

GEF-8 REQUEST FOR CEO ENDORSEMENT/APPROVAL

TABLE OF CONTENTS

GENERAL PROJECT INFORMATION	3
Project Summary	4
Project Description Overview	5
PROJECT OUTLINE	8
A. PROJECT RATIONALE	8
B. PROJECT DESCRIPTION	16
Institutional Arrangement and Coordination with Ongoing Initiatives and Project.....	30
Core Indicators	33
Key Risks	38
C. ALIGNMENT WITH GEF-8 PROGRAMMING STRATEGIES AND COUNTRY/REGIONAL PRIORITIES	40
D. POLICY REQUIREMENTS	43
Gender Equality and Women’s Empowerment.....	43
Stakeholder Engagement	44
Private Sector	44
Environmental and Social Safeguards	44
E. OTHER REQUIREMENTS	45
Knowledge management	45
Socio-economic Benefits	45
ANNEX A: FINANCING TABLES	46
GEF Financing Table	46
Project Preparation Grant (PPG)	46
Sources of Funds for Country Star Allocation.....	47
Focal Area Elements.....	47
Confirmed Co-financing for the project, by name and type.....	47
ANNEX B: ENDORSEMENTS	48
Record of Endorsement of GEF Operational Focal Point (s) on Behalf of the Government(s):.....	48
ANNEX C: PROJECT RESULTS FRAMEWORK.....	48
ANNEX D: STATUS OF UTILIZATION OF PROJECT PREPARATION GRANT (PPG)	53
ANNEX E: PROJECT MAP AND COORDINATES	54
ANNEX F: ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREEN AND RATING.....	58
ANNEX G: BUDGET TABLE.....	58
ANNEX I: RESPONSES TO PROJECT REVIEWS	63

General Project Information

Project Title	
Climate Resilient Transformation of Rice-based Farming and Food Systems in Central Nepal (CRAFT Nepal)	
Region	GEF Project ID
Nepal	11401
Country(ies)	Type of Project
Nepal	FSP
GEF Agency(ies):	GEF Agency Project ID
FAO	747104
Project Executing Entity(s)	Project Executing Type
Ministry of Agriculture and Livestock Development	Government
GEF Focal Area (s)	Submission Date
Climate Change	2/7/2025
Type of Trust Fund	Project Duration (Months)
LDCF	60
GEF Project Grant: (a)	GEF Project Non-Grant: (b)
8,932,420.00	0.00
Agency Fee(s) Grant: (c)	Agency Fee(s) Non-Grant (d)
848,580.00	0.00
Total GEF Financing: (a+b+c+d)	Total Co-financing
9,781,000.00	10,000,000.00
PPG Amount: (e)	PPG Agency Fee(s): (f)
200,000.00	19,000.00
Total GEF Resources: (a+b+c+d+e+f)	
10,000,000.00	
Project Tags	
CBIT: No NGI: No SGP: No Innovation: No	
Project Sector (CCM Only)	
Climate Change Adaptation Sector	

Taxonomy

Focal Areas, Influencing models, Demonstrate innovative approaches, Strengthen institutional capacity and decision-making, Stakeholders, Indigenous Peoples, Private Sector, SMEs, Individuals/Entrepreneurs, Beneficiaries, Local Communities, Gender Equality, Gender Mainstreaming, Sex-disaggregated indicators, Gender results areas, Access to benefits and services, Awareness Raising, Capacity Development, Climate Change, Climate Change Adaptation, Livelihoods, Least Developed Countries, Adaptation Tech Transfer, Climate information, Complementarity, Community-based adaptation, National Adaptation Plan, Ecosystem-based Adaptation, Climate resilience, Disaster risk management, Mainstreaming adaptation, Type of Engagement, Information Dissemination, Consultation, Participation, Civil Society, Non-Governmental Organization, Community Based Organization, Capacity, Knowledge and Research, Knowledge Exchange, Sustainable Development Goals, Food Security, Land Degradation

Rio Markers

Climate Change Mitigation	Climate Change Adaptation	Biodiversity	Land Degradation
Significant Objective 1	Principal Objective 2	Significant Objective 1	Significant Objective 1

Project Summary

Provide a brief summary description of the project, including: (i) what is the problem and issues to be addressed? (ii) what are the project objectives, and if the project is intended to be transformative, how will this be achieved? (iii), how will this be achieved (approach to deliver on objectives), and (iv) what are the GEBs and/or adaptation benefits, and other key expected results. The purpose of the summary is to provide a short, coherent summary for readers. (max. 250 words, approximately 1/2 page)

The project *Climate Resilient Transformation of Rice-based Farming and Food Systems in Central Nepal (CRAFT Nepal)* is to address climate vulnerability of smallholder farmers and reduce climate related risks of rice-based farming system. Agriculture in Nepal engages 66 percent of labour force contributing 25.83 percent to the GDP. Rice is the highest contributor (16 percent) to the agriculture GDP amongst agriculture commodities (MOALD, 2023). Climate change induced disasters (floods, droughts, erratic rainfall, heat/cold waves and disease/pests' outbreaks) are negatively affecting agriculture in the country making farmers food insecure. In addition, the rice-based farming and food systems are directly constrained by insufficient access to critical inputs and resources including quality seed materials, irrigation, agro-chemicals, mechanization, small land holdings and labour leading to low yield. Underdeveloped value chains, lack of technical know-how and unavailability of climate resilient technology suitable for their specific location at the right time are other problems. Rice being the main staple, increasing the productivity of rice-based cropping system is needed to sustain the livelihoods of farmers.

The project objective is to promote transformation toward climate-resilient rice-based production landscapes in central Nepal that improve agro-ecosystem function and food security through inclusive, climate resilient value chains and adoption of innovative Nature-based Solutions (NbS). The project will be implemented in four districts in three provinces – Mahottari and Sarlahi districts in Madhesh province, Nuwakot in Bagmati province and Parasi in Lumbini province. The project aims to reduce vulnerability, improve adaptive capacity and strengthen food security in target communities in central Nepal. This transformation will be achieved through partnerships with each level of governments, farming communities, cooperatives and private sector actors to enable a whole-of-society approach by removing institutional, technical and capacity barriers to climate resilient rice-based farming and food systems.

The project includes technology and capacity building interventions along the entire value-chain supporting improved, climate resilient agronomic advisories and practices, investment in resilient value-chain infrastructure, commercialization of rice farming, adoption of NbS at the landscape level, and the creation of an enabling environment to promote and scale-up climate resilient value-chains and NbS. Project activities will be underpinned through the establishment of systems to foster adaptive learning and knowledge management including a robust M&E system, as well as the commercialization of sustainable rice farming in partnership with key private sector actors to ensure

sustainability. The project will be implemented over five years with a budget of USD 10 million from the GEF/LDCF and co-financing of equal amount.

The targets for the Core Indicators include 162,800 direct beneficiaries, 10,000 ha of area of land managed for climate resilience, 68 number of policies, plans, and frameworks mainstreaming climate resilience, 7,400 people trained or with awareness raised, and 72 private sector enterprises engaged in climate change adaptation and resilience action.

Project Description Overview

Project Objective

To promote transformation toward climate-resilient rice-based production landscapes in central Nepal that improve agro-ecosystem function and food security through inclusive, climate resilient value chains and adoption of innovative Nature-based Solutions (NbS).

Project Components

I. Climate resilient rice-based production landscapes promoted

Component Type	Trust Fund
Investment	LDCF
GEF Project Financing (\$)	Co-financing (\$)
5,878,650.00	5,005,000.00

Outcome:

Outcome 1. Resilient rice-based production landscapes with improved agro-ecosystem function promoted through adoption of nature-based solutions and climate resilient practices at farm and landscape level

Indicators:

- Number of direct beneficiaries (male, female)
- Area of land managed for climate resilience (ha)
- Number of people trained or with awareness raised (male, female) and
- Cropping intensity (%) and crop yield (kg/ha)
- Number of farmers adjusting practice based on agro-advisory services

Output:

Output 1.1 Nature-based solutions (NbS) adopted for the sustainable management of rice-based production landscapes and strengthened climate resilience

Output 1.2 Climate resilient seed systems, agronomic practices, technologies and farm management strategies verified and scaled in rice-based production landscapes

Output 1.3 Crop and location specific agro-advisory services disseminated to and used by women and men farmers and other value chain actors

II. Climate resilient value chains developed and supported

Component Type	Trust Fund
Investment	LDCF
GEF Project Financing (\$)	Co-financing (\$)
1,492,750.00	2,750,000.00

Outcome:

Outcome 2. Climate resilient value chains in rice-production landscapes developed and supported through enhanced access to infrastructure and services to manage climate risks and access market opportunities.

Indicators:

- Number of people trained or with awareness raised (male, female),
- Number of private sector enterprises engaged in climate change adaptation and resilience action
- Number of technologies introduced/improved
- Number of value chain actors (male/female) receiving technical support and
- Number of farmers (male/female) and enterprises receiving & using market information

Output:

Output 2.1: Adaptive capacities of agricultural value chain actors enhanced through climate resilient business planning and access to risk mitigation services including credit and insurance

Output 2.2: Climate resilient post-harvest infrastructure including storage facilities and processing technologies promoted

III. Enabling environment to promote transformation toward climate resilient agricultural landscapes strengthened

Component Type	Trust Fund
Technical Assistance	LDCF
GEF Project Financing (\$)	Co-financing (\$)
637,800.00	1,350,000.00

Outcome:

Outcome 3. Government policy, planning frameworks and climate services strengthened at all levels of government in a gender responsive manner to promote transformation toward climate resilient rice-based agricultural landscapes.

Indicators:

- Number of government staff (male/female) trained on climate change adaptation and providing extension services,
- Number of government institutions with strengthened capacity,

- Total number of policies, plans, and frameworks that mainstream climate resilience,
- Multistakeholder dialogues conducted and
- Number of non-state actors and private sector entities engaged in the multistakeholder dialogues

Output:

Output 3.1 Governance and regulatory systems to promote climate resilient value-chains and NbS at local, provincial and federal government levels strengthened in gender responsive manner

Output 3.2 Multi-stakeholder dialogues with non-state actors and private sector entities promoted to develop inclusive services and approaches to promote climate resilient value-chains and NbS

IV. Effective monitoring, evaluation and knowledge management

Component Type	Trust Fund
Technical Assistance	LDCF
GEF Project Financing (\$)	Co-financing (\$)
271,500.00	200,000.00

Outcome:

Outcome 4. Learnings from adaptation innovations monitored, analysed, reported and disseminated

Indicators:

- Communication strategy and plan developed,
- Project newsletters produced and disseminated,
- Technical reports published
- Robust M&E system in place.

Output:

Output 4.1 Adaptive learning and support programmes established for collection and scaling up of innovation and transformation for rice-based production landscapes

M&E

Component Type	Trust Fund
Technical Assistance	LDCF
GEF Project Financing (\$)	Co-financing (\$)
246,550.00	200,000.00

Outcome:

Output:

Robust M&E systems established to track and evaluate adaptation and resilience with gender disaggregated data and information in agriculture

Component Balances

Project Components	GEF Project Financing (\$)	Co-financing (\$)
I. Climate resilient rice-based production landscapes promoted	5,878,650.00	5,005,000.00
II. Climate resilient value chains developed and supported	1,492,750.00	2,750,000.00
III. Enabling environment to promote transformation toward climate resilient agricultural landscapes strengthened	637,800.00	1,350,000.00
IV. Effective monitoring, evaluation and knowledge management	271,500.00	200,000.00
M&E	246,550.00	200,000.00
Subtotal	8,527,250.00	9,505,000.00
Project Management Cost	405,170.00	495,000.00
Total Project Cost (\$)	8,932,420.00	10,000,000.00

Please provide Justification

PROJECT OUTLINE

A. PROJECT RATIONALE

Describe the current situation: the global environmental problems and/or climate vulnerabilities that the project will address, the key elements of the system, and underlying drivers of environmental change in the project context, such as population growth, economic development, climate change, sociocultural and political factors, including conflicts, or technological changes. Describe the objective of the project, and the justification for it. (Approximately 3-5 pages) see guidance here

Nepal is a Least Developed Country (LDC) highly vulnerable to climate change due to its i) fragile topography, ii) agrarian-based economy with smallholders, iii) weak human, technical and financial resources, iv) insufficient physical infrastructure, and v) limited access to production technologies and support services. Agriculture contributes 25.83 percent to the gross domestic product (GDP). Rice is the highest contributor (16 percent to the agricultural GDP) amongst agriculture commodities¹.

Climate Hazards in Nepal and project areas

Climate projections for medium-term (2016-2045) and long-term (2036-2065) with respect to the reference period (1981-2010) in Nepal suggest that the climate will be significantly warmer and wetter in future (Table 1). Temperature projected for the medium-term is about 1.0°C whereas that for long-term is about 1.5°C. However, precipitation projections are less consistent than that for temperature. Average annual precipitation is 1830 mm, 77 percent of which occurs during the monsoon season. The precipitation is projected to increase during the monsoon and post-monsoon seasons. The post-monsoon season might have the highest increase in precipitation with respect to the reference period. The projected results indicate that monsoonal precipitation is more likely to increase,

whilst already scanty winter precipitation is more likely to decrease indicating that the monsoon season will be wetter, thereby increasing flood and landslide hazards and more drier winter season.

Table 1. Baseline and projections of seasonal temperature and precipitation in Nepal

Seasons	Mean temperature (°C)	Multi-model ensemble mean of change in temperature (RCP4.5)		Average precipitation (mm)	Multi-model ensemble mean of change in precipitation (RCP4.5)	
	Baseline (1981-2010)	2016-2045	2036-2065	Baseline (1981-2010)	2016-2045	2036-2065
Winter (Dec-Feb)	4.6	1.0	1.5	84 (5%)	-5.8	13.6
Pre-monsoon (Mar-May)	12.5	0.7	1.0	232 (13%)	-5.0	-7.4
Monsoon (Jun-Sep)	17.7	0.8	1.1	1418 (77%)	2.7	9.4
Post-monsoon (Oct-Nov)	11.4	1.3	1.8	96 (5%)	18.6	20.3
Annual	12.1			1830 (100%)		

Source: MOFE, 2019

The project is proposed for four districts in three provinces. Mahottari and Sarlahi districts in Madhesh province, Nuwakot district in Bagmati province and Parasi district (*formally Nawalparasi Bardaghat Susta Paschim*) in Lumbini province. The national projections of temperature and precipitations are valid for the project districts as well. Climate change projections implying RCP4.5 for the target districts of the Project show mean annual precipitation increase by 0.5-5.5%, and mean annual temperature increase by 0.85-0.9°C until 2045 (Table 2).

Table 2. Climate change projections (RCP4.5), exposure, vulnerability, extreme events, and climate risk in the target districts

District	Temp. change (°C)		Precip. change (%)		Exposure index ¹	Sensitivity Index ²	Adap. Cap. Index ³	Vuln. Index ⁴	Extr. Events index ⁵	Risk index ⁶
	2016-45	2036-65	2016-45	2036-65						
Mahottari	+0.87	+1.22	+5.51	+8.95	0.563	0.784	0.534	0.623	0.695	0.590
Sarlahi	+0.85	+1.17	+4.17	+9.83	0.571	0.754	0.611	0.529	0.734	0.533
Nuwakot	+0.88	+1.22	+3.01	+8.48	0.457	0.885	0.486	0.758	0.767	0.650
Parasi	+0.90	+1.20	+0.54	+7.44	0.466	0.715	0.433	0.502	0.728	0.358
Colour code:	Very low, Low, Moderate, High, very high	and just reverse for the adaptive capacity								

¹ Composite weighted index of 128 exposure indicators; Composite weighted index of 249 sensitivity indicators; Composite weighted index of 214 adaptive capacity indicators Sensitivity Ind. – Adaptive Capacity Ind.; composite climate extreme index based on RCP 4.5 in 2030; ⁶Hazard Index * Exposure Index * Vulnerability Index.

Source: MOFE, 2019.

Climate change induced hazards in the project districts are flash floods and inundations, droughts, erratic rainfall, heat and cold waves and disease/pests outbreaks. The pace of climate change is accelerating more frequent and intense droughts and floods. These hazards are both location specific (e.g., flood-prone areas in large river basins and landslides in fragile hills) and non-specific (e.g., droughts and heat/cold waves). Over the past decade, Nepal has witnessed more frequent and severe floods, droughts and earthquakes, increasing physical and economic impacts, particularly in rural areas. More frequent and intense storms, droughts, and floods is likely to inflict lasting economic and societal damage in agriculture.

Exposure of rice-based farming and food systems

Agriculture is particularly exposed to natural hazards, and it is feared that climate change will significantly alter the flow of ecosystem services that are essential to the agricultural system and wellbeing of communities. Degradation of upland slopes compounds problems and leads to increased exposure of smallholder farmers with low level of technology. Average holding size in Nepal is 0.55 ha (NSO,

2023). Over half of the cropped area is under rice production. Rice is grown in 1.48 million hectares producing 5.13 million metric tons contributing to 52 percent of the total cereal consumption. With a population of 29 million, 57.3 percent of Nepal's workforce (74 percent of the female workforce) is engaged in agriculture. The project districts have 1.58 million farm population in 304,305 farm households which is eight percent of the total farm population in Nepal (Table 3).

