-making; dependence on firewood for energy results in forest degradation and deforestation

Fiscal and regulatory: much infrastructure is developed without adequately considering climate change; this is often compounded by inadequate infrastructure environmental regulations and their enforcement.

Technological: inadequate weather and climate data, and access to technology to monitor changes in precipitation, glaciers, permafrost, stream flow, and species range shifts; inadequate information on vulnerability; inadequate mainstreaming of adaptation in development planning, including across sectors, and inadequate planning at river basin/watershed scales; limited access to renewable sources of energy.

Financial: least developed country (LDC) with low gross domestic product (GDP) cannot afford the full suite of adaptation interventions needed for vulnerable communities; adaptation project funding is often inadequate to implement adaptation plans fully; limited financing for shifting towards renewable sources of energy.

Ecological: highly vulnerable topography which puts people and infrastructure at risk; climate change exacerbating the effects of bad land use practices and poorly planned infrastructure.

Institutional: limited capacity for climate adaptation in government; limited mainstreaming of climate adaptation in planning at any level except for local level pilots; poor coordination across sectors.

¹⁰ Government of Nepal. (2011). Climate Change Policy. Government of Nepal, Kathmandu, Nepal.

¹¹ Ministry of Environment (2010). National Adaptation Programme of Action (NAPA) to Climate Change. Kathmandu, Nepal.

¹² Ministry of Population and Environment (MoPE). (2016). Nationally Determined Contributions. MoPE, Kathmandu, Nepal.

¹³ Ministry of Environment (MoE). (2011). National Framework on Local Adaptation Plans for Action. MoE, Kathmandu, Nepal.

B.2. Project/Programme description (max. 3 pages)

Project components and activities to address the barriers and achieve outcomes

The objective of this project is: **To build climate change resilience of communities, ecosystems and infrastructure in the West Seti sub-river basin and develop a scalable river basin adaptation model for Nepal and similar mountain countries, while also generating mitigation co-benefits.**

A description of the West Seti sub-river basin and justification for its selection are presented in Annex 1. Activities will take place at the level of communities, sub-watersheds, municipalities and the sub-river basin.

Sub-objective A: Risk of climate-related disasters to communities and ecosystems is reduced while generating mitigation co-benefits

A major part of community and ecosystem climate vulnerability in Nepal lies in disaster risk. The project will work to **reduce climate-related disaster risk and promote capacity for disaster management**. Activities will include **forest restoration**, using ecosystem services to reduce risk of landslides and flash flooding from more intense rainfall, and reduce risk of water insecurity during drought. In places where firewood extraction threatens ecosystem services, **renewable energy** solutions will be promoted which will also reduce carbon emissions and sequester carbon. **Water supplies** will be made more secure in light of drought and/or flood risk, through protecting and reforesting aquifer recharge zones, and through rainwater harvesting and water efficiency practices. Disaster early warning systems will be put in place. Sub-watershed zoning plans will be implemented by the local government to reduce risk from hazards such as landslides and flooding. The Khaptad National Park (KNP), which provides important ecosystem services including downstream water supply and regulation, is vulnerable to climate change; the project will support mainstreaming of climate adaptation in its management plan to build resilience. To increase resilience to drought, the project will promote **resilient agriculture and food security** practices, including promotion of climate-adapted and culturally appropriate crops and livestock. Farmers will be helped to access insurance schemes and seasonal weather forecasting. Where climate-related disaster risk is exacerbated by poverty, the project will seek ways to strengthen and diversify on-farm and off-farm incomes. **Community infrastructure** such as flood shelters will increase adaptive capacity. Please see Annex 3 for more detail on adaptation activities.

The project will establish **Citizen Awareness Centres (CACs)** at the community level. Here the poor, disadvantaged, women, and most vulnerable will come together to identify, discuss, and be trained on social, economic, and climate change related issues, and be empowered to participate effectively in **climate risk assessments (CRAs)** and identify adaptation options. CRAs will be conducted in 150 sub-watersheds using the best available climate science, vulnerability information and adaptation approaches. They will be participatory and bottom-up, analysing human, ecosystem and local infrastructure vulnerability; and upstream-downstream linkages. Since ecosystem processes, infrastructure and disaster response operate at different levels, the project will also undertake a sub-river basin climate risk assessment that includes recommendations for action. Climate adaptation planning will follow, producing and implementing **integrated sub-watershed adaptation and management plans (SWAMPs)** that mainstream climate adaptation, and are participatory and responsive to the needs of the most vulnerable people. Technical support and facilitation will come from service providers including non-governmental organizations (NGOs).

Intermediate outputs and outcomes: 150 participatory SWAMPs produced; 494,116 vulnerable people build resilience to climate change; 260,403 tons carbon sequestered/emissions avoided.

Sub-objective B: Climate resilience of large-scale infrastructure is enhanced

The project will partner with government agencies including the Ministry of Energy, Water Resources, and Irrigation and the Ministry of Physical Infrastructure and Transport and its respective departments; and with non-state actors like Nepal Hydropower Association, Independent Power Producers' Association Nepal, Confederation of Nepalese Industries, and relevant investors, developers and stakeholders to identify climate risks to existing and planned infrastructure in the sub-river basin. It will draw on experience from other projects and encourage them to develop climate-adapted designs for new infrastructure, avoiding locking into climate-inappropriate designs, and to plan additional requirements for operation and maintenance of existing infrastructure in light of climate change.

In recent years, local authorities have opened many **local roads** in the sub-river basin, often using bulldozers and with inadequate planning, design, construction and maintenance. Many roads have been washed out, causing landslides, loss of access, and damage to farms, forests and water supplies. The project will work with local government to embed sound environmental approaches to road building that allow for more extreme weather events. Demonstration sites with good practices (e.g. soil bioengineering) will be established. The project will also work with national roads, collaborating with the Department of Roads (DoR) on risk assessments to promote climate resilience for new and existing national roads in the sub-river basin.

Hydropower is developing rapidly in the sub-river basin: for example, the large-scale West Seti dam and hydroelectric project is proposed on the Seti River. While hydropower development will bring many economic

benefits, the plants are vulnerable to extreme weather events. Already, several have been damaged in Nepal in recent years. There is little collaboration among upstream and downstream hydropower units about discharges; this will become more problematic if planned storage reservoirs are built. Taking a holistic sub-river basin approach the project will work with the sector through participatory climate risk assessments and scenario planning, encouraging collaboration and communication across stakeholder groups about flows and releases, and supporting development of early-warning systems for floods. It will also work with transmission line investors to encourage more climate-resilient designs and alignments. The project will work with proposed water transfer schemes by providing information about climate change scenarios, while working with states and local governments in the sub-river basin to understand the impacts of diversions and seek climate-adapted solutions. **Intermediate outputs and outcomes:** climate adaptation incorporated in infrastructure planning and operation; capacity built in stakeholders to reduce disaster risk from infrastructure.

Sub-objective C: Climate change is mainstreamed into development planning and governance processes, and access to climate adaptation finance increased at local level

A detailed stakeholder analysis and capacity needs assessment will cover government and civil society organizations at all levels (federal, state and local); from this the project will produce a capacity development plan, and provide capacity building support to government staff at all levels to implement the project and sustain good practices. Training will also be provided for community mobilizers, community-based organizations (CBOs) and local NGOs who will work directly with local communities in collaboration with the municipalities. Environmental governance systems in 37 local governments will be strengthened by scaling up the EFLG approach to establish **integrated development planning, budgeting, public financial management, monitoring and evaluation systems** to create a sound basis for climate-resilient governance, following the new municipality planning framework. To **strengthen the enabling policy environment** for adaptation, the project will review federal sectoral policies covering mainstreaming of climate adaptation (including the NAPs if they are finalized by then) to identify gaps and inform state and local sectoral policies and plans, and clarify roles and mandates at different government levels. Each local government will then use the SWAMPs from its area, along with relevant sub-river basin information, to integrate climate adaptation into municipality strategic plans and annual development plans, and allocate budget for adaptation activities.

While local governments allocate a share of their annual development budget for climate change (adaptation/mitigation), this is often not enough. Thus, a **PBCRGS will be established** to support to local governments who performed very well in implementation of climate change adaptation plans. The additional fund obtained under PBCRGS will be utilized for further sectoral mainstreaming of climate change, implementation of additional adaptation actions, and support incurring costs from ad-hoc impacts of climate change during the project phase. For sustainability of the PBCRGS, the project will advocate with the federal and provincial government to integrate PBCRGS into the Minimum Condition and Performance Measure (MCMP) currently being introduced by National Natural Resource Fiscal Commission so that a sustainable financing mechanism is available for local governments to meet their climate change adaptation/mitigation needs beyond the project life.

Coordination mechanisms will be established both horizontally and vertically, taking into account different scales of adaptation and its multi-disciplinary nature. Horizontal coordination across sectors will be undertaken at local government, district, state and sub-river basin levels.

Intermediate outputs and outcomes: adaptation capacity of 18,300 government officers and service provider staff enhanced; 30 local government plans and policies integrate gender and social inclusion (GESI)-sensitive climate adaptation and DRR; government resources for adaptation effectively invested; PBCRG system implemented at local level.

Sub-objective D: Knowledge, guidance and capacity are in place to replicate and scale up the approach

The project will undertake studies and install meteorological stations as needed to better understand local climate, climate change impacts and adaptation responses. Successes, challenges and lessons will be analysed; guidance and tools will be produced so that successes can be replicated in other sub-river basins and scaled up to basin level (e.g. the whole Karnali basin; river basins elsewhere in Nepal; and other mountain countries with similar conditions). Study visits and other capacity development will be undertaken for stakeholders, government and NGO staff, and others in Nepal who can catalyse replication and scaling up. Working through the local government system, allocation of funds for climate change in other areas will be encouraged, which can be complemented by funds from the private sector, communities and donors.

Intermediate outputs and outcomes: documented lessons and guidance for replication and scaling up; increased awareness of the approach among stakeholders; and capacity built for replication and scaling up.

Theory of change for this project is: *If current and future projected climate risks to communities, ecosystems and infrastructure are identified, and contextual climate adaptation and mitigation interventions are designed at appropriate levels through a multidisciplinary, coordinated approach; if access to performance-based*

climate finance is increased to cover adaptation costs and also generate mitigation co-benefits, and plans that mainstream climate risk management are implemented by communities, government and private sector at appropriate administrative and ecological levels; if environmental and climate change governance systems are improved in local government units, and local governments and communities are well capacitated to manage them; then the sub-river basin, its ecosystems, communities and infrastructure will become more resilient to climate change; and the project's adaptation and mitigation co-benefits contribute to achieving Nepal's NDC to tackling global climate change. Further, if successes and challenges in West Seti sub-river basin are analysed, guidance is produced for scaling up the approach, capacity is built elsewhere in Nepal and outreach undertaken nationally and internationally, this approach can be scaled up in Nepal and other countries with similar conditions.

