PROJECT DOCUMENT

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GEF Focal Area Objectives:	CCA-1: Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation CCA-2: Mainstream climate change adaptation and resilience for systemic impact
Implementing Agency:	World Wildlife Fund, Inc.
Executing Agency	Ministry of Forests and Environment (Bagamati Province), Government of Nepal

All figures in USD

GEF Project Cost:	9,024,312
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Total Project Cost:	36,657,417

WWF GEF Agency Contact:	Heike Lingertat
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Abbreviations and Acronyms

AWPB	Annual Work Plan and Budget
BCM	Billion cubic meter
BRCRN	Building a Resilient Churia Region in Nepal
CAPA	Community Adaptation Plan of Action
CARE	Cooperative for Assistance and Relief Everywhere
CBOs	Community-Based organizations
CCA	Climate Change Adaptation
CFOP	Community Forest Operational Plan
CFUG	Community Forest Users Group
CRVA	Climate Risk and Vulnerability Assessment
EbA	Ecosystem-based Adaptation
EPCCMNC	Environmental Protection and Climate Change Management National Council
FAO	Food and Agriculture Organization of the United Nations
FECOFUN	Federation of Community Forestry Users in Nepal
GAP	Gender Action Plan
GBP	The British Pound Sterling
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GESI	Gender Equality and Social Inclusion
GoN	Government of Nepal
Ha	Hectare
IFAD	International Fund for Agricultural Development
IMCCCC	Inter-Ministerial Climate Change Coordination Committee
IPLCs	Indigenous People and local Communities
IUCN	International Union for Conservation of Nature
km	Kilometers
LAPA	Local Adaptation Plan of Action
LDCF	Least Developed Countries Fund
LFG	Leasehold Forest Group
M&E	Monitoring and Evaluation
masl	meters above sea level
MaWRiN	Managing Watersheds for Enhanced Resilience of Communities to Climate Change in Nepal (Acronym of the Project)
Mm	Millimeters
MoF	Ministry of Finance
MoFE	Ministry of Forests and Environment
NAP	National Adaptation Plan
NAPA	National Adaptation Program of Action
NbS	Nature-based Solution
NCCSP	Nepal Climate Change Support Program
NDC	Nationally Determined Contributions
NGO	Non-Government Organization
NPC	National Planning Commission
NR	Nepal Rupee
NTFP	Non-Timber Forest Product

PIR	Project Implementation Report
PMU	Project Management Unit
POM	Project Operational Manual
PPC	Project Planning Committee
PPG	Project Preparation Grant
PPR	Project Progress Report
PRA	Participatory Rural Appraisal
PSC	Project Steering Committee
RCP	Representative Concentration Pathway
SALT	Sloping Agriculture Land Technology
SDG	Sustainable Development Goal
SLM	Sustainable Land Management
TA	Technical Assistance
ToR	Terms of Reference
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNFCC	United Nations Framework Convention on Climate change
USAID	United States Agency for International Development
USD	United States Dollar
VDC	Village Development Committee
WWF	World Wildlife Fund

Executive Summary

Climate change poses one of the biggest challenges to sustainable development in Nepal. As a least developed country with a high poverty rate of 18.7% and a predominantly agrarian economy mainly influenced by the monsoon, Nepal is highly vulnerable to climate change. Nepal's rugged topography and fragile geology also render it vulnerable to climate change. Mountain ecosystems are inherently prone to natural hazards, and climate change has exacerbated their intensity and frequency in the recent years. Current changes in the climate and its variability directly impact the hydrological cycle and increase the risk for a multitude of water- and climate-induced hazards.

This climate change adaptation project will be based in the Marin watershed, which occupies the midwestern part of Sindhuli district in the Churia belt of Nepal. It has an area of about 70,000 hectares with a population of 63,722. The watershed was selected for project focus due to the high level of vulnerability to landslides, floods and drought, and its alignment with the national priority to support the most vulnerable communities. The watershed has a largely indigenous population (68.5% of the population) which primarily subsist on agriculture that relies on stable climate conditions. Poverty rate is very high with 43% of the local population living in poverty. Thus, the watershed was identified as having communities that are highly vulnerable to climate change risks and impacts and requiring urgent support to enhance their resilience and adaptive capacity against climate change.

At the present, the local governments, sector agencies, community-based groups, and local communities in general in the Marin watershed face a number of barriers to addressing climate change impacts despite strong government policy emphasis on climate change and environment. The barriers include: absence of an integrated watershed approach due to planning based on administrative boundaries of the municipalities which do not always coincide with watershed boundaries; lack of systematic coordination between municipalities and other stakeholders; inadequate knowledge, information and tools to support CCA mainstreaming in local plans and policies; limited human resources, know-how and tools to deliver extension services on climate-resilient technologies and sustainable practices; additional initial costs associated with climate-adaptive technologies and practices; lack of research and knowledge for technology transfer; limited awareness of the linkages between environment, climate change and livelihoods; limited access to knowledge, information and decision making by women, the poor and vulnerable groups, and Indigenous people; and high level of poverty in the project area hindering community investment in climate adaptation. Without GEF/LDCF intervention, these barriers will continue due to resource constraints and capacity gaps in local governments, and lead to exacerbation of climate change impacts on community livelihoods and natural resources, which in turn will cause further impoverishment and food insufficiency.

With a GEF/LDCF financing of USD 9,024,312 and a co-financing amounting to USD 26,820,917 over a six-year period, the project will enable the government and local stakeholders to invest in protecting the Marin watershed while bolstering the longer-term resilience of local and indigenous communities against climate emergencies. The objective of the project is *"to enhance climate resilience of Indigenous people and local communities in the Marin watershed through nature-based solutions and livelihood diversification."* The fundamental approach will be to address climate change impacts using an integrated approach at the watershed level. This approach is to consider: (a) strengthening coordination between local stakeholders and their capacity to assess climate risks and vulnerabilities, and mainstream appropriate climate adaptation strategies and actions in local development; (b) empowering communities through training and site-based field interventions to enhance the climate resilience of local livelihoods and the resources that the local communities depend upon including through transfer of climate-adaptive technology and practices, sustainable forest management, and employment of nature-based solutions (NbS) to reduce vulnerability to climate hazards and disasters; and (c)

generating lessons and good practices, and developing knowledge for replication, adaptation and sustainability of the project results.

A preliminary analysis of potential sites for climate change adaptation was conducted prior to the selection of the Marin Watershed in the Sindhuli district. The secondary assessment focused on climate hazards such as flooding, riverbank erosion, landslides and drying up of water sources including incidences of forest fires. This analysis showed that the Marin Watershed is one of the most vulnerable to the impacts of climate change in Nepal where the risks are further exacerbated by the fragile geology and topography of the Chure region. In addition to the geological features, the area has a predominantly indigenous (68.5%) and subsistence living population which is highly vulnerable to the impacts of climate change. The Government of Nepal also has a dedicated program in this area to address the impacts of climate change. The capacity assessment done during the project preparation phase showed that the adaptation capacity needs are high, and as such, Marin Watershed was selected as the project area of focus, to build adaptation capacity for the vulnerable communities. During early project development, consultations were held in all 9 catchments that make up the Marin Watershed. Of these, the 3 highly vulnerable catchments were initially selected as the project area of focus for investment in building adaptation capacity. In order for the Government of Nepal to access the full LDCF envelope of funding, and to generate even higher adaptation benefits for Nepal and particularly for the indigenous and highly vulnerable population in the vast Marin Watershed (70,000 ha), a 'major amendment' was made to the project by adding investment to Component 2, on demonstrations of enhanced resilience of local communities, deepening the work with the original 3 catchments, and adding another 3 catchment areas to the initial 3. Originally the project included the three most critical catchment areas of Marin Watershed; namely Ghagar khola, Kyan khola and Phulbari khola, as being highly vulnerable to climate hazards in the form of landslides and river-bank erosion. With the major amendment, the catchments of Dhungajor, Jalkeni Sakhauri, and Simale, all vulnerable to climate change, have been added for demonstration sites. Under this major amendment, the components, outcomes, outputs and activities remain unchanged. The additional GEF investment will go towards (i) increased demonstration in the original, most critical 3 catchments (for example, where multiple adaptation approaches are warranted, application of more such approaches than was originally envisioned) and (ii) applying the demonstrations in the additional 3 catchments within Marin Watershed to deliver overall higher adaptation benefits to the highly vulnerable population. This results in an improved community-based management of forests by 29,000 hectares, and more than 3,860 households benefitting from adaptation interventions in the form of enhanced livelihoods opportunities, reduced risk of landslides, floods and riverbank erosion to agricultural lands while restored water sources and irrigation systems will benefit an additional 1,000 indigenous households.

Corresponding to the afore-mentioned approach, the project will be made up of three components.

Component 1: Enabling environment for mainstreaming climate change, through the development of capacity of the municipalities and other key local agencies to assess and understand climate risks and vulnerabilities, and accordingly mainstream climate change adaptation strategies and actions in local plans and policies, and the establishment of a multi-stakeholder platform for dialogue and cooperation on climate change adaptation at the watershed level.

With a GEF/LDCF financing of 354,893 and co-financing of USD 1,072,837, the component will focus on developing the knowledge and skills of the municipal officials, soil and watershed management officials, divisional and sub-divisional forest officials, and community-based natural resource management groups (forestry, agriculture, irrigation, livestock) for participatory assessments of climate risks and vulnerabilities, and CCA mainstreaming. This will be achieved through a series of training and development of tools (e.g.

guidelines), followed by their application for assessment of climate risks and vulnerabilities, and CCA mainstreaming which will reinforce the capacity of the training recipients whilst also providing detailed and systematic information on local climate risks and vulnerabilities. The systematic information and understanding generated by the participatory assessments of climate risks and vulnerabilities will help the municipalities and other local agencies to review local plans and assess the integration of CCA in these plans and policies. These reviews will then feed into the formulation of CCA-integration guidelines for the municipalities and sector agencies. The guidelines, in turn, will help municipalities and sector agencies to formulate or revise local plans and policies to make them responsive to climate change and its impacts. Under this component, the project will also strengthen coordination between multiple stakeholders of different municipalities in the Marin watershed through the establishment and operationalization of a multi-stakeholder platform. The platform will be supported by well-defined operational modality, structure and functions to ensure that it operates as an inclusive, coherent and transparent mechanism for the stakeholders to share information, exchange knowledge and views, coordinate and collaborate on climate change issues in the Marin watershed. Particular attention will be given to the inclusion of women, youth, and Indigenous people and facilitating equal opportunity to express views and aspirations, and contribute to the collaboration and decision-making process.

Component 2: Enhanced Resilience of Local Communities to Climate Change through a) community-based natural resource management such as community identification of adaptation interventions, support and demonstration of sustainable and climate-resilient agriculture and livestock practices, improved water management, strengthened management of community and leasehold forests, and b) Nature-based Solutions that reduce climate impacts and risks.

With GEF/LDCF financing of USD 7,945,559 and co-financing of USD 23,602,407, this will be the largest project component and will focus on field investments for technology transfer of climate-adaptive solutions in agriculture, livestock management and water management. It will involve community training, farmer-to-farmer learning, extension skills training for government staff and private service providers in agriculture and livestock sectors, and field demonstrations, integrating Indigenous Knowledge and practices wherever appropriate (linkage to project component 3, wherein the project will support assessment and documentation of Indigenous Knowledge related to climate-adaptive practices). Basic equipment and material support will also be provided to the local communities for implementation of climate-adaptive technologies and practices. These technologies and practices will help to transform and reorient the local farming system to a more resilient system that ensures food and livelihood security under a changing climate. To economically incentivize farmers to adopt technologies and practices that enhance the climate resilience of their livelihoods, the project will promote household-level, small-scale commercialization of crops and livestock produces emanating from climate-adaptive technologies and practices. This will be pursued through partnerships between the farmers and private sector based on a cooperative approach that protects the interest of the farmers whilst also attracting private sector to get involved. The project will further support community forest users and leasehold forest groups with training, awareness building, technical backstopping and equipment/ materials, contributing to improved livelihoods whilst also addressing forest degradation, which exacerbate climate hazards and disasters such as landslides, soil erosion, floods and forest fires. It will design and implement NbS interventions to arrest land degradation and mitigate climate disaster risks in areas/ sites that are most vulnerable. In order to maintain focus and demonstrate tangible results, six critical catchment areas – Kyan Khola, Phulbari khola, Ghagar khola Dhungajor, Jalkeni Sakhauri, and Simale – have been identified for implementation of NbS interventions and community based natural resource management taking into account upstream-downstream linkages. The approach will be to first introduce climate smart NbS interventions in the upstream problem areas and then move to midstream and downstream areas.

Component 3: Monitoring, evaluation and knowledge management, through tracking of project progress on a regular basis, garnering and analysis of lessons and good practices, and development and dissemination of knowledge that reinforces project results from components 1 and 2, providing sound basis for their replication, adaptation and sustainability.

With GEF/LDCF financing of USD 294,131 and co-financing of USD 804,628, the monitoring, evaluation and knowledge management component of the project will be key to ensure that the project is effectively implemented and progresses in line with expected results and managed adaptively in response to challenges and lessons experienced during project implementation. Knowledge management will be pursued through case studies to analyze and highlight concepts, approaches and issues that the project addressed, and the lessons and best practices that emerged from project implementation. The project will support the development of information and knowledge products related to CCA including information on the different impacts of climate change across gender, age, and social groups. The project will consider communities as generators of knowledge and promote peer-to-peer and lateral knowledge-sharing. In this respect, it will support the assessment, documentation and dissemination of Indigenous knowledge for CCA, and promote its integration in adaptation solutions for agriculture, livestock management, water management, and community/ leasehold forest management (linkage with project component 2). Media and communication events will be organized to enhance the visibility of project activities and achievements and create wider awareness of watershed management approach to climate change adaptation and the innovations on the ground. Under this component, the project will have a monitoring and evaluation system in place to keep track of project progress against project results including GESI indicators, ESS indicators, identify constraints and challenges to project progress, and provide information for adaptive management. As required for all full-size GEF projects, a mid-term evaluation of the project will be conducted after two years of project implementation and a terminal project evaluation will be done towards the end of the project. Annual and bi-annual project reviews will be undertaken as a part of the project management, and periodic progress reports will be produced to inform project stakeholders and provide documentation for planning and evaluation purposes.

Project outcomes and outputs for each of the above components are given in the project strategy summary table below:

Table 1: Project Framework

Project Components/ Programs	**Project Outcomes**	**Project Outputs**
Component 1: Enabling environment for mainstreaming climate change, through the development of capacity of the municipalities and other key local agencies to assess and understand climate risks	**Outcome 1.1:** Improved understanding, knowledge and capacity to mainstream climate change adaptation in local plans and policies.	**Output 1.1.1:** Training and exchange visits for community-based organizations (CBOs), soil and watershed management office, division and sub-division offices, municipalities and relevant provincial officials on climate change impacts and risks assessment tools and methods for mainstreaming CCA in all sectors and municipal plans in an integrated approach.

Project Components/ Programs	Project Outcomes	Project Outputs
and vulnerabilities, and accordingly mainstream climate change adaptation strategies and actions in local plans and policies, and the establishment of a multi-stakeholder platform for dialogue and cooperation on climate change adaptation at the watershed level.		**Output 1.1.2:** CCA-integration guidelines developed with communities and municipalities to support and formulate climate-responsive policies and plans on water, agriculture, forestry, and rural development for four municipalities in the Marin watershed, and integrated in the watershed, forestry, and municipal planning process.
		Output 1.1.3: Multi-stakeholder platform established in the Marin watershed to drive the mainstreaming of adaptation in an integrated watershed approach.
Component 2: Enhanced Resilience of Local Communities to Climate Change through a) community-based natural resource management such as community identification of adaptation interventions, support and demonstration of sustainable and climate-resilient agriculture and livestock practices, improved water management, strengthened management of community and leasehold forests, and b) Nature-based Solutions that reduce climate impacts and risks.	**Outcome 2.1:** Increased adaptive capacity of vulnerable households in the Marin Watershed to climate-induced disasters such as landslides, floods, droughts, and forest fire.	**Output 2.1.1:** Climate-adaptive technologies and practices for agriculture, livestock management and water management introduced and demonstrated.
	Outcome 2.2: Nature-based Solutions (NbS) reduce climate-induced vulnerabilities of community livelihood resources and assets.	**Output 2.2.1:** Management of community and leasehold forests strengthened, and vulnerable catchment areas rehabilitated and protected for reduced vulnerability to climate-induced disaster risks such as landslides, sedimentation, flooding and forest fires.
Component 3: Monitoring, evaluation and knowledge management, through tracking of project progress on a regular basis, garnering and analysis of lessons and good practices, and development	**Outcome 3.1:** Project monitoring, evaluation, and learning to enable adaptive management, replication and sustainability.	**Output 3.1.1:** Knowledge products are developed and disseminated to enable upscaling of the project activities.
		Output 3.1.2: Project progress tracked effectively through project Monitoring and Evaluation (M&E).

Project Components/ Programs	Project Outcomes	Project Outputs
and dissemination of knowledge that reinforces project results from components 1 and 2, providing sound basis for their replication, adaptation and sustainability.		

Section 1: Project Background and Situation Analysis

1.1 Project Context and Environmental Significance

Nepal is committed to sustainable development and has aligned the global Sustainable Development Goals (SDGs) with the national aspirations of socio-economic development and environmental conservation laid out in the country's new constitution. After the promulgation of the Constitution of Nepal 2015, the national agenda has been to usher in a new era of prosperity and human well-being based on good governance, economic growth and empowerment. The current 15th Five-Year Plan envisions a 'Prosperous Nepal, Happy Nepal' centered on human development, and aims to transform into a developed country in 25 years. In addition to integrating the SDGs in policies and programs, the plan further commits to Nepal's graduation from the Least Developed Country category by 2024.

Climate change poses one of the biggest challenges to sustainable development in Nepal. As a least developed country with a high poverty rate of 18.7% and a predominantly agrarian economy mainly influenced by the monsoon, Nepal is highly vulnerable to climate change. Nepal's rugged topography and fragile geology also render it vulnerable to climate change. Mountain ecosystems are inherently prone to natural hazards, and climate change has exacerbated their intensity and frequency in the recent years. Current changes in the climate and its variability directly impact the hydrological cycle and increase the risk for a multitude of water- and climate-induced hazards. The country is beset with climate-induced hazards such as floods, landslides and debris-flows along with extended dry spells and drying up of water sources along the mid hills and mountains while glacial melt is significantly increasing the potential risk of Glacial Lake Outburst Floods in the high mountains[1].

Nepal is divided into five physiographic zones from south to north: (a) Terai (up to 200 meters above sea level); (b) Siwaliks (200-1,500 masl); (c) Middle-mountains (Mahabharat, 1,000-2,500 masl); (d) High Mountains (2,200-4,000 masl); and (e) High Himalayas (above 4,000 masl). Among the five zones, the Siwalik zone – also known as Churia – is a young, fragile 25 km mountain belt with steep slopes in the high intensity precipitation zone that is highly susceptible to weathering resulting in enhanced risks of landslides and slope failures.[2] The Churia belt spreads across the entire length of Nepal covering 36 districts.[3] The region has ecological, social, economic, and political significance for Nepal. With more than 50% of the area under forest cover, the Churia hills regulate surface water flows, recharge groundwater, and the foothills serve as water recharge area for the Terai. However, the rivers emerging from the range also carry debris at the rate of about 780 to 20,000 tons/ km^2 annually contributing to the gradual

[1] There are 2,070 glacial lakes in Nepal. Of these, 21 are potentially dangerous glacial lakes according to the Inventory of Glacial Lakes and Identification of Potentially Dangerous Glacial lakes in the Koshi, Gandaki, and Karnali River Basins of Nepal, the Tibet Autonomous Region of China, and India, a research report published in 2020 by the International Centre for Integrated Mountain Development and the United Nations Development Program.

[2] Dhakal, S. (2014). Geological Divisions and Associated Hazards in Nepal. In book: Contemporary Environmental Issues and Methods in Nepal, Publisher: TU CDES, pp.100-109.

[3] President Chure-Tarai Madhesh Conservation Development Board (2017). President Chure-Tarai Madhesh Conservation and Management Master Plan. Government of Nepal.

desertification of the Churia, Bhawar and Terai regions.[4] The debris flows, landslides and soil erosion ultimately deposit sediments on the cultivated land in the Terai, which is considered as the rice basket of Nepal.

This project, located in Marin watershed in the central east of the Churia region (see maps below **Figure 1**: Map of Nepal with provinces **Figure 3:** Map of the Project Area (with an inset of the location in the map of Nepal) , was conceptually approved in November 2020 by the GEF for funding from the GEF-managed Least Developed Countries Fund (LDCF). The Marin watershed was selected for project focus due to the high level of vulnerability to landslides, floods and drought and its alignment with the national priority to support most vulnerable communities. The Marin watershed has a largely indigenous population (68.5% of the population) which depends on subsistence agriculture and was thus identified as having communities that are highly vulnerable to climate change risks and impacts. Additional information can be found under 1.4.2. Project Area Description.

The project will be implemented over a period of six years by WWF-US GEF agency in close association with the Provincial Ministry of Forests and Environment of Bagamati Province as the national executing partner. The project will enable the government and local stakeholders to invest in protecting the Marin watershed while bolstering the longer-term resilience of local and indigenous communities against climate emergencies. The GEF-LDCF funding will particularly (a) develop the capacity of local stakeholders to assess and understand climate risks and vulnerabilities at the watershed level, and collaborate, plan and mainstream climate adaptation in local development and watershed management in an informed and coordinated manner; (b) support local communities – particularly women and indigenous peoples – to improve the climate resilience of their livelihoods and natural resources, and implement nature-based solutions (NbS) to reduce local vulnerabilities and risks from climate hazards and disasters; and (c) garner lessons and good practices, and develop and disseminate knowledge on integrated and community-based approaches to climate change adaptation at the watershed level to foster better professional and public understanding, and support replication and sustainability.

The project holds significance for its potential to foster and demonstrate a combination of locally based policy and field interventions that can effectively address climate change adaptation at the watershed level in an area, which renders critical hydrological services to the downstream communities in the Terai regions of both Nepal and neighboring India, and, by extension, in the Indo-Gangetic Plain. These communities together form one of the most populated regions in the world. While climate change directly poses significant challenges for the local communities and their natural ecosystems, it also has a significant impact on the forest resources in the project area. Deforestation and forest degradation in the Churia region are driven, in part, by poverty and other economic factors. As communities and the agricultural livelihoods on which they depend are undermined by climate change, expansionary pressures driving deforestation and forest degradation will increase, which in turn will accelerate both greenhouse gas emissions and vulnerability of ecosystems and communities Since the late 1970s, Nepal has embarked on a community forestry program as a major strategy to address forest degradation based on a participatory approach that allows local communities to meet their forest-based

[4] SAWTEE (2016). A Study of Effect of Chure Degradation on Water, A Case of Kamala Basin in Nepal. Briefing Note, No.19.

needs for their livelihood improvement whilst also ensuring that forest resources are sustainably managed. Thirty percent of Nepal's forest has been handed over to 22,266-community forest users' groups (CFUGs) as of 2019[5].

1.2 Climate Change and Environmental Problems, Threats and Root Causes

Nepal featured among the ten countries most affected by climate change between 2010 and 2019 according to the Global Climate Risk Index 2021[6]. Floods are frequent, triggered by rapid snow and ice melt in the mountains as well as by extreme, torrential rainfall occurrences in the foothills during the monsoon season (June-September). The heavy rains also wear away the geologically fragile mountains and foothills, especially where areas are exposed and degraded due to unsustainable land use and depletion of forest resources, causing landslides, soil erosion and expansion of riverbanks. Figures compiled by the World Bank show that floods and landslides are the most common natural hazards, respectively accounting for around 38% and 20% of all natural hazards in the country[7]. Furthermore, as winters become drier, droughts are becoming more frequent and exacerbating seasonal water stress in many parts of the country. Drier and warmer winters also increase the risk of forest fire. The impact of climate change is more pronounced where there is environmental degradation[8] and high levels of poverty[9].

Key climate change and associated environmental problems that characterize the project area are highlighted below:

Floods triggered by heavy rainfall events: The occurrence of flooding events has increased over the years, albeit with significant inter-annual variation. Due in part to changing precipitation patterns, the frequency of floods is expected to further increase in the Marin watershed in the future, as are the severity of these flooding events. Unsustainable land use and forest degradation also contribute to this by: (i) further reducing infiltration capacity of the landscapes; and (ii) exacerbating erosion and sedimentation, which contribute to riverbed rise, cutting of riverbanks, change of river course, and flash floods further downstream.

Seasonal water stress due to drier winters and longer dry spells: The dry winter season has become drier, worsening challenges associated with seasonal water stress. As temperatures continue increasing, and post-monsoon and winter precipitation continue to decline, local communities in the Marin watershed increasingly struggle to cope with shortage of water for household use and farming. The effect of water shortage is pronounced on women and girl children as they have the responsibility for fetching water. Extended dry periods throughout the year will pose increasingly significant challenges in the Marin watershed. The area experienced long periods without rain in 1999/2000 (from October to March), 2008/2009 (from

[5] https://careclimatechange.org/model-community-forest/

[6] Published by Germanwatch in 2021.

[7] Nepal Climate Risk Country Profile, World Bank Group, 2021. Derived from https://climateknowledgeportal.worldbank.org/country/nepal.

[8] Global Forest Watch reports that Nepal lost 48,600 hectares of tree cover during the period of 2001-2020.

[9] Nepal's multi-dimensional poverty rate is 17.4% according to the Nepal Multi-dimensional Poverty Index 2021 published by the National Planning Commission, Government of Nepal. In the rural areas, the multi-dimensional poverty rate is higher at 28%.

November to April) and 2018/2019 (from November to March)[10]. As the number of consecutive dry days continues to increase, rainfall becomes more sporadic, and the water that does fall (during intense precipitation events) increasingly exceeds the infiltration capacity of the landscape with very little retention due to highly fragmented sedimentary formation and sloping terrain, poor agricultural communities will have to find new ways to cope with water deficit.

Soil erosion and landslides triggered by heavy rainfall: Rates of soil erosion and sedimentation have steadily increased, driven in part by the combined effects of drying soils and increasingly extreme precipitation events – trends that are projected to intensify in the future. Churia landscapes are particularly vulnerable because of the fragile geologic formation and steep terrain combined with widespread unsustainable land use and forest management practices. The impacts on local communities and livelihoods are considerable due to degradation of fertile agricultural lands as a result of sediment deposit carried over by flooding, cutting of river banks and expansion of riverbeds. Many of the agricultural fields close to rivers and rivulets belong to poor households, who are ill-equipped to cope with inundation of their agricultural fields by floods.

Climate-vulnerable geological and hydrological features: The geological and hydrological features of the Churia region leave communities particularly exposed to climate-related hazards. The rivers/streams that originate from the Churia are seasonal with surplus water flow during monsoon season, and little or no water flow during the rest of the year. In addition, the Churia consists of highly fractured sedimentary rocks with low groundwater retention potential. During the wet season, rainfall can quickly exceed the infiltration rate. Due to its sloping lands, the Churia is therefore more prone to flash floods, and retains little water to discharge during dry season. The Churia´s fragile slopes are also susceptible to erosion and landslides, particularly as extreme precipitation events become more common.

Land use practices and natural resources degradation: The Churia region is one of the most densely populated areas of Nepal, with a predominantly rural population practicing a semi-subsistence agrarian livelihood system that is labor-intensive and heavily dependent on natural resources, including collection of fuelwoods, fodder for animals, materials for construction, and a wide variety of products for various local uses. Poor agricultural practices and unsustainable use of forests and other natural resources have reduced the resilience of farms and forest lands, and increased vulnerability to climate change. Fuelwood collection from the forests is very high in the Marin watershed with around 86% of the local households dependent on fuelwood as the main source of energy for cooking[11]. Forest regeneration is also affected by open/ free-range grazing, which is widely practiced in the project area. Deforestation and forest degradation in upstream areas, as well as the use of inappropriate agricultural practices, have resulted in soil degradation, reduced vegetative cover, and further reduced water infiltration capacity of landscapes. This has contributed to accelerated erosion and sedimentation, resulting in riverbed rise downstream that increases the risk of flash flooding and inundation of agricultural fields close to the rivers, rivulets and creeks with sediments and debris. It has also further exposed the Churia's already steep and fragile slopes, increasing risk of erosion and landslides upstream whilst exacerbating flood and riverbank expansion downstream.

[10] Rainfall data from Hariharpur Gadhi Meteorological Station, Sindhuli 2021, collected during PPG baseline assessments.

[11] National Population and Housing Census 2011 figures cited in the Project Area Baseline Assessment Report for project development.

Climate-sensitive livelihoods: Predominant livelihood practices in the project area rely on stable climatic conditions and a healthy natural resource base, and thus are particularly sensitive to climate change and environmental degradation. Many communities are engaged in semi-subsistence rain-fed agriculture, and often use agricultural practices that are not suitable for the local terrain – particularly under the anticipated changing climatic conditions – including cultivation on steep slopes. Increased seasonal variations in river flows, floods and sedimentation have led to depletion in fish species and population in the rivers, affecting the livelihoods of communities, such as the Majhi communities in the project area, who depend on fishing[12]. Longer and drier winters create greater risks of forest fires, which damages and degrades forest resources affecting local communities who depend on forests for fuelwood, fodder and a number of other non-timber forest products for their subsistence.

1.3 Barriers Addressed by the Project

1.3.1. Institutional Barriers

Managing the impacts of climate change such as landslides, sedimentation and debris flow, flooding, and drought at the watershed level as an ecological unit is especially important for mid-hill areas, which are topographically characterized by steep slopes where upstream disturbances can significantly impact downstream ecosystems and communities. This requires a coordinated and integrated approach to mainstream CCA in municipal and sector plans in a synergic manner based on a sound knowledge of the climate impacts on local livelihoods.

A key barrier for climate change adaptation (CCA) in the Marin watershed is the absence of an integrated watershed approach since its boundaries do not always coincide with the administrative boundaries of municipalities and their specific plans. Many of the rivers and rivulets crisscross municipal and ward boundaries. In accordance with the Local Government Operation Act (2017), the municipalities and the rural municipalities formulate individual local plans and policies that cover environment and disaster management key components of their annual plans and budgets, but the issues of climate change are not systemically addressed or integrated into these plans or key sectors such as agriculture and livestock development. This leads to isolated and ineffective implementation of activities and measures, as the ecological unit is managed in a fragmented manner by numerous administrative units.

Lack of coordination between municipalities and other stakeholders hinders linkages and synergy of efforts for CCA at the watershed level. At the present, there is no institutional mechanism to bring different municipalities and other stakeholders together to discuss, share information and knowledge, and coordinate on climate change issues at the watershed level. The private sector and vulnerable sections of the community, such as women, poor and marginal groups who are disproportionately more vulnerable to climate change, are often left out from the discussion and decision-making process on climate change adaptation and watershed management issues. While there are community groups that include women, poor and dalit, they generally remain passive participants due to relatively low literacy levels[13], limited access to knowledge and information, and patriarchal norms which are still prevalent especially among the rural communities. These community groups also generally operate in an insulated manner.

[12] Local community consultation, Project Area Baseline Assessment for project development

[13] Literacy rate of female population in the project area was 52.1% compared to 69.5% of male population as per 2012 data maintained by the Central Bureau of Statistics.

Furthermore, key agencies that have a role in addressing the impacts of climate change operate under different institutional systems. While the municipalities function as local government agencies responsible for overall local development in accordance with the Local Government Operation Act (2017), the divisional and sub-divisional forest offices operate as a part of the federal/ provincial government structure in accordance with the Forests Act (2019). This parallel arrangement has not been conducive for dialogue and coordination between these important agencies, which is crucial for an integrated and holistic approach to watershed management and climate change adaptation.

Knowledge, information and tools are inadequate to support CCA mainstreaming. A sound and comprehensive understanding of local climate risks and vulnerabilities, and their impacts on key sectors (agriculture, livestock, forest, water) that support local livelihoods is critical to support coordination and integration of CCA at the watershed level. However, this is currently lacking in absence of any systematic assessment of local climate risks and vulnerabilities at the municipality level, and their impacts. While there is some climate risk and vulnerability information at the district level, they are generic and does not provide the level of detail required for local-level CCA planning and mainstreaming at the watershed level. Concurrently, the capacity of the municipalities and other local stakeholders is severely limited in terms of knowledge and tools to assess climate change risks and vulnerabilities, and mainstream climate change adaptation in local plans and relevant sectors. While there is a national framework for LAPA, none of the municipalities in the project area have the training and tools to support the planning and mainstreaming of CCA along the lines of this framework. Existing national guidelines for watershed management planning were produced many years ago and do not factor in climate change risks and impacts. For instance, the basic guidelines for Sub-watershed Management Planning were developed in 1994, and Guidelines and Methodology for Sub-Watershed Prioritization in Watershed Management Planning were developed in 1997.

1.3.2. Technology Transfer Barriers

Technology is defined as 'a piece of equipment, technique, practical knowledge or skills for performing a particular activity.' It is common to distinguish between three different elements of technology: the tangible aspects, such as equipment and products (hardware); the know-how, experience and practices (software) associated with the production and use of the hardware; and the institutional framework, or organisation, involved in the transfer and diffusion of a new piece of equipment or product[14]. Technology plays an important part in reducing vulnerability of communities to climate change in rural Nepal. Various climate-adaptive technologies such as drip and micro-sprinkler irrigation, tunnel farming (also known as greenhouse farming), rainwater harvesting, locally modified tools, climate smart agricultural and livestock management practices are available in Nepal, yet their uptake remains limited due to a number of barriers.

The municipalities and sector agencies at the local level are short-staffed and lack the know-how and tools to deliver extension services on climate-resilient technologies and sustainable practices of agriculture, livestock management, and water management. The municipalities have the mandate to deliver extension services for the development of agriculture, livestock and water but they lack adequate staff to fulfil this mandate. For instance, there are only 21 veterinary technicians and five village-level animal husbandry workers for the entire Marin watershed,

[14] Nygaard, I. and Hansen, U. (2015). Overcoming Barriers to the Transfer and Diffusion of Climate Technologies: Second edition. UNEP DTU Partnership, Copenhagen.

which is inhabited by 11,338 households with a total number of 112,220 heads of livestock (cattle, buffalo, sheep and goat)[15]. The shortage of staff is further aggravated by the remote location of many local communities and poor road connectivity in the project area. And the few who are posted in the project area lack the knowledge and tools to deliver extension services and technical backstopping required for the farmers to learn and adopt climate-adaptive technologies and practices. Household survey carried out for the baseline assessment of the project area revealed that only 3.8% of the households had received any agriculture-related training and 2.1% had received any livestock management-related training[16].

There are additional costs associated with climate-adaptive technologies and practices, which hinder their transfer to local communities especially the poor households. While climate-adaptive technologies and practices are expected to generate improved socio-economic benefits over the long term, there are additional initial costs. This is especially a major deterrent especially among poor communities, such as in the Marin watershed where poverty rate is very high at 43%. Furthermore, much of the existing farming system is subsistence or semi-subsistence. Baseline household survey indicate that only 0.7% of the farm households sold crop for income while 16.5% sold livestock produce. Therefore, there is currently very little economic incentive for farmers to invest additional resources for climate-adaptive technologies and practices in agriculture and livestock management.

Research and knowledge for technology transfer is lacking and there is little awareness of the linkages between environment, climate change and livelihoods. There is very little research and testing of climate-adaptive technologies and practices in the project area. As a result, there is little to demonstrate to the farmers on how climate-adaptive technologies and practices work in the field and what are the associated costs and benefits. This creates room for uncertainties among local communities to adopt climate-adaptive technologies lest they do more harm than existing traditional practices. There are indigenous agricultural practices that are environment-friendly, such as use of farmyard manure, mulching, composting, and inter-cropping, but these have not been systematically assessed for their potential for integration in the development of climate-adaptive technologies and practices. Inadequate local-level participatory research limits comprehensive understanding of climate change impacts on natural resources and biodiversity, the understanding and prediction of climate change impacts, the understanding of the nexus between climate change, environment and livelihoods, and the development of local adaptation solutions. There is also a weak understanding of how ecosystem services would respond to climate change and its impacts on local farming system.

1.3.3. Social Barriers

One of the key barriers to climate change adaptation in Marin is the limited access that women, the poor, socially marginalized, and Indigenous people have to knowledge, information and decision making. While community-based groups, such as community forest user groups and water user groups, include women and vulnerable groups, their inclusion is often to meet the 33% representation mandated by law. Even if the vulnerable households are formally included in decision-making on natural resources, their influence in decision-making is negligible. There is no

[15] National Population and Housing Census 2011.

[16] The household survey covered 419 households in the project area.

motivation to listen and integrate the feedback and opinions of the marginalized population, only to include them to "check a box[17]". Low literacy among women, poor and vulnerable communities also inhibit their participation in decision-making and access to knowledge and information. It is these vulnerable groups who most heavily depend on the climate sensitive ecosystem services and subsistence agriculture in the Marin watershed, such as irrigation, collection of water and NTFPs. Women tend to be overly burdened with household work and have less access to participation in policy formulation and the decision-making process. Adaptation is further challenged by poor governance of resources, specifically of natural resources that the most vulnerable and marginalized communities depend on. Ultimately, women and socially marginalized groups are the most severely affected by climate change impacts and their voices need to be incorporated into decision-making to build capacity in an effective and equitable manner.

High level of poverty in the project area hinders communities to invest in climate adaptation. A large proportion (69%) of the local communities are indigenous people, who subsist on crop agriculture and livestock rearing. They have limited access to public services and market opportunities for improved livelihoods due to poor road connectivity. As mentioned earlier, household surveys for the baseline assessment of the project area show that only 0.7% of the households made an earning from the sale of crops and 16.5% made an earning from livestock products. Consequently, there is negligible earning from agriculture and some limited earning from livestock management. Under current circumstances, the poverty rate is very high at 43%.

1.4 National Context and Project Area Description

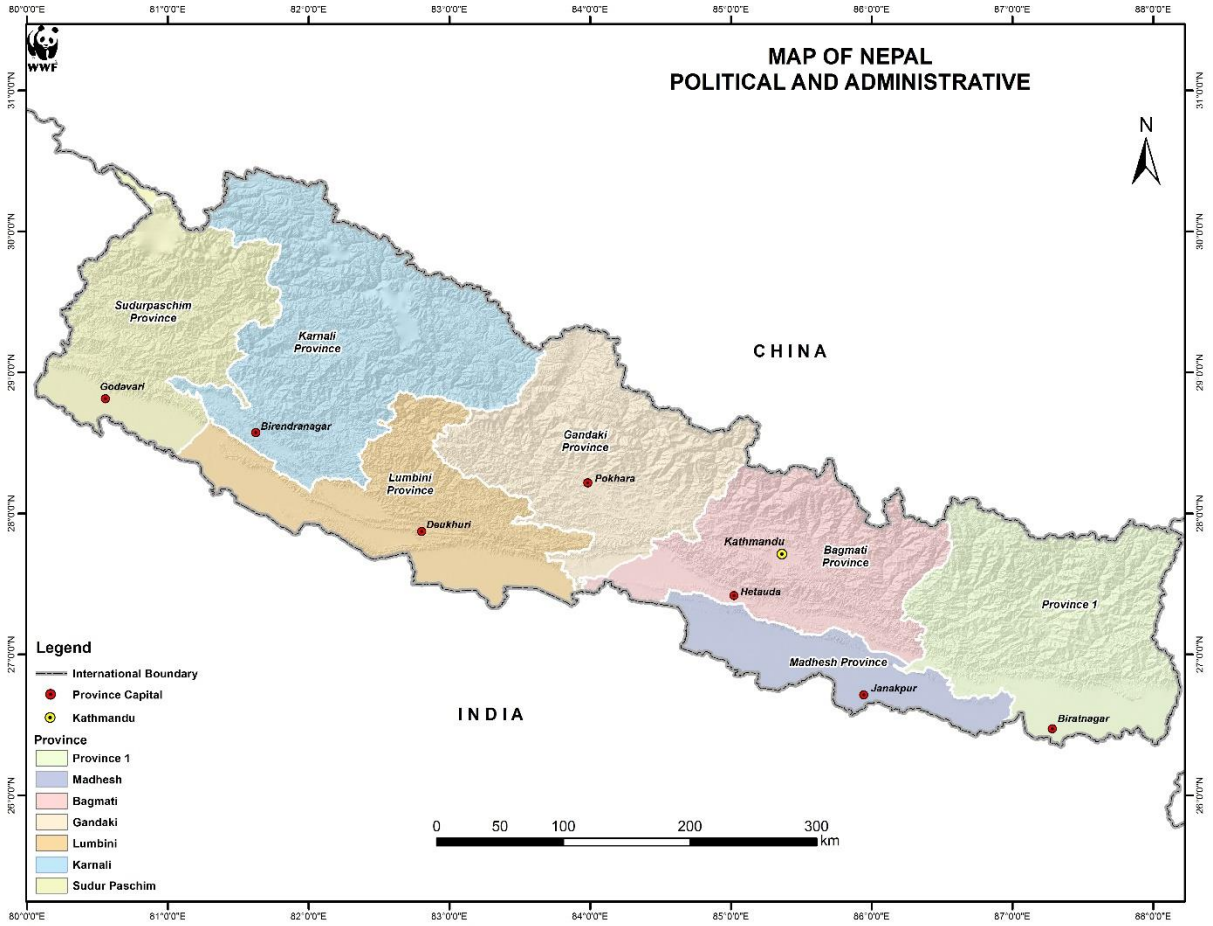
1.4.1. National Context

Geography and Administration

Flanked by China to its north and India to the south, east and west, Nepal is a landlocked country in the central Himalayas with an area of 147,181 km^2 (see Figure 1). Much of the country is made up of mountains, hills and valleys. Low-lying areas and plains are limited to the southern stretch of the country bordering India. It is made up of seven provinces and 77 districts. Each district is divided into municipalities and rural municipalities, which are further broken down into wards.

[17] See Gender analysis and action plan, Appendix 11 for more information on marginalized communities and their involvement in the decision-making process

Figure 1: Map of Nepal with provinces



Climate

Nepal has a very diverse climate resulting from its vast altitudinal range over a short north to south distance. The climate is influenced by the Himalayan Mountain range and the South Asian monsoon. Table 1 below presents the climatic characteristics of the country's five physiographic zones, including their share of area, elevation range, precipitation and temperature.

Table 2: Climatic Characteristics of Different Physiographic Zones in Nepal

Physiographic Zone	Area share (%)	Elevation (masl)	Climate	Average annual precipitation (mm)	Mean annual temperature (^{0}C)
Terai	14	Below 500	Hot monsoon and tropical	1,100-3,000	20-25
Siwalik (also known as Churia)	13	500-1,000	Hot monsoon and sub-tropical		
Middle mountains	30	1,000-2,000	Warm temperate monsoon	275-2,300	10-20
		2,000-3,000	Cool temperate monsoon		
High mountains	20	3,000-4,000	Subalpine	150-200 (snow)	<3-10
		4,000-5,000	Alpine		
High Himal	23	Above 5,000	Tundra type and arctic		

Source: Water and Energy Commission Secretariat, Government of Nepal, 2015.

Climate Change Trends and Scenarios in Nepal

Historical analysis of climate data indicates that a large part of the Eastern Himalayan region is undergoing warming. Overall, the analysis indicates that the Eastern Himalayas are experiencing widespread warming of generally 0.01 to 0.04°C per year. The highest rates of warming are generally in the winter. Long-term trends for annual precipitation in Nepal (1970–2012) indicate a significant increase of precipitation over the middle mountains and hills within the western region of Nepal, and over the high mountains within the central region. Monsoonal and annual precipitation feature significantly decreasing trends over the whole central and eastern regions, except for the eastern middle-mountain and hills. On the other hand, winter precipitation demonstrates a decreasing trend over most of Nepal.

Future projections for Nepal suggest a continued increase in mean annual temperature, shifting precipitation patterns – with many models suggesting that the monsoon season will become wetter and the dry season will become drier – as well as an increased likelihood of heavy precipitation events. While there is considerable uncertainty in climate models with respect to precipitation, it is likely that annual average precipitation in Nepal will increase in the future, albeit with differences in the regional and temporal distribution of this precipitation. The following main climate change trends are observed in Nepal:

(a) **Increase in temperature and the number of hot and very hot days:** Average annual temperatures have increased – driven partly by notable increases in temperatures during winter months – over the past 40-60 years, with many models indicating annual increases of 0.02-0.05^{0}C over the past few decades. Temperatures are expected to continue increasing in both summer and winter months in the coming decades, with some models predicting that average annual temperatures in Nepal could increase by 1.3-3.8^{o}C by 2060, and 1.8-5.8^{o}C by 2090 compared to a reference period of 1986-2005. In addition, the number of hot days and extremely hot days is expected to increase in the pre-monsoon, monsoon, post-monsoon and winter seasons, with some models predicting about a 16% increase in the frequency of hot days by the 2060s (relative to the mean from 1970-1999).

(b) **Decrease in post-monsoon and winter precipitation:** Average precipitation during the post-monsoon and winter seasons decreased between 1970 and 2012, further exacerbating the challenges that local farmers and communities must confront during the dry season. Recent analysis of data from weather stations across Nepal observed decreasing post-monsoon precipitation at 92% of stations from 1981- 2010 and decreasing winter precipitation at 68% of stations in this same period. These trends are expected to continue in the coming decades. Some models predict that (under both RCP 4.5 and 8.5 scenarios) overall average winter precipitation could decline by around 10% for the period 2021-2050 relative to the period 1961- 1990.

(c) **Increase in the number of consecutive dry days:** The average number of consecutive dry days has increased across Nepal and in the Churia region over the past 40 years, with a recent analysis finding that 80% of stations in Nepal (including in the region targeted by this project) from where weather data has been analysed exhibit a significant increase in consecutive dry days over the period 1970-2012. The average number of dry days and consecutive dry days is projected to continue increasing in the coming decades.

(d) **Increase in summer precipitation:** Although the overall volume of precipitation during monsoon season has varied considerably over the preceding decades (both across regions and from year to year), models indicate that summer precipitation – particularly during the monsoon season, which runs from June until September – is expected to increase considerably in the future. Some models predict that monsoon precipitation could increase by around 14-15% (under RCPs 4.5 and 8.5 respectively) for the period 2021-2050 relative to the period 1961-1990. Over the course of the entire summer season, precipitation could increase to an even greater degree – between 10-25% – over this same time period.

(e) **Increase in the number of heavy precipitation and very heavy precipitation days:** Extreme precipitation events have become more common over the past 40 years, with some recent observations in the nearby Koshi river basin (from 1970-2010) suggesting increases in the number of heavy precipitation days at 62% of weather stations and increases in extremely heavy precipitation days at 64% of weather stations. These trends are projected to continue in the coming decades, particularly during monsoon season. The number of very wet days is expected to steadily increase, while the number of moderate rainfall days and consecutive wet days is expected to decrease. In other words, increases in overall monsoon precipitation (as outlined above) will likely fall but precipitation events are expected to become more intense.

Population and Economy

The total population of Nepal has been recorded at 26.5 million in the last national population census in 2011; projected population estimate (medium variant scenario) is given at about 30.4 million for 2021[18]. The country has a multi-cultural population with over 125 ethnic groups across the country[19].

[18] Population Projection 2011-2031 based on National Population and Housing Census 2011, Central Bureau of Statistics, Government of Nepal. The population projections have been estimated under three variant scenarios, high, medium and low. For the purpose of the prodoc, the population projection for medium variant scenario has been used.

[19] National Population and Housing Census 2011 Report.

More than 80% of the population live in rural areas. Agriculture (including livestock production) and forestry activities are the mainstays of the country's rural economy, and account for one-third of the Gross Domestic Product (GDP)[20] and over 66% of the employment. Farming is largely semi-subsistence in nature and crop production is mostly integrated with livestock rearing. About 65% of the arable land is rain-fed[21]; hence, agriculture production is largely dependent on timely and sufficient rains. Rice, maize, millet, wheat, barley and buckwheat are the major staple food crops while oilseeds, potato, tobacco, sugarcane, jute and cotton are the important cash crops. Pulse crops commonly grown include lentil, gram, pigeon pea, black gram, horse gram and soybean. Buoyed by rich water resources and scenic mountains including some of the world's highest peaks, hydropower development and tourism are one of the most important economic sectors. Major industries include carpets, textiles, cigarettes, cement, brick, as well as small rice, jute, sugar and oilseed mills.

Poverty level is high, and more so in the rural areas. According to the Multi-dimensional Poverty Index Report 2021 produced by the National Planning Commission, 17.4% of the Nepalese were multi-dimensionally poor in 2019. In the rural areas, multi-dimensional poverty rate was 28% compared to 12.3% in the urban areas clearly showing the disparity in income level but also in terms of access to education, health care, clean energy, housing materials, etc.

Environment and Natural Resources

Nepal is rich in forests and biodiversity. Forests occupy 6.54 million hectares, equivalent to 44.47% of the country's area[22], and is the most important natural resource along with water resources. Local communities depend on forests for a wide range of products including fuelwood, fodder, timber, medicinal and aromatic plants, and edibles. The biodiversity of Nepal is one of the most remarkable in the world; the country houses 12 of the 867 global terrestrial eco-regions[23] and contains a disproportionately large diversity of plants and animals, relative to its size. While the country occupies only about 0.1 percent of the global area, it harbours 3.2% of world's known flora and 1.1% of the fauna. There are 118 ecosystem and habitat types in the country, ranging from tall grasslands and tropical broadleaved forests in the Terai to alpine meadows and scree above the tree line.

In terms of water resources, Nepal is one of the richest countries in the world. It has more than 6,000 rivers and rivulets draining from north to south towards the Ganges. Rivers in Nepal can be classified into the following three types based on their origin and discharge: (a) Large snow-fed rivers originating from the Himalaya (Koshi, Gandaki, Karnali and Mahakali) with significant discharge even in dry season; (b) Median rivers originating from the Mahabharat Hills (Kankai, Kamala, Bagamati, West Rapti, Babai) with little flow during dry season; and (c) Small rivers (Biring, Ratuwa, Lohendra, Lakhadehi, Lal Bakaiya, Tinau, Khutia and many others), which are almost dry during dry season and experience flash

[20] Agriculture sector's share of contribution to the GDP have been marginally declining in recent years.

[21] Government figure cited in http://naturekhabar.com/en/archives/8417

[22] National Level Forests and Land Cover Analysis, Forest Research and Training Institute, Ministry of Environment and Forests, 2019.

[23] Nepal National Biodiversity Strategy and Action Plan 2014.

floods during monsoon time. Surface water availability in the country is estimated to be about 225 billion cubic meter (BCM) per annum or equivalent to an average flow of 7,125 cubic meter per second, out of which only 15 BCM per annum is in use[24].

1.4.2. Project Area Description

At the time of the development of the project concept, WWF Nepal and the MoFE undertook a national review of vulnerable communities and climate change risks to identify a geographic focus for the project. This included a review of climate change vulnerability mapping related to drought, floods and landslides as well as vulnerability mapping of watersheds located in the high and middle mountains. This review provided comparative information to identify the districts or watersheds most susceptible to climate disasters, coupled with areas which best support Nepal's national priorities to address the needs of the most vulnerable and marginalized communities. From among the eight sites[25] that were evaluated, the Triyuga cluster in Eastern Churia Terai Complex was identified as the one that most needed project support. Within this cluster, Marin watershed was selected as it aligned most closely with national priorities to support the most vulnerable communities on account of having the highest proportion of Indigenous people as well as a high level of vulnerability to landslides, floods and drought.

A preliminary analysis of potential sites for climate change adaptation was conducted prior to the selection of the Marin Watershed in the Sindhuli district. The secondary assessment focused on climate hazards such as flooding, riverbank erosion, landslides and drying up of water sources including incidences of forest fires. This analysis showed that the Marin Watershed is one of the most vulnerable to the impacts of climate change in Nepal where the risks are further exacerbated by the fragile geology and topography of the Chure region. In addition to the geological features, the area has a predominantly indigenous (68.5%) and subsistence living population which is highly vulnerable to the impacts of climate change. The Government of Nepal also has a dedicated program in this area to address the impacts of climate change. The capacity assessment done during the project preparation phase showed that the adaptation capacity needs are high, and as such, Marin Watershed was selected as the project area of focus, to build adaptation capacity for the vulnerable communities. During early project development, consultations were held in all 9 catchments that make up the Marin Watershed. Of these, the 3 highly vulnerable catchments were initially selected as the project area of focus for investment in building adaptation capacity. In order for the Government of Nepal to access the full LDCF envelope of funding, and to generate even higher adaptation benefits for Nepal and particularly for the indigenous and highly vulnerable population in the vast Marin Watershed (70,000 ha), a 'major amendment' was made to the project by adding investment to Component 2, on demonstrations of enhanced resilience of local communities, deepening the work with the original 3 catchments, and adding another 3 catchment areas to the initial 3. Originally the project included the three most critical catchment areas of Marin Watershed; namely Ghagar khola, Kyan khola and Phulbari khola, as being highly vulnerable to climate hazards in the form of landslides and river-bank erosion. With the major amendment, the catchments of Dhungajor, Jalkeni Sakhauri, and Simale, all vulnerable to climate change, have been added for demonstration sites. Under this major amendment, the components, outcomes, outputs and activities remain unchanged. The additional GEF investment will go towards (i) increased demonstration in the original, most critical 3 catchments

[24] Third National Communication to the UNFCCC

[25] The sites were: (i) Kanchenjunga Landscape; (ii) Tinjure Milke cluster; (iii) Chitwan cluster; (iv) Gaurishankar Cluster; (v) Triyuga Eastern Churia Terai complex; (vi) Gorkha Lamjung Cluster; (vii) Mahakali-Kailash Karnali; and (viii) Rara Mugu cluster.

(for example, where multiple adaptation approaches are warranted, application of more such approaches than was originally envisioned) and (ii) applying the demonstrations in the additional 3 catchments within Marin Watershed to deliver overall higher adaptation benefits to the highly vulnerable population. This results in an improved community-based management of forests by 29,000 hectares, and more than 3,860 households benefitting from adaptation interventions in the form of enhanced livelihoods opportunities, reduced risk of landslides, floods and riverbank erosion to agricultural lands while restored water sources and irrigation systems will benefit an additional 1,000 indigenous households.

The project area, Marin watershed, has a total area of about 70,000 hectares (ha), and is made up of two main rivers, Marin and Kyan, and numerous catchments with rivulets and creeks. It occupies the midwestern part of Sindhuli district, one of the 13 districts under Bagamati Province (see Figure 2). The Marin River originates in the Churia hills and flows through four municipalities – Ghyanghlekh Rural Municipality, Hariharpur Rural Municipality, Kamalamai Municipality, and Marin Rural Municipality – in the Sindhuli district.