Table 3. Farm population in the project districts

Province	Districts	Physiographic region	Total No. of holdings	Farm Population		
				Male	Female	Total
Madhesh province	Mahottari	Terai	87,062	256,915	235,646	492,561
	Sarlahi	Terai	105,230	306,246	282,541	588,787
Bagmati province	Nuwakot	Hill	56,915	104,001	111,538	215,539
Lumbini province	Parasi	Terai	55,098	143,385	147,794	291,179
Project area total and national figures	Total (% to the national figure)		304,305 (7.37)	810,547 (8.49)	777,519 (7.85)	1,588,066 (8.17)
	Nepal		4,130,789	9,543,825	9,904,130	19,447,955

Source: NSO, 2023

The rice-based cropping system faces high level of exposure to climate change related hazards including drought, flood, cold and heat waves, and insect pests and diseases. The project targets two municipalities (including rural municipalities) per district (Table 4). In total, the project municipalities have nearly 25,000 ha of rice areas (including double rice crops in some municipalities) out of 32,000 ha farmlands operated by 52,000 farm families.

Table 4: Key characteristics of Rice-Farming Municipalities targeted by the project (Source: NSO, 2023)

District	Municipality	Farm families	Farmland (ha)	Irrigation (%)	Rice area (ha)	Rice area (%)	Remarks
Mahottari	Gaushala	9,279	5,929.9	58.9	1,738.5	29.3	Double rice crop
	Bhangaha	7,530	6,660.6	75.1	5,871.9	88.2	
Sarlahi	Ishworpur	9,220	4,934.2	89.2	3,842.0	77.9	
	Haripurva	4,203	2,597.8	92.5	2,032.4	78.2	
Nuwakot	Likhu	3,945	1,374.6	77.1	1,678.0	122.1	Double rice crop
	Shivapuri	4,254	2,120.4	56.9	1,224.8	57.8	Double rice crop
Parasi	Ramgram	8,778	5,891.0	87.4	5,788.5	98.3	
	Palhi Nandan	5,130	2,808.7	97.6	2,794.2	99.5	
Total		52,339	32,317.0	78.8	24,970.0	77.3	

The cropping calendar (Figure 1) shows that the monsoon (June to September) is the main rice growing season in irrigated as well as rainfed areas whereas spring rice (April-July) is planted in limited areas that have assured irrigation facility. Rainfed areas are left fallow during the dry season and planted during the monsoon season. Other major other crops fitting to the rice-based cropping system are wheat, maize, legumes, mustard, potato and vegetables. Irrigated areas have larger crop options as compared to the rainfed. The farmlands are used the least during the spring season. Though the yield is higher for spring season rice than the main season rice, unavailability of irrigation facility during planting season in spring and lack of drying facilities at the time of harvest in monsoon season limit the area under this crop. During the PPG consultations, farmers reported that irrigation cost is high, and output price is low for the spring rice.

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Gaushala and Bhangaha (<200 m asl)												
Irrigated	Wheat		Spring rice			Rice (blackgram and pigeon pea in bunds)				Wheat		
	Mustard	Spring rice							Mustard			
	Vegetables (Potato, Tomato, Cauliflower, Pea)											
	Maize									Maize		
Rainfed	Fallow					Rice (blackgram and pigeon pea in bunds)						
Ishworpur and Haripurva (<300 m asl)												
Irrigated	Wheat		Spring rice			Rice (blackgram and pigeonpea in bunds)				Wheat		
	Maize									Maize		
	Mustard	Vegetables							Mustard			
Rainfed	Fallow					Rice (Pigeonpea in bunds)						
Likhu and Shivapuri (<1500 m asl)												
Irrigated	Vegetables/potato		Spring rice			Rice (blackgram and pigeonpea in bunds)				Vegetables/potato		
	Mustard									Mustard		
	Potato		Maize							Potato		
Rainfed	Potato		Maize							Potato		
Ramgram and Palhi Nandan (<200 m asl)												
Irrigated	Mustard		Spring rice			Rice (Blackgram and soyabeans in the bunds)				Mustard		
	Wheat/lentil/chickpea									Wheat/lentil/chickpea		
Rainfed	Fallow					Rice						



Figure 1: Cropping calendar in the project municipalities (Source: PPG Baseline Survey, 2024)

Rice-based value chains are exposed to climate hazards as they remain fragmented, particularly related to critical elements of collection, drying, storage and transport due to low investments and unfavorable agribusiness environment. Production areas are highly scattered, productions are heterogenous and transportation facilities and cold-chains are limited. Collections and storage of the produce are highly exposed to precipitations, high temperature, flash floods and road obstructions. Rice mills are mainly with traditional technologies, and they hardly purchase rice directly from the farmers. They purchase rice from commissioned agents through layered middlemen, resulting in farmgate prices below government-guaranteed minimums and elevated consumers' price. Milling is highly inefficient and access to storage structures and drying facilities are limited, leading to inefficiencies in value addition and high levels of post-harvest losses.

Sensitivity of rice-based farming and food systems: Agriculture in Nepal is highly dependent on climate-sensitive natural resources such as precipitation-based water sources and fragile land, making it sensitive to climate-related hazards including floods, droughts, landslides and soil erosion. Monsoon floods are an annual feature in June to September in the Terai (UNDRR, 2019) and river basins. Hill slopes are sensitive to landslides which is aggravated after 2015 earthquake. In late September 2024, heavy rainfall (239.7 mm in 24 hours) and resulting flood destroyed 88,476 ha of paddy farms with a loss of USD 8.43 million² in central Nepal in addition to at least 224 deaths, 158 injuries, 24 missing persons, 12,586 people rescued, and 1,200 houses were destroyed or damaged. Late October heavy rainfall in 2021 damaged ready to harvest rice in large area in the country.

The average rice yield (3.5t*ha⁻¹) in Nepal is below that that in South Asian countries. More than a half (55 percent) of the 4.13 million farm holdings report that their own food production is insufficient for household consumption (NSO, 2023). The smallholder farmers are particularly sensitive to climate impacts since (i) high hazard exposure, (ii) limited crop choice under rainfed conditions, (iii) low crop yield, and (iv) limited alternate livelihood options. The high hazard exposure, coupled with small landholding and low yield, threatens their livelihood security. The occurrence of drought affects rice production in Nepal as most of the area under the rice production is lacking irrigation facility (Gahatraj et al. 2018). Under the baseline trajectory, crop productivity will decline, and food security and livelihoods of the rural poor will be aggravated due to effects of climate change.

Value chains remain fragmented due to low private sector investments and an unfavourable agribusiness environment. Information systems are inadequate, and critical value-chain infrastructure (rice collection, drying, storage and transport) remains weak and underdeveloped. The sensitivity of rice-based value chains to climate change is determined by fragmented linkages between value chain actors. Rice mills do not generally buy rice from the farmers due to small volume and uneven products. They purchase rice from commissioned agents through layers of middlemen. This leads to farmgate prices below government-guaranteed minimums and elevated consumer prices. As the mills are using traditional technologies, milling is highly inefficient and access to storage structures and drying facilities are limited, leading to sensitivity to climate change and inefficiencies in value addition.

Adaptive capacity of farmers and other value chain actors

Nepalese agriculture is ill-equipped to guard against, adapt to and recover from climate change. Male outmigration, which is partially attributed to climate change³, is increasing the vulnerability of women and girls to the negative impacts of climate change and leading to the feminization of agriculture. Women in the project area have less access to land, water and other productive natural resources due to gender-discriminatory social and cultural norms and they often face greater barriers than men to accessing technical and financial opportunities and to participating in decision making processes.

Rice-based farming is supported by a largely enabling policy, legal, and regulatory environment. Agriculture Development Strategy (ADS, 2015-35) provides guidance for the agricultural sector aiming increasing productivity, improving competitiveness, enhancing commercialization and strengthening governance. The strategy also includes disaster preparedness measures, such as an early warning system, agricultural insurance, and a fund for emergencies. However, the low level of investment and weak capacity limit the success of the strategy. The institutional baseline is marked by the three-tier system of government, with challenged coordination among state, provincial, and local government actors. Challenges are also there for coordinating development, research and teaching in agriculture.

Low capacity and insufficient access to technologies is compounded by an inadequate policy environment. The rice-based farming and food systems are already constrained by insufficient access to critical inputs and resources including irrigation, quality seed materials, agro-chemicals, mechanization, small land holdings and labour leading to low yield. In addition, other problems are fragmented land holdings, increasing labour shortage, and underdeveloped value chains, lack of technical knowhow and unavailability of location specific climate resilient technology. Now, climate change is an added problem to aggravate food production system. The increased variability in climate conditions poses a challenge to rain-fed paddy rice, and limited technology diffusion, increasing labour shortages together with high energy costs and infrastructure gaps is also constraining the economic development opportunities in the rice sector (MoPE, 2017). Pesticides (particularly insecticides and herbicides) are often used incorrectly due to lack of labelling in local language and insufficient extension services. Over-use and incorrect disposal of agricultural chemicals reduce their effectiveness and has a negative effect on the environment (particularly water and soil contamination). Licensed pesticides applicators are very limited in number and not available in rural areas.

Mechanisation of rice-based farming systems has been initiated, but support services are limited. Irrigation remains unavailable on a substantial proportion of land growing rice, leaving rainfed rice farming highly exposed to climate risks. Seed availability of resilient and high-yielding rice varieties is limited and development and release of varieties for Nepal is constrained by limited trained human resources and budget. Technology generation and diffusion, particularly the uptake of climate-resilient rice-farming techniques are limited. Agro ecosystem-based decision making for crop and insect pest management is weak.

In the project area, use of climate adaptation technologies is limited to a few households. Water harvesting and alternative wetting and drying (AWD) are used by less than 10 percent of households (Figure 2). The system of rice intensification (SRI) is adopted partially by less the 15 percent of the households. Other technologies adopted by some households are intercropping, changing the planting dates, crop shifting and crop rotation. Nearly half of the farm households buy seeds, but only a small number of them buy short duration and stress-tolerant varieties.

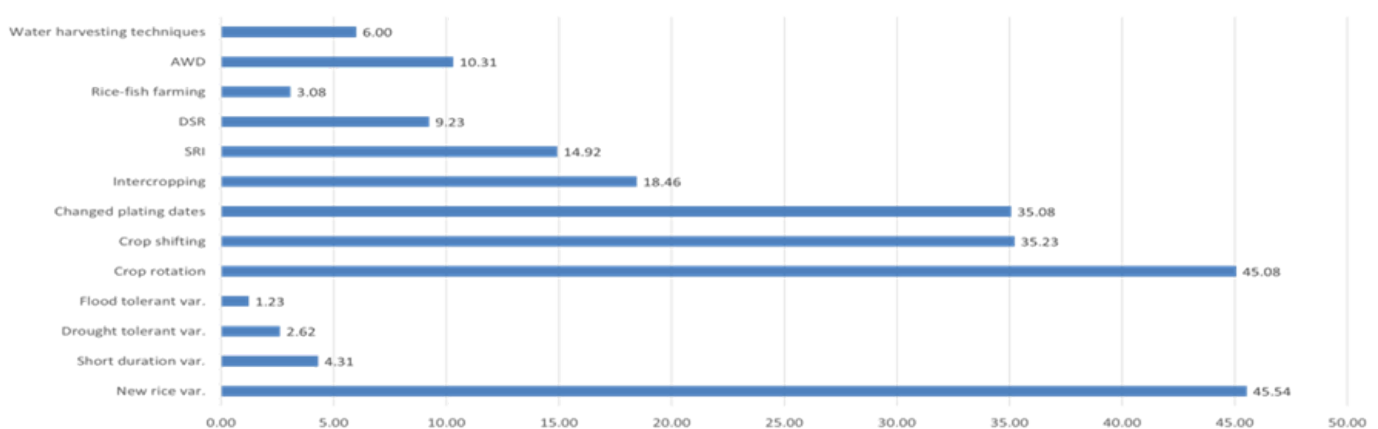


Figure 2: Percent households adopting adaptation measures

Limited capacity of the farmers to understand market demand for rice and produce volume to cater the demand, they are not able to sell their products directly to the mills. Underdeveloped value chains, lack of technical knowhow and unavailability of climate resilient technology are making rice farming non-profitable. Access to storage structures and drying facilities are limited, leading to inefficiencies in the value chain and high levels of post-harvest losses. Without technological improvements along the value chain,

increased humidity levels and erratic rainfall patterns are likely to increase post-harvest losses due to spoilage while also causing food safety concerns. The problem is more pronounced for spring rice and early rice maturity main season rice than late maturity rice.

Limited capacity of value chain actors to comply with food quality and food safety standards is preventing Nepali producers from substituting imports of long grain and basmati rice. Rice-based agrifood systems are further constrained by limited capacities in terms of increasing labour shortage and lack of knowledge on climate-resilient practices, agrobusinesses development, rice-based value chains, and effective extension services. Information systems are inadequate to support climate-resilient farming and marketing.

Insufficient collaboration and coordination among farmer organizations and the private sector limit smallholder rice producers and women to access postharvest technologies, insurance, information, extension services and inputs. Banks and financial institutions are reluctant to invest in smallholder crop producers due to high climate risks and high costs of retail loan administrations.

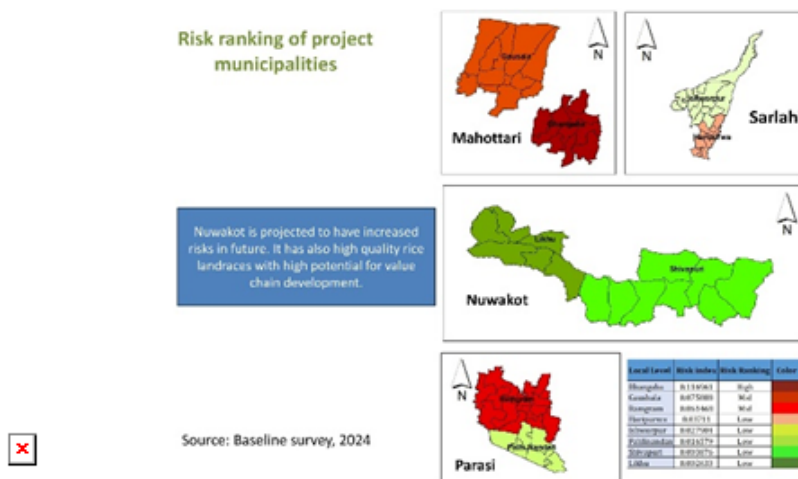


Figure 3: Risk ranking of project municipalities

Table 4: Summary of vulnerability of rice-based farming and food systems

Systems	Climate Change Vulnerability		
	Exposure	Sensitivity	Adaptive Capacity
Rainfed rice-based cropping system	<ul style="list-style-type: none"> Erratic rainfall patterns – short intense periods of rain, storms causing floods and droughts during the growing season. Drought conditions during critical period (like crop establishment, panicle initiations and flowering). High temperature leading to heat stress. Increased pests and diseases. 	<ul style="list-style-type: none"> Yield reduction, crop damage and loss through untimely rainfall and flooding, water shortages, and heat stress. Increased loss of crops and storage from disease and pests. Income and livelihood loss, particularly affecting women and ethnic minority groups with limited resources, and men out migration. Flood damage to farm assets. 	<ul style="list-style-type: none"> Limited awareness of farmers and other value chain actors about climate risks. Limited access to early warning and agro-advisory, and financial tools for early action, recovery and long-term adaptive measures. Limited extension support and outreach capacity. Heavy reliance on rain-fed systems and limited dry season production to improve food security and market access. Limited awareness of climate-resilient options and technologies, e.g., climate-smart technological options.

Irrigated rice-based cropping system	<ul style="list-style-type: none"> • Floods damage irrigation structures and farmland • Increased pests and diseases • High temperatures leading to heat stress. • Drying canals during winter and spring seasons 	<ul style="list-style-type: none"> • Irregular supply of canal irrigation causes crop loss. • Crop damage by rainfall, hailstorms and flood during the pre-harvesting stage. 	<ul style="list-style-type: none"> • Limited fund for repair and maintenance of irrigation structures. • Limited knowledge of farmers on stress tolerant varieties, water management and NbS to avoid short-term maladaptive solutions. • Limited market access and diversification options.
Rice value chain	<ul style="list-style-type: none"> • Damage of road linkages due to flood, and seasonal earthen roads • High temperature increases spoilage of farm products during transport and storage. 	<ul style="list-style-type: none"> • Weak linkages among the farming communities and other value chain actors. • Multiplicity of poorly linked value chain actors. 	<ul style="list-style-type: none"> • Poorly developed value chain infrastructure. • Weak linkages among value chain actors and service providers. • Limited regulatory and institutional capacity for integrating climate risks and adaptation measures in local development plans.

Barriers

In the baseline situation, the following barriers to resolving the global adaptation problem remain:

- i. **Limited Access to Adaptation Technology and Practices:** Farmers struggle to access climate-resilient, high-yield rice varieties, largely due to slow development and release processes, regulatory constraints, and illegal seed imports. Key barriers to adopting sustainable practices, including Nature-based Solutions (NbS), are the lack of large-scale investments in green infrastructure, inadequate soil management (overreliance on inorganic fertilizers), and inefficient irrigation. Limited mechanization also reduces efficiency and increases labour dependence, restricting adaptation efforts. Though some of the traditional practices are promising for climate change adaptation, some others could be considered maladaptation⁴.
- ii. **Inadequate dissemination of information on Agro-Advisory Services:** Both extension workers and farmers lack access to tailored agro-meteorological information and decision-support tools. This gap prevents informed agronomic decisions, increasing vulnerability to climate hazards and limiting the adoption of innovations like weather-based crop insurance.
- iii. **Weak Agro-Entrepreneurship and Inefficient Value Chains:** Smallholder farmers face high input costs and limited financial access, exacerbated by fragmented landholdings. They struggle to market produce efficiently, due to poor infrastructure and lack of bargaining power, further hindering profitability. Value chains suffer from insufficient knowledge of business planning, lack of market information, and poor access to financial risk mitigation services such as credit and insurance.
- iv. **Insufficient Post-Harvest Infrastructure:** The lack of critical infrastructure—such as collection centres, drying, cleaning, and storage facilities—limits the ability of farmers to maintain product quality and hedge against market fluctuations, weakening their overall resilience.
- v. **Fragmented Institutional Landscape and Weak Local Governance:** While national climate policies exist, sub-national governments struggle to translate these into local action due to weak institutional coordination and limited capacity, especially in mainstreaming climate adaptation into planning and implementation.
- vi. **Limited Knowledge and Awareness on Climate Adaptation:** Knowledge gaps persist across all stakeholders, especially in sustainable practices like the System of Rice Intensification (SRI), crop diversification, and integrated water management. Farmers, particularly women, face unequal access to technology and productivity-enhancing tools. Local governments also lack the technical capacity to support climate-resilient farming systems.

