



GEF-7 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: Least Development Countries Fund

PART I: PROJECT INFORMATION

Project Title:	Managing Watersheds for Enhanced Resilience of Communities to Climate Change in Nepal (MaWRiN)		
Country(ies):	Nepal	GEF Project ID:	
GEF Agency(ies):	WWF-US	GEF Agency Project ID:	G0033
Project Executing Entity (s):	MoFE	Submission Date:	9/27/2020
GEF Focal Area(s):	Climate Change	Project Duration (Months):	60

A. INDICATIVE FOCAL/NO-FOCAL AREA ELEMENTS

Programming Directions	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
CCA-1 Reduce vulnerability to the adverse impacts of climate change, including variability, at local, national, regional and global level	LDCF	3,903,900	22,852,350
CCA-2 Mainstream climate change adaptation and resilience for systemic impact	LDCF	532,350	3,000,000
Total Project Cost		4,436,250	25,852,350

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objectives: *To enhance climate resilience of Indigenous people and local communities in the Marin watershed through nature-based solutions and livelihood improvement.*

Project Components	Component Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
Component 1: Enabling environment for mainstreaming climate change	TA	1.1 Improved understanding, knowledge and capacity to mainstream Climate change adaptation (CCA) in local plans and policies	<p>1.1.1. Trainings and exchange visits for Community-based organizations (CBOs), municipality and provincial officials on climate change impacts and risk assessment tools and methods for mainstreaming CCA in all sectors and municipal plans in an integrated approach;</p> <p>1.1.2. Multi-stakeholder dialogue and action platform established in the Marin watershed to drive the mainstreaming of adaptation in an integrated watershed approach;</p> <p>1.1.3. CCA integration guidelines developed for communities and municipalities in Marin watershed to support policies and plans on water, agriculture,</p>	LDCF	302,500	1,123,799

			forestry, and rural development for four municipalities in Marin; and integrated in the municipal planning process.			
Component 2: Enhance resilience of communities to climate change	Investment /TA	<p>2.1 Increased adaptive capacity of vulnerable households in the Marin Watershed to climate induced disasters such as landslides, floods, droughts and fires</p> <p>2.2. Nature-based Solutions (NbS) reduce climate induced vulnerabilities of community livelihood assets</p>	<p>2.1.1 Support to climate smart agriculture and local adaptation solutions, such as:</p> <ul style="list-style-type: none"> • Water efficient technologies and farmer managed irrigation systems; • Livestock management (fodder plant support, vet support, upgrading animal sheds for farm manure management); • High-value crops and climate resilient seeds, varieties, and seedlings; • Higher productivity/low impact small hand-tools and technologies that are GESI/labor and energy smart; • Training or extension services for the above solutions for marginalized farmers. <p>2.2.1. Enhanced resilience of the communities of the Marin watershed against drought, flood and landslide, and forest fires through:</p> <ul style="list-style-type: none"> • Multiple use water source/spring protection for irrigation and domestic use; • Forest protection, restoration and regeneration through nursery management, plantation, fire control and fencing to reduce forest pressure; • Rehabilitation of degraded land, stabilization of landslide vulnerable areas and restoration of riverbanks through erosion control, fencing and plantations, bioengineering to protect livelihood assets and farms. 	LDCF	3,607,500	22,373,800
Component 3: Monitoring, Evaluation and Knowledge management	TA	3.1 Project monitoring, evaluation, and learning to enable adaptive management, replication and sustainability	<p>3.1 Knowledge products are developed and disseminated to enable upscaling of the project activities.</p> <p>3.2 Project progress tracked effectively through project M&E</p>	LDCF	315,000	1,123,799

	Subtotal		4,225,000	24,621,398
	Project Management Cost (PMC)		211,250	1,230,952
	Total Project Cost		4,436,250	25,852,350

For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different Trust funds here: ()

C. INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND TYPE, IF AVAILABLE

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount (\$)
Recipient Country Government	Ministry of Forests and Environment, Ministry of Industry, Tourism, Forest and Environment, Bagmati Province; Municipalities	Public investment	Investment mobilized	22,000,000.00
Recipient Country Government	Ministry of Forests and Environment, Ministry of Industry, Tourism, Forest and Environment, Bagmati Province; Municipalities	In-kind	Recurrent expenditures	3,000,000.00
Beneficiaries	Community and Leasehold forestry User groups	In-kind	Recurrent expenditures	220,000.00
GEF Agency	WWF US	In-kind	Recurrent expenditures	532,350
CSO	WWF Nepal	In-kind	Recurrent expenditures	100,000
Total Co-financing				25,852,350.00

Describe how any “Investment Mobilized” was identified.

There are major contributions/co-financing to the project namely through the federal government's investment mobilized through the President Chure Conservation Program, provincial investment through Division Forest Office and local investment through the municipalities and user groups. These contributions are indicative figures at this PIF stage which will be further refined during the ProDoc stage. Co-financing from Ministry of Forests and Environment as investment mobilized is based on the tentative annual budget for the project area through its line agencies. The public investment mobilized by the municipalities is also based on their current investments in the areas highly relevant to the project objectives as described in the PIF which create an opportunity for collaboration in the future. There are additional indications of potential co-financing from the community and leasehold forestry users' groups in-kind as recurrent expenditure and public investment.

D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country/Regional/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b)	Total (c)=a+b
WWF-US	LDCF	Nepal	Climate Change	CC Global/regional set aside	4,436,250.00	399,263	4,835,513
Total GEF Resources					4,436,250.00	399,263	4,835,513

E. PROJECT PREPARATION GRANT (PPG)

Is Project Preparation Grant Requested? Yes No if no, skip item E.

PPG AMOUNT REQUESTED BY AGENC(IES), TRUST FUND COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country/Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPGs (a)	Agency Fee (b)	Total (c)=a+b

WWF-US	LDCF	Nepal	Climate Change	CC Global/regional set aside	150,000	13,500	163,500
Total PPG Amount					150,000	13,500	163,500

F. PROJECT'S TARGET CONTRIBUTIONS TO GEF 7 CORE INDICATORS

Provide the relevant sub-indicator values for this project using the methodologies indicated in the Core Indicator Worksheet provided in Annex B and aggregating them in the table below. Progress in programming against these targets is updated at the time of CEO endorsement, at midterm evaluation, and at terminal evaluation. Achieved targets will be aggregated and reported at any time during replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Project Core Indicators		Expected at PIF
1	Terrestrial protected areas created or under improved management for conservation and sustainable use (Hectares)	
2	Marine protected areas created or under improved management for conservation and sustainable use (Hectares)	
3	Area of land restored (Hectares)	
4	Area of landscapes under improved practices (excluded protected areas) (Hectares)	
5	Area of marine habitat under improved practices (excluded protected areas) (Hectares)	
6	Greenhouse Gas Emission Mitigated (metric tons of CO ₂ e)	
7	Number of shred water ecosystem (fresh or marine) under new or improved cooperative management	
8	Globally over-exploited marine fisheries moved to more sustainable levels (metric tons)	
9	Reduction , disposal/destruction, phase out, elimination and avoidance of chemicals of global concern and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced)	
10	Reduction, avoidance of emissions of POPs to air from point and non-point sources (grams of toxic equivalent gTEQ)	
11	Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment	

G. PROJECT TAXONOMY

Please fill in the table below for the taxonomic information required of this project. Use the GEF Taxonomy Worksheet provided in Annex C to help you select the most relevant keyword/topic/themes that best describe this project.

Level 1	Level 2	Level 3	Level 4
<input checked="" type="checkbox"/> Influencing models			
	<input type="checkbox"/> Transform policy and regulatory environments		
	<input checked="" type="checkbox"/> Strengthen institutional capacity and decision-making		
	<input type="checkbox"/> Convene multi-stakeholder alliances		
	<input checked="" type="checkbox"/> Demonstrate innovative approaches		
	<input type="checkbox"/> Deploy innovative financial instruments		
<input checked="" type="checkbox"/> Stakeholders			
	<input type="checkbox"/> Indigenous Peoples		
	<input type="checkbox"/> Private Sector		
		<input type="checkbox"/> Capital providers	
		<input type="checkbox"/> Financial intermediaries and market facilitators	
		<input type="checkbox"/> Large corporations	
		<input type="checkbox"/> SMEs	
		<input type="checkbox"/> Individuals/Entrepreneurs	
		<input type="checkbox"/> Non-Grant Pilot	
		<input type="checkbox"/> Project Reflow	
	<input checked="" type="checkbox"/> Beneficiaries		
	<input checked="" type="checkbox"/> Local Communities		
	<input checked="" type="checkbox"/> Civil Society		

		<input checked="" type="checkbox"/> Community Based Organization	
		<input checked="" type="checkbox"/> Non-Governmental Organization	
		<input type="checkbox"/> Academia	
		<input type="checkbox"/> Trade Unions and Workers Unions	
	<input checked="" type="checkbox"/> Type of Engagement		
		<input checked="" type="checkbox"/> Information Dissemination	
		<input checked="" type="checkbox"/> Partnership	
		<input checked="" type="checkbox"/> Consultation	
		<input checked="" type="checkbox"/> Participation	
	<input checked="" type="checkbox"/> Communications		
		<input checked="" type="checkbox"/> Awareness Raising	
		<input type="checkbox"/> Education	
		<input type="checkbox"/> Public Campaigns	
		<input checked="" type="checkbox"/> Behavior Change	
<input checked="" type="checkbox"/> Capacity, Knowledge and Research			
	<input type="checkbox"/> Enabling Activities		
	<input checked="" type="checkbox"/> Capacity Development		
	<input checked="" type="checkbox"/> Knowledge Generation and Exchange		
	<input type="checkbox"/> Targeted Research		
	<input checked="" type="checkbox"/> Learning		
		<input type="checkbox"/> Theory of Change	
		<input type="checkbox"/> Adaptive Management	
		<input type="checkbox"/> Indicators to Measure Change	
	<input checked="" type="checkbox"/> Innovation		
	<input checked="" type="checkbox"/> Knowledge and Learning		
		<input type="checkbox"/> Knowledge Management	
		<input type="checkbox"/> Innovation	
		<input checked="" type="checkbox"/> Capacity Development	
		<input type="checkbox"/> Learning	
	<input type="checkbox"/> Stakeholder Engagement Plan		
<input checked="" type="checkbox"/> Gender Equality			
	<input checked="" type="checkbox"/> Gender Mainstreaming		
		<input checked="" type="checkbox"/> Beneficiaries	
		<input type="checkbox"/> Women groups	
		<input checked="" type="checkbox"/> Sex-disaggregated indicators	
		<input checked="" type="checkbox"/> Gender-sensitive indicators	
	<input checked="" type="checkbox"/> Gender results areas		
		<input checked="" type="checkbox"/> Access and control over natural resources	
		<input checked="" type="checkbox"/> Participation and leadership	
		<input checked="" type="checkbox"/> Access to benefits and services	
		<input checked="" type="checkbox"/> Capacity development	
		<input type="checkbox"/> Awareness raising	
		<input checked="" type="checkbox"/> Knowledge generation	
<input checked="" type="checkbox"/> Focal Areas/Theme			
	<input type="checkbox"/> Integrated Programs		
	<input type="checkbox"/> Biodiversity		
	<input type="checkbox"/> Forests		
	<input type="checkbox"/> Land Degradation		
	<input type="checkbox"/> International Waters		
	<input type="checkbox"/> Chemicals and Waste		
	<input checked="" type="checkbox"/> Climate Change		
		<input checked="" type="checkbox"/> Climate Change Adaptation	
			<input type="checkbox"/> Climate Finance
			<input checked="" type="checkbox"/> Least Developed Countries
			<input type="checkbox"/> Small Island Developing States
			<input type="checkbox"/> Disaster Risk Management
			<input type="checkbox"/> Sea-level rise
			<input checked="" type="checkbox"/> Climate Resilience
			<input type="checkbox"/> Climate information
			<input checked="" type="checkbox"/> Ecosystem-based Adaptation
			<input type="checkbox"/> Adaptation Tech Transfer
			<input type="checkbox"/> National Adaptation Programme of Action
			<input type="checkbox"/> National Adaptation Plan
			<input checked="" type="checkbox"/> Mainstreaming Adaptation
			<input type="checkbox"/> Private Sector
			<input checked="" type="checkbox"/> Innovation
			<input checked="" type="checkbox"/> Complementarity