The watershed is made up of 18 wards[26] located in these four municipalities. These 18 wards have a total population of 63,722, including 30,276 males and 33,446 females (see table below). People of 10 different castes and ethnicities are found in the four municipalities of the Marin watershed[27]. Indigenous communities, such as Tamang, Magar, Newar, Danuwar and Majhi, make up 68.5% of the local population and another 8.28% is made up of Dalits, which include Kami, Sarki and Damai/Dholi, who are traditionally discriminated as low caste.

Figure 2: Map of the Project Area (with an inset of the location in the map of Nepal)

[26] A ward is a subdivision of a municipality and the smallest administrative unit of local governance in Nepal. A municipality is to have a minimum of five wards and a maximum of 33 wards. Small areas of Wards 4, 5 and 8 in Kamalamai Municipality and Wards 1 and 3 in Hariharpur Gadhi Rural Municipality also fall in the Marin watershed but they have not been included in the project area.

[27] Please note that caste- and ethnicity-wise population is available at the municipality level, not at the ward level.

Figure 3: Map of the Project Area (with an inset of the location in the map of Nepal)

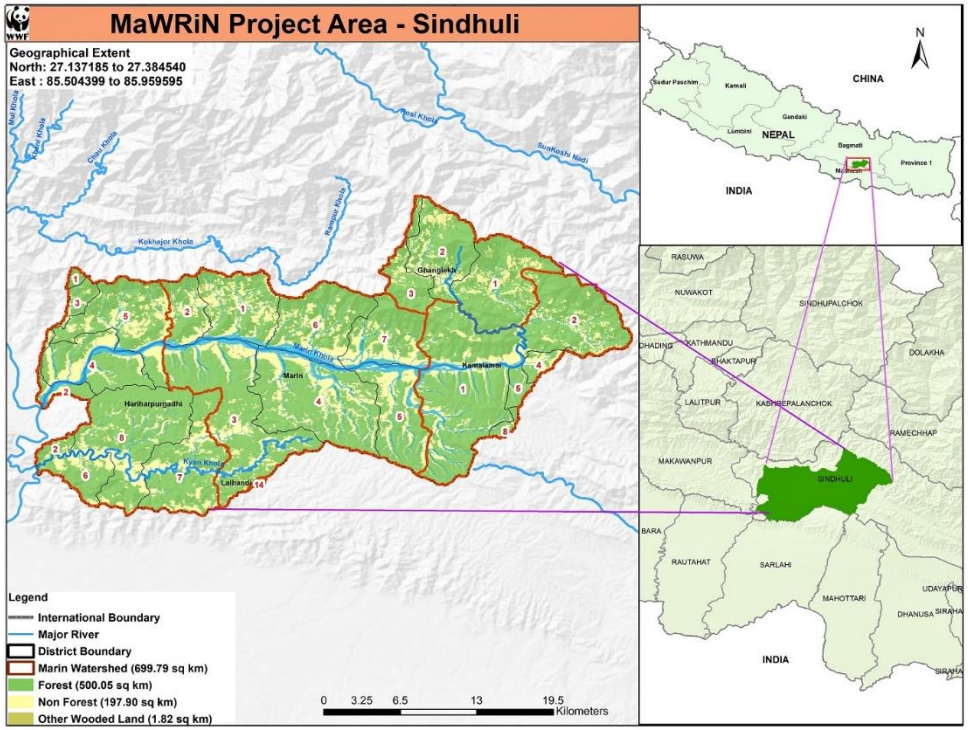


Figure 4: Map of project area showing initially selected and additional catchments

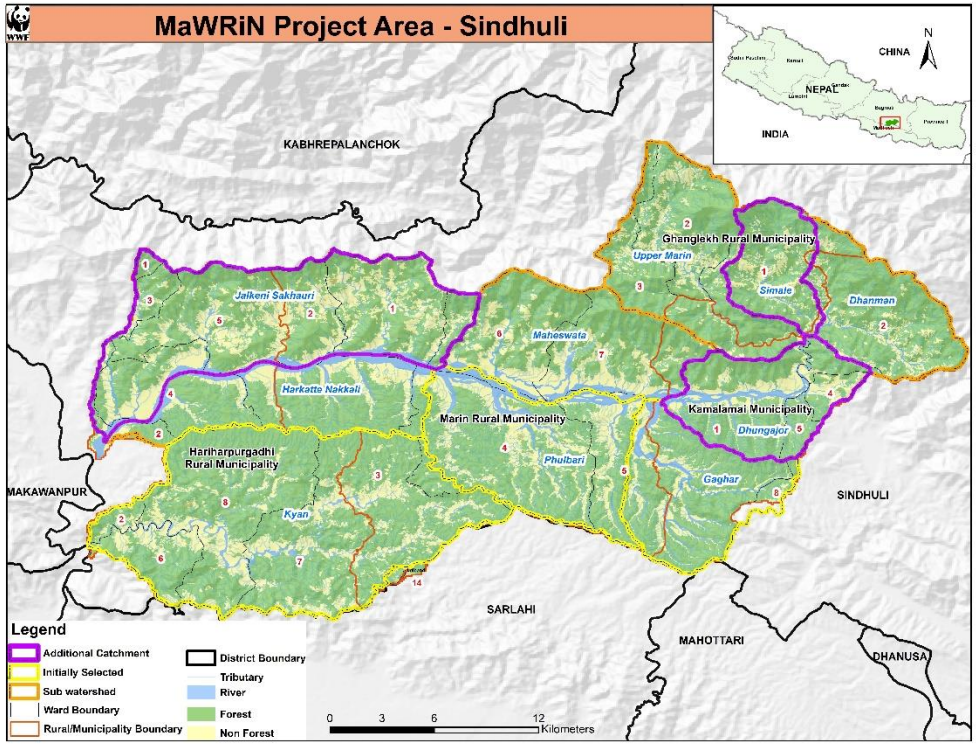

MaWRiN Project Area - Sindhuli
CHINA
NEPAL
INDIA
N
KABHREPALANCHOK
Ghanglekh Rural Municipality
Upper Marin
Simale
Dhanman
Jaikeni Sakhauri
Maheswata
Harkatte Nakkali
Kamalamai Municipality
Dhungajor
Marin Rural Municipality
Phulbari
Gaghar
Hariharpurgadhi
Rural Municipality
Kyan
MAKAWANPUR
SINDHULI
SARLAHI
MAHOTTARI
DHANUSA
Legend
Additional Catchment
Initially Selected
Sub watershed
Ward Boundary
Rural/Municipality Boundary
District Boundary
Tributary
River
Forest
Non Forest
0 3 6 12
Kilometers

Table 3: Estimated population Distribution of the Project Area

Municipality	Ward	Total Households	Total Population	Total Male	Total Female
Ghyanghlekh Rural Municipality	Ward-1	415	2,261	1,047	1,214
	Ward-2	545	3,029	1,366	1,663
	Ward-3	445	2,346	1,102	1,244
Hariharpur Rural Municipality	Ward-2	663	3666	1789	1877
	Ward-4	412	2432	1151	1281
	Ward-5	550	3583	1721	1862
	Ward-6	492	2839	1346	1493
	Ward-7	640	3756	1816	1940
	Ward-8	485	2769	1320	1449
Kamalamai Municipality	Ward-1	973	4,804	2,262	2,542
	Ward-2	848	4,415	2,074	2,341
Marin Rural Municipality	Ward-1	441	2,922	1,360	1,562
	Ward-2	726	4,640	2,315	2,325
	Ward-3	836	4,962	2,378	2,584
	Ward-4	758	4,408	2,105	2,303
	Ward-5	528	2,865	1,345	1,520
	Ward-6	800	3,923	1,914	2,009
	Ward-7	781	4,102	1,865	2,237
Total	**All Wards**	**11,338**	**63,722**	**30,276**	**33,446**

Source: National Population and Housing Census of Nepal, 2011

Low incomes and high poverty level characterize the project area. At 43%, poverty in the watershed is very high and ranges from 24% in Kamalamai municipality to 56% in rural municipalities, indicating significant economic disparity within the watershed. On the income index, the four municipalities in the watershed rank very low: Kamalamai at 76, Hariharpur at 78, Ghyanghlekh at 82, and Marin at 97 out of the 119 municipalities in Baghmati province[28].

Seventy to eighty percent of the local population relies on subsistence agriculture, forest, and fish farming for their livelihood with a significantly higher percentage (85%) of the female population depending on it as compared to male population (73%)[29]. While agriculture is the main source of livelihood for people living in the Marin watershed, only about 21.6% of the total land in the project area is agricultural land with average farm landholding of 0.92 hectares per household[30]. Rice and maize are the dominant crops grown in the project area. Three types of rice are grown by the local farmers:

[28] Province Policy and Planning Commission, Bagamati Province, Hetauda, Nepal, 2019.

[29] Project Development Baseline Assessment Report, 2022

[30] As per data from Sindhuli Agriculture Knowledge Center, 2020

Chaithe rice grown in irrigated fields; local rice grown in rain-fed fields; and hybrid rice. Similarly, three types of maize are grown: winter maize, rainy season maize, and spring maize. Among the rice types, local rice accounts for more than 95%, both in terms of production and land under rice cultivation. Similarly, rainy season maize makes up for more than 92%, both in terms of production and land under maize cultivation. These figures clearly suggest the enormous importance that rains have for the local farmers in the Marin watershed. Wheat, millet and buckwheat are the other cereal crops grown by the local farmers. Non-cereal crops include potato, soybean, vegetables, oil crops, spices and banana.

Livestock farming is integrated in the local livelihood system, with local people rearing cattle, buffalo, sheep and goat. While cattle are kept mainly for dairy products and tilling fields, buffalo, sheep and goat are reared mainly for meat. There are 33,917 cattle, 13,573 buffaloes, 643 sheep and 64,091 goats in the project area. Poultry farming and piggery are also practiced supplementing domestic consumption as well as to make extra income.

Forest land makes up more than 70% of the project area. More than 31,000 hectares of forests have been handed over to the local communities for management as community forests to sustain their basic forest needs such as fuelwood, fodder and timber and provide income through sale where there are surplus forest resources based on government-approved community forest operational plans. Altogether, there are 143 community forests registered in the project area but only 62 of them have valid operational plans. The key reason for a large number of community forests being non-operational include lack of capacity within the CFUG to revise and update the operational plans on their own. In addition, more than 740 hectares of forests have been handed over to 119 leasehold forest groups comprising 1,157 poor households in the project area to address the dual objectives of forest conservation and poverty alleviation.

Within the project area, six critical catchments of Kyan Khola, Ghagar khola and Phulbari khola, Dhungajor, Jalkeni Sakhauri, and Simale – have been identified for NbS interventions and community based natural resource management to reduce climate risk. These catchment areas were identified based on recommendations derived from a series of consultations with municipal and ward officials, and local communities in the project area. Key factors such as the number of households and the area of agricultural and forest lands exposed to climate impacts, and high presence of land degradation (siltation, land scars, etc.) were also considered in the site selection based on GIS map analysis and field appraisal of the sites.

Climate Change and Climate Vulnerability in the Project Area

Climate in the Project Area

The climate of the project area is primarily upper tropical and sub-tropical. The annual maximum temperature in Sindhuli district is 27.2ºC whereas annual minimum temperature is 15.8 ºC. The temperature is at highest in the monsoon (30ºC maximum and 22ºC minimum) and lowest in the winter (7.8ºC maximum). In the Churia region, the temperature is 1 to 2.4ºC higher from that of Sindhuli district depending on the period of the year.

The Sindhuli district receives an annual rainfall of almost 1,700 mm. Rainfall is very marginally higher in the Churia region. More than 80% of the rainfall occurs in the monsoon period. Winter is the driest period with the precipitation decreasing by around 27 to 38 times from that of the monsoon period.

Table 4: Temperature and precipitation during different periods of the year, Sindhuli District and Churia Region

Period	Sindhuli District			Churia Region		
	Max Temp (ºC)	Min Temp (ºC)	Precipitation (mm)	Max Temp (ºC)	Min Temp (ºC)	Precipitation (mm)
Pre-monsoon	29.6	16.1	205.4	32.5	17.7	160.9
Monsoon	30.0	22.0	1,376.3	32.4	23.5	1,426.3
Post-monsoon	26.8	14.8	80.9	28.5	15.9	69.4
Winter	7.8	-	36.2	8.9	-	52.0
Annual	27.2	15.8	1,698.8	29.3	17.1	1,708

Source: Department of Hydrology and Meteorology, 2017

Climate Change Scenarios – Sindhuli District

Future climate change projections for Sindhuli district are available for medium-term (2016-2045) representing 2030s, and long-term (2036-2065) representing 2050s under two scenarios – Representative Concentration Pathway (RCP) 4.5 and RCP 8.5[31] [32].

RCP 4.5 Scenario: The precipitation is projected to increase by 4.63% in the medium term (2016-2045) and 7.53% in the long term (2036-2065) while temperature is projected to increase by 0.83ºC in the medium term (2016-2045) and 1.17ºC in the long term (2036-2065) compared to that of the reference period (1981-2010). Very wet and extremely wet days are projected to increase by 3.42% in the medium term and 8.41% in the long term. However, the number of rainy days is projected to decrease by 1.43% in the medium term and 0.79% in the long term. The number of consecutive dry days is projected to increase by 7.43% in the medium term and 2.23% in the long term whereas the number of consecutive wet days is projected to decrease by 14.14% in the medium term and 10.31% in the long term. Warm days and warm nights are projected to increase while cold days and cold nights are expected to occur less.

RCP 8.5 Scenario: The increase in precipitation as well as temperature is expected to be more heightened under this scenario. Precipitation is projected to increase by 6.06% in the medium term (2016-2045) and 11.87% in the long term (2036-2065) while temperature is projected to increase

[31] RCP 4.5 is described by the Inter-governmental Panel on Climate Change as an intermediate scenario. Emissions in RCP 4.5 peak around 2040, then decline. RCP 4.5 is the most probable baseline scenario (no climate policies) taking into account the exhaustible character of non-renewable fuels. In RCP 8.5, emissions continue to rise throughout the 21st century. It is generally taken as the basis for worst-case climate change scenario.

[32] Climate projection for the National Adaptation Planning, Ministry of Forests and Environment, 2019.

by 1.04ºC in the medium term (2016-2045) and 1.75ºC in the long term (2036-2065) compared to that of the reference period (1981-2010). Very wet and extremely wet days are projected to increase significantly by 9.61% in the medium term and 17.16% in the long term while the number of rainy days is projected to decrease by 1.85% in the medium term and 1.36% in the long term. The change in the number of consecutive dry days and consecutive wet days is expected to be milder than that of the RCP 4.5 scenario. The number of consecutive dry days is projected to increase by 2.49% in the medium term and 0.03% in the long term whereas the number of consecutive wet days is projected to decrease by 2.48% in the medium term and 6.08% in the long term. Warm days and warm nights are projected to increase while cold days and cold nights are expected to occur less.

1.5 Baseline Situation

1.5.1 National Plans and policies

The National Climate Change Policy 2019 replaced the Climate Change Policy of 2011, to effectively address the changes of national and international dimensions in the area of climate change management that have emerged since the implementation of the earlier Climate Change Policy and on the basis of lessons learnt from the implementation of the previous policy. In keeping with the Constitution of Nepal 2015, the new policy is aligned with the federal structure to enable programs pertaining to climate change adaptation and mitigation to operate in an effective manner by integrating the issues of climate change into policies and programs at all three levels (national, subnational, and local) of the government. It is a comprehensive policy document with strategies and working policies spelt out for eight thematic areas and four inter-thematic areas. The thematic areas consist of: (a) agriculture and food security; (b) forests, biodiversity and watershed conservation; (c) water resources and energy; (d) rural and urban habitats; (e) industry, transport and physical infrastructure; (f) tourism and natural and cultural heritage; (g) health, drinking water and sanitation; and (h) disaster risk reduction and management. The inter-thematic areas include: (a) gender equality and social inclusion, livelihoods and good governance; (b) awareness-raising and capacity development; (c) research, technology development and expansion; and (d) climate finance management.

Nepal's climate change policies, plans and programs are also influenced by international climate treaties that the country is a party to, such as the United Nations Framework Convention on Climate change (UNFCCC) that it ratified in May 1994 and the Paris Agreement in October 2016. It is committed to active participation in the global efforts and international processes to fight climate change. The country submitted its Second Nationally Determined Contributions (NDC) in December 2020, updating the First NDC submitted in 2016, and the Third National Communication to the UNFCCC in August 2021 . The National Adaptation Program of Action (NAPA), submitted in 2010, has identified long-term adaptation needs in various sectors. In order to fulfill medium- and long-term adaptation needs, the Government of Nepal (GoN) has formulated its National Adaptation Plan (NAP) for the period of 2021-2050.

The NAP sets out priority programs in the nine thematic sectors, including agriculture and food security, and forests, biodiversity and watershed management, as outlined in the National Climate Change Policy 2019. The programs include adaptation actions that are best able to address climate vulnerabilities and risks in the short (to 2025), medium (to 2035), and long-term (to 2050), as well as adaptation actions that contribute to the achievement of national economic and development priorities. All in all, the NAP identifies 64 strategic priority adaptation programs/interventions, their estimated cost, duration, alignment with the national policy documents, and the climate vulnerabilities and risks they seek to address.

Cross-sectoral mechanisms to mainstream climate adaptation and resilience

The Government of Nepal (GoN) has identified long-term adaptation needs in various sectors and is in the process of formulating a National Adaptation Plan (NAP). In line with these national policies and plans, adaptation programs and activities are being implemented by various governmental, non-governmental and community-based organizations.

During the NAPA preparation there was a realization that a mechanism, which integrates local adaptation actions into Nepal's development planning, is essential for successful adaptation. Thus, the Government prepared a National Framework on Local Adaptation Plan for Action (LAPA) in 2011 and revised it in 2019. The framework provides tools and methodologies for local level adaptation planning, implementation, and monitoring. The framework considers administrative boundaries as the management unit, and is designed to support decision-makers at local-to-national levels to: (a) identify the most climate vulnerable Village Development Committees (VDC's), wards, and people and their adaptation needs; (b) prioritize adaptation options in easy ways with the local people setting priorities; (c) prepare and integrate local adaptation plans for action into local- to national-level planning; (d) identify appropriate service delivery agents and channels for funding to implement local adaptation plans for action; (e) assess the progress of LAPA to ensure effective planning and delivery; and (f) provide cost-effective options for scaling out local-to-national adaptation planning.

Integrated watershed management approach to address climate change impacts

The GoN's 15th Five-Year Plan (2019/20-2023/24) emphasizes an integrated watershed management approach to address climate change impacts along with a focus on increasing production and productivity of forests and biodiversity while ensuring the enhancement of ecosystem services. The plan also stresses the need to improve governance and ensure equitable benefit sharing of natural resources to minimize climate change impacts on vulnerable communities. Furthermore, the plan prioritizes policy and institutional changes including capacity building at federal, provincial and local levels to ensure that climate change and disaster risk management is integrated at every level.[33] On the budget front, out of the overall country budget for 2019/20, only 5% of the budget allocation is highly climate relevant whereas 25% is climate relevant.[34]

Institutional Set-up for Addressing Climate Change

The promulgation of the Constitution of Nepal 2015 has ushered in a federal, democratic, republican system of governance. It has now a three-tier governance system, involving the federal, provincial and local levels. Each of the three tiers of government under the new federal structure have their constitutionally specified autonomous and shared jurisdictions. In particular, Local Government Operation Act (2017) in its Chapter 3, Article 11 (2, J, 16) has mandated Municipalities and Rural Municipalities to adopt low carbon and environment-friendly development activities. The same act in its Chapter 3, Article 11 (4, E, 1-26) has provided Municipalities and Rural Municipalities authority to protect and manage forests (community, rural and urban, religious, leasehold and collaborative), manage buffer zone forests, promote private forests, carry out afforestation in open lands,

[33] NPC (2019). 15th Periodic Plan 2076/77 – 2080/81. National Planning Commission, Government of Nepal.

[34] Bhattrai, P. and Singh, P. M. (2019). Climate Change Budget: Federal and Provincial Budgets in FY 2019/20. Fact Sheet. Prakriti Resource Centre. Kathmandu, Nepal.

manage forest nurseries, promote greenery at local level, adopt low carbon and environment-friendly development activities. The constitutional arrangement entrusts a good part of climate change policies and interventions with the provincial and local governments.

Coordination at the federal level: There are two main mechanisms for coordination at the federal level: Environmental Protection and Climate Change Management National Council (EPCCMNC) and Inter-Ministerial Climate Change Coordination Committee (IMCCCC). The EPCCMNC has been established by the Environment Protection Act 2019 (Article 32) and is chaired by the Prime Minister, with its members comprising four Ministers, seven Chief Ministers (of all provinces), a member from the National Planning Commission (NPC), two professors, three experts, and the Secretary of the Ministry of Forests and Environment. It is the highest body that directs on integration of matters related to the environment and climate change into the long-term policies, plans and programs, gives policy guidance to the provincial and local levels with regard to environmental protection and climate change, and manages economic resources for environmental protection and climate change (Environment Protection Act 2019, Article 34 - 1a, 1c, 1d).

The IMCCCC, is chaired by the Secretary of MoFE with membership comprising Joint Secretaries of 22 federal ministries, NPC, and representatives of Nepal Academy of Science and Technology (NAST), National Agriculture Research Council (NARC) and AEPC, and additional members invited at the discretion of MOFE secretary.

Coordination at subnational level: Provincial climate change coordination committee (PCCCC), comprising mainly province-level government agencies and representatives of civil society and local governments has been established in most of the seven provinces to coordinate climate related activities at sub-national level. The coordination committees are chaired by the Secretary of the Provincial Ministry of Industries, Tourism, Forests and Environment. These coordination mechanisms operate mostly as horizontal mechanisms. For vertical coordination, the Constitution of Nepal stipulates that the three tiers of governments will operate on the principles of "cooperation, co-existence, and coordination" and communication from the federal level to sub-national agencies will take place through the Office of the Prime Minister and Council of Ministers and Ministry of Federal Affairs and General Administration.

1.5.2 Project Area Situation

Climate Vulnerability and Risks – Sindhuli District

As a part of the National Adaptation Planning process, a series of vulnerability and risk assessments were completed ranking districts on various vulnerability indices. Sindhuli district ranks high or very high on a number of climate vulnerability indices. It is among the districts with high extreme events composite index in the baseline situation and is projected to have very high extreme events composite index in the medium- and long-term future. The district ranks high on the exposure and sensitivity indices while adaptive capacity is moderate for the general population and low in the case of women and marginalized groups, due to limited access to climate-adaptive technology and practices, high poverty rate, and a low human development index. Overall climate vulnerability ranking of the district is high.

In the agriculture and food security sector, Sindhuli district ranks moderate on exposure and sensitivity indices but has very low adaptive capacity. Consequently, the district is considered to have high vulnerability in the agriculture and food security sector. Climate risk to agriculture and food security is ranked very high in the baseline situation as well as in the medium- and long-term (under both RCP 4.5 and RCP 8.5 scenarios).

In the forests, biodiversity and watershed management sector, Sindhuli district ranks high on exposure index due to highly exposed watersheds and distribution of large forest areas and very high on sensitivity index due to occurrence of forest fire, larger forest-fire-prone areas, a large number of households directly engaged in forest-based livelihoods, high landslide- and flood-prone areas, and high drainage density. Climate risk to forests, biodiversity and watershed management sector is ranked high in the baseline situation and is expected to become very high in the medium- and long-term (under both RCP 4.5 and RCP 8.5 scenarios).

In terms of disaster risks in Sindhuli, drought hazard /drying up of water sources is high while landslide hazard is moderate and flood hazard low whereas river bank cutting is a persistent problem in the downstream areas. Within the Marin watershed, the baseline assessment of the project area has identified three most critical catchment areas; namely Ghagar khola, Kyan khola and Phulbari khola, as being highly vulnerable to climate hazards in the form of landslides and river-bank erosion whereas the catchments of Dhungajor, Jalkeni Sakhauri, and Simale are vulnerable. These catchment areas show high levels of land degradation in the uphill areas leading to increased sedimentation and expansion of riverbanks in the downstream areas. Among these, the project will focus on catchments of Kyan Khola, Ghagar khola and Phulbari khola, Dhungajor, Jalkeni Sakhauri, and Simale to implement a series of NbS interventions and community based natural resource management linking upstream and downstream problem areas in Kamalamai (ward no. 1, 4, 5), Marin (ward no. 1, 2, 3, 4, 5,), Hariharpur Gadhi (ward no. 4, 5 6, 7 and 8) and Ghyanglekh (ward no. 1) municipalities.

Climate Vulnerability and Risks – Marin Watershed

In the Marin watershed, a participatory assessment of climate risks and vulnerabilities was conducted as a part of the project baseline assessment. Vulnerable settlement and hazard mapping, field observation, focus group discussions, and key informant interviews were used as the main tools and methods. Ward chairpersons and members, including Women's group members, Community Forest User Groups, Farmers Groups, Mother Groups, Indigenous communities and Dalit households, Agricultural Service Center, Livestock Service Center, Divisional Forest Offices, Agricultural Knowledge Centre, Ward chairpersons and members participated in the vulnerability assessments.

At first Municipal Level Consultations were conducted in Marin Rural Municipality and Hariharpur Rural Municipality. After consultations with municipal level stakeholders, the national consultant team conducted vulnerability assessments with ward and community level stakeholders in all of the four municipalities within the Marin watershed for the identification of vulnerable sites within each ward. The national team conducted consultation workshop at Ward Level focusing on identifying vulnerable settlements/toles/village and within wards. Participatory resource and climate impact maps were prepared through group work for mapping vulnerable settlements/toles/village and compiling information, followed by a presentation and validation of the group work. These community consultations helped identify local experiences and impacts in relation to climate change and listed down the most vulnerable areas within these vulnerable catchments in terms of climate impacts such as flooding, sedimentation, drying up of water resources, impacts on local livelihood assets. The vulnerable areas (sites) were primarily selected using criteria such as climate

risk exposure, sensitivity, and adaptive capacity, economically and socially vulnerable communities pocket area, potentiality of risks and past disasters and economically poverty pocket area. Climate risks and vulnerabilities were identified within the vulnerable areas and are outlined in Table 3.

Table 5: Climate Risks and Potential Risk Reduction Measures identified through participatory assessment with local stakeholders

SN	Risks	Reasons	Possible Mitigation Measures
1	Flooding affecting mid and downstream	- High rainfall in the upstream area - No or insufficient interventions to control flooding - Degraded ecosystems - Haphazard development activities such as road construction	- Adopt integrated watershed management approach - Conserve the forest, agriculture and river ecosystems from upstream to downstream - Construct series of check-dams and bamboo plantations from upstream area of creeks (Jhora) - Construct serious of conservation ponds to hold rainwater in stream area and along the reclaimed and recovered riverbeds - Involve and capacitate community forest user groups in the integrated watershed management and conservation ponds - Construct embankments and bamboo plantation along riverbank to protect settlements and agriculture lands
2	Siltation and deposition of silts in agriculture lands	- Degraded ecosystems in the upstream area - Agriculture cultivation in the steep slopes - Lots of landslides, gully and surface erosion - Forest fire and open grazing in forest area - Disturbances in fragile ecosystems such as haphazard road construction - Lack of interventions to reduce siltation in upstream	- Construction of check dams and bamboo plantation from upstream to downstream of creeks and tributaries - Construct embankments, spurs and bamboo plantation along riverbank to protect settlements and agriculture lands - Application of SALT technology in slope land and barren land to reduce siltation from upstream to downstream

3	Riverbank cutting and loss of agriculture lands	- High flooding from upstream area - Extreme rainfall and flooding - No interventions to control flooding	- Construction of embankments, spurs and bamboo plantations along the riverbank
4	Reduction in agriculture production	- Dependence on rainfall - Irregularity in rain fall - Loss of agriculture land by siltation and riverbank cutting - Failure of crops due to lack of irrigation or damage or siltation in irrigation canals - Crops affected by diseases - Unavailability of chemical fertilizer on time	- Maintenance support for irrigation canals - Harvesting and use of sub-surface level water for irrigation - Technical support to control disease in agriculture crops - Protection of agriculture land from siltation and riverbank cutting i.e. embankments - Resistant variety of seeds for agriculture - Introduce the Slopping Agriculture Land Technology - SALT in farmer's field and barren forest area to conserve soil in agriculture land and barren forest lands
5	Forest degradation	- Frequent forest fire - Heavy grazing in the forest - Exploitation of forest resource	- Update the forest management plans of expired FOP - Protect the forest from grazing and forest fire - Manage the forest maintaining the ground cover in the forest area (only tall trees cannot conserve the soil)
6	Low productivity of meat and milk production	- Insufficient fodder and forage supply - Low productivity of local breeds - Marketing problem during rainy seasons - Loan problem	- Cross-breeding or high-breed program of livestock - Support in fodder and forage development in forest and private lands - Focus on goat, fattening of young buffalo in rainy season, the project area is inaccessible due to lack of road access.
7	Water shortage in dry season	- Drying up of water sources - Degradation and disturbances in water sources	- Water source conservation such as fencing - Plantations in water source area - Construction of conservation ponds in water source area - Sub-surface level water harvesting

	Water-related Disasters	- Loss of human lives, livestock, standing crops, lands and physical properties	- DRRM plans, strategy and resource allocation - Implementation of DRRM plans and its close monitoring

Climate Change and Agriculture in the Project Area

Agriculture is the main livelihood of the local communities although there is a gradual trend of abandonment of agriculture due to low economic returns and migration of rural youth to urban centres and overseas for better incomes and living standards. However, in the wake of Covid-19 pandemic, the area has witnessed the return of many migrants. The migrant returnees are primarily taking up livestock farming and vegetable cultivation. Land under agriculture constitutes about 21% of the land use in the project area and are located along the downstream of these catchments making them more vulnerable to river-bank erosion and sedimentation from landslides and degradation of watersheds in the upstream. Much of the agriculture remains under conventional farming system with little or no measures to adapt to the impacts of climate change. In the uphill areas, inappropriate agricultural practices and farmland management on hill slopes are causing loss of soil and soil fertility, thereby reducing productivity and increasing risks of slope failure. Extension services to advise and train farmers on sustainable and climate-adaptive agricultural practices is inadequate. Local government agencies are short-staffed as well as inadequately -equipped in terms of training and tools for delivery of extension services to address climate impacts in agriculture. Furthermore, the remoteness of the project area has meant that the local communities have had very limited exposure and access to climate-adaptive technologies and practices to improve rural livelihoods.

A major climate-related problem to agricultural livelihoods is seasonal water scarcity in the dry winter season as the rivers and rivulets in Marin watershed are ephemeral with plenty of water during the rainy season but very scarce water in the winter when rainfall is very low. The high porosity of the geologic formation and increasing depth of groundwater due to siltation also contributes to water shortage, burdening especially women and girls who are tasked with the collection of water in rural households. Growing uncertainties in rainfall patterns also hinder agricultural production in the project area, where rice and maize cultivation is largely rain-fed. Furthermore, existing irrigation systems are very rudimentary and largely made up of earthen irrigation channels which are predisposed to erosion and seepage.

Crop damage or crop failure due to extreme weather (drought, heat, hail, unseasonal/ excessive rain) occurs from time to time in the project area, and there are also instances of damages or loss of animal sheds due to heavy rains and landslides. In such events, the poor households are particularly affected and driven further into deep poverty leading to additional pressure on natural resources upstream of the watersheds. Government insurance schemes for livestock exist at the federal, provincial, and are also supported by numerous municipalities. Also, a weather index-based crop insurance scheme has been initiated for selected crops, such as apple, in the high hills of the country. However, poor households are generally unable to avail these schemes because of lack of funds to pay for the premium despite government subsidy.

Climate Change and Forest Management in the Project Area

While overall forest cover is still high in the project area, localized forest degradation is taking place due to encroachment, overgrazing, excessive collection of forest resources, and forest fires, and, more recently, from inappropriately planned development of roads. Fuelwood collection is huge with almost 86% of the local household dependent on fuelwood for cooking[35]. Open grazing in the forest by livestock is very common too, affecting forest regeneration and soil cover. Forest fire risk has also grown due to warmer and drier winter season. There are also instances where local people set forests on fire to invigorate growth of grass that the livestock can feed upon. Forest degradation exacerbates climate-induced hazards and disasters such as landslides and floods, which in turn causes rise and expansion of riverbeds cutting into forests and agricultural lands located along the riversides. Community forests and leasehold forests constitute major forest management strategies of the GoN. Since its formal initiation in the late 1970s, more than 20% of Nepal's forest has been under community forest management involving more than 22,200 CFUGs. The governance of community forests is guided by the Forests Act of Nepal 2019 and community forest development guidelines[36]. In the project area, there are 143 community forest users' groups managing 31,328 hectares of forests. Another 744 ha of forests are managed as leasehold forests by 119 groups made up of 1,157 poor households. However, baseline information from the Marin Divisional Forest Office reveal that only 62 community forests (43.4%) are active with updated operational plans. A major reason for this is the lack of training and funds among the CFUGs. The process of revision of the community forest operational plan (CFOP) requires technical capacity and funds by the CFUGs while the community forests do not generate adequate funds, especially in the Churia region where extractable volume of timber for sale is very low. Community forests are largely only able to address basic forest needs such as fuelwood, fodder and leaf litter. Also, due to out-migration of a generation of male, the women and elderly left behind do not have adequate understanding of the procedures and requirements of CFOP revision.

Climate Disasters and Vulnerable Catchments in the Project Area

The Marin watershed is made up of several catchment areas with steep terrain, fragile geologic formations, and porous soil. It frequently experiences climate-induced hazards and disasters such as landslide, sedimentation and flooding, impacting livelihood assets and resources such as agricultural lands, forests, water sources and fish fauna. While some landslide risk mitigation and flood control activities have been carried out with support from the President's Churia-Terai Madhesh Conservation and Management Program, they remain inadequate in terms of upstream-downstream linkages and, therefore, have not had demonstrable impact. The project will focus on three initially selected critical catchment areas, Kyan Khola, Phulbari khola and Ghagar khola, which have been identified as the most vulnerable to landslide, sedimentation and flooding while also expanding the investment in three additional catchments of Dhungajor, Jalkeni Sakhauri, and Simale of the Marin Watershed. Over 400 locations were identified requiring NbS interventions in the three catchment areas through a series of field consultations with the local stakeholders, namely the municipal/ ward officials and local communities, for the project design. These locations were also appraised through GIS map analysis and direct field observations. With an expansion of the total project budget, three additional catchment areas have been added into the project scope, to increase the demonstration area under the same components, outcomes, outputs and activities, to deliver higher benefits to IPLCs and total targets.

[35] National Housing and Census 2011 Report, Central Bureau of Statistics, Government of Nepal.

[36] https://wwfasia.awsassets.panda.org/downloads/model_community_forest.pdf

1.5.3 Ongoing Climate Change Adaptation Initiatives

President Churia-Terai Madhesh Conservation and Management Master Plan

Recognizing the scale and extent of environmental degradation in the Churia-Terai Madhesh region in Nepal and its vulnerability to environmental degradation and climate-related hazards, the GoN initiated a special program called the 'President's Churia-Terai Madhesh Conservation and Management Program' in 2011 to identify the problems, challenges and issues of conservation of the Churia region and to propose an effective conservation plan. This led to the establishment of the President's Churia-Terai Madhesh Conservation Development Board in 2014 to support integrated and coordinated efforts for conservation of the Churia region and the development of the President's Chure-Tarai Madhesh Conservation and Management Master Plan in 2017 to provide strategic direction for conservation activities in the Churia. More specifically, the Master Plan aims to support the integrated management of upstream and downstream land use activities, promoting an integrated landscape approach, and poverty reduction through conservation and sustainable management of the natural resources and improvement of ecosystem services. It also aims to mitigate climate-induced disasters and hazards and improve climate resilience through conservation and management of land, water, vegetation and biodiversity. An estimated total investment of around USD 2 billion is required to accomplish the programs in the 20-year period of the master plan. Out of this, USD 0.6 billion is expected to be invested during the first five years.

The program covers 36 districts of the Churia region, including the Sindhuli district where the Marin watershed is situated. The program is supporting flood control in the Marin watershed by construction of embankments of the rivers.[37] The government regularly funds flood control, forest management (encroachment control, nursery management, plantation, fencing) activities through this program along with supporting/ additional activities through the Provincial government and Division Forest Office.

FAO/GCF Project on Building a Resilient Churia Region in Nepal

The GoN has accessed financing from the Green Climate Fund (GCF) for the "Building a Resilient Churia Region in Nepal (BRCRN) Project". In November 2019, the GCF approved total financing of about USD 39.3 million over a period of seven years (January 2020 to December 2026). The BRCRN project, which was developed with the support of the Food and Agriculture Organization of the United Nations (FAO) and is being implemented by the MoFE with FAO's technical oversight and guidance, aims to enhance the climate resilience of ecosystems and vulnerable communities in the Churia region through integrated sustainable rural development and natural resource management approaches. The project will directly benefit over 830,000 people, including 50% women, in 26 vulnerable river systems to strengthen their resilience against climate change. Two of the river systems adjoin the MaWRiN project area and, hence, would support improving the ecological integrity of the region, though the project areas do not overlap. Coordination will be pursued with this project through participation in project meetings, as well as exchange visits to share knowledge and learn from each other's experiences.

[37] MoSTE (2015). Indigenous and Local Knowledge and Practices for Climate Resilience in Nepal, Mainstreaming Climate Change Risk Management in Development. Ministry of Science, Technology and Environment (MoSTE), Kathmandu, Nepal.

IUCN/GCF-supported Project on Improving Climate Resilience of Vulnerable Communities and Ecosystems in the Gandaki River Basin, Nepal

This project, which commenced in November 2021 with a GCF grant of USD 27.4 million, aims to mainstream and operationalise a sustainable river-basin approach for watershed management to achieve resilience of climate vulnerable communities and ecosystems in the Gandaki River Basin. This will be achieved through the planning and implementation of climate change adaptation measures across impacted ecosystems and communities both upstream and downstream across the landscape. The project seeks to shift from the traditional district and municipality (political/ administrative boundary) based approach to a more holistic river basin-wide approach for climate-resilient development and management that transcends political/administrative boundaries. On completion in 2026, the Gandaki River Basin will be used as a model to showcase how climate-resilient development in large river basins can occur throughout Nepal. Given the similarity in using watershed as the ecological unit for an integrated and holistic approach to climate change adaptation, the MaWRiN project and this GCF project will benefit from each other's experience and lessons from project implementation. Furthermore, project interventions common to both projects include support for climate-resilient agricultural livelihoods and reduction of climate disaster risks through NbS. The project is executed by the MoFE with support from the World Conservation Union (IUCN).

UNEP/GCF-supported Project on Building Capacity to Advance National Adaptation Plan Process in Nepal

This project, with a financing of USD 2.935 million over three years, executed by the MoFE with support from the United Nations Environment Program (UNEP), aims to reduce vulnerability to climate change and increase resilience through integration of climate change adaptation into development planning processes. It constitutes four key components: (i) strengthening institutional capacity to advance the NAP process; (ii) strengthening system for developing and sharing climate risk and vulnerability information at different levels; (iii) establishing funding strategy for implementation of the NAP processes; and (iv) strengthening capacity to monitor and review outcomes of the NAP process. A key result of this project is a series of reports providing vulnerability and risk assessment and identifying adaptation options across eight sectors and one cross-cutting theme in accordance with the National Climate Change Policy 2019. Among these reports, relevant to the MaWRiN project are the sectoral reports for agriculture and food security; forests, biodiversity and watershed management; and disaster risk reduction and management; and the cross-cutting thematic report on gender, livelihoods and socioeconomics.

Nepal Climate Change Support Program

Nepal Climate Change Support Program (NCCSP)/UNDP – the NCCSP, implemented by the MoFE and financed by the United Kingdom's Department for International Development (DFID), aims to help the poorest and most vulnerable communities in Nepal to adapt to the effects of climate change. Phase I of the program ran from 2013-2017 and Phase II is from 2017-2022. It supports implementation of the LAPA, which creates jobs, mitigates disaster risks and increases agricultural productivity through improved infrastructure. It has created district-, village- and municipal-level energy and environment committees for LAPA-related activities. Total budget was GBP (British Pound Sterling) 17.6 million for Phase 1 and is GBP 22 million for Phase II.

1.6 Coordination with other GEF Projects

IUCN/GEF Project on Restoring the Degraded Watershed and Livelihoods of Lakhandei River Basin through Sustainable Land Management

This GEF project was approved for implementation in August 2021 with a GEF financing of about USD 1.55 million over four years. The project focuses on strengthening land and landscape governance and river basin management institutions, implementing sustainable land management (SLM) practices for restoration of degraded watershed, enhancing public and private sector investment in watershed restoration through SLM practices and associated value chain development, and revitalizing rural communities for watershed management. It will be implemented by the International Union for Conservation of Nature (IUCN) in association with the MoFE as the national executing partner. With integrated and community-based approaches to watershed management common to both projects and given the location in the same physiographic zone (Churia region) *albeit* different watersheds, coordination between MaWRiN project and this project will be mutually useful.

FAO/GEF Enhancing Capacity for Sustainable Management of Forests, Land and Biodiversity in the Eastern Hills

Approved in October 2021, this GEF project will be implemented with the objective to deliver multiple biodiversity and sustainable livelihood benefits through adaptive, collaborative management and restoration in the middle hill landscapes in eastern Nepal. With GEF financing of more than USD 4 million over a four-year period, the project will primarily improve capacities of provincial and local stakeholders for adaptive and collaborative landscape planning and management to support biodiversity conservation, ecosystem restoration and achieving land degradation neutrality, and support community-based conservation and sustainable production, management and restoration practices for biodiversity and local livelihoods. Common project interests and areas of work include landscape management for ecosystem restoration, capacity development of municipalities for landscape management, community-based natural resource management particularly through community forest users' groups, and sustainable community livelihoods. The project will be implemented by FAO in association with MoFE as the national executing partner.

WWF/GEF Project on Integrated Landscape Management to Secure Nepal's Protected Areas and Critical Corridors

The GEF-6 project "Integrated Landscape Management to Secure Nepal's Protected Areas and Critical Corridors", implemented by WWF in association with MoFE as the national executing partner, is focused on the Terai Arc Landscape. The project objective is to promote integrated landscape management to conserve globally significant forests and wildlife. With a GEF financing of about USD 6.7 million over five years (2019-2024), the project focuses on institutional and coordination capacity for planning integrated landscape management, and sustainable habitat and wildlife management including community-based natural resources management. While this project has no geographic overlap with the MaWRiN project, it includes community-based activities, such as community forest management, to address the problems of forest degradation and unsustainable land use in similar natural geophysical and socio-economic situations.

WWF/GEF Project on Sustainable Land Management in the Churia Region of Nepal

The goal of this three-year GEF-5 project, which concluded in May 2017 with a GEF financing of USD 917,431, was to address the problem of land degradation and unsustainable natural resources management in Nepal's Churia range. The SLMCRN project aimed to achieve its objective by: (a) promoting sustainable agricultural and livestock management practices; (b) engaging local communities in forest conservation; and (c) creating the enabling conditions for inter-sector collaboration for sustainable land use and management. It closely aligned with the GEF land degradation focal area strategic objective 1 to maintain or improve flows of agro-ecosystem services to sustain livelihoods of local communities, and strategic objective 3 to reduce pressures on natural resources from competing land uses in the wider landscape. The SLMCRN project provides some key lessons, which have been taken into account in the design of the MaWRiN project (see section 3.7 Lessons Learned During Project Preparation and from Other Projects).

UNDP/GEF/LDCF Project on Developing Climate Resilient Livelihoods in the Vulnerable Watershed in Nepal

This project was approved in April 2020 for GEF/LDCF financing of USD 7 million over four years. The project, implemented by UNDP in association with the MoFE, focuses on establishing integrated watershed management framework to address climate change induced floods and droughts and supporting integrated adaptive watershed management practices in three vulnerable watersheds, representing each of the three main physiographic regions of high mountain, mid-range hills and Terai. Like the MaWRiN project, this project seeks to promote participatory assessments of climate risks and vulnerabilities for planning and mainstreaming adaptation solutions at the watershed/ sub-watershed level, and support community-based activities to improve the climate resilience of local livelihoods.

UNEP/GEF/LDCF Project on Ecosystem-based Adaptation for Climate-resilient Development in the Kathmandu Valley

This LDCF project is aimed to increase the capacity of communities living in the Kathmandu Valley to adapt to the negative effects of climate change using Ecosystem-based Adaptation (EbA) approaches and practices. The project was approved in August 2019 with a GEF/LDCF financing of more than USD 6.2 million over a four-year period. It focuses on improving the capacity of national government institutions and local municipalities to integrate EbA in development planning of Kathmandu and supporting local communities to implement EbA approaches and practices to manage the effects of climate change. The MaWRiN project will stand to benefit from this project's experience in the areas of working with local municipalities for climate change adaptation and employing EbA/ NBS approach and practices to reduce climate risks and vulnerabilities.

UNEP/GEF Project on Catalyzing Ecosystem Restoration for Climate Resilient Natural Capital and Rural Livelihoods in Degraded Forests and Rangelands of Nepal

This four-year project (2018-2022) is being executed by the MoFE with support from the UNEP. With a GEF grant of USD 5.246 million, the project was conceived with the objective to enhance the capacity of the government and local communities to adapt to climate change by implementing EbA in degraded forests and rangelands in mid-hills and high mountain areas. It has three key components: (i) capacity development of local and national institutions for EbA; (ii) strengthening of national policy and strategic framework to promote EbA implementation; and (iii) demonstration of EbA through implementation and monitoring by user groups to restore forests and rangelands in the mid-hills of Accham and Salyan and high mountains of Dolakha, thereby decreasing the vulnerability of local communities to climate change.

Section 2: Project Execution Strategy

2.1 Project Objective and Theory of Change

The objective of the project is *"to enhance climate resilience of Indigenous people and local communities in the Marin watershed through nature-based solutions and livelihood improvement."* With GEF/LDCF financing of USD 9,024,312 and a co-financing amounting to USD 26,820,917 over a six-year period, the project will enable the government and local stakeholders to invest in protecting the Marin watershed while bolstering the longer-term resilience of local and indigenous communities against climate emergencies. The objective of the project is "to enhance climate resilience of Indigenous people and local communities in the Marin watershed through nature-based solutions and livelihood diversification." The fundamental approach will be to address climate change impacts using an integrated approach at the watershed level. This approach is to consider: (a) strengthening coordination between local stakeholders and their capacity to assess climate risks and vulnerabilities, and mainstream appropriate climate adaptation strategies and actions in local development; (b) empowering communities through training and site-based field interventions to enhance the climate resilience of local livelihoods and the resources that the local communities depend upon including through transfer of climate-adaptive technology and practices, sustainable forest management, and employment of nature-based solutions (NbS) to reduce vulnerability to climate hazards and disasters; and (c) generating lessons and good practices, and developing knowledge for replication, adaptation and sustainability of the project results.

The project's Theory of Change is based on the following logic:

If there is information-sharing, coordination and collaboration among stakeholders in the Marin watershed, and the knowledge and tools to understand climate risks and vulnerabilities, and participatively identify and integrate appropriate adaptation solutions in local development in a holistic manner on the basis of watershed; **then** there will be an enabling environment for mainstreaming climate change adaptation and integrated watershed management in proactive and cost-effective ways.

If sustainable land use and natural resource management practices and technologies are introduced, based on community and local government participatory identification of climate risks and vulnerabilities and potential adaptation interventions, and these practices strengthen community livelihoods and reduce climate change impacts, and NbS interventions effectively reduce risks and impacts of climate hazards and disasters, and there is meaningful participation of the local communities; **then** there will be demonstrated evidence of successful climate-adaptive technologies and practices for larger uptake by the local communities and government;

If lessons and good practices from the project's implementation are garnered and analysed progressively throughout the project, and the project monitoring and evaluation system operates effectively providing timely information on project progress; **then** knowledge will be managed and available for replication and adaptation, and project results will be effectively monitored, understood, disseminated and used.

In summary, when **stakeholders** (specifically municipalities, soil and watershed management office, Divisional and **s**ub-divisional forest offices, community-based groups, and farmers) **in the Marin watershed are capacitated** to assess climate risks and vulnerabilities and accordingly integrate

adaptation solutions into development plans through coordination and collaboration, and learning and knowledge is being complemented by **demonstrated evidence** of sustainable practices of livelihood and natural resources management, and NbS interventions to climate hazards and disasters, then the **resilience of communities** and ecosystems to climate change will improve.

2.2 Project Components and Expected Outcomes

The project objective *"to enhance climate resilience of Indigenous people and local communities in the Marin watershed through nature-based solutions and livelihood diversification"* is expected to be achieved through the following three inter-connected project components:

Component 1: Enabling environment for mainstreaming climate change, through the development of capacity of the municipalities and other key local agencies to assess and understand climate risks and vulnerabilities, and accordingly mainstream climate change adaptation strategies and actions in local plans and policies, and the establishment of a multi-stakeholder platform for dialogue and cooperation on climate change adaptation at the watershed level.

Component 2: Enhanced Resilience of Local Communities to Climate Change through a) community-based natural resource management such as community identification of adaptation interventions, support and demonstration of sustainable and climate-resilient agriculture and livestock practices, improved water management, strengthened management of community and leasehold forests, and b) Nature-based solutions that reduce climate impacts and risks.

Component 3: Monitoring, evaluation and knowledge management, through tracking of project progress on a regular basis, garnering and analysis of lessons and good practices, and development and dissemination of knowledge that reinforces project results from components 1 and 2, providing sound basis for their replication, adaptation and sustainability.

Details of the outcomes and outputs expected under each of the project components are provided below:

Component 1: Enabling environment for mainstreaming climate change

GEF grant: USD 354,893 Co-financing: USD 1,072,837

Outcome 1.1: Improved understanding, knowledge and capacity to mainstream climate change adaptation in local plans and policies.

This outcome seeks to strengthen the capacity of the municipalities, soil and watershed management office, division and sub-division forest offices, Indigenous people and local communities (IPLCs) and CBOs and other stakeholders to coordinate, collaborate, plan and mainstream climate change adaptation in the local plans and policies based on a sound and holistic understanding of climate change impacts at the watershed level. While a sound understanding of the local climate risks and vulnerabilities among the local stakeholders is crucial for them to effectively plan and mainstream climate change adaptation; at present there is limited systematic studies and information on climate change impact on livelihoods and livelihood resources accessible to local stakeholders although local communities have identified major impacts of climate change in the area as increase in

flooding incidences, drying up of water sources and damage to livelihood assets and community infrastructures such as drinking water sources, spring sources, farmer-managed irrigation systems including a rise in extended dry spells leading to an increase in incidences of forest fires. Although there is a national framework for climate risk and vulnerability assessment (CRVA) and LAPA, there is no well-defined practical tool and method to assist local stakeholders to assess and understand local climate risks and vulnerabilities and their impacts at a watershed level, nor do the local government officials and community-based organizations (CBOs) possess sufficient knowledge and training in CRVA and CCA mainstreaming. Therefore, the project will train and equip the municipalities, key sector agencies and CBOs, with hands-on methods and tools to carry out participatory assessments of climate risks and vulnerabilities in the four municipalities in the project area. The participatory assessments will help the municipalities, sector agencies and CBOs to identify climate risks and vulnerabilities, assess their impacts on key sectors (agriculture, livestock, water and forestry) that support local livelihoods, and accordingly identify adaptation options. A potential approach would be to use Participatory Rural Appraisal (PRA) tools and techniques, which have versatile application and can be easily customized to assess climate risks and vulnerabilities. A major advantage of PRA is that the visual tools can be very useful in drawing active participation from all groups of the local communities in a situation like Marin watershed, where literacy level is low and there is high inhibition to participation in formal consultations and meetings especially among women and socially marginalized communities. It can also be a powerful tool to increase community awareness on climate risks and vulnerabilities that enables them to visualize the cause-effect linkages in relation to their livelihood practices. The participatory assessments of climate risks and vulnerabilities will provide the necessary information and understanding for the local stakeholders to have effective dialogue and deliberations on climate impacts, adaptation options, and plan a coordinated and holistic approach to address climate change impacts at the watershed level.

Based on the information and understanding generated by the participatory CRVAs, the municipalities, soil and watershed management office, division and sub-division forest offices, community forestry user's groups and other local stakeholders will review municipal and sector plans and policies and assess the integration of CCA in these plans and policies. These reviews will strengthen the information and understanding for formulation of CCA-integration guidelines for the municipalities and sector agencies. The guidelines, in turn, will help municipalities and sector agencies to formulate or revise local plans and policies to make them responsive to climate change and its impacts. Currently, there are no such guidelines and although there is a national framework for LAPA it has not yet been applied in the project area in the absence of specific hands-on guidelines. The project will support the development of CCA-integration guidelines, taking into account the national framework for LAPA and feedback from key stakeholders, and conduct workshops to disseminate the guidelines to the officials of the municipalities and key sector agencies. In order to supplement learnings from training and workshops, the project will support learning and exchange visits for the municipal officials and other local stakeholders to other CCA projects in Nepal, where CCA mainstreaming and LAPA have been implemented successfully, and abroad to gain hands-on knowledge and insights on CCA mainstreaming carried out by those projects. Additionally, these visits are expected to facilitate networking and knowledge-sharing and provide opportunities to learn about climate-resilient livelihood practices and NbS interventions employed by other CCA projects (links to project component 2).

At present, planning for CCA and watershed management takes place in an isolated manner with limited coordination between the municipalities and sectors. Participation of local communities and private sector is also very weak in the processes related to formulation of local and sector plans

and policies. This has led to ad hoc, piecemeal planning and implementation of CCA and watershed management activities, diluting the impacts of the activities and resulting in wastage of resources. To facilitate dialogue and coordination between the local stakeholders to address CCA in an integrated and cost-effective manner at the watershed level, the project will support the establishment of a multi-stakeholder platform and facilitate its operationalization. This will entail the development of the operational modalities, structure and functions of the multi-stakeholder platform so that it operates in a transparent, coherent and inclusive manner. An event will be organized to launch and activate the platform and create awareness about it. Subsequently, the project will support the multi-stakeholder platform to organize workshops, meetings and media events to enhance stakeholder awareness and coordination. A key function of the multi-stakeholder platform would be to provide an inclusive forum that ensures the knowledge, views and aspirations of all key stakeholders, particularly Indigenous people, marginalized communities and women, are recognized and inform the development of a coordinated and concerted approach to climate change adaptation in the Marin watershed. The role of the private sector will also be examined for inclusion in the platform.