Baseline and future narratives

The baseline situation outlined in Section A is complemented by several key baseline investments:

- GEF-8009 (\$38.9M, UNEP) focuses on mainstreaming climate adaptation into territorial planning and raising awareness in the Kathmandu Valley. This provided motivation for NbS (Output 1.1).
- GEF-5111 (\$2.6M, FAO, 2015-2020) strengthened government capacities for climate adaptation, improved risk assessment tools for agriculture, and enhanced knowledge management. Lessons learnt from this project helped to design Output 1.2 adaptation technologies, 1.3 weather based agro-advisory services and 3.1 enabling environment.
- GCF-LP131 (\$32.7M, IUCN, 2021-2028) works in the Gandaki River Basin to reduce climate vulnerability through community-based approaches, climate data use, and improved institutional frameworks. This is related to Output 1.1.
- GCF-FP118 (\$43.3M, FAO, 2020-2027) focuses on climate-resilient land use and resource management in the Churia region, upstream of the target landscapes. This project motivated for Output 1.1 of the project.
- IFAD “Value Chains for Inclusive Transformation of Agriculture Programme” (\$179.2M, 2020-2027) aims to develop inclusive supply chains and financial services in Provinces 2, 3, and 5, aligning with the GEF-10540 landscapes. Lessons learnt from this project are useful for the Output 2.1 value chain development and Output 2.2 post-harvest infrastructure.
- IFAD “Resilient High-Value Agriculture Programme” (\$121M, 2024-2031) will support transitioning smallholders to commercially oriented, multi-product supply chains in western provinces. This project motivated for transformational change in crop and food systems.
- CropScape Nepal provides online mapping of rice yield and quality changes within seasons.
- Climate Smart Agriculture Investment Plan (CSAIP), developed by the Government of Nepal with World Bank support, identifies capacity gaps for scaling climate-smart agriculture, focusing on enabling CSA adoption and private sector engagement. Technologies identified by the CSAIP will be useful for Output 1.2.
- Prime Minister Agriculture Modernization Project (PMAMP) (2016-2026) aims to enhance agricultural productivity and value chains for major crops and livestock. The lessons from the government funded project are useful for project design of Output 1.2 production technologies, Output 2.1 value chain development and private sector engagement, and Output 2.2 postharvest infrastructure development. This also highlighted the needs for enabling environment under the government system (Output 3.1) and private sector (Output 3.2).
- Food and Nutrition Security Enhancement Project (FANSEP) (GAFSP, 2018-2023) improves food security and livelihoods for smallholders, women, and children, with technologies and lessons feeding into the proposed FANSEP-II (2024-2027). This project provides guidance for livelihoods of smallholder farmers and inclusive governance.

Overall, the project is designed on the baseline projects specifically by (i) incorporating experiences and lessons learned from previous GEF and other initiatives, (ii) demonstrating NbS for climate resilient rice farming, (iii) climate proofing rice seed systems, (iv) improving the dissemination of agro-meteorological information, (v) enhancing the economic viability of rice-based production systems and value chains, (vi) demonstrating best practices of climate-proof post-harvest infrastructure, (vii) improving governance and regulatory systems for resilience of value chains, and (viii) facilitating multi-stakeholder dialogues, dissemination and management of knowledge. The design, as described under the baseline.

The engagement of multiple stakeholders is essential in terms of (i) government organizations for coherent and coordinated implementation of the policy and legal framework, particularly related to climate information, extension services, facilitating landscape-level adaptation investments, input supply, marketing, knowledge management and upscaling best practices; (ii) rice farming families, including women and youths for adoption of resilient technologies and processes back up by improved livelihoods; (iii) cooperatives, traders and other value chain actors, financial service providers, mechanization service providers, markets, private R&D etc. for achieving economies of scale and maximising value addition to rice-based products for all actors; (iv) seed sector companies for supplying legally approved superior quality climate adapted seed material; (v) research and academic organisations for developing and releasing improved seed varieties and providing best practices on climate change adaptation in rice-based farming systems; and (vi) Non-Governmental Organisations (NGOs) for capacity development, advocacy, and supporting rice farmers in adoption of climate resilient practices.

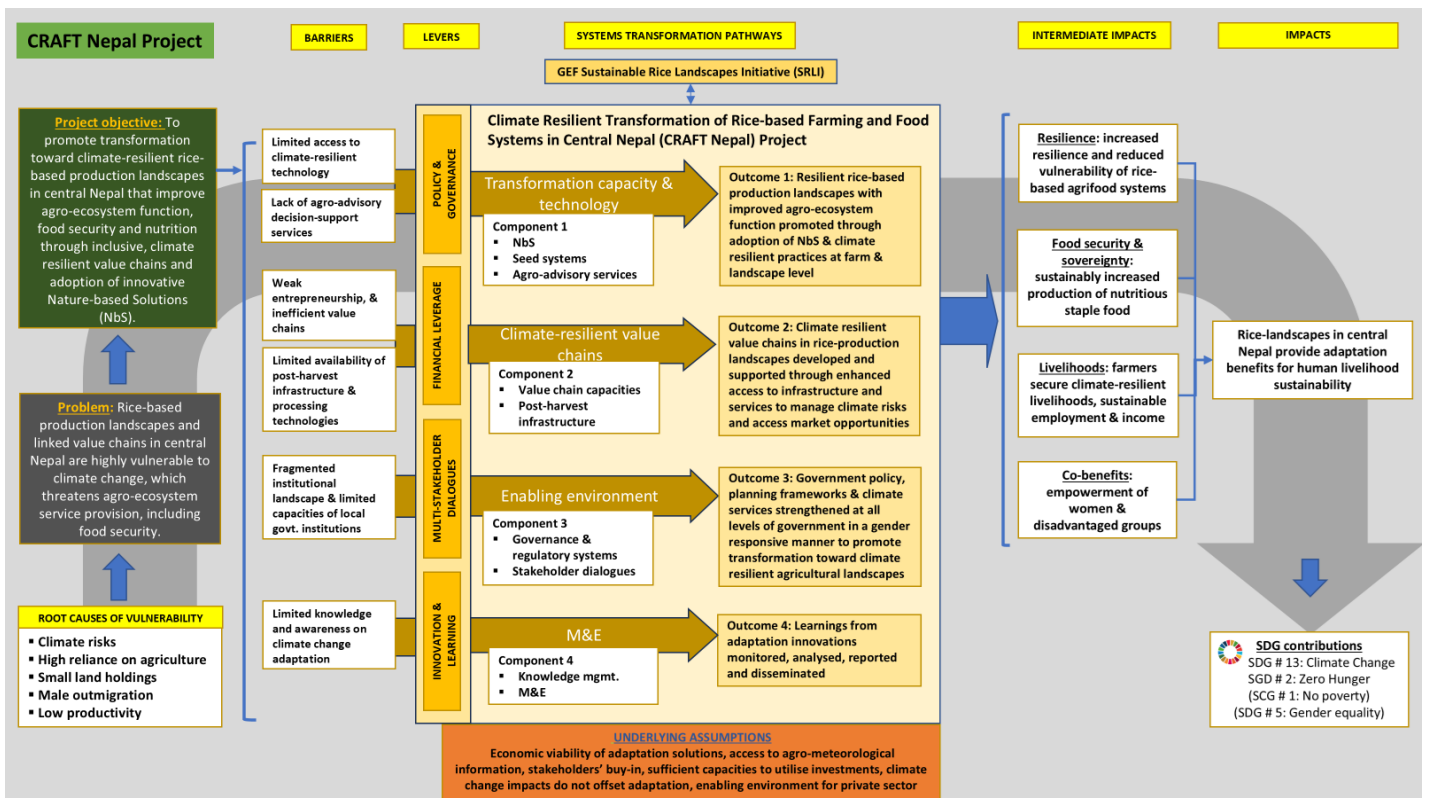
Purposeful application of the GEF-8 transformation levers will ensure lasting results in view of the future scenario envisaged above.

B. PROJECT DESCRIPTION

This section asks for a theory of change as part of a joined-up description of the project as a whole. The project description is expected to cover the key elements of good project design in an integrated way. It is also expected to meet the GEF’s policy requirements on gender, stakeholders, private sector, and knowledge management and learning (see section D). This section should be a narrative that reads like a joined-up story and not independent elements that answer the guiding questions contained in the guidance document. (Approximately 3-5 pages) see guidance here

Theory of change and detailed description of project components

The Project’s Theory of Change (ToC) in Figure 4 describes the systemic approach to achieve the project objective “*To promote transformation toward climate-resilient rice-based production landscapes in central Nepal that improve agro-ecosystem function and food security through inclusive, climate resilient value chains and adoption of innovative Nature-based Solutions (NbS)*” by promoting climate resilient value-chains and nature-based solutions (NbS) to reduce vulnerability, improve adaptive capacity and strengthen food security in rice-based agrifood systems. The ToC addresses six barriers via four distinct, but interlinked impact pathways, along which inputs, outputs and outcomes lead to intermediate and higher-level impacts under a set of assumptions.



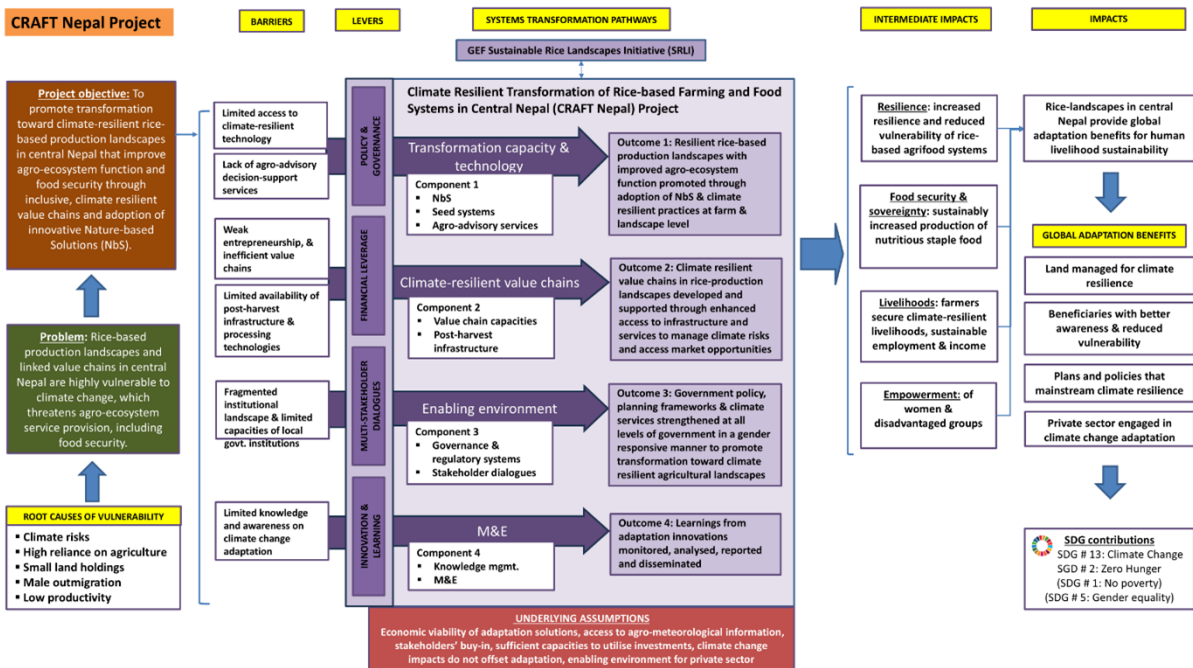


Figure 4: Theory-of-Change

The key barriers (see Section A for full description) that currently prevent the transformation towards climate-resilient rice-based farming systems and effective associated value chains include:

- Limited access to climate-resilient technology,
- Lack of access to agro-advisory decision-support services,
- Weak agro-entrepreneurship and inefficient value chains,
- Limited availability of post-harvest infrastructure and technologies,
- Fragmented institutional landscape and limited capacities of local government institutions, and
- Limited access to information and knowledge on climate change adaptation.

Consistently applying all four system transformation levers (TL)⁵ of the GEF-8 nine key outputs were identified to remove these barriers. The TL also helped to thematically cluster program outputs into four inter-linked and inter-dependent components.

Component 3 sets the stage by creating an enabling environment for systemic action on climate proofing vulnerable rice-based agrifood systems, by operating at all levels of government and administration, ranging from federal to provincial, district and municipal levels, and applying TL 1 Policy and Governance and TL 2 Multi-stakeholder Dialogues. Components 1 and 2 benefit from the enabling environment created by Component 3 and operate in a mutually reinforcing manner at the level of contiguous clusters of two neighbouring and interdependent municipalities with predominant rice farming and rice-based value chains. These two components will jointly deliver the adoption of innovative rice-farming technologies and the increased resilience of rice-based value chains. Component 1 provides transformation capacity and technology for climate-resilient rice-based cropping systems, applying primary TL 4 Innovation and Learning on NbS, resilient seed systems, and agro-advisory services. Component 2 works on climate-resilient value chains by enhancing access to infrastructure and services, primarily applying TL 3 Financial Leverage. Finally, Component 4 on monitoring and evaluation will apply TL 4 Innovation and Learning to ensure the required knowledge and awareness available not only to achieve outcomes of Components 1 and 2, but also to sustain them over the longer-term, and to allow their up-scaling beyond the landscape level jointly with Component 3. Intensive coordination with the GEF Sustainable Rice Landscapes Initiative will ensure the exchange of lessons and best practices on an international scale.

Table 5. Climate-resilient practices for rice production and value chains

Stage	Hazard	Climate-resilient practices
Soil & land management	Drought & rainfall variability	Weather-informed agricultural advisories (to all the stages) Market information on source of climate-resilient inputs
	Extreme heat	Increase application of organic matter and biofertilizers
Transplanting	False start rainy season	Adjusting transplanting date Machine transplanting of nurse seedlings
	Heavy rainfall	Direct seeded fields (DSR)
Production	Drought & rainfall variability	Promotion of short cycle stress-tolerant varieties Apply climate and crop-water productivity models
Crop management	Irrigation	Wet and drying techniques (AWD)
	Pests & diseases	Integrated Pest Management (IPM)
Harvest	Drought & heavy rainfall	Training on harvesting methods and best timing Strengthen the uptake of climate information services
	Extreme heat & UV light	Cover perishables to preserve them until they reach maturity Implement cold chains and ice cooling Promote harvesting early in the morning
	Storm/wind	Use proper harvest equipment Strengthen early warning systems
	Relative humidity	Sun drying, heated-air drying to reduce food moisture
Storage	Extreme heat	Renewable energies to support storage facilities Use cold rooms to prevent biological degradation Reduce storage time to reduce risks of food spoilage Use temperature and relative humidity sensors to prevent food losses
	Heavy rainfall	Store in wood pallets, maintaining distance with walls Build climate proof warehouses
	Storm/wind	Build climate proof infrastructure for storing food products
	Pests & diseases	Store in jute bags and wool blankets to let the air circulate, or hermetic bags to decrease food contamination and spread of mold
	Relative humidity	Improve storing conditions with fan systems Use dehumidifiers, roof ventilators and wall air vents
Processing & packaging	UV light	Use UV lamps to preserve food quality and safety Switch from sun drying to other solar drying techniques
	Relative humidity	Use mechanical drying techniques such as heated air-drying Implement modified atmosphere packaging Use temperature and humidity sensors
Refrigeration	Extreme heat & relative humidity	Build cold chain infrastructures and technologies Build sustainable energy infrastructure
Transport	Heavy rainfall	Efficient planning of transport routes Provide training and advice on food storage techniques

	Landslides	Develop a landslide hazard assessment in current flash flood systems Divert food trucks to new transportation routes	
	Fog & dust	Use LED panels and appropriate lighting	
	Extreme heat	Improve insulation of refrigerated trucks Promote safe, efficient routes for transportation	
Markets & retail	Heavy rainfall	Real-time market information using ICT Promote rainwater collection systems Build flood-proof infrastructures	
		Pests & diseases	Develop alert systems for food contamination Recall of contaminated products from markets

Sources: Extracted from Adhikari et al. (2015) and FAO (2021).

The barriers of limited access to climate-resilient technology, and agro-advisory decision-support services, will be removed by specific investments fostering the adoption of Nature-based Solutions (NbS) and climate resilient agronomic practices, the application of technologies and farm management strategies for the sustainable management of rice-based production landscapes, and the enhanced availability of crop- and location-specific agro-advisory services to farmers and other value chain actors. These investments are bundled into **Component 1 on transformation capacity and technology for resilient rice-based cropping systems**. This component will leverage farmers registry and related datasets developed by the government to target its interventions. It will synergize with government's programmes and projects, such as extension activities, agricultural information, early warning, agro-advisory, crop breeding and Prime Minister Agriculture Modernization project (PMAMP) that provides subsidized inputs (seeds, saplings, fertilizers), irrigation and mechanization to farmers. The Outputs resulting from investments under Component 1 will lead to Outcome 1: Resilient rice-based production landscapes with improved agro-ecosystem function promoted through adoption of nature-based solutions and climate resilient practices at farm and landscape level. The economic viability of climate resilient practices and NbS, the accessibility of agro-meteorological data and services, the buy-in of rice farmers and other key stakeholders, and high enough resilience of the adaptation technologies against future climate risks must be in place for achieving this. Keen interest of all stakeholders in climate-resilient technologies, including irrigation and resilient, high-yielding seed materials provide reassurance for stakeholders' buy-in, however capacities and coherent implementation at various scales need to be built. The outcome will be contributed by achievements of three specific outputs.