Consistency of activities with national regulatory and legal framework (if applicable)

The project will work within the national regulatory and legal framework, including the Local Governance Bill.

How Accredited Entity is well placed to undertake activities, and implementation arrangements with executing entities and implementing partners

WWF US is a Green Climate Fund (GCF) International Accredited Entity. As an international NGO (INGO), WWF has a presence in more than 100 countries; it focuses on six major goals – forests, oceans, wildlife, food, climate and energy, and freshwater – and three key drivers of environmental problems – markets, finance and governance. WWF started work in Nepal in 1967 and opened an office in 1993. It is currently registered as an INGO under the Government's Social Welfare Council. WWF Nepal will be a joint executing entity for this project. It has strong working relationships with government, civil society organizations, private sector, and donors. Its work in climate adaptation started in 2003 and it has pioneered an integrated ecosystem- and community-based approach. It provided technical support to NAPA formulation and is contributing to formulation and implementation of local and community level adaptation plans, and upscaling adaptation at river basin level. WWF has been supporting various ministries including the Ministry of Forests and Environment (MoFE) and MoFAGA to undertake adaptation. It has worked in climate mitigation in Nepal for several years, through renewable energy (including a Gold Standard biogas project), and supported government in REDD+ readiness.

WWF Nepal has experience of large project management: it leads the 10-year, \$56m United States Agency for International Development (USAID) funded Hariyo Ban (Green Forests) Program which is building resilience of people and ecosystems in two large landscapes in Nepal. WWF Nepal also undertook a project in the Indrawati watershed of the Sunkoshi, working with local communities and the Water and Energy Commission Secretariat (WECS) to promote river basin management and implement the National Water Plan, integrating climate adaptation. WWF is working in the far-west of Nepal in the Karnali and Mahakali basins through the USAID funded Program for Aquatic Natural Resources Improvement (PANI) project (US\$ 25m), and Swedish International Development Cooperation Agency funded Transboundary Rivers of South Asia (TROSAs) project (US\$11m) with Development Alternatives Inc. and Oxfam respectively.

Implementation arrangements are shown in Annex 4. MoFAGA will lead activities at local level with technical support from MoFE and Alternative Energy Promotion Centre (AEPCC). MoFAGA and WWF have already signed a Memorandum of Understanding (MoU) to collaborate on this project. Implementing partners include UNE which will provide technical assistance on local governance, and UNCDF which will provide technical support on the PBCRGS. CARE Nepal will support local level climate adaptation, building on the partnership it already has with WWF through the Hariyo Ban Program and the CARE-WWF Alliance. The Federation of Community Forest Users Nepal (FECOFUN) and the National Trust for Nature Conservation (NTNC) will provide support at local level, working with community forest user groups to identify climate risks and build resilience of local people and ecosystems. The Nepal Federation of Indigenous Nationalities (NEFIN) will provide support on indigenous peoples' issues. Many local NGOs and CBOs will also be partners.

Brief overview of key financial and operational risks, and mitigation measures

Key risks	Mitigation measures
Staff turnover and transfers	Have succession plan; ensure adequate handover time for departing staff; have central repository for all key project documentation
Weak coordination or communication among partners	Coordination promoted through: strong project structure; MoFAGA's Development Partner Cell coordination mechanism; regular local level coordination workshops; regular communication including newsletters and e-group
Under-expenditure or cost overrun	Close financial monitoring will indicate any underspending and adjustments will be made; cost overruns will be avoided through strong financial management
Limited capacity of local government	Capacity building in local government is a major focus; technical assistance will be provided and there will be close monitoring
Delays due to in-country restructuring process, instability or natural disaster	Local government will continuously coordinate with MoFAGA. Normally instability does not cause long delays; both MoFAGA and WWF have experience working during instability; and a contingency plan will be prepared. Experience of operating after the recent earthquake and floods will be applied in case of natural disaster.

B.3. Expected project results aligned with the GCF investment criteria (max. 3 pages)

Expected impacts aligned with GCF investment criteria

1. Climate impact potential

The anticipated number of direct beneficiaries is 494,116 vulnerable people, 65% the population living in the sub-river basin and 1.70% of Nepal's total population (<https://tradingeconomics.com/nepal/population>). They will have increased adaptive capacity that reduces their vulnerability to disasters such as landslides, floods, loss of water and food security; as well as alternatives to wood-fuel energy. Infrastructure will be more resilient to climate change. There will be a major focus on the poor, women, ethnic groups, marginalized and disadvantaged communities. In addition, an estimated 363,543 people will be indirect beneficiaries; they include the other people living within the sub-river basin who will benefit from strengthened local governance systems, disaster early warning systems, water recharge, climate-sensitive infrastructure and/or bioengineering solutions in upstream areas; and people living downstream of the sub-river basin in the upper reaches of 3 districts (Surkhet, Kailali, and Bardia) lying in States 5, 6 and 7 of Nepal, who will have reduced flooding, river course changes and sedimentation, and avoidance of upstream maladaptation which could have affected them adversely. An estimated 74,706 ha of forests will be under improved management for climate resilience, and there will be broader economic benefits through more resilient infrastructure. There will be mitigation co-benefits through carbon sequestration with forest restoration, and reduced carbon emissions with increasing access to renewable energies and reduced use of fuelwood.

Specifically, the project foresees the following indicative results:

- 97,500 vulnerable households with increased adaptive capacity
- 149,500 vulnerable women with greater capacity to adapt to climate change
- Climate resilience enhanced in 150 sub-watersheds
- 1 protected area (Khaptad National Park) implements climate adaptation measures
- 19,500 households with better access to disaster early warning systems and disaster facilities
- At least 1 large-scale hydropower plant & at least 100 km of new roads adopt climate-resilient measures
- 7,400 households benefit from improved cook stoves (ICSs) and 1,050 households benefit from solar micro grids
- 878,319 tons of CO₂ eq. emissions reduced through improved forest ecosystem management and 21,080 tons of CO₂ eq. emissions reduced from access to clean energy (See Annex 7 for detailed mitigation calculation)
- 74,706 ha of forest ecosystem under improved management and sequestering carbon

2. Paradigm shift potential

Innovation: Seizing the one-time opportunity to mainstream climate adaptation as the federalization process is rolled out, the project will work at multiple levels in the new system to promote sound adaptation practices in future development. With budgets and decision-making suddenly being largely delegated to local governments under the new Constitution, **the project will support strengthening of the local governments to mainstream climate adaptation that also has mitigation co-benefits into their operations, working through the existing EFLG Framework which is currently being transformed to strengthen its climate resilience focus.** This will help ensure that local governments' development budgets are used in climate-sensitive ways, providing a high degree of leverage for climate adaptation. The project will also work with states and federal government to undertake adaptation measures at higher levels, including bringing together neighbouring or groups of municipalities to build resilience of shared resources such as blocks of forest, larger catchments, or linked infrastructure. Working through the local development planning process ensures a multi-disciplinary approach to climate adaptation, enabling a prioritization process for adaptation that is based on true need and is not confined to a single sector approach common among existing adaptation projects. It also ensures coordination across disciplines, reducing the risk of duplication and gaps.

As part of the support to local governments the **project will use a system of performance-based grants** to support climate adaptation in addition to municipalities' own funding: this mechanism will help ensure that adaptation support reaches needy beneficiaries effectively through local governments that are ready and able to implement appropriate resilience building measures, with good absorptive capacity for funding. This will overcome challenges encountered in previous projects that allocated set amounts for implementation of local adaptation plans, irrespective of funding need and capacity to use funds. It will also provide motivation for the new local governments to demonstrate good performance.

The project will promote use of ecosystems as part of its overall approach to help vulnerable people and communities to build resilience to climate change, and reduce the risk of climate-related impacts to infrastructure. This is particularly important in light of Nepal's young and fragile topography, coupled with high human population density and strong dependence on natural resources. While the ecosystem-based adaptation

approach alone is not new, the project will go beyond this, **identifying current and future ecosystem vulnerability to climate change, reducing climate-related and non-climate stresses, and where necessary, facilitating ecosystem adaptation** (such as conserving corridors up slopes and river valleys for species movement, and embracing change in forest species composition as climate change advances) to restore or maintain ecosystem services for as long as possible. In this process, the project will also document mitigation co-benefits which are often ignored in adaptation projects.

Until now, many adaptation plans have been based on administrative boundaries (for example, local adaptation plans for action (LAPAs)). They often fail to address the upstream-downstream linkages, and tackle symptoms only without solving issues holistically. This project will **take action at multiple hydrological scales as well as administrative ones**. The scale of the new local governments enables a sub-watershed approach to climate adaptation that is better aligned with the new administrative units than the previous administrative system in Nepal. Larger scale processes will be tackled at state level. Since many climate risks are water-related, there are many advantages to following boundaries of hydrological units for climate adaptation. This includes upstream-downstream conflict resolution and collaboration to reduce the risk of maladaptation; and taking a multi-disciplinary approach when needed to reduce vulnerability to climate-induced disasters. In this way the project will build resilience of the whole sub-river basin.

Potential for scaling up and replication: The project will strengthen national systems, creating an enabling environment for scaling up and replication. Successful approaches and lessons developed in the sub-river basin approach through this project can be replicated in other sub-river basins, and scaled up to basin level in Nepal's four major river basins. Since local government units can allocate annual development funds to five areas, climate change and environment being one, the basic approach can be scaled up in a more modest way by relying on these funds for climate adaptation in other parts of Nepal, and applying efficiencies and prioritization identified in the project. This approach can also be replicated in other mountain countries with decentralized governance systems. Successful climate-resilient infrastructure approaches can also be scaled up, going where necessary to state, river basin level and national level. In many cases infrastructure investors should cover additional adaptation costs, which will often be a sound investment in the longer term by avoiding costly damage to infrastructure from extreme weather events.

Potential for knowledge and learning: With a view to testing different approaches in the sub-river basin and learning how to best replicate and scale up under the new government structure, the project will have a strong learning agenda and communication plan. Indicative learning questions are:

- What are the enabling conditions for land and water related DRR at local level?
- What are the benefits and challenges of working at a range of hydrological scales as well as the new administrative scales for climate adaptation?
- What are the barriers and incentives for translating strengthened governance mechanisms in local governments, and the performance-based grants system, into effective climate adaptation action?
- What science is required for climate adaptation planning and implementation at local level?
- How can indigenous knowledge and practices be integrated in climate adaptation planning alongside the best available climate science and new technology?
- How can innovative and developing technologies be made more affordable and accessible locally?
- How can collaboration with the infrastructure sector on climate adaptation be taken to scale in Nepal?
- How can mitigation co-benefits be maximized within the framework of a project focusing on adaptation?

