



Restoring the degraded watershed and livelihoods of Lakhandei river basin through Sustainable Land Management. in Nepal

Part I: Project Information

GEF ID

Project Type

MSP

Type of Trust Fund

GET

CBIT/NGI

CBIT

NGI

Project Title

Restoring the degraded watershed and livelihoods of Lakhandei river basin through Sustainable Land Management. in Nepal

Countries

Nepal

Agency(ies)

IUCN

Other Executing Partner(s)

Executing Partner Type

Government

GEF Focal Area

Land Degradation

Taxonomy

Focal Areas, Land Degradation, Land Degradation Neutrality, Influencing models, Transform policy and regulatory environments, Stakeholders, Indigenous Peoples, Local Communities, Gender Equality, Gender Mainstreaming, Capacity, Knowledge and Research, Capacity Development

Rio Markers**Climate Change Mitigation**

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 1

Duration

48 In Months

Agency Fee(\$)

139,995

Submission Date

12/18/2019

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
LD-2-5	GET	1,555,505	5,250,000
	Total Project Cost (\$)	1,555,505	5,250,000

B. Indicative Project description summary

Project Objective

Improving sustainable land management for achieving land degradation neutrality in Nepal

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
1. Adaptive Land Governance	Technical Assistance	1. Improved land and landscape governance and empowered river basin management institutions	1.1 Systems for monitoring land degradation within the watershed established 1.2 Community participation in watershed management increased 1.3 Strengthened policies to supporting sustainable watershed management	GET	282,820	1,000,000

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
2. Scaling up best practices of SLM	Investment	2. Sustainable land management options for degraded watershed restoration scaled-up	<p>2.1 Best practices in sustainable land management and watershed restoration assessed</p> <p>2.2 Validated SLM practices as watershed restoration options are demonstrated at selected sites</p> <p>2.3 Successfully demonstrated SLM practices as restoration options are rolled out at wider scale along the Lakhandei river basin</p>	GET	707,059	2,300,000

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
3. Investments in watershed restoration	Investment	3. Enhanced public and private sector investment in watershed restoration through SLM practices and associated value chain development	3.1 Market based options for SLM product based value chain development assessed 3.2 Communities are capacitated on SLM product based value chain development 3.3 Market-based incentive mechanism for watershed restoration developed and established	GET	254,537	1,050,000
4. Watershed restoration stewardship in rural societies	Technical Assistance	4. Rural communities revitalised for sustainably managing watersheds	4.1 Economic, social and environmental benefits generated by SLM interventions assessed 4.2 Youth motivated and engaged in key landscape restoration activities	GET	169,680	700,000
Sub Total (\$)					1,414,096	5,050,000
Project Management Cost (PMC)						

Project Management Cost (PMC)

GET	141,409	200,000
Sub Total(\$)	141,409	200,000
Total Project Cost(\$)	1,555,505	5,250,000

C. Indicative sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Government	Ministry of Forests and Environment	In-kind		5,250,000
			Total Project Cost(\$)	5,250,000

Describe how any "Investment Mobilized" was identified

D. Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
IUCN	GET	Nepal	Land Degradation	LD STAR Allocation	1,555,505	139,995	1,695,500
Total GEF Resources(\$)					1,555,505	139,995	1,695,500

E. Project Preparation Grant (PPG)

PPG Required

PPG Amount (\$)

50,000

PPG Agency Fee (\$)

4,500

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
IUCN	GET	Nepal	Land Degradation	LD STAR Allocation	50,000	4,500	54,500
Total Project Costs(\$)					50,000	4,500	54,500

Core Indicators**Indicator 3 Area of land restored**

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
8500.00	0.00	0.00	0.00

Indicator 3.1 Area of degraded agricultural land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
7,000.00			

Indicator 3.2 Area of Forest and Forest Land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
1,500.00			

Indicator 3.3 Area of natural grass and shrublands restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 3.4 Area of wetlands (incl. estuaries, mangroves) restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
4316.00	0.00	0.00	0.00

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
4,316.00			

Indicator 4.2 Area of landscapes that meets national or international third party certification that incorporates biodiversity considerations (hectares)

Ha (Expected at PIF)

Ha (Expected at CEO Endorsement)

Ha (Achieved at MTR)

Ha (Achieved at TE)

Type/Name of Third Party Certification

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)

Ha (Expected at CEO Endorsement)

Ha (Achieved at MTR)

Ha (Achieved at TE)

Indicator 4.4 Area of High Conservation Value Forest (HCVF) loss avoided

Ha (Expected at PIF)

Ha (Expected at CEO Endorsement)

Ha (Achieved at MTR)

Ha (Achieved at TE)

Documents (Please upload document(s) that justifies the HCVF)

Title

Submitted

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

Number (Expected at PIF)

Number (Expected at CEO Endorsement)

Number (Achieved at MTR)

Number (Achieved at TE)

Female

35,718

Male

13,648

Total

49366

0

0

0

Part II. Project Justification

1a. Project Description

1) Watershed management problems, root causes and barriers

A) Land degradation in Nepal

The UN Convention to Combat Desertification (UNCCD) defines land degradation as the “reduction or loss of the biological or economic productivity and complexity of rainfed cropland, irrigated cropland, or range, pasture, forest and woodlands”. Land degradation has become a major problem for both environmental sustainability and poverty reduction across the world and in dryland areas in particular. Nepal is naturally highly vulnerable to different forms of mass-movement and soil erosion on mountain slopes and flooding and siltation in the low-land area. The major reasons for such vulnerability are highly rugged mountainous topography, active tectonics and highly concentrated Monsoon precipitation. Agriculture Development Strategy (2015-35) has recognised that about 3.2 million ha of the total land is degraded that needs to be restored^[1]. The status indicates that out of 5.828 million hectare of forest land, 36 percent is degraded, out of 2.969 million hectare of agriculture land, 10 percent is degraded and out of 1.75 million hectare of pasture land, 37 percent is in degraded status. The breakdown of land degradation is presented in the following table. It is often reported that the situation is further worse in the watersheds of major river basins; however the detail breakdown is not available.

SN	Land Use Category	Degraded Area (m ha)	Total land area (m ha)	Percentage of degraded land
	Forest (poorly managed)	2.100	5.828	36.02
2	Agriculture (poorly managed slopping terraces)	0.290	2.969	10.00
3	Pasture/rangeland (degraded)	0.647	1.75	37.00
4	Areas damaged by floods and landslides (1984-2003)	0.106	11.551	0.92

5	Forest encroachment	0.119	5.828	2.04
	Nepal	3.262	11.551	28.24

Government of Nepal (GoN) decided to participate in LDN TSP on 6th March 2016 and committed to set national voluntary LDN targets. The GoN, as a party to the UNCCD, launched LDN TSP at the workshop held in Kathmandu on 30th January 2017. For setting the LDN baseline, the LDN working group agreed to use default data as provided by the LDN TSP. The details of the sources of data were provided in the methodological note shared by the GM/UNCCD. As per the default data, there was a decline in forest area with declining productivity whereas for shrubs, grasslands and sparsely vegetated areas and cropland/agricultural land, there is gain in the area but decline in productivity[2]².

Nepal will implement the Agriculture Development Strategy (ADS 2015) which has outlined broad strategies and flagship programmes for agricultural and related sectors in Nepal and the Forest Sector Strategy and National Biodiversity Strategy and Action Plan (NBSAP), 2014.

Based on the land degradation data and degraded watershed area of Nepal, the LDN hotspots of Nepal were identified representing seven river-basins namely 1. Ghuari; 2. Burhi-Gandak; 3. Lakhandei; 4. Kali Gandaki/ Seti/Marsyangdi; 5. Karnali, 6. Seti/Karnali/MuguKarnali; and 7. Karnali.

As envisioned by the LDN Target, government will develop the transformative projects based on the current LDN baseline and identified degraded areas to reduce the formidable pressure on land, by maintaining a state of health and productivity of the lands. Furthermore, through LDN targets Nepal will aim to address SDG 15 through activities such as poverty reduction, soil and water conservation, and sustainable use of natural resources climate change adaptation and mitigation and livelihood improvement. It is in line with the LDN target, the Ministry of Forests and Environment and NDA/Ministry of Finance requested IUCN to develop a proposal for the restoration of degraded Watershed of Lakhandei watershed that covers Sarlahi and Sindhuli districts. This proposal is based on this decision.