Output 1.1 Nature-based solutions (NbS) adopted for the sustainable management of rice-based production landscapes and strengthened climate resilience. The Municipality coordinates existing groups related to agriculture and natural resource management in the municipality particularly farmers groups (FGs), water users' groups (WUGs), community forest users' group (CFUG) and other CSOs for planning, development and operation of NbS infrastructures at landscape level in the municipality. The planning for the NbS will be part of the municipal level adaptation planning (Activity 3.1.4). Role of private sector will be on the constructions. Training of farmers (including women and ethnic groups) on development, operation and maintenance of NbS and irrigation infrastructure will help to sustain these infrastructures. Proportionate participation of women, IPs, youth and other excluded groups will be ensured in location specific NbS for landscape management considering their time and accessibility.

Indicative Activities:

Activity 1.1.1. Coordinate farmers groups, water users' groups and forest users' groups in the municipality with proportionate participation of women, IPs, youth and other excluded groups and strengthen their capacity and awareness for landscape-level planning of green infrastructures drawing from the municipality level climate change adaptation plans (3.1.4)

Activity 1.1.2. Develop green infrastructure like rain gardens and rejuvenate water holding infrastructure in upstream areas in coordination agriculture and natural resources related groups (1.1.1) and using location specific promising indigenous knowledges of women groups, IPs and Dalits for landscape management (documented by 4.1.2)

Activity 1.1.3. Develop and rehabilitate farmers managed small irrigation systems (as planned by the adaptation plan 3.1.4).

Municipalities will conduct Activity 1.1.1 in line of climate change adaptation plan (Activity 3.1.4). MoALD, in collaboration with the municipalities, will implement other two activities. Implementation will be coordinated with the GEF-10727 and IMEP projects. Strengthening technical capacity of government officials (Activity 3.1.3) planning appropriate adaptation responses using NbS and identification of location specific NbS (Activity 3.1.4) help to implement these activities

Output 1.2 Climate resilient seed systems, agronomic practices, technologies and farm management strategies verified and scaled in rice-based production landscapes. Though NARC has already produced some stress (particularly drought and flood) tolerant rice varieties, they find difficulties to compete with imported hybrid rice varieties mainly due to their low yield. Farmers want high yielding varieties to cover their cost of production. Introduction of stress tolerant and high yielding rice germplasm, identification of landraces with promising gene pools, and strengthening rice breeding capacity of NARC and private breeders are to promote multi-stress tolerant, high yielding and high-quality rice varieties for climate resilience (Such high-quality varieties with climate resilient agronomic practices and better postharvest management and marketing can fetch better price in the niche market, Outputs 2.1 and 2.2). Seeds without border initiatives signed by Nepal also facilitates introduction of rice varieties with preferred traits. Agriculture cooperatives and private sector will get supports for improving seed multiplication, processing, quality control and marketing of rice. This output will set a strong focus on closing the gender gap in access and control of land and natural resources by women, especially through the preferential selection of women-led households as project beneficiaries.

Indicative Activities:

Activity 1.2.1. Introduce, identify and promote multiple stress tolerant crop **germplasm/varieties and landraces with preferred traits and improve rice breeding capacity.**

Activity 1.2.2. Establish and strengthen community seed banks **with participation of women and IPs** (as planned by the adaptation plan 3.1.4).

Activity 1.2.3. Support seed multiplication, processing, quality control and marketing of stress tolerant crop varieties and landraces with gender and youth responsive resilient seed systems **in participation with agriculture cooperatives and private seed companies;**

Activity 1.2.4. Conduct large-scale demonstrations of climate resilient conservation agriculture practices with land consolidations.

Activity 1.2.5. Establish and strengthen custom hiring centres prioritizing gender friendly machineries and equipment linked with FFS groups (1.2.7);

Activity 1.2.6. Manage soil health including integrated plant nutrient management (IPNM) through soil amendment with organic matter, green manuring, biofertilizers, site specific nutrient management and soil tests for crop specific precision application of fertilizers;

Activity 1.2.7. Select, validate and adopt GESI responsive location-specific climate resilient agronomic practices (for rice, wheat, maize, potato, pulses and vegetables) and crop calendars through the FFS approach.

MoALD will be responsible for all the activities except 1.2.1 and 1.2.4 for which IRRI and NARC will collaborate. Fund for NARC will flow from the MOALD whereas that for IRRI will be through a LoA with FAO. Private seed companies, agriculture cooperatives, and grain traders will play a key role in the identification, breeding, production and promotion of climate-resilient local rice varieties. Implementation will be coordinated with the PMAMP, FANSEP II, GEF-10469, and GEF-10727 projects

Output 1.3 Crop and location-specific agro-advisory services disseminated to and used by female and male farmers and other value chain actors. Farmers have reported difficulties to access and use agro-advisory bulletins issued by NARC and DHM. Farmers access to information will be ensured through a range of sources – many digital and others. Activities under this output will make use of dedicated ICT, social media and other means such as farmer and

expert exchanges, improve the capacity for farmers to understand and adapt advisories to their specific circumstances. Activities will also allow for the integration of feedback systems to understand the usefulness and applicability of advisory information and incremental improvement and targeting of specific groups such as women. Finally, a feasibility assessment will be prepared to understand how the advisory system could be used to support establishment of an index-based insurance scheme for rice producers. The index-based insurance system is a new concept for Nepal and feasibility study is needed.

Indicative activities:

Activity 1.3.1. Build capacity of farmers, extension service providers and other value chain actors to access and adopt weather and climate information and agro-advisory services through different channels including mobile apps, social media and structured exchanges (regularly issued by NARC and DHM)

Activity 1.3.2. Develop and strengthen a farmers' feedback mechanism for the weather forecast information and agro-advisory services;

Activity 1.3.3. Conduct feasibility study of weather index-based agro-insurance scheme.

MoALD will be responsible for all the activities except 1.3.3 for which FAO will support under the TA component leveraging international experiences. Implementation will be coordinated with the GCF "Building a Resilient Churia Region in Nepal" project.

The barriers of weak agro-entrepreneurship and inefficient value chains, as well as the limited availability of post-harvest infrastructure and processing technologies will be removed by investments into climate-resilient post-harvest infrastructure, enhancing the capacities of agriculture Small- and Medium Enterprises (SMEs) and farmers to manage climate risks in rice-based farming and food systems through climate resilient business planning and to access to risk mitigation services including credit and insurance. These investments are bundled into **Component 2 on support for climate-resilient value chains**. The technical expertise and advisories will support PMAMP for making its mechanization efforts climate resilient to improve their scalability and sustainability. The Outputs resulting from investments under Component 2 will lead to Outcome 2: Climate resilient value chains in rice-production landscapes developed and supported through enhanced access to infrastructure and services to manage climate risks and access market opportunities. Leveraging private sector investments, availability of market information, and access to resources for farmers and entrepreneurs, and capacities to maintain and operate post-harvest infrastructure are important interventions for capacity building of value chain actors. The outcome will be contributed by achievements of two specific outputs.

Output 2.1: Adaptive capacities of agricultural value-chain actors enhanced through climate resilient business planning and access to risk mitigation services including credit and insurance. Value-chain networks will be mapped to identify critical points for the project interventions and model business plans will be developed for such interventions. For example, if rice seedling production for machine planting is a critical node, a business model will be developed for rice seedling production and machine planting of paddy fields. Similarly, if drying and milling of spring rice is a critical note, a model business plan will be developed for drying the spring rice harvested during early rainy season. Value-chain actors will be encouraged to select a model business plan (planting business, drying business, etc.) fitting to their own business environment and investment capacity. The value-chain actors will be supported to develop their own business plan based on the model. Their training through financial education and business literacy helps to develop their own business plans.

Agribusiness incubation services will be provided to SMEs farmers groups, agriculture cooperatives and private entrepreneurs involved in agricultural value-chain. The private entrepreneurs include agriculture service providers (like seed suppliers and other input suppliers commonly known as agrovets in Nepal) at production level and service providers engaged postharvest management. The incubation services include risk assessment, insurance, management capacity development and competitive grants. The competitive grants will be managed by the OP. Risk assessment and developing management capacity of value-chain actors help to access risk mitigation services, including insurance and finance. The business literacy, risk assessment and

insurance facilities will encourage investments from the banks and financial institutions. The incubation services at the postharvest level include development of Participatory Guarantee Schemes (PGS) for better quality safe food products produced through climate resilient practices. The PGS will be linked to organic or other standards such good agriculture practices (GAP) and sustainable rice platform (SRP). This output will emphasize closing of the gender gap by the preferential selection of female value chain actors as project beneficiaries.

Indicative activities:

Activity 2.1.1. Map rice value-chain networks and identify their critical nodes that require climate resilient interventions

Activity 2.1.2. Develop model business plans for each of the critical nodes of the value-chains;

Activity 2.1.3. Build capacity of value chain actors like farmers groups, agriculture cooperatives and service providers including women, IPs and youths to develop their own business plans using the model business plans, financial education and business literacy;

Activity 2.1.4. Provide agribusiness incubation services like risk assessment, insurance, management capacity development and competitive grants to value-chain actors (as identified in Activity 2.1.3) to develop capacity of value-chain actors for adapting and using the business plans to their own businesses .

MOALD will be responsible for all the activities except 2.1.1 and 2.1.2 for which FAO will support under the TA component. Implementation will be coordinated with the PMAMP and GEF-10469 projects.

Output 2.2: Climate resilient post-harvest infrastructure including storage facilities and processing technologies promoted. On site support will be provided to value-chain actors for identification, prioritization, designing, installation and operationalization of climate resilient processing technologies and post-harvest handling infrastructures for seeds and farm products (at the critical nodes identified by 2.1.1). The machines and equipment needed for climate resilient value-chain will be identified based on stakeholder consultations by the municipalities. Prioritization of the machines and equipment and selection of the beneficiaries (as identified in 2.1.3) will be done based on established systems of cost benefit analysis, multicriteria analysis, climate resilience benefits, etc. Technical supports will be provided to the municipalities to administer the selection process and selected entities will be supported for designing, installation and operation of the machineries.

The OP will procure the machines and equipment identified by (Activity 2.2.1) following the process employed by Prime Minister Agriculture Modernization Project (PMAMP) being implemented by the OP. Such supports will stimulate business opportunities and technological innovation in value-chain logistics. This activity will also invest into institutional capacity building of the farmers groups, agriculture cooperatives and private sector in charge of post-harvest infrastructure to ensure their long-term sustainability.

Indicative activities:

Activity 2.2.1. Support identification, prioritization, designing, installation and operationalization of climate resilient processing technologies and post-harvest handling infrastructures for seeds and farm products for value chain actors (at critical nodes identified by 2.1.1);

Activity 2.2.2. Provide machines and equipment to value-chain actors including farmers groups, agriculture cooperatives and private agencies including women led organizations to pilot new technologies at different nodes of the value-chain.

MoALD will be responsible for all the activities under this output.

The barrier of fragmented institutional landscape and limited capacities of local government institutions to support climate-resilient transformation of rice-based agrifood systems will be removed by targeted investments into strengthened governance and regulatory systems to promote climate resilient value-chains and NbS at local, provincial and federal government levels, and multi-stakeholder dialogues with non-state actors, including private sector entities to develop inclusive services and approaches to promote climate resilient value-chains and NbS. These investments are bundled into **Component 3** on creating the **enabling environment for scaling up sustainable interventions on climate resilient rice-based farming and food systems**. Successful delivery of all Outputs under this component will lead to Outcome 3: Government policy, planning frameworks and climate services strengthened at all levels of government in a gender responsive manner to promote transformation towards climate-resilient rice-based farming and food system landscapes. This, however, will only be achieved in case sufficient political will to instigate the required changes and to consistently implement the policy and regulatory frameworks and multi-stakeholder governance mechanisms, and the associated institutional capacity for these is in place. Ownership by the Executing Agency, provincial governments and municipalities involved provides reassurance of the political will and the institutional support, however institutional capacities for coherent policy implementation will need to be built. The outcome will be contributed by achievements of two specific outputs.

Output 3.1 Governance and regulatory systems to promote climate resilient value-chains and NbS at local, provincial and federal government levels strengthened in gender responsive manner.

The digital agriculture extension framework will provide a framework and mainstream climate change adaptation to the mobile apps and agriculture extension portals being developed by Agriculture Information and Training Centre (AITC), NARC and private sector agencies independently in uncoordinated ways. This framework will help mainstream the training of the government staff (3.1.3) and execution of the activities under the Component 1. Public and private sector rice breeders will be trained for breeding stress tolerant rice varieties using germplasm introduced (1.2.1). This activity will be executed by FAO as the TA service provider.

Strengthening the coordinating function of municipal government (Activity 3.1.3) will be helpful to the institutional arrangements for identifying NbS at landscape scale. The municipality plays a coordinating role across the project farmers groups and other groups. Adaptation planning (Activity 3.1.4) is at the municipal scale, increasing the role of municipal entities in coordinating the farmers groups and the CFUG and WUG to support deployment of NbS (1.1). Thus, the activities 3.1.3 and 3.1.4 ensure the linkages across the activities and groups in planning, coordinating and implementing.

Indicative activities:

Activity 3.1.1 Develop a digital agriculture extension framework to mainstream climate change adaptation practices, technologies and information (to support activities under 1.2 and 1.3), linking agriculture extension to agricultural research and teaching;

Activity 3.1.2. Provide training to public and private sector rice breeders for breeding stress tolerant rice varieties using germplasm introduced (1.2.1).

Activity 3.1.3. Strengthen technical capacity of government officials mainly at the municipal level on identifying climate risks and vulnerabilities and planning appropriate adaptation responses using NbS and training at provincial levels for climate resilient value chains;

Activity 3.1.4. Conduct climate risk and vulnerability assessments of municipalities, identify and assess location specific NbS and develop gender-specific climate change adaptation plans in agriculture sector (to support activities under Component 1);

Activity 3.1.5. Develop gender and youth-responsive climate resilient farm management strategies for rice-based cropping system apply them for agronomic practices under the Output 1.2 and mainstream them into the agriculture programmes of municipalities.

MOALD is responsible for 3.1.1 and 3.1.3. FAO TA will be responsible for 3.1.4 and 3.1.5 and it will get the work done from IRRI for 3.1.2. 3.1.4 will be coordinated with the GEF-10727 MaWRiN project

Output 3.2 Multi-stakeholder dialogues with non-state actors and private sector entities promoted to develop inclusive services and approaches to promote climate resilient value-chains and NbS. A scheme for institutional partnerships and coordination mechanisms will be developed for inclusive services and approaches at provincial level in consultations with private sector entities and CSOs to adopt climate resilient value-chains (linking to 2.1 and 2.2). This is a mechanism at the provincial level to link the municipal level activities into higher level for market linkages for agricultural services and marketing. As VCs tend to cut across administrative boundaries, the value chain networks will be organized at provincial level.

Multi-stakeholder platforms will be formed at national and provincial levels (following 3.2.1) and conducted GESI responsive multistakeholder dialogues with them. The participants will include agriculture cooperatives, private sector entities, CSOs and government agencies at the national and province levels for developing business linkages for agriculture.

The multistakeholder dialogue may raise several issues out of which some of them may be policy issues that can be resolved with small budget. The follow up programme will provide supports for resolving such issues. This output will focus on closing the gender gap at a strategic level by ensuring female participation in the dialogues and decision-making on climate-resilient value chains.

Indicative activities:

Activity 3.2.1. Develop a scheme for institutional partnerships and coordination mechanisms for inclusive services and approaches at provincial levels in consultations with private sector entities and CSOs to adopt climate resilient value-chains (linking to 2.1 and 2.2;

Activity 3.2.2. Form multi-stakeholder platforms at national and provincial levels and conduct GESI responsive multistakeholder dialogues with agricultural cooperatives, private sector entities, CSOs and government agencies for developing business linkages for agriculture;

Activity 3.2.3. Provide follow up and support services for issues raised by the multistakeholder dialogues.

MoALD will be responsible for all the activities.

The barrier of limited access to knowledge and awareness on climate change adaptation among rice farmers, value chain actors and government institutions will be removed by targeted interventions into knowledge management systems focusing on collection and scaling up of innovations and associated adaptive learning to drive climate resilient transformation in rice-based cropping systems, documentation of indigenous knowledge and practices, and establishment of a robust M&E system to track and evaluate adaptation and resilience in agriculture. These investments are bundled into **Component 4 on capturing and disseminating relevant knowledge, as well as monitoring and evaluating the results.** Where feasible the project will also aim to share lessons learned via relevant regional and global initiatives including the Sustainable Rice Landscapes Initiative (SRLI⁶). The STAP decision tree for adaptation rationale will be used to identify promising traditional practices for up scaling. The delivery of targeted outputs will lead to Outcome 4: Learnings from adaptation innovations monitored, analysed, reported and disseminated. Sufficient access to data and stakeholder cooperation are assumptions that need to be met for the outcome to be achieved. Close coordination, efficient two-way communication and exchange of information between the Executing Agency and all Delivery Partners is further essential for this. These assumptions appear reasonable, given the strong interest of all partners in the project. The outcome will be contributed by achievements of two specific outputs.