To achieve Outcome 1.1, the following outputs and indicative activities are planned:

Output 1.1.1: Training and exchange visits for community-based organizations (CBOs), soil and watershed management office, division and sub-division forests offices, municipalities and relevant provincial officials on climate change impacts and risks assessment tools and methods for mainstreaming CCA in all sectors and municipal plans in an integrated approach.

This output will focus on developing the knowledge and skills of the municipal officials, divisional and sub-divisional forest officials, and community-based natural resource management groups (forestry, agriculture, irrigation, livestock) for participatory assessments of climate risks and vulnerabilities, and CCA mainstreaming. This will be achieved through a series of training and development of tools (e.g. guidelines), followed by their application for assessment of climate risks and vulnerabilities, and CCA mainstreaming which will reinforce the capacity of the training recipients whilst also providing detailed and systematic information on local climate risks and vulnerabilities. This will then enable the municipalities and local sector agencies to mainstream CCA in local plans and policies at the watershed level. It will also involve exchange visits for the soil and watershed management office, division and sub-division forest offices, community forestry user groups, municipality officials and other local stakeholders to other CCA projects in Nepal, where CCA mainstreaming and LAPA have been done successfully, and abroad to gain hands-on knowledge and insights on CCA mainstreaming carried out by those projects.

Indicative GEF financing for this output: US$ 194,711

To realize Output 1.1.1, the following indicative activities are proposed for project implementation:

Activity 1.1.1.1: Stakeholders consultations to validate and finalize project activities and sites along with execution strategy and workplan given the 3 additional watersheds.

Activity 1.1.1.2: Assess training needs and, accordingly, develop curricula and materials for training on participatory gender-sensitive assessments of climate risks and vulnerabilities, adaptation options and CCA mainstreaming in key sectors at the local level.

Activity 1.1.1.3: Conduct a series of training for CBOs and government officials to develop their knowledge and skills for participatory gender-sensitive assessments of climate risks and vulnerabilities, adaptation options and CCA mainstreaming.

Activity 1.1.1.4: Support CBOs, municipalities and relevant sector agencies to carry out participatory gender-sensitive assessments of climate risks and vulnerabilities and produce the reports of the assessments through workshops and consultations *(this activity will provide the basis for activity 1.1.2.1 under output 1.1.2).*

Activity 1.1.1.5: Organize learning and exchange visits for communities, local and provincial government officials, enabling them to acquire hands-on knowledge and insights on CCA mainstreaming from other CCA projects in Nepal and abroad.

Output 1.1.2: CCA-integration guidelines developed with communities and municipalities to support and formulate climate-responsive policies and plans on water, agriculture, forestry, and rural development for four municipalities in the Marin watershed, and integrated in the watershed, forestry, and municipal planning process.

This output will focus on the development of CCA-integration guidelines and its application in the revision or formulation of local and sector plans to integrate or enhance their responsiveness to climate change. It is linked to Output 1.1.1 as the systematic information and understanding generated by the participatory CRVAs under that output, will help the municipalities and other local agencies to review local plans and policies, and assess the integration of CCA in these plans and policies. These reviews will then feed into the formulation of CCA-integration guidelines for the municipalities and sector agencies. The guidelines, in turn, will help municipalities and sector agencies to formulate or revise local plans and policies to make them responsive to climate change and its impacts.

Indicative GEF financing for the Output: US$ 108,259

Under output 1.1.2, the following indicative project activities are proposed:

Activity 1.1.2.1: Review municipality plans and policies for key sectors and assess the integration of climate change adaptation needs in these plans and policies, taking into account the information generated by the participatory assessments of climate risks and vulnerabilities *(linked to output 1.1.1, activity 1.1.1.3).*

Activity 1.1.2.2: Based on the above review, develop guidelines to support integration of CCA in agriculture, livestock, forestry, and water sectors at the municipality level.

Activity 1.1.2.3: Conduct workshops to disseminate the aforementioned CCA-integration guidelines to officials of the municipalities and relevant sector agencies at the local level.

Activity 1.1.2.4: Support workshops and consultations for formulation or revision of plans and policies at the municipality/ provincial level in accordance with the CCA-integration guidelines.

Output 1.1.3: Multi-stakeholder platform established in the Marin watershed to drive the mainstreaming of adaptation in an integrated watershed approach.

This output will strengthen coordination between multiple stakeholders of different municipalities in the Marin watershed through the establishment and operationalization of a multi-stakeholder platform. The platform will be supported by well-defined operational modality, structure and functions to ensure that it operates as an inclusive, coherent and transparent mechanism for the stakeholders to share information, exchange knowledge and views, coordinate and collaborate on climate change issues in the Marin watershed. It is expected to bring synergy in adaptation efforts and the use of adaptation resources. Particular attention will be given to the inclusion of women, youth, and Indigenous people and facilitating equal opportunity to express views and aspirations and contribute to the collaboration and decision-making process.

Indicative GEF financing for this output: US$ 51,923

Under output 1.1.3, the following indicative project activities are proposed:

Activity 1.1.3.1: Develop operational modality, structure including the composition of the stakeholders and functions for the multi-stakeholder platform.

Activity 1.1.3.2: Organize events to launch the multi-stakeholder platform and create general awareness and common understanding about the platform among the stakeholders.

Activity 1.1.3.3: Support the multi-stakeholder platform to organize workshops, media events and dialogues to facilitate information exchange, and develop coordination and common understanding on climate change issues and adaptation measures.

Component 2: Enhanced Resilience of Local Communities to Climate Change

GEF grant: USD 7,945,559 Co-financing: USD 23,602,407

This will be the largest project component and will focus on field investments to ensure that communities' vulnerabilities as a result of climate change impacts on livelihoods and livelihood resources are reduced, improving their resilience to climate uncertainties and adversities. The project will invest in community training and provision of low-cost materials (e.g. seeds/ seedlings of climate-resilient crop varieties) and equipment (agricultural tools that have low impact on the soil and environment); local communities to take up climate-resilient and sustainable practices of agriculture, livestock management, forestry and water management. The project will further support community forest users and leasehold forest groups, contributing to improved livelihoods whilst also addressing forest degradation, which exacerbate climate hazards and disasters such as landslides, soil erosion, floods and forest fires. It will also support NbS interventions to arrest land degradation and mitigate climate disaster risks in areas/ sites that are most vulnerable. In order to maintain focus and demonstrate tangible results, six critical catchment areas – Kyan Khola, Phulbari khola, Ghagar khola, Dhungajor, Jalkeni Sakhauri, and Simale– have been identified for implementation of NbS interventions and community based natural resource management taking into account upstream-downstream linkages. The approach will be to first introduce climate smart NbS interventions in the upstream problem areas and then move to midstream and downstream areas. These catchment areas were selected based on their high exposure to climate hazards and disasters,

particularly landslides, flooding and sedimentation, and their high sensitivity to climate change due to presence of numerous IIPLCs and large areas under agriculture. In the initial year of the project, an NbS expert will be hired to assist the project together with the safeguards/stakeholder consultation specialist in the identification and design of NbS interventions that are climate-resilient and ecologically appropriate as per local site conditions. The expert will also prepare a detailed plan for implementation and management of the NbS interventions in the three identified catchment areas. This project component is made up of two outcomes: (i) increased adaptive capacity of vulnerable households in the Marin Watershed to climate-induced disasters such as landslides, floods and droughts; and (ii) NbS reduce climate induced vulnerabilities of community livelihood assets.

Outcome 2.1: Increased adaptive capacity of vulnerable households in the Marin Watershed to climate-induced disasters such as landslides, floods, droughts, and forest fire.

GEF financing for the Outcome: US$ 4,060,566

Extensive consultations with IPLCs and municipalities in the project area during project preparation identified several interventions favored by communities to increase their adaptation capacity. See the detailed consultation reports in Appendix 10: Stakeholder Engagement Plan. This support will be provided through Outcome 2.1 and includes community training and farmer-to-farmer learning, as well as training of local government officials on the delivery of extension services as well as to promote and demonstrate gender-sensitive, sustainable and climate-resilient technologies and practices in agriculture, livestock management and water management, integrating Indigenous Knowledge and practices wherever appropriate (linkage to project component 3, wherein project will support assessment and documentation of Indigenous Knowledge related to climate-adaptive practices). These technologies and practices will help to transform and reorient the local farming system to a more resilient system that ensures food and livelihood security under a changing climate. Climate-adaptive agricultural practices that the project will support will include use of high-value crops and climate-resilient varieties of seeds and seedlings, agroforestry, and the use of higher productivity/low impact small hand-tools and technologies that are labor- and energy-efficient, and also responsive to the needs of women and poor households.

The project will promote water-efficient and farmer-based irrigation systems. This might include upgrading of existing earthen irrigation channels to more resilient structures such as cement masonry channels and HDPE (high density polyethylene) pipe, promotion of drip and micro/ low-volume sprinkler irrigation, environmental-friendly restoration and protection of water sources and springs, and sub-surface water harvesting while also supporting water-lift systems in water-stressed settlements. All these interventions are targeted to increase efficiency and access to existing water resources

Considering the close relationship among local livelihood resources in the form of forests, farm and water, an integrated approach and supporting interventions have been designed through a consultative manner to address multiple impacts of climate change on local communities. Improved livestock and grazing management will also be promoted through support for fodder plantation, veterinary and animal husbandry services, promotion of improved local breeds, and upgrading of animal sheds for improved management of farmyard manure and stall feeding, which will contribute to sustainable agriculture and reduction of open grazing in the forests. Improved animal sheds and access to fodder are targeted to reduce impacts of heavy rainfall and leading on livestock health and also minimize the exposure of local communities to adverse weather conditions in search of fodder for animals. Household-level, small-scale commercialization of agriculture and livestock production, including fishery development, will be

supported to provide economic incentives to the farmers and motivate them to adopt and sustain climate-adaptive agriculture and livestock management practices. Women, poor and vulnerable households will be provided locally available construction materials, tools and equipment including locally appropriate fodder plants. In this respect, the project will work with the private agriculture and veterinary service providers in the project and facilitate partnerships between farmers and the private sector based on a cooperative approach that protects farmers' interests whilst strengthening coordination with the private sector. The locally established cooperatives will be provided materials and technology for promotion of seeds and species among the communities and the project will also support to strengthen their operation through capacity building on various aspects of cooperative management including operation, financial literacy, value chain. Additional support will be provided for enhancing the technical capacities of local private veterinary and agriculture service providers and provide material support so that the local communities have enhanced access to such services which have an increasing demand under adverse conditions following excessive rain, drought and forest fires. Since most of the communities remain isolated from the nearest service centers during heavy rain, landslides and flooding during the monsoon, an improvement of the above-mentioned facilities will support to strengthen local livelihoods.

Output 2.1.1: Climate-adaptive technologies and practices for agriculture, livestock management and water management introduced and demonstrated.

This output will focus on technology transfer for climate-adaptive solutions in agriculture, livestock management and water management. It will involve community training, farmer-to-farmer learning, extension skills training for government staff and private service providers in agriculture and livestock sectors, and field demonstrations. Basic equipment and material support will also be provided to the local communities for implementation of climate-adaptive technologies and practices. To economically incentivize farmers to adopt technologies and practices that enhance the climate resilience of their livelihoods, the project will promote household-level, small-scale commercialization of crops and livestock produces emanating from climate-adaptive technologies and practices. This will be pursued through partnerships between the farmers and private sector based on a cooperative approach that protects the interest of the farmers (almost all of whom are smallholding farmers) whilst also attracting private sector to get involved.

Indicative GEF financing for this output: US$ 4,060,566

To achieve Output 2.1.1, the following indicative activities are planned, and specific activities will be implemented in the communities based on the results of the participatory CRVAs with communities and based on some self-determination by communities on appropriate and priority activities:

Activity 2.1.1.1: Support for climate-adaptive and sustainable agriculture by means of:

(a) Support for expansion of high value crops and climate-resilient varieties of seeds and seedlings for communities
(b) Promotion for commercial production of high value/climate-resilient varieties of seeds and seedlings in collaboration with the private sectors/cooperatives
(c) Identification, development and distribution of energy-efficient and gender friendly tools for agricultural production in coordination with private sector

Activity 2.1.1.2*:* Support for sustainable livestock management by means of:

(a) Upgradation of animal sheds for improved management of farmyard manure and stall feeding with fodder support
(b) Improving veterinary/ animal husbandry services in coordination with private agro/vet sector;
(c) Promotion of improved local breeds and their management;
(d) Fishery development (as a physical barrier to flooding whilst also supporting local livelihood)

Activity 2.1.1.3: Support for water-efficient technologies and farmer-managed irrigation systems including:

(a) renovation/ upgradation of existing irrigation canals/ channels for enhanced climate resilience and water efficiency;
(b) Water-lifting technologies and promotion of drip and sprinkler irrigation restoration and protection of water sources and springs for irrigation and domestic purposes; and
(c) sub-surface water harvesting and distribution.

Activity 2.1.1.4: Train local communities on climate-adaptive technologies and practices in agriculture including commercial farming, livestock management and water management in support of activities 2.1.1.1, 2.1.1.2 and 2.1.1.3.

Activity 2.1.1.5: Train local government officials and private agricultural/ veterinary service providers in the delivery of extension and technical services to local communities on climate-adaptive technologies and practices in agriculture, livestock management and water management, in support of activities 2.1.1.1, 2.1.1.2 and 2.1.1.3.

Outcome 2.2: Nature-based Solutions (NbS) reduce climate-induced vulnerabilities of community livelihood resources and assets.

GEF financing for the Outcome: US$ US$ 3,884,993

The project will support the community forest users' groups and leasehold forest groups for improved management of their forests, including plantation and protection against unregulated grazing, forest fire and encroachment. It will also revitalize CFUGs and leasehold forestry use groups that are non-functional or do not have valid operational plans, train them and help them to prepare updated and improved operational plans, which integrate climate change factors. The outcome will support CFUGs on financial literacy, legal and technical aspects of forest management and provide basic material support for functioning of a CFUG. Local forestry officials will be trained to improve their knowledge and skills for delivery of extension services to CFUGs and leasehold forest groups.

The project will invest in designing and implementing NbS interventions to mitigate climate disaster risks at a comprehensive scale, focusing on three initially selected critical catchment areas, Kyan Khola, Phulbari khola and Ghagar khola, which have been identified as the most vulnerable to landslide, sedimentation and flooding while also expanding the investment in three additional catchments of Dhungajor, Jalkeni Sakhauri, and Simale of the Marin Watershed. Over 400 locations were identified for NbS interventions in the nine catchment areas during the field assessments conducted for the project design. In the initial year, the project will reappraise these locations and finalize them. Once the final locations have been selected, the project will identify and design NbS interventions for these locations and develop a detailed plan for implementation and management of the NbS interventions. Given the highly specialized tasks, the project will hire a watershed/NbS expert to assist the project in the afore-mentioned activities who will be supported by an

overseer (Engineer) with proven experience in designing, implementing and monitoring river-bank protection interventions. In the identification and design of the NbS interventions, the project will ensure that they are climate-resilient and ecologically appropriate in keeping with the local site conditions. Replicability and cost factor will also be important criteria in the choice and design of the NbS interventions. These interventions will be carried out in a series, first in the upstream problem areas and steadily moving to midstream and downstream areas. Local communities will be trained to develop their skills for carrying out these interventions.

Output 2.2.1: Management of community and leasehold forests strengthened, and vulnerable catchment areas rehabilitated and protected for reduced vulnerability to climate-induced disaster risks such as landslides, sedimentation, flooding and forest fires.

Under this output, the project will strengthen the management of 29,000 hectares of community and leasehold forests with the purpose of improving ecosystem services for climate resilience of the watershed whilst also improving community livelihoods from sustainable forest use. It will invest in training, awareness-building, equipment and materials for existing CFUGs and LFGs, and the revitalization of non-functional CFUGs by assisting them in the development and implementation of updated community forest operational plans. The second aspect of this output will be the development and implementation of NbS interventions to reduce climate disaster risks in six vulnerable catchment areas, Kyan khola, Ghagar khola, Phulbari khola, Jalkeni Sakhauri, Dhungajor and Simale collectively encompassing an area of 37,000 hectares and an estimated population of 35,500 in around 6,000 households. Wherever appropriate, Indigenous Knowledge and practices will be integrated in the NbS interventions. Community and leasehold forest management will be prioritized all across the Marin watershed considering the fact that these community-managed forest areas need to be maintained while benefitting the local population to ensure that they are not degraded as this will have a significant impact through landslides and siltation for downstream communities.

Indicative GEF financing for this output: US$ 3,884,993

Indicative project activities to achieve Output 2.2.1 include:

Activity 2.2.1.1: Strengthen community forest management, including forest nurseries and plantations, forest fire management and grazing management, through support to existing CFUGs with training, awareness-building, equipment and materials.

Activity 2.2.1.2: Strengthen community-based forest management through CFUGs with training, awareness-building and support for development and implementation of updated and improved community forest operational plans.

Activity 2.2.1.3: Strengthen leasehold forest management through support to leasehold forest groups with training, awareness-building, equipment and materials.

Activity 2.2.1.4: Rehabilitate and protect degraded and vulnerable areas in Phulbari khola and Ghagar khola Dhungajor, Jalkeni Sakhauri, and Simale catchments against climate disaster risks through NbS interventions ensuring community engagement, which will include:

(a) Riverbank protection/ degraded land restoration through bamboo plantation/ fencing, bioengineering.
(b) Check dam on priority streams.

(c) Conservation ponds (for erosion control and landslide risk mitigation but will also contribute to improving water management – activity 2.1.1.3);

Activity 2.2.1.5: Train local communities to develop their skills required for implementation of the aforesaid NbS interventions (listed under activity 2.1.1.4).

Activity 2.2.1.6: Train local forest officials for delivery of extension services and technical support to CFUGs and leasehold forest groups for improved management of community forests and leasehold forests (linked to activities 2.2.1.1, 2.2.1.2 and 2.2.1.3).

Component 3: Monitoring, Evaluation and Knowledge Management

GEF grant: USD 294,131 Co-financing: USD 804,628

The monitoring, evaluation and knowledge management component of the project will be key to ensure that the project is effectively implemented and progresses in line with expected results and managed adaptively in response to challenges and lessons experienced during project implementation. This component will ensure that lessons learned, and good practices are garnered, documented, analyzed, and disseminated to facilitate knowledge development and visibility of project results. It will keep track of project results, including capturing and sharing of key project lessons with project stakeholders and beyond. This project will consider monitoring, evaluation, and learning (MEL) as a package to enable adaptive management and success of the project interventions, and aid replication and scaling-up.

Outcome 3.1: Project monitoring, evaluation, and learning to enable adaptive management, replication and sustainability.

GEF Financing for the Outcome: US$ 294,131

The outcome will focus on garnering and analyzing lessons and good practices and developing and disseminating knowledge that are central to the project objective and outcomes. This will be primarily done by carrying out case studies to analyze and highlight concepts, approaches and issues that the project addressed and the lessons and best practices that emerged from project implementation. Knowledge derived from these case studies will be disseminated to facilitate replication in other communities and circumstances facing similar climate stress and challenges. The project will support the development of information and knowledge products related to CCA including information on the different impacts of climate change across gender, age, and social groups. The project will consider communities as generators of knowledge and promote peer-to-peer and lateral knowledge-sharing. In this respect, it will support the assessment, documentation and dissemination of Indigenous knowledge for CCA, and promote its integration in adaptation solutions for agriculture, livestock management, water management, and community/ leasehold forest management (linkage with project component 2). Media and communication events will be organized to enhance the visibility of project activities and achievements and create wider awareness of watershed management approach to climate change adaptation and the innovations on the ground.

Under this outcome, the project will have a monitoring and evaluation system in place to keep track of project progress including against project results including GESI indicators, ESS indicators, identify constraints and challenges to project progress, and provide information for adaptive

management. The project's results framework will be the main instrument for assessing project progress against indicators and targets including those that are GESI-related. It will be supplemented by the GEF Capacity Development tracking tool and GEF-7 CCA Results Framework tracking tool. As required for all full-size GEF projects, a mid-term evaluation of the project will be conducted after two years of project implementation and a terminal project evaluation will be done towards the end of the project. Annual and bi-annual project reviews will be undertaken as a part of the project management, and periodic progress reports will be produced to inform project stakeholders and provide documentation for planning and evaluation purposes.

Output 3.1.1: Knowledge products are developed and disseminated to enable upscaling of the project activities.

This output relates to generation and management of knowledge, especially lessons learnt and best practices, to enable replication and scaling-up and improve future adaptation project design. Case studies will be conducted to analyze concepts, approaches and practices implemented by the project and highlight their strengths and weaknesses, replication potential, etc. The project will also implement media and communication events and produce communication materials to make project activities and achievements visible to the wider audience. Indigenous knowledge will be assessed for their potential integration in the design of climate-adaptive solutions. A project website will also be developed to provide project information and updates, and access to project knowledge resources.

Indicative GEF financing for this output: US$ 164,064

The activities under this output would include:

Activity 3.1.1.1: Conduct case studies, and assess lessons learned and best practices emanating from implementation of project activities, and document and disseminate them for replication and up-scaling.

Activity 3.1.1.2: Assess and document Indigenous knowledge on climate-resilient methods and practices in the project area, and promote their integration in the design of climate-adaptive solutions for agriculture, livestock management, water management, community/ leasehold forest management, and climate disaster risk reduction (linkage with project component 2).

Activity 3.1.1.3: Develop and disseminate communication and education materials through print, broadcast and digital media.

Activity 3.1.1.4: Create and maintain a project website that provides information and updates on project activities, and access to project knowledge resources in particular reports, publications, case studies and other knowledge products.

Activity 3.1.1.5: Organize media and communication events, such as project site visits by journalists, write-shops and media fellowships at local/ district, provincial and national levels, to highlight and disseminate watershed management concept, approach and practices applied by the project for climate change adaptation.

Output 3.1.2: Project progress tracked effectively through project M&E.

This output will involve M&E activities to ensure progress of planned project activities and delivery of project results and facilitate adaptive management according to the challenges and lessons emanating during project implementation. It will facilitate project work planning with course correction where necessary.

Indicative GEF financing for this output: US$ 130,067

Project activities under this output would include:

Activity 3.1.2.1: Project inception and stakeholder engagement

Activity 3.1.2.2: Conduct annual and semi-annual monitoring visits to project sites.

Activity 3.1.2.3: Conduct bi-annual and annual review and planning workshops to reflect on project progress and performance and plan for oncoming year.

Activity 3.1.2.4: Produce and disseminate bi-annual project progress and annual implementation reports.

Activity 3.1.2.5: Conduct Project Steering Committee meetings as required and disseminate meeting proceedings and reports.

Activity 3.1.2.6: Conduct independent mid-term project evaluation and terminal evaluation as scheduled in the M&E plan and disseminate the findings and recommendations of the evaluation reports for follow-up actions by the concerned parties.

2.3 Project Governance and Institutional Arrangement

The **Ministry of Forests and Environment (MoFE), Bagamati Pradesh, Soil and Watershed Management Office, Ramechhap (SWMO)** will be the main executing agency and will have the overall executing and technical responsibility for the project and will be responsible for the day-to-day management of project results. As Lead Executing Agency of the project MoFE- Bagamati Pradesh, is responsible and accountable to the WWF GEF Agency for the timely implementation of the agreed project results, operational oversight of implementation activities, timely reporting, and for effective use of GEF resources for the intended purposes and in line with WWF- US and GEF policy requirements. MoFE, Bagamati Province may depute its technical staffs to PMU to strengthen PMU workforce.

WWF Nepal is a key partner of the Government of Nepal and will provide services at the request of the government as co-financing to the project, not accessing any GEF funds. These services include:

a. At the direction of MoFE- Bagamati Pradesh, SWM recruitment of staff (to be seconded to the project) and consultants to be assigned to the PMU,
b. Administering funds for hiring the PMU and certain TA activities such as workshops according to WWF policies and procedures,
c. Provide technical backstopping for smooth execution of the project.

All other execution functions will be undertaken by MoFE- Bagamati Pradesh, SWM.

The Ministry of Forests and Environment (MoFE) will play a facilitating and coordinating role at the national level for the project execution. More specifically MoFE will (i) Coordinate with MoF, MoFE, Bagamati Pradesh and WWF-Nepal on matters related to project implementation, (ii) Facilitate periodic monitoring, mid-term and terminal evaluation of the project, and (iii) Provide technical backstopping on institutional capacity building and knowledge management.

The Ministry of Finance is the political and operational focal point of GEF/LDCF. All the financial resources made available to Nepal will be channelized through MoF. MoF will make the necessary arrangement to provide the funds to national or provincial authorities for the execution of the approved project. MoF will ensure timely flow of fund to the provincial executing agency.

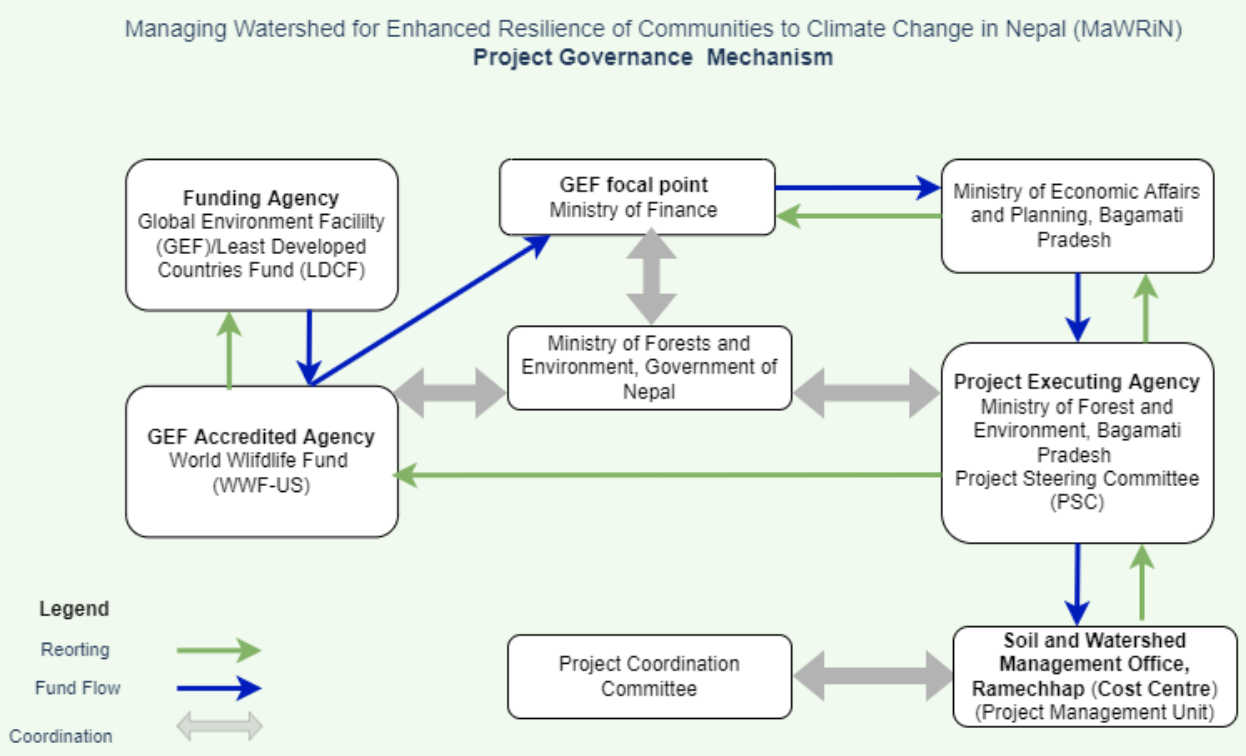
Project partners executing project activities in coordination with MoFE- Bagamati Pradesh, SWM will be different government agencies such as the Divisional Forest Office Marin and Sindhuli, IPLCs, and various civil society organizations in the watershed such as community development groups, women groups, farmer's groups, community forest users' groups and leasehold forest groups.

GEF Agency Oversight and Supervision

WWF-US, through its WWF GEF Agency will: (i) provide consistent and regular project oversight to ensure the achievement of project objectives; (ii) liaise between the project and the GEF Secretariat; (iii) report on project progress to GEF Secretariat (annual Project Implementation Report); (iv) ensure that both GEF and WWF policy requirements and standards are applied and met (i.e. reporting obligations, technical, fiduciary,

safeguards, M&E); (v) approve annual workplan, budget and procurement plan; (vi) approve budget revisions, certify fund availability and transfer funds; (vii) organize the terminal evaluation and review project audits; (viii) certify project operational and financial completion, and (ix) provide no-objection to key terms of reference for project management unit.

Figure 5: Institutional arrangements



Project Steering Committee (PSC)

The Secretary of MoFE - Bagamati Pradesh will chair the Project Steering Committee (PSC) which will be the main governing body of the project. The PSC will be composed of high-level officials/representatives from relevant provincial and national government agencies, project stakeholders, NGOs, and WWF-Nepal. WWF GEF Agency will serve as an observer.

The PSC is responsible for providing strategic guidance and an enabling environment for the effective implementation across all levels of the government, and guidance to the Project Technical Committee (PTC). The PSC oversees the Project Management Unit (PMU) for the overall project delivery according to the Project Document and approves the annual work plan and budget (AWP/B) and associated procurement plan for project implementation, and the reporting before submission to the GEF Agency. The PSC members will: (i) provide policy and strategic guidance, (ii) technically oversee activities project execution; (iii) ensure a fluid two-way exchange of information and knowledge between their respective agency and the project; (iv) facilitate coordination and links between the project activities and the work plan of their respective agency and approve AWP/B and associated procurement plan; (v) recommend any changes necessary to the project workplan/result framework or project timeline; (vi) approve the project operation manual; (vii) facilitate the provision of co-financing to the project. The PSC will meet at least twice a year to ensure that all relevant project partners are involved in the decision making and implementation of the project.

Composition of PSC

1. Chair - Secretary, MOFE, Bagamati Province
2. Members
    - Province Forest Director, Provincial Forestry Directorate, MoFE, Bagamati Province
    - Representative, MoFE, Government of Nepal
    - Representative, Ministry of Economic Affairs and Planning, Bagamati Province
    - Country representative, WWF Nepal
    - Representative, Ministry of Agriculture and Livestock Development, Bagamati Province
    - Department Chief, Department of Watershed Management and Environmental Science, Institute of Forestry (IoF), Hetauda
    - Faculty of Forestry, Agriculture and Forestry University (AFU), Hetauda
    - Representative Rastrapati Tarai, Chure, Madhesh Conservation and Development Board
    - Division chief, Science, Environment and Climate Change Division, MoFE, Bagamati Province-Member
    - Chief, Soil and Watershed Management Office, Ramechhap
    - Technical Team Leader (invitee)
    - Member secretary: Division Chief, Forest Management and Biodiversity Division, MoFE, Bagamati Province

Project coordination committee (PCC)

A Project Coordination Committee (PCC), chaired by the mayor of the Municipality/rural Municipality on seniority basis, will be set up to coordinate, review, and monitor project field activities. The PCC will also facilitate the implementation of project activities, and facilitate wider stakeholder engagement for the successful project execution.

Composition of the PCC

- Chairperson- District Coordination Committee Sindhuli
- Members
  - Mayor Kamalamai Municipality
  - Chairperson-Hariharpur Rural Municipality
  - Chairperson-Marin rural Municipality
  - Chairperson-Ghyanghlekh Rural Municipality
  - District Coordination Officer- Sindhuli
  - Divisional Forest Officer-Divisional Forest Office, Marin
  - Divisional Forest Officer-Divisional Forest Office, Sindhuli
  - Chief-Agriculture Knowledge Centre, Sindhuli
  - Chief, Livestock Support Expert Service, Sindhuli
- Member secretary: Chief-Soil and Watershed Management Office, Ramechhap

Project Management Unit PMU)

A Project Management Unit (PMU) will be set up consisting of officials of SWMR, not financed by the Project; and staff to be recruited on the open market according to WWF policies and procedures in coordination with MoFE, Bagamati Pradesh and seconded to the project. Chief of the Soil and Watershed Management Office, Ramechhap will serve as the Project Manager (PM), not financed by the project. Following the guidance of the PSC, the main functions of the PMU are to (i) oversee fiduciary arrangements, (ii) ensure overall efficient management, coordination, timely implementation of the agreed project work plan/result framework including the ESMF and related Safeguard plans, (iii) operational oversight of implementation activities, (iv) timely reporting, and for effective use of GEF/LDCF resources for the approved work plan and (v) monitoring of the project. The PMU will also serve as the secretariat to the project coordination committee and multi-stakeholder dialogue and action platform. PMU will be based in the project area.

The PMU will comprise of the following full-time staff:

1. Chief, Soil and Watershed Management Office, Ramechhap -Project Manager

2. Technical Team Leader (watershed and forestry expert)

3. Project Officer (Agriculture and Livestock)
4. Finance and Compliance Officer
5. Overseer (Lead Engineer)
6. MEL and Communication Officer
7. Gender, Social Inclusion and Safeguards experts
8. Administration Assistant
9. Project Assistants (2)
10. Project Support Staff

A project operational manual (POM) will be developed by the PMU at the beginning of the project for review and approval by the first meeting of the project steering committee and endorsement at the Project Inception Workshop. The POM will provide overall guidance on project management and operations and lay out the procedures for financial and programmatic operations.

2.4 Stakeholder Engagement

2.4.1. Stakeholder Engagement during Project Preparation

Preliminary stakeholder consultations were taken up at the time of project identification. These included municipal officials in the project area, federal, provincial and district government officials, and local community members. Altogether 28 individuals were consulted during the project identification phase; 21% of them were women. These consultations provided a basic understanding of key climate change and environmental issues in the project area, root causes of these problems, existing barriers and opportunities, priorities of the government, issues concerning implementation and role of different organizations in project implementation, ongoing climate-related initiatives and activities, and potential project activities, which helped formulate the project concept.

During the project design preparation, extensive stakeholder consultations were held to derive detailed understanding of the project situation and formulate the project execution strategy in detail. Major stakeholder consultation activities included:

- A Project Planning Committee (PPC) was formed to provide strategic guidance and support to the project preparation team, and to coordinate and facilitate the participation of the project stakeholders, in particular the provincial and local governments, in the project design process. The PPC met three times over the course of the project preparation. The PPC was chaired by the Joint Secretary, Planning, Monitoring and Coordination Division, MoFE. Other members included the GEF Operational Focal Person from the International Economic Cooperation Coordination Division, Ministry of Finance, Under Secretary of the Planning, Monitoring and Coordination Division, MoFE, Department of Forests and Soil Conservation, MoFE, Climate Change Management Division, MoFE, Gender and Climate Change Focal Person of MoFE, Provincial Forest Director of Bagamati Province, and WWF Nepal.
- A series of stakeholder consultation workshops as shown below:
  - **Project development inception workshop** on 1st October 2021, to familiarize the policy-level project stakeholders with the project, its key components and funding; introduce the plan and process for the project development, and elicit initial feedback and suggestions for the project development from the participants. The workshop was chaired by the Joint Secretary, MoFE, and participated by 19 officials from relevant government agencies including the provincial forest department, NGOs and international development agencies.
  - **Field-level project design workshops** were held with municipality officials and local communities from January 3rd to January 8th, 2022to disseminate baseline assessment information and elicit feedback and clarifications. The objective of these consultations was to also closely consult them to identify project sites, identify specific project activities in the identified sites, and assess capacity of municipalities in accordance with GEF capacity assessment indicators. At these workshops, the project activities were discussed with the government officials and local communities in the project area, to participatively appraise the feasibility of the activities and their suitability to local communities' needs for adaptation to climate change. Activities were modified, where necessary, in accordance with the suggestions from the local government officials and communities. Altogether, these workshops had 178 participants (104 from Kamalamai Municipality and 74 from Marin Rural Municipality). Of these 125 (70.2%) were men and 53 (29.8%) were women. In

terms of ethnicity of the participants, 137 (77%) belonged to indigenous group, 28 (15.7%) to Dalit caste, and 13 (7.3%) to Brahmin/ Chhetri castes.

- **Project Implementation arrangement meetings** were held between 19-24 February 2022 with the Mayor/Chair of the three municipalities, Kamalamai, Marin and Hariharpur Gadhi and MoFE of Bagamati Province, Ministry of Economic Affairs and Planning of Bagamati Province and Ministry of Land Management, Agriculture and Cooperatives of Bagamati Province with participation of the Honourable Minister and Secretary of Forests and Environment including participation of GEF Operational Focal Point from MoF.

- Key informant interviews and focus group discussions were conducted from September 3rd to September 9th, 2021, for the GESI analysis. A total of 62 people were consulted during the GESI assessment in the project area. This included 52 women (83.8% of the total respondents), 47 indigenous people (75.8%), and eight Dalits (12.9%).
- Individual consultations and focus group discussions were conducted between September and December 2021, with a total of 385 people to assess climate risks and vulnerabilities in the project area, capacity of municipalities and other local agencies for CCA mainstreaming (project component 1), and community livelihoods, natural resources management, and vulnerable community livelihood assets and infrastructure in the project area (component 2). The consultations included 274 men (71.2%) and 111 women (28.8%). In terms of ethnicity, 137 (77%) belonged to indigenous group, 28 (15.7%) to Dalit caste, and 13 (7.3%) to Brahmin/ Chhetri castes.
- Household survey were carried out in the project area to secure first-hand socio-economic baseline information of the local population in relation to agriculture, livestock management, water use, energy use, climate change knowledge, and income. A total of 419 households in the project area were included in the survey: 66 each in Kamalamai Municipality and Ghyanglekh Rural Municipality; 155 in Marin Rural Municipality; and 132 in Hariharpur Gadhi Rural Municipality. Women comprised 42% of the total respondents and men comprised 58%. The majority (80.2%) of the respondents were between 30 to 59 years old. Other respondents were between 18 to 29 years old and older than 60 years of age. In terms of ethnicity, 72.6% of the households belonged to indigenous group, 19.3% to Dalit caste, and the remaining 8.1% to Brahmin/ Chhetri and other castes.

Details on the engagement of various stakeholders in the project design can be found in Appendix 10: Stakeholder Engagement Plan.

2.4.2. Stakeholder Engagement during Project Implementation

The project seeks to strengthen the engagement of all related stakeholders towards unified and coherent understanding and delivery of integrated approach to climate change adaptation at the watershed level, with enhanced capacity for CCA mainstreaming, climate-resilient livelihoods, and NbS for climate disaster risk reduction. Given the localized nature of the project, the engagement of local stakeholders, in particular the municipal and ward authorities, divisional and sub-divisional forest offices, CFUGs and LFGs, and the local farmers, will be the main actors in project implementation. The MoFE of Bagamati Province) will function as the national project executing agency to coordinate, guide, backstop and enable project implementation in the field.

The engagement of the various stakeholders in project implementation is outlined in the Appendix 10: Stakeholder Engagement Plan.

2.5 Gender Equality and Social Inclusion

2.5.1. Gender Equality and Social Inclusion Status in Nepal

According to the National Housing Census 2011, women constitute 51.5% of Nepal's total population. As mentioned earlier (section 1.4.1), over 125 different castes and ethnic groups can be found in the country. About 36% of the country's population is indigenous people and another 13.6% make up the Dalit population. Nepal is predominantly a patriarchal society; men are generally the ones who liaison with external communities and make decisions on resource management while women manage the work and operations within the household. Historically, discrimination against women and ethnic minorities in Nepal has been severe. This is now being steadily removed with modern policy reforms and an increasing recognition of the importance of an egalitarian society in a democracy. However, discrimination against women and minorities is still an issue the country faces. The differences are more exaggerated in the rural areas due to weak implementation of GESI policies and strategies employed by the government. Low levels of education, high poverty rates, and deeply entrenched patriarchal customs are major impediments to furthering gender equality in Nepal.

The Government has been steadily improving the gender gaps and inequalities women face. As per global Human Development Report data for Nepal from 1995 to 2018, along with calculations for the National Human Development 2020 report, Nepal has made improvements in reducing gender inequality in human development. Its gender inequality value fell from 0.71 in 1995 to 0.48 in 2015, a decrease of 31%. Since 2015, the gender inequality score has remained fairly stagnant at around 0.479. Nepal is ahead of all South Asian countries except Bhutan, the Maldives and Sri Lanka in terms of lower gender inequality in human development. Nepal's females share of seats in parliament is among the highest in South Asia. However, it significantly lags behind in terms of maternal mortality ratio, fertility rate and percentage of adult females with secondary education.

2.5.2. GESI Policy Framework

The Constitution of Nepal (2015) is the overarching law and policy that structures the country to be an inclusive state and guarantees the right to equality for all its citizens. It expresses the determination to create an egalitarian society based on the principles of proportional inclusion and participation, and to ensure equitable economy, prosperity and social justice. Positive constitutional provisions include affirmative action to address historical disadvantage and a ban on gender- or caste/ethnicity-based discrimination. The article on Rights of Women establishes for women, among other things, the right to equal lineage, right to participate in all bodies of the State, and right to property and family affairs. The Right to Equality further elaborates the special provisions by law for the protection, empowerment or development of citizens, including those described by the constitution as "socially or culturally backward." The Right to Social Justice establishes the people's right to participate in state bodies on the basis of the principles of inclusion and proportional representation.

Nepal's 15th Five-Year Plan (2019/20-2023/24) reinforces its emphasis on economic prosperity and social justice. It aims at longer term vision of 'Prosperous Nepal, Happy Nepal' by including poor and socio-economically disadvantaged communities, regions, classes and marginalized groups in the overall development process. It aims for conscious efforts on gender equality and addressing the issues of marginalized groups through

meaningful participation, targeted programs, productive employment, reducing income disparity and opportunity to equal access and distribution of resources. Sectoral strategies and guidelines, including for agriculture and forestry, are also in place to support GESI mainstreaming. These sectoral GESI strategies and guidelines emphasize participation of women, Dalits and other socially excluded communities in the formulation, implementation, monitoring and evaluation of sectoral policies, plans and programs. They recognize the need to identify the specific barriers faced by women, the poor, the vulnerable and the excluded in the sector concerned[38]. The National Climate Change Policy 2019 recognizes GESI mainstreaming as one of its objectives and mandates the need to address the concerns and circumstances of women, Dalit, indigenous people and disadvantaged groups in matters related to climate change.

At the international level, Nepal has ratified and adopted international instruments including the UN Convention on Elimination of All Forms of Discrimination against Women (CEDAW), the UN Declaration on the Rights of Indigenous Peoples and the International Labour Organization Convention on Indigenous and Tribal Peoples, 1989 (No. 169) and Beijing Platform for Action (BPfA) 1995 – all of which shows the country's commitment to GESI. Nepal is also committed to the SDGs, including SDG 5 on gender equality and empowerment of women and girls and SDG 10 on reducing inequality within and among countries.

2.5.3. GESI Analysis

The GoN and WWF are committed to Gender Equality and Social Inclusion (GESI) to ensure that the distinctive circumstances and needs of women and men, and marginalized communities, including their access to resources and benefits and participation in decision-making, are recognized and taken into account in all stages of project development and implementation. As a part of the project design, a GESI analysis of the project area was carried out. The key findings of the GESI analysis are summarized below:

Roles and Responsibilities, and Decision-making

Women play a significant role in the rural economy and livelihood system, which is predominantly based on agriculture supplemented by livestock rearing and use of forest products. Women are primarily engaged in household chores (fetching water, feeding cattle, cooking, etc.) and supporting men in agricultural and livestock keeping activities, men are engaged in economic development activities, decision-making and interactions with the outside world. According to the National Housing and Census 2011 Report, 52% of the population in the project area is made up of women. However, in terms of resident population in the project area, the actual proportion of women population in the project area is expected to be higher as many men leave the villages for employment and better incomes in the cities and foreign countries. In the absence of men, there is shortage of farm labour and women have to often shoulder additional responsibilities, adding to their workload. *Parma* (exchange labour) is the traditional labour system for planting rice in rural areas. This is, however, being increasingly replaced by wage labour. There is wage difference between women and men depending on the type of work undertaken. Land tilling is an arduous work, so men are paid around NRs 1,000 a day whereas women get around NRs 500 per day for sowing, weeding, manuring of the field and other agricultural chores. In the wake of Covid-19 pandemic, many men

[38] A Common Framework for Gender Equality and Social Inclusion, GESI Working Group, International Development Partners Group, 2017.

have returned to the villages. However, the migrant returnees have shown less inclination towards field-based agriculture and generally opt for vegetable growing (tunnel farming) and livestock rearing. So, women end up taking major responsibility for field-based agricultural activities whilst also assisting men in vegetable growing and livestock rearing. While women have a larger responsibility for daily household and agricultural chores, incomes from agriculture and other household activities are primarily controlled by men.

Women play a key role in community forest management. A national review of the CFUGs in Nepal undertaken by the MoFE found that women led CFUGs were performing better than other CFUGs. Focused group discussions with a women-dominant CFUG and a men-dominant CFUG in the project area revealed that indeed the women-dominant CFUG was functioning better. The forest conditions are more significantly linked with women's wellbeing as they are the ones who have to collect fuelwood, fodder, leaf litter and other NTFPs from the forests on a daily basis while men carry out forestry activities that are much less frequent such as collection of timber, making of fire lines, fencing and forest patrolling. Consequently, women also tend to have a more intimate knowledge of the state of forests in their locality than the men. Women generally play a supportive role in CFUG meetings and general assembly while men have a more active leadership and decision-making role. This is, however, gradually changing and women are starting to play a more active role in decisions related to community forest management.

Access to and control over resources

Community forests and leasehold forests provide access to forest resources to meet local community needs for fuelwood, fodder, timber, and NTFPs. All CFUGs are required to have at least 33% women representation in keeping with the government's GESI policy, and leasehold forests are geared towards handing over state forests to poor/ socially disadvantaged households for improvement and management to support their livelihoods. In the project area, while, on average, women make up 33.98% of the community forest users' group members, there are nine wards that have less than the mandatory 33% women representation. Women are involved in collection of a wide range of forest products for subsistence as well as to make additional incomes, such as through sale of fuelwood, Himalayan bamboo shoot (locally known as *Nigalo*), and *Shorea robusta* (Sal) leaves. Community forests and more particularly the leasehold forests are used for cultivation of a variety of NTFPs to generate additional incomes, thus helping the poor households who are the target beneficiaries of leasehold forests.

Norms, values, and perspectives

From a social and cultural perspective, the predominant patriarchal mindset still underestimates the role and position of women. Key informant interviews and focus group discussions reveal that male dominant CFUGs often undermine opinions coming from women. Similarly, marginalized and socially disadvantaged groups are considered incapable, and their presence and opinions are generally not valued in the planning and decision-making process. This typical mindset acts as a barrier for women and other marginalized groups to actively participate in and benefit from development programs and plans.

Awareness of GESI policies and laws

Although there is a strong policy and legal framework (see subsection 2.5.2) to support gender equality and inclusion of socially disadvantaged groups, local stakeholders have very little understanding of the various GESI-related policies and legislation. The level of awareness is even minimal in the case of women and marginalized communities due to lack of education and exposure. Due to weak implementation of GESI policies and strategies, meaningful participation of women and socially excluded groups is lacking. So, there is a need to create and enhance awareness of the GESI-related policies and laws among the policy implementors at the local level as well as the policy beneficiaries.

Impacts of climate change and environmental degradation on women, poor and vulnerable groups

Climate change affects both men and women, but the impacts are more severe on women because of the kind of household chores that they are associated with. In the Marin watershed, women and girl children, who are generally the ones tasked with water collection, have to now fetch water from longer distances in dry season with winter precipitation decreasing over the years and nearby water sources drying up. Water shortage has also led to poor health and hygiene among the local people as well as disputes including squabbles between women at the time of water collection. Forest fire is one of the causes of forest degradation. With warmer temperature and decreased precipitation in the dry winter season, forests are becoming increasingly susceptible to forest fires. The effects of forest degradation are more directly felt by women as they are the ones who have to search for and collect fuelwood, fodder and other NTFPs on a daily basis. Besides with women taking on more responsibility for agricultural activities due to migration of men to cities and foreign countries, the burden of coping with the impacts of climate change on agriculture, such as crop failure due to drought, washing away of agricultural lands due to landslides and floods, pest and disease due to extreme weather, and hailstorm, falls directly on women in many households. Agricultural fields close to the rivers and rivulets are inundated by sediment and debris or washed away in the event of heavy rains and floods. Many of these agricultural fields belong to poor households. In addition, it is the women who have to take up the grueling and time-consuming task of clearing the agricultural fields from gravels and other debris deposited by floods.

Most of the indigenous communities in the project area inhabit and cultivate the uphill areas, which are highly prone to soil erosion in the event of heavy rainfall due to the delicate geological formation and steep topography. With little in terms of soil and water management, soil and soil fertility of farmlands on steep slopes are lost each year leading to low agricultural productivity. Small farm landholding and low household incomes among these communities make soil conservation interventions unaffordable for them. Furthermore, sedimentation, debris flow and hydrological changes have led to depletion of fish species and their population. This has affected the livelihoods of fishing communities, such as the Majhi, in the project area. Many poor households have their agricultural lands near rivers, rivulets and creeks. Heavy rains, debris flow and flooding downstream have led to rise of riverbeds and cutting of riverbanks, damaging adjacent agricultural lands.

There is a strong poverty-climate change nexus. The impacts of climate change are disproportionately higher on impoverished communities as they have limited resources to employ adaptive measures and cope with climate impacts. At the same time, poor people are likely to engage in unsustainable livelihood practices (e.g. excessive collection of NTFPs, wildlife poaching) in absence of support for sustainable alternatives. This in turn would impact ecosystem services that help mitigate climate hazards.

2.5.4. Gender Action Plan

A Gender Action Plan (GAP) has been formulated to assist the project to ensure that the gender equality and inclusion of socially disadvantaged groups are adequately considered during the course of project implementation. The GAP identifies specific interventions, and indicators and targets for integrating GESI in each of the project activities and assigns responsible persons for their implementation. The timeframe and budget are also given for these interventions. See

Appendix 11: Gender Analysis and Action Plan.

2.6 Environmental and Social Safeguards

The proposed project has been identified as a category "B" (medium risk) project given that it is essentially an environmental project to address climate change impacts and associated environmental issues and enhance the climate resilience with capacity-building and physical interventions at the local level. Physical interventions will include community-based forest management, climate-resilient livelihood practices, and NbS activities for climate disaster risk reduction. These interventions are expected to generate significant positive and durable social, economic and environmental benefits but may also have potential environmental and social risks. However, any adverse environmental and social impacts due to project activities will be minor and site-specific and will be mitigated.

2.7 Monitoring and Evaluation

2.7.1. Project Staff Dedicated for Monitoring and Evaluation

The Project Management Unit (PMU) will have the main responsibility for ensuring the monitoring and evaluation activities are carried out in a timely and comprehensive manner, and for initiating and facilitating key monitoring and evaluation activities, such as the independent external evaluations at the midterm and end of the project.

The following staff within the PMU will serve various roles and function in project M&E:

Technical Team Lead: The Technical Team Lead is responsible for completing project progress reports and ensuring that the project M&E plan is implemented to WWF and GEF standards, on time to meet reporting deadlines and of the highest possible quality. The PMU lead oversees the collaborative development of annual project work plans (with implementing partners) and their implementation, based on the reflections of the progress reports and M&E plans.

M&E and Knowledge Management Officer: Under the guidance and supervision of the Technical Team Lead, the M&E and Knowledge Management Officer will be responsible for M&E activities including tracking project implementation against the project work plans. He/she will be responsible for consolidating, collecting and analyzing different data in relation to the project activities, outputs, and outcomes, managing the M&E plan and results framework of the project; and assisting the Technical Team Lead in preparing semi-annual/annual reports on project progress. Through the collection and analysis of high quality and timely data inputs, he/she will be responsible for ensuring that the project maintains its strategic vision and that its activities result in the achievement of its intended outputs and outcomes in a cost effective and timely manner. In addition, he/she will be responsible for conducting an initial analysis that identifies potential opportunities for adaptive management and will seek feedback from the PMU and partners throughout the analysis.

Financial and Administration Officer: The F&A Officer will be responsible for tracking the budget and project expenditures, facilitating financial transactions between GEF, WWF, and MoFE of Bagamati Province, and preparing and delivering the quarterly project-level financial reports included in the M&E plan.

Project Field Office Staff: At the field level, the Project Field Coordinator will coordinate and monitor the implementation of planned field activities with support from the Assistant Project Field Coordinators. He/ she will ensure that the project activities in the field are implemented in accordance with the approved work plans, including the ESMF and Safeguard Plans, maintain necessary documentation, and communicate project progress to the Technical Team Lead as per reporting requirements. The GESI and Safeguards Coordinator will

monitor and report on the implementation of the Gender Action Plan, and the environmental and social safeguards in coordination with other field office staff.

2.7.2. Monitoring and Evaluation Instruments

The PMU and Project Executing Agency is responsible for the following reporting elements and activities:

Project Results Framework: The main instrument and point of reference for planning project activities, monitoring project progress and evaluating project results will be Appendix 5: Project Results Framework. The results framework identifies and describes two indicators for the project objective and two to three indicators for each expected project outcome. It provides the baseline for each of these indicators and targets against the baselines, outlines sources/ methods for verification, and assigns responsible person/ entity. The monitoring of the results indicators throughout the life of the project will be necessary to assess the extent to which the project has successfully achieved its expected results. Yearly reporting on the PRF will contribute to the annual project development objective rating.

Annual Work Plan Tracking: Towards the end of each project year, the PMU will work with project implementing partners to develop a detailed Annual Work Plan and Budget (AWPB) that includes targets for key activities to achieve the outputs. When possible, the development of the AWPB will take into account suggestions for adaptive management and lessons learned that result from the reflections workshop and which are reported in the biannual Project Progress Reports. The AWPB will be given a no-objection from the WWF GEF Agency and endorsed by the Project Steering Committee prior to start of the next project year. Tracking against the AWPB targets will be reported on annually, and the end of year tracking will contribute to the project's implementation progress rating.

Quarterly Field Reports: The PMU will receive quarterly field reports from the project implementing partners, using a Project Progress Report template. These reports will track progress on project activities, challenges encountered, expenditures, lessons learned, adaptive management applied, and GESI/ safeguards aspects.

Quarterly Financial Reports: The project's F&A Officer will submit a financial progress report every three months using the WWF Network Standard financial reporting template. These reports will be delivered to the WWF-GEF Agency and the WWF-US Program Operations team and will include information on expenditures to date along with expected future expenditures and requests for disbursement to cover expected expenditures from the next quarter.