B) General background of the Lakhandei watershed

Lakhandei watershed (LWS) - Lakhandei River and its Tributaries: Lakhandei river originates from Siwalik hill of Sarlahi district at an elevation of 820 meters above the sea level and meets the Bagmati river at Katra of Muzaffarpur district, India. The length of the river channel in Nepal is 68.35 km. Watershed area of Lakhandei river covers 317.7 km² out of which 107.3 km² (33.7%) falls in Chure, 57.1 km² (18%) falls in Bhabar and 153.3 km² (48.3%) falls in Terai areas with 68.35 km length of the main river channel[3]³. Chure hills of Lakhandei river basin (LRB) are also used by the local inhabitants of the watershed as well as by the farmers of Marin Rural Municipality 3, 4 and 5 of Sindhuli district. In Sarlahi districts, Lalbandi Municipality 12, 13 and 14 are along the LRB. Hence Lakhandei riverbasin dagradation and management in this proposal refers to Lalbandi Municipality 12, 13 and 14 of Sarlahi district; and Marin Rural Municipality 3, 4 and 5 of Sindhuli district.

The upper LWS is situated in Siwalik hill which covers 31,773.5 ha land. Geologically, the LWS is divided into 4 major parts such as the upper Siwalik with 8,995.27 ha (28.31%), the middle Siwalik with 2,263.61 ha (7.12%), the lower Siwalik with 1,918.58 ha (6.04%) and recent deposit and Terai plain areas with 18,596.1 ha (58.53%). The upper, middle and lower Siwaliks are composed of conglomerate and boulder, sand and silt beds, medium to coarse grained sandstone and mudstone and fine grained greenish sandstone and siltstone with mudstone, respectively. This region is very fragile and highly sensitive to water erosion. Forests of Chure and Bhabar range of Lakhandei river basin (LRB) are heavily degraded and are sparse and in poor condition. Soil and gravel eroded from the upper, middle and lower Siwaliks during rainy season are deposited in recently deposited Bhabar and plain areas. The annual sediment yield of the Lakhandei River is estimated as high as 178,000 cubic meters per year (Adhikari, 2013). Terai belt of Lakhandei river greatly suffers from flooding during torrent rainy days in monsoon season.

The upper Lakhandei watershed comprises 131.7 km², in which 89.7 percent lies at Chure hills. The upper watershed of the river is 36 kilometers far from the district headquarter, Malangwa. Its elevation ranges from 80 meters to 820 meters from the mean sea level. Partially, it covers 8 Municipalities of Sarlahi district namely Lalbandi, Hariyon, Haripur, Barahathawa, Kabilasi, Chakraghatta, Kaudena and Malangwa.

There are 6 main tributaries of Lakhandei River which are Daieni khola, Matar khola (Hattisude), Narayan khola, Bahuni khola, Atrauli khola and Chapini khola. The Chapini khola join Lakhandei River just below the East-west highway. Atrauli khola and Chapini khola are located in Hariwan Municipality and other tributaries are located in Lalbandi Municipality. These tributaries do not have perennial source of water and therefore, water flowing is seen only during rainy seasons. However, change in rainfall pattern with some torrent rainfall due to the effects of climate change have resulted in landslides in the upstream —degraded Churia hills, and sedimentation and heavy flooding in downstream. The river water hidden under deposited sediment debris in midstream again become visible in the downstream of the East-west highway.

Landuse: Land of Lakhandei watershed is used for agriculture, forest, shrub-lands, grass/meadow and river bed/water etc. Crop land is 58.2 percent followed by sparse forest (18.1%), degraded forest (13.9%), dense forest (2%) and others (7.8%). As presented in the Table below, the land use of Lakhandei watershed areas. Forest of Chure and Bhabar range of Lakhandei river basin was sparse with poor condition. Several patches of shifting cultivation as well as landslides were also observed in Churia hills resulting massive soil erosion during rainy season creating sedimentation and flooding problems in mid and downstream areas of the watershed. Holding is small and fragmented, which was 0.69 ha per household.

The major livestock of the watershed are cattle, buffalo, goats and sheep, pigs and poultry. In 2012, there were 6,905 cattle, 5,654 buffalo and 31,445 goats and sheep in Lakhandei watershed[4]⁴. The main grazing areas of these animals are forest, shrub lands, range lands and community grazing areas around the village. Free and open grazing is common in the Chure hills following sedentary herding systems in which ruminant livestock such as cattle, buffalo, goat and sheep etc make daily grazing in forests or range lands or community grazing lands, and return in cattle shed or paddock at every evening. However, after August month dry animals live in forests for up to 1 month. Livestock of Hariharpur Gadhi -7 and 8, and Marin- 3, 4 and 5 wards of Sindhuli district are also grazed in this watershed area. The sedentary livestock population consists of working oxen, dry cows, dry buffaloes, goats and sheep etc.

Population: There were 19,752 households in 2011 census out of which 1,856 households were in Chure, 3,117 households were in Bhabar region, and the rest (14,779) of the households were in Terai region. The population of the Lakhandei River watershed areas is estimated to be 139,016 with 52.1:47.9 male:female ratio[5]⁵.

The major ethnic groups of the watershed include Bhramin, Chhetri, Madhesi, Dalit and indigenous communities.. In the upstream - Tamang, Magar, Dalit, Newar and Bhramin and Chettri are in majority, while Yadav, Dalit, Koiri, Muslim, Teli, and Tharu are in majority in the downstream of the watershed. The population density of Chure, Bhabar and Terai was respectively 194, 608 and 543 persons per km². Higher population density in Bhabar region have extremely high pressure on natural resources of the Siwalik hills resulting upstream environment degradation in Lakhandei watershed of Sarlahi district.

Majority (>68%) of the users of the Churia hills of Lakhandei river basin both in Sarlahi and Sindhuli districts are Tamang, Magar, Majhi, Newar and disadvantaged communities. In Bhabar and Terai regions, the population of ethnic and disadvantaged groups is lower with 45 percent and 28 percent, respectively.

As most of the people in Chure hills were migrated from neighbouring hill districts, more than 90 percent of them are living without land ownership certificate. They have small and fragmented land holding – about 0.69 ha per household.

Livelihoods: Agriculture is the major occupation of the people living in Lakhandei watershed. Majority (69.3%) of the people are involved in agriculture followed by wage labour (27.7%) and only 3 percent in government and other services. However, majority (79.5 percent) of the total population were having food unsecured problem.

Socio-economic status: Poverty is high (56%) in the in the Lakhandei watershed. There are 38 percent households belonging to medium poverty and a mere 6 percent households falling in well-off group. Reports show that 49 percent of the total population in Lakhandei River basin were illiterate followed by 32 percent, 12 percent, 4.5 percent, and 0.5 percent of the total population who have received primary, secondary, higher secondary school and university level education, respectively. Lack of employment opportunity has led to a high rate of outmigration from the watershed.

Gender issues: Peoples of the Lakhandei watershed area reported that 85 percent of women in their communities are involved in agriculture and livestock sector. Women's contribution is therefore critical in the agriculture and livestock sectors to achieve food security. However, they generally do not have the same access to land, water, seeds, training and credit as men. In general, men perform heavy physical labour such as ploughing, levelling of terraces, threshing of rice, etc. Women are involved in tedious and time-consuming work such as weeding, harvesting and milling. More men of the upper watershed were employed outside, leaving more women in charge of the household and farms. This phenomenon, called “feminization of agricultural labour force”.

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C) Watershed restoration problems

In the Lakhadei watershed also, there has been a loss of value over time, including the productive potential of forests and agricultural lands and water. It has been accompanied by marked changes in the hydrological behaviour of the Lakhadei river system resulting in droughts during winter and summer and floods and inundation during monsoon. Land degradation (both forests and agricultural) has become a major problem for both environmental sustainability and poverty reduction in degraded Lakhadei watershed areas.