Output 4.1 Adaptive learning and support programmes established for collection and scaling up of innovation and transformation for rice-based production landscapes

Indicative activities:

Activity 4.1.1. Formulate a learning agenda, and the project's capacity development strategy for collaborative and adaptive learning and adoption in climate resilient rice-based agriculture landscapes;

Activity 4.1.2. Document indigenous/local rice-based cropping system skills, knowledge and technologies and practices (to support 1.2.1).

Activity 4.1.3. Develop and promote knowledge and communication products and technology briefs for public use, especially by farmers, technicians, researchers, government officials and CSO (e.g. pocket booklet of local rice varieties, photo stories, audio/video tutorial on Integrated pest management and indigenous climate resilient practices etc.).

MoALD will be responsible for all the activities under this output while FAO will be responsible for consultant input (Gender and M&E). The output will be coordinated with the GEF-10727 MaWRiN, GCF-LP131, the GCF “Building a Resilient Churia Region in Nepal”, FANSEP II, REED projects.

Output 4.2 Robust M&E systems established to track and evaluate adaptation and resilience with gender disaggregated data and information in agriculture

Indicative activities:

Activity 4.2.1. Develop and adopt a multilayered Project Management Information System (PMIS) and share knowledge using UNICT for improved monitoring and reporting;

Activity 4.2.2. Organize inception workshop, annual review and planning workshops, reflection workshops, and final dissemination workshop;

Activity 4.2.3. Conduct indicator surveys (midterm and terminal);

Activity 4.2.4. Conduct Mid-term evaluation of the project;

Activity 4.2.5. Conduct Terminal evaluation of the project.

MoALD will be responsible for PMIS under 4.2.1 and whole of 4.2.2 and FAO will be responsible for UNICT under 4.2.1 and the last three activities.

The four outcomes corresponding to four impact pathways (transformation capacity and technology, climate-resilient value chains, enabling environment for climate-resilient agrifood systems, and knowledge and knowledge and M&E for climate resilience) taken together will result in three positive intermediate effects:

- **Resilience:** increased resilience and reduced vulnerability of rice-based farming and food systems
- **Food security and sovereignty:** sustainably increased production of nutritious staple food,
- **Livelihoods:** farmers secure climate-resilient livelihoods, sustainable employment and income.

These intermediate effects are further underpinned by empowerment of women and of members of disadvantaged groups, as well as the reduction of social inequalities. The scale and impacts of project interventions will outweigh countering social and environmental effects. This requires amongst other things that the transformational change in implementing adaptation technologies and NbS, increasing the profitability and resilience of value chains, and creating of an enabling environment are wide-ranging enough and achieve large scales of impact that go beyond targeted landscapes.

Under the assumption that the delivery of outcomes and resulting intermediate impacts will not be derailed by disproportionately high climate change impacts, unforeseen natural disasters, diseases, conflict, or other disruptions. They will ensure that the rice-based farming landscapes in central Nepal deliver global adaptation benefits for human livelihood sustainability, including (i) land managed for resilience, (ii) beneficiaries with better awareness and reduced vulnerability, (iii) plans and policies that mainstream resilience, and (iv) private sector engaged in climate change adaptation. Ultimately global adaptation benefits will contribute to the achievement of the SDGs, particularly targets under SDG 13 Climate Action, and SDG 2 Zero Hunger. Alignment with the UN Food Systems Dialogue and other relevant international processes ensures the Project fits well into the relevant international agenda towards climate-resilient transformation of agrifood systems.

Building on the baseline (Section A), additional GEF funds are required for the demonstration of innovative adaptation technologies (including NbS) for rice-based farming systems, for increasing the resilience and profitability of rice-based value chains through post-harvest technologies, climate-resilient business planning and ease of market access, for facilitating institutional coordination across three levels of government for effective policy implementation, and for building the knowledge base and relevant capacities of several stakeholders.

The transformation will be achieved through partnerships with federal, provincial and municipal governments, rice farming communities, private sector entities, and other value chain actors to enable a whole-of-society approach. This will remove institutional, technical and capacity barriers to climate resilient rice-based farming and food systems. In line with the GEF Stakeholder Engagement Policy (SD/PL/01), stakeholders were thoroughly identified, consulted, and their engagement was tailored to specific needs during the PPG, as described in the Project's Stakeholder Engagement Plan (SEP; Annex J). The stakeholders include government institutions at federal (MoALD, Department of Agriculture and NARC), provincial (provincial agriculture ministry and Agriculture Knowledge Centre) and municipality. Other stakeholders are Civil Society Organizations (farmers cooperatives and Self-Help Groups), private sector value chain actors, Indigenous Peoples, local community members, specifically including women, youth and members of disadvantaged groups. The MOALD takes the lead responsibilities of project execution and will benefit from increased institutional and individual capacities to develop and implement government policies, strategies, and programs. For this, MOALD will closely rely on collaboration with provincial agriculture ministries and municipalities, who will benefit from the development of enabling environment together with their capacity building. Value chain actors, including farmers, benefit from reduced vulnerability to climate change, resilient livelihoods, empowerment of women, youth and members of disadvantaged groups, increased social capital, and strengthened farmers institutions. They are further supported by IRRI providing innovative technologies and best practices through on-farm demonstrations. Private sector actors, including multi-grain or rice mills, rice-based food industries, seed companies, agriculture input suppliers, grain traders, and supermarkets selling rice products are engaged through multi-stakeholder consultations (3.2) and value chain and post-harvest infrastructure development (2.2) to benefit from and in turn to sustain more resilient and sustainable business opportunities. The private sector engagement will demonstrate initially at the landscape scale how value chains can be transformed to address key vulnerabilities related to climate change. The upscaling of these best practice initiatives through Components 3 and 4 will contribute to agrifood systems transformation at large.

The project fully complies with the GEF Gender Policy, primarily through gender responsive and sex-disaggregated landscape-level consultations, also outlined in the Stakeholder Engagement Plan (SEP; Annex J), and a dedicated Gender Analysis and Action Plan (GAAP; Annex K), which help to fully mainstream gender equality into the project cycle. The GAAP is fully integrated into the Project's results framework, which contains gender-responsive results and corresponding sex disaggregated indicators (Annex C).

Lessons and best practices from past projects (refer to Sections A and C) inform the knowledge management (KM) strategy of the Project (refer to Section E.1). Farmers' access to the substantial body of knowledge on climate change adaptation in rice-based agrifood systems remains inadequate. Digital agriculture extension framework (3.1) to mainstream climate change adaptation practices, technologies and information, and linking agriculture extension to agricultural research and teaching will effectively interfacing between science, policy, and practice. KM will rely on (i) continued review of own results as well as those of parallel projects capturing newly emerging information. (ii) Knowledge sharing between other stakeholders and initiates will be actively pursued through dedicated events and be linked to (iii) knowledge-based capacity development, thus directly mainstreaming new lessons into practice. This aspect will further be supported by (iv) Farmer Field Schools (FFS) to test, validate, and adopt new technologies. The project will utilise (v) knowledge dissemination through technical briefs. KM will further be supported by (vi) strategic communication, also focusing on dissemination of knowledge.

The project's success hinges largely on making available and developing institutional capacities relevant to the achievement of the targets. These include technical capacities on climate change adaptation mainstreaming into planning and implementation of technical interventions and institutional coordination mechanisms across the different levels of government. While capacity gaps of MOALD are being filled by TA, the important gaps to be filled by the project include capacities of non-state actors and private sector on climate-resilient investment, insurance, innovations, capacities of farmers and community members on climate change adaptation in rice-based farming systems. The capacities of municipalities will be developed for mainstreaming climate change adaptation into their agriculture policies and planning. The design ensures optimal utilization of existing capacities through partnerships with relevant government and non-government organizations, which helps fill important capacity gaps.

Expected outcomes are enduring and resilient to possible future changes in the barriers identified in Section A. Design and dimensions of adaptation technologies, NbS, post-harvest infrastructure and value chain development activities will all be based on climate risk assessments based on the RCP4.5 scenario.

Stakeholder engagement

The project adheres to the principles of stakeholder engagement by demonstrating commitment to their needs and priorities, fostering mutual respect and trust, acknowledging diversity, addressing community concerns in a transparent and timely manner, promoting inclusive practices, and building trust through open and meaningful dialogue. The key stakeholders are farmers and their organizations, service providers, value chain actors, sub-national government agencies and national government agencies.

Farmers and their organizations are engaged under Component 1. They are the primary stakeholders and direct beneficiaries. Their focus is on adopting climate-smart and nature-based solutions adaptation options to enhance food security and household income by enhanced access to knowledge, technologies, finance, and markets provided by the project for long-term adaptive strategies. The support will include technology and knowledge interventions at the farm level and demonstration of landscape-level interventions by

improving coordination among villages, village clusters, and municipalities. The aim is to ensure climate-resilient rice-based farming and food systems through integrated management of water and land resources, creating enabling conditions for farmers and their households to adopt necessary transformations in their practices.

Technological service providers are engaged under Component 1. International Rice Research Institute (IRRI) will be engaged in capacity-building of NARC and demonstration of climate resilient technologies at farmers' field. NARC is engaged in adaptability trials of stress-tolerant varieties and production of breeders' seeds of those varieties.

Value chain actors, including private sector are engaged under Component 2. Capacity building will be done through development of value chain networks and supporting for business planning of the private sector, comprising farmers' associations, cooperatives, input suppliers, millers/processors, wholesalers, exporters, and local financial institutions and insurance providers. The value chain actors will be supported through post-harvest infrastructure development for seeds and farm products. Multi-stakeholder dialogues (under Component 3) will develop linkages among different stakeholders, Particularly among seed companies, farmers, traders, rice processors, including rice mills and retailers. Specifically, multi-grain and rice mills will be engaged in promoting market linkages and climate resilient local rice varieties (Output 1.2), rice-based industries and firms will be engaged in the promotion of market linkages (Output 2.1) and climate resilient local rice varieties (Output 1.2). Seed companies will be involved in the production and distribution of local climate resilient rice varieties to farmers and cooperatives (Output 1.2). Multi-agrobusinesses / agricultural input suppliers will promote environment friendly input supplies, including organic manure, pesticides and NbS (Outputs 1.1, 1.2). Grain traders will be engaged in the promotion of local climate-resilient rice varieties and products developed from it (Output 1.2). Finally, supermarkets and agri-marts will enhance market access to local rice varieties (Output 2.1).

Government agencies at sub-national level are engaged under Component 3. The sub-national government agencies include project municipalities, AKC and provincial ministry for agriculture. They will receive support through enhanced planning and the integration of climate risks and NbS into local development plans. These enabling conditions will capacitate them to encourage farmers and value chain actors through policy and technological supports.

Government agencies at national level are engaged under Components 3 and 4. National stakeholders include the MOALD as the executing agency. Other agencies engaged are Agriculture Information and Training Centre (AITC), NARC and Department of Agriculture. These national agencies get capacity building supports under the enabling environment and information supports through knowledge management. They will support in project execution. These stakeholders are invested in driving the country's progress towards achieving SDG2 (eliminating hunger), SDG1 (reducing poverty) and SDG13 (taking climate actions). These institutions will support the effective delivery of Components 1 and 2 by creating enabling policy and institutional environments, and information flow, and relevant national and sectoral policies and strategies, discussed in Section C below. They will promote intersectoral coordination and knowledge management to integrate best practices and lessons learned from the project into national policies, climate investment strategies, and regional and international cooperation, as relevant.

For effective stakeholder engagement the project will follow an inclusive and meaningful consultation, forging strong partnerships, and harnessing the knowledge and expertise of communities, Indigenous Peoples, private sector actors, and CSOs. The project will adhere to core principles of constructive, responsive, accountable, and transparent engagement. This calls for the fair, balanced, and inclusive participation of key stakeholders, alongside commitments and resource allocations for identifying, designing, implementing, monitoring, and evaluating programs.

Private sector involvement

Private sector plays a key role in climate change adaptation through creating business and investment opportunities in this area, establishing and expanding market linkages of resilient inputs, adding value to farm products, marketing the products, and ensuring quality in the end use. Its engagement also brings climate-resilient technologies and innovations by identifying and promoting locally feasible and promising techniques. Through collaboration with the private sector for quality agricultural services, input supplies, post-harvest technology transfer, market access, and business development, the CRAFT Nepal project aims to foster resilience and profitability in rice-based value chains and secure financial leverage.

Following GEF policy guidelines⁷, the CRAFT Nepal project adopts a key approach to amplify private sector engagement by aligning with their business strategies and establishing partnerships. Through regular consultation, collaboration, and joint implementation, the project aims to involve private agencies at all levels and scales. The strategy focuses on six modalities: (a) knowledge and information sharing, (b) policy development, (c) technical assistance, (d) capacity building, (e) finance, and (f) industry leadership. The project

strives for dedicated private sector engagement to explore business opportunities in sustainable and climate-resilient rice-based agriculture and food systems.

For private sector engagement, the project emphasizes value chain and post-harvest infrastructure development (Component 2) and creating an enabling environment to scale up sustainable interventions in climate-resilient agri-food systems (Component 3). Through market-based solutions and increased private investment in small and medium enterprises (SMEs), the project aims to develop climate-resilient value chains in rice production landscapes. Specific priorities include climate-resilient post-harvest storage and processing facilities, capacity development for SMEs and farmers to promote rice-based businesses and enterprises, and the provision of credit and insurance services for risk mitigation.

To create an enabling environment for sustainable, climate-resilient agri-food systems, the project will foster multi-stakeholder dialogue among diverse actors, including the private sector. Key priorities include promoting commercial investment in climate-resilient value chains and Nature-based Solutions (NbS). To enhance investment flow, the project will support the development and promotion of innovative financial mechanisms, incentivize the private sector, and assist in investment risk assessment and mitigation.

The key approaches that will be followed for private sector engagement are financing for climate-resilient agriculture mechanization and attracting investment for the cost leveraging. The financing for climate-resilient agriculture mechanization and technologies will be done in collaboration with Agriculture Development Bank Limited (ADBL) and other banks, and insurance companies, special scheme loans, credit and insurance package can be offered to the local farmers to adopt climate resilient farming and technologies, and agri-enterprises. Similarly, the attraction of investment for the cost leveraging in agri-base businesses will be done by reducing risks and linking to insurance focusing on social and environmental safeguard. These activities are supported by capacity building and technical assistance through multistakeholder dialogue process (Component 3). To ensure effective engagement with the private sector, the CRAFT Nepal project deliberately promotes the participation and inclusion of women, youth, Dalits, Adivasi-Janajati, and Madadhesi, along with their small and large enterprises, in project design, planning, execution, monitoring, evaluation, and closure.

Innovation & Transformative Change, Knowledge management, Policy coherence and Capacity development

Innovation and transformative change

The Project’s specific approach to innovation and transformative change is guided by the FAO Science and Innovation Strategy⁸ and is internalised in the theory of change. The approach addresses the FAO science and innovation pillars and subordinate outcomes, as specified in the table below.

FAO Science and Innovation Strategy pillar	FAO Science and Innovation Strategy Outcomes modified to the requirements of the Project	Applicable project outputs
Strengthening science and evidence-based decision-making	<ul style="list-style-type: none"> ▪ Enhanced knowledge ▪ Strengthened science-policy-practice interface ▪ Research for development 	4.1 Adaptive learning for innovation & transformation 3.1 Governance & regulatory systems for climate resilient value chains & NbS 3.2 Multi-stakeholder dialogues
Supporting innovation and technology at regional and country level	<ul style="list-style-type: none"> ▪ Access to innovative technologies ▪ Capacities for agricultural innovation ▪ Capacities to design, implement and evaluate strategies, policies, regulatory frameworks on science, technology and innovation strengthened 	1.1 NbS adopted 1.2 Agronomic practices scaled 1.3 Access to agro-advisory services 2.1 Climate-resilient business planning & risk mitigation 2.2 Climate-resilient post-harvest infrastructure
Serving Members better by reinforcing FAO’s capacities	<ul style="list-style-type: none"> ▪ Science communication enhanced 	3.2 Multi-stakeholder dialogues

	4.1 Adaptive learning for innovation & transformation
--	---

The innovation and transformative change approach is aligned with the Strategy on Climate Change, and the Strategy on Private Sector Engagement. Youth engagement and institutional innovation includes the breaking down of sectoral and hierarchic silos across research and extension and linkages among the three tiers of government that currently hamper innovation in agriculture. Action under each of the pillars will be catalysed and scaled by two cross-cutting enablers: transformative partnerships and innovative funding and financing.

The innovation of the CRAFT Nepal project lies in its integrated approach, which builds on the existing policies, institutional and individual capacities, as well as technical tools and knowledge. This strategy enhances the baseline capacity and knowledge base to innovatively adapt to evolving needs, specific local circumstances, and current opportunities for supporting further climate-resilient transformation. The strategy thus ensures the additionality of the technical assistance and investment by the project. It leverages the successes of the GEF/LDCF project (GEF ID: 5111) to scale up best practices in adaptation technologies, location specific agro-advisory and rural livelihood diversification.

The innovative design of the CRAFT Nepal project is informed by terminal evaluation report of GEF-5111 (FAO, 2019), which recommends (i) to institutionalize a well-resourced training and extension wing in newly established AKCs to promote climate adaptive agriculture practices, (ii) to institutionalize the FFS approach in AKCs and undertake phase-wise implementation in districts or pocket areas in close coordination with and support from local governments to replicate climate adaptive agriculture practices, (iii) municipalities to allocate resources and undertake phase-wise implementation of risk reduction and climate change adaptation plans with technical assistance from AKCs, (iv) to continue to work with NARC, MoALD and develop partnership with Provincial Governments to give continuity to agro-meteorological forecasts production and dissemination, and (v) FAO to assist the Federal Government of Nepal and interested Provincial Governments to develop and implement a longer-term project at a wider scale on climate change adaptation in agriculture sector building on the achievements of the FFS approach. The CRAFT Nepal project focuses on expanding on the recommendations to further address the evolving needs and challenges being faced by farmers and their households in the target areas. In this context, the project's innovation is predicated on the following three pillars.