Project Progress Reports (PPRs): The PMU will deliver a Project Progress Report to WWF on a six-monthly basis using the WWF-GEF Project Progress Report (PPR) template. The report will include: self-rating of project development objective and implementation progress, and risks using WWF/GEF rating criteria; action plans for sub-optimal ratings (Annual PPRs only); summary of project outcomes and impacts based on project M&E plan including PRF plus tracking of output-level indicators (Annual PPRs only); challenges and strengths of the project; progress of project based on approved annual work plan; lessons learned and opportunities for adaptive management; and financial progress.

Annual Adaptive Management Review: At the end of each year of the project, the PMU, project implementing partners and other key stakeholders will convene and conduct a review exercise to improve the strategic direction of the project and aid planning forward. At each exercise, a review of the M&E data, project progress and challenges will occur, and the project theory of change will be assessed to decide whether or not any assumptions or strategies need modification. This will provide opportunities for adaptive management that will lead to changes in the project design, management or operation. The changes will be largely reflected and

incorporated into the new Annual Work Plans. All modifications will be reviewed for no objection by the Project Steering Committee and the WWF GEF Agency.

Annual Project Audit: The project will be subjected to statutory audit annually by a registered certified Chartered Accountancy Firm. The audit conducted based on Generally Accepted Accounting Principles and other applicable standards of the country. A copy of the audit report must be submitted to the WWF-GEF Agency and to the government authorities as required by the laws. The books of account and other financial records of the project shall at all reasonable times be available for inspection, review, and audit by the WWF-GEF Agency.

Project Closure Report: The executing agency and PMU will develop a project closure report, using the WWF GEF Agency template. The report will outline the same areas as the PPRs, but will be cumulative for the whole project period, and will also include information on project equipment handover, an assessment of WWF GEF performance, an exit and sustainability plan, and will focus on key lessons from the project. This report will be due within one month of project closure.

GEF Tracking Tools: The GEF Capacity Development Tracking Tool and the GEF-7 CCA Results Framework Tracking Tool apply to this project. The GEF Capacity Development Tracking Tool (Annex…) provides baseline scores for five capacity results using a total of 15 indicators and provides target scores for the mid-term and end of the project. The PMU will assess progress towards the capacity results at the mid-term and at the end of the project. The GEF-7 CCA Results Framework Tracking Tool (Appendix 6 GEF-7 CCA Framework) shows project baselines and targets for relevant GEF-7 CCA Core Indicators and relevant indicators of GEF-7 objectives, outcomes and outputs. Progress towards these targets will be assessed at the mid-term and end of the project.

Annual WWF-GEF Project Implementation Report (PIR): At the end of each calendar year, the WWF-GEF Agency will deliver to the GEF Secretariat an Annual Project Implementation Report (PIR), building on the semi-annual PPRs delivered by the PMU. The PIR includes general project information, implementation summary, results framework (tracking of high-level M&E plan), ratings of GEF rating criteria, and financial status.

Annual WWF-GEF Monitoring Review (AMR): In August each year, the WWF-GEF Agency will send to the GEF Secretariat a Monitoring Review: an Excel document with ratings for every project in the WWF-GEF Agency's portfolio, including this project. The ratings will be determined by the WWF-GEF Agency in conjunction with the PMU.

Supervision Mission Reports: Annually the WWF-GEF Agency will conduct a supervisory support mission to discuss project progress with the PMU, key stakeholders and executing partners, and guide and backstop the PMU and project executing partners depending on issues emanating during the mission. The PMU will assist with organizing logistics for the support mission in communication and coordination with the WWF-GEF Agency, and the mission will serve to assist the WWF-GEF Agency in supervising project implementation and monitoring WWF Safeguard Policies in the project regions. The WWF-GEF Agency will develop a report for each annual mission, to which the PMU will respond and adapt its action plan.

Mid-term Project Evaluation: In coordination with the PMU, the WWF GEF Agency will organize an independent Mid-term Project Evaluation (MPE) before the end of the third year of project implementation, providing an external evaluation of the project progress, effectiveness and efficiency to date and recommendations for improvement of project performance in the second half of the project. The WWF-GEF Agency in collaboration with the PMU and the Program Steering Committee will provide a formal management response to the findings and recommendations of the MPE.

Terminal Project Evaluation: An independent Terminal Project Evaluation (TPE) will take place within six months of project completion providing an external evaluation of the project progress and achievements, and project performance in terms of effectiveness, efficiency and sustainability. As with MPE, this will also be organized by the WWF GEF Agency in coordination with the PMU. It will provide recommendations for GEF and its agencies on future related projects and to the project team on consolidation of project achievements and impacts after completion of the project. The WWF-GEF Agency in collaboration with the PMU and the Project Steering Committee will provide a formal management response to the findings and recommendations of the PFE.

The Terms of Reference for the MPE and FPE will be drafted by the WWF-GEF Agency in accordance with GEF requirements. Qualified evaluator(s) with experience in evaluating GEF projects will be employed for conducting these evaluations. The funding for the evaluations will come from the project budget.

2.7.3. Monitoring and Evaluation Plan and Budget

The table below summarizes the purpose, timeframe, budget and responsibility for M&E activities and documents that would inform project progress and performance over the course of project implementation:

Table 6: Monitoring and Evaluation Plan

M&E Activity/ Document	Purpose	Timeframe/ Frequency	Responsible	Budget (USD)
Project Inception Workshop and Report	▪ Summarize decisions made during inception workshop, including changes to project design, budget, project results framework, etc; ▪ Endorse implementation arrangements and initiate implementation (3.1.2.1)	Within three months of project commencement	Technical team lead, Project Manager and M&E/ KM Officer (PMU)	7,500
Quarterly Field Report	Inform PM/PMU on progress, challenges and needs of activities in field.	Every three months	Project Field Office Staff	Staff costs built into components estimated to be $ 10,167
Quarterly Financial Reports	Assess financial progress and management.	Every three months	F&A Officer (PMU)	Staff costs built into components estimated to be $ 10,167
WWF Project Progress Report (PPR) with RF and workplan tracking.	▪ Inform management decisions and drafting of annual workplan and budget; ▪ Share lessons internally and externally; ▪ Report to the PSC and GEF Agency on the project progress.	Every six months	Project Manager, Technical team lead, and M&E/ KM Officer (PMU)	Staff costs built in components estimated to be $ 10,167

M&E Activity/ Document	Purpose	Timeframe/ Frequency	Responsible	Budget (USD)
Supervision Mission and Reports	▪ Discuss project progress with the PMU, key stakeholders and executing partners; ▪ Guide and backstop the PMU and project executing partners depending on issues emanating during the mission; ▪ Ensure compliance of WWF/GEF standards and requirements	Annually, at the end of each year	WWF-GEF Agency in coordination with the PMU	Costs covered by WWF US
Annual WWF-GEF Project Implementation Report	▪ Inform GEF SEC on project implementation status, progress against results framework (tracking of high-level M&E plan), ratings of the project implementation as per GEF criteria, and financial status; ▪ Build on all periodic project progress reports.	At the end of each project year	WWF-GEF Agency in coordination with the PMU	Staff costs built into components estimated to be $ 10,167
Bi-annual and annual monitoring visits	Monitor project progress and project activities in the field, understand field issues and provide backstopping/ guidance (3.1.2.2)	Biannually/ Annually	WWF-GEF Agency in coordination with the PMU	30,000
Bi-annual and annual review and planning workshops	Conduct bi-annual and annual review for project progress, reflect on project implementation, and plan including adaptive management (3.1.2.3)	Biannually/ Annually	PMU	14,400
Project Steering Committee and Coordination Meetings	Conduct PSC/PCC meetings to review project progress, provide oversight, guidance and decisions. Coordination of project plans, budgets and activities (3.1.2.5)	21 meetings over the project duration	PMU	18,000
GEF Capacity Development Tracking Tool	Inform GEF SEC on progress in capacity development against capacity results and indicators outlined in the GEF Capacity Development Tracking Tool	CEO endorsement, mid-term (before MPE) and end of the project (before TPE)	WWF at the time of CEO endorsement, and thereafter Technical team lead, and M&E/ KM Officer (PMU)	WWF to cover costs outside the project activities
GEF-7 CCA Results Framework Tracking Tool	Inform GEF SEC on the contribution of the project against relevant indicators and targets of the GEF-7 CCA	CEO endorsement, mid-term (before MPE)	WWF at the time of CEO endorsement, and thereafter Technical team lead,	WWF to cover costs outside the

M&E Activity/ Document	Purpose	Timeframe/ Frequency	Responsible	Budget (USD)
	Results Framework Tracking Tool	and end of the project (before TPE)	and M&E/ KM Officer (PMU) in coordination with PMU	project activities
Mid-term Project Evaluation Report	▪ External formative evaluation of the project; ▪ Recommendations for adaptive management, course correction and improved project performance in the second half of the project period depending on evaluation findings; ▪ Inform PSC, GEF and other stakeholders of project progress and performance to date.	Mid of the third year of the project	External evaluator(s) recruited by WWF GEF Agency in coordination with PMU	10,000
Terminal Project Evaluation Report	▪ External summative evaluation of the overall project; ▪ Recommendations for future project design and implementation, consolidation of project results, lessons learnt and good practices, and sustainability of project interventions.	Towards the end of the project, before two months of project completion	External evaluator(s) recruited by WWF GEF Agency in coordination with the PMU.	10,000
Project Completion Workshop and Closure Report	▪ Review project completion and officially close the project; ▪ Provide cumulative progress report for the entire project period.	Within a month of project closure	WWF-GEF Agency in association with national executing partner	-
Total				**130,067**

2.8 Project Budget

CATEGORY		PROJECT TOTAL
Component 1: Enabling environment for mainstreaming climate change	**$**	**354,893**
TOTAL OUTCOME 1.1	**$**	**354,893**
Output 1.1.1: Training and exchange visits for community-based organizations (CBOs), municipality and provincial officials on climate change impacts and risks assessment tools and methods for mainstreaming CCA in all sectors and municipal plans in an integrated approach.	$	194,711
Output 1.1.2 : CCA-integration guidelines developed for communities and municipalities to support policies and plans on water, agriculture, forestry, and rural development for four municipalities in the Marin watershed, and integrated in the municipal planning process.	$	108,259
Output 1.1.3 : Multi-stakeholder platform established in the Marin watershed to drive the mainstreaming of adaptation in an integrated watershed approach.	$	51,923
Component 2: Enhanced Resilience of Local Communities to Climate Change	**$**	**7,945,559**
TOTAL OUTCOME 2.1	**$**	**4,060,566**
Output 2.1.1 : Climate-adaptive technologies and practices for agriculture, livestock management and water management demonstrated and expanded.	$	4,060,566
TOTAL OUTCOME 2.2	**$**	**3,884,993**
Output 2.2.1: Management of community forests strengthened, and vulnerable catchment areas rehabilitated and protected for reduced vulnerability to climate-induced disaster risks such as landslides, sedimentation, flooding and forest fires.	$	3,884,993
Component 3: Monitoring, Evaluation and Knowledge Management	**$**	**294,131**
Outcome 3.1	**$**	**294,131**
Output 3.1.1: Knowledge products are developed and disseminated to enable upscaling of the project activities.	$	164,064
Output 3.1.2: Project progress tracked effectively through project M&E.	$	130,067
PMC	**$**	**429,729**
TOTAL PROJECT COSTS	**$**	**9,024,312**

3 Private Sector Engagement

The project will work with the local governments, specifically municipal and ward offices, and vulnerable and marginalized communities that are socially bound together through community-based institutions such as CFUGs. Hence, major focus will be on strengthening the local government agencies and community-based institutions. There is an opportunity for private sector engagement for sustainability and upscaling, particularly in Component 2 which focuses on diversifying livelihoods and engaging local communities in small-scale income generating enterprises. Under this component, the proposed project will engage with local private service providers such as agro-vet enterprises and micro-enterprises, other relevant projects that address these issues and micro-finance institutions and cooperatives to build capacity, document and disseminate locally appropriate climate smart technologies and provide enabling environment and access to credit facilities for communities. Though the local agriculture is subsistence in nature, the private sector will be engaged to upscale and add value to the local production systems. Partnerships will be facilitated between local communities and the private sector to promote commercialization of agricultural and livestock produces emanating from climate-adaptive practices. This will be pursued through a cooperative approach to protect the interest of small farmers whilst fostering private sector interest in working with the small farmers.

Section 3: GEF Alignment and Justification

3.1 Additional Cost Reasoning

The proposed project builds upon a strong national commitment to strengthen the climate resilience of vulnerable communities and ecosystems in general, and to conserve the Churia region in the face of increasing challenges to the environment and growing vulnerability to climate change. The GoN updated the National Climate Change Policy to enhance its relevance to current circumstances and needs at the national as well as international levels. The Policy is a guiding document and lays out working policies and strategies to address climate change in a comprehensive manner. Immense importance is attached to the Churia region due to its critical socio-cultural, environmental and hydrological features, combined with the growing environmental and climate change threats to the region. The GoN has embarked on a twenty-year President Churia-Terai Madhes Conservation and Management Master Plan since 2017 to provide strategic direction for conservation activities in the Churia and support the integrated management of upstream and downstream land use activities, promoting an integrated landscape approach, and poverty reduction through conservation and sustainable management of the natural resources and improvement of ecosystem services. However, Nepal – as a least developed country – is unable to come up with enough funds required to cover the additional costs of climate change risk management in the highly vulnerable Churia region. With the current level of funding, the efforts in building resilience of communities through ecosystem-based adaptation remain limited and dispersed, and a comprehensive watershed approach cannot be implemented to address climate vulnerabilities of an ecological unit such as the Marin watershed.

Despite the strong commitments to address climate change impacts and to conserve the Churia region, there is insufficient foothold and capacity to remove the institutional, technological and social barriers to achieving enhanced adaptive capacity and resilience against climate change impacts in the project area. In the baseline situation, the institutional capacity of the local governments and other relevant local stakeholders to coordinate, collaborate and plan for climate change adaptation and mainstream climate change issues in local development in an integrated manner at the watershed level is highly deficient. If the current situation continues, activities in Marin watershed will continue without coordination between the municipalities and sectors, local and sector plans will have little or no CCA integration, and local development and CCA will continue to be planned and implemented in silo and remain ineffective against climate change impacts and risks from landslide, flood,

sedimentation/ siltation, drought, and forest fire. As a result, climate change impacts will likely exacerbate, leading to increasing loss of livelihoods and livelihood assets impoverishing local communities. Women, poor and vulnerable communities, who are most vulnerable to climate change, will continue to have little voice in local development and climate change matters and remain with little access to knowledge and technology for climate-adaptive agriculture, livestock management and water management practices.

In the baseline situation, local communities have very limited exposure and access to climate-adaptive technologies and practices, and extension services remain deficient due to lack of training among local government staff and CBOs. Local farming systems remain predominantly conventional with little or no integration of climate-resilient methods and practices while climate change impacts are becoming increasingly profound over time. Community forests and leasehold forests lack proper management due to inadequate training and funds. As a result, there is excessive collection of forest resources, overgrazing, encroachment and forest fire, leading to localized forest degradation in the project area. Climate-induced hazards and disasters, such as landslide, sedimentation and debris flow, flooding, drought and forest fire threaten farmlands, forest resources and community livelihoods every year. Existing climate disaster risk reduction interventions are ad hoc and too small to be effective. If the current situation continues, farm productivity and incomes will reduce and farmers are likely to abandon agriculture, impacting food security. In absence of alternative livelihoods, local communities may exploit forest resources and engage in unsustainable practices that damages the environment. This combined with ineffective community forest/ leasehold forest management would intensify and expand forest degradation, which would in turn diminish the resilience of forest ecosystems and induce further climate hazards and disasters. In the absence of GEF intervention, climate disaster risk reduction interventions will be ad hoc and with no upstream-downstream linkage. In such situation, landslides, sedimentation and debris flow, and flooding will continue to occur year after year, affecting farmlands, forests, community infrastructure and riverine ecosystem, which are critical livelihood assets for the local communities.

The table below provides a comprehensive overview of the adaptation rationale of each project component.

Table 7: Summary of Additional Cost Reasoning for the Project Intervention

Barriers	Baseline Scenario	GEF Alternative Scenario	Adaptation Benefits
Component 1: Enabling environment for mainstreaming climate change			
• CCA mainstreaming is constrained by lack of sound and holistic understanding of local climate risks and vulnerabilities, and their impacts on key sectors. • Technical capacity in terms of knowledge and tools for CCA mainstreaming is non-existent among local government officials and other local stakeholders. • There is no mechanism for coordination among stakeholders including between the municipalities and government sectors. Planning and implementation of local	• There is some climate risk and vulnerability information up to the district level but there is no systematic assessment and information on climate risks and vulnerabilities at the municipality level and for Marin watershed. • There is a national framework for LAPA but none of the municipalities have yet developed a LAPA or an equivalent local plan to enable CCA mainstreaming. • There is no hands-on tool for local-level CCA mainstreaming nor do the municipalities and local sector agencies have	• The project will train local government officials and CBOs and equip them with the knowledge and tools for participatory assessments of local climate risks and vulnerabilities, and CCA mainstreaming. • The project will support the municipalities and key sector agencies to carry out participatory assessments of local climate risks and vulnerabilities in a systematic manner, which will enable them to fully understand climate impacts in key sectors and CCA mainstreaming needs. • Guidelines for CCA-integration in local plans will be developed and the	• CCA mainstreaming will be more effective based on sound and systematic understanding of the climate risks and vulnerabilities, and their impacts. • Dialogue and coordination on adaptation planning and implementation will improve with better awareness and understanding of the climate risks and vulnerabilities, and their impacts. • Improved coordination between stakeholders will enable more effective and efficient use of adaptation resources, and synergy between various adaptation interventions. It will also help mobilize knowledge and views from multiple stakeholders, including

Barriers	Baseline Scenario	GEF Alternative Scenario	Adaptation Benefits
development and sector plans occur in isolation, resulting in piecemeal and ad hoc CCA investments, diluting their impact and causing wastage of limited funds. • Women, poor and vulnerable groups, who are more directly exposed to climate change risks and impacts, have limited access to knowledge, information and decision-making.	training in CRVA and CCA mainstreaming. • Municipalities have overall responsibility for local development plans and policies, which cover environment and climate change, but have no capacity to coordinate and systematically mainstream CCA in municipal and sector plans. • Municipalities rarely coordinate between themselves and synergize their activities, and the forestry sector functions outside the local government system as a part of the provincial/federal system. • There are women groups and women representation in some of the community groups such as CFUGs but they have little voice in the decision-making due to low literacy and limited access to knowledge and information.	project will support municipalities and sector agencies to formulate/ revise municipality and sector plans to integrate CCA as per the guidelines. • A multi-stakeholder platform will be established, providing the mechanism for dialogue and coordination between multiple stakeholders to facilitate a holistic and coordinated approach to climate change adaptation based on watershed as an ecological unit. This platform will ensure that women, poor and vulnerable groups are represented and have the equal opportunity to participate and contribute to decision-making for CCA.	women, poor and vulnerable groups, leading to better understanding and decision-making for CCA. • Enhanced knowledge and skill among local government officials to systematically conduct CRVAs and mainstream CCA in local plans and policies will lead to high quality CRVAs and CCA mainstreaming. • CCA-integrated local plans and policies will improve the quality and effectiveness of local development investments in various sectors, in terms of better adaptation and resilience to climate impacts.
Component 2: Enhanced Resilience of Local Communities to Climate Change			
• Local communities lack exposure and access to climate-adaptive technologies and practices. Particularly women, poor and vulnerable groups have limited access to knowledge and skills for employing such technologies and practices. • Municipalities are short-staffed as well as lack trained staff for delivery of extension services to build local awareness and knowledge for climate-adaptive technologies and practices. • Poverty is high in the project area, which hinders many households to employ climate-adaptive technologies and	• Agriculture and livestock management are the main community livelihoods but existing local farming systems are predominantly conventional with little or no integration of climate-resilience measures. • There is very limited extension services and technology transfer at the community level for climate-adaptive agriculture, livestock management and water management. • Water scarcity is a major problem especially during the dry winter season, which has become drier and warmer over the years. Current irrigation systems are primitive and largely made up of earthen channels which are easily predisposed to	• The project will invest in supporting climate-adaptive technologies and practices in agriculture, livestock management and water management through field demonstrations, community training, extension services, and provision of equipment and materials that are affordable, labour- and energy-efficient, and have low ecological impact. Indigenous knowledge will be garnered and integrated in the design of climate-adaptive technologies and practices to enhance their affordability, applicability and acceptability by the local communities. Project support will be extended to farmers commercialize agricultural and livestock products emanating from climate-adaptive practices	• 3,860 farm households will have adopted climate-adaptive technologies and practices in agriculture, livestock management and water management, directly benefitting at least 19,000 local people, including 50% females. • 540 ha of agricultural land will be brought under climate-adaptive management. • Agricultural productivity and livelihood incomes are expected to improve, enabling local households to invest further in climate-adaptive technologies and practices. • 29,000 ha of community and leasehold forests will be brought under improved management, enhancing forest ecosystem services and resilience against climate impacts. Additionally, it is expected to improve the

Barriers	Baseline Scenario	GEF Alternative Scenario	Adaptation Benefits
practices because of the additional costs involved. Poor households are further impoverished by crop and livestock-related damages/ losses caused by extreme weather. • Management of community forests and leasehold forests is weak due to lack of training and funds. • In absence of a coordinated and integrated approach, adaptation interventions to reduce climate disaster risks tend to be ad hoc with no consideration of upstream-downstream linkages.	erosion and seepage. Water-efficient technologies are also absent in the project area. • Crop and livestock insurance schemes exist in mountain areas of Nepal but poor households are unable to avail them because of lack of funds to pay premium, even when they are government subsidized. • Overall, forest cover is healthy but there is localized forest loss and degradation due to excessive use of forest resources, overgrazing, forest fire and encroachment. Community forestry and leasehold forestry constitute the main strategy for sustainable forest management at the local level. There are 143 CFUGs and 119 LFGs in the project area but many of them are unable to be effectively operational due to limited technical capacity and funds. • Climate disaster risks, such as landslide, sedimentation and flooding, occur frequently in Marin watershed with no systematic and holistic approach to arrest land degradation (primarily in the upstream areas) and control flood and riverbank expansion (in the downstream areas).	in collaboration with the private sector. • The project will support the poorest of the poor households in the project to secure crop and livestock insurance based on a set of criteria. • The project will strengthen the management of community and leasehold forests through support to 95 CFUGs and 110 LFGs with training and awareness-building, and provision of equipment and materials. It will also train local forest officials to strengthen the delivery of extension services and technical backstopping for management of community and leasehold forests. • NbS interventions to reduce climate disaster risks will be employed in two critical catchment areas, in a systematic and comprehensive manner beginning with upstream area and steadily moving into mid-stream and downstream areas. An integrated approach, combining a range of NbS interventions depending on local geologic conditions and the nature of the risk, will be implemented. Local communities will be trained to develop their skills required for implementation of the NbS interventions.	livelihoods of the participating CFUGs and LFGs, enhancing their adaptive capacity. • Six highly vulnerable catchment areas will be rehabilitated and/or protected from climate disaster risks through a series of NbS interventions with upstream-downstream linkages
Component 3: Monitoring, Evaluation and Knowledge Management			
Knowledge management is not a priority because of limited funds and human resources.	• There is no knowledge management system in the project area. • Research capacity is lacking and existing government M&E system is rudimentary and deficient to capture CCA aspect.	• The project will carry out case studies and field assessments to garner and analyse lessons learnt and best practices, including indigenous knowledge, on CCA, and disseminate them for replication and scaling-up. • The project M&E system will track project progress, appraise challenges, reflect on lessons, and adaptively	• There will be better visibility and awareness of watershed management concept, approach and practices for CCA and inform future policies and plans. • Knowledge management will facilitate replication and scaling-up of effective and sustainable CCA interventions, and generation of wider adaptation benefits with respect to agriculture,

Barriers	Baseline Scenario	GEF Alternative Scenario	Adaptation Benefits
		manage the project implementation. • Media and communication activities will be organized, and communication materials will be developed and disseminated to enhance the visibility of project activities and achievements, and highlight watershed management concept, approach and practices applied for CCA.	livestock management, water management, community and leasehold forest management, and climate disaster risk management at watershed level. • M&E will improve project implementation and ensure delivery of project results whilst also providing information for design of future adaptation projects.

3.2 Alignment with GEF Focal Area and/or Other Impact Strategies

3.2.1. Alignment with GEF Focal Area Strategy and Objectives

The project will directly contribute to the GEF-7 CCA Strategy goal "to strengthen resilience and reduce vulnerability to the adverse impacts of climate change in developing countries and support their efforts to enhance adaptive capacity." It aligns with the GEF-7 CCA Strategy objectives as described below:

Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation (CCA-1): The project will introduce and demonstrate climate-adaptive technology and practices, including NbS, to increase the resilience of agricultural livelihoods and livelihood resources against climate change and reduce the impacts of climate hazards and disasters particularly landslide, flooding, drought and forest fire. It will develop the capacity of local government agencies to deliver extension services as well as create community-based/ farmer-to-farmer learning opportunities to demonstrate and promote sustainable innovation and technology for climate-adaptive agricultural livelihood practices and management of livelihood resources such as farmlands, forests, grazing lands, and water.

Mainstream climate change adaptation and resilience for systemic impact (CCA-2): The project seeks to address climate change impacts through a holistic and integrated approach at the level of watershed as an ecological unit. It will work with municipalities and multiple stakeholders within the Marin watershed and enhance their capacity to collaborate, coordinate and mainstream climate change adaptation and resilience measures for a larger impact at the watershed level. It will develop the capacity of municipal and other key local agencies to conduct participatory assessments of climate risks and vulnerabilities and use the resultant information and knowledge for mainstreaming climate adaptation in local plans, coherent with the national framework for LAPA.

Foster enabling conditions for effective and integrated climate change adaptation (CCA-3): The project will create enabling conditions in terms of improved knowledge and tools for assessing climate risks and vulnerabilities and integrating climate adaptation in local plans. It will also support the establishment and operationalization of the MsDAP to facilitate information-sharing and coordination between multiple stakeholders for integrated and sustainable adaptation solutions to climate impacts at the watershed level.

3.2.2. Alignment with Sustainable Development Goals

The project will directly contribute to SDG 13: Take urgent action to combat climate change and its impacts. Within SDG 13, it will primarily contribute to the SDG target 13.1: Strengthen resilience and adaptive capacity

to climate-related hazards and natural disasters in all countries; SDG target 13.2: Integrate climate change measures into national policies, strategies and planning; and SDG target 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning. Secondarily, the project will contribute to SDG 1: End poverty in all its forms everywhere, in particular SDG target 1.5: 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. It will also contribute to SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture, especially in relation to SDG target 2.4: Ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and 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.

3.3 Adaptation Benefits

The adaptation benefits anticipated from the GEF/LDCF project are shown in **Table 8: Risk Analysis and Mitigation Measures** and summarized below:

- CCA mainstreaming and improved coordination between stakeholders will enable more effective and efficient use of adaptation resources, and synergy between various adaptation interventions. It will also help mobilize knowledge and views from multiple stakeholders, including women, poor and vulnerable groups, leading to better understanding and decision-making for CCA.
- Enhanced knowledge and skill among local government officials to systematically conduct CRVAs and mainstream CCA in local plans and policies will lead to high quality CRVAs and CCA mainstreaming.
- CCA-integrated local plans and policies will improve the quality and effectiveness of local development investments in various sectors, in terms of better adaptation and resilience to climate impacts.
- 3,860 farm households will have adopted climate-adaptive technologies and practices in agriculture, livestock management and water management, directly benefitting 19,000 local people, including 50% females. Consequently, agricultural productivity and livelihood incomes are expected to improve, enabling local households to invest further in climate-adaptive technologies and practices.
- At least 29,000 ha of community and leasehold forests will be brought under improved management, enhancing forest ecosystem services and resilience against climate impacts. Additionally, it is expected to improve the livelihoods of the participating CFUGs and LFGs, enhancing their adaptive capacity.
- Six highly vulnerable catchment areas will be rehabilitated and/or protected from climate disaster risks through a range of NbS interventions and community based natural resource management with upstream-downstream linkages. This will reduce loss of and damage to community assets and resources, and enable local communities to sustain and improve agriculture, livestock management, water management and local livelihoods in general in a more resilient and robust ecosystem.
- Knowledge management will facilitate replication and scaling-up of effective and sustainable CCA interventions, and generation of wider adaptation benefits with respect to agriculture, livestock management, water management, community and leasehold forest management, and climate disaster risk management at watershed level.
- M&E will improve project implementation and ensure delivery of project results whilst also providing information for design of future adaptation projects.

3.4 Risks and Proposed Mitigation Measures

Overall risk ranking of the project is medium and will be managed through the proposed mitigation measures. The key risks that could threaten the achievement of the project results through the chosen project execution strategy, and the mitigation measures that will be employed to manage them are outlined in Table 7. The risk

ranking is based on the likelihood of a given risk occurring combined with potential severity of its impact on the success of the project.

Table 8: Risk Analysis and Mitigation Measures

Risk Category	Identified Risks	Risk Ranking[39]			Mitigation Measures
		Likelihood	Severity	Rank	
Political	Political instability and/or deterioration in security situation	2	2	4	The project will pursue community-based approach working with CFUGs, farmers' groups, water/irrigation user groups and actively engage with the civil society, building on local institutions and norms that are resilient to political instability and changes. Extensive consultations were held with the officials of the municipalities and other local stakeholders, including community-based groups, during the project design process. This would have fostered local ownership of the project design, which is expected to continue into project implementation even if there is a change of local government. If and when there is a change in the local government during project implementation, the PMU will organize a meeting to fully inform the new government on the project, its progress and plan continued coordination, and follow-up with enhanced communication with key local government officials.
	Change in local government -- Local elections are expected to take place in a few months followed by provincial and federal elections. In general, elections would not impact project implementation but, in some cases, there may be delays in decision-making at various government levels.	3	2	5	
Operational	Staff turn-over in the project and municipalities	3	2	5	PMU staff will be renumerated fairly and will be recruited based on their motivation to help local communities and address climate change at the grassroots level. Should staff change occur, events will be organized to orientate new staff to the project strategy and operational arrangements. The PMU will maintain detailed and up-to-date documentation on project implementation so that there is no information gap for continued project implementation. Furthermore, the PMU will try to engage local human resources to the extent possible.
	Inadequate coordination with other relevant projects/ programs	2	2	4	The project executing agency, MoFE, Bagamati Province will ensure that the project steering committee has representation from all key provincial ministries and line agencies. Coordination and synergy with other relevant projects/ programs will be a key agenda item in the PSC meetings, as well as required to be reported in periodic project progress and implementation reports. Overall, the PMU will have the responsibility to ensure coordination with government agencies and other development partners including GEF/GCF projects.
	Inadequate coordination among stakeholders	3	1	4	At the local level, the project will establish a multi-stakeholder platform to facilitate information-sharing, dialogue and coordination between multiple stakeholders.

[39] Adapted from WWF Project and Program Management Standards. Likelihood: (1) Very Unlikely; (2) Unlikely; (3) Likely; (4) Very Likely.

Risk Category	Identified Risks	Risk Ranking[39]			Mitigation Measures
		Likelihood	Severity	Rank	
					At the upstream project management level, the project steering committee will be used as a key mechanism for information-sharing and coordination with relevant government ministries, line agencies and development partners.
	Insufficient government staff for delivery of extension services for climate-adaptive technology and practices	2	3	5	Local communities will be trained and community-based/ farmer-to-farmer learning approaches will be supported to promote and demonstrate climate-adaptive technology and practices. Technical Assistance provided in the form of project staffs at PMU will support the Executing entity.
	Low capacity to disburse and spend project funds	3	2	5	The PMU and WWF will work closely with the executing agency, MoFE of Bagamati Province, and other implementing partners to facilitate timely human resource recruitment, procurement of goods and services, ensure granting and subcontracting process for smooth implementation of planned activities.
Social	Communities may be unwilling to adopt new technology and practices	2	1	3	Participatory methods will be employed and close consultations with local communities will be undertaken to foster community participation and ensure that community needs, and priorities are fully prioritized in technology transfer. Special attention will be given to ensure that new technology and practices are responsive to the needs of women, poor and vulnerable groups. Technical guidance and backstopping will be delivered on a regular basis as per the needs of the local communities. Training and knowledge dissemination will be carried out concurrently to raise awareness and confidence among target communities for adoption of new technology and practices.
	Shifting priorities of local governments with a focus on infrastructure as compared to watershed/natural resources management which could negatively impact biodiversity.	3	2	5	A major project focus is on mainstreaming climate change and watershed management approach in local plans and policies in key sectors which should safeguard the environment and watershed from adverse development impacts, and ensure that infrastructure development fully take into account climate resilience measures. The project will also establish a multi-stakeholder platform, which will enable dialogue and cooperation among stakeholders to ensure that infrastructure development activities do not adversely impact the watershed and its ecosystem services.
	Youth outmigration due to lack of local employment opportunities leading to low youth engagement and effective implementation of project activities.	3	2	5	The project will engage youth through livelihood activities and build their capacities in areas that can generate local employment opportunities based on sustainable rural livelihoods and natural resources management within the scope of the project.

Risk Category	Identified Risks	Risk Ranking[39]			Mitigation Measures
		Likelihood	Severity	Rank	
	Conflict and inequity among communities over use of water, forests and other natural resources due to exploitation of resources and effects of climate change.	2	3	5	The project will closely work with local communities and the civil society to support community-based natural resource management in accordance with existing government laws and regulations, and adhere to norms and standards set for equitable benefit-sharing of natural resources. It will also apply WWF environmental and social safeguards to ensure that any potential conflicts over natural resources are effectively mitigated. Through the Gender ESI action plan, the project will ensure that the project interventions do not disadvantage women, poor and vulnerable groups, and instead bring enhanced benefits to them.
Physical	Road connectivity is poor and, during rainy season, many of the target communities and sites would become inaccessible.	3	2	5	Project work plans will take into account the local weather pattern. NbS interventions and the delivery of community training and extension services will be largely carried out before the onset of monsoon. Participatory learning will be promoted to facilitate transfer of knowledge and skills between farmers in the absence of extension services and guidance from local government officials and project staff due to inaccessibility during rainy season.
Disaster (climatic and non-climatic)	Climate-induced disasters (e.g. landslide, flooding) impede project implementation and negate project achievements.	3	3	6	The project will collaborate with municipalities, district line agencies and other key stakeholders to identify the high-risk areas and ensure preparedness while also facilitating local communities to rebuild and recover after such disasters with a focus on NbS while promoting green recovery and reconstruction. The project activities are designed and will be implemented in a manner that there is follow-up and support in such cases in following years and the project will also facilitate to leverage support from local government and other agencies where feasible.
	Non-climatic disasters (e.g. health epidemic, earthquake) impede project implementation and negate project achievements.	2	3	5	By and large, the project will rely on NbS interventions which will be relatively more resilient to disasters. In the event of health epidemic, the project will employ health protocols and good practices recommended by national and international health agencies to ensure that project activities are pursued with minimal health risk to the project staff and intended beneficiaries. Virtual interaction will be employed to the extent possible where physical interaction is to be avoided. Depending on the situation, work plans and implementation approach will be adapted to achieve project results.
Notes on Risk Ranking: Likelihood: (1) Very Unlikely; (2) Unlikely; (3) Likely; (4) Very Likely Severity: (1) Low; (2) Medium; (3) High; (4) Very High Rank: 1-3 Low Risk (Green); 4-5 Medium Risk (Yellow); 6-8 (High Risk)					

COVID-19 Risk Analysis

Table 9: Project COVID-19 Risk assessment

Risk category	Potential Risk	Mitigations and Plans
Availability of technical expertise and capacity and changes in timelines	Continued or renewed efforts in COVID-19 containment are likely over the course of project development and possibly into implementation.	The project development work plan and team will be built with this in mind, for example, selecting local staff and consultants to conduct stakeholder engagement to minimize the risks associated with international or outside consultants physically interacting with isolated, and rural communities. Project development will be managed by the WWF Nepal office in coordination with the Ministry of Forests and Environment, and the WWF GEF team will use remote technology to connect to in-country consultants and partners to design and consult on the project.
Financial Resources	Changes in baseline – It is not likely that any of the co-financing or baseline will be decreased or delayed due to the Pandemic.	The additional need for resources to address the effects of the pandemic will not likely affect the co-financing available for this project, as the funding for public health crises will not draw on the resources dedicated to the President Chure Conservation Program
Stakeholder engagement process	With the risks COVID-19 poses, extra precautions must be taken during project consultations and analysis in the field of local communities,	Local level consultation will only be undertaken if it complies to national to local government guidelines and WWF national office guidelines. For example, it is likely that a small number of staff engage stakeholders on a broader set of topics such as helpful nature based solutions, agricultural products for improvement, and related project topics in order to limit exposure. Staff conducting consultations will have PPE for themselves and for people they talk to in person. Additionally, COVID protocol will be developed and followed, such as testing, and supply of sanitizer and masks. In any case where either party is not comfortable to engage in discussions; it will not proceed. As much as possible, remote connections will be sought, for example via local government offices visiting communities. In all cases, continued attention will be given to ensuring the voices of IP, women, youth, and any underrepresented community members.
Future risk of similar crises	It is not anticipated that this project will have adverse impacts that might contribute to future pandemics, for example,	This will be a consideration during project implementation that the PMU is made aware of. There are some activities that may reduce current forest

	there will be no focus on increasing the human-wildlife interface or any actions that cause degradation.	degradation which could help reduce human-wildlife conflict.
	It is possible that COVID-19 impacts lead more people to move to rural areas, including areas around the Marin watershed and this may add more pressure to resources there.	As the project will improve watershed management, attention will be paid to affects that incoming residents may have on the water quality and availability. The social dynamics are also affected within households with migrant workers and the project's gender action plan addresses this.

COVID-19 Opportunity Analysis

Table 10: COVID-19 Opportunity, potential and planning.

Opportunity Category	**Potential**	**Project Plans**
Can the project do more to protect and restore natural systems and their ecological functionality?	The proposed project will contribute to restoring ecosystems and function within the Marin watershed which includes the river basin and the surrounding forest areas, as a co-benefit of nature- based solutions for adaptation.	At the core of the project ToC is the strategy to reduce landslide, drought and flood threats to vulnerable communities. This will include guidelines for communities and municipalities to support more sustainable agriculture, forestry use and rural development, which will protect land and watershed ecosystems.
Can GWP/BD projects regulate consumption of wildlife and markets?	N/A	
Can the project include a focus on production landscapes and land use practices within them to decrease the risk of human/nature conflicts?	The project will include guidelines and support to climate smart agriculture and local adaptation solutions which will alleviate pressures on surrounding vulnerable forests, and result in less human encroachment on forested areas.	The project will increase adaptive capacity of vulnerable households by specifically promoting sustainable agricultural practices that may include: Water efficient technologies and farmer managed irrigation systems; promotion of high-value crops, climate resilient seeds, higher productivity/low impact small hand-tools and technologies that are GESI/labor and energy smart.
Can the project promote circular solutions to reduce	This project includes support to address forest degradation and	Reducing unsustainable timber extraction from forests may be an

unsustainable resource extraction and environmental degradation?	the anthropogenic causes of ecosystem deterioration.	outcome of this project, as the extraction of timber from forests on the fragile slopes in the Marin watershed is contributing to the degradation of the targeted landscape.
Can the project innovate in climate change mitigation and engaging with the private sector?	This project focuses more on Climate Change Adaptation and using innovative tools and technology to improve agricultural practices and the management of the Marin Watershed. The project will facilitate partnerships between small farmers and the private sector to promote commercialization of agricultural and livestock products.	Community Based Organizations as well as municipality and provincial officials will be trained on climate change impacts and risk assessment tools that can be utilized in further planning and mainstreaming of climate change in Nepal. Improved climate-adaptive practices will reduce the emissions from the agriculture sector and positively impact the carbon storage capacity of the surrounding forests.

3.5 Consistency with National Priorities or Plans

The project is consistent with Nepal's priorities and plans for climate change, environmental conservation and sustainable development and will also contribute to the country's implementation of international conventions particularly related to climate change. The key national policies and plans that the project will specifically contribute to are articulated below:

National Climate Change Policy 2019: The project is relevant to the implementation of the National Climate Change Policy 2019. It will contribute to the implementation of NCCP 2019 objectives to: (a) enhance climate change adaptation capacity of persons, families, groups and communities vulnerable to, and at risk of, climate change; and (b) build resilience of ecosystems that are at risk of adverse impacts of climate change; (c) mainstream or integrate climate change issues into policies, strategies, plans and programs at all levels of State and sectoral areas; and (d) mainstream gender equality and social inclusion into climate change mitigation and adaptation programs. Within the NCCP 2019, the project will specifically relate to sector strategies and working policies for agriculture and food security, and forests, biodiversity and watershed conservation.

National Adaptation Plan (2021-2050): The project will relate to the following specific NAP objectives: (a) increase crop production through identification and adoption of good, climate resilient, and sustainable agricultural practices under the NAP priority program for sustainable agriculture, food and nutrition and security, and climate resilient health and hygiene; (b) explore, assess and promote climate smart agriculture technology under the NAP priority program for climate smart transformative agriculture promotion in the hills and mountains; and (c) promote watershed management for conservation of soil fertility and enhanced productivity, and support local livelihoods through watershed management under the NAP priority program for integrated sub-watershed management for climate resilience and increased water availability and agricultural productivity.

Second Nationally Determined Contributions 2020: The project is relevant to the implementation of the adaptation component of Nepal's NDC, drawn in line with the Paris Agreement. It will specifically contribute to the NDC commitment: By 2030, all 753 local governments will prepare and implement climate-resilient and gender-responsive adaptation plans. The plans will address climate change and disaster vulnerability and risks and prioritize adaptation and disaster risk reduction and management measures focusing on women, differently abled, children, senior citizens, youth, Indigenous Peoples, economically deprived communities and people residing in climate-vulnerable geographical areas.

National Adaptation Program of Action (2010): The project is relevant to the implementation of NAPA priorities of: (a) promoting community-based adaptation through integrated management of agriculture, water, forest and biodiversity sectors; and (b) community-based disaster management for facilitating climate adaptation. Under the NAPA priority of promoting community-based adaptation through integrated management of agriculture, water, forest and biodiversity sectors, the project aligns with the following activity components: (a) ensuring ecosystem and community adaptation to climate change through integrated watershed management in Churia; and (b) reducing the vulnerability of communities and increasing their adaptive capacity through flood management. Under the NAPA priority of community-based disaster management for facilitating climate adaptation, the project aligns with the following activity components: (a) building capacity for community adaptation to climatic hazards; and (b) reducing disaster risks at community level with climate change dimension.

Fifteenth Five-Year Plan (2019/20-2023/24)*:* The project is in line with the GoN's 15th FYP, which emphasizes an integrated watershed management approach to deal with climate change impacts along with the focus on the need to increase production and productivity of forests and biodiversity while ensuring to enhance ecosystem services. Given its focus on developing an enabling environment for CCA mainstreaming at the local level, the project also relates to the 15th FYP priority on capacity

building at federal, province and local level to ensure that climate change and disaster risk management is integrated at every level.

President Chure-Tarai Madhesh Conservation and Management Master Plan: The project will contribute to addressing two key objectives laid out in this Master Plan: (a) mitigate the damage likely to be caused by climate change and natural disasters through ensuring the sustainable management of the natural resources of the Chure hills and Bhavar region, favourable to their geological, physiographical status and ecosystems; and (b) mitigate the damage likely to be caused by water-induced disasters in the Chure hills, Dun and Tarai Madhesh Landscape, and to continue the flow of the environmental services. The catchment areas – Kyan Khola, Ghagar khola and Phulbari khola – where the GEF/LDCF project will implement field interventions for climate-adaptive agricultural livelihoods, community forest management, and NbS to reduce climate disaster risks are areas that the President Chure-Tarai Madhesh Conservation and Management Program has identified among highly vulnerable to landslides, flooding and sedimentation.

National Agriculture Development Strategy 2015-2035: The project will contribute towards the outcome of higher agricultural productivity envisaged in the twenty-year National Agriculture Development Strategy. It will particularly contribute to output 2.10 (improved resilience of farmers to climate change, disasters, price volatility and other shocks) and output 2.11 (sustainable farming, good agricultural practices, good veterinary animal husbandry practices are established and adopted).

National Forest Policy 2015: The project is consistent with the GoN's National Forest Policy (2015), which identifies community and leasehold forests among key strategies to provide social, economic and ecosystems services from forest resources. The Forest Policy outlines forests as critical to reduce the impacts of climate change through adaptation so as to ensure the flow of forest ecosystem services. The Forest Policy recognizes forests as a renewable natural resource, which contributes to subsistence livelihoods and recognizes subsistence forest use as a stepping stone to increased application of good forest management practices. The project will support improved community forest management to enhance the climate resilience of Marin watershed.

Forestry Sector Strategy 2016-2025: The project will contribute to the following outcomes envisaged in the strategy: (a) forest productivity and sustainable supplies of products and services enhanced; (b) biodiversity, watersheds and ecosystem services improved; and (c) climate resilient capacity of society and forest ecosystems enhanced. With regards to the outcome of forest productivity and sustainable supplies of products and services enhanced, the project will contribute to promotion community-based forestry and enhancing the capacity of the community in forest management; to the outcome of biodiversity, watersheds and ecosystem services improved, it will contribute to the promotion of integrated watershed management by strengthening upstream and downstream linkages; and to the outcome of climate resilient capacity of society and forest ecosystems enhanced, it will contribute to the adaptive capacity of local communities and forest ecosystems, and promotion of ecosystem- and community-based resilience measures.

National Disaster Risk Reduction Policy 2018: The project will contribute specifically to one of the NDRRP 2018 objectives stated as "to mainstream disaster risk reduction in all development processes by integrating it with climate change adaptation activities." It will particularly be in line with the principle of integrated water resource management, addressing river management and inter-relationship of upper and lower riparian areas, outlined in the NDRRP 2018.

Nepal Sustainable Development Goals, Status and Roadmap 2016-2030: In keeping with its commitment to the global SDGs, Nepal has drawn a roadmap for implementation of the SDGs at the country level. This project will contribute to the implementation of the SDG roadmap, primarily the country-level targets and indicators set for climate adaptation and resilience but also those pertaining to poverty eradication and food security.

3.6 Innovativeness, Sustainability and the Potential for Scaling-up

The project seeks to undertake an integrated approach for climate change adaptation at the level of watershed as an ecological unit, by creating enabling conditions in terms of improved knowledge and tools for CCA mainstreaming in local plans, and implementing demonstrable and sustainable climate-adaptive technology and practices for agricultural livelihoods, community forest management and NbS to reduce climate disaster risks. It will establish and support a multi-stakeholder platform to facilitate dialogue and coordination between multiple stakeholders, including women, poor and vulnerable groups, and private sector, for collective approach to enhance climate adaptation at the watershed level, transcending administrative boundaries. In view of limited government capacity for delivery of extension services for climate-adaptive agricultural and land-use practices, it will not only train local government but also promote community-based/ farmer-to-farmer learning through innovative participatory approaches. To create market incentives among small farmers for adoption of sustainable and climate-resilient technologies and practices, the project will look into value chains, and facilitate partnerships between small farmers and private sector to promote commercialization of agricultural and livestock products. These partnerships will be based on a cooperative approach to ensure that the interests of small farmers are protected whilst also fostering private sector interest in partnering with small farmers. It will employ a comprehensive series of NbS interventions and community based natural resource management to reduce climate disaster risks, starting in the upstream areas and steadily moving into midstream and downstream. Since this would entail intensive efforts, the project will focus on six critical catchment areas in the project area to make tangible impacts on the ground, providing demonstrable evidence that can be replicated in other catchment areas in Marin watershed and beyond. The proposed project interventions for climate-adaptive solutions to agriculture, livestock management and irrigation management, and NbS for climate disaster risk reduction linking upstream and downstream problem areas will be relatively new for the communities in the project area, as they currently lack access and exposure to such technologies and practices. The project will introduce technologies and practices which have proven to be successful in other areas of Nepal with socio-economic and biophysical conditions similar to the project area. Local adaptations will be made wherever necessary to enhance their suitability based on local conditions.

Sustainability: This project will pursue CCA mainstreaming in local policies building on the national framework for LAPA, which is well-entrenched as a government strategy. It will also build on the foundation provided by the community forestry program, strengthening the capacity of the existing CFUGs for improved and climate-resilient management of their community forests. The training and tools for CRVA and CCA mainstreaming, and the establishment of the multi-stakeholder platform will enhance the capacity of the local stakeholders to sustain the concept, approach and practices for climate change adaptation through integrated watershed management. Field interventions will focus on implementing and demonstrating affordable climate-adaptive technology and practices that are compatible with the local socio-economic and environmental conditions. The NbS interventions will be community-driven, and community skills will be developed to carry out the interventions, so that there is ownership and capacity for management of the NbS beyond project period. The Environment and Natural Resource Protection Acts at local level define Climate change, Adaptation and Mitigation and have dedicated Clause on formulation of adaptation plans at the local level as a primary responsibility of the municipality which also emphasize special consideration for inclusion of vulnerable women, disable people, children, elderly, and poor communities while also ensuring that norms and standards of the Government of Nepal on climate change adaptation and mitigation are integrated while formulating annual plans and policies of the municipalities. The act also emphasizes conservation and management of forest areas in coordination with provincial and federal governments where necessary that also contribute to climate change adaptation and mitigation. Hence, the proposed project shall support local governments to further strengthen local governance of climate change.

Potential for scaling up: The replication potential of this investment extends beyond Marin watershed to other areas in the Churia region, which is made up of numerous watersheds and sub-watersheds with similar climate challenges, and related environmental and socio-economic issues. The concept and approach for CRVA and CCA mainstreaming that this project will support through capacity development are national in scope, allowing other municipalities and local agencies in Nepal to undertake similar approaches for integrated watershed management to enhance the climate resilience of local communities and livelihood resources. The project will test the efficacy of CCA mainstreaming in local plans based on better knowledge of local climate risks and vulnerabilities among local stakeholders, and dialogue and coordination between multiple stakeholders. Working with CFUGs to improve sustainability of forest resources as a critical natural asset for local livelihoods and enhanced resilience against climate impacts is hugely replicable in view of the country's agenda of community forestry as a vital national program to conserve forest resources whilst addressing forest-based livelihood needs of the local people.

3.7 Lessons Learned During Project Preparation and from Other Projects

The key lessons learned during the project preparation and from other projects as follows:

- A country-led process is key to the development of a sound project design and fostering country ownership. A PPC at the national level led by the Executing Agency with representation from key departments and GEF Operational Focal ministry was formed at the outset of the PPG phase. This has helped the project development process to progress in close coordination and consultation with key national partners and enlist their valuable inputs and suggestions throughout the course of the project preparation. Additionally, the PPC meetings helped improve coordination with other GEF and non-GEF funded projects in the area such as 'Restoring the degraded watershed and livelihoods of Lakhandei river basin through Sustainable Land Management (10469)' in the same area where duplication of activities can be avoided while complementarity can be strengthened.

- On the recommendation of the participants of the project development inception workshop, the project has been designed to ensure that the project resources are not thinly spread out but are strategically invested to generate tangible and practicable results. For instance, the NbS interventions for climate disaster risk reduction will be implemented in three critical catchment areas (and not the in entire Marin watershed), employing a series of interventions, starting in the upstream areas and steadily moving into midstream and downstream areas. This targeted approach will allow better use of project resources to demonstrate a comprehensive and integrated series of NbS interventions and community based natural resource management with upstream-downstream linkage, which will provide a model for replication in other catchment areas. While targets, such as number of direct beneficiaries and area rehabilitated/ protected for climate resilience, initially envisaged during the PIF stage would come down, the intensive project interventions are expected to generate more replicable results to enable scaling-up, resulting in more beneficiaries and area rehabilitated/ protected for climate resilience over time. This approach is also in keeping with the finding of the terminal evaluation[40] of the WWF/GEF Sustainable Land Management in Churia Region (SLMCRN) project that "inclusion of large number of activities and targets to be achieved in four scattered sites over a three-year project period" was a major weakness in project design leading to focus on delivery of targets instead of ensuring effectiveness, replicability and sustainability.

- Also, this project draws on the lesson from the finding of the terminal evaluation of the WWF/GEF SLMCRN project that a "top-heavy, bottom-thin" institutional arrangement was not suitable for a field-based project targeting a specific project area and, therefore, failed to ensure common understanding and effective coordination between relevant agencies. This project will have a more

[40] The terminal evaluation of SLMCRN project was conducted in June-July 2017.

decentralized institutional arrangement with the Provincial Ministry of Forests and Environment (Baghmati Province) as the principal project executing agency and the PMU based in the ministry. The Soil and Watershed Management Office (for Ramechhap and Sindhuli Districts) will host the Project Implementation Unit while a Project Coordination Committee will be formed at the district level to guide and ensure coordination of project work plans and activities.

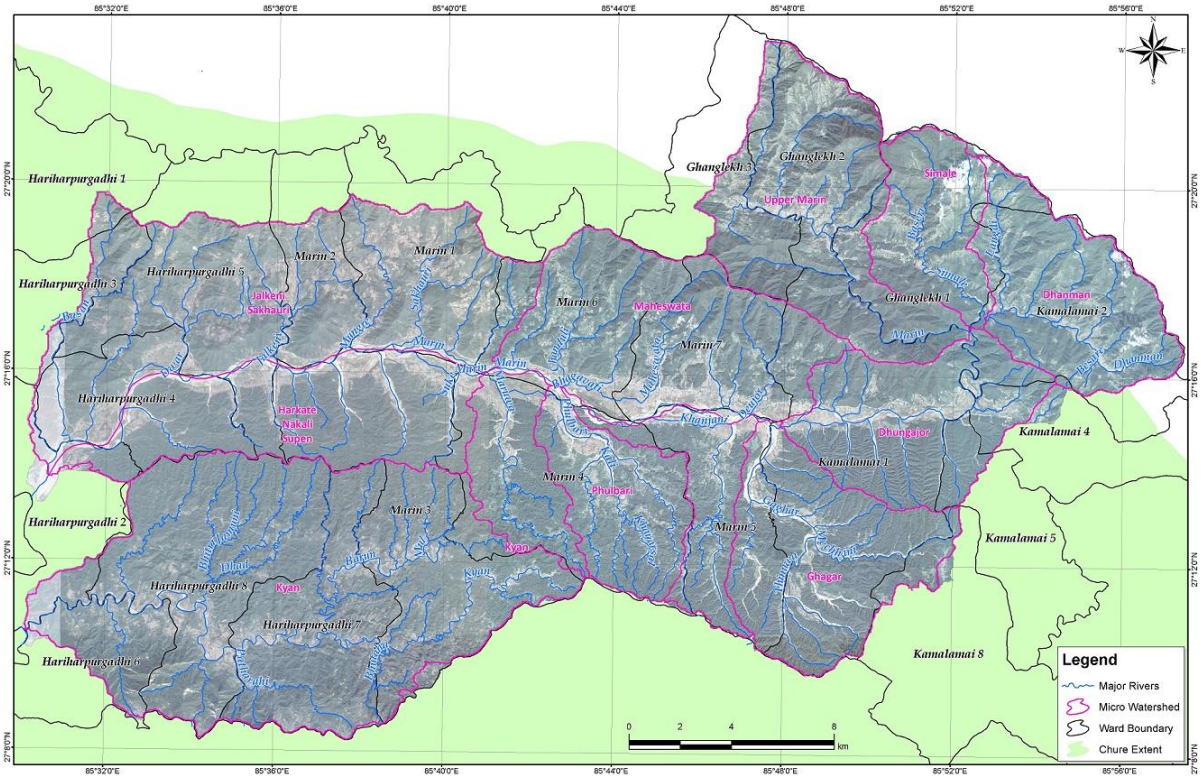
- The terminal evaluation of the WWF/GEF SLMCRN project also drew attention to the fact that the WWF safeguards policies and requirements became known to the project stakeholders only after the project was already approved and project implementation had commenced, and this complicated project implementation including initial delays and additional costs for safeguards implementation. In view of this lesson, this project has taken a proactive approach to assess and integrate safeguard implementation needs, including costs, in the project design. A Gender, Social Inclusion and Safeguards Specialist will be recruited as a part of the project management/ implementation team early on during the project implementation phase.
- During the project formulation, it was learned that local government agencies were short-staffed as well as they were not able to reach out to the local communities because of the remoteness and poor road connectivity to the project area. In the monsoon season, many of the villages and communities in the project become inaccessible. The project will, therefore, give high priority to community training and foster farmer-to-farmer learning whilst also training government staff.