		<input checked="" type="checkbox"/> Community-based Adaptation
		<input checked="" type="checkbox"/> Livelihoods
	<input checked="" type="checkbox"/> Climate Change Mitigation	
		<input checked="" type="checkbox"/> Agriculture, Forestry, and other Land Use
		<input type="checkbox"/> Energy Efficiency
		<input type="checkbox"/> Sustainable Urban Systems and Transport
		<input type="checkbox"/> Technology Transfer
		<input type="checkbox"/> Renewable Energy
		<input type="checkbox"/> Financing
		<input type="checkbox"/> Enabling Activities
	<input type="checkbox"/> Technology Transfer	
		<input type="checkbox"/> Poznan Strategic Programme on Technology Transfer
		<input type="checkbox"/> Climate Technology Centre & Network (CTCN)
		<input type="checkbox"/> Endogenous technology
		<input type="checkbox"/> Technology Needs Assessment
		<input type="checkbox"/> Adaptation Tech Transfer
	<input type="checkbox"/> United Nations Framework on Climate Change	
		<input type="checkbox"/> Nationally Determined Contribution

Part II. Project Justification

1a. Project description

Global environmental and/or adaptation problem, root causes, and barriers that need to be addressed

Climate Change Risk Context in Nepal

Climate change is one of the defining issues of this era with far-reaching impacts affecting ecosystems and communities dependent on it. The climate system may be global in extent but the impacts due to climate change are regional or local depending upon the prevailing atmospheric processes, ocean circulation, bioclimatic zones, daily weather, and longer-term climate trends.¹ The magnitude and scale of the impact is also place and context specific, with Least Developing Countries (LDCs) having vulnerable backgrounds mostly bearing the losses from climate change impacts.² Nepal is one of the Least Developing Countries significantly impacted by climate change where the direct cost of different impacts of climate change was estimated to be approximately USD 270–360 million/year in 2013 prices (i.e. 1.5–2% of current GDP/year) and could be up to 5% in extreme years.³ However, Nepal is inadequately prepared to deal with the impacts of climate change due to political, social and economic barriers. According to the Germanwatch's Global climate Risk Index 2020, Nepal is the 9th most affected country in terms of the Climate Risk Index covering a period of 1999-2018 with 180 events during this period.⁴ As per the Notre Dame Global Adaptation Initiative index, Nepal's vulnerability (in relation to food systems, water,

¹ IPCC (2014). Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Barros, V.R., C.B. Field, D.J. Dokken, M.D. Mastrandrea, K.J. Mach, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 688.

² Handmer, J., et al. (2012). Changes in impacts of climate extremes: human systems and ecosystems. 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. 231-290.

³ IDS-Nepal, PAC and GCAP (2014). Economic Impact Assessment of Climate Change in Key Sectors in Nepal. IDS-Nepal, Kathmandu, Nepal.

⁴ Germanwatch (2020). Global Climate Risk Index 2020, Who Suffers Most from Extreme Weather Events? Weather-Related Loss Events in 2018 and 1999 to 2018

ecosystem services, human habitat, infrastructures) and its readiness (in terms of economic, governance and social readiness) is rated very low; 138th and 128th among 181 countries.⁵

Nepal is vulnerable to numerous climate-induced hazards such as floods, landslides and debris flows due to its steep topography 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.⁶ The climate trend analysis for the period of 1971 - 2014 suggests a significant positive trend in annual maximum temperature at the rate of 0.056 degree Celsius (°C) / year. The minimum temperature trend is increasing at a rate of 0.02 °C /year, which is most significant during the monsoon. A consistency in the precipitation trend for the whole country has not been observed but precipitation extremes are found to be increasing in recent decades, especially in central Nepal.⁷

Both the average annual mean temperature and average annual precipitation are projected to increase until the end of the century. More specifically, average annual precipitation is likely to increase by 2-5% in medium-term period (2016-2045) whereas the average annual mean temperature is likely to rise by 0.0-1.1 °C. These projections are significantly higher for the long-term period (2035-2065) where precipitation could increase by 8-12%, and mean temperature might increase by 1.3–1.8 °C. Intense precipitation events are likely to increase in frequency, but the number of rainy days is likely to decrease in the future. With increase in mean annual temperature and shifting precipitation patterns, the monsoon season will become wetter and the dry season will become drier. This, in combination with the increase in precipitation intensity, is likely to create more water-related hazards in the future. These climate projections for Nepal are expected to affect biodiversity and different developmental sectors, such as water, disaster management, energy, agriculture, health, urban planning and livelihoods and a better understanding of these changes is expected to help design and implementation of adaptation strategies.⁸

Apart from extreme weather events, Nepal's topography also renders it vulnerable to climate change. Nepal is divided into five physiographic zones from south to north: Terai (up to 200m above sea level), Siwaliks (200-1500 m asl), Middle-mountains (Mahabharat, 1000-2500m asl), High Mountain (2200-4000 m asl) and High Himalayas (>4000 m asl). Among the five zones, the Siwalik region also known as Chure 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.⁹ The Chure range spreads across the entire length of Nepal covering 36 districts.¹⁰ The Chure region has ecological, social, economic, and political significance for Nepal. With more than 50% of the area under forest cover, the Chure 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 780-20,000 tons/sq. km. annually contributing to the gradual desertification of the Chure, Bhawar and Terai regions.¹¹ 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.

The mean change in precipitation and temperature in the medium-term and the long-term for different regions of Nepal shows that the increase in temperature would be highest in Chure and Terai regions of the country.¹² The

⁵ UN (2018). Vulnerability Profile of Nepal. Committee for Development Policy 20th Plenary Session, United Nations New York.

⁶ <http://drrportal.gov.np/risk-profile-of-nepal>

⁷ DHM (2017). Observed Climate Trend Analysis in the Districts and Physiographic Regions of Nepal (1971-2014). Department of Hydrology and Meteorology, Kathmandu.

⁸ MoFE (2019). Climate Change Scenarios for Nepal for National Adaptation Plan (NAP). Ministry of Forests and Environment, Kathmandu.

⁹ 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. (available at: https://www.researchgate.net/publication/301479127_Geological_Divisions_and_Associated_Hazards_in_Nepal)

¹⁰ President Chure-Tarai Madhesh Conservation Development Board (2017). President Chure-Tarai Madhesh Conservation and Management Master Plan. Government of Nepal.

¹¹ SAWTEE (2016). A Study of Effect of Chure Degradation on Water, A Case of Kamala Basin in Nepal. Briefing Note, No.19.

¹² MoFE (2019). Climate change scenarios for Nepal for National Adaptation Plan (NAP). Ministry of Forests and Environment, Kathmandu.

maximum temperature between the period 1971–1994 increased by less than 0.03°C per year in the Siwaliks.¹³ For the project district Sindhuli, the number of very wet days and extreme wet days is projected to rise significantly in the mid-term period whereas the number of rainy days is expected to decrease¹⁴ which increases the risk of flooding and landslides in Marin watershed. The Chure range receives a greater amount and higher intensities of rainfall.¹⁵ Together, the Terai and Chure comprise about 25% of Nepal’s land area, but around 50% of the country’s population inhabits this area. Most of the ridges of the Chure are under forest cover because of the coarse textured shallow soil and steep slopes, which make them unsuitable for cultivation. Forest encroachment is a problem along the border of the Chure hills, as people migrating from the hills find marginalized areas to settle along these unproductive and fragile slopes. In addition, ongoing in-migration resulted in more settlements in landslide-susceptible areas. In 1993 there were 80,181 houses in the Chure hills of Nepal which increased by 68% to 134,700 houses in 2014. Due to these trends the hills become even more vulnerable as a result of encroachment, unsustainable harvesting, and poorly planned infrastructure development that can worsen landslide events along the slopes. Overall, climate induced hazards (landslides, floods, drought, fire) pose considerable threat to Chure ecosystems and communities which is aggravated by steep topography, fragile geology, sensitive ecosystems therein.

Climate Change Risks at Marin Watershed

For this proposed LDCF project, the team undertook a national review of vulnerable communities and climate change risk, to identify a project focus. Attachment 1 provides the initial analysis and screening of potential climate change adaptation project sites in Nepal considered for selection of the proposed area. This included reviewing climate change vulnerability mapping related to drought, floods and landslides as well as vulnerability mapping in watersheds located in the high and middle mountains. This provided information to create a matrix identifying which districts or watersheds are most susceptible to climate disasters, coupled with which areas best support Nepal’s national priorities to address the needs of the most vulnerable and marginalized communities. Sites that were considered included the Kanchenjunga Landscape, the Tinjure Milke cluster, the Chitwan cluster, the Gaurishankar Cluster, the Triyuga Eastern Chure Terai complex, the Gorkha Lamjung Cluster, the Mahakali-Kailash Karnali and the Rara Mugu cluster. After these landscapes were evaluated the Triyuga cluster in Eastern Chure Terai Complex which comprises the Marin watershed was selected as it is the watershed with the most indigenous people present, it has a high level of vulnerability to landslides, floods and drought and it aligns most closely with national priorities to support the most vulnerable communities. Marin watershed is a largely indigenous population (around 90% of the people in the area) and highly subsistence agrarian and was thus identified as having highly vulnerable communities to climate change risks and impacts.

The **environmental problem** for Marin Watershed has been identified as increasing floods, droughts, fires and associated landslides, which affect the subsistence 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. Drought, floods and landslides also impact subsistence agriculture, and cause waterways to fill with debris. The proposed project solution is to build community resilience to these risks and impacts through climate smart agriculture and other tools to support livelihoods and using nature-based solutions to reduce the impacts of landslides and forest loss or degradation. This is elaborated below.

Climate Context: Major climate change risks of the Chure zone including the Marin watershed comprise landslides and slope failures upstream along the hill slopes that lead to debris flow and sedimentation downstream into settlements and agricultural lands. These events also degrade natural water sources used for drinking, irrigation and livestock downstream. The increased and erratic precipitation also results in flooding, river course shifting along with loss of agriculture lands. Recent trends show extended dry spells and rising temperatures

¹³ Neupane, M. and Dhakal, S. (2017). Climatic Variability and Land Use Change in Kamala Watershed, Sindhuli District, Nepal. *Climate* 2017, 5, 11; doi:10.3390/cli5010011.