Knowledge management

The Project's approach to knowledge management is guided by FAO's Knowledge Management Strategy⁹ and the GEF Knowledge and Learning Strategy and is primarily operationalised (Output 4.1). The project benefits from existing knowledge on technologies including NbS and agronomic practices and traditional knowledge of rice-based farming systems.

A detailed project level Knowledge Management Strategy to be developed during the inception phase will specify procedures for capturing, storing, and tailored dissemination of knowledge. Traditional knowledge on rice-based cropping systems will be documented (Output 4.1), enhanced with technical innovations resulting from scientific knowledge as applicable, and disseminated to diverse stakeholders as outlined in the section on capacity development below. Knowledge management will be closely supported by the Project's communication strategy, focusing on developing and promoting knowledge and communication products and technology briefs tailored to specific target beneficiary groups.

The project will generate new knowledge primarily by documenting existing traditional knowledge and by field testing of scientific innovations through the FFS approach. Knowledge will be disseminated to project stakeholders through printed and online knowledge and communication products. The project under Component 4 will also engage with global and regional initiatives including the GEF Food Systems and Food Systems and Land-Use Restoration Impact Programmes (FS-IP & FOLUR) and Sustainable Rice Landscapes Initiative (SRLI), to benefits from and share best practices with other similar projects and initiatives internationally and regionally.

Policy coherence

Following the GEF-STAP Guidance on Policy Coherence,¹⁰ project design maximises coherence with international and national processes, policies and agendas and coherence between sectors (refer to Section C), while ensuring coherence between stakeholders and different sources of finance. The project 1) fosters synergies across economic, social and environmental policy areas by integrating climate change adaptation, resilience and livelihood security, food production, as well as agribusiness development needs. 2) Trade-offs between conflicting policy objectives have been identified, including between the maximisation of agricultural production and environmental sustainability, as described in the ESMP (Annex F). 3) these trade-offs were addressed in the project's results framework, incl. e.g. by informing irrigation investments.

The Project will not develop any new national policies or strategies, but will invest into an improved alignment and implementation of existing policies to ensure that global adaptation benefits which are not negated by incoherent policy implementation. The key instruments the project will put in place for this includes municipal-level climate change adaptation plans and agriculture extension strategies.

The project will engage in multi-stakeholder policy dialogue to mainstream its best practices and lessons learned into broader policy frameworks (Output 3.2). By working closely with policymakers and stakeholders, the project aims to inform overall policy direction and guide public investments in climate-resilient rural development and food security pathways. This dialogue will ensure that the knowledge generated by the project directly influences sectoral policy decisions and strategies, promoting effective and inclusive approaches to climate resilience.

Capacity development

The capacity development approach is aligned with the FAO Capacity Development Strategy,¹¹ and approach focused on developing capacities along i) three dimensions (individual, organisational, enabling environment) and ii) along four functions (policy and normative, knowledge, partnering, and implementation), aside from iii) the technical aspects dictated by the project’s targeted results, as presented below (technical aspects dimension not shown).

Capacity functions	Capacity dimensions		
	Individual	Organisational	Enabling environment
Policy and Normative	n/a	Formulate digital extension framework (MoALD) and climate adaptation plans (municipalities)	Implement the framework and plans
Knowledge	Accessing data and information (e.g. markets, climate-hazards, agro-advisory)	Generate, manage and exchange knowledge (all govt., CBOs, cooperatives)	n/a
Partnering	Managerial skills in networking	Engage in networks, alliances and partnerships	Institutionalise science-policy-practice
Implementation	Assess and implement climate-resilient agronomic practices in rice-based farming Climate-resilient business plans	Implementation NbS, municipal-level adaptation plans and agriculture extension strategies.	interface across three tiers of government

The Project’s detailed Capacity Building Strategy and its complementary Learning Agenda will be developed during the inception phase to enhance collaborative and adaptive learning on climate-resilient rice-based agrifood systems. Capacity development investments are tailored to the requirements of beneficiary stakeholders across all three tiers of project governance and typology of stakeholders. Centrepiece of the capacity development approach will be groups and networks of local level stakeholders to share learnings along individual and organisational dimensions. All capacity development investments are proposed to be met by GEF financing.

Institutional Arrangement and Coordination with Ongoing Initiatives and Project.

Please describe the Institutional Arrangements for the execution of this project, including financial management and procurement. If possible, please summarize the flow of funds (diagram), accountabilities for project management and financial reporting (organogram), including audit, and staffing plans. (max. 500 words, approximately 1 page)

The *Ministry of Agriculture and Livestock Development* will act as the lead executing agency and will be responsible for the day-to-day management of project results entrusted to it in full compliance with all terms and conditions of the Operational Partnership Agreement signed with FAO¹². As OP of the project the *Ministry of Agriculture and Livestock Development* is responsible and accountable to FAO for the timely implementation of the agreed project results, operational oversight of implementation activities, timely reporting, and for effective use of GEF resources for the intended purposes and in line with FAO and GEF policy requirements.

The project organization structure is as follows:

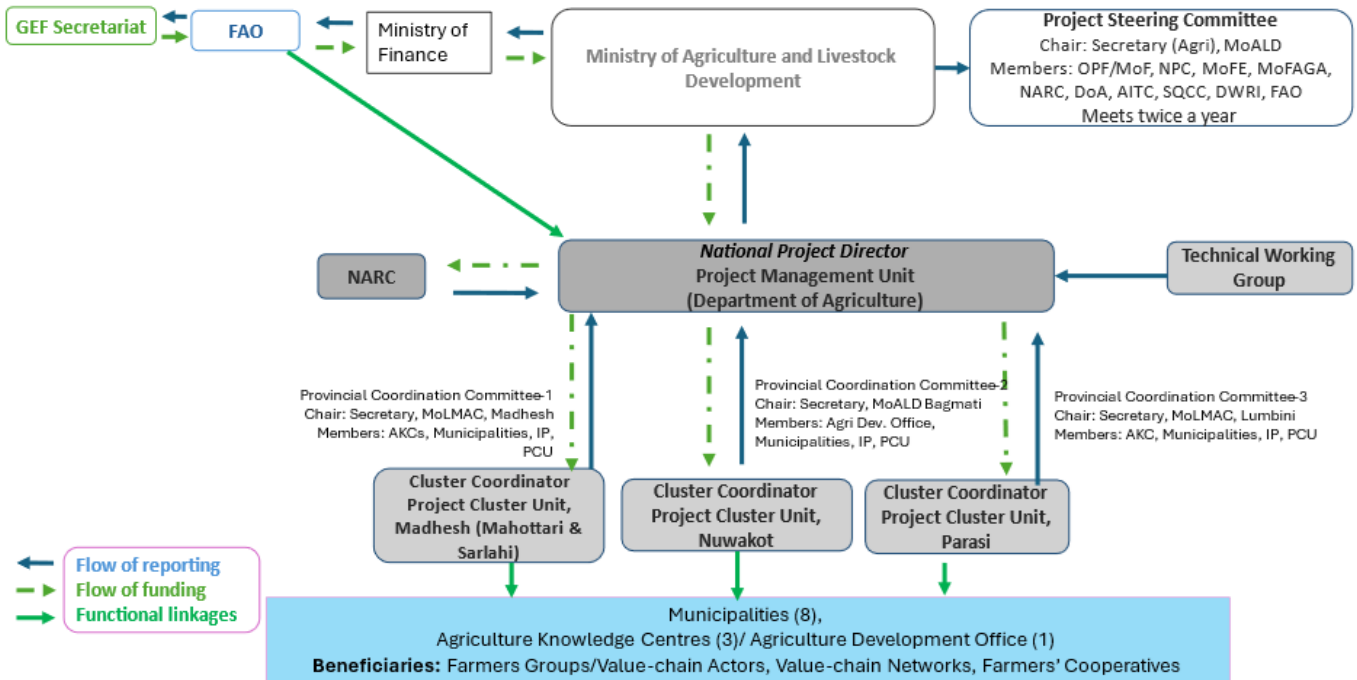


Figure 5: Implementation arrangements

The Government may designate a National Project Director (NPD). The PMU will be located in the Department of Agriculture, and the NPD who will be the head of the PMU, will be responsible for coordinating the activities with all the national and sub-national bodies related to the different project components, as well as with the project partners. He/she will also be responsible for supervising and guiding the Project Manager (see below) in compliance with policies and priorities of the government, FAO and GEF.

The Secretary (Agriculture), Ministry of Agriculture and Livestock Development will chair the Project Steering Committee (PSC) which will be the main governing body of the project. The PSC will review and approve Annual Work Plan and Budget on a yearly basis and will provide strategic guidance to the Project Management Unit (PMU) and others.

PSC will comprise of representatives from Ministry of Finance (MoF), the OFF, National Planning Commission (NPC), Ministry of Forest and Environment (MoFE), Ministry of Federal Affairs and General Administration (MoFAGA), Department of Agriculture (DoA), Agriculture Information and Training Centre (AITC), Seed Quality Control Centre (SQCC), Nepal Agriculture Research Council (NARC), Department of Water Resources and Irrigation (DWRI), Department of Hydrology and Meteorology (DHM), local level (representation of 2 local level on a rotational basis), and FAO. The members of the PSC will each assume the role of a Focal Point for the project in their respective agencies. Hence, the project will have a Focal Point in each concerned institution. As Focal Points in their agency, the concerned PSC members will: (i) technically oversee activities in their sector; (ii) ensure a fluid two-way exchange of information and knowledge between their agency and the project; (iii) facilitate coordination and links between the project activities and the work plan of their agency; and (iv) facilitate the provision of co-financing to the project. The MoALD will constitute a Technical Working Group (TWG) chaired by the Joint Secretary of Planning and Development Cooperation Coordination Division,

MoALD, including members from relevant sections of the Ministry, Departments, NARC, and local level (8 local levels-Ag. Section head).

The Provincial Coordination Committee will be formed in all three provinces chaired by the Secretary of the provincial ministry of agriculture. The members of the Committee will be from Agriculture Knowledge Centres, municipalities, Project Cluster Unit (PCU).

For day-to-day implementation of the Project, MoALD will establish a Project Management Unit within the DoA, to be staffed by cofinanced positions as well as dedicated specialists to be recruited using project funds.

The Food and Agriculture Organization (FAO) will be the GEF Implementing Agency (IA) for the Project, providing project cycle management and support services as established in the GEF Policy. As the GEF IA, FAO holds overall accountability and responsibility to the GEF for delivery of the results. In the IA role, FAO will utilize the GEF fees to deploy three different actors within the organization to support the project (see Annex M for details):

The Budget Holder, FAO Representative for Nepal and Bhutan, will provide oversight of day-to-day project execution; The Lead Technical Officer(s), based at Regional Office for Asia Pacific (RAP) of FAO will provide oversight/support to the projects technical work in coordination with government representatives participating in the Project Steering Committee; The GEF Technical Officers (GTO) and the Funding Liaison Officer(s) in OCB, FAO will monitor and support the project cycle to ensure that the project is being designed and carried out in accordance with FAO and GEF minimum fiduciary and technical standards.

FAO responsibilities, as GEF agency, will include:

- Administrate funds from GEF in accordance with the rules and procedures of FAO;
- Oversee project implementation in accordance with the project document, work plans, budgets, agreements with co-financiers, Operational Partners Agreement(s) and other rules and procedures of FAO;
- Conduct at least one supervision mission per year; and
- Reporting to the GEF Secretariat and Evaluation Office, through the annual Project Implementation Review, the Mid Term -Review, the Terminal Evaluation and the Project Closure Report on project progress;
- Financial reporting to the GEF Trustee.

Will the GEF Agency play an execution role on this project?

No

If so, please describe that role here and the justification.

Also, please add a short explanation to describe cooperation with ongoing initiatives and projects, including potential for co-location and/or sharing of expertise/staffing (max. 500 words, approximately 1 page)

GEF-10727 “Managing Watersheds for Enhanced Resilience of Communities to Climate Change in Nepal (**MaWRiN**)”¹³ to be implemented in Sindhuli District upstream from Mahottari and Sarlahi districts targeted by GEF-10544. Coordination will focus synergizing landscape level investments under consideration of upstream-downstream linkages, as well as on climate risk assessment and municipality-level adaptation planning, climate-smart agriculture, including NbS, relevant knowledge management.

GEF-10469 “Restoring the degraded watershed and livelihoods of Lakhadei river basin through **Sustainable Land Management in Nepal**”¹⁴ geographically overlapping with one of the Project’s target landscapes. Coordination will focus on coordinated and mutually synergistic interventions in geographically overlapping areas, exchange of lessons and best practices of climate-resilient Sustainable Land Management practices, value chain development, and market-based incentive mechanisms.

GCF-LP131 on **NbS, climate-resilient crop varieties**, small-scale irrigation systems, community-based planning of EbA infrastructure, data and information on CbA and EbA, real-time access to climate information for users, and climate change knowledge sharing and learning structures.

The World Bank supported Climate Smart Agriculture Investment Plan (**CSAIP**) identifies critical capacity gaps in the legal, policy, institutional and operational areas concerning the scale-up of climate-smart agriculture. It emphasizes creating an enabling environment for CSA adoption and action to strengthen local capacity to plan and implement engaging private sector. The capacity gaps and investment needs identified by the CSAIP will provide valid guidelines to the proposed project, and experiences from implementing the proposed project will provide valuable lessons for the CSAIP too.

The Project will coordinate with the Prime Minister Agriculture Modernization Project (**PMAMP 2016-2026**) for replication of climate resilient interventions for cereals production. The project will leverage subsidized technologies being provided by the project to farmers’ groups and other value chain actors and coordinate in technological interventions. The PMAMP aims to boost agricultural productivity through adoption of modern farm techniques and improvement of value chains of agricultural products through enhanced productivity and commercialization of major cereals, livestock, fisheries, fruits and vegetables.

GCF funded project “Building a Resilient Churia Region in Nepal” (**BRCRN 2020-2027**) aims at sustainable natural resources management and reduction of climate-driven natural hazards in the Churia watersheds by enhancing the resilience of ecosystems and vulnerable communities. It promotes climate-resilient land use practices to address deforestation and forest degradation and build resilience to climate-induced hazards. It builds capacities of governments, communities and other stakeholders for better management of natural resources under climate risks. The proposed project will benefit from experiences and lessons learned from the project.

The Food and Nutrition Security Enhancement Project (**FANSEP II**) is funded by Global Agriculture and Food Security Program (GAFSP). The proposed GEF project can benefit from sharing adaptation technologies and dissemination of climate and nutrition smart agricultural technologies, income generation and diversification, and improving nutrition security.

The Rural Enterprise and Economic Development Project (**REED**) is funded by the World Bank. The proposed GEF project can benefit from learnings of rural entrepreneurship development through productive partnership in value chain.

The Irrigation Modernization Enhancement Project (**IMEP**) is funded by ADB. The proposed GEF project can benefit from sharing community managed irrigation systems.

Agriculture Knowledge Centres (**AKC**) and Agriculture Section of Local Government. The proposed GEF project can benefit from learnings of agriculture development and extension programs being implemented by provincial level/ local level government.

The Nuts and Fruits in Hilly Area (**NAFHA**) project is funded by ADB and GAFSP. This project is being implemented in hilly areas including Nuwakot district. The proposed GEF project can benefit from sharing green infrastructures like agroforestry.