An online hub will be developed to document and disseminate results, tools and lessons. A communication strategy will be developed, identifying relevant messages for priority audiences and the most appropriate means to communicate with them, drawing on existing experience in Nepal.

Enabling Environment and Contribution to Policies: The results and lessons from this project will be shared with newly formed local governments, government institutions and structures at higher levels, as well as local communities, indigenous people, NGOs, private sector and other stakeholders, so that relevant successful approaches can be replicated and scaled up. Results from this project will inform new policy at federal and state level. Further, the project will assist in opening avenues for climate adaptive planning and actions that account mitigation co-benefits at river basin and sub-river basin scales. Local policies will be reformed and revised to assist in mainstreaming climate change across sectors that integrates both adaptation and mitigation. Capacities of state and non-state actors will be enhanced by the project for preparing and implementing SWAMPs, and mainstreaming adaptation and identifying mitigation co-benefits into local government planning.

3. Sustainable development potential

Since Nepal is so vulnerable to climate change, reducing its vulnerabilities and building resilience is an urgent prerequisite for maintaining the development gains of recent decades. The capacity and approaches that the project will build to tackle climate change will serve as a base for ensuring climate-adaptive development in the

future. With its multidisciplinary and multi-scale approach, the project will make a major contribution to sustaining development in the West Seti sub-river basin, with good potential to scale up efforts to the whole country.

The project will contribute to Nepal's efforts to achieve several Sustainable Development Goals (SDGs), particularly SDG13 (Climate Action) and SDG 11 (Sustainable Cities and Communities). Its work across disciplines means it will also contribute to several others: SDG 1 (No Poverty), 2 (Zero Hunger), 5 (Gender Equality), 6 (Clean Water and Sanitation), 7 (Affordable and Clean Energy), 9 (Industry, Innovation and Infrastructure), 10 (Reduced Inequalities), 15 (Life on Land), 16 (Peace, Justice and Strong Institutions), and 17 (Partnerships for the Goals). The linkages of project outcomes to these goals and their targets are described in Annex 5.

4. Needs of recipient

Nepal's high vulnerability to climate change, and the differential vulnerability of some of its poorest, most marginalized people, have already been outlined in previous sections. Much of its vulnerability is disaster-related, and it is especially prone to flood, landslide and drought hazards. It is a least developed country with a per capita GDP of US\$729.53 in 2016, with agriculture contributing 35% of GDP. Agriculture employs 66% of the economically active population and is crucial for rural income generation, employment, and food security¹⁴. Only 59% of agricultural land (1.766 million ha) is irrigable and less than one-third has year-round irrigation. Rainfed agriculture is vulnerable to erratic rainfall, drought and flood. A large proportion of marginal farmers have small landholdings, limited or no irrigation facilities, low incomes and limited institutional capacity. Many farming households fail to produce enough food for themselves for a full year, and rely heavily on remittances from employment of family members away from home. Nepal has International Development Association credits totalling \$443 million and grants of \$339 million. It struggles to meet basic social needs such as education and health, and has poor infrastructure development. While government strongly recognizes the threat from climate change and the importance of proactively building resilience, and is allocating some funds to tackle climate change, it cannot afford all the additional cost for building resilience of its people, ecosystems and infrastructure.

5. Country ownership

There is strong country ownership of this project. MoFAGA will be the lead executing agency for the project on behalf of the government of Nepal. It has been involved in project planning and design from the beginning. MoFE and AEPC has agreed to provide technical support on adaptation and energy access in the project implementation. The project is fully aligned with government programs on climate adaptation and mitigation, water management and forest management.

MoFAGA has been the lead government body to coordinate and facilitate implementation of climate adaptation and other environment-related programs at local level, and has been piloting EFLG. The project builds on this existing experience and learning. MoFAGA has also committed to provide 30% co-financing as the project is in line with priorities of local government. The project has the support of the Ministry of Finance (MoF), Nepal's GCF NDA (see the first letter in Annex 6 for the no-objection letter).

6. Effectiveness and efficiency

The overall project cost is US\$40 million, with US\$25 million requested from GCF. Out of the total requested amount, about 21% the budget will be invested in activities leading to mitigation co-benefit. It is estimated that with investment of 1 US\$ from GCF, 0.17 tons of CO₂ eq. emissions would be reduced (or 1 tonne of CO₂ eq. will cost 5.8 US\$).

The average gross cost per direct beneficiary is approximately \$80. This is more than the USAID-funded Hariyo Ban Program's climate adaptation component with \$41, where seed funds provided for community adaptation plan of action (CAPA) and LAPA interventions were in many cases not adequate. We consider that a larger amount of funding per capita is needed to be effective, especially if community infrastructure is part of the adaptation plan, and since the West Seti is in a very remote part of Nepal with higher operating costs. Hence, we consider that an overall budget of \$40 million for 494,116 direct beneficiaries will be effective as well as efficient given the very difficult access in the project area. The use of a performance-based grants system to further implement identified adaptation programs will ensure effective use of funds; only those local government units who are performing well will receive performance-based grants after the first year of participating in the project.

¹⁴ Ministry of Science, Technology and Environment. (2014). Second National Communication to the United Nations Framework Convention on Climate Change. Ministry of Science, Technology and Environment, Kathmandu, Nepal.
<http://unfccc.int/resource/docs/natc/nplnc2.pdf>

B.4. Engagement among the NDA, AE, and/or other relevant stakeholders in the country (max ½ page)

The process of designing the project concept started with a meeting of MoFAGA and WWF Nepal in 2016. A concept note development task force was created with members from both the entities. In February 2017, a workshop was organized to review the GCF concept note template; identify needs and gaps for climate adaptation; and develop a conceptual model for this project. Participants initially included MoFE, MoFAGA and WWF Nepal. Later, the broad strategies and activities for the project were worked out by WWF and MoFAGA together.

As an Executing Entity, MoFAGA has played a critical role in identifying partners for the project, including UNE and UNCDF given their strengths in implementing the PBCRG mechanism and integrating climate adaptation into local government planning. Building on existing partnerships and experience of implementing local level adaptation in the Hariyo Ban Program consortium, WWF Nepal proposed including CARE Nepal, FECOFUN and NTNC as partners. The project will be implemented through local government units engaging other stakeholders including local community groups and CBOs, and NGOs at various levels.

Several versions of the concept note were shared with the NDA and reviewed by the technical committee, and recommendations were incorporated before submission to GCF. Further, following the suggestions of the technical committee, MoFE and AEPC were included as technical partners. During the project concept development phase, WWF consulted with CARE Nepal, FECOFUN, NTNC and NEFIN. It also coordinated with other GCF Accredited Entities (AEs) working in Nepal (International Union for the Conservation of Nature, United Nations Development Programme, and the Food and Agriculture Organisation (FAO)), to bring synergies and complementarity among the projects proposed to GCF and exploring how the AEs can share information, tools and approaches.

If GCF approves this concept note, WWF and MoFAGA will involve implementing partners extensively in project preparation, and will undertake participatory planning with a wide range of stakeholders and beneficiaries.

C. Indicative Financing/Cost Information (max. 3 pages)

C.1. Financing by components (max ½ page)

Please provide an estimate of the total cost per component/output and disaggregate by source of financing.

Component/Output	Indicative cost (USD)	GCF financing		Co-financing		
		Amount (USD)	Financial Instrument	Amount (USD)	Financial Instrument	Name of Institutions
Risk of climate-related disasters to communities and ecosystems is reduced while generating mitigation co-benefits	30,100,000	22,100,000	Grant	8,000,000	Grant	MoFAGA
Climate resilience of large infrastructure is enhanced	6,605,200	330,200	Grant	6,275,000	Grant	MoFAGA
Climate change is mainstreamed into development planning and governance processes, and access to climate adaptation finance increased at local level	2,712,000	2,012,000	Grant	700,000	Grant	MoFAGA
Knowledge, guidance, and capacity in place to replicate and scale up the approach	582,800	557,800	Grant	25,000	Grant	MoFAGA
Indicative total cost (USD)	40,000,000	25,000,000		15,000,000		

C.2. Justification of GCF funding request (max. 1 page)

Why the project requires GCF funding and cannot be funded through in-country public or private sector

As a highly climate-vulnerable country, it is very urgent for Nepal to scale up climate adaptation efforts in order to proactively tackle climate change. Government is committed to climate adaptation, having pledged that some public funds in local governments will be spent on combatting climate change (mitigation and adaptation). However, this is not enough - Nepal cannot afford the full cost of what is needed to invest now to proactively prepare for climate change. This project will support the government to meet the costs of adaptation and mitigation efforts. Similarly, there is very limited private sector engagement in Nepal in climate adaptation, and it is not in a position to contribute major funding at the level required for this project; the role of the private sector is limited to selling appropriate technologies for implementation of adaptation and mitigation measures (e.g. solar grids, agriculture technologies).

Alternative funding options, constraints, and barriers for beneficiaries to access them

Alternative funding options were explored, including government funding (see paragraph above); the Adaptation Fund (whose funding level is too small a scale for this project); and international and bilateral donors (while Nepal receives a large amount of international support there are many other pressing needs for funding). The only available funding was through local governments; their funds are not enough to finance the project fully but make a significant co-financing contribution.

Justification for rationale and level of concessionality, and how this will be passed on to end users and beneficiaries

Climate adaptation is urgently needed in Nepal so that its people, social systems and the economy do not to lose hard-won development progress. Since adaptation is a defensive expense it is difficult to finance it commercially. As a least developed country, Nepal cannot afford to finance this project through a loan. Many of the beneficiaries are poor, disadvantaged people who cannot be expected to build climate adaptation into a profit-making venture, and cannot afford to take loans to build climate resilience. Therefore, WWF seeks grant funding from GCF. The funds will be channelled through WWF to the local government as a grant to implement adaptation and mitigation programs to benefit local communities.

C.3. Sustainability and replicability of the project (exit strategy) (max. 1 page)

The project's exit strategy lies in the established information systems and knowledge base, strengthened capacity and environmental governance, framework for mainstreaming climate change, and sustainable climate finance available from government, so that local government continues to plan and implement adaptation and mitigation initiatives in the sub-river basin after the project closes.