Lakhadei river originates from Siwalik hill of Sarlahi district at an elevation of 820 meters above the sea level and meets the Bagmati river at Katra of Muzaffarpur district, India. The length of the river channel in Nepal is 68.35 km. Watershed area of Lakhadei river covers 317.7 km² out of which 107.3 km² (33.7%) falls in Chure, 57.1 km² (18%) falls in Bhabar and 153.3 km² (48.3%) falls in Terai (District Soil Conservation Office, Sarlahi (2017) areas with 68.35 km length of the main river channel. Chure hills of Lakhadei river basin (LRB) are also used by the local inhabitants of the watershed as well as by the farmers of Marin Rural Municipality 3, 4 and 5 of Sindhuli district. In Sarlahi districts, Lalbandi Municipality 12, 13 and 14 are along the LRB. Hence Lakhadei riverbasin dagradation and management in this proposal refers to Lalbandi Municipality 12, 13 and 14 of Sarlahi district; and Marin Rural Municipality 3, 4 and 5 of Sindhuli district.

The upper Lakhadei watershed is situated in Siwalik hill. In this watershed, there is 31,773.5 ha land which is mainly used for agriculture, forest (shrub lands, grass/meadow) and river bed/water etc. Forests of Chure and Bhabar range of Lakhadei river basin are heavily degraded and are sparse and in poor condition.

The annual sediment yield of the Lakhadei River Basin is estimated as high as 178,000 m³ per year^[6]. The soil erosion and land degradation problems in the Chure region of the Lakhadei River are not only affecting the uplands areas of the watershed, but also affecting downstream by converting the productive agriculture lands into waste lands. The Lakhadei river in the downstream is very narrow, and therefore, flooding and water logging problems in downstream have been severe. In view of its severe flooding impact, Lakhadei river is known for flooding in Terai.

Root causes of Lakhadei watershed degradation

Degradation of watershed has stemmed from the loss of natural vegetation primarily. In the Lakhadei watershed, it was found being caused by forest degradation as well as deforestation (DFD). It has been reported that the shrub land area increased by 126% during the period of 1979-94 while forest area decreased by 24% in the same period. Higher

increase in the proportion of shrub land contiguous with continuing decrease in overall forest area gives a clear picture of the state of deforestation and forest degradation in Nepal[7]⁷. In general, the DFD is considered as the main drivers of watershed degradation. Both climatic and non-climatic factors have caused the DFD as follows.

a) Climatic factors (climate change impacts)

Climate change has resulted into decreasing number of rainy days and occasional torrent rainfall leading to “too much water during rainy season and too little water during dry season”. Landslides and gully formation are found in the upstream and floods in the plain areas during rainy days are very high in the Lakhandei watershed areas. Evapo-transpiration rate has also increased in the degraded agricultural and forest lands. Decreasing water-holding capacity of soil due to low organic matter contained in soil has contributed to increasing runoff and decreasing rate of water seepage into the soil.

The vegetation pattern of forest has also changed due to climate change. Changing composition of forest is aggravated by decreasing density of bamboo, sal (*Shorea robusta*) and Khair (*Acacia catechu*) in the forest. There has been drying out of water sources in the upstream of the watershed and low volume of water in river during rainy season. There has been heavy soil erosion, sedimentation and flooding during torrential monsoon rain leading to several disasters such as landslides, floods and inundation. Spread of invasive species and other unwanted plants has also occurred.

b) Non-climatic factors (anthropogenic impacts)

Impact of climate change on the watershed has been further aggravated by the anthropogenic factors. In the past (some 15-20 years ago), due to increased population pressure, there has been several impacts on forest. The major impacts were accorded to[8]⁸ a) high reliance on forests for subsistence use, b) illegal harvest, c) unsustainable harvesting practices, d) overgrazing, e) infrastructure development, f) resettlement, g) forest fire, h) encroachment, and i) spread of invasive species. As a result, community dependency on forest further increased thereby further degrading the forest which continued cycle after cycle until people finally started migrating, leaving the agricultural land also abandoned. The rate of land abandonment has been as high as 44 per cent in the hills[9]⁹.

In the recent past (last 5-10 years; more intensely from 2010's), Nepali youth are going abroad for the sake of employment. A total of 512, 000 active youth are estimated to enter Nepal's labour market annually[10]¹⁰. Nepal can absorb about 200,000 to 250,000 labour annually in its regular and planned economic activities. Hence, Nepal needs to create another 250,000 to about 300,000 employment opportunities annually[11]¹¹. In its recent survey report, UNDP has reported that Nepal needs to create 286,900 employment every year to keep even the current level of employment[12]¹². As Nepal could not create the required jobs in the country, more than 300,000 youth are going abroad in search of employment. Quoting the latest labour force survey, Ministry of Finance, Government of Nepal[13]¹³ (2018) has reported that unemployment rate in Nepal is 2.3 percent and under-employment rate is as high as 30 percent. Similarly, the youth underemployment rate is 35.8 percent. Currently, 1,500 Nepali youth have been going abroad daily for foreign employment. About 20% of the total household have left villages in the upstream, and about 33% of the total households have left their village temporarily with their children to work in brick factories in cities after Dashai and Tihar festivals (October). In many hill regions, outmigration for foreign employment has caused acute shortage of labour causing land abandonment leading to land degradation[14]¹⁴. The degraded agricultural lands cannot be brought to production immediately within a year or two in the case of acute national need.

Poverty and food insecurity is another factor contributing to Lakhadei Watershed degradation.- Majority (79.5%) of the total households in the watershed were food insecure as a result of which many of them have started harvesting wild food products from the forests and river banks. For example: before 30 years, there were plenty of bamboo bushes along Lakhadei river bank in the upstream. Presently, it is disappearing due to the harvesting of young bamboo shoot to prepare "Tama". As a result, there has been landslides, gully formation and stream bank cutting by flood waters in the upstream and silt deposition in midstream and flooding in the downstream.

Another important non-climatic factor is the farmers lack of knowledge, technology and financial assets to adapt to climate change.

Consequence of watershed degradation

The degradation of Lakhadei watershed has impact on specifically four major ecosystems. As a result, the livelihoods of the communities has been negatively affected. The affected ecosystems and realised consequences are summarised as follows.

On agro-ecosystem: The negative impacts of climate change are observed on food crops in terms of diseases and pests such as club root of crucifers, blight of solanaceous, rust of wheat, blast of rice and leaf spot of maize and red ants of potatoes which have become menacing leading to decreasing crop productivity[15]¹⁵. The increasing temperature and change in precipitation pattern (delayed monsoon), increased frequency, duration and intensity of droughts, and increased heat stress have significantly resulted in prolific growth of invasive alien species affecting biodiversity; changing cropping pattern and decreased agricultural production. It has also increased appearances of new insects (mosquitoes) and vectors (citrus psylla) in higher altitudes, etc.

Landslides and undercutting by rivers has destroyed productive agricultural land in the upstreams. Likewise, flooding and increased sedimentation has reduced the productive capacity of agricultural land in the downstreams. IFAD[16]¹⁶ reported that a total of 847,648 ha of agricultural crop land were lost between 1971 and 2007. Cultivation in sloping land leads to a high risk of soil erosion and landslides during the rainy season.

The delayed rainfall (lack of rain in April-May) has negatively impacted on the maize productivity. Due to increasing drought periods, legume crops are also disappearing compared with 20-25 years ago and productivity of such crops is also reduced. Torrential rain during monsoon has eroded top soil resulting into decreasing soil productivity in the upstream and alkalisation of the soil in the downstream due to flood.

Livestock population, specially cattle and buffalo population have declined resulting into low level of farmyard manure production. On the other hand, farmers have started growing improved varieties and lost the diversity of traditional and drought tolerant varieties. The improved varieties need more manure. As a result of growing improved crop varieties in the upstream of the Lakhadei watershed using chemical fertiliser has made the soil acidic.

On forest ecosystem: The major impact is the conversion of degraded forest lands for non-forest uses thereby reducing both net forest area and natural vegetation. Other impacts include: forest degradation due to free and open grazing in community forests and uncontrolled grazing in forests, loss of biodiversity - for example: reduced bamboo, broom grass and other fodder and forage species, fragmentation of habitat due to linear infrastructure construction such as roads and hydroelectric power highways, decreasing forest products due to uncontrolled collection of forest products/overharvesting and frequent forest fire, and decreasing productivity of medicinal and edible plants due to unsustainable practices of harvesting/collection methods.