Core Indicators

Indicate expected results in each relevant indicator using methodologies indicated in the GEF-8 Results Measurement Framework Guidelines. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Explain the methodological approach and underlying logic to justify target levels for Core and Sub-Indicators (max. 250 words, approximately 1/2 page)

META INFORMATION – LDCF

LDCF true	SCCF-B (Window B) on technology transfer false	SCCF-A (Window-A) on climate Change adaptation false	
Is this project LDCF SCCF challenge program? false			
This Project involves at least one small island developing State(SIDS). false			
This Project involves at least one fragile and conflict affected state. false			
This Project will provide direct adaptation benefits to the private sector. true			
This Project is explicitly related to the formulation and/or implementation of national adaptation plans (NAPs). true			
This project will collaborate with activities begin supported by other adaptation funds. If yes, please select below			
Green Climate Fund true	Adaptation Fund false	Pilot Program for Climate Resilience (PPCR) false	
This Project has an urban focus. false			
This project will directly engage local communities in project design and implementation true			
This project will support South-South knowledge exchange true			
This Project covers the following sector(s)[the total should be 100%]: *			
Agriculture	50.00%		
Nature-based management	30.00%		
Climate information services	10.00%		
Coastal zone management	0.00%		
Water resources management	0.00%		
Disaster risk management	0.00%		
Other infrastructure	10.00%		
Tourism	0.00%		
Health	0.00%		
Other (Please specify comments)	0.00%		
Total	100.00%		
This Project targets the following Climate change Exacerbated/introduced challenges:*			
Sea level rise false	Change in mean temperature true	Increased climatic variability true	Natural hazards false
Land degradation false	Coastal and/or Coral reef degradation false	Groundwater quality/quantity false	

CORE INDICATORS – LDCF

	Total	Male	Female	% for Women
CORE INDICATOR 1				
Total number of direct beneficiaries	162,800	68,000.00	94,800.00	58.23%
CORE INDICATOR 2				
(a) Area of land managed for climate resilience (ha)	10,000.00			
(b) Coastal and marine area managed for climate resilience (ha)	0.00			
CORE INDICATOR 3				
Number of policies/plans/ frameworks/institutions for to strengthen climate adaptation	68.00			
CORE INDICATOR 4				
Number of people trained or with awareness raised	7,400	2,645.00	4,755.00	64.26%
CORE INDICATOR 5				
Number of private sector enterprises engaged in climate change adaptation and resilience	60.00			

SUB INDICATOR 1

	Total	Male	Female
1.1 Number of direct beneficiaries from more resilient physical and natural assets	16000	10,000	6,000
1.2 Number of direct beneficiaries with diversified and strengthened livelihoods and sources of income	52000	27,000	25,000
1.3 Number of direct beneficiaries from the new or improved climate information services including early warning systems	80000	50,000	30,000
1.4 Number of youth (15 to 24 years of age) benefiting from the project	14800	7,800	7,000
1.5 Number of elderly (over 60 years of age) benefiting from the project	0	0	0
1.6 Increased income, or avoided decrease in income (per capita in \$ across all relevant beneficiaries)	1,500		

SUB-INDICATOR 2

- 2.1 Hectares of agricultural land
10,000
- 2.2 Hectares of urban landscape
0
- 2.3 Hectares of rural landscape
0
- 2.4 Hectares of forests

0

2.5 Hectares of marine area

0

2.6 Hectares of freshwater area

0

2.7 Number of residential houses

0

2.8 Number of public buildings

0

2.9 Number of irrigation or water structures

200

2.10 Number of fishery or aquaculture ponds or cages

0

2.11 Number of ports or landing sites

0

2.12 Km of road

0

2.13 Km of riverbank

0

2.14 Km of coast

0

2.15 Km of stormwater drainage

0

2.16 Number of new adaptation technologies supported

21

SUB INDICATOR 3

3.1 Number of policies/plans developed and strengthened that will mainstream climate resilience
(regional, national, sub-national)

8

3.2 Number of systems and frameworks established for continuous monitoring, reporting and review of climate
adaptation impacts

1

3.3 Number of national climate policies and plans enabled, including national adaptation planning processes

0

3.4 Number of institutional partnerships or coordination mechanisms established or strengthened

8

3.5 Number of institutions with increased capacity to plan, implement, monitor, and report for climate adaptation

8

3.6 Number of institutions with increased capacity to attract, and manage climate adaptation finance

11

3.7 Number of local community organizations benefitting from and/or engaged in institution strengthening, partnerships, or financing

24

3.8. Number of climate risk and vulnerability assessments conducted

8

SUB INDICATOR 4

4.1 Number of people trained or made aware of climate change impacts and appropriate adaptation responses	Total	Male	Female
a) National government	40	25	15
b) Local government	320	120	200
c) Local community organizations	6560	2,120	4,440
d) Extension services	480	300	180
e) Hydromet and disaster risk management agencies	0	0	0
f) School children, university students, and teachers	0	0	0
g) Youth	0	0	0

SUB INDICATOR 5

	Total	Male	Female
5.1 Amount of investment mobilized (US\$) from private sector sources	3,000,000		
5.2 Number of entrepreneurs supported for climate adaptation or resilience	60	40	20
5.3 Total financial value of lines of credit and/or investment funds	0		
5.4 Number of MSMEs incubated/accelerated with technical assistance, financial matchmaking, and/or direct financing	12		

Key Risks

	Rating	Explanation of risk and mitigation measures
CONTEXT		
Climate	Moderate	The project area is exposed to climate hazards such as extreme high temperature, extreme precipitation, drought and extreme precipitation led flood. Rising temperature, extreme precipitation leading to flood and waterlogged field condition and persistent drought pose significant risk of reducing agricultural production and productivity. Factors such as high population, poverty and inequality, and dependency on climate-sensitive livelihoods, make local communities highly vulnerable to climate change while adaptive capacity is limited because of lack of access to climate data/information, weak institutional mechanism, and limited financing. The project will develop and demonstrate climate-resilient rice-based farming system solutions, support agricultural livelihoods especially among vulnerable communities, pilot weather index-based insurance, help to access and use weather-based agro-advisory services, collect and disseminate climate resilient knowledge products, conduct large technology demonstrations, strengthen capacity of value chain actors, establish climate resilient green infrastructures, adopt gender friendly mechanization, adopt nature-based solutions considering agricultural landscape approach.
Environmental and Social	Moderate	Key potential adverse impacts include possible exclusion of women, Dalit, and Indigenous Peoples, risk of elite capture, unequal benefits, gender-based and sexual violence, and youth outmigration. The project may contribute to soil, air, and water contamination. The executing institution has inadequate capacity to integrate aforesaid social and environmental measures. To address these issues, the project will incorporate safeguards and prioritize gender mainstreaming during implementation, with a strong focus on capacity building and human resource development. The project will ensure proportionate benefits for Dalits, Indigenous Peoples (IPs), and women through a proportionate benefit-sharing approach and obtain Free, Prior, and Informed Consent (FPIC) before adopting indigenous practices. Access to real-time notice systems for pest and disease outbreaks will be implemented. Environment friendly crop production practices including IPM, FFS, precision agriculture, climate smart practices, among others will be implemented. The environmental and social (E&S) capacity of service providers will be enhanced. Specific provisions and targeted awareness programs will actively engage Dalits and poor farmers. The project will promote gender friendly mechanization through the establishment of custom hiring centers to address human resource issues.
Political and Governance	Moderate	Political pressure may surface during planning and implementation particularly on selection of project beneficiaries. Given that the ambition of the project in changing policies is low, and emphasis is on improving the implementation of the existing policy and legal environment, which are driven by existing policies, political risks are low. Governance risks are moderate and relate to

		the disjunct institutional landscape stemming from the three-tier system of government in Nepal. Mitigating measures include institutionalisation of coordination among different levels of government, including through stakeholder dialogues, and streamlined exchange processes, engaging the full array of stakeholders at various levels into project governance.
INNOVATION		
Institutional and Policy	Low	Risks to the institutional sustainability of the project's achievements are low. The project will largely work through established institutions instead of establishing new ones. While all institutions are formally established, staffing of key institutions at local level is far from complete in several municipalities. Mitigating measures include advocacy among decision-makers to complete the staffing of all institutions relevant to the project, as well as engagement of private sector that can partially back up missing functions.
Technological	Low	The risks related to the technical design of the project are low. Substantive scientific, technical and practical knowledge is available on best practices of climate change adaptation in rice-based farming and food systems. Intensive stakeholder consultations took place throughout the PPG phase, which led to the design of project components specific to the activity level, indicating clear roles, responsibilities and geographic focus related to individual activities. Mitigating measures include provisions for adaptive management, including (1) FPIC process at the start of the implementation phase, (2) project governance and decision-making mechanisms built into the project design at the three levels of government, which correspond to the three levels of decision-making in the project, and (3) linkages to other initiatives and global processes that can help to mitigate any technological issues. In case some crop varieties and technologies are outsourced, they will be verified and validated by research system following the established protocols.
Financial and Business Model	Low	The risks to financial sustainability are low. As an LDCF project, most funding is provided from GEF grant and co-financing. The mitigation measures include commitment of the government in co-financing. For leveraging private financing, business models will be developed, and private sector capacity building activities will be conducted.
EXECUTION		
Capacity	Moderate	Risks for institutional capacity for implementation and sustainability are moderate. The project will be executed by the government agency responsible for agriculture policy and programme implementation in Nepal, supported by other government agencies at provincial and municipal levels. However, the coordination among the three tiers of the government is weak and the capacity of the government institutions is not enough for effective implementation of the project with high quality. The private sector largely operates at landscape level. Among them, they cover most technical and social expertise required for implementation. Mitigating measures to deal with the risk include targeted and well-resourced capacity building investments for existing institutions to ensure long term sustainability. The project will support government agencies and the

		private sector through developing an enabling environment (Component 3). The capacity building of the private sector will be linked back into the value chain.
Fiduciary	Low	The Micro Assessment completed for the Executing Agency MoALD has identified zero high risk, a few medium risks and overall, it has low risks. Budget expenditure capacity of the MoALD is moderate, fiduciary capacity especially for grant-based projects is excellent
Stakeholder	Low	Risks related to stakeholder engagement are low and relate particularly to the far spread of project target landscapes and the three levels of project governance, which pose challenges for effective multi-stakeholder processes. The capacities of executing and operational partners on multi-stakeholder engagement are limited. Beneficiaries may not prefer climate resilient new varieties as long as they do not clearly see their benefits better than hybrid varieties they are using. Mitigating measures include (1) dedicated capacity building on multi-stakeholder processes including the practical demonstration of building such processes, (2) integration of conflict management into relevant processes with local communities and Indigenous Peoples, (3) utilization of services of private sector to engage multiple types of stakeholders, (4) implement FPIC process, (5) ensure quota for the participation on behalf of Indigenous Peoples and women as defined in the SEP and GAAP.
Other	Low	Macro-economic risks to the project exist through macro-economic trends affecting the agrifood sector, as well as other key production sectors that indirectly affect these trends. Macroeconomic projections show high spread (refer to future scenarios in Section A) whereby the risk is classified as moderate. Mitigating measures include adaptive management provisions built into different design elements of the project.
Overall Risk Rating	Moderate	The project follows nature-based solutions at landscape level to transform rice-based agriculture and food systems and all expected risks are being mitigated with ESMP. Despite the mitigation measures put in place, some unforeseen situations like natural disasters, political and governance instability may affect the progress of the project. All possible early mitigation measures will be taken to address these risks to minimise their impacts.

C. ALIGNMENT WITH GEF-8 PROGRAMMING STRATEGIES AND COUNTRY/REGIONAL PRIORITIES

Explain how the proposed interventions are aligned with GEF- 8 programming strategies and country and regional priorities, including how these country strategies and plans relate to the multilateral environmental agreements.

For projects aiming to generate biodiversity benefits (regardless of what the source of the resources is - i.e., BD, CC or LD), please identify which of the 23 targets of the Kunming-Montreal Global Biodiversity Framework the project contributes to and explain how.

Confirm if any country policies that might contradict with intended outcomes of the project have been identified, and how the project will address this. (max. 500 words, approximately 1 page)

The Project aligns with the GEF Adaptation Strategy to Climate Change for LDCF and SCCF¹⁵ Programming Directions (GEF/R.08/29/Rev.01), along with Nepal's national priorities and commitments to Multilateral Environmental Agreements (MEAs):

LDCF Programming Direction

The Project supports the GEF climate change adaptation programming's goal to facilitate transformational adaptation. It specifically targets:

- Theme 1 Agriculture, Food Security and Health through promoting adaptation in ecosystem management, food value chains, and livelihoods, specifically by applying insurance, resilient crop varieties, pest and disease surveillance systems, post-harvest measures, extension services, and enhanced farmers' capacities.
- Theme 2 water; integrated water resource management, rainwater harvesting and water conservation, policy measures to enable efficient water use, support measures to reduce vulnerability to droughts and floods that are induced or exacerbated by climate change.
- Theme 3 Nature-Based Solutions (NBS), by tools for upscaling NBS and analytical tools to support NBS.

The Project adopts the landscape and value chain-based intervention scale of the LDCF ToC and applies all key transformation levers: (1) policy coherence and mainstreaming of climate adaptation, (2) strengthened governance for adaptation, and (3) knowledge exchange and collaboration to deliver Outputs effectively and efficiently.

The Project predominantly contributes to the LDCF Priority Area 2 "Strengthening Innovation and Private Sector Engagement", by (i) advancing technology transfer, innovation, and deployment, (ii) enabling the conditions for private sector action. Marginally, it also contributes to Priority Area 1 "Scaling Up Finance" through reinforcing policy coherence, and Priority Area 3 "Fostering Partnership for Inclusion and Whole-of-Society Approach", by institutional strengthening and capacity building.

National priorities

The Project is aligned with several national policies and strategies:

- Constitution of Nepal (2015) and Right to Food and Food Sovereignty Act (2018): supports the right to food as a fundamental right.
- Sixteenth plan (2024/25 -2028/29): addresses enhanced production, productivity and competitiveness, gender, social and geographical inclusion, strengthened local and provincial economy and balanced development, climate change adaptation.
- National Agriculture Policy (2004): supports major objectives of increased production and productivity, promotes commercialization and conservation and efficient utilization of natural resources.
- National Climate Change Policy (2019):¹⁶ demonstrates climate-friendly agriculture systems.
- National Irrigation Policy 2023: increase agriculture production and productivity through optimum utilization of water resources, climate resilient and climate adaptive irrigation system.
- Disaster Risk Reduction National Strategic Plan of Action (2018 – 2030): conducts local vulnerability and risk assessments and provide climate information services.
- Agriculture Development Strategy (ADS) (2015-2035): Support the Local Adaptation Plan for Action as implementation support for the National Adaptation Program of Action for climate change, early warning system, agricultural insurance; strengthening the seed system. Strengthen governance, productivity, commercialization and competitiveness to achieve sustainable and inclusive agriculture sector that contributes improved livelihood and food and nutrition security.
- Multi-Sector Nutrition Plan II (2018-2022): contributes to flagship program food security and nutrition.

- Zero Hunger Challenge National Plan of Action (2016-2025): contributes to targets of ending hunger, improving food access and income for smallholders.
- National Seed Vision (2013-2025): introduces new rice varieties and makes available quality seeds.
- Environment Friendly Local Government Framework (2013): establishes post-harvest agriculture infrastructure and builds local capacities.

Multilateral Environmental Agreements / international commitments

The project aligns with Nepal's commitments to MEAs and other international agreements:

- UNFCCC:
 - National Adaptation Plan (2021-2050)¹⁷: contributes to Priority Adaptation Programme 1 Agriculture and Food Security (sub-programmes 1, 3, 5, 8 and 9); and 9 Gender equality and social inclusion livelihoods and governance. Under Priority Adaptation Programme 1, the project supports NAP implementation of sub-programme 1 through increased crop production by adopting good, climate-resilient and sustainable agricultural practices, sub-programme 3 through capacity building of farmers on climate risks and promoting climate insurance, sub-programme 5 through improving climate-resilient irrigation and increasing the reliably irrigated area, sub-programme 8 through digital climate information packages made available to farmers, and sub-programme 9 through capacity building of government institutions on climate change mainstreaming. Under Priority Adaptation Programme 9, the project supports NAP implementation particularly of sub-programme 4 through promoting the integration of vulnerable groups to reduce climate-related risks.
 - 2nd Nationally Determined Contribution (NDC),¹⁸ adaptation component supports local government adaptation plans, strengthens agrometeorological systems, develops of circular economy-based adaptation measures.
 - 3rd National Communications to UNFCCC¹⁹: implements 4 out of 6 adaptation strategies for the agriculture and food security sector.
 - Framework on Local Adaptation Plans of Action (LAPA) (2019)²⁰: prepares climate vulnerability assessments and local adaptation plans.
- UNCCD:
 - National Action Programme²¹: contribution to Programme 5 through improved water management and agriculture irrigation.
 - National LDN targets:²² contributes to target 2 on increased agricultural growth, and target 3 on increased Soil Organic Carbon stocks.
- Sustainable Development Goals: contributes to Nepal's SGD 2 subtarget to increase per capita food grain production, and all SDG 13 subtargets.²³ Subordinate contributions are made to the SDG 5 subtarget of ensuring women's full and effective participation in decision making in economic life and SDG 1, subtarget to build resilience of poor and the vulnerable people to external shocks and climate change.
- International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)²⁴: improved access to germplasm in agriculture.
- UN Food Systems Summit 2021 and Food Systems Dialogue: supports Action Tracks (i) ensuring safe and nutritious food for all, (iii) boost nature-positive production at scale (iv) advancing equitable livelihoods, (v) building resilience to vulnerabilities, shocks, and stresses, and (vi) right to food.

Alignment to FAO Strategic framework, SDGs and Country Programming Framework

FAO's Strategic Framework 2022-2031 revolves around the "Four Betters" defining FAO's strategic thrust in alignment with the SDGs. The Project contributes directly to 1. "Better Production", particularly Programme Priority Area (PPA) "Innovation for sustainable agriculture production" and 3. "Better Environment", particularly PPA "Climate change mitigating and adapted agrifood systems", and 4 "Better Life", particularly PPA "Resilient agrifood systems". Indirect contributions are made to 2 "Better Nutrition", particularly PPA "Nutrition for the most vulnerable". The Project applies all four of FAO's cross-cutting/cross-sectional "accelerators", which include (i) technology, (ii) innovation, (iii) data, and (iv) complements (governance, human capital, and institutions) to accelerate impact while minimizing trade-offs.

The Project is further aligned with FAO's Country Programming Framework (CPF) for Nepal 2023 to 2027,²⁵ directly addressing CPF Priority 1 "Sustainable agrifood systems transformation and inclusive socio-economic development", particularly Outputs 1.1 (enhanced production and productivity, resilient technologies, capacity building), 1.2 (improved agricultural research and extension linkages), 1.3 (increased income and livelihoods), 1.4 (access to information and support), CPF Priority 3 "Sustainable natural resource management; climate and disaster resilience", Output 3.2 (increased resilience of agri-food systems), and CPF priority 2 "Food security, safety, and sustainable consumption for reducing hunger and malnutrition", Output 2.1 (improved food security).

FAO is well positioned to support Nepal in the delivery of this project given the organization's comparative advantage in building a better enabling environment through technical supports for sustainable and resilient agrifood systems. FAO's expertise in policy supports, integrated capacity building, and technical cooperation are invaluable instruments for successful project delivery.