¹⁴ 8

¹⁵ Dhital, Y. and Kayastha, R. (2013). Frequency analysis, causes and impacts of flooding in the Bagmati River Basin, Nepal. *Journal of Flood Risk Management*, 6 (2013) 253–260.

leading to the prevalence of insects and diseases in agriculture, water quality degradation, vector and water borne diseases, forest fires and degradation of ecosystems in general mainly by invasion and expansion of invasive species in agriculture and forests.

Vulnerable Communities: The project area, the Marin watershed, covers an area of approximately 700 km² and it is characterized by tropical climate. The Marin river originates in Chure and flows through 4 municipalities (Marin Rural Municipality, Hariharpur Rural Municipality, Kamalamai Municipality, Ghyanghlekh Rural Municipality) of the Sindhuli district in Bagmati Province. The total population of the Marin watershed is estimated to be around 78,000. Poverty in the watershed is below national average (43%) but ranges from 24% in a municipality to up to 56% in rural municipalities, portraying the economic disparity within the watershed. Most of the population (78%) still 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 (73%) male. Agriculture is the main source of employment for people living in the Chure including the Marin watershed, but only about 14 per cent of the total land area is cultivable and the average land ownership is about 0.3 hectares.¹⁶ The general phenomenon of landslides and flooding are exacerbated by climate change and this has significant impact on the subsistence agriculture of households in Marin sub-watershed. Households who practice agriculture along the already fragile and climate vulnerable slopes of the watershed including the downstream valleys that are flood prone, are highly vulnerable to impacts of climate variabilities and change. Additionally, landslides and debris flow from upstream as a result of recent erratic rainfall in the sub-watershed also degrade the available agricultural lands during the monsoon causing significant damages to rice crops. These events also increase the possibility of unsustainable practices of forest resource extraction since communities largely rely on these resources after disaster events for income through selling of firewood, non-timber forest products and other resources which also put these communities in higher risk of human-wildlife conflicts. Similarly, as a result of extended dry spells and increasing temperatures, the chances of forest fire, drought, prevalence of insects and diseases in agriculture has increased in the area. Both these climatic conditions degrade forest ecosystem and agro-biodiversity. Large tracts of fertile agricultural land are damaged by floods and riverbank-cutting in downstream areas. Debris flow, soil erosion and decreasing use of forest leaf litter in agricultural land are also degrading the soil fertility.¹⁷ The dependency of the population in the Marin watershed on agriculture and natural resources, mainly forest resources, makes them highly vulnerable to climate change impacts in the form of landslides, floods and droughts.

Marginal farmers with small landholding, limited irrigation facilities, few income opportunities, and greater dependency on natural resources have a high degree of vulnerability. Both increase in rainfall intensity during the monsoon and extended dry spells prior to the monsoon have been witnessed by local communities. Decreasing water availability and degradation of existing water sources is further aggravated by inefficient irrigation practices and technologies. The traditional farmer-managed irrigation systems face increased damages from landslides and debris flow as most of these originate in the more vulnerable slopes and foothills of Marin. The poor and vulnerable households depend on adjoining community forests for water sources, fodder, leaf litter and manure which play a key part in the local subsistence agriculture. Degradation of these forests under the impacts of climate change will lead to farmers, especially women, having to travel greater distances to acquire these resources. Farmers in Marin rely largely on conventional tools, technologies and practices which are inefficient and resource and labor demanding. All these issues and aspects of subsistence agriculture in Marin are exacerbated under climate change resulting in decreased productivity and production and an increased workload for women and resource poor households in an area which is already food insecure. Farmers have inadequate knowledge, skills and access to climate smart and resilient practices, tools, and technologies.

Climate Risks to Vulnerable Communities: The Marin watershed, located in the northern part of the Chure complex, is still largely covered by forests (72%) though most of these resources are inaccessible to communities due to their remoteness whereas the forest areas along the lower elevations of the valley face threats from encroachment due to agriculture expansion, grazing and fuelwood pressure. Since the forests protect communities

¹⁶ Ghimire P., (2016). Chure Conservation Area: Lessons for the Management and Use of Natural and Biological Resources in Nepal. Case Study Report. Kathmandu: South Asia Watch on Trade, Economics & Environment (SAWTEE).

¹⁷ 2

downstream from landslides and debris flow, any degradation exacerbated by climate change can increase the vulnerability of the communities and the assets. World Wildlife Fund's Climate screening tool (Attachment 2) was also used to screen climate change impacts in the watershed.

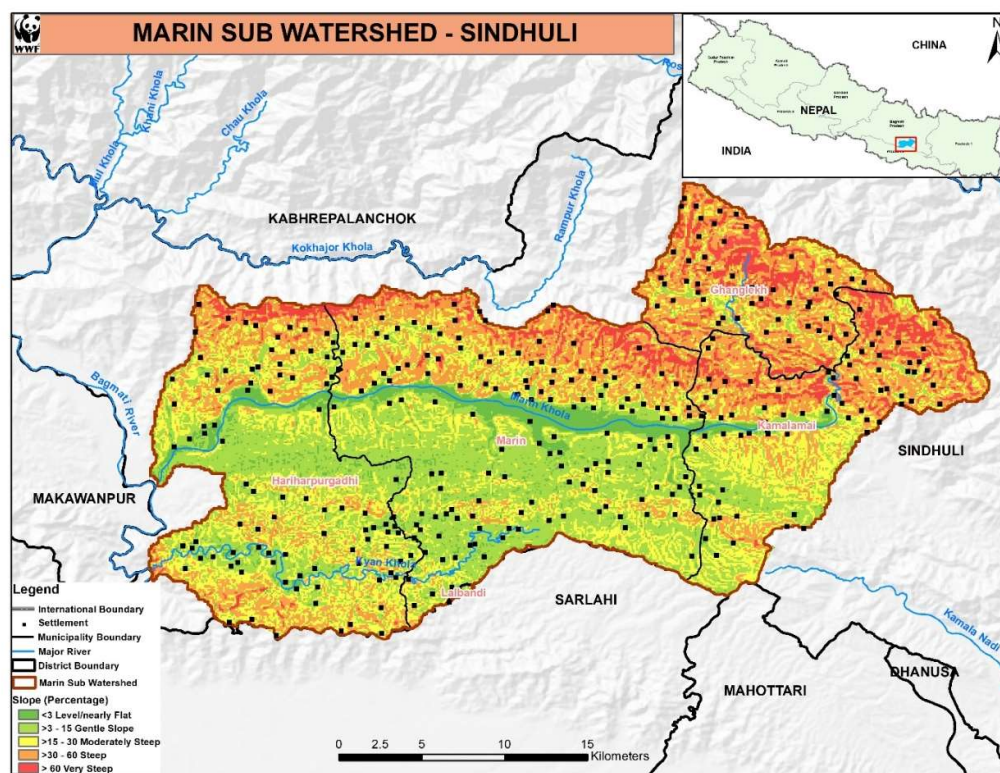


Figure 2: Communities along the slope are highly exposed to landslides whereas settlements in the downstream face flooding.

Poverty and marginalization of the most vulnerable communities in the watershed causes a high percentage of the population to depend on remittance. With the Covid-19 pandemic, the project area could face additional pressure from returning migrants, as 20-36% of households have members employed outside the project area who are highly likely to return. As the pandemic is rapidly affecting the national economy, more people are returning to their households and abandoning travel-dependent and remote employment opportunities. The influx of people in the highly forested project areas could cause additional pressures on the fragile natural resources, such as the watersheds. As the federal government grapples with the effects of the pandemic and focuses on healthcare management, there has been a significant reduction in national funding for adaptation measures.

Barriers for adaptation in Marin Watershed:

Nepal in general lacks adequate financial resources, institutional mechanisms, and capacity to address the impacts of climate change at federal, provincial, and local levels. This results in a lack of comprehensive studies and research and inadequate understanding of climate change and its impacts and necessary adaptation measures. The National Climate Change Policy 2019 has identified limited coordination among multiple government and non-government agencies and inadequate mainstreaming of climate change into the development process along with limited institutional capacity, financial resources, technology and knowledge as the key issues and barriers for adaptation. The major barriers to addressing climate change impacts and adaptation opportunities in the project area are described below:

i. Institutional barriers

Inadequate integration and mainstreaming of climate change in sectoral policies is a key barrier to identifying impacts, risks and related adaptation measures. In the Marin watershed, local-level municipalities formulate plans and policies which cover environment and disasters as one of the components of their annual plans and budget,

but the issues of climate change are not systemically addressed or integrated into these plans or sectors such as agriculture. A key barrier for 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. This leads to an isolated implementation of activities and measures which results in ineffectiveness as the ecological unit is managed in numerous administrative units. Managing climate change impacts specially landslides, debris flow and flooding on a watershed level as the ecological unit is especially important for mid-hill areas whose topography is characterized by steep slopes where upstream disturbances can significantly impact downstream ecosystems and communities. Concurrently, local municipalities do not have adequate technical capacity to deal with these issues. The proposed LDCF project aims to create and mobilize a multi-stakeholder platform where all the municipalities within the watershed including other key stakeholders prioritize and plan to address climate change impacts which brings together upstream and downstream communities.

ii. Financial barriers

Limited financial resources result in inadequate adaptation to climate change as pressing development needs dictate spending on business as usual development interventions of the municipalities which fail to integrate adaptation to climate change into their approaches and strategies. The dependence on external funding can also amplify a top-down approach of adaptation policies and programs designed and planned at higher level leading to reduced ownership among local government bodies and Indigenous people and local communities (IPLC).¹⁸ The project aims to facilitate dialogues through the multi-stakeholder platform which can help identify most pressing vulnerabilities at the watershed level and address these financial barriers and lack of ownership through capacity building. With increasing incidents of floods and landslides, there is generally a scarcity of financial resources to manage these events. Concurrently, local municipalities address climate change impacts after the disaster events whereas the project plans to catalyze the government and community for timely preparation and adaptation and thus reduce the climate change risk and high costs that follow climate related disasters.

iii. Technological barriers

Technology 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.¹⁹ Technology plays an important part in reducing vulnerability of communities to climate change in rural Nepal. Various climate adaptive technologies such as drip irrigation, plastic tunnels, locally modified tools, climate smart agricultural practices are available in Nepal. A major challenge for technology transfer, adoption and sustainability is inadequate dissemination, testing and adapting to the local context along with capacity building. The project will finance the locally appropriate and urgently needed testing and scaling out of climate smart agricultural practices in the Marin watershed, adapt these low-cost technologies, build capacity of local communities and CBOs in maintaining and upgrading these locally adapted technologies and where relevant disseminate the learning.

iv. Inadequate awareness and knowledge gap

Stakeholders do not have adequate skills and knowledge of CCA methods and technologies. Inadequate research limits comprehensive understanding of climate change impacts on natural resources and biodiversity; the understanding and prediction of climate change impacts; and the development of adaptation strategies at regional and national scales. There is also a weak understanding of how ecosystem services would respond to climate change and its impact on subsistence agriculture. One of the key barriers is the limited access women, the poor, socially marginalized, and indigenous people have to knowledge, information and decision making. Even if the

¹⁸ Helvatas (2011). Nepal's Climate Change Policies and Plans: Local Communities' Perspective Environment and climate series 2011. HELVETAS Swiss Inter-cooperation Nepal.