Studies have shown that to keep crop production and livestock rearing functional, certain percentage of forest needs to be maintained. Reports show that to maintain one hectare of paddy land in high hills of Nepal requires up to 50 hectares of forest and grazing land and 3.5 hectares of forest and grazing land in the midhills[17]¹⁷. It was reported during prefeasibility study by the communities that no such attention has been given by the local authorities in the LWS. The declining and degrading forest area has negatively impacted on agricultural productivity as well.

On rangeland ecosystem: Most of the impact on the rangeland is due to over grazing as a result of free and open grazing of unmanaged and unproductive livestock. Significance of pastoralism and its link with biodiversity has diminished because of breakdown of customary herding practices. There has been decrease in the productivity of rangeland products due to unsustainable practices of harvesting/collection, and there has been also growth of weeds and invasive species due to degradation of natural ecosystems.

On wetland ecosystem: There were two wetlands in Sindhuli district. Pancha Kanya lake located in Marin Rural Municipality-5, and Kunda Pokhari in Hariharpur Gadhi Rural Municipality-7. The main problems of these sites were sedimentation and eutrophication, and drought caused by climate change.

Barriers to restoration of degraded watershed (barriers to adaptation)

Due to degradation of the watershed of LRB, the LRB communities have become vulnerable to climate change impacts such as increased frequency and intensity of rain, floods, landslides and droughts. As women, Dalits (members of the lowest caste group) and poor indigenous peoples are dependent on forests, agriculture and water resources for their livelihoods, they are more vulnerable as compared to others. The project focuses on restoring the degraded watershed thereby improving the adaptive capacity of such highly vulnerable groups. There are several restoration needs to be addressed. Nevertheless, communities are facing various barriers to address their restoration needs.

There are five types of barriers identified in the LRB which impede watershed restoration.

- Information and knowledge on land management: Inadequate data and information to inform good land management decision making. Local bodies often i) have inadequate knowledge about land use changes with respect to degrading watershed and restoration needs, ii) lack or do not have adequate restoration technology, iii) find that the process of accessing technology is expensive and cumbersome, and iv) face a gap in the translation of technology into practice (education, skill).
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- Governance and rule of law: The degradation of watershed is aggravated by the impact of climate change. Communities have not been put at the heart of the restoration governance. Implementation of climate-related policy is poorly coordinated between line agencies, political transition over the past 20 years and more recently the move to federalism has created some uncertainty in terms of who has authority and responsibility for climate action. In large parts of LRB, there is a limited local level presence of key institutions, lack of land tenure security is a barrier to the reutilisation of unused and underutilized agriculture land as an adaptive mechanism, and regulatory framework and institutional structures are often impediments to conducting business and using natural resources.
- Social license: Women, indigenous peoples, Dalits, ethnic groups, disabled and others often have limited access to decision making for earning their livelihoods from land resources, and local political bodies and politicians often affect the decision in their favour thereby not seeking the acceptance of the project activities by society or the local community dependent on land resources.
- Capacity and capability: Poverty/low income levels leading to poor affordability to new technology, out-migration of youth/men leading to a lack of full utilization of land, and poor physical access (roads) leading to poor market access.
- Market and finance: Vulnerability to shocks and changes is high due to low levels of livelihood options as a result of the lack of access to finance and resources for climate change adaptation. Access to market is also difficult due to low scale of production from the restored degraded watershed. Technology and other inputs are also not easily available for climate change adaptation as a result of which farmers are constrained to adopt climate responsive new crops/varieties and techniques.. There is also lack of financial resources, lack of credit facilities and loans required for planting trees, planting improved varieties of crops (e.g., drought tolerant crop varieties), diversification of livelihoods activities, changing the timing of planting, etc. This is where the project intervention is required to ensure that the enabling environment is set in a way that it brings in finance activities that will de-risk farmers activities (inclusive finance, mobile finance / micro-insurance, etc.).

2) Baseline scenario and associated baseline projects

Baseline scenario

Nepal in, 'National land degradation neutrality (LDN) targets and measures', issued by MoFE has decided to use the global default data received from UNCCD through LDN TSP (target setting process) to assess land degradation and set baseline and targets based on the three UNCCD land based global indicators;

- Land use/land cover change
- Land productivity dynamic
- Soil organic carbon

The summary of baseline for Nepal thus derived is as follows.

- From 2000 to 2010, 118 km² of Forest area was converted to grassland, shrubs, sparsely grown vegetation and croplands
- Net land productivity of 6,263 sq km land area (4%) is already declining out of which 13% is forest land, 42% is shrub, grassland and sparsely vegetated area, and 5% is crop land
- Net land productivity of 3,693 sq km land area (3%) has shown early signs of declining net land productivity out of which 63% is forest land, 21% is shrub, grassland and sparsely vegetated area, and 15% is crop land
- Net land productivity of 11,972 sq km land is in stressed condition out of which 46% is forest land, 30% is shrub, grassland and sparsely vegetated area, and 10% is crop land
- From 2000 to 2010, the total area under crop has increased by 74 sq km

These National baseline figures for this proposed project will be used to derive the baseline during the full proposal preparation stage.

Baseline projects

Current status of the baseline projects: Many programmes and projects that are relevant to restoration of degraded watershed and climate change adaptation have been implemented or are still under implementation within the LRB. In all, there are five major regular sectoral government programmes, namely, agricultural extension, livestock extension, soil and watershed conservation and forest management. There are more than 15 relevant programmes/projects under implementation or just recently completed in the LRB districts from which many lessons and models can be customized or replicated for this proposed project. The important projects are summarized in the table below.

Project Title	Location	Implementation Period	Funding Agency	Implementing Partner	Objectives
Soil Conservation Programmes	Nationwide	Regular programme of the government	Nepal Government	Local governments	To conserve fragile soil resources in a way that is integrated with watershed management; and conserve land productivity.

Government's regular Forest management programme	Nationwide	Regular programme of the government	Nepal Government	Local and provincial governments	Effective Programmatic Forest Management
Afforestation and Enhancing Carbon Sequestration	Nationwide	Regular programme of the REDD+ Cell of the government	REDD+, WB's Forest Carbon Partnership Facility	Local governments and forest user groups (FUGs)	To carry out readiness activities, implement emission reduction programs and demonstrate results related to REDD+ in Nepal
President Chure-Terai Madhesh Conservation Programme	Chure-Terai Madhesh	Regular programme of the government	Nepal Government	Local governments and forest user groups (FUGs)	<ul style="list-style-type: none"> - To mitigate the damage likely to be caused by climate change and natural disasters in the Chure hills and Bhavar region - To mitigate the damage likely to be caused by the water-induced disasters and to continue the flow of the environmental services - Maintain accessibility in the household use of energy, and to increase the accessibility of the residents
Water Induced Disaster Prevention	Nationwide	Government's regular programme	Government of Nepal	Local governments	To prevent water induced disasters
The Agriculture management information system	Nationwide	Regular programme of the government	Nepal Government	Local governments	To promote agriculture as a source of livelihood and employment adapting to climate change impacts
Livestock Extension Programme	Nationwide	Regular programme of the government	Nepal Government	Local governments	To promote livestock as a source of livelihoods and employment adapting to climate change impacts