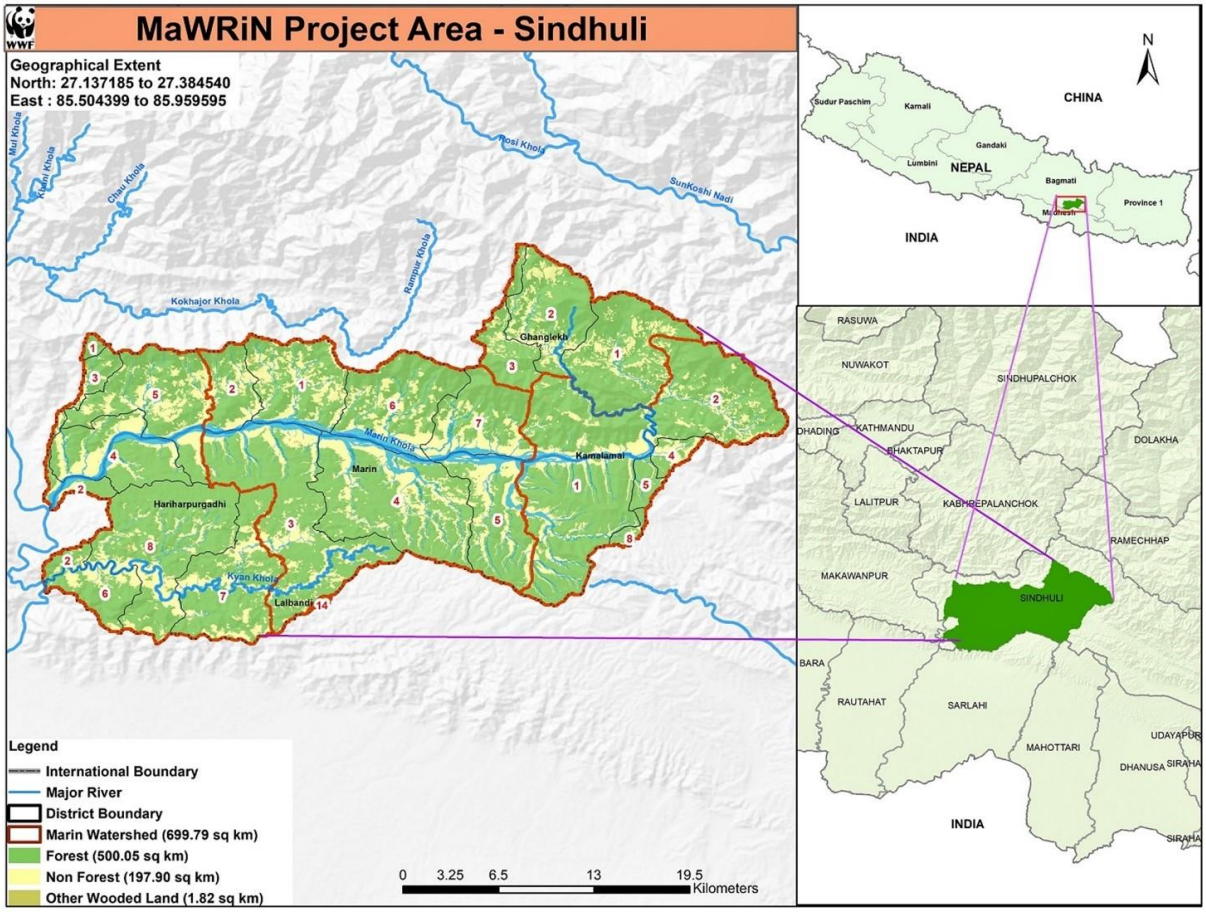
- The engagement of federal ministries at the beginning followed by representation from provincial government and in-depth engagement of local governments (Mayors, Chairs, Deputy Mayors, Vice-Chairs, ward chairs and members and bureaucracy at municipalities) has been very useful to develop ownership and coordination at all three tiers. The initial outreach and consultations with municipalities before reaching out to the local communities has helped in facilitating rapid coordination and organization of project development events.

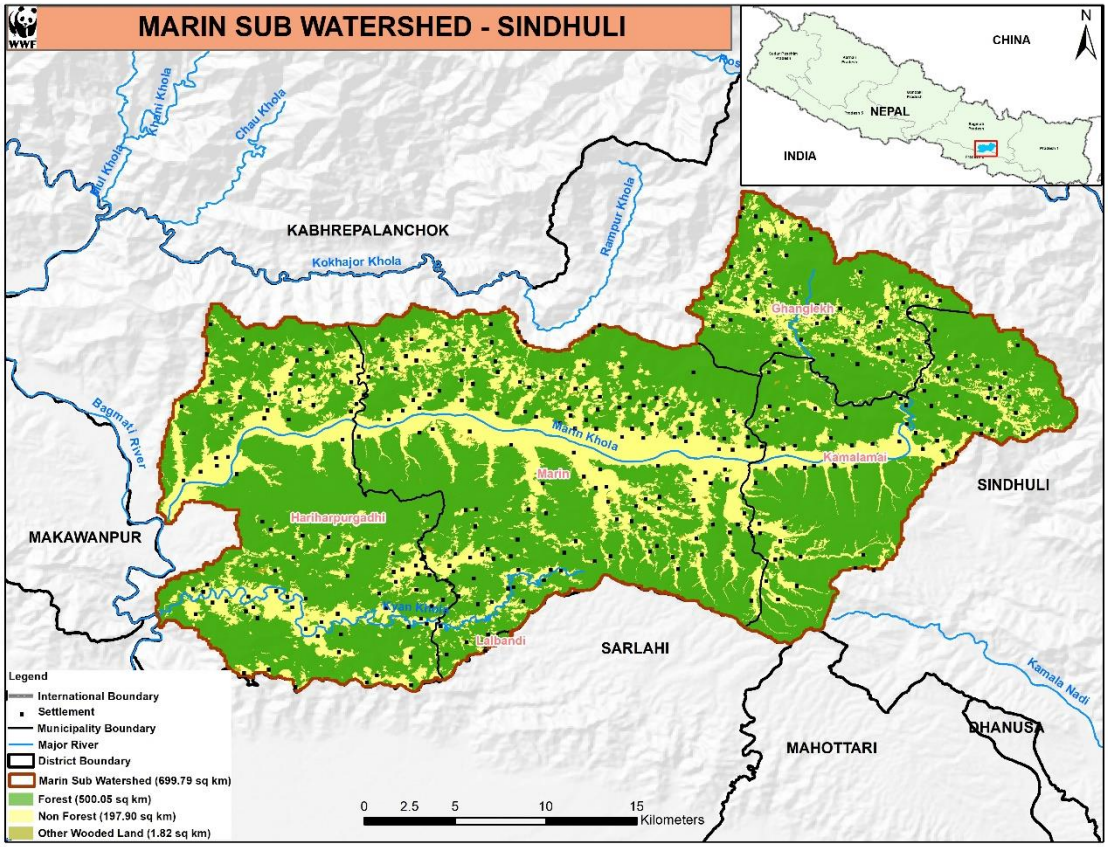
- Review of other recent GEF projects in Nepal [Restoring the degraded watershed and livelihoods of Lakhandei river basin through Sustainable Land Management (10469), Enhancing capacity for sustainable management of forests, land and biodiversity in the Eastern Hills (ECSM FoLaBi EH) (10381), and Developing Climate Resilient Livelihoods in the Vulnerable Watershed in Nepal (6969)] have emphasized the need and importance of capacity building at local level for mainstreaming environmental, disaster and climate change issues in policies and planning under the fairly new federal structure of the country. This project builds on the same based on field studies and stakeholder consultations, and the information collated through the GEF Capacity Development Assessment Indicators.

Appendix 1: Project Area Map and Geographic Coordinates

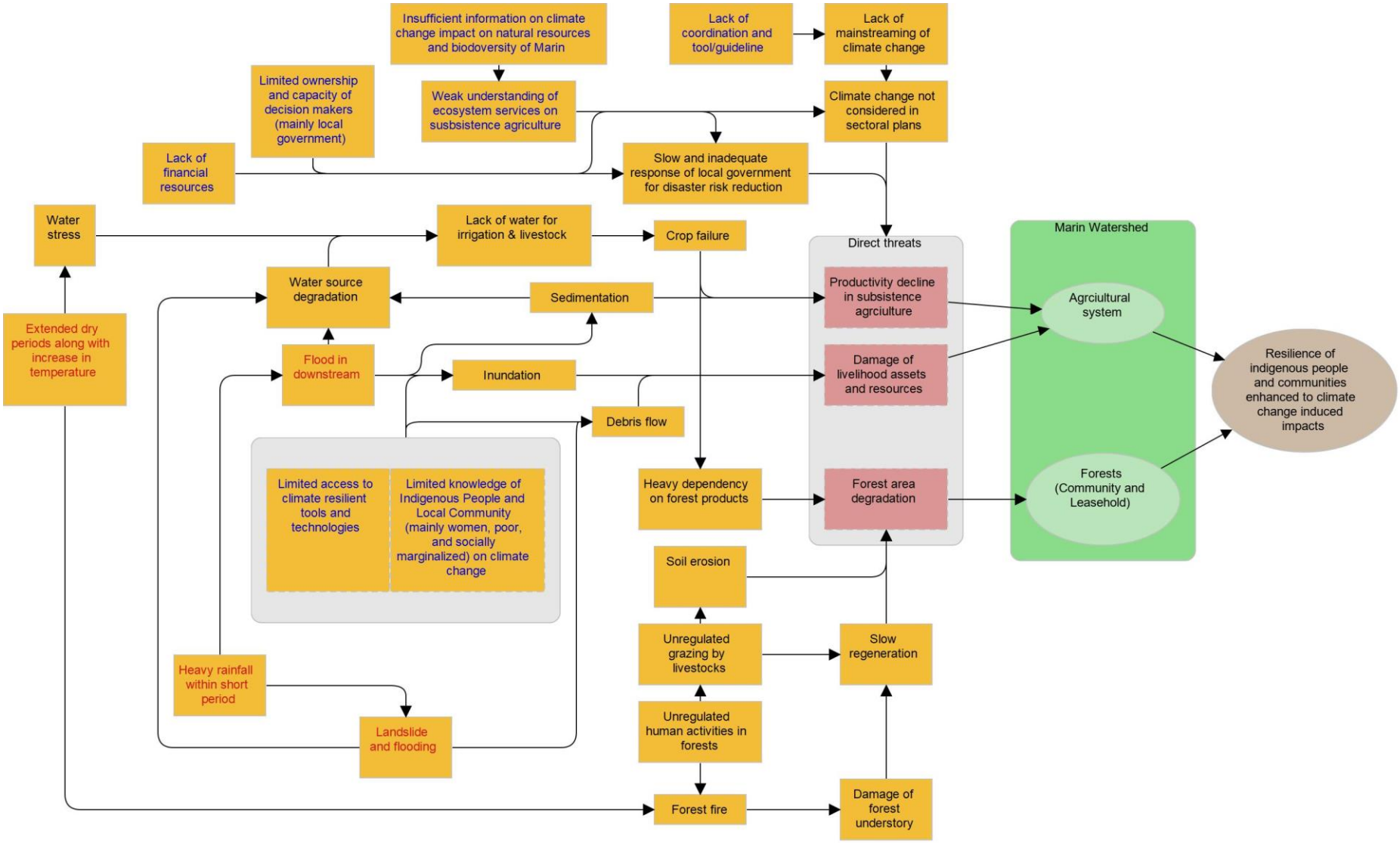
Project Area Map: Marin watershed (Longitude: 85°30’ – 85°57’ East; Latitude: 27°9’ – 27°23’ North)



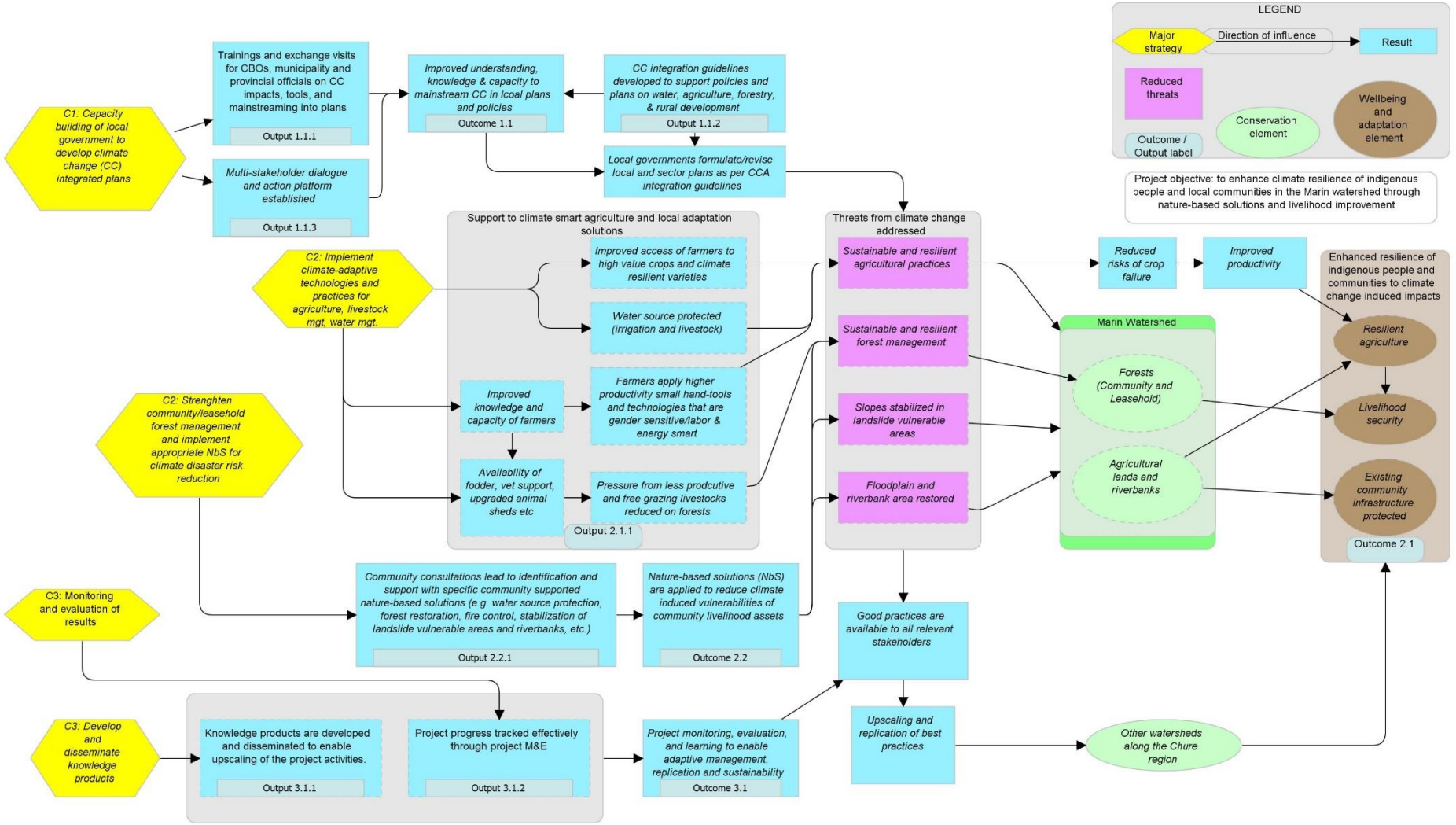

MaWRiN Project Area - Sindhuli
Geographical Extent
North: 27.137185 to 27.384540
East : 85.504399 to 85.959595
Mul Khola
Khani Khola
Chau Khola
Rosi Khola
SunKoshi Nadi
Rampur Khola
Kokhajor Khola
Ghanglekh
Marin Khola
Marin
Kamalamai
Hariharpurgadhi
Kyan Khola
Lalbandi
Legend
International Boundary
Major River
District Boundary
Marin Watershed (699.79 sq km)
Forest (500.05 sq km)
Non Forest (197.90 sq km)
Other Wooded Land (1.82 sq km)
0 3.25 6.5 13 19.5
Kilometers
N
CHINA
NEPAL
INDIA
Sudur Paschim
Karnali
Gandaki
Lumbini
Bagmati
Province 1
Madhesh
RASUWA
NUWAKOT
SINDHUPALCHOK
DHADING
KATHMANDU
BHAKTAPUR
DOLAKHA
LALITPUR
KABHREPALANCHOK
RAMECHHAP
MAKAWANPUR
SINDHULI
BARA
RAUTAHAT
SARLAHI
MAHOTTARI
UDAYAPUR
DHANUSA
SIRAHA
INDIA


MARIN SUB WATERSHED - SINDHULI
CHINA
NEPAL
INDIA
N
KABHREPALANCHOK
Kokhajor Khola
Rampur Khola
Ghanglekh
Bagmati River
Marin Khola
Kamalamai
Marin
SINDHULI
Hariharpurgadhi
MAKAWANPUR
Lalbandi
SARLAHI
Kamala Nadi
DHANUSA
MAHOTTARI
Legend
International Boundary
Settlement
Municipality Boundary
Major River
District Boundary
Marin Sub Watershed (699.79 sq km)
Forest (500.05 sq km)
Non Forest (197.90 sq km)
Other Wooded Land (1.82 sq km)
0 2.5 5 10 15
Kilometers

Appendix 2: Conceptual Model



Appendix 3: Results Chain



Appendix 4: High-level Work Schedule

	YR1				YR2				YR3				YR4				YR5				YR6			
Component 1: Enabling environment for mainstreaming climate change																								
Outcome 1.1: Improved understanding, knowledge and capacity to mainstream climate change adaptation in local plans and policies.																								
Output 1.1.1: Training and exchange visits for community-based organizations (CBOs), soil and watershed management office, division and sub-division offices, municipality and provincial officials on climate change impacts and risks assessment tools and methods for mainstreaming CCA in all sectors and municipal plans in an integrated approach.																								
Activity 1.1.1.1: Stakeholders consultations to validate and finalize project activities and sites along with execution strategy and workplan given the 3 additional watersheds.																								
Activity 1.1.1.2: Assess trainings needs and, accordingly, develop curricula and materials for training on participatory gender- sensitive assessments of climate risks and vulnerabilities, adaptation options and CCA mainstreaming in key sectors at the local level																								
Activity 1.1.1.3: Conduct a series of training for CBOs and government officials to develop their knowledge and skills for participatory gender- sensitive assessments of climate risks and vulnerabilities, adaptation options and CCA mainstreaming.																								
Activity 1.1.1.4: Support the municipalities and relevant sector agencies to carry out participatory assessments of climate risks and vulnerabilities and produce the reports of the assessments *(this activity will provide the basis for activity 1.1.2.1 under output 1.1.2).*																								
Activity 1.1.1.5: Organize learning and exchange visits for local and provincial government officials, enabling them to acquire hands-on knowledge and insights on CCA mainstreaming from other CCA projects in Nepal and abroad.																								
Output 1.1.2: CCA-integration guidelines developed for communities and municipalities to support policies and plans on water, agriculture, forestry, and rural development for four municipalities in the Marin watershed and integrated in the watershed, forestry, and municipal planning process.																								
Activity 1.1.2.1: Review municipality plans and policies for key sectors and assess the integration of climate change adaptation needs in these plans and policies, taking into account the information generated by the participatory assessments of climate risks and vulnerabilities *(linked to output 1.1.1, activity 1.1.1.3).*																								
Activity 1.1.2.2: Based on the above review, develop gender- sensitive guidelines to support integration of CCA in agriculture, livestock, forestry, and water sectors at the municipality level.																								
Activity 1.1.2.3: Conduct workshops to disseminate the aforesaid CCA-integration guidelines to officials of the municipalities, relevant sector agencies and other key local stakeholders.																								

Activity 1.1.2.4: Support workshops and consultations for formulation or revision of plans and policies at the municipality/ provincial level in accordance with the CCA-integration guidelines.																									
Output 1.1.3: Multi-stakeholder platform established in the Marin watershed to drive the mainstreaming of adaptation in an integrated watershed approach.																									
Activity 1.1.3.1: Develop operational modality, structure and functions for the multi-stakeholder platform.																									
Activity 1.1.3.2: Organize an event to launch the multi-stakeholder platform and create general awareness and common understanding about the platform among the stakeholders.																									
Activity 1.1.3.3: Support the multi-stakeholder platform to organize workshops, media events and dialogues to facilitate information exchange, and develop coordination and common understanding on climate change issues and adaptation measures.																									
Component 2: Enhanced Resilience of Local Communities to Climate Change																									
Outcome 2.1: Increased adaptive capacity of vulnerable households in the Marin Watershed to climate-induced disasters such as landslides, floods, droughts, and forest fire.																									
Output 2.1.1: Climate-adaptive technologies and practices for agriculture, livestock management and water management introduced and expanded.																									
Activity 2.1.1.1: Support for climate-adaptive and sustainable agriculture by means of support for expansion of high value crops and climate-resilient varieties of seeds and seedlings for communities, promotion for commercial production of high value/climate-resilient varieties of seeds and seedlings in collaboration with the private sectors/cooperatives; identification, development and distribution of energy-efficient and gender friendly tools for agricultural production in coordination with private sector.																									
Activity 2.1.1.2: Support for sustainable livestock management by means of upgradation of animal sheds for improved management of farmyard manure and stall feeding with fodder support; improving veterinary/ animal husbandry services in coordination with private agro/vet sector; promotion of improved local breeds and their management, and fishery development.																									
Activity 2.1.1.3: Support for water-efficient technologies and farmer-managed irrigation systems including renovation/ upgradation of existing irrigation canals/ channels for enhanced climate resilience and water efficiency; water lifting technologies and promotion of drip and sprinkler irrigation; restoration and protection of water sources/ springs for irrigation and domestic purposes; and sub-surface water harvesting.																									
Activity 2.1.1.4: Train local communities on climate-adaptive technologies and practices in agriculture including commercial farming, livestock management and water management in support of activities 2.1.1.1, 2.1.1.2 and 2.1.1.3																									
Activity 2.1.1.5: Train local government officials and private agricultural/ veterinary service providers in the delivery of extension and technical services to local communities on climate-adaptive technologies and practices in agriculture, livestock management and water management, in support of activities 2.1.1.1, 2.1.1.2 and 2.1.1.3																									

Outcome 2.2: Nature-based solutions (NbS) reduce climate-induced vulnerabilities of community livelihood resources and assets.																								
Output 2.2.1: Management of community and leasehold forests strengthened, and vulnerable catchment areas rehabilitated and protected for reduced vulnerability to climate-induced disaster risks such as landslides, sedimentation, flooding and forest fires.																								
Activity 2.2.1.1: Strengthen community forest management, including forest nurseries and plantation, forest fire management and grazing management, through support to existing CFUGs with training, awareness-building, equipment, and materials. a) Support to multi-purpose nursery establishment, maintenance, and promotion b) Afforestation/ plantation support including protection and fencing c) Forest fire management support through extension materials, awareness, workshops, and material d) Grazing management support for materials and forest watchers																								
Activity 2.2.1.2: Strengthen Community-based Forest management with training, awareness-building and support for development and implementation of updated and improved community forest operational plans.																								
Activity 2.2.1.3: Strengthen leasehold forest management through support to leasehold forest groups with training, awareness-building, equipment and materials.																								
Activity 2.2.1.4: Rehabilitate and protect degraded and vulnerable areas in Phulbari khola, Ghagar khola, Dhungajor, Jalkeni Sakhauri, and Simale catchments against climate disaster risks through NbS interventions ensuring community engagement, which will include: riverbank protection/ degraded last restoration through bamboo/plantation/fencing/bioengineering, check-dams on priority streams and conservation ponds (for erosion control and landslide risk mitigation but will also contribute to improving water management – activity 2.1.1.3);																								
Activity 2.2.1.5: Train local communities to develop their skills required for implementation of the aforesaid NbS interventions (listed under activity 2.2.1.4).																								
Activity 2.2.1.6: Train local forest officials for delivery of extension services and technical support to CFUGs for improved management of community and leasehold forests (linked to activities 2.2.1.1, 2.2.1.2 and 2.2.1.3).																								
Component 3: Monitoring, Evaluation and Knowledge Management																								
Outcome 3.1: Project monitoring, evaluation, and learning to enable adaptive management, replication and sustainability.																								
Output 3.1.1: Knowledge products are developed and disseminated to enable upscaling of the project activities.																								
Activity 3.1.1.1: Conduct case studies, and assess lessons learned and best practices emanating from implementation of project activities, and document and disseminate them for replication and up-scaling.																								
Activity 3.1.1.2: Assess and document indigenous knowledge on climate-resilient methods and practices in the project area and promote their integration in the design of climate-adaptive solutions for agriculture, livestock management, water management, community/ leasehold forest management, and climate disaster risk reduction (linkage to project component 2).																								

Activity 3.1.1.3: Develop and disseminate communication and education materials through print, broadcast and digital media.																								
Activity 3.1.1.4: Create and maintain a project website that provides information and updates on project activities, and access to project knowledge resources in particular reports, publications, case studies and other knowledge products.																								
Activity 3.1.1.5: Organize media and communication events, such as project site visits by journalists, write-shops and media fellowships at local/ district, provincial and national levels, to highlight and disseminate watershed management concept, approach and practices applied by the project for climate change adaptation.																								
Output 3.1.2: Project progress tracked effectively through project Monitoring and Evaluation (M&E).																								
Activity 3.1.2.1: Project inception and stakeholder engagement																								
Activity 3.1.2.2: Conduct annual and semi-annual monitoring visits to project sites.																								
Activity 3.1.2.3: Conduct bi-annual and annual review and planning workshops to reflect on project progress and performance and plan for oncoming year.																								
Activity 3.1.2.4: Produce and disseminate periodic project progress and implementation reports**.**																								
Activity 3.1.2.5: Conduct Project Steering Committee meetings as required and disseminate meeting proceedings and reports.																								
Activity 3.1.265: Conduct independent mid-term project evaluation and terminal evaluation as scheduled in the M&E plan and disseminate the findings and recommendations of the evaluation reports for follow-up actions by the concerned parties.																								

Appendix 5: Project Results Framework

Project Results Framework (MaWRiN project) March-2022

Indicator/Unit	Definition (note if cumulative)	Method/Source	Who	Disaggregation	Baseline	Targets by Year						Notes/ Assumptions
						Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
Objective Level Indicators												
Project Objective: To enhance climate resilience of indigenous people and local communities in the Marin watershed through nature-based solutions and livelihood improvement.												
GEF-7 CCA Core Indicator 1: Total number of direct beneficiaries	Number of people benefitting from targeted project interventions.	Project documentation related to implementation and progress, including field reports.	PMU	Number of direct female beneficiaries	-	1000	5000	7500	7500	5000	Cumulative total by project end: **31,000**	The number and gender ratio of beneficiaries may be affected by migration pattern. During normal times, many men tend to migrate to urban centers and overseas countries for jobs. However, in the wake of Covid-19 pandemic, many migrants have returned to the villages in the project area. Includes direct beneficiaries from trainings and exposure and household members benefitting from interventions.
				Number of direct male beneficiaries	-	1000	4500	7000	7500	**5000**	Cumulative total by project end: **29,000**	
GEF-7 CCA Core Indicator 2: Area of land managed for climate resilience (hectares)	This will include agricultural land, community and leasehold forests, and catchment areas restored and/or brought under improved management for climate resilience through direct project support.	GIS mapping and analysis; Pre- and post-intervention field assessments and reports.	PMU	Hectares of agricultural land under climate-adaptive practices		20	160	160	120	**80**	Cumulative total by project end: **540**	There will be no resource-use conflict in the catchment areas targeted for rehabilitation/ protection/ improved management.
				Hectares of community and leasehold forests brought under improved management		1000	5000	7500	7500	**5000**	Cumulative total by project end: **29,000**	
				Hectares of degraded/ vulnerable catchment areas rehabilitated/ protected for		600	1000	1000	1000	**1000**	Cumulative total by project end: **5,600**	

Indicator/Unit	Definition (note if cumulative)	Method/Source	Who	Disaggregation	Baseline	Targets by Year						Notes/ Assumptions
						Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
				resilience against climate disasters								
GEF-capacity development tracking tool scores	GEF capacity development indicators are measured against five key capacity results. This project will contribute to three of the GEF capacity results as below: CR1- capacity for engagement; CR2- capacity to generate, access and use information and knowledge; and CR3- capacity for strategy, policy and legislation development.	Capacity assessment and score in accordance with GEF-capacity development scorecard.	PMU	GEF-CD score for engagement in CCA and CCA mainstreaming (Capacity Result 1). Maximum attainable score for this capacity result is 9.	Municipality: **2 out of 9** Rural Municipality: **0 out of 9**						Municipality: **7 out of 9** Rural Municipality: **7 out of 9**	Staff turnover may affect capacity development results.
				GEF-CD score to generate, access and use information and knowledge for CCA and CCA mainstreaming (Capacity Result 2) Maximum attainable score for this capacity result is 15.	Municipality: **3 out of 15** Rural Municipality: **3 out of 15**						Municipality: **7 out of 15** Rural Municipality: **7 out of 15**	
				GEF CD score for CCA-integrated strategy, policy and legislation development (Capacity Result 3) Maximum attainable score for this capacity result is 9.	Municipality: **2 out of 9** Rural Municipality: **0 out of 9**						Municipality: **6 out of 9** Rural Municipality: **6 out of 9**	

Indicator/Unit	Definition (note if cumulative)	Method/Source	Who	Disaggregation	Baseline	Targets by Year						Notes/ Assumptions
						Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
Component 1: Enabling environment for mainstreaming climate change												
Outcome 1.1: Improved understanding, knowledge and capacity to mainstream climate change adaptation in local plans and policies												
Total number of government and CBO staff with training and knowledge for participatory CRVA and CCA mainstreaming	Target participants will be government and CBO staff with responsibility for planning, monitoring and backstopping local and sector plans and policies. *This indicator will directly relate to GEF-7 CCA Results Framework* ***Core Indicator 4.***	Training reports; Project implementation and progress reports.	PMU	-		100	200	200	200	**200**	Cumulative total at project end: **1200**	Staff turnover may affect training achievements.
Number of municipal/ sector plans formulated or revised as per CCA-integration guidelines.	CCA-integration in municipal/ sector plans is to be achieved in accordance with CCA-integration guidelines developed and disseminated by the project. *This indicator will relate to GEF-7 CCA Results Framework Core Indicator 3 and Output 2.1.1.*	Project implementation and progress reports; Review of the CCA integration plans.	PMU	N/A	0	-	-	2	2	**1**	Cumulative total at project end: **6 local plans**	Sectoral agencies are willing to cooperate and participate in the formulation/ revision of local plans to integrate CCA led by the municipalities.
Presence of a functioning multi-stakeholder platform for dialogue and coordination.	The mechanism is to be a multi-stakeholder platform, which includes all key stakeholders in the Marin watershed	Project implementation and progress reports.	PMU	None		-	-	1	-		Cumulative total: **1**	There will be commitment from all key stakeholders to be a part of the platform, and comply with the operational modality, structure and functions.

Indicator/Unit	Definition (note if cumulative)	Method/Source	Who	Disaggregation	Baseline	Targets by Year						Notes/ Assumptions
						Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
	with special attention to inclusion of women and socially-marginalized groups. It is to be supported by clearly defined operational modality, structure and functions. *This indicator will relate to GEF-7 CCA Results Framework Core Indicator 3 and Output 2.1.2.*											
Component 2: Enhanced resilience of communities to climate change												
Outcome 2.1: Increased adaptive capacity of vulnerable households in the Marin watershed to climate-induced disasters such as landslides, floods, droughts and forest fires.												
Number of local households with knowledge and training for adaptation solutions to climate change impacts on their livelihoods	Heightened community knowledge on adaptation solutions will enable local communities to employ them in their livelihood situation. Increased knowledge and employment of the adaptation solutions will increase adaptive capacity of the vulnerable households.	Household surveys); Project documents/ field reports.	PMU	No disaggregation		100	250	250	250	150	Cumulative total by project end: **1,100**	There will be community interest in receiving knowledge and training in climate-adaptive technologies and practices; Training events/ programs are suitably designed for the local communities based on their literacy and other relevant socio-economic attributes; Training providers are skilled in participatory training methods to effectively deliver knowledge and skills to the local communities.
Number of local households employing	In the context of the project, adaptation solutions to livelihoods would	Household surveys);	PMU	Number of local households employing climate-adaptive		20	100	100	80	60	Cumulative total by project end: **360**	There will be community interest to take up climate-adaptive solutions for

Indicator/Unit	Definition (note if cumulative)	Method/Source	Who	Disaggregation	Baseline	Targets by Year						Notes/ Assumptions
						Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
adaptation solutions to climate change impacts on their livelihoods.	include technologies and practices that enable local communities to make agriculture, livestock management and water management resilient to climate change.	Project documents/ field reports.		agriculture technologies and practices								sustainable and resilient livelihoods. The adaptation solutions will be affordable and easily demonstrable for community adoption. There will be overlaps among households employing more than one practice.
				Number of local households employing climate-adaptive practices for livestock management		50	600	550	550	450	Cumulative total by project end: **2150**	
				Number of local households employing water-efficient technologies and irrigation practices		60	300	300	300	285	Cumulative total by project end: **1350**	
Outcome 2.2: Nature-based solutions reduce climate-induced vulnerabilities of community livelihood resources and assets												
Number of community and leasehold forests with improved forest management plans.	Improved forest management plan would include integration of climate resilience and adaptation needs, and capacity to implement the improved plan.	Review of community forest management plans; Project documents/ field reports; Government documentation on community forests in Marin Forest Division.	PMU	Community forest		5	20	20	20	20	Cumulative total by project end: **95**	
				Leasehold forest		10	30	30	25	10	Cumulative total by project end: **110**	

Indicator/Unit	Definition (note if cumulative)	Method/Source	Who	Disaggregation	Baseline	Targets by Year						Notes/ Assumptions
						Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
Hectares of degraded/ vulnerable lands restored/ stabilized with NbS for better resilience against climate disaster risks.	NbS interventions would include bamboo/ forest plantation, check dam, and conservation pond. Two catchment areas (Ghagar khola and Phulbari khola) have been identified as priorities for NbS interventions to reduce climate disaster risks with upstream-downstream linkage.	GIS mapping and analysis; Field reports.	PMU	Upstream		200	500	750	750	1000	Cumulative total by project end: **7,500**	
				Downstream		100	1000	1000	1000	1000		
Component 3: Monitoring, evaluation and knowledge management												
Outcome 3.1: Project monitoring, evaluation and learning to enable adaptive management, replication and sustainability												
Number of case studies and knowledge products on project-supported best practices and lessons developed and disseminated.	Best practices that are selected for dissemination should meet key criteria such as relevance, community participation, sustainability, replicability, ethical soundness, effectiveness and efficiency.	Case study publications and knowledge products; Project implementation and progress reports; Dissemination/ circulation lists of case study publications and knowledge products; Project website.	PMU			-	1	2	3	5	Cumulative total by project end: **13**	Project activities show best practices that fulfill key criteria such as relevance, community participation, sustainability, replicability, ethical soundness, effectiveness and efficiency; Knowledge products reach the target audiences.
Number of cases where project-supported best practices have	Cases replicated would include: instances where local communities and local	Project documents, including reports and photographs;	PMU					2	3	**3**	Cumulative total by project end: 11	The project produces a critical mass of best practices by the third of the project to enable replication before project end;

Indicator/Unit	Definition (note if cumulative)	Method/Source	Who	Disaggregation	Baseline	Targets by Year						Notes/ Assumptions
						Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
been replicated.	governments have applied project-supported best practices in other villages/ sites in the project area with their own resources or resources mobilized from other sources, as well as instances of where WWF and its partners have applied them in areas outside the project based on demonstrated evidence from the MaWRiN project.	Key informant interviews; Project website.										Local communities possess the capacity to replicate the best practices.
Number of media/ communication articles or programs on project activities and achievements highlighting watershed management concept, approach and practices for CCA.	This would primarily include articles in print and electronic media, broadcast programs on TV and radio, and audiovisuals on social media e.g. YouTube.	Appraisal of media/ communication articles and programs;	PMU	Written articles			2	2	2	4	Cumulative total by project end: **15**	-
		Project progress and implementation reports;					1	2	2	2	Cumulative total by project end: 10	
		Project website.		Social media audio-visuals			2	2	2	2	Cumulative total by project end: **10**	

.

Appendix 6 GEF-7 CCA Framework

MaWRin GEF-7 CCA_Tracking tool_11May22.pdf (Command Line)

Appendix 7: Terms of Reference of Project Management Entities and Positions

A. Project Manager (PM)

Chief of Soil and Watershed Management Office, Ramechhap will serve as the Project Manager (PM) of this project. The PM will be responsible for overall management and technical supervision of the project, on behalf of the MoFE, Bagamati Province and within the framework delineated by the PSC. PM will report to the member secretary of PSC on matters related to the project execution. S/he will be responsible, among others, for

- Collaborating with provincial agencies, local governments, field level agencies and concerned stakeholders for the activity planning, participatory monitoring, securing technical backstopping, and timely implementation of the project
- Preparing and submitting the trimester, six-monthly and other technical and financial reports to PSC
- Providing technical guidance and assessing the outputs of the PMU staffs
- Preparing and submitting the prescribed project progress and financial report to the PSC
- Monitoring and tracking project co-financing including the preparation of co-financing report
- Organizing project workshops and meetings to monitor progress
- Organizing project coordinating committee meetings, and facilitating the establishment and operationalization of a Marin watershed multi-stakeholder dialogue and action platform)
- Support in organizing project steering committee meetings

Technical Team leader (TTL) (watershed and forestry expert)

TTL will be stationed at Project Management Unit (PMU), Marin. The TTL will help the PM in day-to-day management of the project. S/he will be responsible for

- Promoting climate resilient watershed planning of local level governments
- Supporting Municipalities and Rural Municipalities in their annual planning process and ensuring that climate change adaptation is internalized into their plans through integrated watershed management approach
- Strengthening local stakeholders' capacity to identify climate risks and vulnerabilities and their impacts on community livelihoods and natural resources
- Organizing in-country exposure visits for the municipal and other agency officials to gain firsthand experience of successful cases of community led climate change adaptation
- Strengthening the capacity of Municipalities and other local stakeholders to plan and mainstream climate change adaptation in their land use plans through integrated watershed management approach
- Identifying and integrating nature-based solution packages for integrated planning and management of Marin watershed

- Empowering local forest user groups and stakeholder organizations on forest fire management and control
- Working with local levels, provincial agencies, and community forest user groups on forest restoration, forest management and adoption of forest degradation control measures
- Helping community forest user group, leasehold forest groups in preparing and executing forest restoration plans, updating operation plans
- Strengthening the capacity of beneficiaries on forest product-based entrepreneurship and enterprise development
- Supporting the WWF (GEF agency) in organizing mid-term and final evaluations
- Any other tasks as requested by PSC and outlined in the project operation manual

Monitoring, Evaluation, Learning (MEL) and Communication Officer

The monitoring, Evaluation, Learning (MEL) and Communication Officer will work under the overall supervision of PM and receive technical guidance from TTL. S/he will be responsible for monitoring, evaluation, communication and knowledge management related activities of the project. S/he will be responsible for:

- Preparing and implementing monitoring, communication and knowledge management plan of the project, maintaining vertical and horizontal communication
- Facilitating the monitoring of the implementation of project activities
- Preparing and implementing performance monitoring and reporting framework with gender disaggregated indicators
- Providing training to stakeholders on monitoring and reporting
- Collecting/compiling the knowledge/learning products of the project and prepare knowledge products for wider dissemination, support preparation of project progress reports
- Maintaining and updating the project database including the systematic collection of pictures and visuals for monitoring
- Supporting capacity building of project personnel and stakeholders at province, Local level and district level agency officials
- Supporting Project Manager in preparing monthly, trimester and annual progress reports
- Carrying out field monitoring and prepare monitoring reports in close coordination with the concerned officials.

Finance and Compliance Officer (FCO)

FCO will be primarily responsible for the financial and compliance matters of the project. S/he will be based at PMU, Marin and will also support the PM in financial management. FCO will:

- Support in financial management and tracking the project's financial progress and ensuring timely delivery of inputs
- Help maintain records of receipts and disbursements
- Draft the financial and administrative correspondence
- Document the procurement, payments and maintains up-to-date office inventories
- Coordinate mailing services and communication with project stakeholders and any other tasks as required

- Prepare quarterly financial reports to track internal expenditures
- Other tasks as related to project finance and compliance

Overseer

Overseer will be based PMU, Marin and work under the overall supervision of PM and technical guidance of TTL. S/he will be responsible for the:

- Design and estimation of community led engineering structures such as small scale irrigation canals, trails, water source protection, water harvesting, conservation pond, landslide control, gully erosion control and other nature based solutions aimed at climate change adaptation and disaster risk management
- Training and capacity building of local stakeholders in the construction, operation and maintenance of those structures
- Promotion of watershed management practices in coordination with local level government agencies
- Documentation of the indigenous traditional knowledge on nature-based solutions to watershed management, degraded land rehabilitation and customizing them for Marin watershed management
- Carry out local level capacity need assessment to integrate climate change adaptation at Marin watershed
- Development/Customization of integrated watershed management tools from climate change adaptation perspective

Project Officer (Agriculture and livestock)

Project officer will be based in PMU, Marin. S/he will work under the overall supervision of PM and technical guidance of TTL. S/he will

- Strengthen and scale up farmer managed water-efficient irrigation methods for farm based livelihoods and enterprises
- Promote value chain of traditional varieties of climate resilient high value traditional agriculture crops, and grass/fodder species
- Strengthen farmers' cooperatives led agriculture and livestock-based enterprise development
- Identify and train female farmers on agriculture, fishery and livestock-based enterprise development
- Train local communities/farmers/user group members on climate-adaptive agriculture technologies and practices
- Capacitate local farmers in conservation farming and promote the cultivation of indigenous varieties
- Strengthen the capacity of Municipal and district level provincial development agencies in the delivery of extension services to local communities on climate-adaptive technologies and practices in agriculture, irrigation, and livestock management

Gender, Social Inclusion and Safeguards (GESI) specialist/experts

The experts will work under the overall supervision of PM and direct supervision of TTL, and will:

- Prepare, implement and monitor the gender action plan, indigenous people plan and social management plan based on the project result framework

- Contribute to preparing gender disaggregated data base and monitoring indicators,
- Develop climate friendly GESI training manual and provide coaching to stakeholders and targeted communities on gender, inclusion and safeguards
- Provide overall support in mainstreaming gender and social inclusion issues in the project implementation
- Facilitate trainings, workshops and seminars on GESI and safeguards,

Appendix 8: Knowledge Management and Communications Plan

Overview

Utilizing available knowledge to apply good practices and lessons learned is important during both project design and implementation to achieving greater, more efficient, and sustainable project results. Sharing this information is then useful to other projects and initiatives to increase effectiveness, efficiency, and impact among the conservation community and enable replication and scaling-up. Project component 3 makes up the monitoring, evaluation and knowledge management component. This component will ensure that the project is effectively implemented and progresses in line with expected results and managed adaptively in response to challenges and lessons experienced during project implementation. It will also ensure that lessons learned, and good practices are garnered, documented, analyzed, and disseminated to facilitate knowledge development and visibility of project results. It will keep track of project results, including capturing and sharing of key project lessons with project stakeholders and beyond. This project will consider monitoring, evaluation, and learning as a package to enable adaptive management and success of the project interventions, and aid replication and scaling-up. The component will focus on garnering and analysing lessons and good practices and developing and disseminating knowledge that are central to the project objective and outcomes. This will be primarily done by carrying out case studies to analyse and highlight concepts, approaches and issues that the project addressed and the lessons and best practices that emerged from project implementation. Knowledge derived from these case studies will be disseminated to facilitate replication in other communities and circumstances facing similar climate stress and challenges.

Existing Lessons used for Project Preparation

Prior to finalizing the project design, lessons were gathered from previous projects and project stakeholders specifically government officials and communities in the project area, and incorporated into the project design. Please refer section 3.7 (Lessons Learned During Project Preparation and from Other Projects) to review the lessons and understand how they were utilized.

M&E and Knowledge Management Tools

During project implementation and before the end of each project year, knowledge produced by or available to the Project will be consolidated from project stakeholders and disseminated by the project management unit (PMU). This collected knowledge will be analyzed alongside project monitoring and evaluation data at the annual Adaptive Management meeting. It is at this meeting that the theory of change will be reviewed, and modifications to the annual work plan and budget will be drafted. Making adjustments based on what works and what does not work should improve project results. The project will have a monitoring and evaluation system in place to keep track of project progress including against project results including GESI indicators, ESS indicators, identify constraints and challenges to project progress, and provide information for adaptive management. The project's results framework will be the main instrument for assessing project progress against indicators and targets including those that are GESI-related. It will be supplemented by the GEF Capacity Development tracking tool and GEF-7 CCA Results Framework tracking tool. As required for all full-size GEF projects, a mid-term evaluation of the project will be conducted after two years of project implementation and a terminal project evaluation will be done towards the end of the project. Annual and bi-annual project reviews will be undertaken as a part of the project management, and periodic progress reports will be produced to inform project stakeholders and provide documentation for planning and evaluation purposes.

Roles and Responsibilities

The PMU Project Manager will ensure that the Ministry of Forest and Environment at the federal level and in the province, the Ministry of Finance (GEF Operational Focal Point), WWF GEF Agency, Project Steering Committee and other project partners are informed of adaptive management, formal evaluations, and any documentation on lessons and good practices undertaken by the project. These partners will receive all related documents, such as the Mid-term and Terminal Evaluation Reports, and case study reports to ensure the sharing of important knowledge products. A full-time M&E and Knowledge Management Officer will be a part of the PMU, with the specific responsibility for monitoring project workplans and keeping track of project progress, managing the project results framework and GEF tracking tools, coordinating project evaluations and disseminating evaluation findings and recommendations, organizing media and communication events, maintaining the project website, and ensuring project lessons and good practices are captured and disseminated for adaptive management, replication and scaling-up.

Knowledge and Communication Products under the Project Components

A strategic communications plan has been budgeted for this Project and will include the following knowledge and communication products:

- Component 1:
    - Methodology and training materials for participatory assessment of climate risks and vulnerabilities;
    - Training reports related to climate risk and vulnerability assessment and CCA mainstreaming;
    - Participatory assessment reports of climate risks and vulnerabilities;
    - CCA-integration guidelines to support revision/ formulation of local and sector plans to enhance their climate responsiveness;
    - Operational modality, structure and functions for multi-stakeholder platform, providing a basis for organizing similar platform in the future.
- Component 2:
    - Community training and staff training reports;
    - Field reports on various climate-adaptive technologies and practices, including NbS, implemented in the project area.
- Component 3:
    - Case study reports garnering and analyzing lessons learned and good practices from the project;
    - CCA Indigenous knowledge assessment report;
    - Annual and semi-annual project progress and implementation reports;
    - Annual WWF-GEF Monitoring Review reports
    - PSC meeting reports;
    - Project website;
    - Media and communication materials;
    - Independent project evaluation reports (mid-term evaluation and terminal evaluation.

All knowledge and communication products produced by the Project will be shared on a project-specific website, hosted by the Ministry of Forests and Environment, Bagamati Province. This will allow a wider audience to gain knowledge from the Project. In addition, WWF Nepal Office will maintain up-to-date project information and knowledge resources on their website.

Appendix 9: Climate Risk Screening

Title of project: Managing Watersheds for Enhanced Resilience of Communities to Climate Change in Nepal
Location: Marin sub-watershed, Sindhuli District, Nepal
Geographic coordinates (in degree decimal): 85.503824 E to 85.958326 E, 27.136513 N to 27.384487 N
Office: WWF Nepal
Name: Dipesh Joshi and Arati Khadgi
Email: dipesh.joshi@wwfnepal.org and arati.khadgi@wwfnepal.org

INTRODUCTION

Climate change creates new challenges for conservation efforts. Climate risk screening is critical in the development of any conservation project/program, since unplanned, poorly planned, or reactive management of climate risks can pose additional threats to people and biodiversity. This tool is designed to assess climate risks at the early stages of project/program design so that they can be addressed and managed through the project itself. Through robust climate risk screening and management practices, we aim to design conservation approaches that are resilient to a changing climate.

Risk is defined as the potential for adverse consequences where something of value is at stake, and where the occurrence and degree of an outcome is uncertain. Climate risk is measured by the vulnerability of an affected system, based on its exposure to climate hazards over time, and the hazards' likelihood of occurrence[41]. Hazards are natural or human-induced physical events that may cause loss of life, injury, other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, and environmental resources. Physical events like tropical cyclones, floods and drought are considered hazards where social elements (people, livelihoods, environmental services and resources, infrastructure, and any economic, social or cultural assets) are exposed to their potentially adverse effects[42].

Climate risk assessment thus includes key steps on hazard identification and vulnerability evaluation, followed by risk rating and risk management. This tool will ask a series of questions to help identify climate hazards in the project area, the adverse effects of these hazards (impacts) on the affected system (ecosystems, communities, livelihoods, economic activity, etc.) and adaptation responses to these hazards, that could affect the outcomes or your proposed work.

[41] IPCC, 2018: Summary for Policymakers. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. In Press.

[42] Lavell, A., M. Oppenheimer, C. Diop, J. Hess, R. Lempert, J. Li, R. Muir-Wood, and S. Myeong, 2012: Climate change: new dimensions in disaster risk, exposure, vulnerability, and resilience. In: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation [Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.)]. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change (IPCC). Cambridge University Press, Cambridge, UK, and New York, NY, USA, pp. 25-64.

PROGRAM INFORMATION

1. Provide a brief description on the screened project/program. What are the goals for your project/program? If applicable, provide information on the funding agency you are working with, what this project focuses on, and what it aims to achieve.

The project "**Managing Watersheds for Enhanced Resilience of Communities to Climate Change in Nepal**" aims to enhance climate resilience of Indigenous People and Local Communities (IPLCs) in the Marin sub-watershed through nature-based solutions and livelihood diversification. The proposed project will help increase resilience of the local communities in the face of long-term climate change and associated hazards such as landslides, floods, droughts and forest fires by reducing vulnerability, increasing adaptability, and improving the transfer and expansion of locally appropriate nature-based solutions.

The project is designed along three components aimed at ensuring community climate resilience by addressing the priority needs identified by local communities. **Component 1** will create an enabling environment for climate change and adaptation mainstreaming through capacity building, planning and policy support and catalyse an innovative approach of integrated watershed management in the Marin watershed to the current management which is characterized by a separate sectoral and administrative approach. **Component 2** will incorporate climate change impacts and adaptation measures into watershed planning and management and implement nature-based solutions (NbS) that support to address impacts of floods, landslides, drought and forest fires while increasing agriculture productivity and resilience and help vulnerable farmers adapt to climate change by improving rural livelihoods. **Component 3** aims to increase knowledge and learning for sustainability and replication while ensuring monitoring and evaluation for adaptive management of the project.

WWF Nepal intends to access **Least Developed Countries Fund (LDCF)** under **Global Environment Facility** (GEF) for funding of the proposed project. After project concept (PIF) was approved by LDCF/GEF in December 2020, WWF US as GEF Agency is supporting WWF Nepal and the executing partner Ministry of Forests and Environment (MoFE) to prepare a detailed Program Document (ProDoc).

2. Which ecosystems are present in your project area? (These are the natural elements of the affected system that are exposed to climate hazards.) Please provide information and/or observations next to the checked boxes, including priority conservation targets in the project area (e.g. specific landscapes or seascapes, freshwater bodies, forests, oceans and reefs, wildlife species, etc.) There is additional space to share other data/information/observations in the box below.

☐ Coral reefs -

☐ Coastal -

☐ Deserts and xeric shrublands -

☐ Deltas and estuaries -

☐ Boreal forests and taiga -

☒ Temperate forests –

☒ Tropical and subtropical forests –

☐ Temperate grasslands -

☒ Tropical and subtropical grasslands -

☒ Ponds and lakes -

☐ Mediterranean shrubs and Forests -

☐ Mangroves -

☐ Montane/Alpine -

☐ Temperate oceans -

☐ Tropical oceans -

☐ Peatland -

☒ Streams, rivers, riparian –

☐ Seagrass -

☐ Saltmarsh -

☐ Wetlands -

☐ Created forest -

☐ Created grassland -

☐ Created other -

☒ Created wetland -

☒ Other –

Please include any other information you would like to describe here:

In the valley area, riverine forest like khair (*Acacia catechu*), Sissoo (*Dalbergia sissoo*), and Semal (*Bombox ceiba*) forests are found whereas in higher altitude Chirpine (*Pinus roxburghii*), *Alnus nepalensis*, *Quercus* species can be seen. Other types of forest include Mixed broad- leaved forests and Riverine forest (along the riverbank). In the tropical areas, the forest is dominated by Sal (Shorea robusta). Hill Sal (*Shorea robusta*) forest and its associated species are found in both valley and mid-hills.