With well capacitated human resources, a participatory and contextual adaptation planning process in place, and strong experience in climate adaptation and mitigation benefits, adaptation approaches will continue to be reflected in national and local development planning and budgeting processes after the project closes. Enhanced awareness and ongoing coordination will leverage state level policies to mainstream and integrate climate change across different sectors; each sector will also start to explore avenues for additional funds and make investments informed by climate adaptive plans. The established PBCRGS mechanism will further support in channelling financial resources from federal and provincial government to local governments to undertake adaptation actions in the future.

In addition, experience and demonstration of climate-adaptive infrastructure design and operation, using approaches such as scenario planning in the face of climate uncertainty, will provide motivation for the federal government, donors and private sector to mainstream climate risk into future infrastructure planning and operation.

MoFAGA has a strong interest to continue monitoring the project's sustainability after project completion, as part of longer term learning about its impacts and replicating successful approaches in the most effective and efficient ways. With the long-term benefits from climate change adaptation and mitigation approaches, the local communities will advocate for support for such interventions in the future.

Replicability has been covered in section B3; there is good opportunity to take successes and learning from the project to the other sub-river basins of the Karnali, and also to the Gandaki, Koshi and Mahakali basins and smaller watersheds in Nepal to achieve national coverage, efficiently utilizing climate change funding of local governments. The project will also reach out to other countries with similar conditions, sharing Nepal's experiences in the sub-river basin adaptation approach and making available its tools, guidance and lessons so that they can benefit from it.

D. Supporting documents submitted (OPTIONAL)

- Map indicating the location of the project/programme
- Diagram of the theory of change
- Economic and financial model with key assumptions and potential stressed scenarios
- Pre-feasibility study
- Evaluation report of previous project
- Results of environmental and social risk screening

Self-awareness check boxes

Are you aware that the full Funding Proposal and Annexes will require these documents? Yes No

- Feasibility Study
- Environmental and social impact assessment or environmental and social management framework
- Stakeholder consultations at national and project level implementation including with indigenous people if relevant
- Gender assessment and action plan
- Operations and maintenance plan if relevant
- Loan or grant operation manual as appropriate
- Co-financing commitment letters

Are you aware that a funding proposal from an accredited entity without a signed AMA will be reviewed but not sent to the Board for consideration? Yes No

Annex 1: Project Area

The project will take place in the West Seti sub-river basin which lies in the Karnali basin of Nepal. The scale selected for the project is at a sub-river basin level, as it is clear from past interventions that adaptation actions following only administrative boundaries often fail to address larger ecosystem processes, infrastructure developments, and upstream-downstream linkages. The area was selected in a collaborative process that took into account climate vulnerability as the prime focus, while avoiding overlaps with other existing or in-development donor-funded projects, particularly GCF. The recommendation letter from the MoF to choose a basin in the western region is included in Annex 6 (second letter).

A study by the International Water Management Institute (IWMI)¹⁵ was a key reference as it is the only vulnerability assessment carried out at watershed level across Nepal. It revealed that among 11 major river basins of Nepal, the Karnali is the most vulnerable (Figure 1), and thus the basin was selected, after also considering the Sunkoshi which overlapped with FAO's proposal under development for GCF.

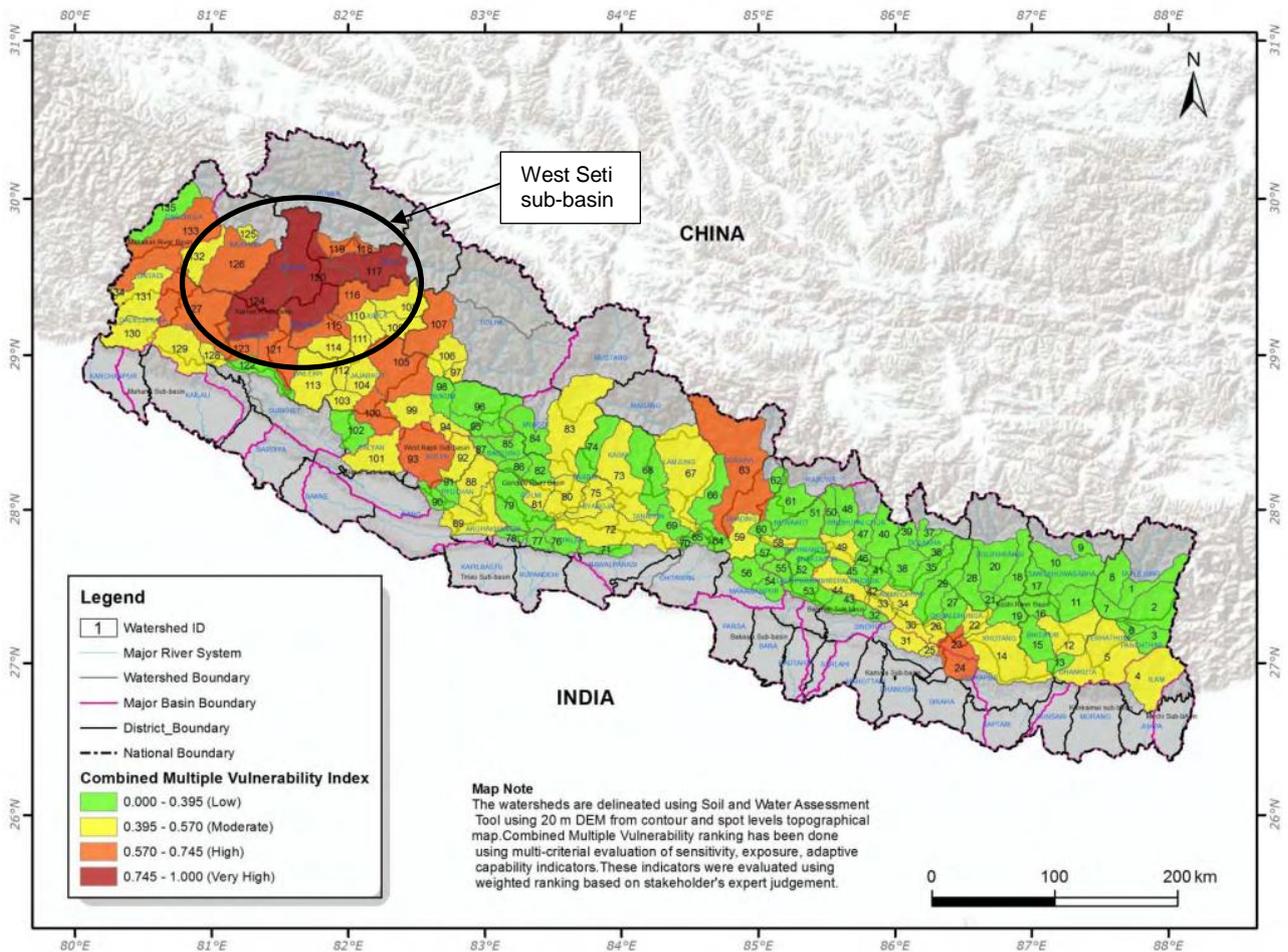


Figure 1: Vulnerability of Nepal's mountain ecosystem watersheds (Source: IWMI, 2012)

Within the Karnali basin, there are 5 major sub-river basins and 36 watersheds. Of the watersheds, 3 are very highly vulnerable and 11 are highly vulnerable. We analysed the number of very highly and highly vulnerable watersheds in each sub-river basin. In addition to climate vulnerability, other aspects considered were: existing climate adaptation activities; major economic activities; geographical diversity; opportunities for upstream-downstream linkages; poverty and presence of disadvantaged groups; and complementarity and synergies with other existing or planned climate adaptation investments in Nepal. These analyses led to the selection of the West Seti sub-river basin. The project builds on the work of the NCCSP in the lowlands of the far west, the USAID-funded Hariyo Ban Program in the Gandaki basin and Terai, the Strategic Program for Climate Resilience in the far west, early results from PANI and TROSA in the far west, and other climate adaptation projects in Nepal. A brief description of the sub-river basin is given below.

¹⁵ International Water Management Institute. (2012). Nepal: Building Climate Resilience in Watersheds in mountain Eco-Regions. Asian Development Bank (ADB): Metro Manila, Philippines.

The Karnali river, the longest river flowing inside Nepal, originates south of Mansarovar and Rokas lakes located in China. Its basin is one of the three major river basins of Nepal; the other two are Gandaki and Koshi basins in Central and Eastern Nepal, respectively. The Karnali River enters Nepal as the Humla-Karnali near Khojarnath with many snow-fed rivers as tributaries. The basin extends from Dhaulagiri Mountain in the east to Nanda Devi Mountain in the west, covering an area of 45,269 km². It has five major sub-river basins (West Seti, Humla Karnali, Mugu Karnali, Tila, and Bheri), all of which originate in Nepal except Humla Karnali, which flows from China. Interestingly, unlike most of the rivers in Nepal, which generally flow from north to south, Mugu Karnali flows from east to west, and the Humla Karnali from west to east. The Karnali River flows through the western part of Nepal and joins the Mahakali River in India, which is known as the Ghaghara in India. While the Karnali basin is rich in natural resources¹⁶, the districts in the basin are the most impoverished in Nepal¹⁷ and people there have very low adaptive capacity¹⁸. This region has a high risk of natural disasters such as landslides and is more sensitive to increasing temperature and decreasing precipitation trends¹⁹ providing opportunities for upscaling.