The Agriculture management information system: Role of ICT for Climate Smart and Sustainable Agriculture	Nationwide	5 years (2013-2018)	World Bank (6 million USD)	Ministry of Agriculture and Livestock development	To provide critical and timely agro-climate and weather information to farmers in order to increase productivity and reduce losses from meteorological and hydrological hazards
Prime Minister Agriculture Modernization Project	Nationwide	10 years (2017-2027)	Government of Nepal About US\$ 1.307 billion	Ministry of Agriculture Development in collaboration with other ministries	Establishing special areas of major crops Enhance competitiveness through value addition in exportable agricultural commodities Create employment opportunities by making agriculture dignified and profitable business Ensure flow of effective services through functional coordination of multi-stakeholder agencies
Micro Enterprise Development Program for poverty Alleviation (MEDPA):	Nationwide	Regular programme of the government (after the termination of UNDP supported MEDEP in 2018)	Government of Nepal (nearly annual US\$ 109 million)	Ministry of Industry	To create and develop microenterprises for poverty alleviation of the target group
Churema aasrit tatha churebat prabhabit tallo tatiye ra upallo tatiye ati bipannghardhuriko jibikoparjan sudhar karyekaram	Haripur-9 Pidari, Harion, Patherkot and Lalbandi	Till now	NRs150 million Rastrapati Chure TaraiMadhesh Conservation Board	Mobilization by Hemanti Nepal	To support livelihood improvement
Churia Livelihood Improvement Project	Patherkot, Netragunj, Atrauli, Saspur	2009 to 2013	Care Nepal	BWSN	To support livelihood improvement
Chure jaladhar management program	Haripur , Netragunj, Patherkot		Rs 1 million	Jagan Abhiyan Nepal	To conserve Chure
Churia Livelihood Improvement Project	Marin R/M	FY 2074/075	Rs 30 million	Rastrapati Chure Program	To raise awareness and support livelihoods

Leveraging potential: From the above mentioned current projects being implemented recently or in implementation, this proposed project is envisioned to draw several lessons and leverage from these best practices. More specifically, this project will be built upon the following practices of those projects.

- Raising awareness of the community on drivers of watershed degradation and its consequences
- Developing a package for livelihood improvement
- Establishment and operation of weather information MIS
- Planning for mitigating climate change impacts and minimizing natural disasters
- Afforestation in the degraded forests
- Integration of watershed management with land productivity conservation
- Promoting agriculture and livestock as a source of livelihood and employment adapting to climate change impacts
- Establishing climate responsive special commodity zones based on market demand
- Effective forest management for forest-based enterprise development
- Create and develop local resource based micro-enterprises
- Establishment and operation of functional coordination mechanism of multi-stakeholders

Gaps that this project aims to fill: There are several gaps in watershed restoration. Nevertheless, this project aims to fill the following in particular.

- Lack of/weak system for monitoring land degradation within the watershed
- Poor community participation in watershed management
- Weak policies to supporting sustainable watershed management
- Best practices in sustainable land management and watershed restoration not assessed
- SLM practices as watershed restoration options are not yet validated for replication
- Market based options for SLM product based value chain development not assessed
- Communities are not capacitated on SLM product based value chain development
- Market-based incentive mechanism not yet developed for watershed restoration

- Economic, social and environmental benefits generated by SLM interventions not assessed
- Youth are not well motivated and engaged in key landscape restoration activities

3) Proposed alternative scenario with a description of outcomes and components of the project

As significant efforts are needed to respond to drivers of watershed degradation and unsustainable land-use practices in LRB, build ecological and socio-economic resilience and diversify local livelihoods, it is proposed to assess and identify opportunities for restoring the degraded watershed and implementing sustainable land management practices in the LRB. Three scenarios were found pertinent as presented in the table below.

<u>Baseline scenario</u>	<u>Proposed alternative scenario</u>	<u>How this project can contribute to the progress toward proposed alternative scenario</u>
Weak institutions (especially local level) for participation in planning and implementation of landscape management	Landscape management institutions and support mechanisms strengthened and capacitated to accelerate the progress in achievement of land degradation neutrality target	Participatory and multi stakeholder SLM and landscape restoration planning mechanisms to develop landscape management plans including capacity development at national, provincial and local level Capacitated local government, civil society, landscape user groups and other stakeholders in land use planning and implementation mechanisms for SLM and landscape restoration.
Land management practices are not in line with SLM or improved management principles	Landscape management mechanisms are strengthened to adopt and mainstream SLM and improved landscape management and is progressing towards land degradation neutrality and resilient rural livelihoods	Best practices and mechanisms in sustainable land management models will be piloted, and documented, mainstreamed for wider uptake.
Farmers/landscape dwellers lack capacity and resources to invest in landscape restoration and SLM practices and associated value chain and enterprises	Local natural resource management/ community-based management institutions such as CFUGs, farmers' groups, will be empowered, through a clear mandate and financial and technical resources, to lead the design and implementation of range management principles envisioned in SLM at the local level	Implement the SLM and landscape restoration options and associated models

Landscape stewardship revitalized and capacitated for landscape restoration and improved livelihood	Capacity building of rural community to motivate and incentivize local communities to sustainably manage and restore landscape
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There are four components each leading to one outcome as follows.

First component deals with restoration governance. It leads to an outcome "strengthened governance of landscape management institutions and support mechanisms". This outcome focuses on establishing an information system for watershed degradation and restoration; establishing community-based mechanism for planning, monitoring, and maintenance of watershed; and establishing knowledge management system for degraded watershed restoration. This component will consider gender and IPs rights while designing information and knowledge management systems.

Second component focuses on scaling up best practices of SLM. It leads to an outcome "scaled-up sustainable land management options for degraded watershed restoration". This outcome has focused on identification, validation and documentation of best practices in sustainable land management and landscape restoration models; demonstration of validated SLM best practices at selected sites; and rolling out of the successfully demonstrated SLM practices at wider scale along the LRB.

Third component deals with SLM investments. It leads to an outcome "increased investment by farmers and local entrepreneurs (including small, medium and large businesses) in degraded watershed restoration through SLM practices and associated value chain development". This outcome focuses on capacitating farmers and local entrepreneurs on SLM product based value chain development in eco-tourism, aquaculture and dairy products, agriculture and forestry; extending financing options to farmers and local entrepreneurs for SLM product based value chain development; and establishing incentive mechanism for financial institutions to extend their savings and credit mobilisation services to farmers and local entrepreneurs.

Fourth component deals with restoration stewardship in the LRB watershed. It leads to an outcome "revitalised rural communities sustainably managing watersheds for social, economic and environmental benefits". This outcome focuses on assessing economic and environmental benefits generated by SLM interventions; and motivating and engaging youth in key landscape restoration activities such as agroforestry.

In all the components, FPIC will be obtained in designing and implementation of the project interventions.

4) Alignment with GEF focal area and/or impact program strategies

The proposed initiative directly addresses the strategic areas of the GEF in land degradation neutrality, more specifically; it addresses the proposed GEF-7 Land Degradation Focal Area that seeks to achieve the following objectives: no. 2, “Create an Enabling Environment to Support Voluntary LDN Target Implementation”. The focus will be to sustain and rebuild productive areas, mitigate the effects of drought, increase resilience and prevent migration. The project has emphasized on specific contexts in drought prone and/or fragile areas to address drivers of fragility and land and water insecurity, to reverse resource pressures, enhance or restore governance and rebuild natural resource based livelihoods and jobs. The project has tried to address the challenge of increasing evidence of the complex interactions between climate change, food and water insecurity, extreme events – such as e.g. prolonged and repeated droughts, torrential rainfall during rainy seasons resulting in soil erosion, landslides, sedimentation and flooding –, and their link to fragility, armed conflict and migration.

In the climate change front, this concept note addresses, GEF’s aim to 1) Promote Innovation and Technology Transfer for Sustainable Energy Breakthroughs, 2) Demonstrate Mitigation Options with Systemic Impacts, and 3) Foster Enabling Conditions for Mainstreaming Mitigation Concerns into Sustainable Development Strategies. In this concept note, these will be achieved through SLM and enhanced resilient livelihoods through enhanced productivity of forest, agriculture, rangeland and wetland.

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

In order to overcome the barriers in the restoration of degraded watershed of LRB, there are additional work to be undertaken incremental to the government's existing relevant development programmes planned to be carried-out in the LRB. Some of such work to overcome the barriers include awareness raising of community people, diversifying livelihood options, changing land use practices, conserving LRB watershed through the adoption and scaling up of SLM, investing in SLM and value chain development such as agroforestry engaging youth and local people.