There are 9 micro-watersheds (including Kyan khola) in the project area and a few man-made ponds for fishing purposes in Marin and Kyan valleys.

3. **Which hazards, directly resulting from or worsened by climate change, have become more frequent or severe and have negatively impacted your project area? These can be anecdotal or based on collected data**. These are the climate hazards to which the affected system is exposed over time. Please describe information and/or observations

next to the checked boxes. There is additional space to share other data/information/observations in the box below.

☒ Changes in timing of seasons -

☒ Changes in frequency and/or severity of rainfall –

☐ Changes in frequency and/or severity of storms/cyclones/hurricanes –

☐ Changes in frequency and/or severity of dust storms/sand storms -

☐ Changes in frequency and/or severity of coastal Flooding -

☒ Changes in frequency and/or severity of inland flooding –

☐ Changes in frequency and/or severity of heat waves/hotter days -

☐ Changes in frequency and/or severity of cold spells/frost -

☐ Changes in frequency and/or severity of ice/permafrost melt -

☒ Changes in frequency and/or severity of wind –

☐ Changes in frequency and/or severity of ocean acidification -

☐ Changes in frequency and/or severity of sea level rise -

☐ Changes in frequency and/or severity of storm surge -

☒ Changes in frequency and/or severity of drought –

☐ Changes in frequency and/or severity of desertification -

☒ Changes in frequency and/or severity of soil erosion –

☒ Changes in frequency and/or severity of wildfires -

☒ Changes in frequency and/or severity of mudslides/landslides –

☐ Changes in frequency and/or severity of increased aridity -

☐ Changes in frequency and/or severity of avalanches -

☐ None -

☐ Other -

☒ Uncertain or do not know –

Please include any other information you would like to describe here

Precipitation could change from 4.63-6.06mm of rainfall in the short-term and 7.53-11.87 mm in the long-term. Increased precipitation brings an increase in flooding events.

Sindhuli district has been affected by different natural disasters in past years. Floods, landslides, fires, epidemics, earthquakes, hailstorms, and windstorms are the major disasters that have occurred. As per the information on disaster severity of Sindhuli district, flooding is the most frequent and severe natural disaster followed by earthquakes. Fire is the third most severe natural disaster and fourth and fifth are landslides and epidemics. Municipality-level analysis shows that Ghanglekh RM is moderatley vulnerable whereas Kamalamai municipality, Hariharpurgadhi RM and Marin RM are classified as highly vulnerable areas in the Sindhuli district.

The average rainfall over a 31-year period from 1990-2020 at Hariharpur Gadhi Meteorological Station during peak monsoon season, has almost doubled, increasing the severity of the effects of precipitation with a maximum of 1655.9mm in the year 2002. Droughts have been more common and longer, with one drought lasting from October to March in 1999, November to April in 2008 and November to March in 2018. There have been noticeable increases in forest fires in the area as well as in the number of landslides. All of these natural disasters contribute to a higher rate of soil erosion in the Chure hills

The annual temperature in Sindhuli district is 27.2ºC. The maximum temperature in pre-monsoon season is 29.6ºC, monsoon 30.0ºC, post-monsoon 26.8ºC and winter it is 7.8ºC. Likewise, the minimum temperature in Sindhuli district falls to 16.1ºC in pre-monsoon, 22ºC in monsoon, and 14.8ºC in post-monsoon. In the case of precipitation, winter precipitation is 36.2 mm, pre-monsoon rates are 205.4 mm, monsoon rates are 1376.3 mm, post-monsoon rates are 80.9 mm and total annual rainfall is 1698.8 mm. Windstorms have also been noted to be more prevalent in the area.

There is a projected change in 30 years of temperature and precipitation rates in the Sindhuli district. Using the RCP of 8.5 for short-term changes (2016-2045) and long-term changes (2036-2065) it is projected that the temperature could change from 0.83-1.05 degrees in the short-term and 1.17-1.75 degrees in the longer term.

4. **What are your primary sources of information on these climate hazards**? Please describe information and/or observations next to the checked boxes. There is additional space to share titles of sources and/or direct links, as well as other data/information/observations in the box below.

☐ Peer-reviewed literature or other academic research

☒ Grey or white literature (i.e. reports from researchers or other NGOs)

☒ Government reports

☒ Observations from the field

☒ Interviews

☐ Personal

☒ Community/expert interviews

☒ Multi-stakeholder workshop

☐ IPCC reports

Include citations below:

COMMUNITY IMPACTS

5. **Describe the socio-economic elements of the affected system in the landscape/protected area the project/program will be working in that are exposed to climate hazards**. Please describe information and/or observations next to the checked boxes and/or in the comment box.

   Communities and their main livelihoods in the project area, including:

   ☒ Population size (men, women)-

   ☒ Number of communities / settlements -

   ☒ % below poverty level -

   ☒ Presence of vulnerable groups –

   ☐ Average annual income -

   ☒ Main economic sectors and primary commodities –

   ☒ Dependence on natural resources (agriculture, fishing, non-timber forest products, etc.) -

Population: 49,075 (women: 25,769). 2.5% of the population is disabled, and around 80% belong to indigenous groups. The project area covers a total of 18 Wards including four municipalities; Kamalamai Ward 1 & 2, all the 7 wards of Marin rural municipality, 1, 2 and 3 Wards of Ghyanglekh rural municipality and 2, 4, 5, 6, 7, & 8 Wards of Hariharpur Gadhi, the rural municipality of Sindhuli district. Poverty in the watershed is below the national average (43%) but ranges from 24% in one municipality to up to 56% in more rural municipalities.

The population has a high dependency on natural resources as **main economic sectors and primary commodities** include agriculture (mainly paddy, maize, millet, and mustard); Horticulture (mainly mango, watermelon, litchi, guava, banana, jackfruit, papaya); Forestry (mainly Tropical and Hill Sal and Chir pine-broad leaved trees that are harvested for timber and fuelwood); Mining (Sand, stone and boulder)

Most of the households (almost 78%) have agriculture as their main source of livelihood which includes both subsistence livestock and crop farming. Only 14% of the total land area is cultivatable and the average size of farmed land is very small (i.e., about 0.3 hectares). The poor households are dependent on Non-timber Forests Products.

The high dependency on natural resources in the area has resulted in the degradation of forest and grazing land. Similarly, unregulated mining has caused river disruptions and widening, altering flood and flow regimes.

6. **Which of the following impacts have been observed in the project area that you believe may be caused or exacerbated by the climate hazards you noted in question 3?** These indicate how the affected system is vulnerable to climate hazards, or non-climate threats that will be made worse by climate hazards. Please describe information and/or observations next to the checked boxes. There is additional space to share other data/information/observations, particularly for vulnerable populations and protected areas, in the box below.
   a. Community/human impacts due to observed climate hazards

      ☒ Decline or loss of crop yields

      ☒ New or increased number of pests -**.**

      ☐ Decline in livestock health (death, disease, weight loss, decline in the production of milk and/or number of offspring) -

      ☐ Increased instances of disease/declining health (e.g. respiratory problems, spread of malaria) -

      ☐ Decline in soil quality -

      ☒ Damage to property, equipment, infrastructure (e.g. caused by floods/storms) –

☒ Increased instances of wildlife entering farms/settlements for water, to prey on livestock, or to eat/damage crops -

☐ Increased instances of hunger, famine, and/or poor nutrition -

☐ Scarcity of pasture for livestock grazing -

☒ Drying/disappearance of surface water/freshwater –

☒ Decreased quality or contamination of surface water/freshwater –

☐ Increased coastal erosion -

☐ Increased coastal saltwater intrusion -

☐ Scarcity or loss of firewood access -

☐ Loss of other ecosystem goods -

☒ Decline in food and timber productivity -

☐ Loss or reduction of wild plants/animals used for consumption -

☐ Loss or reduction of wild plants/animals used for medicinal purposes -

☒ Loss of fish availability (death of fish, or fish swimming to lower depths/ farther out from shore to escape heat, making them more difficult to catch) –

☐ Loss of biomass cover -

☒ Impacts to places or species of religious/cultural significance -

☒ Other –

☐ Uncertain or do not know –

Please include any other information you would like to describe here. Elaborate on how vulnerable groups may be impacted differently or if there are any impacts that are particularly severe for vulnerable groups, (e.g. indigenous peoples, women, children). Note if any practices are illegal or lead people to enter parks or reserves (protected areas):

Loss of productivity: Due to extended dry spells, the disappearance of spring sources, damage to irrigation systems in a few places, and lack of access to irrigation facilities, the agricultural productivity is decreasing. Productivity is also affected by sand and silt accumulation in agricultural land as a result of heavy rain and flooding and a disappearance of local varieties of rice (such as Hardagola, Satara, Jhiguwa etc.). Traditionally, people used to cultivate rice, but they are now shifting to maize and wheat, crops that need less water. Agriculture crops are infested by various types of diseases such as Blast, Sheath Blight in Paddy; Leaf Blight and Head Smut in Maize, Anthracnose and Down Mildew in vegetable crops. Weeds such as *Cyperus difformis, Cynodon dactylon, Vicia sativa* directly affect the crop productivity.

Also, there are incidents when rice fields were damaged by the floods. The land areas in Marin River valley, which were primarily used for agriculture farming, now have been largely converted into river beds due to high siltation from the creeks/streams originating from the North Slope of the Chure region and also from river-bank cutting. large creeks carry excessive amount of soil and gravel from the fragile Chure region that's gets deposited into the river beds and farm land. The quantity of fish being harvested has decreased due to a decrease in regular flows of water or fisheries being washed away due to extreme rainfall.

Human Wildlife Conflict: Previously, Monkeys, wild boars, local leopards, and Nilgai occasionally entered the village from the Chure forest region; however, these incidences have become frequent lately as the animals search for the increasingly illusive water sources.

Forest Degradation: Increased incidences of forest fire and open grazing in the forest are reducing forest cover. The forests and barren lands are seeing more exotic invasive species that have affected the growth of desired species. Locals believe that due to low quality of fodder and environmental conditions, the productivity of livestock is also decreasing as open spaces are invaded by the invasive exotic species.

Damage to property and infrastructure: the flood has damaged houses, agricultural land, bridges, canals and local roads in the area.

Decreased availability of freshwater: The mixing of earth material and debris from landslide has degraded the quality of freshwater resources. Also, springs and wetlands in the forests and settlements are drying up. Water scarcity (drinking and irrigation) is of one the pressing threats in the project area.

Marginalized communities and IPs are highly affected due to their dependency on traditional farming methods. Traditional occupational activities such as fishing in the river by the Majhi communities has been disappearing. The number of absentees in schools is high during monsoon season mainly due to floods in the rivers/streams. Local roads in some area get completely damaged during heavy rainfall.

7. **How are communities responding to these impacts due to climate hazards**? These are the **adaptation responses** to climate hazards. Please describe information and/or observations next to the checked boxes. There is additional space to share other data/information/observations, particularly for vulnerable populations and protected areas, in the box below. (We will address the adverse consequences of these responses below).

    a. Food production

    ☒ Adopting alternative crop practices (crop type, ground contouring, conservation agriculture, farming in new areas, planting earlier/later than usual) -

    ☒ Increasing application or changing the type of pesticides used

    ☒ Increasing application or changing the type of fertilizer used -

    ☒ Adopting alternative livestock practices (livestock type, new grazing area, grazing in certain areas earlier or later than usual) -

    ☒ Practicing agroforestry (planting trees to prevent erosion/provide shade) -

    ☒ Using irrigation practices (where there previously was none, or increased use) –

    ☐ Rainwater harvesting -

    ☒ Land clearing/expansion of agriculture -

    ☒ Opportunity to plant different types of crops –

    ☐ Other -

    ☐ Uncertain or do not know -

    b. Alternative or supplementary income

    ☒ Selling assets (property, belongings, livestock) -

    ☒ Changing livelihoods towards small business practices (selling charcoal, crafts, tourism, etc.) –

    ☐ Hunting/trading animals as a source of income or food -

    ☐ Relying on fishing as a source of income or food -

    ☒ Logging -

    ☒ Relying on aid from an NGO or government for resources -

    ☒ Foraging in natural areas (i.e. forests) to gather food/raw materials or doing so more intensively -

    ☐ Other -

    ☐ Uncertain or do not know -

    c. Resource access

    ☒ Investment in water access (boreholes, impoundments, rainwater storage tanks) –

    ☒ Investment in road access -

    ☐ Using different fishing gear or fishing in new locations -

☒ Traveling farther or to new locations to access water -

☐ Traveling farther or to new locations to access firewood -

☒ Traveling farther or to new locations to access NTFPs -

☐ Traveling farther or to new locations to access game/food -

☐ Traveling farther or to new locations to access land and soil -

☒ Migrating to new areas –

☒ Construction of infrastructure (dams, wells, fencing) -

☐ Other -

☐ Uncertain or do not know -

d. Ecosystem and human-wildlife interactions

☒ Practicing restoration or protection of key landscape/ecosystem services (water catchment, restoration of riverbanks to maintain flood mitigation benefits) **-**

☐ Killing of wildlife for defensive or retaliatory reasons (posing a threat to life or property) –

☐ Measures to reduce crop damage (e.g. solar fencing, ditches, scaring methods, alternative crops undesirable to wildlife, protecting livestock from predators) -

☐ Other -

☐ Uncertain or do not know –

Please include any other information you would like to describe here. Elaborate on how vulnerable groups may be impacted differently or if there are any impacts that are particularly severe for vulnerable groups, (e.g. indigenous peoples, women, children). Note if any practices are illegal or lead people to enter parks or reserves (protected areas):

Local food production does not meet the food requirement of households of the project area. Thus, they purchase from the market. In order to meet the food requirements of the family, many people seasonally migrate to make additional income from labor work. This has overburdened the work load for women responsible for fodder collection to sustain livestock. As a result, many households have reduced their traditional animal keeping practices. The traditional breeds of livestock numbers are gradually decreasing due to heavy migration of male population from the project area. However, those who have returned from abroad have started commercial livestock keeping such as poultry farming, goat farming, buffalo farming and piggery farms near the road heads or market centers.

Decline in crop production from the limited land of the poor and marginalized community resulted in forced migration for labor work. Some have abandoned agricultural practices altogether and are investing in livestock and small enterprises such as poultry and vegetable farming. Excessive amount of pesticide and fertilizers are used for increasing production which is degrading the production capacity gradually every year. Most farmers try to put chemical fertilizers on their crops without knowing the requirement of crops but the fertilizers are not readily available which affects the productivity of agriculture.

Local villagers have their own traditional irrigation or small seasonal irrigation systems. Some of these systems have been supported by municipality. There are few cooperatives running in the project area that provides loan to the community, individual farmers, and entrepreneurs.

Logging and exploiting community and national forests as major sources of fodder, forage, firewood and timber has been degrading the forest. The poor households also rely on the forest to gather bamboo, bamboo shoots, green vegetables, wild fruits and wild yams from the forests. A couple of years ago, logging was done in the name of Scientific Forest Management in many community forests. Recently, the Government of Nepal has cancelled the concept of scientific forest management.

As landslides and flooding are the major threats in the area, government have constructed embankment, landslide control measures such as check-dams, and conservation ponds in the hotspot locations/sites in the Sindhuli district. Some Wards/ Municipalities have also invested in constructing a few spurs, embankments to protect settlements and/or agriculture lands. Without the technical expertise needed, these infrastructure projects have not been very successful. In addition, agroforestry and plantation activities have been carried out in the degraded forest. There has also been construction of conservation ponds and the installation of new drinking water systems by the municipality and NGOs.

Rural road construction is the first priority of all the communities, wards and municipalities but haphazard road construction using bulldozers without planning, or accounting for environmental consideration, has caused lots of landslides in the project area. The newly constructed Madan Bhandari Highway has highly increased the value of lands in the Marin valley, particularly in the road heads and market centers. Newly opening market centers have also increased the demand for vegetables, meat, fish and milk products, fruits and other products for hotels and the growing population**.** The surplus products can be easily marketed to Sindhuli, Kathmandu and Hetauda.

BIODIVERSITY IMPACTS

8. **Which of the following impacts have been observed in the project area that you believe may be caused or exacerbated <u>directly</u> by the climate hazards you noted in question 3?** (These indicate how the affected system is vulnerable to climate hazards.) Please describe information and/or observations next to the checked boxes. There is additional space to share other data/information/observations, particularly for vulnerable populations, in the box below.

   a. Direct impacts on biodiversity that could be attributed to observed climate hazards.
      ☒ Increase in invasive plant/animal species –
      ☐ A general decline in population or disappearance of a species in an area -

☐ Decrease in pollinators -

☐ Fragmentation of habitat, creating restricted movement for wildlife -

☒ Habitat loss due to deforestation or other land clearing/conservation activities -

☒ Habitat degradation from human encroachment, increased human activity and extraction of resources in natural areas including reserves and parks (protected areas) -

☐ Ecological change in habitat types

☒ Habitat degradation from natural causes -

☐ Range shift (wildlife moving into an area they previously did not occupy or out of an area they previously occupied) -

☒ Increase or emergence of new diseases affecting plant/animal species –

☐ Mortality/decline in abundance of plants/animal species caused by extreme weather events (e.g. heatwaves, cold spells, wet/dry periods, strong winds, etc.) -

☐ Mortality/decline in abundance of plants/animal species caused by floods -

☐ Changes in life cycle events of plants/animal species (phenotypic change) -

☐ Other -

☐ Uncertain or do not know –

Please include any other information you would like to describe here. Elaborate on how vulnerable groups may be impacted differently or if there are any impacts that are particularly severe for vulnerable groups, (e.g. indigenous peoples, women, children):

Two invasive species have become prevalent in the area: *Eupatorium* species and *Lantana camera*. These species are seen mainly in forest area.

Habitat degradation from natural causes is present. Sub-Watershed conditions of Marin river and its tributaries have been degraded which has caused high siltation due to open grazing, forest fires, farming in steep slopes and over-exploitation of forest resources. The high amounts of siltation in the river and drying up of water, are two major causes for habitat loss of indigenous aquatic species in Marin river.

Communities in the project area have noticed an increase in the intensity of infestation of pests in crops and plants.

b. Indirect impacts on biodiversity that could be caused or exacerbated by the <u>community coping responses</u> to climate hazards noted in question 3.

☐ Increase in invasive plant/animal species –

☐ A general decline in population or disappearance of a species in an area -

☐ Decrease in pollinators -

☐ Fragmentation of habitat, creating restricted movement for wildlife -

☒ Habitat loss due to deforestation or other land clearing/conservation activities -

☒ Habitat degradation from human encroachment, increased human activity and extraction of resources in natural areas including reserves and parks (protected areas) -

☐ Ecological change in habitat types

☐ Habitat degradation from natural causes–

☐ Range shift (wildlife moving into an area they previously did not occupy or out of an area they previously occupied) -

☐ Increase or emergence of new diseases affecting plant/animal species -

☐ Mortality/decline in abundance of plants/animal species caused by extreme weather events (e.g. heatwaves, cold spells, wet/dry periods, strong winds, etc.) -

☐ Mortality/decline in abundance of plants/animal species caused by floods -

☐ Changes in life cycle events of plants/animal species (phenotypic change) -

☐ Other -

☐ Uncertain or do not know –

Habitat degradation from human encroachment and habitat loss can me linked to unmanaged forest fires conducted by communities to improve forest regeneration.

BUSINESS SECTOR

9. **Describe the economic elements of the affected system in the landscape/protected area the project/program will be working in, that are exposed to climate hazards.** Please describe information and/or observations next to the checked boxes and/or in the comment box

Major relevant industries or economic sectors in the project area:

☒ Commercial agriculture –

☒ Fisheries –

☒ Forestry –

☒ Mining –

☒ Major infrastructure –

☐ Manufacturing

☐ Other –

☐ Uncertain or do not know -

Fisheries: Some of the indigenous communities of the project area Majhi, Danuwar, Hayu are fishing communities by tradition; improving fishing practices can support in commercialization of fisheries

Forestry: non-timber forest products such as bamboo, forest yam etc. and timber from Sal and Asna tree are sold in the project area.

Commercial Agriculture: potato, rice, vegetables, commercial fruit (in a small area for sweet oranges), are all grown in the project area for income generation

Mining: sand and gravel mining is present in the project area

Major Infrastructure: Building of roads, bridges, irrigation canals is all prevalent in the project site

10. **Which of the following impacts have been observed in the project area that you believe may be caused or exacerbated by the climate hazards you noted in question 3?** (These indicate how the affected system is vulnerable to climate hazards.) Please describe information and/or observations next to the checked boxes. There is additional space to share other data/information/observations, particularly for vulnerable populations and protected areas, in the box below.

    a. Economic sector impacts due to observed climate hazards

    ☒ Decline in agricultural production –

    ☐ Decline in energy generation -

    ☒ Decline in fisheries production –

    ☒ Decline in forestry –

    ☒ Damage to infrastructure –

    ☐ Disruptions in manufacturing -

    ☐ Disruptions in supply chains -

    ☐ Disruptions in operations -

    ☐ Social conflict -

    ☐ Market change -

    ☒ Workforce migration –

    ☐ Regulations due to scarcity of resources or other impacts -

    ☐ Credit risk -

    ☐ Raw material price increases -

    ☒ Increased cost of inputs –

☐ Operational price increases -

☐ Labor availability impacted -

☐ Increase in insurance prices -

☐ Reinsurance impacts -

☐ Other -

☐ Uncertain or do not know –

Please include any other information you would like to describe here. Elaborate on how vulnerable groups may be impacted differently or if there are any impacts that are particularly severe for vulnerable groups, (e.g. indigenous peoples, women, children). Note if any practices are illegal or lead people to enter parks or reserves (protected areas):

A decline in agricultural productivity and market failure have forced communities to look for alternative job opportunities in other cities in Nepal as well as in abroad. This male migration in search of additional income for the family has added a greater burden to women who must now look after agriculture, livestock, children and elderly people within their family. Water sources that have been drying up also increase the workload for women and children who need to travel farther to access water during the dry season. The project area has 2.5% disabled (differently able people) who are also highly susceptible to climate change and disasters.

Water insecurity has caused a decline in agricultural production and a decline in fisheries.

Infrastructure is repeatedly damaged by floods and landslides. The cost of pesticides and fertilizers has increased in response to the higher demand as more farmers face agricultural production losses.

A decline in forests and forest products has been associated with forest fires and degradation.

11. **How is the business sector responding to these impacts due to observed climate hazards?** (These are the **adaptation responses** to **climate hazards** that can pose additional risk to the affected system.) Please describe information and/or observations next to the checked boxes. There is additional space to share other data/information/observations, particularly for vulnerable populations and protected areas, in the box below.

☒ Adding on-site utilities and energy sources

☐ Shifting supply base -

☐ Increasing risk awareness -

☐ Relocating physical assets and operations -

☐ Increasing insurance coverage -
☐ Development of disaster recovery plans -
☐ Shifting patterns of production and sourcing -
☐ Auditing suppliers' activities and plans -
☐ Risk assessment and management shifts -
☒ Financing adaptation activities –
☒ Technology development, transfer, and application -
☐ Efficiencies -
☐ Policy engagement -
☒ Investment in green and grey infrastructure to protect assets –
☐ Other -
☐ Uncertain or do not know –

Please include any other information you would like to describe here. Elaborate on how vulnerable groups may be impacted differently or if there are any impacts that are particularly severe for vulnerable groups, (e.g. indigenous peoples, women, children). Note if any practices are illegal or lead people to enter parks or reserves (protected areas):

Utilities and Energy Sources:

The project area is adapting to decreased agricultural production by investing in cold storage and refrigeration to secure milk products, fruit and crops**.**

Technology:

The construction of Madan Bhandari Highway through Marin valley has opened the scope of technology development, transfer and application. The project area is an emerging site for technology development and its application. However, there is a limited use of technology in communication, agriculture and other sectors.

There are agro-vet based markets that supply Pesticides, Insecticide, Fertilizers, feed additives and equipment to support farmers in preventing crop failure.

Infrastructure: The project area has been adding more irrigation canals, bridges and roads

Financing:

Loan services are provided by agriculture-based cooperatives and small-scale financing institutions to help mitigate the loss of agricultural crops.

CLIMATE RISK AND PROGRAM DESIGN

12. Which of the identified climate hazards, impacts, and responses will have the biggest implications for the 1) operations and/or 2) sustaining long-term outcomes of your project? If so, how?

Operations: Erratic rainfall and consequential flood may disrupt the installation of bioengineering structures and damage the plantation activities carried out in the vulnerable sites, requiring investment of additional human and other resources or a delay in the implementation of activities.

Sustainable long-term outcomes: Revival of water sources may take time; thus farmers may adopt mal adaptation practices such as excessive use of chemical fertilizers or might even change their source of livelihood and start increasing their dependency on natural resources they are easier to exploit. This will cause degradation of natural resources and as the project is based on nature-based solutions, the outcomes expected mainly under Component 2 will be impossible to achieve. Also, large scale landslides, floods or windstorms may permanently damage the adaptation support and interventions implemented under this project jeopardizing the success of the project.

13. How does your project address or plan to address these identified climate hazards to ensure project success? How will you incorporate equity measures for vulnerable populations?

☒ Description of what your project is doing/will do to address these risks

Climate change related hazard have been identified as one of the major risks for the project's success. To mitigate this the following considerations will be made:

- Construction activities will be conducted in the dry season where chance of rainfall is minimal.
- Consideration will be given to timing that affects human resource safety so that construction and plantation activities are not impacted by any kind of disaster events.
- Awareness of long-term benefits to nature-based solutions will be provided to local communities under Component 1 so that they do not seek short term benefits from mal adaptation practices.
- Some of the large-scale events such as landslides cannot be managed by the proposed project due to budget constraints. Thus, coordination with President Chure Conservation Project and Local government will be carried out for joint investments.

☐ We do not know how to mitigate these risks

☐ We cannot mitigate these risks:

Appendix 10: Stakeholder Engagement Plan

1. **Introduction**

This project, located in Marin watershed in the central-east of the Churia region, was conceptually approved in November 2020 by the GEF for funding from the GEF-managed Least Developed Countries Fund (LDCF). The Marin watershed was selected for project focus due to the high level of vulnerability to landslides, floods and drought and its alignment with the national priority to support most vulnerable communities. The Marin watershed has a largely indigenous population (68.5% of the population) which depends on subsistence agriculture and was thus identified as having communities that are highly vulnerable to climate change risks and impacts.

The project will be implemented over a period of six years by WWF-US GEF agency in close association with the Ministry of Forests and Environment of Bagmati Province as the national executing partner. The objective of the project is ***"to enhance climate resilience of Indigenous people and local communities in the Marin watershed through nature-based solutions and livelihood diversification."*** The fundamental approach will be to address climate change impacts using an integrated approach at the watershed level. This approach is to consider: (a) strengthening coordination between local stakeholders and their capacity to assess climate risks and vulnerabilities, and mainstream appropriate climate adaptation strategies and actions in local development; (b) empowering communities through training and site based interventions to enhance the climate resilience of local livelihoods and the resources that the local communities depend upon including through transfer of climate-adaptive technology and practices, sustainable forest management, and employment of nature-based solutions (NbS) to reduce vulnerability to climate hazards and disasters; and (c) generating lessons and good practices, and developing knowledge for replication, adaptation and sustainability of the project results.

At the present, there is no institutional mechanism to bring different municipalities and other stakeholders together to discuss, share information and knowledge, and coordinate on climate change issues at the watershed level. The private sector and vulnerable sections of the community, such as women and poor sections of the community groups who are disproportionately more vulnerable to climate change, are often left out from the discussion and decision-making process on climate change adaptation and watershed management issues. While there are community groups that include women, poor and Dalit, they generally remain passive participants due to relatively low literacy levels[43], limited access to knowledge and information, and patriarchal norms which are still prevalent especially among the rural communities. The

project will enable the government and local stakeholders to invest in protecting the Marin watershed while bolstering the longer-term resilience of local and indigenous communities against climate emergencies.

The following benefits will be achieved through the project and aim to positively impact stakeholders.

- Improved coordination between stakeholders will enable more effective and efficient use of adaptation resources, and synergy between various adaptation interventions. It will also help mobilize knowledge and views from multiple stakeholders, including women, poor and vulnerable groups, leading to better understanding and decision-making for Climate Change Adaptation (CCA).
- The project seeks to address climate change impacts through a holistic and integrated approach at the level of watershed as an ecological unit. It will work with municipalities and multiple stakeholders within the Marin watershed and enhance their capacity to collaborate, coordinate and mainstream climate change adaptation and resilience measures for a larger impact at the watershed level. It will develop the capacity of municipal and other key local agencies to conduct participatory assessments of climate risks and vulnerabilities and use the resultant information and knowledge for mainstreaming climate adaptation in local plans, coherent with the national framework for the Local Adaptation Plan of Action (LAPA).
- A multi-stakeholder platform will be established, providing the mechanism for dialogue and coordination between multiple stakeholders to facilitate a holistic and coordinated approach to climate change adaptation based on watershed as an ecological unit. This platform will ensure that women, poor and vulnerable groups are represented and have the equal opportunity to participate and contribute to decision-making for CCA.

2. **Regulations and Requir**ements

Government of Nepal Policies and Regulations

Forest Policy 2019 has mentioned that forest should be managed based on sustainable, participatory and accountable manner. Likewise, Chure watershed should be conserved and managed based on upstream-downstream linkage of stakeholders and integrated conservation of land and water for maintaining healthy watershed to increase land productivity.

Forestry sector strategy 2016-2025 has mentioned that give the greater opportunity for the establishment of formal partnership between different organizations in the forestry sector by re-defining the roles, responsibilities and functions of Ministry of Forests and Soil Conservation (MFSC) (from center to district level) and by creating opportunities for NGOs, CBOs and the private sector to deliver forestry services of all kinds.

Climate change policy 2019 has included that capacity of stakeholders including local community to espouse adaptation and mitigation measures will be enhanced by creating awareness on impacts and risk of climate change.

WWF Standard on Stakeholder Engagement

The WWF GEF Agency requires all GEF projects comply with GEF and WWF Standards on Stakeholder Engagement, specifically the WWF Standard on Stakeholder Engagement and the associated Procedures for Implementation of the Standard on Stakeholder Engagement. Stakeholder engagement is an

overarching term that encompasses a range of activities and interactions with stakeholders throughout the project cycle and is an essential aspect of good project management.

The WWF Standard on Stakeholder Engagement requires the Executing Agency to engage stakeholders throughout the life of the project; communicate significant changes to project stakeholders and consult on potential risks and impacts; establish a grievance redress mechanism and register and respond to grievances throughout project execution, and; disseminate information in a way that is relevant, transparent, objective, meaningful, easily accessible. The Standard on Stakeholder Engagement promotes an inclusive process to support the development of strong, constructive and responsive relationships that help to identify and manage risks, and which encourage positive outcomes for stakeholders and project activities.

*The project will comply with WWF and government restrictions to prevent the spread of the COVID-19 virus. During field visits and in-country travel, all attempts to practice social distancing will be made, as well as the use of personal protective equipment (PPE).

3. **Proje**ct Stakeholders

WWF defines stakeholders as "persons or groups who are directly or indirectly affected by a project, as well as those who may have an interest in a project and/or the ability to influence its outcomes, either positively or negatively." Project stakeholders include the following:

National Government Entities

The national Government entities will include the Ministry of Forests and Environment, Ministry of Agriculture and Livestock Development, Ministry of Federal Affairs and General Administration, Ministry of Home Affairs, President Chure-Terai Madhesh Conservation Development Board, Department of Forest and Soil Conservation, National Planning Commission, Ministry of Finance, UNDP and FAO Projects working in Chure Conservation in Nepal.

Provincial level stakeholders: Ministry of Forests and Environment, Ministry of Land Management, Agriculture and Co-operatives, Regional Directorate of Forest, Regional Directorate of Agriculture and Livestock, GESI focal persons in the concerned organizations

District Level stakeholders: Marin Divisional Forest Office, Sindhuli Divisional Forest Office, Soil and Watershed Management Office, Sindhupalchok (responsible for watershed management at Sindhuli), District Veterinary Hospital and Livestock Expert Center, District Agriculture Knowledge Center, District Disaster Risk Reduction and Management Committee, District Coordination Committee, District Administration Office, District Water and Sanitation Office, District Irrigation Office, District Chapter of Indigenous People's Organization (NEFIN), NEWAH (Nepal Water for Health) organization, Marin-Sunkoshi Diversion Project, District Federation of Community Forest User Groups of Nepal (FECOFUN) Chapter

Local Level Stakeholders: Following, but not limited to, are the local level stakeholders:

Government Agencies: 4 Municipalities/14 Wards, Field Level Forest Offices, Livestock Service Center, Agriculture Service Centers, Field Office of President Chure-Terai Madhesh Conservation and Development Board

NGOs

Nepal Federation of Indigenous Nationalities (NEFIN), NGO Federation of Nepal, FECOFUN, Himalayan Grassroots Women's Natural Resource Management Association (HIMAWANTI), Disaster Preparedness Network (DP Net), Nepal Red Cross Society.

Community Based Organizations (cooperatives, etc.)

Community Forest User Groups, Leasehold Forest User Groups, Registered Private Forest Owners, other local CBOs (Drinking Water User Groups, Irrigation User Group, Local Disaster Risk Reduction and Management Committee, Groups for Early Warning System Management, local active clubs), Local NGOs, Farmers' Field School Groups, Saving and Credit Groups

Indigenous Peoples and Local Communities

Indigenous Peoples and their Organizations (Municipal/Ward level Chapters), mothers Group, Dalit and their Organization at Municipal/Ward Level will participate in planning and monitoring of the activities.

Private Sector

Agriculture, livestock and forest related private sector partners which are officially registered in the government agencies will support in delivery of goods and services to the project. Further consultation with private sector partners is expected during implementation.

4. **Summary of any previous stakeholder engagement act**ivities

The project development team consulted a number of stakeholders throughout the project development process, including government ministries, Indigenous Peoples, local communities, municipalities, and NGO's/CSO's.

PIF Stage Consultations with Stakeholders on Project Design

Preliminary stakeholder consultations were taken up at the time of project identification. These included municipal officials in the project area, federal, provincial and district government officials, and local community members. Altogether 28 individuals were consulted during the project identification phase; 21% of them were women. These consultations provided a basic understanding of key climate change and environmental issues in the project area, root causes of these problems, existing barriers and opportunities, priorities of the government, issues concerning implementation and the role of different organizations in project implementation, ongoing climate-related initiatives and activities, and potential project activities, which helped formulate the project concept.

Project Document stage Consultations with Stakeholder on Project Design

At first, Municipal Level Consultations were conducted in Marin Rural Municipality and Hariharpur Rural Municipality. After consultations with municipal level stakeholders, the national consultant team conducted vulnerability assessments with ward and community level stakeholders for the identification of vulnerable sites within each ward. The national team conducted a consultation workshop at the Ward Level focusing on identifying vulnerable settlements/toles/village within wards. Participatory resource and climate impact maps were prepared in working groups for mapping vulnerable settlements/toles/villages and compiling information, followed by a presentation and validation of the group work. These community consultations helped identify local experiences and impacts in relation to climate change and determine

the most vulnerable areas within these catchments. Vulnerable areas were determined based on climate impacts such as flooding, sedimentation, drying up of water resources, and impacts on local livelihood assets. Consultations led to a list of potential interventions and solutions that stakeholders have recommended for project implementation. This list can be found in **Appendix 2.**

During the project design preparation, extensive stakeholder consultations were held to derive detailed understanding of the project situation and formulate the project execution strategy in detail. Major stakeholder consultation activities included:

- A Project Planning Committee (PPC) was formed to provide strategic guidance and support to the project preparation team, and to coordinate and facilitate the participation of the project stakeholders, in particular the provincial and local governments, in the project design process. The PPC met three times over the course of the project preparation. The PPC was chaired by the Joint Secretary, Planning, Monitoring and Coordination Division, MoFE. Other members included the GEF Operational Focal Person from the International Economic Cooperation Coordination Division, Ministry of Finance, Under Secretary of the Planning, Monitoring and Coordination Division, MoFE, Department of Forests and Soil Conservation, MoFE, Climate Change Management Division, MoFE, Gender and Climate Change Focal Person of MoFE, Provincial Forest Director of Bagmati Province, and WWF Nepal.
- A series of stakeholder consultation workshops as shown below:
  - **Project development inception workshop** on 1st October 2021, to familiarize the policy-level project stakeholders with the project, its key components and funding; introduce the plan and process for the project development and elicit initial feedback and suggestions for the project development from the participants. The workshop was chaired by the Joint Secretary, MoFE, and attended by 19 officials from relevant agencies including the provincial forest department, Non-Government Organization (NGOs) and international development agencies.
  - **Field-level project design workshops** were held with municipality officials and local communities from January 3rd to January 8th, 2022, to disseminate baseline assessment information and elicit feedback and clarifications. The objective of these consultations was to also closely consult community members to identify project sites, specific project activities in these identified sites, and assess capacity of municipalities in accordance with GEF capacity assessment indicators. At these workshops, the project activities were discussed with the government officials and local communities in the project area, to participatively appraise the feasibility of the activities and their suitability to local communities' needs for adaptation to climate change. Activities were modified, where necessary, in accordance with the suggestions from the local government officials and communities. Altogether, these workshops had 178 participants (104 from Kamalamai Municipality and 74 from Marin Rural Municipality). Of these 125 (70.2%) were men and 53 (29.8%) were women. In terms of ethnicity of the participants, 137 (77%) belonged to Indigenous group, 28 (15.7%) to Dalit caste, and 13 (7.3%) to Brahmin/ Chhetri castes.
  - **Project Implementation arrangement meetings** were held between 19-24 February 2022 with the Mayor/Chair of the three municipalities, Kamalamai, Marin and Hariharpur Gadhi and MoFE of Bagamati Province, Ministry of Economic Affairs and Planning of Bagamati and Ministry of Land Management, Agriculture and Cooperatives of Bagamati Province with

participation of the Honourable Minister and Secretary of Forests and Environment including representation from the GEF Operational Focal Point MoF.

- Key informant interviews and focus group discussions were conducted from September 3rd to September 9th, 2021, for the GESI analysis. A total of 62 people were consulted during the GESI assessment in the project area. This included 52 women (83.8% of the total respondents), 47 Indigenous People (75.8%), and eight Dalits (12.9%).
- Individual consultations and focus group discussions were conducted between September and December 2021, with a total of 385 participants. These consultations had several objectives including; to assess climate risks and vulnerabilities in the project area, assess capacity of municipalities and other local agencies for CCA mainstreaming (project component 1), assess community livelihoods, natural resources management, and vulnerable community livelihood assets and infrastructure in the project area (component 2). The consultations included 274 men (71.2%) and 111 women (28.8%). In terms of ethnicity, 137 (77%) belonged to Indigenous groups, 28 (15.7%) to Dalit caste, and 13 (7.3%) to Brahmin/ Chhetri castes.
- Household surveys were carried out in the project area to secure first-hand socio-economic baseline information of the local population in relation to agriculture, livestock management, water use, energy use, climate change knowledge, and income. A total of 419 households in the project area were included in the survey: 66 each in Kamalamai Municipality and Ghyanglekh Rural Municipality; 155 in Marin Rural Municipality; and 132 in Hariharpur Gadhi Rural Municipality. Women comprised 42% of the total respondents and men comprised 58%. The majority (80.2%) of the respondents were between 30 to 59 years old. Other respondents were between 18 to 29 years old and older than 60 years of age. In terms of ethnicity, 72.6% of the households belonged to Indigenous groups, 19.3% to the Dalit caste, and the remaining 8.1% to Brahmin/ Chhetri and other castes.

5. **Stakeholder Engagement Plan**

The purpose of this Stakeholder Engagement Plan is to ensure appropriate and consistent involvement of project stakeholders in every stage of the project implementation, supporting effective communication and working relationships. The Project Management Unit (PMU) will ensure that the views and inputs of stakeholders are taken into consideration throughout project implementation. For detailed information on how the project will accommodate women's barriers to participation in stakeholder engagement, please refer to the Gender Action Plan in Appendix 11 of the project document. For detailed information about how the project will engage Indigenous Peoples and ensure their rights are respected during the project design and implementation, please refer to the ESMF, which contains an Indigenous Peoples Planning Framework.

To facilitate dialogue and coordination between the local stakeholders to address CCA in an integrated and cost-effective manner at the watershed level, the project will support the establishment of a multi-stakeholder platform and facilitate its operationalization. This will entail the development of the operational modality, structure and functions of the multi-stakeholder platform so that it operates in a transparent, coherent and inclusive manner. An event will be organized to launch and activate the platform and create awareness about it. Subsequently, the project will support the multi-stakeholder platform to organize workshops, meetings and media events to enhance stakeholder awareness and coordination. A key function of the multi-stakeholder platform would be to provide an inclusive forum that ensures the knowledge, views and aspirations of all key stakeholders, particularly Indigenous Peoples, marginalized communities and women, are recognized and inform the development of a coordinated and concerted approach to climate change adaptation in the Marin watershed. The role of the private sector will also be examined for inclusion in the platform.

The project seeks to strengthen the engagement of all related stakeholders towards unified and coherent understanding and delivery of integrated approach to climate change adaptation at the watershed level, with enhanced capacity for CCA mainstreaming, climate-resilient livelihoods, and NbS for climate disaster risk reduction. Given the localized nature of the project, the engagement of local stakeholders, in particular the municipal and ward authorities, divisional and sub-divisional forest offices, CFUGs and LFGs, and the local farmers, will be the main actors in project implementation. The MoFE of Bagmati Province will function as the national project executing agency to coordinate, guide, backstop and enable project implementation in the field.

The engagement of the various stakeholders in project implementation is outlined in the table below:

Stakeholder Name	Relevant Project Components	Role in Project Implementation/ Mode of Engagement
Federal Ministry of Forests and Environment	Policy level guidance as necessary and function as the coordinating ministry between WWF and MoFE Bagamati Province	Policy level and programmatic guidance and backstopping as necessary.
Provincial Ministry of Forests and Environment	All project components, and project management.	As the national project executing partner, MoFE will be responsible for overall project coordination and management. The PMU will be located within the Soil and Watershed Management Office, Ramechhap of the MoFE, and a senior MoFE official will be deputed as the Project Director. Keep GEF Operational Focal Point informed of project progress and performance. Coordinate with WWF GEF Agency in accordance with the agreed project operation procedures.
Municipalities/ Rural Municipalities and constituent wards	Project components 1 and 2	Recipient of capacity development for climate risk and vulnerability assessment (CRVA) and CCA mainstreaming. Direct implementation role in implementation of activities related to Outputs 1.1.2, 1.1.3, 2.1.1 and 2.2.2.
Divisional and Sub-Divisional Forest Offices	Project component 2	Guidance and backstopping for implementation of activities related to Output 2.2.1
FECOFUN: CFUGs and LFGs	Project component 2	Direct implementation role in implementation of activities related to Output 2.2.1
Local communities	Project component 2 and 3	Will be target project beneficiaries and will have a direct implementation and decision-making role in all household and community-level project interventions with support and guidance from project executing office, and local government and forest agencies.

Stakeholder Name	Relevant Project Components	Role in Project Implementation/ Mode of Engagement
Ministry of Finance	No direct role in project implementation but will have major advisory role and influence in project decisions.	Participate in Project Steering Committee meetings, keeping track of project implementation and performance and providing executive guidance where necessary. Be informed by the MoFE of project progress and performance.
Other Federal Ministries: Energy, Water Resources, and Irrigation; Agriculture and Livestock Development; Land Management, Cooperatives and Poverty Alleviation; and Water Supply.		Participate in Project Steering Committee and Technical Coordination Committee meetings, providing policy and executive guidance relevant to the affairs of their respective ministries.
Non-governmental Organizations		Participate in Technical Coordination Committee meetings, providing guidance on gender and community empowerment issues and matters related to climate change and environment depending on their organization's experience and expertise.
Other relevant provincial ministries and agencies		Participate in Project Steering Committee and Technical Coordination Committee meetings, providing provincial-level guidance and backstopping relevant to the project.
District Administration Office (Sindhuli District)	No direct role in project implementation but will have an advisory role	Regional level guidance and backstopping to community and leasehold forest management activities.
Private sector enterprises	Collaborative role in project component 2	Collaboration with local communities and cooperatives in commercialization of agriculture and livestock products resulting from project interventions. Agricultural and veterinary service provider and influencer in technology transfer.

6. Resources and Responsibilities

The Ministry of Forest and Environment of Bagamati Province is the executing agency of the project. Thus, MOFE will be responsible for carrying out the stakeholder engagement activities. The Ministry of Forest and Environment will set up a Project Management Unit (PMU) of officials of SWMO and staff recruited through Technical Assistance. Chief of the Soil and Watershed Management Office, Ramechhap will serve as the Project Manager (PM). The PMU will be responsible for conducting stakeholder consultations and supervising Stakeholder Engagement. A Gender, Social Inclusion and Safeguards (GESI) specialist will ensure all marginalized groups are included in consultations, decision-making that impacts their lives and livelihoods and workshops, that activities implemented are GESI friendly, and that materials are designed in an inclusive manner. The GESI and Safeguards expert will monitor and report on the implementation of the Gender Action Plan, the Indigenous Peoples Plan, and the environmental and social safeguards in coordination with other field office staff.

To ensure coordination and cooperation among relevant agencies, carrying out activity monitoring, reviewing the project progress on a periodic basis, a Project coordination Committee (PCC), made up of chairpersons from the local governments and heads of the key sectoral agencies, will be formed. The PCC will also facilitate the implementation of project activities, provide technical backup and facilitate wider stakeholder engagement for the successful project execution.

The WWF GEF Project Agency is responsible for oversight. The lead Executing Agency is responsible for executing the Stakeholder Engagement Plan and overall compliance with the WWF Standard on Stakeholder Engagement.

7. Grievances Mechanism

The following is a brief overview- for full information about the Grievance Mechanism, please see the ESMF. The grievance redress mechanism is designed to enable the receipt of complaints of affected women and men and public concerns regarding the environmental and social performance of the project. In short, the aim of the mechanism is to provide people fearing, or suffering, adverse impacts with the opportunity to be heard and assisted with resolving their grievance. It is designed to address the concerns of the community(ies) with a particular project, identify the root causes of the conflicts, and find options for the resolution of grievances. Therefore, it is an essential tool to foster good cooperation with project stakeholders and ensure adequate delivery of previously agreed-upon results.

This mechanism is designed to:

- Address potential breaches of GEF and WWF's policies and procedures;
- Be independent, transparent, and effective;
- Be accessible to project-affected people;
- Keep complainants abreast of progress of cases brought forward; and
- Maintain records on all cases and issues brought forward for review.

The PMU will be responsible for informing project-affected parties about the grievance mechanisms. Contact information of the staff member responsible for the grievance mechanism in the PMU will be made publicly available.

Project-Level Grievance Mechanism At the field level, the PMU will provide technical and management support to the field level activities. This team will be responsible for establishing a grievance mechanism at field level. However, the PCC will be responsible for addressing grievances that may arise in relation to policy.

WWF GEF Agency Grievance Mechanism

Project-affected communities and other interested stakeholders may raise a grievance at any time to the WWF GEF Agency. Contact information of the WWF GEF Agency will be made publicly available.

A grievance can be filed with the Project Complaints Officer (PCO), a WWF staff member fully independent from the WWF GEF Agency, who is responsible for the WWF Accountability and Grievance Mechanism and who can be reached at: Email: SafeguardsComplaint@wwfus.org.

Mailing address:

Project Complaints Officer Safeguards Complaints,

World Wildlife Fund

1250 24th Street NW

Washington, DC 20037

Complaints may be submitted in the Affected Party's native language and should include the following information:

- Complainant's name and contact information;
- If not filed directly by the complainant, proof that those representing the affected people have authority to do so;
- The specific project or program of concern;
- The harm that is or may be resulting from the project;
- The relevant Environmental and Social Safeguards policy or provision (if known);
- Any other relevant information or documents;
- Any actions taken so far to resolve the problem, including contacting WWF;
- Proposed solutions; and
- Whether confidentiality is requested (stating reasons).

The PCO will respond within 10 business days of receipt, and claims will be filed and included in project monitoring. Stakeholders may also submit a complaint online or over the phone through an independent third-party platform at https://secure.ethicspoint.com/domain/media/en/gui/59041/index.html

8. Monitoring and Reporting

Progress against the Stakeholder Engagement Plan will be monitored and reported on throughout implementation.

The following comprises the monitoring and reporting activities to be undertaken with respect to stakeholder engagement **by the PMU**:

- The SEP will be periodically reviewed and updated as necessary at an annual Reflection Workshop. The review will ensure that the list of project stakeholders and methods of engagement remain appropriate.

- Activities related to stakeholder engagement will be documented and reported by the PMU every 6 months in a Project Progress Report (as part of regular reporting). The project Results Framework and Annual Work Plan and Budget will track beneficiaries of the project and activities related to the Stakeholder Engagement Plan.
- Stakeholder Engagement activities and progress will be monitored through the following indicators:
    - GEF Core Indicator 11: Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment
    - Indicator SEP 1: Number of government agencies, civil society organizations, private sector, indigenous peoples and other stakeholder groups that have been involved in the project implementation phase on an annual basis
    - Indicator SEP 2: Number persons (sex disaggregated) that have been involved in project implementation phase (on an annual basis)
    - Indicator SEP 3: Number of engagements (e.g. meeting, workshops, consultations) with stakeholders during the project implementation phase (on an annual basis)

Stakeholder Engagement will be evaluated by **independent consultants** recruited for the project midterm and terminal evaluation.

The **WWF GEF Agency** will undertake annual supervision missions to ensure compliance, and report on progress against the Stakeholder Engagement Plan annually to the GEF through Project

Appendix 1: Systematic Documentation of Stakeholder Consultations

Stakeholder Name	Mandate	Role in the Project	Engagement during Project Preparation
Ministry of Forest and Environment	Federal ministry with overall mandate and responsibility for matters related to forest administration and management, biodiversity conservation and wildlife protection, watershed management, climate change, and environment.	Focal agency for the project development and implementation as the main national executing partner.	Led Project Planning Committee and provided strategic guidance for project design through the PPC; coordinated with stakeholders at the central level to ensure their views are incorporated in the project design; steered national-level stakeholder consultation workshops for project design and validation; provided guidance on engagement with stakeholders at the sub-national and local levels.
Ministry of Finance	The Joint Secretary of the International Economic Cooperation Coordination Division under MoF is the GEF Operational Focal Point for Nepal.	Keep track of project development and implementation and ensure these are taking place as planned and approved.	Participated in the Project Planning Committee, keeping track of project development and providing executive guidance as and when necessary.
Other Federal Ministries: Energy, Water Resources, and Irrigation; Agriculture and Livestock Development; Land Management, Cooperatives and Poverty	These federal ministries charged with the overall mandate and responsibility for agriculture and livestock development, land management, water resources management, irrigation and water supply.	As members of the Project Steering Committee, senior representatives from these ministries will provide policy-level and executive guidance on project implementation.	Participated in the Project Planning Committee, providing guidance and views during various stages of the project design.

Stakeholder Name	Mandate	Role in the Project	Engagement during Project Preparation
Alleviation; and Water Supply.			
Provincial Government (Bagamati Province)	Within the Bagamati Provincial Government: (a) Provincial Ministry of Forests and Environment has the mandate for forest, environment, soil and watershed management climate change and disaster risk management; and (b) Provincial Ministry of Land Management, Agriculture and Cooperatives has the mandate for sustainable land use and management, agriculture and livestock development, and community organization.	Provincial-level guidance and support on issues related to forest, climate change, disaster risk management, environment, agriculture and land use.	Participated in the project development inception workshop, technical design workshop, and validation workshop. Consulted for information and suggestions on project development.
District Administration Office (Sindhuli District)	Mandated to provide development support and assistance to local development plans and programs within the district jurisdiction.	District-level support and backstopping for project implementation.	Consulted for information and suggestions on project development.
Local Governments: Municipalities/ Rural Municipalities and constituent wards (Ghyanghlekh, Hariharpur, Kamalamai and Marin)	Municipalities have responsibilities for local level development plans and projects, including environmental protection, climate change management, agriculture and animal husbandry, disaster management, protection of watersheds and water supply.	Target agencies for capacity development and implementation of project activities in the field, including delivery of extension services and guidance for climate-adaptive practices in agriculture, livestock management, water management, and climate disaster risk reduction.	Involved in stakeholder consultations for project baseline assessments, appraisal of potential project sites, and identification of potential project interventions. Also consulted for appraisal of project implementation arrangement in the field.

Stakeholder Name	Mandate	Role in the Project	Engagement during Project Preparation
Divisional and Sub-divisional Forest Offices	Division Forest Office and their Sub-divisional Forest Offices are the designated authorities to manage the forest and conservation of biodiversity at the local level (outside the protected areas).	Target agencies for capacity development, and delivery of extension services and guidance for activities related to community forest and leasehold forest management including development of operational plans.	Involved in stakeholder consultations for project baseline assessments, appraisal of CFUGs, and identification of potential project interventions.
Federation of Community Forest User Groups of Nepal (FECOFUN)	FECOFUN is a network of community forest users' groups in Nepal. The network is organized into federal, provincial, district and local levels. CFUGs and LFGs have the responsibility for management of forests designated/ leased to them to meet their livelihood needs and forest conservation objectives as per approved operational plans.	Target agencies for capacity development, and implementation of community forest and leasehold forest management activities under the project.	Involved in stakeholder consultations for project baseline assessments and GESI analysis related to the functioning of CFUGs and LFGs.
Other community-based groups	There are other relevant community-based groups, including women groups, livestock groups, agriculture groups, water users' groups, and local disaster risk reduction committees.	No direct role in the project but will influence project activities, including GESI mainstreaming.	Involved in stakeholder consultations for project baseline assessments and GESI analysis.
Local communities	Responsible for self-initiative and participation in decision-making and development opportunities provided by projects and programs.	Target project beneficiaries of climate-adaptive practices in agriculture, livestock management, and water management supported by the project.	Involved in stakeholder consultations for project baseline assessments and GESI analysis, and decision-making in potential project interventions that may affect their lives or livelihoods.

Stakeholder Name	Mandate	Role in the Project	Engagement during Project Preparation
Private sector entities	Private sector contributes to local livelihood and income enhancement by creating markets, and	Important role in supply chain of inputs and materials for climate-adaptive livelihood practices and NbS, and important partner in strengthening value chain for products emanating from climate-resilient livelihoods. Will also have a crucial role in the multi-stakeholder dialogue and action platform.	Involved in stakeholder consultations for project baseline assessments.
Non-governmental Organizations	NGOs play a vital part in Nepal in grassroots level environment and community development, and empowerment of women and marginalized communities.	No direct role in project implementation but will influence project decisions, including in addressing the needs of women, poor and vulnerable communities.	Himalayan Grassroots Women's Natural Resource Management Association (*HIMAWANTI*), Disaster Preparedness Network (DP Net), and Nepal Red Cross Society were involved in the Project Planning Committee, providing views and suggestions for the project design.
WWF	WWF is an international conservation organization involved in the conserving biological diversity, ensuring sustainable use of renewable natural resources; and promoting the reduction of pollution and wasteful consumption.	As the GEF Agency for the project, WWF has the responsibility for managing and quality assurance of project development and implementation.	Managed the project development process in close coordination with the PPC. Managed project development consultants and ensured their deliverables were in keeping with WWF/GEF project designs and requirements.