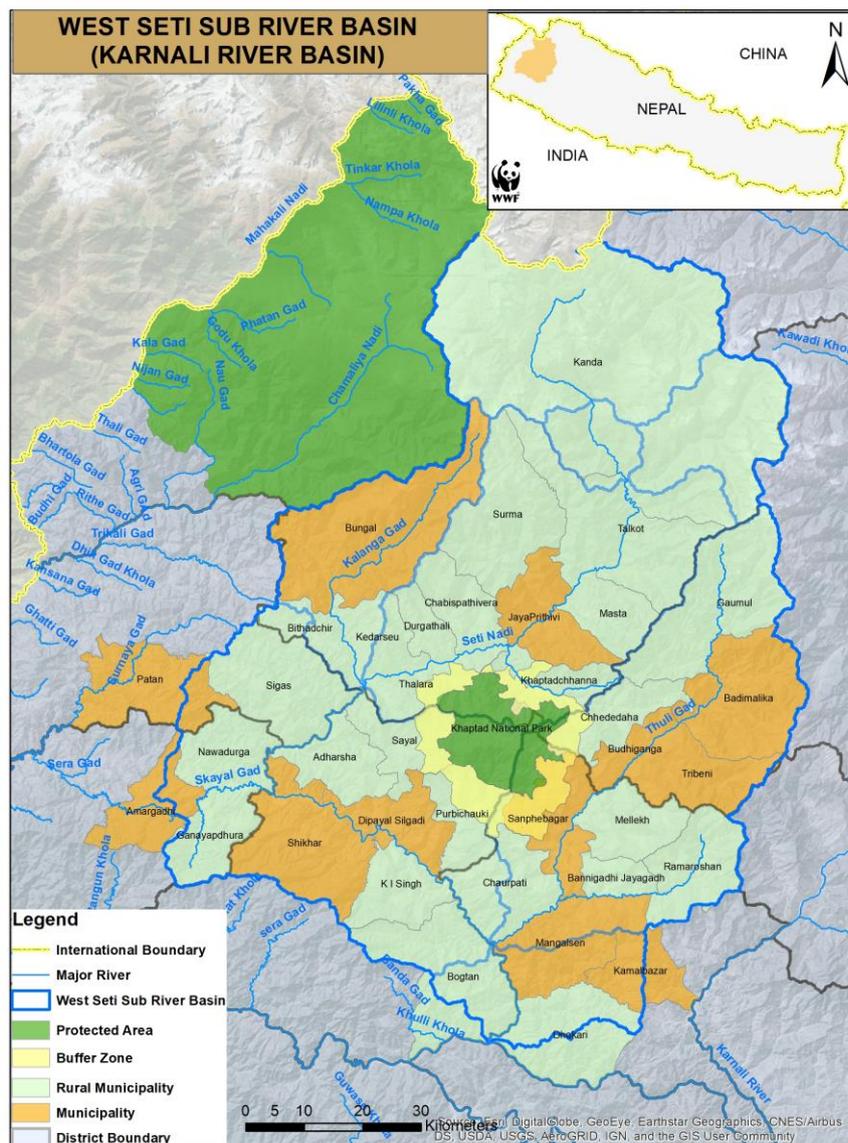


Figure 2: Map of West Seti sub-basin with sub-watersheds and local government units

¹⁶ Shrestha, D.L. and Paudyal, G.N. (1992). Water resources development planning in the Karnali river basin. Nepal. Int. J. Water Resour. Dev., 8, 195–203.

¹⁷ Thapa, S. (1995). The human development index: A portrait of the 75 districts in Nepal. Asia Pac. Popul. J. 10, 3–14.

¹⁸ Kocanda, J. and Puhakka, K. (2012). Living with Floods along the Karnali River; A Case study of Adaptive Capacity in Rajapur Area, Nepal. Lund University, Lund, Sweden.

¹⁹ International Water Management Institute. (2012). Nepal: Building Climate Resilience in Watersheds in Mountain Eco-Regions. ADB, Metro Manila, Philippines.

The West Seti sub-river basin covers approximately 7,927 sq. km and comprises six watersheds: Lower West Seti, Thuli Gad, Middle West Seti, Chaira khola, Kalanga Gad, and Upper West Seti (Figure 2). It stretches across 6 districts, 12 (urban) municipalities, and 25 rural municipalities. There is also a national park (Khaptad National Park) that spans 4 districts. All the local government units are part of State no. 7 of the country.

S.N.	Name of local unit	District	Area (km ²)	Type
1	Khaptad National Park	Doti	94.89748973270	National Park
2	Adharsha	Doti	128.47025282000	Rural Municipality
3	Bogtan	Doti	300.21882373700	Rural Municipality
4	Dipayal Silgadi	Doti	126.61804356100	Municipality
5	K I Singh	Doti	127.00788958400	Rural Municipality
6	Purbichauki	Doti	117.64425377800	Rural Municipality
7	Sayal	Doti	122.72314173200	Rural Municipality
8	Shikhar	Doti	285.37108290300	Municipality
9	Amargadhi	Dadeldhura	139.32632146400	Municipality
10	Ganayapdhura	Dadeldhura	135.65327131100	Rural Municipality
11	Nawadurga	Dadeldhura	141.89155033300	Rural Municipality
12	Badimalika	Bajura	276.00219420100	Municipality
13	Budhiganga	Bajura	59.19621469440	Municipality
14	Chhededaha	Bajura	127.52079524000	Rural Municipality
15	Gaumul	Bajura	314.66186238200	Rural Municipality
16	Khaptad National Park	Bajura	7.56156866868	National Park
17	Tribeni	Bajura	170.32263992300	Municipality
18	Bithadchir	Bajhang	86.14779418850	Rural Municipality
19	Bungal	Bajhang	447.58493422300	Municipality
20	Chabispathivera	Bajhang	116.33644177100	Rural Municipality
21	Durgathali	Bajhang	61.83419709230	Rural Municipality
22	JayaPrithivi	Bajhang	166.78610947200	Municipality
23	Kanda	Bajhang	1467.27507779000	Rural Municipality
24	Kedarseu	Bajhang	113.90928950300	Rural Municipality
25	Khaptad National Park	Bajhang	70.11082301590	National Park
26	Khaptadchhanna	Bajhang	113.51643357900	Rural Municipality
27	Masta	Bajhang	109.23517709300	Rural Municipality
28	Surma	Bajhang	270.80065325600	Rural Municipality
29	Talkot	Bajhang	335.25583693000	Rural Municipality
30	Thalara	Bajhang	105.50658345400	Rural Municipality
31	Patan	Baitadi	219.25598484600	Municipality
32	Sigas	Baitadi	245.44013634400	Rural Municipality
33	Khaptad National Park	Achham	38.80627649220	National Park
34	Bannigadhi Jayagadh	Achham	58.26263943150	Rural Municipality
35	Chaurpati	Achham	182.16305767400	Rural Municipality
36	Dhakari	Achham	227.88408130300	Rural Municipality
37	Kamalbazar	Achham	120.78106304400	Municipality
38	Mangalsen	Achham	220.13968092600	Municipality
39	Mellekh	Achham	134.78197268900	Rural Municipality
40	Ramaroshan	Achham	173.33100778800	Rural Municipality
41	Sanphebagar	Achham	166.70537553200	Municipality

The sub-river basin has a population of 760,178 people, with a high proportion of ethnic groups and marginalized people. The average Human Poverty Index (HPI) of the districts in the sub-river basin (42.4) is higher than the national average of 31.12²⁰. Women comprise 53% of the total population and a considerable percentage of households (on average 25%) are headed by women²¹. The sub-river basin is popular for its religious significance as well as natural beauty and has good potential for tourism. Khaptad National Park (KNP) covering 211 km² of the sub-river basin is the one of the main attractions.

Agriculture is the main economic activity, comprising mainly small-scale farming using traditional methods²². Much of the agriculture is rain-fed, making it vulnerable to increasingly erratic monsoons and unreliable pre-monsoon precipitation. Due to a pattern of decreasing rainfall food security is worsening²³. Short-term intense precipitation events during the monsoon makes the sub-river basin highly vulnerable to floods, landslides, and changing river courses, which affect infrastructure and local and regional economies as well as local communities and ecosystems. Increased runoff due to extreme rainfall events results in less absorption of water in soil and aquifers, and in parts of the sub-river basin spring sources are dwindling. These effects are often compounded by deforestation and forest degradation due to heavy dependence on fuelwood and construction of poorly designed infrastructure. As climate change advances the risks are projected to increase in the future.

Box 1. Case study of Syandi village, Bajhang district

Syandi Village Development Committee is a remote area in Bajhang. Agriculture is the prime occupation and livestock is an integral part of farming. The area has immense natural as well as cultural diversity. There are opportunities to promote this small village as a tourist destination as part of the Khaptad National Park trekking route.

The local people in Syandi village have experienced an increase in temperature over time. Monsoon rainfall has reduced significantly, and the timing of rainfall and snowfall has shifted in recent decades. Rainfall used to occur in June and July and snowfall during November and December in past, but now snowfall is occurring four to five months earlier. In addition, the number of days with snowfall is decreasing. The situation is even worse during the dry season as the frequency of drought is increasing. People have experienced short snowy seasons because of the warmer winter. Sector wise, impacts are:

- **Water resources:** Due to reduced precipitation especially during the dry season, natural springs are drying up. Water wells are the main source of water for domestic use, and in recent years water levels in wells have dropped significantly. The impacts are also visible in the local river system. Rivers are drying up as the water level is sinking year by year.
- **Agriculture:** The decline in monsoon rainfall and its temporal variation has affected the agriculture sector widely. Some examples include early ripening of crops and whitening of wheat. According to villagers, maize production has decreased remarkably in last decade. Farmers used to harvest 300 kg of maize per ropani¹ of land some 10 years back; now it has reduced by 50 percent. An additional problem associated with decreasing productivity is the prevalence of pests. The changing rainfall pattern has also had noticeable impacts on livestock. With decreasing rainfall in the monsoon season, pastureland in Syandi village is decreasing, and availability of fodder is getting low.

Bajhang District is located in the northern part of far-western Nepal, with great views of mountains like Saipal, Yoga, Nappa, Urai, and Vyas. In recent decades, Bajhang has witnessed pronounced impacts of changing climate. Climatic data analysis of Pipalkot station in Bajhang shows that the average annual rainfall has decreased by 2.47 mm/year over the 30 years from 1981 to 2010. Changes in precipitation regime have great effects on water resources and the agriculture sector. According to the NAPA (MoE 2010), the vulnerability status of Bajhang is moderate. In particular, Bajhang is highly vulnerable to drought and landslides, but adaptation capacity in Bajhang is very low, linked to its low socio-economic development status.

Source: Extracted from CAHC. 2015

²⁰ United Nations Development Programme (UNDP). (2014). Nepal Human Development Report. UNDP, Kathmandu, Nepal

²¹ Central Bureau of Statistics. (2011). National population and household census (National Report). CBS, Kathmandu, Nepal.

²² Climate Alliance of Himalayan Communities (CAHC). (2015). Overview of Climate Change: Impact and Adaptation in Nepal Himalayas. CAHC, Kathmandu, Nepal.

²³ Khatiwada, K.R., Panthi J., Shrestha, M.L. and Nepal, S. (2016). Hydro-climatic variability on the Karnali river basin of Nepal Himalaya. Climate, 4, 17; doi:10.3390/cli4020017.

Development in the far-western region has been slow and many parts are very remote; access to many rural areas in this extremely rugged terrain is still by foot trail, and may take several hours or days. Existing highways in the sub-river basin include the Mahakali highway (Atariya-Dadeldhura-Doti) and Seti highway (Saule-Doti). There are frequent reports of landslides on these routes affecting vehicular movement and the built environment. For example, in July 2017, traffic along the Mahakali Highway was obstructed following a landslide triggered by incessant rainfall at Bangabagar in Dilasaini-6, Baitadi (<http://bit.ly/2torfbf>). Vehicles traveling to and from Baitadi were stranded halfway due to the obstruction. The Government of Nepal (GoN) is planning to invest in infrastructure development in the area. The construction of the Mid-Hills Highway and Seti-Mahakali Highway are targeted in the Policies and Programmes of the Government of Nepal for Fiscal Year 2015-16²⁴.