The project is requesting GEF incremental assistance to achieve the long term solution of addressing Lakhadei watershed degradation in Sarlahi district of Province 2 and its users of Sindhuli district of Province 3 of Nepal. The alternative scenario funded by GEF and co-financing resources is expected to result in key modifications to the baseline scenario that will generate global environmental benefits via sustainable land management and will contribute in the achievement of land degradation neutrality. As stated in the

Final Report of the Land Degradation Neutrality Target Setting Programme in Nepal (2018), LRB is one of the priority LDN watershed in the country and hence will address the country's top priority in terms of LDN.

6) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

Through the LDN TSP, the GoN has set voluntary targets to achieve land degradation neutrality by 2030 that will contribute towards SDG target 15.3. the GoN will put efforts in developing a land degradation-neutral world through up scaling good practices for soil conservation and watershed management as identified under sustainable land management (SLM) and developing appropriate technologies for the conservation of land and natural resources.

The alternative scenario for which funding is being requested from GEF and co-financing resources are being provided is expected to result in key modifications to the baseline scenario that will generate global, national, and local environmental and socio-economic benefits by creating the enabling environment for land degradation neutrality. The project objective is to strengthen institutions and mechanisms to accelerate progress in the achievement of land degradation neutrality in Nepal. The benefits will also be generated through piloting and scaling of SLM options in the Lakhandei watershed of the Province 2 Sarlahi district and its users from Sindhuli district for productive landscapes to deliver on ecosystems benefits to both livelihoods and biodiversity. To achieve the project objective, and address the barriers discussed, the project's interventions have been organized into four outcomes, each with several outputs. The global environment benefits that project will contribute are; improved provision of agro-ecosystem and forest ecosystem goods and services; mitigated/avoided greenhouse gas emissions and increased carbon sequestration in production landscapes; conservation and sustainable use of biodiversity in productive landscapes; and reduced pollution and siltation of international waters.

7) Innovativeness, sustainability and potential for scaling up

Innovativeness

This project is innovative in the sense that it aims to address the root causes of the watershed degradation rather than attempting to protect the Lakhandei river flood affected people and their livelihoods in the plain. It aims to restore the degraded watershed and ensure that the watershed land area is fully covered by vegetation, slope is stabilised, and soil fertility is maintained such that the declined land productivity is reversed and people in the upstream return to their community and bring back the abandoned agricultural lands in to production. Likewise, the intensity and severity of floods in the downstream is minimised such that the increasing sedimentation and alkalinisation of agricultural lands in the downstream is checked. This requires an integrated approach in watershed restoration. The following approaches taken by this project will be explicitly an innovative and transformational approach in the restoration of degraded LWS.

- a) Contribute to poverty reduction through environmental-friendly local employment creation and income generation by soil and water conservation in agriculture and forestry by applying nature-based solutions
- b) Identify and validate a cost-effective watershed restoration technique for improving reforestation projects from an economic, environmental and technical point of view
- c) Developing Strategic Investment Framework for Sustainable Land Management (CSIF-SLM) in partnership with the private sector
- d) Put communities at the heart of the restoration governance
- e) Strengthen forest-farm producer organisations for the development of locally adapted options for agriculture in dry marginal areas alongside an integrated approach to SLM
- f) Repair ecosystem functioning by enhancing patches of vegetation that contribute to the regulation of water, materials and nutrient fluxes
- g) Mainstreaming forest landscape restoration in the policy framework of the provincial and local governments

Sustainability

Technical sustainability - This project will start with raising awareness of the community and the local government on land degradation, biodiversity conservation, and climate change issues, and their impacts in enhancing resilient livelihoods. Awareness raising will be followed by capacity development of local government and communities to mainstream the tested and piloted SLM approach. With the high level of awareness and enhanced capacity of the local government and community in adopting the SLM approach, the development outcomes will continue even after the project.

Economic sustainability - This project aims to establish a sustainable financial mechanism for the management and sustainability of the dryland ecosystem services in the context of land degradation, climate change, and biodiversity conservation. In addition, the project interventions are designed to diversify sustainable livelihood options that contribute to enhance household incomes through agricultural practices, sustainable community forest management and livestock activities.

Social sustainability - This project will give due priority to gender and social inclusion in all activities wherever applicable. As a result of increased income and other benefits, communities will have increased access to better education, health and community services. They will have increased participation in community decision making thereby enhancing good governance practices.

Potential opportunities for scaling-up of the project: It is envisioned through this project that the MOFE and MOALD will gradually internalise and incorporate the proposed approach in the government's programmes through annual planning processes. Land-use planning and implementation guidelines and capacity building programmes will help to scale-up in other landscapes across the country.

Potential for Scaling-up

- It is expected that this project will establish a model for the restoration of degraded watershed for improved livelihoods and climate change adaptation.
- The project will build technical capacity of stakeholders and support for local institutions for stewardship and sustainability that is likely to enable scaling up of successful interventions

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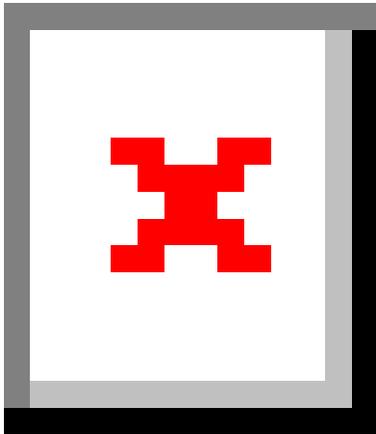
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1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

(In case the map does not show in the portal, it is attached to the submission in a separate file).

The project will be working in Wards 12,13 and 14 of Lalbandi Municipality of Sarlahi district and Wards 3, 4 and 5 of Marin Rural Municipality of Sindhuli district. The exact location of the project intervention will be identified in consultation with the communities and the Municipality authorities during the preparation of full proposal.



2. Stakeholders

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

Indigenous Peoples and Local Communities Yes

Civil Society Organizations Yes

Private Sector Entities Yes

If none of the above, please explain why:

In addition, 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.

The types of stakeholders and their their expected roles and means of engagement is presented in the table below.

Stakeholder Group	Name of Organization/Community	Expected Role in the Project
Local and indigenous community groups, including women's groups	Nepal Federation of Indigenous Nationalities (NEFIN)	Be a member of the Project Steering Committee and ensure the effective participation of indigenous groups in project activities at local level
	Federation of Community Forestry Users Nepal (FECOFUN)	Be a member of the Project Steering Committee and ensure coordination of project initiatives with existing community forest users groups (CFUGs) and the participation of CFUGs where appropriate
	Dalit Alliance for Natural Resources (DANAR)	Be a member of the Project Steering Committee to represent the voice and concerns of the under-privileged in natural resource management
	Nepal Farmers Group Federation (NFGF)	Be a member of the Project Steering Committee to represent the voice and concerns of the under-privileged in natural resource management
National and regional NGOs	Community Self Reliance Centre (CSRC)	Represent the concerns of landless and underprivileged resource less communities dependent on natural resources on land tenure and access and benefit sharing
	Himalayan Grassroots Women's Natural Resource Management Association (HIMAWANTI)	Represent the concerns of women in natural resource management
	Relief Nepal	Represent the local concerns of the disadvantaged communities in Sarlahi and Sindhuli
International organizations	International Centre for Integrated Mountain Development (ICIMOD)	Collaborate in information sharing regarding climate change and natural disasters in the projects districts
Research institutions	Tribhuvan University Central Environment Division	Contribute in research on ecological functions, ecosystem services
Private sector	Agriculture Enterprise Section (AEC) -Federation of Nepalese Chambers of Commerce and Industry (FNCCI)	Contribute in capacity building of community members, and participate in developing the knowledge sharing network, ensuring the involvement of its own networks of entrepreneurs
	Federation of Cottage and Small Industries (FNCSI)	Contribute in capacity building of community members, and participate in developing the knowledge sharing network, ensuring the involvement of its own networks of entrepreneurs

	Cooperatives	Contribute in arranging finance and managing product market
Government institutions	Ministry of Forests and Environment (MoFE)	Executor Chair the Project Steering Committee and provide overall guidance for the project as national focal point for the UNCCD
	§ Relevant Division, MoFE	Member of Project Steering Committee Focal executioner of the project Participate in monitoring the project's progress
	Ministry of Agriculture and Livestock Development (MoALD)	Co-Executor Be a member of the Project Steering Committee and coordinate the input of MoALD departments into the project as focal point of sustainable land management
	§ Soil Division, MoALD	Member of Project Steering Committee Focal executioner of the project Participate in monitoring the project's progress
	§ Livestock Division, MoALD	Member of Project Steering Committee Focal executioner of the project Participate in monitoring the project's progress
	Ministry of Industry, Commerce and Supplies	Be a member of the Project Steering Committee and contribute to coordinating activities at the district and local levels
	Ministry of Federal Affairs and Local Affairs	Be a member of the Project Steering Committee and coordinate the input activities at the province and local levels
	Provincial Forest, Agriculture, Industry Ministries and Divisions	Provinces 2 and 3
	Local Government Units	Sarlahi and Sindhuli Districts
Media	National Television Station	Contribute to broadcasting videos at national level

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).