¹⁹ Nygaard, I. and Hansen, U. (2015). Overcoming Barriers to the Transfer and Diffusion of Climate Technologies: Second edition. UNEP DTU Partnership, Copenhagen.

vulnerable households are formally included, their influence on decision-making is negligible,^{20,21} but these vulnerable groups are the ones who mostly depend on the climate sensitive ecosystem services and subsistence agriculture in the Maru watershed, such as irrigation, collection of NTFPs, etc. Women tend to be overly burdened with household work and have less access to participation in policy formulation and the decision-making process. Hence, adaptation is further challenged by poor governance of resources, specifically of natural resources that the most vulnerable and marginalized communities depend on.

Baseline scenario and associated baseline project

Nepal became a Party to the United Nations Framework convention on climate change (UNFCCC) in 1994. Since then, Nepal has been actively participating in international processes related to climate change. Necessary actions have been initiated for updating the Nationally Determined Contributions (NDC) submitted in 2016 and preparing the Third National Communication (TNC) Report. 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, GoN is in the process of formulating a National Adaptation Plan (NAP). Likewise, a revised national climate change policy has been published in 2019 in order to effectively address the national and international developments in the area of climate change management. In line with these national plans and policies, 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 frame considers administrative boundaries as the management unit.

Nepal's 15th Periodic Plan (2019/20-2023/24) 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. The plan also stresses the need to improving governance and ensuring equitable benefit sharing of natural resources to mitigate climate change impacts on the vulnerable communities. The plan also prioritizes policy and institutional changes including capacity building at federal, province and local level to ensure that climate change and disaster risk management is integrated at every level.²² 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.²³

Baseline plan/projects/programs and complementarities with proposed project

President Chure Conservation Program

The government of Nepal initiated a special program called the 'Rastapati (President) Chure Conservation Programme' in 2011 in the Chure region to identify the problems, challenges and issues of Chure conservation and to propose an effective conservation plan. A Master Plan (MP) has been prepared to plan and implement long-term conservation activities to halt degradation of the Chure from landslides, flooding and forest destruction. The MP focuses on the reduction of water-related disaster in the Chure hills, Dun and Tarai Madhesh and supports improving the accessibility of local communities to resources such as energy, timber, fodder etc. President Chure-Tarai Madhesh Conservation and Management Master Plan has the goal "To support in poverty reduction and national goal of Prosperous Nepal through conservation and sustainable management of the resources in the Chure region, and improvement of the ecosystem services" with its the objectives to mitigate the damage likely to be caused by the climate change and natural disasters through ensuring the sustainable management of the natural resources (land, water, vegetation and biodiversity) of the Chure hills, mitigate the damage likely to be caused by

²⁰ Ojha, H.R., Banjade, M.R., Sunam, R.K., Bhattarai, B., Jana, S., Goutam, K.R. and Dhungana, S. (2014). Can authority change through deliberative politics? Lessons from the four decades of participatory forest policy reform in Nepal. *Forest Policy and Economics*, 46, 1–9.

²¹ Ojha, H.R., Ford, R., Keenan, R.J., Race, D., Vega, D.C., Baral, H. and Sapkota, P. (2016). *Delocalizing Communities: Changing Forms of Community Engagement in Natural Resources Governance*.

²² NPC (2019). 15th Periodic Plan 2076/77 – 2080/81. National Planning Commission, Government of Nepal.

²³ Bhattarai, P. and Singh, P. M. (2019). *Climate Change Budget: Federal and Provincial Budgets in FY 2019/20*. Fact Sheet. Prakriti Resource Centre. Kathmandu, Nepal.

the water-induced disasters in the Chure hills, Dun and Tarai Madhesh Landscape, and to continue the flow of the environmental services while improving accessibility in the household use of energy, and to increase the accessibility of the residents. 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 prioritizes the following activities to be implemented at the three levels:

- Central level: policy reform, high-level directions, central-level coordination, work-policy and development of manual/guidelines, public communication strategy development, production of informational materials, research, development of a monitoring system.
- River system-level: treatment of landslide sites at the upper watershed areas, community- based soil and water (springs) conservation, strengthening of the riverbanks in downstream regions, and construction of green-belts.
- Local level: control of forest encroachment, rehabilitation of degraded public lands, control and management of grazing, management of the use of river-bed materials, management of the settlements in susceptible areas, extension of multi-year crops on the sloped agricultural lands, wetland management, forest fire control, collection and storage of rainwater, groundwater recharge and the use of surface-water

The Program covers 36 districts of the Chure region, including the Sindhuli district where the Marin watershed lies. The Program is supporting the Marin watershed in flood control by construction of embankments of the rivers.²⁴ 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. The estimated budget allocated for the project watershed is US\$ 200,000 for the current fiscal year.

Annual budget and plan of local government

Following federalization in Nepal, there has been a shift from a district-based development and administration to municipality level administration and planning. Municipalities now have the authority and responsibility to plan and execute service delivery that was previously executed through the district and national governments. The most relevant investment working areas of the municipalities are in line with the project are:

- Forest and Soil Conservation
- Climate Change Adaptation and Disaster Risk Reduction (CCA and DRR)
- Emergency rescue and Relief
- Livelihood improvement and
- Alternative energy promotion

The annual budget for 2020/21 of the above listed categories for the municipalities of the Marin Watershed is as listed in Table 1.

Table 1: Allocation of budget and activities for adaptation related activities

Name of Municipality	Prioritized activities	Budget	
		Name of Fund	Amount (USD)
Kamalamai Municipality	Livelihood improvement and alternative energy (biogas installation, solar energy generation, and improved cookstoves) Implementation of River Embankment Development of municipal level disaster management plan	Disaster Management Fund	5,000
		Environment protection and conservation	15,000
		Livelihood improvement and alternative energy	7,000
		Disaster Management Fund	40,000

²⁴ 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.

Name of Municipality	Prioritized activities	Budget	
		Name of Fund	Amount (USD)
Ghyanglekh RM	Livelihood improvement and alternate energy (biogas installation, solar energy generation, improved cookstoves) Environment friendly infrastructure development Development and implementation of Local CCA Action Plan in coordination with stakeholders, I/NGOs, and development partners Establishment of Emergency / disaster management fund	Environment protection and conservation	2,000
		Livelihood improvement and alternative energy	7,000
Marin RM	Environment protection through plantation and waste management Disaster response through establishment of disaster fund Promotion of bioengineering and promotion of disaster risk management program suggested as per Local Disaster and Climate Change Action Plan 2018	Disaster Management Fund	40,000
		Environment protection and conservation	15,000
		Relief Fund	25,000
Hariharpur Gadi RM	Disaster response and management	Disaster Management Fund	1,11,000

The investments by local municipalities is a potential co-financing based on initial discussions with the municipalities. But the figures presented above are for the entire municipality and specific costs for wards within the watershed will need to be calculated during project development stage.

Building a Resilient Churia Region in Nepal

The Government of Nepal has accessed the Green Climate Fund (GCF) for improving resilience in the Chure region. The project is being developed with the support of the Food and Agriculture Organization (FAO) of the United Nations. The overarching objective of the project “Building a Resilient Churia Region in Nepal” is to enhance the climate resilience of ecosystems and vulnerable communities in the Chure region through integrated sustainable rural development and natural resource management approaches. The project will directly benefit around 831,168 people (50% women), in 26 vulnerable river systems to strengthen their resilience against climate change including two river systems adjoining this LDCF project area and hence would support improving the ecological integrity of the region, though project areas do not overlap.

Proposed alternative scenario with a brief description of expected outcomes and project components

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 proposed requested GEF funding will help increase the resilience of the local communities of the Marin watershed 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 catalyze 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.

The theory of change for the project is that when stakeholders are capacitated to assess and integrate climate change uncertainties and impacts into policies and plans through learning, research and knowledge complimented by demonstrated examples of ecosystem based adaptation and when sustainable management of the vulnerable communities' livelihood assets is ensured through nature-based solutions, then the resilience of communities and ecosystems will improve. The proposed LDCF project will reduce the existing vulnerabilities of the Marin watershed - its forest ecosystems and communities by adopting an integrated approach to watershed management.

Component 1: Enabling environment for mainstreaming the impacts and uncertainties of climate change

Outcome 1.1 Improved understanding, knowledge, and capacity to mainstream Climate Change Adaptation (CCA) in local plans and policies

Since a comprehensive understanding of climate change impacts is the basic premise for integration and mainstreaming, the project will support the government and community-based organizations (CBOs) to conduct scientific and participatory vulnerability assessments. These participatory assessments will identify risk mitigation and adaptation solutions under different climate scenarios and enhance the collective understanding of climate change issues among the stakeholders within the watershed and capacitate stakeholders to identify, prioritize, implement, and monitor adaptation interventions beyond the project life while ensuring that they learn from them. As management of the watershed under increasing climate change risks requires an integrated approach of various sectors such as forestry, water, land use, this component will also focus on building the institutional capacity of the relevant agencies and their government officials responsible for the management of these resources, such as the Division Forest Office and Municipalities staffs on CCA and DRR. The project will support integrating climate change in local level policy and planning processes. For this purpose, the project aims to provide trainings, exposure and peer learning opportunities for municipality staff, government line agencies such as Division Forest Office and CBOs on climate change impacts, vulnerability assessment tools and methods, and mainstreaming approaches. The project will support the review of relevant local plans, sector and development strategies that address climate risks and, where necessary, support the formulation of tools and guidelines for integrating CCA and DRR into these plans and investments that promote ecosystem-based adaptation and nature-based solutions.

The project goes one step further and introduces a novel approach for Nepal to watershed management which is characterized by isolated planning of the different municipalities within a watershed. It not only supports an integrated approach to climate change adaptation between sectors but seeks to facilitate an integrated approach of all four municipalities of the Marin watershed. The goal is to build resilience of the communities and develop adaptive measures that are taking into account the interconnectedness of disasters in the whole Marin watershed by creating incentives for multi-stakeholder dialogue and establishing a climate resilient development platform at the watershed level that brings together multiple municipalities and sectors.

The project focuses on climate change related planning and management, integration and mainstreaming of climate change policies and adaptation in relevant sectors and institutional coordination processes. It will develop guidelines on the integration of climate change adaption into local policies and plans. These guidelines will be discussed at the climate resilient development platform and be used during the municipal planning processes to develop climate responsive sectoral plans.

Corresponding training will also focus on climate change related planning and management, integration and mainstreaming of climate change policies and adaptation in relevant sectors and institutional coordination processes. It is expected that these measures will have a long-term positive impact on the Marin watershed and help to sustain project interventions.