Similarly, hydropower is developing rapidly in the sub-river basin. As of March 2018, there are nine proposed 3.5-7.7 MW hydropower plants in this sub-river basin (<http://www.doed.gov.np/application-construction-license-for-generation.php>). The much larger West Seti Dam project is a National Priority Project of GoN. Located in Doti, Dadeldhura, Bajhang and Baitadi districts, West Seti Hydropower would be a storage project with a capacity of 750 MW. The power station would be located approximately 63 km upstream from the Seti River confluence with the Karnali River, with the dam site located a further 19.2 km upstream. The dam's catchment area covers the upper 4,022 km² of the West Seti River Basin and its reservoir volume would be 1.5 km³.

Nepal has had severe power shortages and these kinds of developments will bring many economic benefits. However, climate change will affect hydropower. Extreme precipitation events due to increased climate variability are likely to increase in the future, with increased risk to hydropower plants from flash floods, boulders and sediment. Prolonged drought periods will also affect hydropower, especially run-of-the-river schemes. Storage in West Seti Hydropower reservoir could potentially affect ecological flows downstream, especially during prolonged drought. Hence there are several issues to take into account when planning climate-adapted hydropower.

²⁴ Government of Nepal. (2015). The Policies and Programmes of the Government of Nepal for Fiscal Year 2015-16. Office of the Prime Minister and Council of Ministers, Kathmandu, Nepal.

Annex 2: How the Project will Help Nepal Achieve its Nationally Determined Contribution (NDC)²⁵

Adaptation: The project will contribute to the following climate adaptation commitments under the NDC:

- *Nepal places climate change adaptation at the centre of its development plans and policies. It aims to strengthen implementation of Environment-Friendly Local Governance Framework in Village Development Committees and municipalities to complement climate change adaptation, promote renewable energy technologies, water conservation and greenery development.*
- *Nepal will undertake scientific (physical and social sciences) approaches to understand and deal with the impacts of climate change in mountains, hills and low-land ecosystems and landscapes. It will develop and implement adaptation strategies for climate change affected sectors.*

Mitigation: Climate mitigation commitments in the NDC relevant to this proposal include:

- *By 2050, Nepal will achieve 80% electrification through renewable energy sources having appropriate energy mix. Nepal will also reduce its dependency on fossil fuels by 50%.*
- *Nepal aims to achieve the following target under the National Rural and Renewable Energy Programme (NRREP), reducing its dependency on biomass and making it more efficient:*

Technologies	Targets
Mini and Micro Hydro Power	25 MW
Solar Home System	600,000 systems
Institutional solar power systems (solar photovoltaic and solar pumping systems)	1,500 systems
Improved water mills	4000 mills
Improved cooking stoves	475,000 stoves
Biogas	130,000 household systems, 1,000 institutional and 200 community biogas plants

- *Nepal will maintain 40% of the total area of the country under forest cover and forest productivity and products will be increased through sustainable management of forests. Emphasis will equally be given to enhance carbon sequestration and forest carbon storage and improve forest governance.*

The project will help Nepal meet its NDC mitigation targets by accessing bilateral and multilateral grant support for the following priority areas listed in the NDC document:

- Support implementation of the NAPA and LAPAs, and the National Adaptation Plans (NAPs) once they are developed
- Develop and implement measures to reduce climate vulnerabilities
- Enhance the agricultural sector by adopting climate-friendly technologies and reducing climate change impacts
- Build capacity at institutional level to plan and implement adaptation and mitigation programmes and projects
- Address drivers of deforestation and forest degradation to enhance carbon sequestration
- Convert waste to energy

²⁵ Ministry of Population and Environment. (2016). Nationally Determined Contributions. Ministry of Population and Environment, Kathmandu, Nepal.

Annex 3: Broad list of project activities

This annex provides details of activities planned under each sub-objective. Activities may be refined once climate risks have been assessed and SWAMPs, municipal and state plans developed. The activities will be carried out in collaboration and consensus with local, state and national government as appropriate, working with non-government stakeholders.

Sub-objective A: Risk of climate-related disasters to communities and ecosystems is reduced while generating mitigation co-benefits

Community capacity building, climate risk assessment and planning

- Raise awareness of climate change in communities through CACs and community-based organizations, and empower women and marginalized people to participate in community climate adaptation processes
- Support participatory climate risk assessments at sub watershed level
- Build capacity of local communities on developing and implementing sub watershed plans through training and workshops
- Develop integrated SWAMPs based on the climate risk assessments
- Disseminate information on climate vulnerabilities and SWAMP interventions to local communities through CACs and other groups
- Provide support to local government, CACs and non-state actors (CSOs/CBOs, private sector etc.) for SWAMP implementation

Reducing risk of climate-induced disasters

- Promote climate-sensitive land use planning in SWAMPs that identifies appropriate land uses for each zone; sensitive developments are directed away from disaster hazard zones
- Restore and build resilience of forests, alpine grasslands and wetlands to enhance or maintain ecosystem services²⁶ for as long as possible while generating mitigation co-benefits
- Reduce the risk of uncontrolled forest fires through awareness raising and fire management practices (climate change brings increased risk of forest fires during exceptionally dry, hot periods before the monsoon)
- Restore priority landslide sites and protect potential sites, particularly those that threaten settlements, infrastructure, economic activities and critical biodiversity; where possible using soil bioengineering, with hard structures where necessary
- Promote climate-sensitive sub-watershed in light of climate impacts on water supplies, increased frequency and intensity of floods and droughts, the need for energy generation, using natural processes as much as feasible to reduce disasters and provide ecosystem services, including restoration of flood plain functions to tackle climate hazards
- Promote use of smart phones to disseminate flood forecasting in partnership with DHM and tele-communication service providers
- Develop and demonstrate a model of “Climate change integrated PA management system” in Khaptad National Park in collaboration with Department of National Park and Wildlife Conservation

Water and energy security

- Introduce scenario planning for water resource management in the sub-river basin in light of increasing uncertainty with climate change, seeking no-regrets solutions that do not close future options to cope with extreme conditions
- Promote upstream-downstream collaboration over shared water resources at different scales (between municipalities, and between communities), working to resolve water conflicts and taking into account climate risks
- Promote water efficiencies, for example through multiple-use water systems, and water-efficient technologies (e.g. drip irrigation)
- Promote rain water harvesting at local level to overcome unreliable precipitation
- Install solar micro-grids and distribute ICSs to improve energy access, and reduce deforestation and greenhouse gas emissions from biomass (linked with DRR above)

Food security and livelihoods

- Where existing agriculture is affected by climate variability, promote climate-responsive solutions such as more appropriate crops, breeds and practices for the changing conditions

²⁶ These ecosystem services include: provision of water supplies and flood protection through water retention and storage in forests and aquifers; reduced risk of soil erosion, landslides and sedimentation of rivers through protection of steep hillsides; provision of sustainably extracted natural resources for resource-dependent communities from well managed forests, wetlands and grasslands; and maintenance of micro-climates (e.g. through provision of shade, shelter).

- Promote use of existing insurance mechanisms for livestock and agriculture through training and awareness using LRPs
- Support vulnerable communities to implement climate-appropriate green micro-enterprises to diversify livelihood options to increase resilience
- Build off-farm skills where appropriate for vulnerable groups to broaden household adaptation options
- Provide grants to cooperatives or other groups for small revolving funds to support climate-appropriate livelihood development

Community infrastructure and built environment

- Strengthen existing community infrastructure and design new infrastructure to withstand climate change impacts including torrential rain and floods; this includes trails, community buildings, access roads and bridges
- Develop community shelters where needed in light of local hazard risk; ensure that everyone knows where they are, and everyone has equal access

Gender and social inclusion

- Ensure full participation in local climate risk assessments and adaptation planning, including women, poor households, and marginalized and ethnic groups, empowering them through CACs prior to adaptation activities
- Identify differential vulnerabilities of the most vulnerable groups and ensure that they are included in adaptation measures developed in SWAMPs
- Ensure that equitable climate adaptation support is made available for the most vulnerable groups

Sub-objective B: Climate resilience of large infrastructure enhanced

General: Monitor all major infrastructure development proposals affecting the sub-river basin, and work with relevant government ministries and prospective developers as early as possible to review potential direct and indirect climate change impacts, possible development scenarios and adaptation measures for the infrastructure and affected stakeholders, in order to avoid locking into climate-inappropriate designs.

Hydropower energy generation and access

- Collaborate with the hydropower sector in the sub-river basin on participatory climate risk assessment and scenario planning as part of the sub-river basin climate risk assessment; encourage the adoption of climate-sensitive practices
- Encourage collaboration and communication between upstream and downstream hydropower developers/operators in the basin about river flows, water diversions, water retention and releases
- Support development of flood early-warning systems for the benefit of hydropower operators and local communities
- Collaborate with transmission line investors to encourage more climate-resilient designs and alignments

Road transport

- Build capacity in local government for sound environmental approaches to local road building, allowing for more extreme weather events associated with climate change
- Work with local government units to identify existing at-risk roads (the project will provide initial support such as technical assistance and GIS support, but local government units will do the detailed planning and implementation of remedial work)
- Encourage local government units to undertake detailed planning and design of new roads, including specifications that incorporate climate risk provisions, to avoid environmental and economic damage from badly designed and built roads which is currently widespread
- Establish demonstration sites at strategic places in the sub-river basin to show good practices (including soil bioengineering techniques such as bamboo crib walls, brush layering, palisades and fascines), in combination with hard engineering structures when needed to stabilize roadside areas
- Collaborate with the Department of Roads on climate risk assessments to promote climate-sensitive planning for new national roads in the sub-river basin, or upgrading of existing ones

Water transfer

- Review proposals for water transfer schemes and provide information from climate risk assessments and climate change scenarios, working with states, local government units and stakeholder groups in the sub-river basin to understand the impacts of diversions, seek adaptive solutions and avoid locking into climate-inappropriate designs

Sub-objective C: Climate change mainstreamed into development planning and governance processes of local government, and access to climate adaptation finance increased