Stakeholder Name	Mandate	Role in the Project	Engagement during Project Preparation
			Participated in PPC meetings and national-level stakeholder consultation events.

Listed Stakeholder consultations during Project Development

Date	Type of Event	Venue	Objective of the consultation	Summary of Meeting outcomes	Total participants
5/17/2021	Consultation workshop with Palika official	Marin RM	To discuss on key issues for the project and potential prioritized area	Identified Ghagar and Phulbari as the most problematic micro-watershed carrying huge amount of siltation in Marin Khola and loss of properties	9
5/18/2021	Consultation workshop with Palika and Ward representative	Marin RM	Same as above	Same as above	12
5/18/2021	Consultation workshop with Palika and Ward Representatives	Haariharpur Gadhi RM	Same as above	Kyan khola as most problematic micro-watershed	14
5/19/2021	FGD with Majhi Community	Marin-04 Jutpani	Same as above	Shortage of drinking water, children cannot go to school during rainy season and Widening of Phulbari khola and loss of agricultural land	8
5/19/2021	Ward Level (1,2,6,7,) Discussion	Marin RM	Same as above	Identified and prioritized vulnerable sites and communities in Ward No. 1, 2, 6 & 7	26
5/20/2021	FGD with CFUG of Dalit Community	Marin-06 Dalit Basti	Same as above	Low participation of Dalits in CFUG	9

5/20/2021	FGD with Women Group of Dalit Community	Marin-06 Dalit Basti	Same as above	Drinking water problem in dry season as well as in rainy season due to wash away pipes	8
5/20/2021	FGD with Farmers and livestock rearing of Dalit Community	Marin-06 Dalit Basti	Same as above	Loan, technical support not readily available	11
5/20/2021	Ward Level (2,4,5) Consultation Workshop	Hariharpurgadi-04	Same as above	Identified and prioritized vulnerable sites and communities in Ward No. 2, 4 & 5	35
5/21/2021	FGD With Farmer and Livestock Groups	Hariharpur Gadhi-04	Same as above	Agriculture land is washed away by the Marin River	10
5/21/2021	FGD with Women Groups	Hariharpur Gadhi-04	Same as above	Shortage of drinking water during dry season and work burden to women to fetch water from river	8
5/21/2021	Group Discussion with Ward Level	Marin-04	Same as above	Identified and prioritized vulnerable sites and communities in Ward No. 4	16
5/22/2021	Group Discussion with Ward Level	Kamalamai-01	Same as above	Identified and prioritized vulnerable sites and communities in Ward No. 1	14
5/22/2021	FGD with FG, CFUG and women Group	Kamalamai-01 Kunda	Same as above	Identified issues in CF and low women participation in it	15
5/22/2021	Group Discussion with Ward Level	Marin-05	Same as above	Identified and prioritized vulnerable sites and communities in Ward No. 5	13
5/23/2021	FGD with FG and CFUG and Mother Group	Marin-06 Damidada	Same as above	Active participation of women in all women FUC	14
5/23/2021	FGD with Dalit and Janjati Community	Hariharpur Gadhi-02 Tudikhel	Same as above	Acute shortage of drinking water and work burden for women	15
5/23/2021	FGD with CFUGs	Hariharpur Gadhi-04	Same as above	Identified the issues in community forest	14
5/23/2021	FGD with Farmer Groups and Mother Groups	Hariharpur Gadhi-04	Same as above	Low productivity from the farmland due to erratic rainfall	12
5/24/2021	Consultation workshop with Ward Representatives	Kamalamai-02	Same as above	Identified and prioritized vulnerable sites and communities in Ward No. 2	6

6/15/2021	Project Inception Workshop at Lalitpur	Himalaya Hotel, Lalitpur	Familiarize the project with central level stakeholders	Shared the project status and get the feedback from the central level stakeholders to design project for the visible results in the field	19
7/11/2021	FGD with Forest Groups and Livestock Group	Ghanglekh-02	Same as above	Low productivity of local livestock breeds	12
7/12/2021	FGD with CFUGs	Ghanglekh-02	Same as above	Forest not source of income for poor people	9
7/13/2021	FGD with WUGs	Ghanglekh-01	Same as above	Acute shortage of drinking water in dry season	10
8/1/2021	FGD with CFUGs	Hariharpur-08 Kyan	Same as above	Forest management issues identified	9
8/2/2021	Group Discussion with Ward Level	Hariharpur-07 Kyan	Same as above	Identified and prioritized vulnerable sites and communities in Ward No.	9
8/17/2021	Group Discussion with Community	Marin-07 Maheshwata	Same as above	Badly affected by huge landslides but no intervention by the municipality or any government agencies	
8/19/2021	Group Discussion with Community	Kamalamai-01 Nepane	Same as above	Identify the key issues of Nepane area	22
8/20/2021	Group Discussion with Community	Marin-05 Piuri	Same as above	Identify the key issues of Piuri area as big landslides	14
8/21/2021	Group Discussion with Community	Kamalamai-01 Machhine	Same as above	Identify the key issues of Machhine area	7
8/22/2021	FGD with CFUG	Marin-04 Magani	Same as above	Identify the key issues of Magani khola area - river going down	8
8/23/2021	FGD with Janjati Women Group	Marin-05 Lamidamar	Same as above	Identify the key issues of Lamidamar area flooding from upstream area	9
9/19/2021	Group Discussion with Community	Kamalamai-01 Beltar	Identify the activities for the project	Identified the project activities by the local people of their own vicinity in Ghagar khola and its tributaries	63
9/20/2021	Group Discussion with Community	Marin-04 Phulbari	Same as above	Identified the project activities by the local people of their own vicinity in Phulbari khola and its tributaries	65

9/21/2021	Sharing Workshop	Marin RM	Sharing of the baseline information and GEF capacity development assessment of Marin RM	Assessed the GEF capacity development indicators of Marin RM with their participation	9
9/22/2021	Group Discussion with Community	Kamalamai-01 Beltar	Identify the location of proposed activity sites	Locate the activity site in the map	25
9/23/2021	Group Discussion with Community	Kamalamai-01 Subini	Same as above	Same as above for Subini sites	9
9/24/2021	Group Discussion with Community	Kamalamai-01 Lukwa	Same as above	Same as above for Lukwa sites	7

Appendix 2: Stakeholder Recommendations Received to Address Climate Risks

Climate Risks and Potential Risk Reduction Measures stakeholders would recommend, identified through participatory assessment with local stakeholders

	Risks	**Possible Mitigation Measures**
1	Flooding affecting mid and downstream	- Adopt integrated watershed management approach - Conserve the forest, agriculture and river ecosystems from upstream to downstream - Construct series of check-dams and bamboo plantations from upstream area of creeks (Jhora) - Construct serious of conservation ponds to hold rainwater in stream area and along the reclaimed and recovered riverbeds - Involve and capacitate community forest user groups in the integrated watershed management and conservation ponds - Construct embankments and bamboo plantation along riverbanks to protect settlements and agriculture lands
2	Siltation and deposition of silts in agriculture lands	- Construction of check dams and bamboo plantation from upstream to downstream of creeks and tributaries - Construct embankments, spurs and bamboo plantation along riverbank to protect settlements and agriculture lands - Application of Sloping Agriculture Land Technology (SALT) in slope land and barren land to reduce siltation from upstream to downstream

3	Riverbank cutting and loss of agriculture lands	- Construction of embankments, spurs and bamboo plantations along the riverbank
4	Reduction in agriculture production	- Maintenance support for irrigation canals - Harvesting and use of sub-surface level water for irrigation - Technical support to control disease in agriculture crops - Protection of agriculture land from siltation and riverbank cutting i.e., embankments - Resistant variety of seeds for agriculture - promote the Slopping Agriculture Land Technology - SALT in farmer's field and barren forest area to conserve soil in agriculture land and barren forest lands
5	Forest degradation	- Update the forest management plans of expired FOP - Protect the forest from grazing and forest fire - Manage the forest maintaining the ground cover in the forest area (only tall trees cannot conserve the soil)
6	Low productivity of meat and milk production	- Cross-breeding or high-breed program of livestock - Support in fodder and forage development in forest and private lands - Focus on goat, fattening of young buffalo in rainy season, the project area is inaccessible due to lack of road access.
7	Water shortage in dry season	- Water source conservation such as fencing - Plantations in water source area - Construction of conservation ponds in water source area - Sub-surface level water harvesting
	Water-related Disasters	- DRRM plans, strategy and resource allocation - Implementation of DRRM plans and its close monitoring

Appendix 11: Gender Analysis and Action Plan

Managing Watersheds for Enhanced Resilience of Communities to Climate Change in Nepal (MaWRiN)

WWF GEF Gender Equality and Social Inclusion Analysis and Action Plan

January 2022

Abbreviations and Acronyms

CBO	Community Based Organization
CCA	Climate Change Adaptation
CF	Community Forest
CFUG	Community Forest User Group
FGD	Focus Group Discussion
GAP	Gender Action Plan
GEF	Global Environmental Facility
GESI	Gender Equality and Social Inclusion
GRB	Gender Responsive Budgeting
HDI	Human Development Index
Hrs	Hours
IP	Indigenous Peoples
KII	Key Informant's Interview
LRP	Local Resource Person
MaWRiN	Managing watersheds for Enhanced Resilience of Communities to Climate Change in Nepal
M&E	Monitoring and Evaluation
NBS	Nature-Based Solution
NEWA	Nepal Water for Health
NTFP	Non-Timber Forest Product
PLAN	Plan International Nepal
RM	Rural Municipality
RP	Resource Person
TOR	Terms of Reference
TOT	Training of trainers
WWF	World Wildlife Fund
WUA	Water User Association

Introduction

This project, located in Marin watershed in the central-east of the Churia region, was conceptually approved in November 2020 by the GEF for funding from the GEF-managed Least Developed Countries Fund (LDCF). The Marin watershed was selected for project focus due to the high level of vulnerability to landslides, floods and drought and its alignment with the national priority to support most vulnerable communities. The Marin watershed has a largely indigenous population (68.5% of the population) which depends on subsistence agriculture and was thus identified as having communities that are highly vulnerable to climate change risks and impacts.

The objective of the project is "to enhance climate resilience of Indigenous people and local communities in the Marin watershed through nature-based solutions and livelihood diversification." The fundamental approach will be to address climate change impacts using an integrated approach at the watershed level. This approach is to consider: (a) strengthening coordination between local stakeholders and their capacity to assess climate risks and vulnerabilities, and mainstream appropriate climate adaptation strategies and actions in local development; (b) empowering communities through training and site based interventions to enhance the climate resilience of local livelihoods and the resources that the local communities depend upon including through transfer of climate-adaptive technology and practices, sustainable forest management, and employment of nature-based solutions (NbS) to reduce vulnerability to climate hazards and disasters; and (c) generating lessons and good practices, and developing knowledge for replication, adaptation and sustainability of the project results.

The project will achieve this through 3 Components:

Component 1: Enabling environment for mainstreaming climate change, through the development of capacity of the municipalities and other key local agencies to assess and understand climate risks and vulnerabilities, and accordingly mainstream climate change adaptation strategies and actions in local plans and policies, and the establishment of a multi-stakeholder platform for dialogue and cooperation on climate change adaptation at the watershed level.

Component 2: Enhanced Resilience of Local Communities to Climate Change through; a) community-based natural resource management such as community identification of adaptation interventions, support and demonstration of sustainable and climate-resilient agriculture and livestock practices, improved water management, strengthened management of community and leasehold forests, and b) Nature-based Solutions that reduce climate impacts and risks.

Component 3: Monitoring, evaluation and knowledge management, through tracking of project progress on a regular basis, garnering and analysis of lessons and good practices, and development and dissemination of knowledge that reinforces project results from components 1 and 2, providing sound basis for their replication, adaptation and sustainability.

The Global Environment Facility **(**GEF) MaWRiN project places an emphasis on mainstreaming gender and social inclusion in all its activities to ensure the project fully recognizes the distinctive needs of women, poor and indigenous groups in the project area. The MaWRiN project has included gender considerations throughout the design process and aims to provide women and minority groups an equal opportunity to benefit from project implementation. It is, therefore, essential that the project should undertake a gender equality and social inclusion (GESI) analysis and develop a gender action plan to address women, indigenous people, Dalit and marginalized group's issues/concerns and their meaningful participation in all

of the project activities. The GESI analysis was developed based on the literature reviewed for Churia hills and stakeholder consultations (focus group discussions and key informant interviews) undertaken during 3-9 September 2021.

The Gender Action Plan (GAP) analysis project activities through a gender lens and will act as a tool during implementation for the Project Management Unit to ensure each activity is incorporating gender and marginalized groups. The GAP includes targets developed under each component of the project to ensure women and marginalized groups equally benefit from, and are equally represented in, the project. The targets developed for the Gender Action Plan have been integrated into the Results Framework for the project (Appendix 5) to aid the Project Management Unit in keeping gender equity and equality at the forefront during project execution.

The MaWRiN project, encompasses two sub-watershed areas – Marin and Kyan- sub watershed of Sindhuli district, Bagamati Province of Nepal. The project area consists of the catchments of Kyan Khola, Ghagar khola and Phulbari khola, Dhungajor, Jalkeni Sakhauri, and Simale. Specific areas in Kamalamai (ward no. 1, 4, 5), Marin (ward no. 1, 2, 3, 4, 5,), Hariharpur Gadhi (ward no. 4, 5 6, 7 and 8) and Ghyanglekh (ward no. 1) municipalities will be where project interventions are focused. The main inhabitants of the area consist of indigenous peoples, including the Tamang, Magar, Majhi, Newar, Danuwar, Hayu (an endangered minority), Dalit (Kami, Sarki, Damai), Brahmin/Chhetri and other castes. 68.5% of the inhabitants are considered indigenous peoples with Brahmin/Chhetri comprising 16.43% and Dalit 8.28% respectively (2011 census). Majhi, Danuwar and Hayu by profession are fishermen.

The Marin watershed is made up of several catchment areas with steep terrain, fragile geologic formations, and porous soil. It frequently experiences climate-induced hazards and disasters such as landslide, sedimentation and flooding, impacting livelihood assets and resources such as agricultural lands, forests, water sources and fish fauna. The total population of the project area (four municipalities) is 63,722 out of which women constitute 52% (2011, Census). The population growth trend indicates that the population is relatively young with 40.24% between the ages of zero and 14 years, a demographic that relies on family for education and livelihoods. The majority of the population, at 52.32%, is between 15 and 50 years of age. This age bracket is the main source of a family's income, usually migrating outside the district or country for work. Men migrating for employment opportunities, has increased the workload of women who are now solely responsible for the house and farm work. However, remittance has provided extra income for these households. Women living near the roadhead and migrant returnees are utilizing this remittance for businesses such as poultry, pig and dairy farming, or tunnel vegetable cultivation.

People are moving away from agricultural practices as it is tedious work and does not have timely support from the state in terms of inputs (timely seed, fertilizer and technical support). Further, climate change has major impact on the Churia range due to erratic rainfall, landslides, and river-cutting turning the agricultural land into river course. It has compelled people to look for alternative livelihood source. Many of the migrant returnees met during the field visit has abandoned agriculture and are investing in livestock raising and small enterprises' such as poultry and vegetable farming. This has increased the workload of women who are still performing agriculture work, household work and supporting male members in the enterprises leading towards feminization of agriculture.

The project area consists of a majority of indigenous peoples (68.5%) who tend to have different socio-cultural practices such as early marriages, multiple marriages, a higher prevalence of gender-based violence, and a higher education rate for males. Education is prioritized for males and not females as girls

are expected to support their mothers in household chores. The literacy rate for 5 years and above stands at 60.0% in the project area.

2.0 Assessment of policy and institutional mechanism for GESI

2.1 Policy and institutional mechanism for gender equality and social inclusion (GESI)

In order to advance and enhance GESI, the government has introduced a number of policies/strategies at all levels. These include;

- **The Constitution of Nepal (2015)** has a mandatory provision of women's representation/participation at the decision-making level. 33% of parliamentary seats are allocated for women and provisions are in place to ensure women's participation in village assemblies and other formal decision- making bodies' e.g. 33% participation/representation in user groups & water user associations and a further 50% participation in CFUGs.
- In the year 2008, the **Ministry of Forest and Soil Conservation (MoFSC) developed a gender equality and social inclusion strategy**. The strategy ensured that all the government, non-government, donor and private sector working in forestry sector to institutionalize GESI within their organization, projects and programs. As a result CBOs working in forestry sector has emphasized on improving women's participation in forestry related decision making. As for example, CFUG's has gender sensitive guideline to ensure women and socially excluded members participation in executive committee and general assembly.
- **The Climate Change Policy** 2019 has mainstreamed gender and social inclusion in the climate change action plan. In the field it is important to note that women and socially excluded groups are unaware of this policy. This is not surprising as policy makers do not know the differential impact of climate change on women versus men.

Due to weak policy implementation of GESI policy and strategy, meaningful participation of women and socially excluded groups has not been achieved. The only representation of women is done to fulfil the requirements of the policy/strategy. This was also noted as a concern during stakeholder consultations on the baseline scenario with men and women in the field. These consultations also revealed that the local people do not believe mere representation and participation of women mean that they are able to influence decision in their favor.

There are several barriers preventing women from making valuable contributions in decision-making roles during critical meetings with government or policy-making bodies;

1. One barrier is that women are hesitant to voice their opinions in meetings. This hesitancy is likely caused by high rates of illiteracy and the gaps in women's knowledge surrounding what is transpiring in the community.
2. Another barrier to entry is that women have less time to participate in meetings due to heavy workloads in the home. During the field visit consultations, women said they work for 10-12 hours a day. Approximately working from dawn to dusk.
3. Women have less influence in decision-meetings as the meetings are pre-dominantly male or upper caste women who seldom encourage women to voice their opinions. Women from the upper caste also feel oppressed due to the culturally acceptable role of male dominance from and the existing patriarchal system.

4. A fourth barrier is that women do not have control over resources in their household or in their livelihoods such as in forestry or agriculture. Despite women being responsible for managing their households and generating alternative livelihoods, they still must consult their husbands prior to making decisions such as selling off livestock or property. (It is important to note, however, that as men are migrating further for employment opportunities, women are able to make more decisions regarding household tasks, education of children, crop plantation and selling of agricultural products to supplement the household income).
5. In the forestry sector, even though women are mainly responsible for collecting forest resources and know the forest well, only men are paid for the work they do in the forest as eco-guards or for selling timber collected by women.
6. Women have limited accessibility to credit from formal institutions. During the stakeholder consultations, elected women representatives said that because women have no land title, it is difficult for them to access credit from formal institutions. It was stated that only 1 out of 5 women may own land viable for constructing a residence. However, a small amount of credit can be accessed from savings and credit groups and cooperatives where women are members.

2.2 Agricultural Production and Marketing

Agriculture is the main occupation of the people in the project area. Within the watershed area, the indigenous people own very small parcels of land, approximately 21,000 to 25,000 square feet as a fixed asset. The maximum amount of land owned is 145,800 to 218,700 square feet. Most of them have *ailani* land (unregistered) and land is officially registered in the name of men. Women land ownership is only possible if it is given by their parents as *Daijo* (a wedding present). According to the National land Policy (1999), there is a lower tax rate when giving land to a woman, this was also verified during the key informant interviews (KII). In 2008/2009 the government initiated a tax exemption for land registration if the newly purchased land is for the construction of a residence and is registered in the name of a woman. As of 2016, a 50% tax exemption is provided if the land is purchased in the name of daughters and granddaughters. Agricultural land inherited from parental property is passed in the name of son(s) but not in the name of daughter (women). However, in 2014, the government initiated new law that provides equal parental property rights to sons and daughters equally. But this law is not in practice yet.

Women in the project area largely depend on agriculture for their main source of livelihood followed by livestock keeping. Settlements in the foothills of the Churia grow mainly paddy. During March and April paddy is planted where there are irrigation facilities, and during monsoon season in June and July. Other crops grown during the monsoon include paddy maize, mustard, and vegetables (the ladder two are grown using rainwater). In the upper area, maize is cultivated as a staple food two to three times a year (winter, monsoon and spring). In winter, wheat, millet and buckwheat are cultivated. Due to this size of land parcels, the crops produced are sufficient for 3-6 months a year.

Agriculture work is undertaken by men and women with men responsible for tilling, ploughing, purchasing and spraying pesticides and marketing crops and women responsible for planting, weeding, carrying manure, harvesting, threshing[44] and storing the agriculture products. In houses headed by women and households (HHs) with males who are absent, decisions are taken by women in consultation with other households members (elderly and other male members) for the sale and purchase of agricultural products.

[44] Threshing is a practice undertaken to separate the grains or the wheats from the plants.

During the peak agriculture season, men who migrated to another city for employment opportunities return home to help in agricultural tasks. During the stakeholder consultations in the field it was observed that men who had returned from outside of the country had opted for enterprises such as poultry keeping, livestock for milk (cows/buffalos), and tunnel farming for vegetable cultivation. These enterprises are undertaken more frequently as agricultural farming becomes less viable due to decreasing yields. Agricultural yields are diminishing in response to the changing climate as well as the destruction of agricultural land from the Churia degradation. As men increasingly turn away from crop farming, women are responsible for undertaking the tasks usually performed by men to obtain crop yields. This has further increased the workload of women as they support their husband in livestock rearing as well as undertake the added crop farming work.

There is the practice of *parma* system (exchange labour) for planting rice in rural areas. Hiring workers and paying for wage labour is becoming popular for rice planting but it is seasonal. However, due to migration of male and youth to cities and foreign countries, it is difficult for women to find available workers. This has created an increase in women farming and participating in the agriculture sector, again increasing the women's workload. There is wage difference between women and men depending on the type of work undertaken. Tilling and digging land is tedious hard work, so men are paid around NRs 1000 whereas women get around NRs 500 for sowing and weeding per day.

Degradation of the fragile ecosystem of the Churia hills is further affected by excess rainfall in monsoon season causing floods and landslides. This destroys the agriculture land in two ways: the first is the cutting of river banks and the second is deposition of silts in the agriculture land. Both are the process of desertification. This has decreased arable land area resulting in reduced crop production, increased months with limited foods and a greater pressure on women's time. During stakeholder consultations, women reported that floods and landslides destroy the crops in the foothills. When the land is dry, women must spend extra time to prepare the land to plant maize. For this, women are mainly responsible for removing gravel and stones from the land, which is a tedious and time-consuming task.

Climatic change has also affected crop farming patterns due to diseases and ecological disturbance that have reduced production. About four (4) decades ago, agricultural production was prominent as there were no settlements upstream of the hills, therefore the ecology was not disturbed. Water flow from the Churia was clean with nutrient-rich leaf litter (minerals) that increased agriculture production. Now, landslides due to heavy rainfall and ecological disturbance from upstream settlements have destroyed sloped agricultural land owned by the local households making them poorer.

Women are interested in cultivating vegetables mostly for consumption but also to sell. Due to water constraints, women are not able to cultivate vegetables in the winter. In the summer, when there is more rain, they cultivate vegetables (pumpkin, leafy vegetables, eggplants, cabbages, cauliflower, onions, chilly etc.).

2.3 Livestock production, marketing and grazing management

During the stakeholder consultations in the field, one particular livestock farm in Marin RM, Ward number 5 demonstrated some of these recurring agricultural changes. The farm was initiated by the man of the house, who had returned from outside of the country due to COVID 19 pandemic. The livestock farm contained two improved varieties of jersey cows and an additional three local breeds, all housed in the animal shed. The cow farm was managed by the husband and wife jointly. Previously, they had planted fodder in their land but due to a lack of knowledge in proper

management of fodder they discontinued fodder cultivation. This took more of the woman's time as she now must collect grass for fodder from the forest. Marketing and selling of the milk is done by the husband, who then gives the wife money for household expenditures. During the field visit it was reported that women get up early in the morning and go to sleep late after completing household work.

In the project area, livestock keeping, an integral part of agriculture, is another major economic activity for household subsistence and to earn additional income. Women keep smaller amounts of livestock such as a few goats and chickens which they may be able to sell in case of emergency or to cover their expenses. Livestock are kept as an asset as well as for manure. Most of households keep livestock in small numbers (bull) for land tilling and manure purposes. Cow and buffalo are raised for milk, manure and meat (buffalo); goats, pigs and chicken are kept for income. On an average, livestock amounts per household are; 4-5 cows, 5-6 goats, 1-2 buffalo, 2-4 bulls for manure and tilling; 2-3 pigs, and 8-10 chicken. Cow milk is sold locally for NRs 50 per mana (a half liter). There is one cow breed that produces 2-3 mana (1-1.5 liter) of milk per day as it is local and not hybrid. A male goat can be sold for NRs 3,500-12,000[45] per goat depending on its size. Milking buffalo prices range from NRs 70,000 to 100,000 and the price of an adult pig ranges from NRs 25,000 – 30,000 and local chicken cost around NRs 800 per kg. Due to cultural beliefs, pigs are not owned by the Brahmin and Chhetri peoples.

Local people grow fodder for livestock on their own land as well as collect them from government forests and community forests. While men are largely responsible for taking care of large livestock such as cows and buffalo, women are primarily responsible for taking care of smaller livestock such as sheep, goats and poultry, which can be time-consuming and demanding. The tasks associated with keeping livestock include forage collection, cleaning animal sheds, feeding the animals, and grazing the animals. Due to climate change, haphazard grazing, over harvesting of forest resources, and forest fires, collecting fodder and forage from the forest has become more difficult. These issues have forced women to travel to the interior part of the forest to collect and cut grasses. Due to degradation of the forest causing landslides and flooding, free grazing has been banned in many Community Forests. Banning free grazing has brought about a reduction in number and type of livestock kept by households, making stall- feeding more popular and increasing the demand for collection of fodder and grasses. During stakeholder consultations, women in the project area reported that during the dry season it takes 2-3 hours to collect grass and forage from the forest. Previously, it took less time as it was easier to find the bountiful grass and fodder.

Working directly in the field is a hard task, especially in the face of decreasing production due to natural disasters (excess rain, long drought, diseases etc.) and lack of proper services such as availability of seeds, fertilizers and technical expertise. Women actively support their male counterparts in crop farming activities. This has increased the work burden of women in addition to their household and agriculture work and livestock rearing for household use.

2.4 Management of community/ leasehold forests

In the project area as in all rural communities in Nepal, people depend on forest resources for their subsistence and livelihood. Due to over harvesting of forest resources, forest degradation is severe. In order to stop forest degradation and improve forest resources, the communities are organized into community forest user groups (CFUGs) for management of forest resources.

[45] 1 USD = NPR 120

There are a total of 143 community forests that have been handed over to the forest user groups. A total of 14,674 households comprises the members of the 143 community forest user groups in the project area. The executive committees of the CFUGs are responsible for forest management and consist of 7 to 11 members with the provision that 33% of the committee must be women and socially excluded members. Women and marginalized community members must hold decision making roles, and each committee must have one position assigned to a woman as a chairperson, a secretary or a treasurer. In the project area 33.98% of women are represented in the CFUGs. This figure is slightly higher than the national figure which stands at 33.1% as per the national database maintained by the department of Forest and Soil Conservation.

Due to the existing cultural practices, insufficient knowledge and training and low education, many women are unable to provide their inputs in decision-making. In order to reduce gender discrimination and develop women's leadership capacity new forest legislation (1993) has the provision that the Community Forest (CF) is managed by the women. A focus group discussion (FGD) with the women-only managed CFUG executive committee of Marin Rural Municipality, Bhutaha, Ward # 6, was undertaken. **It was observed that the women-only committee takes their work seriously and that they have a platform to organize and speak out freely, resulting in a better managed forest than in the mixed gender CFUG committee.** For example, women CF committee members are organizing meetings on a regular basis and are managing the forest as per the rules prescribed. Further, the women members were provided training on conducting meeting and keeping minutes as well as weeding, cleaning, tree planting. They also said that the formation of all women executive committee has created an enabling environment for women's participation in meeting and other activities as they can put forward their views and goals for further action. The all-women committee is also organizing and accessing additional resources to improve the CF.

In Kamalamai Municipality, ward number 1, a few CFUG members from Bedjuri CF met. The Bedjuri forest is used by 50 households and has imposed a number of restrictions such as a ban in grazing livestock. But due to unavailability of alternative options grazing is continued where as in Bhutaha CF women have a specific rule that allows goats to be grazed only in the foothills of the forest. Further, the secretary of the Bedjuri CF (male) said that women are represented in his committee but are not vocal in putting forward their views during the meeting. One of the women of the committee is from the Dalit class and does not speak out as she fears men in the committee will dominate the conversation and control the decisions. This situation is not in the Butaha CF as the secretary is from the Dalit class but she is very vocal and speaks out openly as all the members are women.

CFUGs have their own rules and regulations for harvesting the resources. For instance, fuel wood/fodder can be collected three times a year for a certain number of days. Whereas grasses, dry twigs, leaf litter and NTFP (seasonal products) can be collected daily.

Women are mainly responsible for collecting forest resources such as fodder, fuel wood, leaf litter and NTFPs for their daily use from the forest. Due to this, women have a better understanding of the state of forest resources. Men are responsible for collecting timber, fencing and forest patrolling and making fire lines. They do not visit the forest as frequently as women do.

During the field visit, KII was conducted with elected women representatives from Kamalamai Municipality, ward #1. The women representatives said that the committee needs to provide alternative options if they cannot forage in the forests (Refer to section 2.3: Livestock production, marketing and grazing management) such as fodder and forage promotion program to sustain livestock farming. During the consultations it was learned that women resorted to collection of resources from government forests, due to the restrictions imposed in community forests.

2.5 Access to and management of non-timber forest products

Poverty is higher in the plains than in the hilly area. Women and poor communities in the Churia region depend on NTFP to earn additional income. Many women collect firewood and sell it in the local market, and using the additional income to buy their daily necessities. Furthermore, during the winter season they collect forest products such as yam (Tarul), berries, gooseberry, mushroom, tender bamboo shoot and green leafy vegetables and sell locally. Another important source of income is bamboo. Young bamboo shoots are sold locally for NRs 250 per kilogram. Nigalo (thin bamboo) found in higher altitude, is another variety of bamboo that are sold locally for income.Young Nigalo shoot, Jhyau, Babio, Amriso, Harro, Barro, Amla are other NTFPsthat are collected and sold for income. Many poor women depend on forest resources for their daily survival. Beside berries and other edible products are harvested such as Sal (*Shorea robusta*) leaf for weaving into various items like leaf plates and bowls that are used for feasts and religious purposes. During the festival time good amount of income is generated by the women through sale of these products. Medicinal plants and herbs are cultivated in the community forest (CF) and mostly in the leasehold forest (LHF) where the groups generate income by selling it commercially. In the LHF cultivation of various products such as banana, fodder species, pineapple, goose berry and broom plant (Amariso) are undertaken that has helped the members to earn income.

2.6 Access to and management of water resources

The Churia hills are the lifeline of water source for the community living in the project area. More than 60% of Churia hills is made up of forest and rivers providing hydrological services in regulating surface water flow and recharging ground water. The households in the project area are dependent on the health of Churia ecosystem to ensure food, water and energy security. Decline in the ground water recharge has direct impact on the availability of forest resources that affects the women the most. Girls and women are mainly responsible for collecting water due to which girls misses their school and women have to travel long distance that increases time for women.

In the project area, there are number of organization (government, PLAN Nepal International, Nepal Water for Health (NEWA, Fund board) working in drinking water sector. Households get their water supply through various means such as tap water, tube well, well, deep boring and stream. There is water shortage during the dry season (winter) for around 2-3 months. During the dry season, drinking water is collected from the well. As there is less water during this time, it is rationed out and women have to wait for their turn to fetch a jar of water. This can sometimes take as long as an hour and as women have less time to wait and are in hurry so women try to skip their turn that leads to conflict among the women. Further as there is less water in the well for washing and cleaning purpose women have to travel to the nearby stream which is time consuming. The water is also contaminated, which has negative impact on them and their family's health. Sometime, women have to dig the sand out in the riverbed to collect water as rivers/streams are dry. This is very tedious as water has to be collected from small cup to be filled up in the water jar and is time consuming. Those households, using water from deep boring, have problem as electricity is not available 24 hrs. Women need to travel to stream to collect water. During monsoon the water source at the top of the Churia hills are often damaged by landslide and flood leading to disruption of tap and pipe water supply. Women led CF from Marin RM, have hired a person to take care of the water source. Due to heavy rainfall most of the time the source is damaged. During this time women have to travel a far distance in search of water that consumes valuable time of women. The average time for collecting water in the project area is minimum 15-20 minutes and maximum 1 hour. In a day women travel two to three times to collect water as they need water for household purpose and as well as for livestock. Due to water scarcity, vegetable

cultivation is not done in the upland areas due to which it has impact on the health and nutrition of the people in the project area.

Climate change has reduced water retention capacity leading to water scarcity in the project area that has increased workload of women as well as it has negative impact on the health of women due to the heavy load women have back ache and uterus problem.

2.7 Decision-making at the household level as well as in the broader local community development plans

In the project area, like in other parts of the country, decision making is dominated by men. Illiteracy, low capacity & self-esteem, time for participation in meeting & trainings, are all barriers women face when accessing information and new technology. More details on women in decision making can be found in section 2.4*: Management of community/ leasehold forests*.

Decision making surrounding agricultural functions are discussed in section 2.2 *Agricultural Production and Marketing*. A key point to note is that most of the women whose husbands work outside the districts consult their husbands over the phone if they want to sell bigger animals. However, some women in the field reported women now takes decision regarding agriculture activity such as planting, sowing, weeding, harvesting and other activities usually done by men such as irrigation and pest control.

The constitution of Nepal 2015 has a special legal provision of 33% women representation in national and state legislatives. The irrigation policy (2003) ensures 33% women representation in water user associations (WUA) and the community forest guideline (2015) ensures a mandatory provision of 50% women representation in executive committees and guarantees one major position (president or secretary) to women. In CFUGs mostly women are the vice chair or secretary of the executive committee. To increase women participation at the decision making level, few CFUGs have formed all-women executive committees as described in section 2.4 *Management of community/ leasehold forests.* The participation of women and socially excluded groups in executive committees and general assembly has created awareness of forest protection.

Regarding the participation of women in planning process, there is a general tendency of excluding women, poor and disadvantaged groups in areas/topics that are critical for their livelihoods. Please refer to Section 2.1 *Policy and institutional mechanism for gender equality and social inclusion (GESI)* and Section 2.4: *Management of community/ leasehold forests* which outline the barriers women face in decision making and influencing policy.

However, the situation is changing as more women are participating in various groups that have provided platforms for them to organize themselves and have a collective voice. During the stakeholder consultations, a few women explained they have memberships in a number of CBOs beside CFUGs such as cooperatives, saving & credit groups and agriculture groups where they have access to resources and trainings to enhance their livelihoods and income. These women have access to loans to construct houses, invest in agriculture and social activities including religious celebrations, health services and childhood education. Loans from the cooperatives are taken for productive activities based on the rules of cooperatives. For example, in Hariharpur RM ward number 4, a woman member from Hatimala cooperative took a loan to invest in vegetable farming and livestock keeping. Women from ward number 5, have collectively taken loans to install deep boring mechanisms. In Kamalamai Municipality ward number 1, Bhagawati Women Cooperative, members have taken loans ranging from NRs 50,000 to NRs 200,000 to invest in agriculture-related work. Interest rates range from 12% -36% annually.

Due to new found economic empowerment, women have gained more household decision-making power. Women living in the foothills near the roads have become pig keepers, small shop vendors, poultry and vegetable farmers. This has increased their self-esteem as they are contributing economically at the household level.

2.8 Socio-cultural norms, values and perspectives

In the project area, women constitute 52 % of population (Census 2011). The project area is inhabited by Tamang, Majhi, Magar, Brahman, Chhetri, Hayu and Dalits who are the main caste/ethnic groups. Most of them have subsistence livelihoods and many households do not have Lalpurja (land title) of their land. People depend on forest resources and agriculture for their livelihood. To supplement their household expenditure livestock rearing is undertaken by most of the households in the project areas.

As the project area is inhabited by mixed castes (Brahmin/Chhetri/Dalit) and the indigenous community (Tamang, Magar, Majhi, Danuwar and Hayu) with diverse socio-cultural practices, gender discrimination and inequalities exist based on age, position in the family, marital status, religion, caste and ethnicity.

Increasingly fragile ecosystems in the Churia hills and diminishing land plot sizes have raised poverty levels and resulted in men migrating to bigger cities and out of the country to find employment. This has resulted in an increasing trend in female headed households. In general, female headed households compared to male headed households are poorer as women own less land than men. After the migration of the man of the house, it is difficult for women to access loans for productive activities. Further, female headed households have heavier workloads as they now need to run the home independently. These women do not have time to participate in meetings and training to enhance their capacity and access information. But due to the remittances, economic status has gradually improved the chances of survival for the family, although the issue of time poverty for women remains.

Women have limited economic opportunity for income. They face gender and caste-based discrimination, illiteracy and low levels of education due to early school drop out of girls to perform household work, farm work and collect forest resources. literacy rate for the project area stands at 60% for 5 years and above population. However, literacy here is measured as those who can simply write (signature) and those who can read and write. Out of the total population who are literate 119,332 only 75,007 can read and write or can only read. Out of the total population surveyed 44, 274 are illiterate. (Census 2011).

Due to the existing cultural practices, women from indigenous communities and disadvantaged groups (Dalit) are also subject to early marriage and multiple marriages. This has impacts on women's health conditions due to early pregnancy. All of such factors have widened the gender gap between men and women and boys and girls resulting in inequality.

MaJhi, Danuwar, Hayu, Tamang and Magars are known as *matawali* (alcohol drinking caste) and spend large portions of their earnings drinking alcohol and gambling. There are many cases of violence against women due to the culture of frequent alcohol consumption. Among the Dalits, there is intra-caste discrimination as Dalits are considered to be of lower caste that are socially exploited and dominated by the so-called higher caste. Violence cases are dealt with by the elected women representative and the mother's group in the locality. It is not a permanent solution as drinking has become habitual and requires an awareness programme and counselling to change this.

During the field visit to Kamalamai municipality, Ward #1, in Kunda settlement, it was learned that due to the cultural practices, there is a tendency of early marriage at the age of 16/17 years. Girls drop out of

school in grade 8 to elope or get married. However, there are a few girls studying until grade 10 as the school is located nearby. **Cultural practices such as early marriages and a lack of women's education will take time to address but awareness on gender and leadership training will enhance knowledge of the community to improve the existing cultural practices.**

3.0 The impacts of climate change on women and poor/ marginalized communities, and the challenges these groups face in addressing these impacts

Climate change has increased natural disasters such as increasing temperature during the dry season and extreme precipitation in monsoon, expose to extreme heat, water scarcity, wildfire, landslides and flooding are common in the project area. This has greatly impacted both women poorer families as they live in high risk areas such as nearby the landslide-prone creeks, where lives and property are at risk of being destroyed. Furthermore, climate change has destroyed agriculture production as new pets, insects and diseases damages the crop and weeds in the field increases women's time for weeding. Such impact has increased workload of women as women are responsible for agriculture work. Heavy rainfall and flooding damages crops and decreases production, causing a shortage of food for the local households. The erratic climate conditions have negatively impacted the availability of forest resources and crop productivity, forcing women to explore alternative income sources and take on more responsibilities in order to sustain their families.

Women and poor communities depend on forest resources for their livelihoods. Forest resources are collected by women such as firewood for fuel, grass and leaf litter for livestock and NTFP to sell to earn additional income. Due to climate change, there are scarcities of such resources and women have to travel longer distances to collect resources. Women and girl children are also responsible for collecting water for household and livestock. During the dry season (2-3 months), there is water scarcity in the project area. Women and girl children have to travel long distances to collect water from the stream or have to wait in long queues near the well to access water. As women are already pressed for time, this has increased their work burden. Girls drop out of school or miss their classes to support their mothers to collect water for household use.

Due to siltation from the Churia hills and the widening of riverbeds, there has been a decrease in crop production. Women make up for this by finding additional wage labour as discussed previously. Women also reported that due to siltation from the Churia hills, crops are destroyed from the silt and women have to work extra hours to clean up the silt and prepare the land for plantation.

Due to an increasing work load and time poverty, women and marginalized groups are often not able to attend meetings and training. This hinders their capacity to put forward their views and participate in local development planning processes. In order to empower women and decrease existing gender discrimination, it is important to consider all the existing barriers while designing the new project. In the ward level meeting, the elected women representatives do not voice their opinions but instead agree to whatever proposal is put forward. Women lack the capacity, technical knowhow, and information and resources to address these challenges. Although women closely deal with forest and agricultural responsibilities, they are generally bypassed by men and not consulted in matters related to improvement of forest and agriculture.

4.0 Anticipated project benefits to women and poor/ marginalized communities

The project will be implementing a number of activities to reduce climate-induced risks and vulnerabilities and improve watershed management for enhanced climate resilience of the communities in Marin watershed.

Women and the poor depend on forest resources (firewood, grass, fodder, forage and NTFP) for their daily use. Improvements in forest and watershed conditions will benefit women and poor/ marginalized communities in the form of reducing time to collect necessary resources. Coupled with the project supporting the CFUGs in sustainable management of forests, the ability to collect fodder and food for livestock may improve. This could affect women's capacity to keep larger amounts of livestock. Wood collection may become more accessible and thus improve the lives of marginalized and poorer groups. The project will also aim to increase their income and thereby improve their livelihoods.

The management of Churia hills will improve the ground water recharge and hopefully reduce water scarcity. Management of water sources will improve the availability of water in the project area and potentially reduce the water collection distance and time consumption that women and girls face. The saved time will allow women to engage in productive activities as well as in attending trainings and meetings. Water recharge will also improve irrigation and potability, improving women's livelihoods by providing more successful crop yields, creating accessible drinking water and returning time back to women who have previously been responsible for obtaining water.

Conservation and management of Marin sub-watershed conditions aims to reduce flooding and siltation which will help to reclaim the agriculture land. This will increase agriculture production and productivity potentially reducing the hunger months and benefitting women and marginalized groups.

The project seeks to address the impacts of climate change on community livelihoods, especially agriculture, livestock farming, forestry and water resource management, reducing vulnerabilities to climate-induced hazards and disasters, and developing the capacity of local stakeholders to mainstream climate adaptation and resilience in the management of Marin watershed. This will benefit the local communities as a whole, but more specially women and poor communities as they are more dependent on natural resources impacted by climate change. The project is expected to undertake interventions that will address water scarcity, wildfires, landslides and flooding by adopting various methods that will benefit all the people in the project area especially women as they are responsible for collecting water and working in agricultural land that gets damaged due to landslide and floods.

The project will build on the requirement that CFUGs and other community-based entities include at least 33% participation of women and socially excluded members in decision making positions. The project approach to target women and marginalized groups in all community-based training and capacity development activities will raise awareness and build knowledge and skills among women and poor and marginalized communities for climate-resilient livelihoods and sustainable management of watershed resources in the project area.

The project activity of building an enabling environment for women and poorer stakeholders by creating awareness on social issues such as gender discrimination as well as building skills for women will end up benefiting the community as a whole.

The project interventions on climate resilient crop plantation and introduction of new information dissemination on climate change issues and technology will highly benefit women and poor equally.

The project proposes to establish a multi-stakeholder dialogue and action platform to strengthen local climate action and mainstreaming. This platform should provide a vital avenue for women to participate

and be represented in the deliberation and implementation of interventions to address climate change and natural resource management in the Marin watershed.

5.0 Any potential project activities that may adversely impact women and poor/ marginalized communities.

- Innovative activities related to agriculture (riverbank farming) may pressure women if consideration on their involvement is not given priority. Men will agree to undertake any activities that provide income but again it is women who are undertaking all these activities.
- The project will ensure women are able to participate and benefit monetarily from innovative activities such as riverbank farming.
- Trainings and meetings, if organized without considering women and time poverty, will have adverse impacts as they may not be able to participate.
- If the project will not provide gender training both to men and women, this may have adverse impact as men will continue to ignore women's active participation in training and meeting.
- It is also possible that the project will help alleviate the frequency and prevalence of gender-based violence, as studies have shown that women contributing to household livelihoods can decrease domestic violence against women.
- Women and poor participation in project activities and committee are ensured through 33% representation. If the project only considers their representation and does not provide training to help them assert their rights and opinions, this will only ensure women and poor **representation** and not **active participation** thus not qualifying as inclusion.
- If the project does not bring innovative ideas for climate change information dissemination and adaptation of such knowledge, as well as provide incentives to encourage participation, the project will not have a positive impact on the women and poorer members in the project area.
- It is also important that women and marginalized communities are well represented in the multi-stakeholder dialogue and action platform that the project proposes to establish in Marin sub-watershed. Without the active participation of women and marginalized communities, the platform would not be able to effectively function as an inclusive entity and may end up ignoring their distinctive needs and priorities related to climate change and natural resource management. The absence of representatives of women and marginalized communities also means losing out on their knowledge and ideas for solutions to climate change and resource degradation problems.

6.0 Key Considerations for project implementation to ensure gender equality and inclusion;

The project, in its implementation stage, needs to consider the following recommendations to be incorporated in order to accomplish the project objectives in a gender responsive and inclusive manner.

6.1 GESI focal person responsible for maintaining a gender-lens on the project during implementation and tracking against the Results Framework

There should be full time or part time monitoring expert with explicit ToR at the PMU to ensure GESI consideration in all project activities. The GESI expert will coordinate with the PMU staff to ensure GESI is fully supported and internalized. Further, in the 4 municipalities, 4 women should be nominated as gender focal points to support and coordinate with the GESI expert to undertake gender activities during the project. Participation of women from Indigenous Peoples, Dalit and marginalized groups will be ensured in

planning, implementation and monitoring of the project. Women from these groups will comprise 50 % of stakeholder participation.

The PMU staff should be provided with clear responsibilities in their ToRs that detail at the field level how to ensure effective implementation and monitoring of the gender plan and strategy. The PMU will be responsible at the central level to coordinate with government authorities/line agencies and other concerned organizations to mainstream gender in the project. The PMU responsible for gender inclusion will coordinate with organizations at the Municipal level to mainstream gender in the project activities.

6.2 Gender and women empowerment training/orientation

All the project staff from the central level to the field level, key people from the Municipal government, and elected women and socially excluded members should be provided orientation /training on GESI that should include tools/techniques to address the root causes of gender discrimination and social exclusion. A similar orientation/training will also be organized for the male and female members of the user groups. This will enhance the capacity of the staff, key people from the Municipal government, elected women and socially excluded members and target groups to mainstream gender in all of the identified project activities.

6.3 Use effective means to disseminate project information

The project information should be communicated to all men and women through various methods (local FM radio and group meetings) so that project activities are accessible to both men and women. At the local level, local FM radio and sharing of the information in group meetings should be organized.

6.4 Leadership development training

Women and IP members from Dalit and disadvantaged groups will be provided leadership development training. This will enhance the capacity of such women to access resources and voice their opinion for their betterment in all programs, committees, and groups. This will strengthen these women’s self-confidence and give them decision-making power regarding matters that are pertaining to their development. As of now, decisions regarding household matters are taken by women and major decisions are undertaken by men.

6.5 Project planning, implementation and monitoring

6.6 Training on climate resilient practices

During the project implementation stage, there will be a number of activities on climate resilient land use practices to enhance income, develop capacity, promote climate resilient crops and undertake various alternative livelihoods (livestock, vegetable farming and forest-based enterprises). In all of these climate resilient practices, where there is scope for women, 50% of the target groups and capacity enhancement trainings should consist of women and socially excluded groups. To ensure equal opportunities for participation, the project will take into consideration location, timing, transportation and approval from the family members. However, it is essential to consider the workload of women prior to initiating any new activities.

6.7 Nature-based solutions

In the project activities such as new nature-based solutions (including bioengineering work in the river) 50% of workers trained should be women and socially excluded groups (or should at least be given the opportunity to participate based on their skill level). This will increase women and socially excluded groups'

participation. In such activities, there should be provision of equal wage both for men and women. Following these guidelines during the implementation of Nature-Base Solutions will hopefully raise awareness in the community of women's capacity to implement activities and earn equal wages as men.

6.8 On-farm and off-farm enterprises

As women take on increasingly more agricultural practices, it is necessary to enhance their entrepreneurial skills, so as to minimize loss and enhance income from their enterprises. During such trainings both women and men from the same household should be required to participate (e.g. husband/wife pair). Since women are mainly responsible for taking care of the livestock (cleaning sheds, feeding, collecting fodder, foraging, milking) it is important that their skills should also be enhanced along with the male members.

In order to enhance entrepreneurial skills at the family level, it is necessary to enhance women's capacity by considering the timing and location of the trainings, so that women and socially excluded groups can fully participate. In order to maintain gender balance and reduce the inequalities in all project training/orientation, both men and women should be included. It is crucial to bring awareness to both men and women, on women's empowerment to ensure family businesses are strengthened and can run as a team, earning more income.

Another important enterprise in the Marin watershed is vegetable farming using the tunnel method to protect vegetables against inclement weather and temperature variations. Due to new road connectivity it is emerging as a popular activity to earn good income. Women are also actively involved as it is jointly undertaken by both men and women. Therefore, while providing training and developing business plan 50% of the participants should be women and socially excluded groups. As women are actively involved in such activities it is essential to introduce new gender friendly technology to undertake such enterprises. Along with technical knowhow women and socially excluded groups should be trained in pest control and marketing of the products. Such activities are undertaken mostly in road head where the vendors come to the farm gate for the supply. But it is necessary that women have marketing and bargaining skills as well.

There are more emerging areas where investments can be made in response to roads creating better connection in the area. Women are involved in NTFP collection and many of them are selling NTFP (yam, berries, bamboo shoot and other leafy vegetables) for income. There is great demand for such products in the nearby market or outside markets. Training on marketing of such products will increase women's capacity to earn more and run successful businesses.

Due to heavy siltation, agriculture land adjoining to rivers and creeks are yearly converted into riverbeds. Thus riverbed-farming may provide an opportunity to men and women to earn income and utilize the riverbed for production. There are such ongoing activities within the district as well as in the adjoining districts in Terai. Such activities should be undertaken in the Marin and Kyan riverbed where feasible. Riverbed farming consists of planting watermelon, and varieties of vegetables that grow in sandy soil. Seasonal vegetables like bottle gourd, pointed gourd, cucumber, pumpkins can be cultivated by the women and socially excluded groups.

6.9 Forest-based enterprises

Community forestry group members are interested in undertaking forestry-based enterprises (bamboo weaving, NTFP processing etc.). Training and capacity to undertake the business will enhance the income of the women and diversify their livelihood income beyond subsistence agriculture. There is a high demand for bamboo products (basket, stool, trays, leaf plate from Sal (*Shorea robusta*) leaf etc.) and trainings on manufacturing such items would enhance their skills to produce quality products.

There are different herbs (lemon grass, Moringa etc.) that can be marketed in the local and district markets. Processing of such herbs can earn good income.

6.10 Group formation

Women have formed several groups such as livestock, agriculture and savings and credit groups to support income generating activities. Due to inability to master bookkeeping for better fund management, outsourcing of resources, skill development, networking, leadership development, financial literacy, marketing of products, value addition of their own products, and lack of awareness on group management, most of the groups are non-functional. Training on group management will revive the group, so as to make them functional. This will organize women to raise their collective voice to access and control resources for their development.

Besides the existing women's groups, the project may formulate new groups or revive existing groups (livestock, forest, water etc.). In such cases, women and socially excluded group members must constitute at least 50%.

The project will consider developing women's capacity through training, awareness and educational visits to other areas where there are good practices. It will provide them exposure through learning by doing.