Expected project outputs and planned activities are listed below:

1.1.1. Trainings and exchange visits for CBOs, government line agencies and municipality officials on climate change impacts and risk assessment tools and methods and mainstreaming CCA;

- Training to CBOs on climate change impacts, adaptation and mainstreaming;
- Conduct participatory vulnerability assessment of Marin watershed on different climate scenarios for capacity building;
- Trainings to municipality and government staffs on climate change risk assessment and mainstreaming developed;
- Learning and exchange visits for CBOs, government line agencies and municipalities.

1.1.2. Multi-stakeholder dialogue and action platform established in the Marin watershed to drive the mainstreaming of adaptation;

- Form multi-stakeholder platform for climate change adaptation and mainstreaming;
- Conduct workshops, media events and dialogues to develop and disseminate common understanding.

1.1.3. CCA integration guidelines developed for communities and municipalities in Marin watershed to support policies and plans on water, agriculture, forestry, and rural development for four municipalities in Marin.

- Conduct workshops for participatory review and assessment of municipality policies and plans on water, agriculture, forestry, and rural development on integration of climate change responsiveness;
- Convene sectoral consultations and formulate guidelines for CCA mainstreaming;
- Integrate these guidelines into the planning process of the four municipalities.

Component 2: Community-based natural resource management to enhance resilience of communities to climate change

Component 2 of this project will ensure that communities' vulnerability to climate induced risks (landslide, flood, drought and forest fires) are reduced, improving their resilience to the adversity of changing climatic. The project will invest in managing and maintaining community and leasehold forests on which local communities depend for livelihoods by addressing key threats such as landslides, invasive species, forest fires, livestock grazing and degradation. This component will engage vulnerable communities and boost their adaptive capacities by addressing climate vulnerabilities of local subsistence farming practices. On top of climate change impacts, natural resources in this watershed will be under additional pressure since a large number of migrant workers are returning home due to the Covid-19 pandemic. Additional support will be provided to mitigate this increasing pressure to maintain healthy forests and to decrease the risk of landslides.

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

Climate risks pose great challenges to the livelihoods of communities, especially socially marginalized, poor and women as vulnerable groups within the community have low/limited capacity to adapt in absence of alternative livelihood options and a social safety net. To support the section of the population most vulnerable to climate change, the project will support and scale-up climate resilient agricultural technologies and practices. These technologies and practices will help to guide actions needed to transform and reorient agricultural systems ensuring food security under a changing climate in this food-deficit area. As most of the households in the Marin watershed depend on agriculture as a main source of livelihood, these interventions will improve the resilience and productivity of this agro-ecosystem. As a co-benefit, these interventions will also contribute to emission reduction as agriculture and forestry is a major emission source in Nepal due to traditional farming practices, deforestation, forest fires and burning of agricultural residues. The livelihoods of local communities who are highly dependent on agriculture and forests will be strengthened through the proposed project interventions. Since the communities in the watershed are facing water shortages for irrigation and livestock and increasing damages to the farmer group managed irrigation systems due to floods and landslides, the interventions will address these

issues which are expected to worsen under climate change. Further, the communities have limited access to agricultural resources and technical services, thus, project interventions will address this aspect by improving their access to knowledge, resources and services which will improve their adaptive capacity. The expected outputs and planned activities are listed below but will depend on specific geographies within the project area and will be identified during the project development phase.

2.1.1. Support to climate smart agriculture and local adaptation solutions, such as:

- Water efficient technologies such as drip irrigation, improving water seepage and wastage;
- Repair and maintenance of community-based farmer managed irrigation systems damaged by floods and landslides;
- Livestock management (fodder plant support, vet support, upgrading animal sheds for farm manure management);
- Support introduction and promotion of high-value climate resilient crops, seeds, varieties, seedlings, etc. that are native to Nepal and locally adapted to the project site;
- Higher productivity/low impact small hand-tools and technologies that are GESI/labor and energy smart;
- Training and extension services for the above solutions to vulnerable farmers.

Consultation with the communities to verify the climate risks and impacts and the appropriate solutions was not possible in PIF development due to COVID-19 travel and meeting restrictions. This will be undertaken in project development, and the list of solutions will be verified or modified.

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

The project will support CBOs (community forestry users' groups and leasehold forest users' groups) to implement activities such as nursery management, plantation and regeneration support, fire management, fencing and grazing management to reduce pressure of the forests on which their livelihoods depend. The project will promote low-cost locally appropriate Nature-based solution (NbS)²⁵ for reducing the vulnerability of communities. The NbS will largely focus on disaster risk mitigation, restoration of degraded lands, within the watershed boundaries. These solutions will protect and restore community's social, cultural, economic and physical assets, strengthening their adaptive capacities.

The planned outputs and activities to achieve the output are listed below and will be selected for sites based on further discussion with local communities:

- **2.2.1. Enhanced resilience of the communities of the Marin watershed against drought, flood and landslide**
Multiple use water source/spring protection for irrigation and domestic use;
- Forest protection, restoration and regeneration through nursery management, plantation, fire control and fencing to reduce forest pressure;
- Rehabilitation of degraded land, stabilization of landslide vulnerable areas and restoration of riverbanks through erosion control, fencing and plantations, bioengineering to protect livelihood assets and farms.

Component 3: Monitoring, Evaluation and Knowledge management

The monitoring, evaluation and knowledge management component of the project will be key to ensure project effectiveness, develop synergies and collaboration among stakeholders and similar projects in the area. As such, an ongoing compilation of best practices on applicable technologies will be collected for dissemination and replication by project partners throughout the duration of the project and to ensure sustainability beyond the project. This component will ensure tracking of project results, including capturing and sharing of key project

²⁵ IUCN defines NbS as actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits.

lessons to project stakeholders and beyond. This project will consider monitoring, evaluation, and learning (MEL) as a package to enable adaptive management and to ensure success of the project interventions.

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

The project will support the development of information and knowledge products related to CCA including information on the different impacts of climate change across genders, ages, and poor and marginalized groups. The project will consider communities as generators of knowledge and promote peer-to-peer and lateral knowledge sharing. The project will contribute to the documentation and wider dissemination of indigenous knowledge for CCA so that the local community can make use of such knowledge for future application. For this the project will focus on research, awareness, and capacity building. The knowledge generated will be disseminated across various levels within the country as well as global level to enable replication and/or upscaling of project approaches and learning.

The activities under this output are:

- Case studies and research on best practices and lessons learned from implementation of NbS to all local and national stakeholders and share globally at appropriate platforms
- Develop and dissemination of information, education, and communication materials through print and digital medium

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

The project will develop a monitoring matrix to track the project outputs and outcomes. The progress indicators will be made gender sensitive where relevant. The project will conduct annual as well as mid-term and final evaluation to determine the relevance of the designed activities/expected outcomes, level of achievement of project objectives, impact and sustainability of the project. The evaluations will feed lessons learned into the decision-making process of the project stakeholders, including donors and national partners. The activities carried out under this output are:

- Periodic monitoring, semi/annual review reflection to inform adaptive management based on success, failures, challenges and lessons learned on a periodic basis
- After-action reviews with stakeholders to document and share learning
- Mid-term and final evaluation
- Annual and semi-annual monitoring visit among project stakeholders.

Alignment with GEF Focal area and/or Impact Program Strategies

In line with the GEF-7 Climate Change Focal Area Strategy that aims to support developing countries to make transformational shifts towards low emission and climate-resilient development pathways, this project is specifically aligned with the **GEF-7 Climate Change Adaptation Strategy** with the 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. Component 2 of the project will largely contribute to achieving Objective 1 (Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation) by improving management of natural resources such as forest conservation and enhancement of farm-based livelihoods based on the introduction of climate smart technologies adapted to the local conditions of the Marin watershed as well as introducing nature-based solutions for landslide treatment, river training and slope stabilization. Component 1 and 3 will support Objective 2 (Mainstream climate change adaptation and resilience for systemic impact) of the strategy by improving the understanding, knowledge and capacity of the municipalities of the Marin watershed to mainstream climate change adaptation in local plans and policies. This objective will be achieved through training and exchange visits of CBOs and government officials, establishing a multi-stakeholder dialogue between the different actors in the Marin watershed and an actin platform to coordinate the different sectoral plans of all four municipalities, as well as developing guidelines on mainstreaming adaptation into sectoral development plans and integrating these into the development process of the four municipalities. As emphasized in the GEF Programing Strategy, the project will promote gender

mainstreaming and women's empowerment in the targeted interventions as applicable, in line with GEF's Gender Policy 2017. As a co-benefit, the proposed project by improving resilience of agro-ecosystem will support in GEF-7 Land Degradation Focal Area.

Incremental/additional cost reasoning and expected contributions from the baseline, LDCF, and co-financing

Nepal being a low-income country cannot afford to finance the high incremental costs associated with climate change risk management. The project area is located in one of the most fragile regions, the Chure which is also vulnerable to climate change. With the current level of funding, the limited efforts in building resilience of communities through ecosystem-based adaptation remain dispersed and a comprehensive watershed approach cannot be implemented to address climate vulnerabilities of an ecological unit such as the Marin watershed. In absence of the GEF LDCF investments, forest degradation could continue further deteriorating the ecosystems and making the communities more vulnerable to climate change. The government of Nepal identified nine profile projects for addressing climate change through the National Adaptation Programme of Action 2010 with an estimated cost of USD 350 million. This LDCF project will build on Profile 1 project (Promoting community-based adaptation through integrated management of agriculture, water, forest and biodiversity) and Profile 5 project (Forest and ecosystem management in supporting climate-led adaptation innovations). The project can receive co-financing from local municipalities who have a limited financial resource for CCA and disaster risk reduction. These limited resources when invested in isolated sites and locations fails to address flooding and landslides in a comprehensive manner. Concurrently, CBOs will be capacitated in gender-responsive budgeting and planning where they able to identify, address and allocate resources accordingly.

Adaptation benefits (LDCF/SCCF)

Climate change is expected to increase the frequency and intensity of floods, droughts, landslides and forest fires in much of Nepal. As a result, the damage caused by these hazards to ecosystems and livelihoods is likely to increase, particularly in vulnerable communities in the Marin watershed. In the absence of adaptation measures, water security and agricultural productivity are likely to decline further, threatening the income and food security of these communities and increasing the impacts on the forest due to compensative income measures from the forest ecosystem.

The requested LDCF funding will generate the following adaptation benefit in alignment with Nepal's NAPA in the project area:

- Reduction of community vulnerability in the watershed through improved management of natural resources such as forest conservation, enhancement of farm-based livelihoods etc.
- Application of nature-based solutions for landslide treatment, river training, slope stabilization etc.
- Enhanced knowledge and improved understanding to deal with climate change through capacity building, research, awareness etc.

Overall, the project will build resilience of around 40,000 people with at least 50% of these being female by the end of four years by implementing various climate adaptation interventions in the watershed.

These communities will benefit through the deployment of locally adapted technologies and innovative solutions to reduce climate-related risks and enhance resilience (CCA1). Specifically, physical assets will be made more resilient to climate variability and change through water efficient technologies, repair and maintenance of community-based farmer managed irrigation systems damaged by floods and landslides; livestock management to address increased risks from flooding; and the introduction and promotion of high-value climate resilient crops, seeds, varieties, seedlings, etc. that are native to Nepal and locally adapted to the project site.