- Map stakeholders, assess their capacity in the context of the new federal structure and prepare capacity development plan
- Organize training for local and state government, CAC facilitators, NGOs, CBOs and private sector on technical aspects required for VA, SWAMP preparation and implementation, and adaptation for local and state government planning
- Prepare revenue improvement action plan to support local government to allocate resources for mainstreaming climate change
- Carry out research and assessments to inform policy and planning
- Review federal sectoral policies for mainstreaming climate adaptation to inform state and local sectoral policies and plans
- Establish Database Management and Information System at targeted local governments and linked to government websites
- Support formulation of state policies integrating climate change and GESI
- Transform existing EFLG framework into climate resilience indicators through discussions, meetings and sharing workshops
- Mainstream climate adaptation integrating GESI into periodical and annual development plan/operation planning guidelines through meetings and workshops
- Review local level budget dedicated for climate change
- Prepare climate finance and budget tracking guideline and promote gender responsive budgeting

Sub-objective D: Knowledge, guidance, and capacity in place to replicate and scale up the approach

- Develop and implement a learning strategy for the project to analyze and document approaches and lessons
- Develop and implement a communication strategy targeting key audiences to share project approaches, results, tools and lessons
- Establish a community-based information sharing center
- Document and publish project results, research findings and lessons learned including stories of change from the field
- Establish demonstration sites in the field for best climate adaptation practices and organize study visits from government, community representatives and civil society from other sub-river basins in Nepal
- Document best practices (audio, video, print etc.) for upscaling and replication including media mobilization
- Reach out to other projects, civil society organizations and government representatives in countries with similar conditions, to share Nepal's experience and benefit from theirs
- Conduct and participate in cross learning and sharing workshops and other events at national and international level

Project management

- Establish and implement project governance, management and coordination structures
- Establish project offices in Kathmandu and sub-river basin
- Recruit project staff and procure equipment
- Prepare annual work plans and periodic progress reports
- Develop and implement monitoring and evaluation plan
- Undertake contracting and grant making

Annex 4: Implementation arrangements

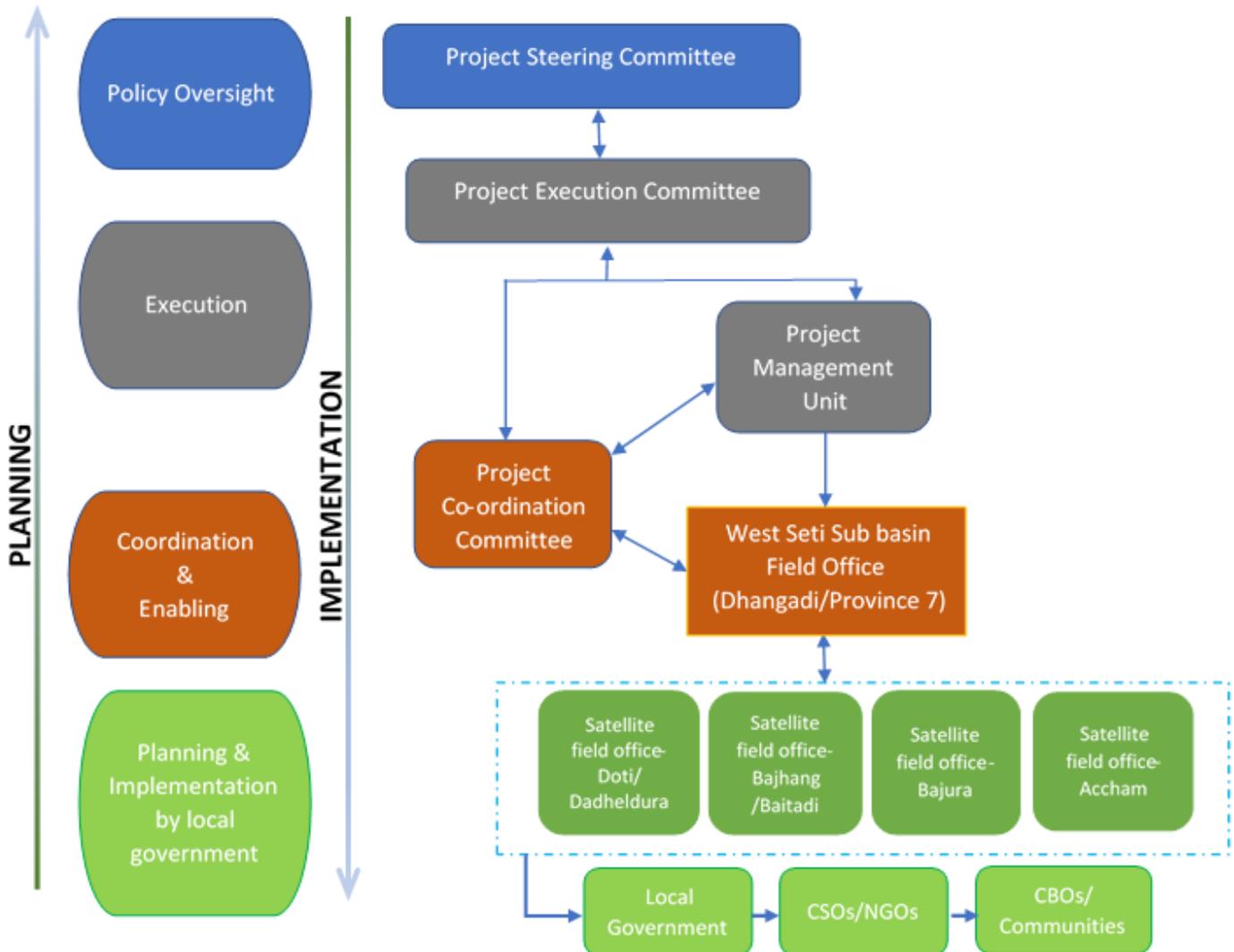


Figure 3: Implementation modality

At national level the **Project Steering Committee**, chaired by MoFAGA, will include MoFE, AEPC and other relevant ministries, WWF staff, representatives from partner organizations, and a senior member of the WWF-US GCF Accredited Entity team. It will provide overall advice and guidance to the program, provide policy support, and promote synergy with other national and sectoral programs. It will have a working group (**Project Execution Committee, PEC**) which will support the implementation of the program. Both committees will support project monitoring. The **Project Co-ordination Committee (PCC)** will support coordination including information flow at state and/or local level. The **Project Management Unit (PMU)** will comprise the core team with representation from MoFAGA, WWF Nepal and implementing partners, and will undertake work planning, implementation, reporting, monitoring, overall coordination and communication. The project will have one sub-river basin level field office in the capital of Province 7, and four satellite field offices across six districts to coordinate with local governments. The **PCC** will facilitate implementation, monitoring, reporting and coordination at the state level.

MoFAGA and WWF Nepal will implement the program under a co-management system. WWF has taken part in this type of mechanism over the past 15 years with other government partners like MoFAGA and WECS. All activities implemented in the selected sub-river basin will be channelled through this mechanism under the programmatic approach.

The Secretary of MoFAGA is Chair of the Central Implementation Coordination Committee of EFLGP that comprises: representatives from various line ministries including MoFE, Ministry of Home Affairs, MoF, Ministry of Drinking Waters and Urban Development, Ministry of Population and Health, Ministry of Agriculture, Land Management, and Cooperatives, Ministry of Industries, Commerce and

Supplies, Ministry of Labor, Employment, Women, Children and Social Security, and their respective departments/divisions; academic institutions such as Tribhuvan University, Mid-Western University, and Kathmandu University; CSOs like the NGO Federation, Federation of Nepalese Chamber of Commerce and Industries, Confederation of Nepalese Industries, and the Association of INGOs in Nepal; and media organizations such as the Nepal Forum of Environmental Journalists. This committee will ensure that the activities proposed are harmonized with other governmental efforts so as to avoid duplication.

WWF Nepal will support MoFAGA to implement the program within the Scope of Cooperation's broader program framework through signing sub-grants. These sub-grant funds will not be transferred to the government account but will be managed under a separate bank account by the project team. The Program Management Unit (PMU) is the core project team. It will consist of a designated government official (who will serve as a project director), a project co-manager from WWF Nepal, and other staff/technical assistance recruited by WWF Nepal and MoFAGA who will provide project management, technical assistance services and compliance support. There will be other full-time and part-time staff as needed from WWF and other implementing partners. This model has been used extensively and successfully by WWF and GoN during the last decade.

The Environment and Climate Change sections/divisions under MoFAGA will support the execution of the GCF project. Grant recipients will report on financial and technical progress to WWF Nepal on semi-annual basis.

MoFAGA and WWF Nepal will conduct periodic programmatic and financial monitoring, and annual audits of this project. They will provide progress reports to the Accredited Entity, who is responsible for reporting to GCF.

Annex 5: Linkages of programme outcomes to SDGs

S. N	Outcomes	SDG Target	Description of Target
Sub-objective 1: Risk of climate-related disasters to communities and ecosystems is reduced while generating mitigation co-benefits (Meets SDGs 1, 2, 5, 6, 7, 9, 10, 11, 13, 15, 17)			
1	Resilient Water, Agriculture, forest ecosystem and protected area that generates mitigation co-benefits at sub-watershed level ensuring GESI	2.4	Ensure Sustainable food production system and implement resilient agricultural practices that increase productivity band production that help maintain ecosystems that strengthen capacity for adaptation to climate change, extreme weather drought, flooding and other disasters, and that progressively improve land and soil quality
		6.5	2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate
		6.6.	2020, protect and restore water-related ecosystem, including mountains, forests wetlands, rivers, aquifers and lakes
		6.b.	Support and strengthen the participation of local communities for improving water and sanitation management
		13.1.	Strengthen resilience and adaptive capacity to climate to climate-related hazards and natural disasters in all countries
		13.2.	Integrate Climate Change measures into national policies, strategies and planning
		13.3.	Improve education, awareness-raising and human and intuitional capacity on climate change mitigation, adaptation, impact reduction and early warning
		13.b.	Promote mechanism for raising capacities for effective climate change related planning and management in LDCs and small island developing states (SIDS) including focusing women, youth, local and marginalized communities
2	Enhance capacities of government (federal, state, local) & communities for climate adaptive land and water management to reduce disaster risk integrating GESI	5.a.	Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources in accordance with laws
		11.b	By 2020 substantially increase the number of cities and human settlement adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, development and implement in line with the Sendai framework for DRR 2015-2030, holistic risk management at all levels
		11.5	By 2030, significantly reduce the number of deaths and the number of affected people and substantially decrease the direct economic losses relative to GDP caused by disasters including water related disasters, with the focus on protecting the poor and people in vulnerable situations.
		13.3.	Improve education, awareness-raising and human and intuitional capacity on climate change mitigation, adaptation, impact reduction and early warning.
		13.b.	Promote mechanism for raising capacities for effective climate change related planning and management in LDCs and SIDS including focusing women, youth, local and marginalized communities
3	Communities aware on climate risk and associated vulnerabilities od the sub watershed enduring GESI	9.c.	Significantly increase access to ICT and strive to provide universal and affordable access to internet in LDCs by 2020
		13.b.	Promote mechanism for raising capacities for effective climate change related planning and management in LDCs and SIDS including focusing women, youth, local and marginalized communities
4	Diversified livelihood options adopted by local communities	10.1	By 2030, progressively achieve and sustain income growth of the bottom 40% of the population at a rate higher than national average.
		9.3	Increase access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and market
		9.b	Support domestic technology development, research and innovation in developing countries including by ensuring a conducive policy environment for inter alia industrial diversification and value addition to commodities
5	Revolving fund and insurance mechanism in place supporting local communities to withstand shocks	1.5	By 2030 build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate related extreme events and other economic, social and environmental shocks and disasters.
		17.3	Mobilize additional financial resources for developing countries from multiple sources
6	Climate appropriate technologies adopted benefitting vulnerable communities & individuals and reducing the adverse impacts on climate change	5.b.	Enhance the use of enabling technologies, in particular ICT to promote empowerment of women
		7.a	By 2030, enhance international cooperation to facilitate access to clean energy research and technologies, including renewable energy, energy efficiency, and advanced and cleaner fossil-fuel technology and promote investment in energy infrastructure and clean energy technology
		7.b	Expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all LDCs, SIDS in accordance with their respective programmes of support
		12.a	Support developing countries to strengthen their scientific and technological capacities to move toward more sustainable patterns of consumption and production
		13.3.	Improve education, awareness-raising and human and intuitional capacity on climate change mitigation, adaptation, impact reduction and early warning.