The project will give priority to gender and social inclusion provisions incorporated in all aspects of planning and implementation of activities. The project will ensure the involvement of women, including indigenous women in decision making regarding the identification and validation of best SLM practices and project interventions. As shown in the background information, there has been feminisation of agricultural labour force in the project site. Hence, the project will focus to ensure that women become an integral part of design and implementation as well as prioritized as beneficiaries of activities on the ground. The project aims to mainstream practical and strategic gender needs. This includes ensuring that the designed activities are culturally and socially acceptable to women. The project has made provision to include gender responsive measures to address gender gaps and promote women's meaningful representation and participation which is expected to contribute to women's empowerment. This will be realized through gender earmarked budgeting in which at least 40 percent of allocated budget under each component will directly address gender gap and empower women.

All the project outcome and output areas will be reinforced by gender specific activities to ensure that gender issues are duly addressed. Women and women's groups will be actively engaged by the project to ensure their proactive role in livelihood opportunities and to strengthen their capacity to participate confidently in activities. The project aims to cover 65% women as direct beneficiaries and 60% women as indirect beneficiaries.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes

closing gender gaps in access to and control over natural resources; Yes

improving women's participation and decision-making; and/or Yes

generating socio-economic benefits or services for women. Yes

Will the project's results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Will there be private sector engagement in the project?

Yes

Please briefly explain the rationale behind your answer.

Collaboration with the private sector: The major private sectors that project will engage are Agriculture Enterprise Section (AEC) -Federation of Nepalese Chambers of Commerce and Industry (FNCCI), Federation of Cottage and Small Industries (FNCSI), and Cooperatives including producers' cooperatives and savings and credit cooperatives.

The proposed initiative will build capacity of the private sector and in the process will engage with local financial institutions and cooperatives on both farm and non-farm enterprises and its market value chain through its 5Ps (pro-poor public private partnership). This will promote resilient livelihoods; the options will be a range of economic activities based on ecosystem services such as eco-tourism, aquaculture and dairy products, agriculture and forestry. Through engagement with the private sector, and setting up the enabling environment and incentive structures to engage them, the project will also pave the way for a much greater scale up and replication.

Facilitation for increased private sector investment in LDN-attainment, biodiversity conservation and climate change adaptation in the long term: The proposed project will collaborate with private firms and institutions to collaborate to promote dryland landscape ecosystem based enterprises in both farm and non-farm sectors. The options will be prioritized based on the cost benefit analysis. Private sector contributions will also come through their contribution in the development of land use planning process as a member of the project multi-stakeholder forum. They are expected to participate in identification and piloting of productivity enhancement, including through financing or direct investment.

The collaboration with private sector will be focused on the promotion of value chain development in eco-tourism, aquaculture and dairy products, agriculture, forestry and agroforestry in particular. Value chain development with private sector will be focused to create local environment friendly job opportunity and generation of income.

5. Risks

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

This proposal builds on the successes of the government's programme on watershed management and soil conservation. This proposal follows the sustainable land management approach linking upstream and downstream. Hence, many potential risks associated with project implementation are mitigated through the Ministry of Forests and Environment's (MOFE) programme monitoring systems as well as strong technical oversight.

In the preliminary study, the following risks were identified.

- Nepal has just entered into a federal system of governance. There are certain acts and regulations to be amended under the new constitution to harmonise the authorities and responsibilities between the three tiers of government in the new federal system regarding river basin management. It might take some time to get such regulations and operational guidelines in place. As a mitigating measure, the project will strengthen climate adaptation by supporting policy development and awareness-raising. The project will also identify and support champions at all levels, from the public and private sectors.
- Insufficient capacity to support emerging implementation challenges - the newly formed provincial and local governments are not yet fully equipped with required human resources and technical capacity. In order to mitigate this risk, the project will build the capacity of a range of institutions at different scales and engage local communities.
- Securing government and private sector investment in SLM - government sector budget allocation is more on direct impact infrastructure development with short-term plans; and the level of awareness in the private sector on SLM is at a rudimentary stage due to which it has not seen scope in investing in SLM and climate change adaptation. As a mitigating measure, the project will involve partners in developing and deploying financing and risk mitigation instruments that demonstrate the potential for climate adaptation to yield a high return on investment.
- Conflict between communities and governments (local, provincial) over land use and natural resource planning may hamper implementation. Instability, conflict, and/or tensions may then constrain project implementation. In order to mitigate this potential risk, the project will continue collaboration and consultation with communities and provincial and local governments through equitable sharing platforms and maintaining objectivity.
- Torrential rains, landslides and flooding during rainy season and longer drought during winter and summer may affect the project implementation on time. These are climate change risks for which the entire project is designed to enhance resilience of the LRB and its watershed.

Detail on the category of risk, probability of occurrence, and potential impact will be analysed during full proposal development. The main risk factors will be described together with identified mitigation measures. Building on the lessons learned and consultation with the government, project will invest in community mobilization as well as capacity building for communities and officials to promote engagement and appropriate refinement of project interventions during the implementation phase.

Risk mitigation measures including capacity building, strengthening institutions, regulatory frameworks and monitoring mechanisms will be incorporated.

6. Coordination

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

The Ministry of Forests and Environment's (MoFE) will serve as the Executing Agency for the proposed project. As per the request of the MOFE IUCN Nepal will act as the project's technical assistance provider. The MoFE identified Joint Secretary will serve as the National Project Director.

A Steering Committee will guide and oversee the proposed project's implementation. MoFE will chair the Project Steering Committee (PSC). The other members of the PSC will be: Ministry of Agriculture Development (MoAD), Ministry of Federal Affairs and General Administration (MoFAGA), Ministry of Finance (MoF) and IUCN. The National Project Director will serve as Member Secretary of the PSC. The PSC will meet every six months during the first year of project implementation and annually after that.

The Project Management Unit (PMU) will be located within the premises of the MOFE, or in another place the MOFE may provide. The PMU will be responsible for day-to-day management and administration of all project activities. The project will recruit a Project Field Officer. IUCN will manage the project's field offices with support from the respective district offices responsible for forests, agriculture, and livestock. There will be a District Level Project Information Sharing Meeting and Site-Level Project Information Sharing Meetings in every three months. The PMU will coordinate these district and site level meetings. The minutes of project information sharing meetings and other feedback and input will be submitted to PSC meetings through the PMU as required.

The MoFE, which will execute the proposed project, houses Nepal's National Focal Points for the UNCCD, is also responsible for implementing Nepal's NBSAP 2014-2020, and is generally responsible for coordinating all biodiversity-related initiatives in the country. The project activities will be regularly monitored by the PMU as well as periodically by the PSC.

7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assessments under relevant conventions

Yes

If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc

The proposed project will contribute to the national policies and initiatives as follows:

National Adaptation Programme of Action (NAPA) (2010): NAPA has prioritized adaptation project profiles and long term adaptation strategies in key vulnerable sectors. This proposal directly contributes to the objectives of combined project profile 1, 2, 3, 5, 7, 8 and 9. Amongst which it will directly contribute in achieving the goal of project profile 1 and 7, (which are ‘Promoting Community based Adaptation through Integrated management of Agriculture, Water, Forest and Biodiversity Sector’ and ‘Ecosystem Management for Climate Adaptation’) both of which aims to strengthen resilient capacity of communities and ecosystems.