Nature-based solutions (CCA-1) will increase the resilience of the local communities and their natural resource assets to climate change impacts and thus reduce their vulnerability to the adverse impacts of climate change. Activities such as protection and maintenance of local spring sources will address decreasing water availability and activities such as forest protection, restoration, regeneration, and fire control will help to mitigate the increasing damages to these natural resources and reduce forest pressures. Deployment of protective measures

such as the rehabilitation of degraded land, stabilization of landslide vulnerable areas and restoration of riverbanks through erosion control, fencing and plantations, and bioengineering will protect the livelihood assets and farms of the communities in the Marin watershed.

Component 1 of the project (CCA-2) focuses on integrating climate change and its impacts into the sectoral and municipal planning and management of the Marin watershed and its institutional coordination processes by building the institutional capacity of the relevant agencies and their government officials, supporting participatory risk assessments, developing and applying guidelines on the integration of climate change adaptation into local policies and plans and establishing a watershed-based coordination platform of the local communities and municipal agencies. These proposed measures will further improve the mainstreaming of long-term climate resilience and risk management of the watershed. If this project is successfully implemented, lessons learned, and models established will be easily replicable across a much larger geographic area in order to benefit a much larger segment of Siwalik region. The lessons captured from the project will help in upscaling the programs in other LDCs with similar geographies.

Innovation, Sustainability, and Scaling up

Innovation: The proposed project focuses on incremental (utilizes existing technology with value addition) and architectural innovation (takes lessons from earlier similar projects). Currently, issues of watershed and climate change adaptation are dealt in isolation. Although, river basin offices have been established and currently preparing and, in some level, implementing basin management plan, the plan focuses on costly hard technologies and fails to adequately integrate climate change. This project thus aims to adopt an integrated approach by addressing the threats caused by climate change in the watershed while also implementing other prioritized watershed management activities. Thus, the activities designed are a combination of conventional conservation of forest, freshwater and agricultural lands as well as application of NbS identified under uncertain climate change scenarios, adapted to the local conditions in each community of the Marin watershed. The project also aims to bring together multiple municipalities for the management of a watershed as an ecological unit which is a new, and innovative approach for Nepal.

Sustainability: The project will build the capacity of the most relevant stakeholders at local level including that of CBOs who will be able to continue and sustain project interventions on completion of the project. Most of the focus is on enhancing understanding and knowledge of CBOs and local governments who are the immediate right holders and beneficiaries of these resources. With enhanced capacity regarding climate change impact assessments, integration and mainstreaming including the knowledge and skills on improving governance of key natural resources, the investments are expected to be sustainable. Also, enhancement of livelihood that largely relies on natural resources will ensure that the communities manage and sustain these resources for their own economic upliftment. Further, mainstreaming of climate adaptation and DRR in the plans and budget of government and community institutions will ensure the sustained investment for climate resilience. The knowledge management component of the project will also be a key factor in the sustainability of the interventions as it will support the replication and upscaling of the successes.

Scaling up: This project will demonstrate an integrated approach to including climate change adaptation capacity in watershed management in Nepal, addressing conservation of water, agriculture and forest resources and improvement of local livelihoods. There is currently a national discourse on a river-basin approach to natural resource management. The federal government has setup River Basin Offices and the provincial government has established Watershed Office. The learning and successes of this project could provide valuable insight into the watershed approach to natural resource management in the face of climate change, which could help to formulate policy frameworks that would facilitate bringing multiple administrative units together. Further, the project will enable upscaling the best practices at watershed level along the Chure range.

1b. Project Map and Coordinates

Coordinate: (Degree Decimal)

Longitude (E): From 85.503824 to 85.958326

Latitude (N): From 27.136513 to 27.384487



Figure 1: WWF GEF LDCF proposed project site (in red).

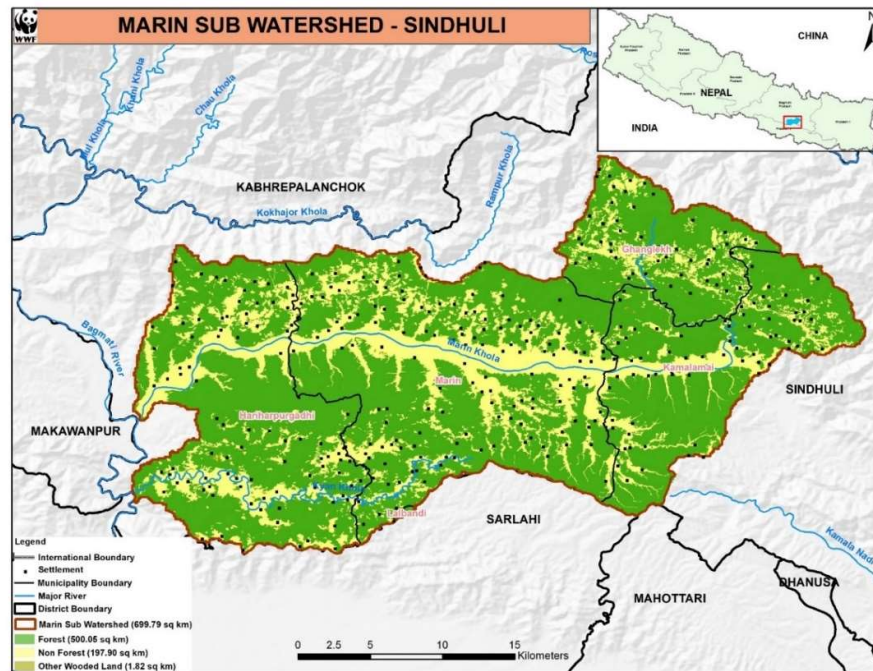


Figure 2: Project watershed and local municipalities

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

- Indigenous people and local communities
- Civil Society Organizations

During project identification, the project tried to engage all possible stakeholders through a participatory approach from all levels – Federal, provincial/district, local (municipality/rural municipality), and wards/village for formulating CCA schemes for enhanced resilience of communities.

The stakeholders were engaged in following ways:

Table 2: Stakeholder engagement activities and outputs obtained during Project Identification phase

Level	Mode of engagement	Output
District/Provincial/ Federal	Key Informant Interviews	Key issues in the project area, root causes of such problems, existing barriers and opportunities, understand priorities of the government, issues related with implementation and role of different organization in project implementation
Municipality/Rural Municipality	Key Informant Interviews	Project Component, Stakeholders mapping, Identification of vulnerable areas and key issues related to projects, key climate change related projects in project sites, ongoing climate related activities implemented by the municipality
Ward/Village	Personal Interview	Project Activities and GESI integrated Adaptation Planning, risk associated with project implementation and possible risk mitigation measures

Altogether 28 personnel representing Government, NGOs and CSO, and local people were consulted during the PIF development. Among the total consulted, 21% were female, 2 belonged to Madesh ethnic group, 1 belonged to Indigenous group, and 1 belonged to Marginalized group. The local communities expressed lack of understanding of climate induced risks, too low investment in river protection works, lack of irrigation facilities, higher dependency on forest products and limited livelihood options with a large population reliant on less productive agriculture as key issues in the project area.

CSOs highlighted inadequate interventions targeting climate change adaptation and disasters reduction including opportunities for capacity building of CSOs and vulnerable communities regarding climate change impacts in the watershed.

Government agencies raised concerns regarding inadequate funding to address issues of widening river streams along with debris flow and sedimentation from seasonal river channels along with high dependency of local communities on traditional rainfed agriculture and lack of irrigation support. A key opportunity highlighted by the government agencies was of capacity building and mainstreaming climate change into the business-as-usual conservation and development at the local level.

Provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement

Table 3: Stakeholder Engagement Plan

SN	Stakeholder	Mode of engagement during project preparation	Contribution in project preparation	Role in project implementation
Federal level				

1	Ministry of Forests and Environment	Part of Project Planning Committee (PCC)	Lead the project preparation process by providing strategic guidance to the technical team; Coordinate with concerned stakeholders (at federal level) and ensure that their views are incorporated in the project document; Identify the ways and means of working with local and state governments.	Executing Agency for LDCF/GEF project
3	President Chure Terai Madhesh Conservation and Development Committee	Meeting	Ongoing programs in the project area; identification of key issues, gaps and sharing of learnings	Support in project implementation, leveraging cash and kind
Province level				
4	Ministries at Province level: Ministry of Land Management, Agriculture and Co-operatives (MoLMAC); Ministry of Industry, Tourism, Forest and Environment (MoITFE), River Basin office,	Meeting and Consultations	Key issues in the project area, root causes of such problems, existing barriers and opportunities, understand priorities of the government, issues related with implementation and role of different organization in project implementation, risk associated with project implementation and possible risk mitigation measures	Coordination and support for project implementation
District level				
5	Local level government organizations: Division Forest Office/Water Induced Disaster Prevention Division Office/District Office of the Department of Cottage and Small Industries/Irrigation Division Offices	KII	Identification of prioritized conservation activities and gaps, possibility of leveraging, engagement in training and other capacity building activities	Support in project implementation, leveraging cash and kind
Local level				
6	Representatives from municipalities	Consultations	Designing project component; Stakeholders mapping; Identification of vulnerable area and key issues related to projects; Key climate change related projects in project sites; Ongoing climate related	Support in project implementation, leveraging cash and kind

			activities implemented by the municipality; Possibility of leveraging	
7	Local NGOs: Federation of Community Forestry Users, Nepal (FECOFUN)/ Forest Resource Users' National Federation/ Collaborative Forest Users' Federation/ National Federation of Irrigation Water User Groups, Nepal/Nepal Federation of Indigenous Nationalities (NEFIN)	Consultations	Share lessons from implemented projects, challenges and opportunities for working in the project area, modality for partnership	On the ground implementation partner, capacity building activities
8	Representatives from ongoing major projects/programs	Consultations	Identification of capacity gaps and barriers for project implementation, lessons and best practices that project can build on	Technology/knowledge transfer
Project area				
9	Private sector (agriculture cooperatives, private enterprises)	Meetings	Identification of market; Help in developing small scale business idea; Value chain analysis of local products	Partner for promoting livelihood opportunities
10	Natural resource management groups (forest user groups, soil conservation user group, irrigation water user groups) and farmers with focus on women, marginalized and indigenous group	Focus Group Discussion	Differential impacts, opportunities and challenges to integrate their issues in climate adaptation	Beneficiaries

3. Gender Equality and Women's Empowerment

Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).

Women constitute more than 50% (50.4) of the total population of Nepal.²⁶ According to the 2019 Human Development Report, Nepal still has a Gender Inequality Index (GII) value of 0.476. The country has made progress in other areas such as life expectancy, literacy rate, etc. however, Nepal has a long way to go before it attains gender equality. Women and girls are more likely to be poor, despite the significant contribution they make to the economy, especially through unpaid care and household work. Further, it has been widely accepted that impact of climate change is disproportionate. Climate change impacts women more than men due to their predefined roles in the society. As climate change exacerbates scarcity of water and firewood, women and girls may have to travel farther to collect these resources, increasing threats to their safety, decreasing productivity in

²⁶ <https://countrymeters.info/en/Nepal>

other areas like farming, and reducing time available for schooling and other productive activities.²⁷ In some areas, the drying up of springs has forced people to out migrate to areas with more water availability.²⁸

In the project area, most of the young men have migrated to other cities and abroad for employment leaving women in charge of managing natural resources and managing households. Multiple roles of women in their home and community place them on the frontline of any climatic and non-climatic impacts. However, only 23.80% of women have ownership of their fixed property. Strengthening woman's access to, and control over, fixed assets is an important means of raising women's status and influence within households and communities. Having no assets or property means having no power and decision-making ability. This decreases the confidence among women and confines them to doing domestic work. Ownership of assets also provides the means to be engaged in productive economic activity because without ownership of fixed assets there is no access to loan from the banks. This completely restricts them to engage in different livelihood enhancement measures. As a result, they have to be dependent on traditional agricultural practices such as rainfed irrigation, cultivation in slopes or degraded land etc. Traditional farming practices and low economic opportunities are also making women more vulnerable than men.