Based on the above gender assessment carried out during the field visit (3rd September – 9th September 2021), the gender action plan with specific activities is as follows:

8.0 GESI Action Plan for the project

Gender Action Plan for the Managing Watersheds for Enhanced Resilience of Communities to Climate Change in Nepal (MaWRiN)

Output	Project Activity	Gender Specific Considerations	Responsible	Indicators and Target	Timeline
Component 1: Enabling environment for mainstreaming climate change, through the development of capacity of the municipalities and other key local agencies to assess and understand climate risks and vulnerabilities, and accordingly mainstream climate change adaptation strategies and actions in local plans and policies, and the establishment of a multi-stakeholder platform for dialogue and cooperation on climate change adaptation at the watershed level.					
Outcome 1.1: Improved understanding, knowledge and capacity to mainstream climate change adaptation in local plans and policies.					
Output 1.1.1: Training and exchange visits for community-based organizations (CBOs), municipality and provincial officials on climate change impacts and risks assessment tools and methods for mainstreaming CCA in all sectors and municipal plans	**Activity 1.1.1.1:** Stakeholders consultations to validate and finalize project activities and sites along with execution strategy and workplan given the 3 additional watersheds., **Activity 1.1.1.2**: Assess training needs and, accordingly, develop curricula and materials for training on participatory gender- sensitive assessments of climate risks and vulnerabilities, adaptation options and CCA mainstreaming in key sectors at the local level. **AND** **Activity 1.1.1.4:** Support CBOs, municipalities and relevant sector agencies to carry out participatory gender- sensitive assessments of climate risks and vulnerabilities and produce the reports of the assessments through workshops and consultations (this activity will provide the basis for activity 1.1.2.1 under output 1.1.2).	During assessments, include women and members from vulnerable groups to identify their specific needs on capacity development.	PMU	1.1.1.1, 1.1.1.2, 1.1.1.4 **100% of materials consider gender in formulation and development**	Year 1 Year 1-6

in an integrated approach.	**Activity 1.1.1.3**: Conduct a series of training for CBOs and government officials to develop their knowledge and skills for participatory gender-sensitive assessments of climate risks and vulnerabilities, adaptation options and CCA mainstreaming.	Ensure all parties are involved in training including Municipality staff, government staff, project staff, CBOs, women's groups and IP (Janajati) organizations. Ensure women and men local and provincial government officials have equal opportunity to take part in learning and exchange visits, taking gender dimensions into consideration when organizing visits.	PMU	1.1.1.3, 1.1.1.5, **At least 33% of participants in trainings and exchanges are women (in line with the regulations of 33% women-held positions in decision-making)**	Year 1, 2, 3, 4
	Activity 1.1.1.5: Organize learning and exchange visits for communities, local and provincial government officials, enabling them to acquire hands-on knowledge and insights on CCA mainstreaming from other CCA projects in Nepal and abroad.		Project manager in consultation with GESI expert or M&E officer		Year 2,3,4,5
Output 1.1.2: CCA-integration guidelines developed for communities and municipalities to support policies and plans on water, agriculture, forestry, and rural development for four municipalities in the Marin watershed and	**Activity 1.1.2.1:** Review municipality plans and policies for key sectors and assess the integration of climate change adaptation needs in these plans and policies, taking into account the information generated by the participatory assessments of climate risks and vulnerabilities **Activity 1.1.2.2**: Based on the above review, develop gender- sensitive guidelines to support integration of CCA in agriculture, livestock, forestry, and water sectors at the municipality level. **AND** **Activity 1.1.2.4**: Support workshops and consultations for formulation or revision of plans and policies at the municipality/ provincial level in accordance with the CCA-integration guidelines.	Ensure research and development of CCA plans includes information on gender dynamics, that women, SI and Dalit have their representation in the sectorial consultations and promote women's economical sustainability.	project manager in consultation with GESI expert or M&E staff;	1.1.2.1, 1.1.2.2, 1.1.2.4 **100% of plans and guidelines developed include GESI dimensions, promote women's economic success and are in line with existing policies on women's rights**	Year 1 Year 1 Year 1,3,4,5

integrated in the municipal planning process	**Activity 1.1.2.3** Conduct workshops to disseminate the aforementioned CCA-integration guidelines to officials of the municipalities and relevant sector agencies at the local level.	Ensure women can participate in the workshops, *(this may require creating enabling conditions for participation)*	Project manager in consultation with GESI expert or M&E staff;	1.1.2.2 **50% of women and marginalized groups participate in workshops.**	Year 1,2,3,5
Output 1.1.3: Multi-stakeholder platform established in the Marin watershed to drive the mainstreaming of adaptation in an integrated watershed approach.	**Activity 1.1.3.1:** Develop operational modality, structure including the composition of the stakeholders and functions for the multi-stakeholder platform.	Ensure women's barriers and restrictions to participation are addressed in the modality, structure and function of the platform	Project manager in consultation with staff from municipalities and members from relevant CBOs	1.1.3.1 **Multi-stakeholder platform addresses women's barriers to participation**	Year 1
	Activity 1.1.3.2: Organize an event to launch the multi-stakeholder platform and create general awareness and common understanding about the platform among the stakeholders.	Development and dissemination of materials targeted to women specifically will be necessary		1.1.3.2, **100% of event materials target women and men and are made accessible to both**	Year 1-6
	Activity 1.1.3.3: Support the multi-stakeholder platform to organize workshops, media events and dialogues to facilitate information exchange, and develop coordination and common understanding on climate change issues and adaptation measures.	Media events and dialogues need to adjust for women's levels of literacy and reach women who may have restricted access to community knowledge		1.1.3.3, **multi-stakeholder platform is comprised of 50% women**	Year 1-6

Component 2: Enhanced Resilience of Local Communities to Climate Change a) community-based natural resource management such as community identification of adaptation interventions, support and demonstration of sustainable and climate-resilient agriculture and livestock practices, improved water management, strengthened management of community and leasehold forests, and b) Nature-based Solutions that reduce climate impacts and risks.					
Outcome 2.1: Increased adaptive capacity of vulnerable households in the Marin Watershed to climate-induced disasters such as landslides, floods, droughts, and forest fire.					
Output 2.1.1: Climate-adaptive technologies and practices for agriculture, livestock management and water management introduced and demonstrated.	**Activity 2.1.1.1:** Support for climate-adaptive and sustainable agriculture. **Activity 2.1.1.2:** Support for sustainable livestock management **Activity 2.1.1.3:** Support for water-efficient technologies and farmer-managed irrigation systems	Ensure developed practices and technologies adopted are gender sensitive.	2.1.1.1 Gender expert or M&E officer, relevant local expert in consultation with community gender focal person	2.1.1.1, 2.1.1.2, 2.1.1.3, **100% of the chosen technologies and new sustainable agriculture techniques can be utilized by, and benefit women**	Year 1-6
	Activity 2.1.1.4: Train local communities on climate-adaptive technologies and practices in agriculture including commercial farming, livestock management and water management in support of activities 2.1.1.1, 2.1.1.2 and 2.1.1.3 **Activity 2.1.1.5**: Train local government officials and private agricultural/ veterinary service providers in the delivery of extension and technical services to local communities on climate-adaptive technologies and practices in agriculture, livestock management and water management, in support of activities 2.1.1.1, 2.1.1.2 and 2.1.1.3	Ensure trainings on sustainable agriculture, livestock management, and water management technologies incorporate women, and marginalized members of society, including methods to address barriers to participation and adoption of the sustainable practices.		2.1.1.4, **50% of participants in trainings for all three activities are women** 2.1.1.5; **ensure at least 33% of govt. officials and private service providers trained are women**	Year 1-6

Outcome 2.2: Nature-based Solutions (NbS) reduce climate-induced vulnerabilities of community livelihood resources and assets.					
Output 2.2.1: Management of community and leasehold forests strengthened, and vulnerable catchment areas rehabilitated and protected for reduced vulnerability to climate-induced disaster risks such as landslides, sedimentation, flooding and forest fires.	**Activity 2.2.1.1**: Strengthen community forest management, including forest nurseries and plantation, forest fire management and grazing management, through support to existing CFUGs with training, awareness-building, equipment and materials. **AND** **Activity 2.2.1.4**: Rehabilitate and protect degraded and vulnerable areas in Phulbari khola and Ghagar khola Dhungajor, Jalkeni Sakhauri, and Simale catchments against climate disaster risks through NbS interventions ensuring community engagement.	Encourage women to participate in trainings on forest management and NBS solutions. This may require removing barriers to entry for women.	GESI expert or M&E officer, local expert in consultation with community gender experts or representatives	2.2.2.1, 2.2.1.4; **50% of trainees and recipients of equipment are female beneficiaries that utilize the community forests and are able to participate in NBS**	Year 1-6
	Activity 2.2.1.2: Strengthen community-based forest management through CFUGs with training, awareness-building and support for development and implementation of updated and improved community forest operational plans. **Activity 2.2.1.3:** Strengthen leasehold forest management through support to leasehold forest groups with training, awareness-building, equipment and materials.	Encourage all CFUG and leaseholder meetings to include women representation from the local communities, and consider that landholding is rare for women due to cultural practices		2.2.1.2, 2.2.1.3: **100% of CFUGs and Leasehold Forest groups have representation of women**	Year 1-6
	Activity 2.2.1.5: Train local communities to develop their skills required for implementation of the aforesaid NbS interventions (listed under activity 2.2.1.3). **Activity 2.2.1.6**: Train local forest officials for delivery of extension services and technical support to CFUGs and leasehold forest groups for improved management of community forests (linked to activities 2.2.1.1 and 2.2.1.2).			2.2.1.5, 2.2.1.6, **at least 33% of participants trained are women**	Year 1-5

Component 3: Monitoring, evaluation and knowledge management, through tracking of project progress on a regular basis, garnering and analysis of lessons and good practices, and development and dissemination of knowledge that reinforces project results from components 1 and 2, providing sound basis for their replication, adaptation and sustainability. **Component 3: Monitoring, evaluation and knowledge management**					
Outcome 3.1: Project monitoring, evaluation, and learning to enable adaptive management, replication and sustainability.					
Output 3.1.1. Knowledge products are developed and disseminated to enable up scaling of the project activities	**Activity 3.1.1.1:** Conduct case studies, and assess lessons learned and best practices emanating from implementation of project activities, and document and disseminate them for replication and up-scaling. **Activity 3.1.1.2:** Assess and document indigenous knowledge on climate-resilient methods and practices in the project area and promote their integration in the design of climate-adaptive solutions for agriculture, livestock management, water management, community/ leasehold forest management, and climate disaster risk reduction (linkage to project component 2).	Consider lessons learned and best practices of the project related to women, and marginalized members and disseminate to local and national stakeholders	Project manager in consultation with GESI expert or M&E officer	3.1.1.1, 3.1.1.2 **100% of assessments reflect on gender within the project during the implementation period**	Year 2, 3, 4, 5, 6 Year 1,2
	Activity 3.1.1.3: Develop and disseminate communication and education materials through print, broadcast and digital media. **Activity 3.1.1.4:** Create and maintain a project website that provides information and updates on project activities, and access to project knowledge resources in particular reports, publications, case studies and other knowledge products. **Activity 3.1.1.5:** Organize media and communication events, such as project site visits by journalists, write-shops and media fellowships at local/ district, provincial and national levels, to highlight and disseminate	Consider developing materials in Nepali language that has pictures to inform on various project activities; Disseminate project information through local FM radio and other medium to ensure access to information by all stakeholders.	Project staff in consultation with GESI expert or M&E officer	3.1.1.3, 3.1.1.4, 3.1.1.5**, 100% of event materials and communications target both women and men and are made accessible to women and marginalized community members through print, local FM radio information**	Year 2,3,4,5, 6 Year 1-6 Year 1-6

	watershed management concept, approach and practices applied by the project for climate change adaptation.			**and other accessible medium.**	
Output 3.1.2. Project progress tracked effectively through project Monitoring and Evaluation (M&E)	**Activity 3.1.2.1:** Project inception and stakeholder engagement **Activity 3.1.2.2:** Conduct annual and semi-annual monitoring visits to project sites. **Activity 3.1.2.3**: Conduct bi-annual and annual review and planning workshops to reflect on project progress and performance and plan for oncoming year.	Organize and ensure women members participate in review meetings and lessons learned sharing; Ensure GESI disaggregated data collection.	3.1.2.1 Project manager in consultation with GESI expert or M&E officer 3.1.2.2 GESI expert or M&E officer with project staff	3.1.2.1, 3.1.2.2, 3.1.2.3 **100% of meetings include mitigation measures to allow women to participate and there are no male-only meetings/consultations**	Year 1 Year 1-6 Year 1-6
	Activity 3.1.2.4: Produce and disseminate periodic project progress and implementation reports. **Activity 3.1.2.5:** Conduct Project Steering Committee meetings as required and disseminate meeting proceedings and reports. **Activity 3.1.2.6:** Conduct independent mid-term project evaluation and terminal evaluation as scheduled in the M&E plan and disseminate the findings and recommendations of the evaluation reports for follow-up actions by the concerned parties.	Ensure GESI analysis is included in the progress reports		3.1.2.4, 3.1.2.5, 3.1.2.6 **Project monitoring matrix has gender sensitive indicators to track progress on gender and social inclusion**	Year 1-6 Year 1-6 Year 3, 6

Annex 1: List of People consulted for GESI study

Names of women and men consulted have been kept private to protect stakeholders involved in the project design and ensure anonymity.

SN	Name	Gender	Ethnicity	Village	Ward	Municipality	Notes
01	[redacted]	female	Indigenous Janajati	Purano Jutpani	7	Marin RM	Joint meeting organized in school building
02	[redacted]	female	Dalit	Purano Jutpani	6	Marin RM	Joint meeting organized in school building
03	[redacted]	Male	Janajati	Bhutaha	6	Marin RM	Chicken farm
04	[redacted]	Female	Janajati	Bhutaha	6	Marin RM	Pig farm
05	[redacted]	Male	Janajati	Bhutaha	6	Marin RM	Chicken farm
06	[redacted]	female	Chhetri	Bagawati tole	6	Marin RM	KII
07	[redacted]	female	Chhetri	Bagawati tole	6	Marin RM	KII
08	[redacted]	female	Janajati	Bagawati tole	6	Marin RM	KII
09	[redacted]	female	Dalit	Bagawati tole	6	Marin RM	KII
10	[redacted]	female	Janajati	Bagawati tole	6	Marin RM	KII
11	[redacted]	Female	Janajati	Bagawati tole	6	Marin RM	KII
12	[redacted]	Female	Janajati	Bagawati tole	6	Marin RM	Livestock Farm
13	[redacted]	female	Janajati	Bhutaha	6	Marin RM	FGD with CFUG
14	[redacted]	female	Janajati	Bhutaha	6	Marin RM	FGD with CFUG
15	[redacted]	female	Janajati	Bhutaha	6	Marin RM	FGD with CFUG
16	[redacted]	female	Janajati	Bhutaha	6	Marin RM	FGD with CFUG
17	[redacted]	female	Janajati	Bhutaha	6	Marin RM	FGD with CFUG
18	[redacted]	female	Janajati	Bhutaha	6	Marin RM	FGD with CFUG
19	[redacted]	female	Janajati	Bhutaha	6	Marin RM	FGD with CFUG
20	[redacted]	female	Janajati	Bhutaha	6	Marin RM	FGD with CFUG
21	[redacted]	female	Janajati	Bhutaha	6	Marin RM	FGD with CFUG
22	[redacted]	female	Janajati	Bhutaha	6	Marin RM	FGD with CFUG
23	[redacted]	female	Janajati	Bhutaha	6	Marin RM	FGD with CFUG
24	[redacted]	female	Dalit	Bhutaha	6	Marin RM	FGD with CFUG
25	[redacted]	female	Janajati	Bhutaha	6	Marin RM	FGD with CFUG
26	[redacted]	Male	Janajati	Bhuta	6	Marin RM	FGD with CFUG
27	[redacted]	female	Chhetri	Pipalbanzan	1	Kamalamai Municipality	Joint meeting
28	[redacted]	female	Janajati	Pipalbanzan	1	Kamalamai Municipality	Joint meeting
29	[redacted]	female	Dalit	Pipalbanzan	1	Kamalamai Municipality	Joint meeting
30	[redacted]	female	Chhetri	Pipalbanzan	1	Kamalamai Municipality	Joint meeting
31	[redacted]	female	Janajati	Pipalbanzan	1	Kamalamai Municipality	Joint meeting

32	[redacted]	male	Dalit	Dhungajor	1	Kamalamai Municipality	Joint meeting
33	[redacted]	female	Dalit	Dhungajor	1	Kamalamai Municipality	Joint meeting
34	[redacted]	female	Dalit	Dhungajor	1	Kamalamai Municipality	Joint meeting
35	[redacted]	female	Janajati	Dhungajor	1	Kamalamai Municipality	Joint meeting
36	[redacted]	female	janajati	Dhungajor	1	Kamalamai Municipality	Joint meeting
37	[redacted]	female	Janajati	Kunda Tole	1	Kamalamai Municipality	FGD
38	[redacted]	female	Janajati	Kunda Tole	1	Kamalamai Municipality	FGD
39	[redacted]	female	Janajati	Kunda Tole	1	Kamalamai Municipality	FGD
40	[redacted]	Male	Janajati	Kunda Tole	1	Kamalamai Municipality	FGD
41	[redacted]	Female	Dalit	Kunda Tole	1	Kamalamai Municipality	FGD
42	[redacted]	male	Janajati	Kunda Tole	1	Kamalamai Municipality	FGD
43	[redacted]	male	Janajati	Kunda Tole	1	Kamalamai Municipality	FGD
44	[redacted]	female	Janajati	Kunda Tole	1	Kamalamai Municipality	FGD
45	[redacted]	female	Janajati	Kunda Tole	1	Kamalamai Municipality	FGD
46	[redacted]	female	Janajati	Kunda Tole	1	Kamalamai Municipality	FGD
47	[redacted]	female	Janajati	Kunda Tole	1	Kamalamai Municipality	FGD
48	[redacted]	female	Janajati	Kunda Tole	1	Kamalamai Municipality	FGD
49	[redacted]	female	Janajati	Kunda Tole	1	Kamalamai Municipality	FGD
50	[redacted]	female	Janajati	Kunda Tole	1	Kamalamai Municipality	FGD
51	[redacted]	male	Janajati	Bhadrakali tole	2	Kamalamai Municipality	KII
52	[redacted]	female	Janajati		2	Kamalamai Municipality	KII
53	[redacted]	female	Janajati	Bhalkada Tole	5	Hariharpur Gadhi RM	FGD
54	[redacted]	female	Janajati	Bhalkada Tole	5	Hariharpur Gadhi RM	FGD
55	[redacted]	female	Janajati	Bhalkada Tole	5	Hariharpur Gadhi RM	FGD
56	[redacted]	female	Janajati	Bhalkada Tole	5	Hariharpur Gadhi RM	FGD
57	[redacted]	female	Janajati	Bhalkada Tole	5	Hariharpur Gadhi RM	FGD

58	[redacted]	female	Janajati	Bhalkada Tole	5	Hariharpur Gadhi RM	FGD
59	[redacted]	female	Janajati	Bhalkada Tole	5	Hariharpur Gadhi RM	FGD
60	[redacted]	male	Brahmin	Sindulii	-	Sindhuli district	Division Forest Office
61	[redacted]	male	Brahmin	Sindulii	-	Sindhuli district	Division Forest Office
62	[redacted]	male	Chhetri	Sindulii	-	Sindhuli district	Division Forest Office

Annex 2: Bibliography

CARE Nepa/ Hariyo Ban Program,2020: Framework for Differential Impact Assessment and Response Planning (DIA-RP) to Climate Change and Disaster Risk

Government of Nepal (GoN) (2015) Constitution of Nepal

Government of Nepal (GoN) 2077 Gender Equality Policy

Government of Nepal (GoN) 2077 National Social Inclusion Policy

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Tulsa Devi Dulal: Gender Mainstreaming: Policies at the National and International Level

UNDP GESI Framework, 2017: A Common Framework for Gender Equality and Social Inclusion

Appendix 13: WWF Environmental and Social Safeguards Risk Categorization

WWF Environmental and Social Safeguards - Risk Categorization Memorandum

Version 2.1 November 2020

Project Name: Managing Watersheds for Enhanced Resilience of Communities to Climate Change in Nepal (MaWRiN) Project	**Date: February 28, 2022**

Executing Agency/ies: Ministry of Forestry and Environment (MoFE), Government of Nepal

Landscape Categorization on E&S Risks:

High Risk - (A) ___and/or (Special Consideration) _X_ /Medium Risk (B) ___ / Low Risk (C)___

Substantive Safeguard Standards Triggered:	Yes/ TBC	No
Natural Habitats	X	
Pest Management		X
Indigenous Peoples	X	
Restriction of Access & Resettlement	X	
Community Health, Safety and Security	X	
Physical and Cultural Resources		X

In addition to the Substantive Safeguards above, the four Process Standards apply to all projects:

- **Environmental and Social Risk Management**
- **Consultation and Disclosure**
- **Community Stakeholder Engagement**
- **Grievance Mechanism**

Landscapes categorized as low risk have been screened in accordance to the Standard on E&S Risk Management.

Project Area Context

Climate change poses one of the biggest challenges to sustainable development in Nepal, which is featured among the ten countries most affected by climate change between 2010 and 2019 according to the Global Climate Risk Index 2021. The country is beset with climate-induced hazards such as floods, landslides and debris-flows along with extended dry spells and drying up of water sources along the mid hills and mountains while glacial melt is significantly increasing the potential risk of Glacial Lake Outburst Floods (GLOFs) in the high mountains.

The Marin Watershed has been identified as one of the most vulnerable areas to the impacts of climate change in the country. Increasing floods, droughts, fires and associated landslides in the area affect the subsistence of agrarian, largely indigenous, communities in the area. Drought and fire are exacerbating the human-caused degradation and loss of forests, which is a resource upon which the subsistence living communities depend.

The Managing Watersheds for Enhanced Resilience of Communities to Climate Change in Nepal (MaWRiN) Project, located in Marin watershed in the central-east of the Churia region, was conceptually approved in November 2020 by the GEF for funding from the GEF-managed Least Developed Countries Fund (LDCF). To be implemented over a period of five years by WWF in close association with the Ministry of Forests and Environment (MoFE) as the national executing partner, the project will enable the government and local stakeholders to invest in protecting the Marin watershed while bolstering the longer-term resilience of

local and indigenous communities against climate emergencies. The project will address these challenges with the following three components:

Component 1: Enabling environment for mainstreaming climate change, through the development of capacity of the municipalities and other key local agencies to assess and understand climate risks and vulnerabilities, and accordingly mainstream climate change adaptation strategies and actions in local plans and policies, and the establishment of a multi-stakeholder platform for dialogue and cooperation on climate change adaptation at the watershed level.

Component 2: Community-based natural resource management to enhance resilience of communities to climate change, through community identification of adaptation interventions, support and demonstration of sustainable and climate-resilient agriculture and livestock practices, improved water management, strengthened management of community and leasehold forests, and NbS interventions that reduce climate impacts and risks.

Component 3: Monitoring, evaluation and knowledge management, through tracking of project progress on a regular basis, garnering and analysis of lessons and good practices, and development and dissemination of knowledge that reinforces project results from components 1 and 2, providing sound basis for their replication, adaptation and sustainability

Summary of Key Safeguard Issues

Natural Habitats:
This Standard is triggered as the proposed Project directly targets protecting and restoring natural habitats; especially through community-based natural resource management, improved agricultural and livestock practices and improved water management practices.

Indigenous Peoples:
The project will take place on lands customarily and legally owned and used by a number of Indigenous communities, and therefore this Policy has been triggered. The Indigenous Peoples within the Marin Sub-watershed are highly diverse, with around 45 castes and ethnicities but dominated largely by Tamang along with Magar, Brahmin, Chhettri, Newar, Majhi and Dalits making up around 90% of the population. These Indigenous communities are represented by their formal organizations, as well as the Nepal Federation of Indigenous Nationalities (NEFIN), an umbrella body of all organizations representing Indigenous communities in Nepal. Nepal Foundation for Development of Indigenous Nationalities (NFDIN) is the Government of Nepal-established body tasked with ensuring the overall welfare of Indigenous nationalities of the country. The foundation is an autonomous body, fully authorized to operate independently where Indigenous nationalities' interests are concerned.

This policy is triggered to ensure the Project respects Indigenous Peoples' rights in the project areas, including their rights to FPIC processes and to tenure over traditional territories; that culturally appropriate and equitable benefits (including from traditional ecological knowledge) are negotiated and agreed upon with the indigenous peoples' communities in question; and that potential adverse impacts are avoided or adequately addressed through participatory and consultative approach. Indigenous peoples live in and/or have cultural, spiritual and economic ties all areas where Project activities will happen, and are the majority populations in those areas. The Marin Sub-watershed is predominantly inhabited by Tamang and Magar communities, and they use natural resources as per their cultural faith and beliefs, including sacred groves, graves, water sprouts and springs or parts of forests which they do use but not legally own.

Due to the ongoing COVID pandemic restrictions, true FPIC processes were not established with communities during the ProDoc stage, and therefore an Indigenous Peoples Planning Framework will be prepared as part of the ESMF to conform to WWF's Environment and Social Safeguards Framework. The Indigenous Peoples Plan will be co-created with communities during the first six months of project implementation with the guidance of the Gender and Safeguards Specialist, who will be hired as part of the PMU.

Restriction of Access & Resettlement
While the proposed Project is unlikely to cause displacement of people, the project might lead to certain access restrictions, especially given the disputed nature of governance and government oversight in the project area. Given that the activities proposed under the project include, but are not limited to, mainstreaming of climate change policy recommendations, strengthened management of community and leasehold forests, and changes to agriculture, livestock grazing practices and collection of NTFPs,

WWF's policy on Involuntary Resettlement is triggered because the Project will help define and thereby potentially restrict access to natural resources and livelihoods activities.

WWF policies prohibit forced evictions, which include acts involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating or limiting the ability of an individual, group or community to reside or work in a particular dwelling, residence, or location without the provision of and access to, appropriate forms of legal and other protection. In addition, the project will exclude financing any activities that would lead to physical displacement and voluntary or involuntary relocation. However, economic displacement or restriction to livelihoods or access to natural resources may occur (e.g. as a result of negotiating through FPIC-based consultations). This, however, will only occur with the consent of the affected peoples and following a decision made with all required information at hand. As the specific project activities will only be confirmed with communities within the first year of project implementation, a Process Framework will be prepared as part of the ESMF to conform to WWF's Environment and Social Safeguards Framework.

Community Health, Safety and Security
This standard is triggered because of necessary safety protocols related to the ongoing COVID 19 pandemic. All related WWF, Nepalese government and community regulations regarding COVID will be followed during project implementation. Occupational health and safety for adult project workers may also present a challenge, since national legislation on these issues is weak, and enforcement is generally low. Detailed guidelines will be provided to project contractors and included as part of the bidding documents.

Accountability and Grievance Mechanism: In addition to stakeholders having access to national level grievance and redress mechanisms, the WWF GEF Agency mechanism and the GEF Agency Mechanisms for Conflict Resolution and Accountability, a project level Grievance Mechanism will be created and implemented for this Project per GEF and WWF requirements.

WWF Environmental and Social Safeguards - Risk Categorization Memorandum

Version 2.1 November 2020

Summary of Cross Cutting Issues; (Human Rights, Gender Equality and Women's Rights, Children's Rights, Conflict Sensitivity and Climate Change).

Human Rights:

The majority of the people in the project area live below the poverty threshold- they do not have year-round food security and depend on agricultural land or forests by selling timber and other forest produce, or both. The Indigenous Peoples and Dalits living here are highly marginalized, which may be attributed to the marginalization of the Churia region. However, extreme pressure on natural resources from the migrant populations, mainly from mid-mountains, from the people of the Tarai and the market forces for natural resources have highly degraded or destroyed the natural resource base. This has further marginalized, or even displaced, large numbers of Indigenous Peoples.

There are other contextual challenges, including the fact that local and national government representatives as well as the PMU staff who are engaged in the project planning and implementation may encounter challenges in meeting safeguards obligations due to lack of skilled person, lack of awareness regarding safeguards requirements and the importance of community engagement, as well lack of prior experience with these issues. At the same time, there is the risk that local communities in the project area are unaware of their rights and are not familiar with the process of how to claim their rights, which is predominantly occupied by Indigenous groups and marginalized communities including the Dalit.

Gender Equality and Women's Rights:

In the project area, as in other parts of the country, decision-making is dominated by men. Illiteracy, low capacity & self-esteem, time for participation in meetings and trainings bar women from access to information and new technology and lack of assets inhibits their access to resources. This has disempowered women in asserting their rights to decision-making positions. Existing cultural practices that curtail mobility due to gender-based violence has further disempowered women to make decision on their own. Due to the low level of literacy, women's participation in decision-making and community level planning process is low. In the project area, women are responsible for all domestic work within the households, but have less power than men over decision-making within the households. This pattern is changing as men migrate to urban centers and outside country in search of employment. In such circumstances, women are the de facto household head and take household decisions.

Regarding the participation of women in planning processes, there is a general tendency of excluding women, poor and disadvantaged groups in decision-making arenas that are critical for their livelihood. Women are responsible and involved in the management of forest and agriculture resources as they are responsible for collecting forest resources and work as agriculture workers. They have in-depth knowledge about the utilization of such services, but they are excluded from the decision-making and planning process in user committee and community works. Furthermore, as men and women are responsible for different roles within agricultural practices, climate-adaptive technologies that support the type of work undertaken by men may further marginalize women if care is not given to ensure equitable distribution of project benefits. A Gender Action Plan will be prepared as part of the project to ensure that the needs, concerns, livelihoods and knowledge of both women and men are equitably integrated into the project design and implementation.

Children's Rights:

Child labor may present a risk in project sites, as it is a cultural norm for children to help their parents in agricultural work. The ESMF will provide mitigation measures to address this risk, and special precautions will be undertaken to ensure that children are not involved in any project activities.

Conflict Sensitivity:

In the last decade, forest management in Chure has remained contested. The President Chure Terai Madhesh Conservation Development Board (PCTMCDB) was formed to plan and implement Chure management interventions and to achieve conservation goals. However, stakeholders perceive this as a top-down approach and the imposition of stringent measures, including a ban on harvesting green trees has led to negative impressions of the Board among stakeholders. The declaration of the Environmental Protection Area (EPA) and the formation of Chure Board has raised concerns among the stakeholders about re-centralization of power, which in turn has triggered mistrust and contestation between the government and CFUGs. The boundary of the Chure Environmental Protection Area is currently contested, particularly after the unilateral designation by the government; issues also remain around the rights to utilize forest resources. In fact, these factors have resulted in over exploitation of the resources, mainly by the upstream communities.

In many cases, the involvement of, and consultations with stakeholders in preparing relevant policies and regulations is low. Local organizations, NGOs and individuals have either limited or no access to the information related to the approved policies. In many cases, it has created conflicts between service providers and receivers, as well as poor participation in program implementation. The other important representation issue regards the relationship of the local and tribal communities with government agencies. Such agencies forward the local people's aspirations to the government, and they must consult the concerned stakeholders— the farming community, local and Indigenous community and user's community— while deciding on issues which affect their livelihood. However, people do not feel that these agencies are doing that, leading to further potential conflict in the project area.

This conflict between Community user groups and government bodies, as well as between communities over natural resource use poses several interconnected risks to effective project implementation, and must be factored into the risk mitigation planning for the project.

Climate Change:
Climate change is the main risk being addressed by this project, and its threat to human and environmental well-being is existential and well documented. The country is beset with climate-induced hazards such as floods, landslides and debris-flows along with extended dry spells and drying up of water sources along the mid hills and mountains while glacial melt is significantly increasing the potential risk of Glacial Lake Outburst Floods (GLOFs) in the high mountains. These risks also pose a threat to the project implementation and measures to mitigate these risks have been incorporated into the project activities and timelines

Required Actions for Impact Assessment (ESIA) and Mitigation Framework (ESMF):

An Environmental and Social Management Framework will be required for this project, created by consultants prior to project implementation. The ESMF will include an Indigenous Peoples Planning Framework, a Process Framework, and guidance on COVID protocols. A Stakeholder Engagement plan will also be drafted, including specifics of how the project will ensure that lessons from past projects in Nepal are integrated into the current stakeholder engagement and project planning processes.

Based on the information contained in the Screening tool, as well as lessons from past projects in Nepal, there is a level of mistrust between communities and the government in the area, and a strong resistance to top-down approaches. Therefore, the ESMF, related Plans and the Project in general must factor this into the design and implementation of the MaWRiN project.

In addition to the actions noted above, a Gender Assessment and Gender Action Plan will be drafted and submitted with the ProDoc and a Grievance Redress Mechanism will be drafted prior to final agency approval, which will include specifics of a project-level grievance mechanism and named PUM staff responsible for its implementation.

Signature: DocuSigned by: Adrienne McKeehan CF38CBFE14D1447... **Date:** 3/1/2022

Name: Adrienne McKeehan

Position: Senior Program Officer, Environmental and Social Safeguards

Signature: DocuSigned by: Brent Nordstrom DD6033B6C7E2446... **Date:** 3/1/2022

Name: Brent Nordstrom

Position: Senior Director, Integration and Performance

Appendix 14: GEF Project Capacity Development Indicators and Scores Worksheets

Marin Rural Municipality

Project Title: Managing Watersheds for Enhanced Resilience of Communities to Climate Change in Nepal
Date: 5 Jan 2022

Country: Nepal **GEF ID Number:** 10727

Capacity Result/ Indicator	Staged Indicators	Score	Baseline	Mid-term	Project End	Comments
Capacity Result 1: Capacities for Engagement						
Indicator 1: Degree of legitimacy/ mandate of lead organizations	Organizational responsibilities for climate change adaptation and its mainstreaming are not clearly defined	0	0			Climate Change Adaptation (CCA) has not received priority yet. Officials informed that in future, it will be kept in priority allocating budget.
	Organizational responsibilities for climate change adaptation and its mainstreaming are identified	1				
	Authority and legitimacy of all lead organizations responsible for climate change adaptation and its mainstreaming are partially recognized by stakeholders	2			2	
	Authority and legitimacy of all lead organizations responsible for climate change adaptation and its mainstreaming recognized by stakeholders	3				
Indicator 2: Existence of collaborative mechanisms	No collaborative mechanisms for climate change adaptation and its mainstreaming are in place	0	0			Once budge will be allocated, collaborative mechanism will be developed through joint funding, idea exchange etc.
	Some collaborative mechanisms for climate change adaptation and its mainstreaming are in place and operational	1				
	Some collaborative mechanisms for climate change adaptation and its mainstreaming are formally established through agreements, MOUs, etc.	2				

	Comprehensive collaborative mechanisms for climate change adaptation and its mainstreaming are formally established and are operational/ functional	3			3	
Indicator 3: Existence of cooperation with stakeholder groups	Identification of stakeholders and their participation/involvement in decision-making for climate change adaptation and its mainstreaming is poor	0	0			Once CCA will be addressed through policy documents, this will be gradually adopted in future
	Stakeholders are identified, but their participation in decision-making for climate change adaptation and its mainstreaming is limited	1				
	Stakeholders are identified, and regular consultations mechanisms for climate change adaptation and its mainstreaming are established	2			2	
	Stakeholders are identified, and they actively contribute to established participative decision-making processes for climate change adaptation and its mainstreaming	3				
	Capacity Result 1, maximum possible score	**9**	**9**	**9**	**9**	
	Capacity Result 1, score at the time of assessment	**0**	**0**		**7**	
	Capacity Result 1, % score of maximum possible score	**0**	**0**		**77.8**	
Capacity Result 2: Capacities to Generate, Access and Use Information and Knowledge						
Indicator 4: Degree of stakeholder awareness on climate change issues and adaptation solutions	Stakeholders are not aware of issues related to climate change and possible adaptation solutions	0				
	Stakeholders are aware of issues related to climate change, but not the possible adaptation solutions	1	1			Inadequate information on policy documents about Chure issue, watershed concept has been mentioned on annual report but adaptation aspect and prospective solution is lacking. Annual report, Policies and Programme Documents 2077/78, 2078/79. See 226 to 249 clause of 2078/79 Policy Document of Marin Rural Municipality. Attached.
	Stakeholders are aware of climate change issues and the possible adaptation solutions, but do not know how to participate	2				

	Stakeholders are aware of climate change issues and are actively participating in the implementation of relevant adaptation solutions	3			3	
Indicator 5: Access and sharing of information on climate change and adaptation solutions by stakeholders	The information needs are not identified, and the information management infrastructure is inadequate	0	0			Will be in priority from next Fiscal Year onwards
	The information needs are identified, but the information management infrastructure is inadequate	1				
	The information is partially available and shared among stakeholders, but is not covering all key aspects and/or the information management infrastructure is limited	2			2	
	Comprehensive information is available and shared through an adequate information management infrastructure	3				
Indicator 6: Existence of education/ awareness programs on climate change issues and adaptation solutions	No education/ awareness programs on climate change issues and adaptation solutions are in place	0				
	Education/ awareness programs are partially developed and partially delivered	1	1			The annual budget speech mentions education and awareness aspect sporadically about education and awareness issues mostly focusing mobilizing them for development only but not climate change issues. Annual report, Policies and Programme Documents 2077/78, 2078/79. See page Education and Youth Section of 2078/79 Policy Document of Marin Rural Municipality. Attached.
	Education/ awareness programs are fully developed but partially delivered	2				
	Comprehensive education/ awareness programs exist and are being delivered	3				
Indicator 7: Extent of the linkage between research/science and policy	No linkage exist between policy development and science/research strategies and programs for climate change adaptation	0	0		0	LG needs capacity development for this
	Research needs for policy development are identified, but are not transferred into relevant research strategies and programs for climate change adaptation	1				

development for climate change adaptation	Relevant research strategies and programs for policy development exist, but the research information is not responding fully to the policy research needs	2				
	Relevant research results are available for policy development related to climate change adaptation	3				
Indicator 8: Extent of inclusion/use of local knowledge in decision making for climate change adaptation	Local knowledge is ignored and not taken into account for relevant participative decision-making processes for climate change adaptation	0				
	Local knowledge is identified and recognized as important, but is not collected and used in relevant participative decision-making processes for climate change adaptation	1	1			Policy document states conservation of local knowledge but action with allocation of budget is lacking. Annual report, Policies and Programme Documents 2077/78, 2078/79. See page 10, 11 and 12 of 2078/79 Policy Document of Marin Rural Municipality. Attached.
	Local knowledge is collected, but is not used systematically into relevant participative decision-making processes for climate change adaptation	2			2	
	Local knowledge is collected, used, and shared for effective participative decision-making processes for climate change adaptation	3				
	Capacity Result 2, maximum possible score	**15**	**15**	**15**	**15**	
	Capacity Result 2, score at the time of assessment	**3**	**3**		**7**	
	Capacity Result 2, % score of maximum possible score	**20**	**20**		**46.7**	
Capacity Result 3: Capacities for Strategy, Policy and Legislation Development						
Indicator 9: Extent of planning and strategy development process relevant	The planning and strategy development process is not coordinated, and does not produce adequate plans and strategies relevant to climate change adaptation	0	0			Major focus was placed in emergency needs and coordinated planning in CCA still to be achieved
	The planning and strategy development process does produce adequate plans and strategies relevant to climate change adaptation, but they are not implemented or used	1				

to climate change adaptation	Adequate plans and strategies relevant to climate change adaptation are produced, but are only partially implemented because of funding constraints and/or other problems	2			2	
	The planning and strategy development process is well coordinated by the lead organizations, and produces the required plans and strategies relevant to climate change adaptation and are being implemented	3				
Indicator 10: Existence of adequate policies and regulatory frameworks for climate change adaptation	The policy and regulatory frameworks relevant to climate change adaptation are insufficient; they do not provide an enabling environment	0	0			Such policy are not in existence now. It will be developed gradually.
	Some relevant policies and laws relevant to climate change adaptation exist, but few are implemented and enforced	1				
	Adequate policy and legislation frameworks relevant to climate change adaptation exist, but there are problems in implementing and enforcing them	2			2	
	Adequate policy and legislation frameworks relevant to climate change adaptation are implemented, and provide an adequate enabling environment; a compliance and enforcement mechanism is established and functions	3				
Indicator 11: Adequacy of information available for decision-making on climate change adaptation	The availability of relevant information for decision-making on climate change adaptation is lacking	0	0			LG needs to enhance capacity to achieve this.
	Some information exists, but it is not sufficient to support decision-making processes	1				
	Relevant information is made available to decision-makers, but the process for updating this information is not functioning properly	2			2	
	Political and administrative decision-makers obtain and use updated information to make decisions on climate change adaptation	3				
	Capacity Result 3, maximum possible score	**9**	**9**	**9**	**9**	
	Capacity Result 3, score at the time of assessment	**0**	**0**		**6**	
	Capacity Result 3, % score of maximum possible score	**0**	**0**		**66.7**	

Capacity Result 4: Capacities for Management Implementation						
Indicator 12: Existence and mobilization of resources for climate change adaptation	The lead organizations do not have adequate resources for climate change adaptation, and the requirements have not been assessed	0				
	The resource requirements for climate change adaptation are known but are not being addressed	1	1		1	Annual report, Policies and Programme Documents 2077/78, 2078/79. See page 1 to 9, and 226 to 249 clause of 2078/79 Policy Document of Marin Rural Municipality. Attached.
	The funding sources for the resource requirements for climate change adaptation are partially identified, and the resource requirements are partially addressed	2				
	Adequate resources are mobilized and available for climate change adaptation	3				
Indicator 13: Availability of required technical skills and technology transfer for climate change adaptation	The required skills and technology for climate change adaptation are not available, and the needs are not identified	0	0			Such study or information not available
	The required skills and technologies needs for climate change adaptation are identified, as well as their sources	1				
	The required skills and technologies for climate change adaptation are obtained, but their access depends on foreign sources	2			2	
	The required skills and technologies for climate change adaptation are available, and there is a national-based mechanism for updating the required skills and upgrading the technologies	3				
	Capacity Result 4, maximum possible score	**6**	**6**	**6**	**6**	
	Capacity Result 4, score at the time of assessment	**1**	**1**		**3**	
	Capacity Result 4, % score of maximum possible score	**16.67**	**16.67**		**50**	
Capacity Result 5: Capacities to Monitor and Evaluate						
Indicator 14: Adequacy of the monitoring of programs	Irregular monitoring is being done without an adequate framework, for detailing what and how to monitor the programs	0			2	During the visit, a record of monitoring visit, meetings were received as hard copy. Monitoring reports, records have been kept intact with hard copy.
	An adequate resourced monitoring framework is in place, but monitoring is irregularly conducted	1				

related to climate change adaptation	Regular participative monitoring of programs is being conducted, but this information is only partially used by decision makers implementation team	2	2			Interim reports, Annual report, Policies and Programme Documents 2077/78, 2078/79 Working procedure, and reports available in https://marinmun.gov.np also support this. M&E mentioned in budget section of 2078/79 Budget document attached.
	Monitoring information is produced timely and accurately, and is used by the implementation of programs to learn and possibly change the course of action	3				
Indicator 15: Adequacy of the evaluation of programs related to climate change adaptation	No or ineffective evaluations are being conducted of the programs, with no adequate evaluation plans or the necessary resources	0			2	During the visit, a record of evaluation work in the form of quarterly report etc were received. Interim reports, Annual report, Policies and Programme Documents 2077/78, 2078/79 Working procedure, and reports available in https://marinmun.gov.np also support this. M&E mentioned in budget section of 2078/79 Budget document attached.
	Adequate evaluation plans are in place, but evaluation activities are irregularly conducted	1				
	Evaluations are being conducted as per adequate evaluation plans, but the evaluation results are only partially used decision makers programme implementation team	2	2			
	Effective evaluations are conducted timely and accurately, and are used by decision makers	3				
	Capacity Result 5, maximum possible score	**6**	**6**	**6**	**6**	
	Capacity Result 5, score at the time of assessment	**4**	**4**		**4**	
	Capacity Result 5, % score of maximum possible score	**66.67**	**66.67**		**66.7**	
	All Capacity Results, total maximum score	45	45		45	
	All Capacity Results, total score at the time of assmt	8	8		27	
	All Capacity Results, % score of max possible score	17.78	17.78		60.00	

Summary of Capacity Development Scorecard Assessment				
Project: MaWRiN (WWF/GEF)	**Date:**	**Jun 2021**		
Capacity Result		**Baseline**	**Midterm**	**Project End**
Capacity Result 1: Capacities for Engagement	Score:	0		7
	% max.:	0%		78%

Capacity Result 2: Capacities to Generate, Access and Use Information and Knowledge	Score:	3		7
	% max.:	20%		47%
Capacity Result 3: Capacities for Strategy, Policy and Legislation Development	Score:	0		6
	% max.:	0%		67%
Capacity Result 4: Capacities for Management Implementation	Score:	1		3
	% max.:	16.67%		50%
Capacity Result 5: Capacities to Monitor and Evaluate	Score:	4		4
	% max.:	66.67%		67%
GRAND TOTAL:	**Total Score:**	**8**		**27**
	% max.:	**17.78%**		**60%**

GEF Project Capacity Development Indicators and Scores Worksheet
Kamala Mai Municipality

Project Title: Managing Watersheds for Enhanced Resilience of Communities to Climate Change in Nepal

Country: Nepal **GEF ID Number:** 10727 **Date:** 5 Jan 2022

Capacity Result/ Indicator	Staged Indicators	Score	Baseline	Mid-term	Project End	Comments
Capacity Result 1: Capacities for Engagement						
Indicator 1: Degree of legitimacy/ mandate of lead organizations	Organizational responsibilities for climate change adaptation and its mainstreaming are not clearly defined	0				
	Organizational responsibilities for climate change adaptation and its mainstreaming are identified	1	1			Environment act (Clause 18) clearly mentions to engage stakeholders on assessment of environmental degradation

						resulting from climate change and formulate strategy to address this.
	Authority and legitimacy of all lead organizations responsible for climate change adaptation and its mainstreaming are partially recognized by stakeholders	2			2	
	Authority and legitimacy of all lead organizations responsible for climate change adaptation and its mainstreaming recognized by stakeholders	3				
Indicator 2: Existence of collaborative mechanisms	No collaborative mechanisms for climate change adaptation and its mainstreaming are in place	0	0			
	Some collaborative mechanisms for climate change adaptation and its mainstreaming are in place and operational	1				
	Some collaborative mechanisms for climate change adaptation and its mainstreaming are formally established through agreements, MOUs, etc.	2				
	Comprehensive collaborative mechanisms for climate change adaptation and its mainstreaming are formally established and are operational/ functional	3			3	Multi-stakeholder platform will be establsihed and operationalized based on well-defined operational modality, structure and functions
Indicator 3: Existence of cooperation with stakeholder groups	Identification of stakeholders and their participation/involvement in decision-making for climate change adaptation and its mainstreaming is poor	0				
	Stakeholders are identified, but their participation in decision-making for climate change adaptation and its mainstreaming is limited	1	1			Local Disaster and Climate Resilient Plan (LDCRP) of municipality identifies different stakeholders such as cooperatives, clubs, Community organizations, Nepal Police, development partners etc.

	Stakeholders are identified, and regular consultations mechanisms for climate change adaptation and its mainstreaming are established	2			2	Multi-stakeholder platform will be established and operationalized based on well-defined operational modality, structure and functions
	Stakeholders are identified, and they actively contribute to established participative decision-making processes for climate change adaptation and its mainstreaming	3				
	Capacity Result 1, maximum possible score	**9**	**9**	**9**	**9**	
	Capacity Result 1, score at the time of assessment	**2**	**2**		**7**	
	Capacity Result 1, % score of maximum possible score	**22.22**	**22.22**		**77.8**	
Capacity Result 2: Capacities to Generate, Access and Use Information and Knowledge						
Indicator 4: Degree of stakeholder awareness on climate change issues and adaptation solutions	Stakeholders are not aware of issues related to climate change and possible adaptation solutions	0				
	Stakeholders are aware of issues related to climate change, but not the possible adaptation solutions	1	1			Development of LDCRP addressing climate change and adaptation issues substantiates that stakeholders are aware of issues on climate change and possible adaptation solutions. Similarly, Annual report, Policies and Programme Documents 2077/78, 2078/79 mention climate issues.
	Stakeholders are aware of climate change issues and the possible adaptation solutions, but do not know how to participate	2				
	Stakeholders are aware of climate change issues and are actively participating in the implementation of relevant adaptation solutions	3			3	
Indicator 5: Access and sharing of information on climate change and	The information needs are not identified, and the information management infrastructure is inadequate	0	0			Being a continuous process, it is in priority.
	The information needs are identified, but the information management infrastructure is inadequate	1				

adaptation solutions by stakeholders	The information is partially available and shared among stakeholders, but is not covering all key aspects and/or the information management infrastructure is limited	2			2	
	Comprehensive information is available and shared through an adequate information management infrastructure	3				
Indicator 6: Existence of education/ awareness programs on climate change issues and adaptation solutions	No education/ awareness programs on climate change issues and adaptation solutions are in place	0				
	Education/ awareness programs are partially developed and partially delivered	1	1			The annual budget speech mentions education and awareness aspect about education and awareness issues and climate change issues has also been addressed through LDCRP document, Environment act etc
	Education/ awareness programs are fully developed but partially delivered	2				
	Comprehensive education/ awareness programs exist and are being delivered	3				
Indicator 7: Extent of the linkage between research/science and policy development for climate change adaptation	No linkage exists between policy development and science/research strategies and programs for climate change adaptation	0	0		0	Municipality will focus on this engaging research institutions in future
	Research needs for policy development are identified, but are not transferred into relevant research strategies and programs for climate change adaptation	1				
	Relevant research strategies and programs for policy development exist, but the research information is not responding fully to the policy research needs	2				
	Relevant research results are available for policy development related to climate change adaptation	3				
Indicator 8: Extent of inclusion/use of local knowledge in decision	Local knowledge is ignored and not taken into account for relevant participative decision-making processes for climate change adaptation	0				

making for climate change adaptation	Local knowledge is identified and recognized as important, but is not collected and used in relevant participative decision-making processes for climate change adaptation	1	1			The conservation of seeds, agricultural resources, forest and other natural resources has been mentioned in annual budget speech as well as in LDCRP and other policy documents. Annual report, Policies and Programme Documents 2077/78, 2078/79. See Policy Document of Kamala Mai Municipality. Attached.
	Local knowledge is collected, but is not used systematically into relevant participative decision-making processes for climate change adaptation	2			2	
	Local knowledge is collected, used, and shared for effective participative decision-making processes for climate change adaptation	3				
	Capacity Result 2, maximum possible score	**15**	**15**	**15**	**15**	
	Capacity Result 2, score at the time of assessment	**3**	**3**		**7**	
	Capacity Result 2, % score of maximum possible score	**20**	**20**		**46.7**	
Capacity Result 3: Capacities for Strategy, Policy and Legislation Development						
Indicator 9: Extent of planning and strategy development process relevant to climate change adaptation	The planning and strategy development process is not coordinated, and does not produce adequate plans and strategies relevant to climate change adaptation	0				
	The planning and strategy development process does produce adequate plans and strategies relevant to climate change adaptation, but they are not implemented or used	1				
	Adequate plans and strategies relevant to climate change adaptation are produced, but are only partially implemented because of funding constraints and/or other problems	2	2		2	Local Disaster and Climate Resilient Plan (a document) of municipality categorically mentioned the adaptation activities with work plan on each wards. The different activities such as river

						training works, plantation, bioengineering etc are proposed.
	The planning and strategy development process is well coordinated by the lead organizations, and produces the required plans and strategies relevant to climate change adaptation and are being implemented	3				
Indicator 10: Existence of adequate policies and regulatory frameworks for climate change adaptation	The policy and regulatory frameworks relevant to climate change adaptation are insufficient; they do not provide an enabling environment	0				
	Some relevant policies and laws relevant to climate change adaptation exist, but few are implemented and enforced	1	1			Environment act, LDCRP, Local Disaster Management Fund Guideline have already been formulated and towards commitment of implementation
	Adequate policy and legislation frameworks relevant to climate change adaptation exist, but there are problems in implementing and enforcing them	2			2	
	Adequate policy and legislation frameworks relevant to climate change adaptation are implemented, and provide an adequate enabling environment; a compliance and enforcement mechanism is established and functions	3				
Indicator 11: Adequacy of information available for decision-making on climate change adaptation	The availability of relevant information for decision-making on climate change adaptation is lacking	0	0			
	Some information exists, but it is not sufficient to support decision-making processes	1				
	Relevant information is made available to decision-makers, but the process for updating this information is not functioning properly	2			2	
	Political and administrative decision-makers obtain and use updated information to make decisions on climate change adaptation	3				

	Capacity Result 3, maximum possible score	**9**	**9**	**9**	**9**	
	Capacity Result 3, score at the time of assessment	**3**	**3**		**6**	
	Capacity Result 3, % score of maximum possible score	**33.33**	**33.33**		**66.7**	
Capacity Result 4: Capacities for Management Implementation						
Indicator 12: Existence and mobilization of resources for climate change adaptation	The lead organizations do not have adequate resources for climate change adaptation, and the requirements have not been assessed	0				
	The resource requirements for climate change adaptation are known but are not being addressed	1	1		1	Local Disaster and Climate Resilient Plan mentioned the adaptation activities with work plan on each wards. The different activities such as river training works, plantation, bioengineering etc are proposed. Possible resource need is also discussed in implicit form.
	The funding sources for the resource requirements for climate change adaptation are partially identified, and the resource requirements are partially addressed	2				
	Adequate resources are mobilized and available for climate change adaptation	3				
Indicator 13: Availability of required technical skills and technology transfer for climate change adaptation	The required skills and technology for climate change adaptation are not available, and the needs are not identified	0	0			This is on priority of municipality
	The required skills and technologies needs for climate change adaptation are identified, as well as their sources	1				
	The required skills and technologies for climate change adaptation are obtained, but their access depends on foreign sources	2			2	
	The required skills and technologies for climate change adaptation are available, and there is a national-based mechanism for updating the required skills and upgrading the technologies	3				
	Capacity Result 4, maximum possible score	**6**	**6**	**6**	**6**	

	Capacity Result 4, score at the time of assessment	**1**	**1**		**3**	
	Capacity Result 4, % score of maximum possible score	**16.67**	**16.67**		**50**	
Capacity Result 5: Capacities to Monitor and Evaluate						
Indicator 14: Adequacy of the monitoring of programs related to climate change adaptation	Irregular monitoring is being done without an adequate framework, for detailing what and how to monitor the programs	0			2	Hard copy documents on monitoring visit maintained in attendance book of Municipality and other hard copy documents support this. Interim reports, Annual report, Policies and Programme Documents 2077/78, 2078/79 Working procedure, and reports available in https://kamalamaimun.gov.np M&E mentioned in budget section of 2078/79 Budget document attached.
	An adequate resourced monitoring framework is in place, but monitoring is irregularly conducted	1				
	Regular participative monitoring of programs is being conducted, but this information is only partially used by decision makers implementation team	2	2			
	Monitoring information is produced timely and accurately, and is used by the implementation of programs to learn and possibly change the course of action	3				
Indicator 15: Adequacy of the evaluation of programs related to climate change adaptation	No or ineffective evaluations are being conducted of the programs, with no adequate evaluation plans or the necessary resources	0			2	Hard copy documents on evaluation activities maintained in Municipality as upport this.Interim reports, Annual report, Policies and Programme Documents 2077/78, 2078/79 Working procedure, and reports available in https://kamalamaimun.gov.np M&E mentioned in budget section of 2078/79 Budget document attached.
	Adequate evaluation plans are in place, but evaluation activities are irregularly conducted	1	2			
	Evaluations are being conducted as per adequate evaluation plans, but the evaluation results are only partially used decision makers programme implementation team	2				
	Effective evaluations are conducted timely and accurately, and are used by decision makers	3				
	Capacity Result 5, maximum possible score	**6**	**6**	**6**	**6**	
	Capacity Result 5, score at the time of assessment	**4**	**4**		**4**	
	Capacity Result 5, % score of maximum possible score	**66.67**	**66.67**		**66.7**	

	All Capacity Results, total maximum score	45	45		45	
	All Capacity Results, total score at the time of assmt	13	13		27	
	All Capacity Results, % score of max possible score	28.9	28.9		60.0	

Summary of Capacity Development Scorecard Assessment				
Project: MaWRiN (WWF/GEF)	**Date:**	**Jun 2021**		
Capacity Result 1: Capacities for Engagement	Score:	2		7
	% max.:	22%		78%
Capacity Result 2: Capacities to Generate, Access and Use Information and Knowledge	Score:	3		7
	% max.:	20%		47%
Capacity Result 3: Capacities for Strategy, Policy and Legislation Development	Score:	3		6
	% max.:	33%		67%
Capacity Result 4: Capacities for Management Implementation	Score:	1		3
	% max.:	16.67%		50%
Capacity Result 5: Capacities to Monitor and Evaluate	Score:	4		4
	% max.:	66.67%		67%
GRAND TOTAL:	**Total Score:**	**13**		**27**
	% max.:	**28.9%**		**60%**