National Framework on Local Adaptation Plan of Action (LAPA) (2011): LAPA framework comprises climate resilient technologies and practices. The project will work synergistically with the implementation of Local Adaptation Plan of Action at local level by integrating SLM approaches and principles in adaptation initiatives of Municipality plans and on-going work of Nepal government.

Climate Change Policy (2010): The proposed initiative considered the policy focus proposing to strengthen the resilience of the communities by strengthening resilience of ecosystems and communities. The CCP (2011) goal is to improve livelihoods by reducing the impact of degrading land, adverse impacts of climate change, and proposed its objectives to implement climate adaptation-related programmes and enhance the climate adaptation and resilience capacity of local communities for optimum utilization of natural resources and their efficient management.

National Biodiversity Strategy and Action Plan (NBSAP) (2014-2020): This initiative will contribute in achieving the NBSAP 2014-20 goals: Climate Change Strategy A: Adaptation and mitigation of the impacts of climate change on biodiversity Strategy A (CCA2-CCA5) and Strategy B: Enhancing the resilience of ecosystems, species and human communities to climate change impacts (CCB1).

National Strategy for Disaster Risk Management in Nepal (NSDRM) (2009): With the broader national vision of making “Disaster-resilient Nepal”, Government of Nepal developed the National Strategy for Disaster Risk Management in Nepal (NSDRM) on October 11, 2009. The National Strategy for Disaster Risk Management aims to reflect the paradigm shift towards enhancing disaster resiliency as part of the fulfilment of the basic right of the people. It also expresses the desire of the people and government of Nepal to reduce disaster risks to an acceptable level for safeguarding their lives, properties, development investments, cultural heritage as well as to mitigate the adverse. This initiative also supports the aims of National Strategy for Disaster Risk Management in Nepal.

Agriculture Development Strategy (ADS) (2015): ADS has clearly noted that there is 3.2 million hectares of degraded land in Nepal, out of which it aims to rehabilitate 1.6 million hectares within the time frame of ADS, i.e., by 2035. This project is very much aligned to this aim.

Forestry Sector Strategy (FSS) (2015): The Forestry Sector Strategy has envisioned eight strategic pillars and identified seven key thematic areas to achieve the vision of the Ministry of Forests and Environment which aims to achieve sustainable production and supply of forest products, improvement of biodiversity conservation, watershed and ecosystem services, increased contribution to national economy, inclusive and accountable forestry sector institutions and organizations, and climate resilient society and ecosystem. This project is directly aligned with the priorities of the FSS.

Consistency with 15th Plan and SDG: The 15th Plan acknowledges the need to enhance knowledge on effect of climate change on ecosystem and biodiversity and has emphasised on promotion of ecosystem based adaptation for increasing the resilience of both communities and ecosystem. This preliminary concept note is consistent with SDG 2 – ‘End hunger’; SDG 11 – ‘Resilient cities’; SDG 13 – ‘Combat climate change and its impacts’; SDGs 14 and 15 – ‘Life below water’ and ‘Life on land’.

Nationally Determined Contributions (NDCs): Nepal has prepared its NDC in the process of implementing the decisions of the Conference of the Parties (COPs) through broad-based stakeholder consultation processes. This concept note directly addresses Nepal's NDC to maintain 40% of the total area of the country under forest cover and increase forest productivity and products through sustainable management of forests including enhanced carbon sequestration and forest carbon storage.

Forest Policy (2015): The Policy aims to base livestock quantities on the amount of fodder production and highland pasture so as to improve forest management and increase the production of fodder through community efforts. It also highlights sub-sectoral programmes relating to forests, plant resources, wildlife, biodiversity, medicinal plants, and soil and watershed conservation. According to this policy document, plantation program would be conducted in private land and community lands, and cost effective soil and water conservation and agroforestry system would be developed through action research and technology could be handed over to farmers. Soil conservation programs would be conducted adjusting forest and agriculture system for food production and food security to adapt and mitigate climate change impacts and vulnerability. Degraded national forest lands are provided as leasehold forest for agroforestry development involving private sector or individuals or group of pro-poor farmers.

Range Land Policy (2012): The condition of rangelands in Nepal is degraded due to an increasing human population, climate change, soil erosion, uncontrolled grazing, forest fire and deforestation and invasive species. The main vision of the rangeland policy is to improve the livelihoods of the rangeland dependent communities and thereby contribute

to the national economy. Major objectives are to upgrade the status of the rangelands and thereby increase its productivity, develop and promote rangeland based enterprises and conserve, promote and utilize rangeland biodiversity in a sustainable and scientific manner thereby contributing in balancing rangeland ecosystems.

The operations recommended for rangeland management involve engaging local people in conserving, promoting the use of public rangelands, scientific grazing management, developing range land infrastructures such as water source development, and trail construction and improvement in mountain regions, improving rangelands through natural and artificial reseeding, developing and expanding rangeland-based enterprises, raising awareness on the present status and importance of rangeland management and studying the contribution of rangelands to carbon sequestration.

National Agroforestry Policy (2019): It emphasize cereal crops, pulse crops and oil seed crops based agroforestry in Terail and plain areas, tree based agroforestry in Chure hills and fragile slopy areas, fruit tree based agroforestry in mid-hills, medicinal plant and herbs based agroforestry in high hills and mountain areas, fishery based agroforestry in wet lands, lakes and water source and livestock based agroforestry in unproductive hilly areas.

Chure Area Programme Strategy and Chure Conservation Master Plan (2017): Recognising the negative impacts of Chure degradation on Bhabar and Terai area, this strategy and master plan aims to conserve and sustainably manage the resources in the Chure region, and improve the ecosystem services through mitigation of 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 (including gullies) and Bhavar region; miitigaton of the damage likely to be caused by the water-induced disasters in the Chure hills, Dun and Tarai Madhesh Landscape, and to continue the flow of the environmental services; and maintaining accessibility in the household use of energy, and to increase the accessibility of the residents (especially from the Tarai Madhesh region) living far from the national forests, in the use of timber, wood and other energy resources.

Integrated Watershed Management Plan of Upper Lakhndei River (2017): The plan is focused on the prevailing issues, possible threats and underlying causes of Lakhndei river system focusing on the upper Lakhndei tributaries. The plan has included three programmes: conservation programme for physical improvement, conservation programme for social development and conservation programme for economic development. The plan envisions that the lives and properties around the upper river systems and its watershed are protected against natural hazards and vulnerability, and livelihoods of the citizens are enhanced.

8. Knowledge Management

Outline the Knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

The project will establish LRB level system for collating data and information on global best practices, lessons learned, evidence from the field and scientific knowledge on ecosystem- and community-based approaches to restoration of degraded watershed. The project will generate baseline data and establish watershed restoration knowledge sharing and learning structures within key clusters to facilitate climate resilient planning and management of degraded watershed.

The project will develop a communication and knowledge management strategy that aims to ensure the project's findings have maximum uptake to contribute to national, provincial and local policy development. Towards this aim, the strategy will involve interactive process-oriented engagement with three key groups: 1) The project community and immediate network of partners (local government, civil society, and private sector); 2) Policy and practice at local, provincial and national levels (who may support the project and scale up lessons); and 3) Wider civil society, particularly, but not only, in Nepal (who may have an interest in the degraded watershed restoration). The project will also facilitate the exchange of tacit knowledge through interaction with other knowledge clusters in the LRB

Knowledge and communication outputs will be in Nepali and English as appropriate. Wherever possible, relevant outputs will also be produced in local languages. The project will establish a management information system (MIS) in the Ministry of Industry, Tourism, Forests and Environment of Province 2. The MIS will provide a repository for a wide range of knowledge products on building the resilience of Lakhadei watershed and communities through nature-based solutions, including ecosystem-based approaches. The MIS will provide the foundation for developing knowledge products that are accessible to the public through a website, radio, television, popular media, project publications, workshops and training.

Part III: Approval/Endorsement By GEF Operational Focal Point(S) And Gef Agency(ies)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

Name	Position	Ministry	Date
Shreekrishna Nepal	OFP - Joint Secretary	Ministry of Finance	11/1/2019

ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

AS teh map does not show in the portal, it is attached as a separate document to this submission