Moreover, only 72% of women are literate in the targeted watershed. Education and awareness are key to improve adaptive capacity to climate change. It is easier for educated people to understand the impacts of climate change and bring change their attitudes and behavior to adopt to climate resilient practices. Education also enable rationale thinking and leadership skills. These factors hinder in access to information and resources and control over natural resources leading to differential impacts of climate change on women.

Additionally, while the current Covid-19 pandemic has in general disrupted economic activities and increased financial burden; the vulnerabilities of women including the people from poor and marginalized communities, have been exacerbated due to other pre-existing factors such as social discrimination, lack of access to financial resources, dependence on informal sector while also due to higher dependence on natural resources. This aspect will be explored thoroughly during the project design and development phase when a detailed gender analysis and assessment of differential impacts of climate change on men, women and other vulnerable groups will also be conducted to assess gender-sensitive vulnerabilities and understand gender-based differences. Subsequently, the results and recommendations from the gender analysis, the assessment on differential impacts of climate change and the results of gender-responsive stakeholder consultations during project development will be used to elaborate the gender action plan (GAP). The GAP will provide the road map throughout project implementation to ensure the project uses a gender-responsive approach with strategies and activities integrated in all project components, including the results framework with gender-specific outputs, targets and indicators and sex-disaggregated data collected wherever possible. The design phase will also review the learning from other adaptation projects regarding gender mainstreaming and will consider national gender policies and commitments that can provide an enabling environment for advancing gender equality and an analysis of the progress made in achieving them, where gaps, barriers and opportunities are in relation to the project objectives. The design phase will consider and plan for addressing women-specific issues considering mobility, cultural, time and financial constraints to participation during the project design and implementation phase. The GEF Policy on Gender Equality and the WWF Gender Policy are used as guidance to ensure full requirements are met and the GAP is aligned with these policies throughout the project life cycle to promote positive impacts on gender equality and women's empowerment.

²⁷ Shrestha, S., Chapagain, P. S. and Ghimire, M. (2019). Gender Perspective on Water Use and Management in the Context of Climate Change: A Case Study of Melamchi Watershed Area, Nepal. SAGE Open. 9(1), 2158244018823078.

²⁸ Chapagain, B. and Gentle, P. (2015). Withdrawing from agrarian livelihoods: Environmental migration in Nepal. Journal of Mountain Science. 12(1), 1–13.

Does the project expect to include any gender-responsive measures to address gender gap or promote gender quality and women empowerment? Yes/no? if possible, indicate in which results area (s) the project is expected to contribute to gender equality:

- Closing gender gaps in access to and control over natural resources: Yes
- Improving women’s participation and decision making: Yes
- Generating socio-economic benefits or services for women: Yes

Will the project’s framework or logical framework include gender-sensitive indicators? Yes/no/tbd

The project will prepare a monitoring framework to assess implementation of the gender strategies, evaluate achievement of desired outcomes and to enable timely adaptive management. The framework will consist of gender sensitive indicators where applicable.

4. Private Sector Engagement

Will there be private sector engagement in the project? (yes/no). Please briefly explain the rationale behind your answer.

Since the project will work with the most vulnerable and marginalized communities that are socially bound together through community-based institutions, there is limited opportunity for private sector engagement. Component 2 focuses on diversifying livelihoods and engaging communities in small scale income options. Under this component, the proposed project will engage with other relevant projects that address these issues as and micro-finance institutions and cooperatives to provide enabling environment and access to credit facilities for communities while also linking private sector for agricultural services.

5. Risk

Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved or may be resulting from project implementation, and if possible, propose measures that address these risks to be further developed during the project design (table format acceptable).

Table 4: Risk analysis, ranking and mitigation measures

Risk Category	Identified risks	Risk ranking ²⁹			Mitigation measures
		Likelihood	Severity	Rank	
Political	Political instability and/or security situations	1	2	3	Designing implementation modality where there is little impact of such instabilities in other parts. And also ensure high degree of engagement of CBOs operating at the local level who own and can execute interventions with least supervisions. Also, ensure appropriate security/contingency plan for staff and community.
Operational	Staff turn-over in the project and at the municipalities	2	2	4	Institutional mechanism will be setup for diversity of stakeholders to be engaged in the project to minimize possible negative impacts of a few changes by ensuring

²⁹ Adapted from WWF PPMS standard: Likelihood: 1: Very Unlikely, 2: Unlikely, 3: Likely, 4: Very Likely

Severity: 1: Low, 2: Medium, 3: High, 4: Very High

Rank: 6-8 High Risk (red), 4-5 Medium Risk (yellow), 1-3 Low Risk (green)

					institutional memory across this diversity of stakeholders.
	Inadequate coordination among projects	3	1	4	The Executing Agency will form a Steering Committee that will have representation from all the key ministries. Project management unit will ensure coordination between the government agencies and other stakeholders. At the local level, the project will be implemented in close coordination with municipalities who will avoid duplication and overlaps.
Social	Communities may be unwilling to adapt to new technologies and practices	2	1	3	Consultation will be undertaken with communities in project development to ensure that community needs and interests are included in the strategy for technologies and practices. Trainings and knowledge management will be conducted so communities realize the long-term benefits of the adaptation interventions
	Conflicts among communities over the use of water, forest and other natural resources due to exploitation of resources and exacerbated by climate change	3	2	5	The project will strengthen community resources ensuring equitable benefit sharing mechanism especially focusing on improving accessibility to indigenous and marginalized groups. In the case of climate change related impacts, the project will conduct detail assessment and develop specific plan during the detailed project development phase.
Disaster (climatic and non-climatic)	Landslides and other climate induced disasters obstructs the smooth implementation of project and destroy project achievements.	3	2	5	The project will collaborate with municipalities, district line agencies and key stakeholders to identify the high-risk area and ensure preparedness while also engaging local communities to rebuild after such disasters as it may lead to increased pressure on remaining resources in absence of external support.

Assessment of different categories of risk shows that, the overall risk in the project is medium, hence, the mitigation measures proposed will assist smooth implementation of the project.

Risks Associated with COVID-19 Impacts:

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, it is going to be difficult to do community-level consultations on the project in development phase.	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 design, gender, social and environmental issues, 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. Development of the Stakeholder Engagement Plan for implementation will also address such restrictions and mitigations.
Future risk of similar crises	It is not anticipated that this project will have adverse impacts that might contribute to future pandemics, for example, there will be no focus on increasing the human-wildlife interface or any actions that cause degradation.	This will be closely reviewed in the ESSF screening and in safeguards analysis and documentation. There are some activities that may reduce current forest degradation.
	It is possible that COVID-19 impacts lead more people to move to rural	As the project will improve watershed management, attention will be paid to affects that

	areas, including areas around the Marin watershed and this may add more pressure to resources there.	incoming residents may have on the water quality and availability.
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COVID-19 Opportunity Analysis

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 unsustainable resource extraction and environmental degradation?	This project includes support to address forest degradation and the anthropogenic causes of ecosystem deterioration.	In project development, assessment will be made on how this can be further enhanced. Reducing unsustainable timber extraction from forests may be an 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. Since the communities of the Marin watershed live on subsistence farming, engagement of the private sector is not foreseen.	Community Based Organisations 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.
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6. Coordination

Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe coordination with other relevant GEF-financed projects and others.

The project will be executed by MoFE, GoN. MoFE will coordinate and engage with President Chure Terai Madhesh Conservation and Development Committee, a committee established within the ministry and MoF at federal level. Under the leadership of the MoFE, a Program Management Unit (PMU) will implement the project. The PMU will coordinate with provincial government and local level government and non-governmental organizations as required for day-day implementation of the project. The PMU will be responsible for reporting and monitoring of the project results. The detailed institutional structure will be determined during project development stage.

WWF GEF Agency in WWF US and WWF Nepal will oversee the project at national level. WWF will provide consistent and regular oversight on project execution and undertake project supervisory missions. WWF will oversee quality of project outputs, products and deliverables to ensure WWF GEF standards are maintained. WWF will regularly monitor project progress and performance and rate progress towards meeting project objectives, project execution progress, and quality of monitoring and evaluation in coordination with the MoFE. WWF will also approve budgets and transfer fund to the project.

A summary of relevant ongoing projects and possibilities for collaboration is depicted in the table below.

Table 5: List of ongoing projects

SN	GEF initiatives	Description	Scope for coordination
1	Reducing vulnerability and increasing adaptive capacity in the agriculture sector	Under Least Developed Countries Fund (LDCF)/GEF (FAO, Reducing Vulnerability and Increasing Adaptive Capacity to Respond to Impacts of Climate Change and Variability for Sustainable Livelihoods in Agriculture Sector in Nepal , #5111) the project aims to strengthen institutional and technical capacities for reducing vulnerability and promoting climate-resilient practices, strategies and plans for effectively responding to the impacts of climate change and variability in the agriculture sector.	Learning and sharing on CCA good practices in agriculture sector. Relevant to Component 2 of this LDCF project.
2	Catalyzing Ecosystem Restoration for Climate Resilient Natural Capital and Rural Livelihoods in Degraded Forests and Rangelands of Nepal.	Under LDCF/GEF (UNEP, Catalysing Ecosystem Restoration for Climate Resilient Natural Capital and Rural Livelihoods in Degraded Forests and Rangelands of Nepal , #5203), Nepal is implementing the project to increase capacity of national and local government institutions to adapt to climate change by implementing ecosystem-based adaptation in degraded forests and rangelands in mid-hill and high mountain area	Capture and apply best practices of Ecosystem based Adaptation and Community Livelihood Improvement Plans based on forests, rangelands and agro-ecosystems. Relevant to Component 1 of this LDCF project.
3	Developing climate resilient livelihoods in the vulnerable watersheds	Supported by LDCF/GEF, (UNEP, Developing Climate Resilient Livelihoods in the Vulnerable Watershed in Nepal , #6989) the project aims to increase adaptive capacity	Relevant for learning and sharing under Component 2.