		17.7	Promote the development, transfer, dissemination and diffusion of environmental sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed
Sub-objective 2: Climate resilience of large infrastructure enhanced (Meets SDG's 9,11)			
7	Climate adaptive development plans that also identifies appropriate mitigation co-benefits prepared and implemented	9.b	Support domestic technology development, research and innovation in developing countries including by ensuring a conducive policy environment for inter alia industrial diversification and value addition to commodities
		9.a	Promote mechanism for raising capacities for effective climate change related planning and management in LDCs and SIDS including focusing women, youth, local and marginalized communities
		11. a.	Support positive economic, social and environmental links between urban, peri urban and rural areas by strengthening national and regional development planning
Sub-objective 3: Climate change mainstreamed into development planning and governance processes of local government, and access to climate adaptation finance increased (Meets SDGs 5, 9, 11, 13, 17)			
8	Capacities of Local, State and Federal government and stakeholder enhanced in assessing Climate risk, DRR, mainstreaming Climate adaptation and mitigation in planning and development	13.2	Integrate Climate Change measures into national policies, strategies and planning
		13.3	Improving Education Awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
9	Research based database for climate generated and maintained for outreach, planning and monitoring purposes	17.18	By 2020, enhance capacity building support to developing countries, including for LDCs and SIDS, to increase significantly the availability of high quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national context
		9.5	Enhance Scientific research, upgrade the technological capabilities of industrial sectors in all countries, particularly developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private R & D spending
10	Local plans (Periodical and annual development plans) and policies integrating adaptation and GESI are prepared	5.a.	Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources in accordance with natural laws.
		13.2	Integrate climate change measures into national policies, strategies and planning.
		13.b	Promote mechanism for raising capacities for effective climate change related planning and management in LDCs and SIDS including focusing women, youth, local and marginalized communities
		16.7	Ensure, responsive, inclusive, participatory and representative decision making at all levels
11	Resources allocated for climate change adaptation increased for financial sustainability to address climate change at local level	17.3	Mobilize additional financial resources for developing countries from multiple sources
12	Performance based Climate Resilient Grant (PBCRG) system institutionalized at local levels	13.1	Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries
		13.2	Integrate climate change measure into national policies, strategies and planning
		17.3	Mobilize additional financial resources for developing countries from multiple sources
13	Coordination mechanism in Federal, state and local level developed and strengthened	11.a	Support positive economic, social and environmental links between links between urban, peri-urban and rural areas by strengthening national and regional development planning
Sub-objective 4: Knowledge, guidance and capacity are in place to replicate and scale up the approach (Meets SDG 9 and 13)			
14	Knowledge and learning base created	13.b	Promote mechanism for raising capacities for effective climate change related planning and management in LDCs and SIDS, including focus on women, youth, local and marginalized communities
15	Communication strategy developed and implemented	9.c	Significantly increase access to ICT by 2020

Annex 6: Supporting letters from the Government of Nepal

1. Letter of no-objection from the Ministry of Finance (GCF National Designated Authority)



Ref.: IECCD/MoFAGA/GCF/150/2074.075 - २०७५

4 July 2018

To
Ministry of Federal Affairs and General Administration
(Environment and Disaster Management Section)
Singha Durbar, Kathmandu

Subject: No Objection Letter for Concept Note

Dear sir,

This refers to the letter from your Ministry ref: 2074/075, 251 dated 24 June 2018. Regarding concept note on **Building Resilient Sub- Watersheds Generating Mitigation Benefits in the West Seti Basin**, we hereby communicate our no-objection to the project as included in the concept note.

Best Regards,



Krishna Chandra Kafley
Section Officer

CC:
Ministry of Forest and Environment
Green Climate Fund (GCF)
World Wildlife Fund (WWF), Nepal

2. Previous letter from NDA requesting WWF to move the project to States 5, 6, 7 (western region)


नेपाल सरकार
अर्थ मन्त्रालय
(अन्तर्राष्ट्रिय आर्थिक सहायता समन्वय महाशाखा)
सिंहदरवार, काठमाडौं
नेपाल।

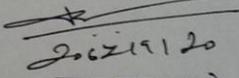
पत्र संख्या: ECCD/MoFAGA /WWF/074.075
च. नं.: १२५१

मिति: २०७५।०९।२०

विषय: GCF Concept Note सम्बन्धमा।

श्री सङ्घीय मामिला तथा सामान्य प्रशासन मन्त्रालय
सिंहदरवार, काठमाडौं।

उपर्युक्त सम्बन्धमा तहां मन्त्रालयको च.नं. ९७, मिति २०७४।९।२० को पत्रसाथ पेश हुन
आएको "Building Climate Resilience of Local Communities and Ecosystems through
Strengthened Local Governance in the Sunkoshi Sub-Basin" विषयक आयोजनाको अवधारणा पत्र
उपर प्राविधिक समितिमा छलफल हुंदा प्रदेश नं.१ र ३ का लाभान्वित समूह लगायत जिल्लाहरु
दोहोरीन गाएकोले त्यसको सट्टा प्रदेश नं. ५, ६ र ७ अन्तर्गतका जिल्लाहरु समेट्ने गरी अनुकुलन र
न्यूनिकरण(Adaptation and Mitigation)मा केन्द्रित रही आयोजनाको अवधारणा पत्र परिमार्जन गर्न
अनुरोध गर्ने भनि मिति २०७४।१०।११ को प्राविधिक समितिको बैठकबाट निर्णय भएको व्यहोरा
अनुरोध गर्दछु।


कृष्ण चन्द्र काफ्ले
(शाखा अधिकृत)

बोधार्थ:
WWF Nepal, Kathmandu
GCF Readiness Programme, Singhadarbar Kathmandu

टेलिफोन नं.: बजेट म. ४२११८०१, प्रशासन म. ४२११७४८, स.स.म. ४२११९९३, राजस्व व्य.म. ४२११८६७, अ.आ.स.स.म. ४२११८३७
आ.नि.वि.म. ४२११८२६, अनुगमन तथा मू.म. ४२००४१८, कानून तथा प.म. ४२११८१३, वि.क्षे.व्य.म. ४२११७७७
फ्याक्स नं. ४२११९६४, ४२११३४८ (बजेट म.), ४२११९६५, (अ.आ.स.स.म.)
ईमेल : admindivision@mof.gov.np, वेब साईट: www.mof.gov.np

Annex 7: Calculation of Mitigation Potential

A forest area of 22,400 ha will be managed from year 2, generating an emission reduction (ER) of 125,580 tons of CO₂ eq. in year 3 taking a removal factor of 5.505 tons of CO₂ eq. In year 3 an additional 29,880 ha will be managed, generating a cumulative ER of 287,878 in year 4. Likewise, in year 4, 22400 ha will be managed, generating a cumulative ER of 452,383 tons of CO₂ eq.

Tree planting will be carried out across 2000 ha. In year 2, planting in 600 ha will generate 2,202 tons of CO₂ eq. taking a removal factor of 3.67 ton of CO₂ eq. In year 3, planting in 800 ha will generate a cumulative ER of 5,138 tons of CO₂ eq. Likewise in year 4, planting in 600 ha will generate a cumulative ER of 7340 tons of CO₂ eq.

Thus, the total ER from forest ecosystem management will be 878,319 tons of CO₂ eq.

Emissions Reductions from forest ecosystems in Tons of CO ₂ Eq.							
Activity	Removal factor	Year 1	Year 2	Year 3	Year 4	Year 5	Total ERs
Forest ecosystem management in 74,706 ha	5.505			123,378	287,878	452,383	863,639
Tree planting (2,000 ha)	3.67			2202	5,138	7,340	14,680
Total ERs				125,580	293,016	459,723	878,319

Emissions Reductions from renewable energy in Tons of CO ₂ Eq.							
Activity	Emission factor	Year 1	Year 2	Year 3	Year 4	Year 5	Total ERs
ICS (7,400 units)	1			4,000	7,400	7,400	18,800
Solar Grids (900 KW)	1			480	900	900	2,280
Total ERs				4,480	8,300	8,300	21,080

For renewable energy, installation will be carried out only in years 2 and 3. 4,000 ICSs distributed in year 2 will generate an ER of 4,000 tons of CO₂ eq. in year 3, taking an emission factor of 1 ton of CO₂ eq per ICS. Installation of an additional 3,400 ICSs in year 3 will generate a cumulative ER of 7,400 tons of CO₂ eq. in year 4. Thus, the cumulative ER by the end of the project will be 18, 800 tons of CO₂ eq.

Similarly, a solar grid of 480 KW installed in year 2 will generate ER of 480 tons of CO₂ eq., and an additional solar grid of 480 KW installed in year 3 will generate cumulative ER of 900 tons of CO₂ eq in years 4 and 5. Thus, a total of 21,080 tons of CO₂ eq. emissions will be avoided through solar grid installation by the end of the project.

Please note that carbon estimates in this concept note are based on unit level CDM/Gold Standard based estimates. During full proposal development WWF will undertake additional analyses to link unit-based accounting with land-based accounting from official national datasets used to elaborate the country's Forests Reference level submission to the UNFCCC, to show more accurately how the project will contribute to reduce emissions and its potential contributions towards the country's NDC.