SN	GEF initiatives	Description	Scope for coordination
		and resilience of vulnerable communities of degraded watershed.	
4	Ecosystem based Adaptation for climate-resilient development in the Kathmandu Valley	Nepal has received supported from LDCF/GEF (UNEP, Ecosystem-Based Adaptation for Climate-resilient Development in the Kathmandu Valley, Nepal, #8009) to increase urban resiliency in Kathmandu valley.	Relevant for learning and sharing under Component 1.
5	National Adaptation Programme of Action to Climate Change	With the support of LDCF/GEF (UNDP, National Adaptation Programme of Action to Climate Change, #3412), Nepal prepared its first comprehensive Adaptation Program through a country-driven consultative process. The adaptation plan has been prioritized on the basis of urgent and long-term adaptation strategies in key vulnerable sectors. The prioritized activities have been clustered into nine combined project profiles.	This project is based on the profile projects (Profile projects 1, 3 and 5) identified by the NAPA.
6	Enhancing capacity for sustainable management of forests, land and biodiversity in the Eastern Hills	GEF FAO (Enhancing capacity for sustainable management of forests, land and biodiversity in the Eastern Hills (ECSM FoLaBi EH) #10381)	There is a possibility of coordination in areas of sustainable forest management and land management.
7	Restoring the degraded watershed and livelihoods of Lakhadei river basin through Sustainable Land Management	GEF IUCN Restoring the degraded watershed and livelihoods of Lakhadei river basin through Sustainable Land Management #10469 . Concept approved and under formulation in the adjoining watershed.	As the proposed LDCF project and the GEF IUCN project on land management are in adjoining watersheds, there is potential for cross-learning during implementation.
8	Integrated Landscape Management to Secure Nepal Protected Areas and Critical Corridors	GEF WWF US Integrated Landscape Management to Secure Nepal's Protected Areas and Critical Corridors #9437 . The project aims to promote integrated landscape management to conserve globally significant forests and wildlife.	There is opportunity for learning on the operational aspects as both are executed by MoFE with the GEF Agency support from WWF Nepal and WWF US.

7. Consistency with national priorities

Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? If yes, which ones and how.

National Adaptation Programme of Action (NAPA)

The NAPA has identified priority activities that respond to the immediate needs to adapt to climate change, ultimately leading to the implementation of projects aimed at reducing the economic and social costs of climate change.³⁰ Nepal's NAPA emphasizes watershed management, farmland conservation, community-based on-farm irrigation facilities to enhance resilience of traditionally rain-fed agriculture while also promoting forest management and improving forest governance for equitable benefit sharing of resources among the most poor and vulnerable communities. The NAPA aims to ensure that national adaptation planning supports adaptation by local communities, particularly the climate vulnerable poor.

³⁰ Ministry of Environment (2010). National Adaptation Programme of Action to Climate Change. Government of Nepal, Kathmandu, Nepal.

National Climate Change Policy

The National Climate Change Policy 2019 aims "to contribute to socio-economic prosperity of the nation by building a climate resilient society". The policy aims to do so through enhancement of CCA capacity of vulnerable groups and building resilience of ecosystems that are at risk of adverse impacts of climate change. Similarly, the policy focuses on conducting research and making effective technology development and information service delivery related to climate change in addition to mainstreaming or integrating climate change issues into policies, strategies, plans and programs at all levels of state and sectoral areas and mainstreaming gender equality and social inclusion into climate change mitigation and adaptation programs. The policy under its Climate Finance Management theme, has strategies to ensure climate change budget in all sectoral plans at all levels; and appropriation of budget targeted to women, minorities, backward class, climate change affected area and vulnerable community. The policy also includes use of mass media for spreading awareness on adaptation measures, capacity development of relevant governmental, non-governmental, academic institutions and community associations in all three level of governance and extension of bilateral and multilateral cooperation have been planned.

Fifteenth Development Plan

The Fifteenth Development Plan (2019/20-2023/24) recognizes the impact of climate change on agriculture and food security, forests and biodiversity, human health, energy, irrigation, settlements and infrastructure and also emphasizes the importance of managing hazards to increase the country's resilience. A key strategy for achieving this is through the development of sectoral plans, some of which relate to natural resources management, DRR and CCA. The fifteenth plan acknowledges inadequate mainstreaming of disaster risks in development planning while also emphasizes the need to implement Nepal's NDCs.

National Biodiversity Strategy and Action Plan (NBSAP)

Nepal as a contracting party to the Convention on Biological Diversity (CBD) is committed for making a significant reduction in the rate of loss of biodiversity. The CBD was ratified by Nepalese parliament on 1993 and enforced in Nepal since 1994. Nepal's NBSAP 2014-2020 provides a guiding framework or translating the **Aichi targets** into national action and achieving the nation's goals to conserve the biodiversity. It is also prepared as a measure to implement the commitments made by the country on **CBD** for the sustainable management of biodiversity for the benefit of present and future generations. It has a long-term vision of 35 years and includes specific short-term strategies and priorities for action up to 2020. The plan has identified climate change as major threat to biodiversity which will ultimately affect livelihoods of millions of local and indigenous people who depend on it. NBSAP acknowledges that Climate change will affect the **poorest** and most vulnerable communities through climate induced disasters (landslides, floods, drought) that pose considerable threat to mountain ecosystems and the natural resource dependent communities.³¹

Nationally Determined Contribution (NDC)

Nepal's NDCs emphasize the importance of mitigation, adaptation and resilience building. The NDC envisions to diversify the country's energy mix and energy consumption pattern to more renewable and economically productive sectors. On the adaptation front, NDC outlined that the Government is implementing CCA and resilience programs and projects and that efforts were underway for localizing climate adaptation actions in planning and implementation.³²

National Action Plan to Combat Desertification and Land Degradation

The Action Plan was prepared in 2016 as a part of implementation of the United Nations Convention on Desertification. The activities identified in the action plan include, but are not limited to, (i) control of soil erosion

³¹ GoN/MoFSC (2014). Nepal Biodiversity Strategy and Action Plan 2014-2020. Government of Nepal, Ministry of Forests and Soil Conservation, Kathmandu, Nepal.

³² Ministry of Population and Environment (2016). Nationally Determined Contributions. Government of Nepal, Katmandu, Nepal.

by diverse means including construction of bench terraces where feasible; (ii) tree plantation to increase the forest cover and hence improve the climate; (iii) sustainable forest management; (iv) development of alternative energies to replace or to complement wood and hence to reduce or to halt deforestation and (v) improvement of agricultural technologies and techniques.

Local Adaptation Plan for Action (LAPA) Framework

To achieve the objectives of NAPA, a need of framework to localize adaptation planning was identified which led to formulation of the framework on Local Adaptation Plan for Action (LAPA) in 2010. With the changes in governance structure after federalization and as mandated by the revised National Climate Change Policy 2019 to implement climate change related plans and strategies by the local government, the LAPA framework has been revised in 2019. The revised framework guides the local government to manage the impacts of climate change at local level; mainstream adaptation and DRR in annual plan, budget and monitoring of local government; and identify and implement long-term climate friendly development plans. Further the framework supports the country in achieving its commitment in CCA, DRR and sustainable development through collaboration with local level stakeholders. The framework identifies the roles and responsibilities of government at all levels for enhancing climate resilience.

National Adaptation Plan (NAP)

Nepal is in the process of formulation of NAP. The main objectives of the NAP are to reduce vulnerability to climate change impacts by improving resilience and adaptive capacity, and to integrate CCA into new and current policies, programs, activities, and development strategies across all sectors and levels of government. The NAP preparation process has identified adaptation pathways for 7 thematic sectors (Agriculture and Food Security; Water Resource and Energy; Public Health and Water; Sanitation and Hygiene; Urban Settlements and Infrastructure; Forests and Biodiversity; Climate-induced Disasters; Tourism, Natural and Cultural Heritage) and 2 crosscutting sectors (Gender and Social Inclusion, and Livelihood and Governance). As of now, synthesis report and reflection report on the process have been published.³³ NAP aims to facilitate the integration of CCA in policies, programs and activities across sectors and levels ultimately reducing the country's vulnerability to climate change. NAP aims to prepare a comprehensive medium- and long-term climate adaptation planning that builds upon each country's existing adaptation activities and helps integrate climate change into national decision-making.

Other sectoral policies

The Forest Act 2076 has provisions of management of various kinds of forests and conservation and wise-use of forest resource, environment, watershed and biodiversity. Likewise, National Forest Policy 2076, has provisions of sustainable and participatory management of forest, watershed and biodiversity. In addition, Nepal National REDD+ Strategy has listed strategies to assess climate change vulnerability of forest ecosystems and strengthen spatial planning. Besides, Forestry Sector Strategy (2016-25) lists strategies for sustainable management of forest ecosystems and optimization of biodiversity and watersheds for national prosperity. On the agriculture and food security sector, provisions are planned to be developed for disseminating prior information to farmers relating to weather through agricultural extension programs through the National Climate change policy 2076. The adaptation program will also be targeted to different disadvantaged groups. Similarly, Agriculture Development Strategy has listed various CCA options for improved resilience of farmers to climate change, disasters, price volatility and other shocks. On the water resource management front, technologies for increasing water use efficiency are planned to be developed through the National Climate change policy 2076. Additionally, National Wetland Policy 2069 has been developed to conserve wetland resources through sustainable and wise use. The Irrigation Policy 2070 also calls for addressing climate change issues through conduction of climate risk

³³ MoFE (2018). Nepal's National Adaptation Plan (NAP) Process: Reflecting on lessons learned and the way forward. Ministry of Forests and Environment (MoFE) of the Government of Nepal, the NAP Global Network, Action on Climate Today (ACT) and Practical Action Nepal.

management in irrigation sector. The policy also calls for integrated watershed management and promotion of multiple use of water including irrigation, hydroelectricity generation and drinking water.

8. Knowledge management

Outline the “Knowledge Management Approach” for the project and how it will contribute to the project’s overall impact, including plans to learn from relevant projects, initiatives and evaluations.

Knowledge management will be a key part of the project and is embedded as a project component. Based on the M&E framework, the information collected will be fed into activities for knowledge management. The project will conduct regular After-action reviews of projects interventions, approaches and initiatives to assess the effectiveness and efficiency of the processes and products in coordination with local communities, municipalities and other relevant stakeholders. The findings and learning from these events will be utilized through adaptive management. The project will also conduct annual review and reflection events to document findings and learning. Key lessons and achievements will be disseminated through publication of case stories, documentaries and social media platforms. Existing materials from other projects will also be built upon rather than re-inventing the wheel. The knowledge products will be produced in locally suitable languages for the communities. The project will also closely coordinate with GEF and GCF funded projects in the adjoining watersheds to build upon their learnings and avoid duplications since the project sites are similar. These learning and exchange events will be conducted on a half-yearly basis. The PMU will be responsible for knowledge management. Through periodic project level review and reflection, lessons learned will be systematically documented. Lessons learnt and best practices will also be garnered through peer exchange programs with similar GEF/non GEF financed projects focusing on ecosystem management. These practices would be integrated into project design in subsequent years. The knowledge capital/products will be widely shared and reflected in periodic reports. Based on the knowledge generated, activities/process would be adjusted/revised through adaptive management to improve the performance of the project.

9. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

The project has preliminarily been categorized as a B (medium risk) given that there will be on the ground activities. The risk categorization is based on current available information on the project design and the project location, and on an ESSF pre-screen. A full safeguards screening and categorization will be undertaken during project development once activities have been explicitly defined and specific locations determined. The safeguards categorization memo will be issued based on the screening, detailing any required management plans. Any plans or measures to address the identified risks will be developed during the project development phase.