Lessons learned from past projects

The project utilizes lessons learned from past initiatives, including:

- 1. IFAD -Improved Seed for Farmers Programme:** This programme demonstrated the value of scaling up small-farmer agriculture cooperatives to ensure access to finance. It highlighted the importance of capacity development and behavior change investments, along with access to markets, enabling farmers to benefit from linkages. Additionally, it underscored the necessity of building the capacities of Agriculture Knowledge Centres of provincial ministries of agriculture to assume the roles of former District Agriculture Development Offices²⁶.
- 2. GEF LDCF: Reducing Vulnerability and Increasing Adaptive Capacity in Response to the Impacts of Climate Change and Variability for Sustainable Livelihoods in Nepal's Agriculture Sector (GCP/NEP/070/LDF):** The project successfully employed FFS to test and validate adaptation technologies. However, it did not scale these technologies or invest in alternative value chains. Valuable tools for stakeholder engagement, capacity building, and communication developed through this project, along with results on institutional capacities for climate-resilient extension services and monitoring, will be further enhanced and scaled. The project also supported the Department of Hydrology and Meteorology (DHM) in establishing Automatic Weather Stations (AWS) and assisted the Nepal Agriculture Research Council (NARC) in developing location-specific agro-advisories, which will be disseminated to the farmers by this initiative.
- 3. Building Resilience for Climate-related Hazards (BRCH):** This Pilot Program for Climate Resilience (PPCR) developed the capacity of the DHM and NARC in early warning and agro-advisory services. It established 88 Automatic Weather Stations (AWS) and three weather radars, and also initiated dissemination of agro-advisory services. Early warning and agro-advisory services will be applied to location- and crop-specific cases and farmers feedback mechanisms will be developed by this initiative.

D. POLICY REQUIREMENTS

Gender Equality and Women's Empowerment

We confirm that gender dimensions relevant to the project have been addressed during Project Preparation as per GEF Policy and are clearly articulated in the Project Description (Section B).

Yes

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

Yes

If the project expects to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment, please 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;

Improving women's participation and decision-making; and/or

Yes

Generating socio-economic benefits or services for women.

Yes

2) Does the project's results framework or logical framework include gender-sensitive indicators?

Yes

Stakeholder Engagement

We confirm that key stakeholders were consulted during Project Preparation as required per GEF policy, their relevant roles to project outcomes has been clearly articulated in the Project Description (Section B) and that a Stakeholder Engagement Plan has been developed before CEO endorsement.

Yes

Select what role civil society will play in the Project

Consulted only;

Member of Advisory Body; Contractor; **Yes**

Co-financier;

Member of project steering committee or equivalent decision-making body ;

Executor or co-executor;

Other (Please explain) **Yes**

Private Sector

Will there be private sector engagement in the project?

Yes

And if so, has its role been described and justified in section B project description?

Environmental and Social Safeguards

We confirm that we have provided information regarding Environmental and Social risks associated with the proposed project or program, including risk screenings/ assessments and, if applicable, management plans or other measures to address identified risks and impacts (this information should be presented in Annex E).

Yes

Please provide overall Project/Program Risk Classification

Overall Project/Program Risk Classification

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate	Medium/Moderate		

E. OTHER REQUIREMENTS

Knowledge management

We confirm that an approach to Knowledge Management and Learning has been clearly described during Project Preparation in the Project Description and that these activities have been budgeted and an anticipated timeline for delivery of relevant outputs has been provided.

Yes

Socio-economic Benefits

We confirm that the project design has considered socio-economic benefits to be delivered by the project and these have been clearly described in the Project Description and will be monitored and reported on during project implementation (at MTR and TER).

The project will deliver socio-economic benefits and decent rural employment by (1) empowering farming communities and private enterprises, (2) delivering climate-resilient sustainable agricultural practices, and (3) addressing local climate vulnerability. Contributions to FAO's Four Pillars of Decent Work are presented in Table 1.

Community level livelihood investments will be based on climate vulnerability assessments and adaptation planning. Community enterprises will be supported in business upskilling and market expansion. Together with enhanced agricultural practices, they will secure climate-resilient livelihoods and employment, while contributing to cultural preservation of members of ethnic groups.

Table 1: Project contributions to socio-economic benefits and rural employment

FAO Pillars of Decent Work	Project contribution (including corresponding Output)
Pillar 1: Employment creation & enterprise development	<ul style="list-style-type: none"> ▪ Local community and ethnic minority members (f/m) supported in accessing markets & modern value chains (2.1) ▪ Rural communities and enterprises supported in accessing markets, training, green and responsible investment, and other productive assets (2.1) ▪ Employment-centred livelihoods diversification mechanisms supported (2.1)

Pillar 2: Social protection	<ul style="list-style-type: none"> ▪ Agronomic practices improved increasing farm employment, production and income (1.2) ▪ Labour-saving technologies for rural poor, discriminated (1.2)
Pillar 3: Standards and rights at work	<ul style="list-style-type: none"> ▪ Socially responsible agricultural production supported, specifically to reduce gender and age-based discrimination (1.1; 1.2)
Pillar 4: Governance and social dialogue	<ul style="list-style-type: none"> ▪ Strengthening democratic organizations and networks of producers and workers (2.1) ▪ Representation of the rural poor in social dialogue and policy dialogue through their organizations supported (3.2) ▪ Participation of rural poor in local decision-making and governance mechanisms supported (1.2; 2.1) ▪ Rural women and youth groups empowered to participate in these organisations (1.1; 1.2, 2.1) ▪ Synergies built between organizations, programmes, countries and producer-to-producer learning opportunities created (3.2)

ANNEX A: FINANCING TABLES

GEF Financing Table

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	Grant / Non-Grant	GEF Project Grant(\$)	Agency Fee(\$)	Total GEF Financing (\$)
FAO	LDCF	Nepal	Climate Change	LDCF Country allocation	Grant	8,932,420.00	848,580.00	9,781,000.00
Total GEF Resources (\$)						8,932,420.00	848,580.00	9,781,000.00

Project Preparation Grant (PPG)

Was a Project Preparation Grant requested?

true

PPG Amount (\$)

200000

PPG Agency Fee (\$)

19000

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	PPG(\$)	Agency Fee(\$)	Total PPG Funding(\$)
FAO	LDCF	Nepal	Climate Change	LDCF Country allocation	200,000.00	19,000.00	219,000.00
Total PPG Amount (\$)					200,000.00	19,000.00	219,000.00

Please provide Justification

Sources of Funds for Country Star Allocation

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Sources of Funds	Total(\$)
Total GEF Resources					0.00

Focal Area Elements

Programming Directions	Trust Fund	GEF Project Financing(\$)	Co-financing(\$)
CCA-1-1	LDCF	5,891,700.00	5005000
CCA-1-2	LDCF	720,875.00	1375000
CCA-1-3	LDCF	720,875.00	1375000
CCA-1-4	LDCF	1,598,970.00	2245000
Total Project Cost		8,932,420.00	10,000,000.00

Confirmed Co-financing for the project, by name and type

Please include evidence for each co-financing source for this project in the tab of the portal

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Recipient Country Government	Ministry of Agriculture and Livestock Development	In-kind	Recurrent expenditures	10000000
Total Co-financing				10,000,000.00

Please describe the investment mobilized portion of the co-financing

The in-kind cofinancing is derived from support by the government through its recurrent regular budget for ongoing related activities in the project sites, regular staff time for the project management, rental of premises, use of office vehicles, etc.

ANNEX B: ENDORSEMENTS

GEF Agency(ies) Certification

GEF Agency Type	Date	Project Contact Person	Phone	Email
GEF Agency Coordinator		Jeffrey Griffin		jeffrey.griffin@fao.org
Project Coordinator		Lianchawii Chhakchuak		lianchawii.chhakchuak@fao.org

Record of Endorsement of GEF Operational Focal Point (s) on Behalf of the Government(s):

Please attach the Operational Focal Point endorsement letter(s) with this template.

Name of GEF OFP	Position	Ministry	Date (MM/DD/YYYY)
Shreekrishna Nepal	Joint Secretary/Chief- International Economic Cooperation Coordination Division	Ministry of Finance	

ANNEX C: PROJECT RESULTS FRAMEWORK

Please indicate the page number in the Project Document where the project results and M&E frameworks can be found. Please also paste below the Project Results Framework from the Agency document.

Results chain	Indicators ²⁹	Baseline	Midterm target	Final target	Means of verification	Assumptions	Responsible for data collection
Project Objective: To promote transformation toward climate-resilient rice-based production landscapes in central Nepal that improve agro-ecosystem function and food security through inclusive, climate resilient value chains and adoption of innovative Nature-based Solutions (NbS).							
Component I. Climate resilient rice-based production landscapes promoted							
Outcome 1. Resilient rice-based production landscapes	1a. Number of direct beneficiaries from NbS infrastructures	0	4,000 (female 2,500, male	14,000 (female 9,000,	PIR and PPR Midterm and terminal	Beneficiaries have access and capacity to utilize the NbS	MOALD/FAO

with improved agro-ecosystem function promoted through adoption of nature-based solutions and climate resilient practices at farm and landscape level	(sex disaggregated)*		1,500)	male 5,000)	survey reports	infrastructures	
	1b. Number of direct beneficiaries with diversified and strengthened livelihoods and sources of income from adoption of climate resilient practices (sex disaggregated)*	0	8,000 (female 5,000, male 3,000)	48,000 (female 25,000, male 23,000)	Midterm and terminal survey reports	Economic viability of climate-resilient practices	MOALD/FAO
	1c. Number of direct beneficiaries from the improved climate information services (sex disaggregated)*	0	20,000 (female 12,000, male 8,000)	80,000 (female 50,000, male 30,000)	Midterm and terminal survey reports	Climate information services are available	MOALD/FAO
	1d. Number of youths benefitting from resilient rice-based production landscapes with improved agro-ecosystem function	0	4,000 (female 2,000, male 2,000)	14,800 (female 7,800, male 7,000)	Midterm and terminal survey reports	Resilient rice-based production systems offer opportunities to youth	MOALD/FAO
	1e. Increased income, or avoided decrease in income (per capita in \$ across all relevant beneficiaries)	4811	5311	6311	Midterm and terminal survey reports	Economic viability of climate-resilient practices	MOALD/FAO
	1f. Area of agricultural land managed for climate resilience (ha)	0	1,500	10,000	Midterm and terminal survey reports	Landowners' buy-in into climate-resilient practices	MOALD
	1g. Number of irrigation or water structures developed and rehabilitated	0	60	200	PIR and PPR Midterm and terminal	Availability of water resource and community support for infrastructure	MOALD

					survey reports	e development	
	1h. No. of new adaptation technologies supported	6	12	21	PIR and PPR Midterm and terminal survey reports	Stakeholder support for adaptation technologies	MOALD
	1i. Cropping intensity (%)	250	270	300	Midterm and terminal survey reports	Climate change, natural disasters, pests, diseases, socio-economic disruptions and land use change do not go beyond the projected level	MOALD
	1j. Rice crop yield (kg/ha)	4.00	4.50	6.00	Midterm and terminal survey reports	Climate change, natural disasters, pests, diseases, socio-economic disruptions do not go beyond the projected levels	MOALD

Output 1.1 Nature-based solutions (NbS) adopted for the sustainable management of rice-based production landscapes and strengthened climate resilience

Output 1.2 Climate resilient seed systems, agronomic practices, technologies and farm management strategies verified and scaled in rice-based production landscapes

Output 1.3 Crop and location specific agro-advisory services disseminated to and used by women and men farmers and other value chain actors

II. Climate resilient value chains developed and supported

Outcome 2. Climate resilient value chains in	2a. Number of entrepreneurs supported for climate adaptation and	0	20 (female 7,	60 (female 20,	PIR and PPR Midterm and terminal	Entrepreneurs get motivated on climate	MOALD
--	--	---	---------------	----------------	-------------------------------------	--	-------

rice-production landscapes developed and supported through enhanced access to infrastructure and services to manage climate risks and access market opportunities.	resilience (sex disaggregated)*		male 13)	male 40)	survey reports	adaptation and resilience	
	2b. Amount of investment mobilized (US\$) from private sector resources	0	1 million	3 million	Midterm and terminal survey reports	Market situations are favorable for investment	MOALD
	2c. Number of direct beneficiaries from climate resilient postharvest infrastructure	0	500 (female 250, male 250)	2,000 (female 1,000, male 1000)	PIR and PPR Midterm and terminal survey reports	Beneficiaries have access to and capacities to use post-harvest infrastructure	MOALD
	2d. Number of direct beneficiaries of value chain development	334	1,000 (female 500, male 500)	4,000 (female 2,000, male 2000)	PIR and PPR Midterm and terminal survey reports	Beneficiaries have access to and capacities to participate in and benefit from value chain activities	MOALD

Output 2.1: Adaptive capacities of agricultural value chain actors enhanced through climate resilient business planning and access to risk mitigation services including credit and insurance

Output 2.2: Climate resilient post-harvest infrastructure including storage facilities and processing technologies promoted

Component III. Enabling environment to promote transformation toward climate resilient agricultural landscapes strengthened

Outcome 3. Government policy, planning frameworks and climate services strengthened at all levels of government in a gender responsive manner to promote transformation toward climate	3a. Number of policies/plans (VRA and adaptation plans) developed that mainstream climate resilience (sub-national)	0	4	8	VRA reports and adaptation plans		MOALD/ Local governments
	3b. Number of digital extension framework established and climate resilient mainstreamed	0	1	1	Report	Political support, stakeholder engagement and capacities for development of plans, policies, strategies, frameworks	MOALD/ Local governments

resilient agricultural landscapes.	3c. Number of institutional partnerships or coordination mechanisms (multistakeholder dialogues) established or strengthened	0	4	4	Report	Availability of shared interests and willingness to collaborate	MOALD/ Provincial ministry of agriculture/L ocal governments
	3d. Number of institutions with increased capacity to plan, implement, monitor, and report for climate adaptation	0	4	8	Reports	Availability of resources and commitment to capacity building	MOALD
	3e. Number of institutions with increased capacity to attract, and manage climate adaptation finance	0	4	11	Report		MOALD
	3f. Number of local community organizations benefitting from and/or engaged in institution strengthening, partnerships, or financing	0	6	24	Reports		MOALD
	3g. Number of people trained or made aware of climate change impacts and appropriate adaptation responses (sex disaggregated) at:	0	20 (female 8, male 12)	40 (female 15, male 25)	Training reports		Target communities are interested and available to participate in the training
	3g.1. National government	0	32 (female 12, male 20)	320 (female 120, male 200)	Training reports	MOALD	
	3g.2. Local government	0	1,800 (female	5,720 (female	Training reports	MOALD	
	3g.3. Local community organizations	0	1,800 (female	5,720 (female	Training reports	MOALD	

			1,200, male 600)	4,000, male 1720)			
	3g.4. Extension services	0	48 (female 18, male 30)	480 (female 180, male 300)	Training reports		MOALD
Output 3.1 Governance and regulatory systems to promote climate resilient value-chains and NbS at local, provincial and federal government levels strengthened in gender responsive manner							
Output 3.2 Multi-stakeholder dialogues with non-state actors and private sector entities promoted to develop inclusive services and approaches to promote climate resilient value-chains and NbS							
IV. Effective monitoring, evaluation and knowledge management							
Outcome 4. Learnings from adaptation innovations monitored, analysed, reported and disseminated	4a. Percentage of annual communication workplan items implemented on time	0	1	1	Annual project communication plan	Annual communication plans are prepared	MOALD
	4b. Number of knowledge products (printed or digital) produced by the project	0	5	20	MOALD website	Access to relevant information	MOALD
Output 4.1 Adaptive learning and support programmes established for collection and scaling up of innovation and transformation for rice-based production landscapes							
Output 4.2 Robust M&E systems established to track and evaluate adaptation and resilience with gender disaggregated data and information in agriculture							

ANNEX D: STATUS OF UTILIZATION OF PROJECT PREPARATION GRANT (PPG)

Provide detailed funding amount of the PPG activities financing status in the table below:

Project Preparation Activities Implemented	GETF/LDCF/SCCF Amount (\$)		
	Budgeted Amount	Amount Spent To date	Amount Committed
Consultants -international project design expert; national coordinator; safeguards experts; gender and Indigenous Peoples expert; GIS expert	102,500.00	87,879.00	33,736.00
contracts (baseline survey)	34,500.00	10,828.00	16,237.00
- domestic – site visits, province and federal; and international	32,000.00	12,623.00	826.00

stakeholder consultation (community level, district/province level and national level)	22,000.00	21,817.00	1,488.00
Meetings, stakeholder consultations, workshops, etc	0.00	1,860.00	9,235.00
office supplies, stationeries, fuel for vehicle for consultations and meetings, etc	9,000.00	3,471.00	0.00
Total	200,000.00	138,478.00	61,522.00

ANNEX E: PROJECT MAP AND COORDINATES

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

Location Name	Latitude	Longitude	GeoName ID
Mahottari	26.9405	85.8206	

Location Description:

Gaushala

Activity Description:

Rice cultivation through NbS; provision of climate information services; adaptation of climate resilient technologies and practices; financial inclusion; value chain

Location Name	Latitude	Longitude	GeoName ID
Mahottari	26.872837	85.8505	

Location Description:

Bhangaha

Activity Description:

Rice cultivation through NbS; provision of climate information services; adaptation of climate resilient technologies and practices; financial inclusion; value chain

Location Name	Latitude	Longitude	GeoName ID
Sarlahi	26.888861	85.6642	

Location Description:

Ishworpur

Activity Description:

Rice cultivation through NbS; provision of climate information services; adaptation of climate resilient technologies and practices; financial inclusion; value chain

Location Name	Latitude	Longitude	GeoName ID
Sarlahi	26.8967	85.6811	

Location Description:

Haripurva

Activity Description:

Rice cultivation through NbS; provision of climate information services; adaptation of climate resilient technologies and practices; financial inclusion; value chain

Location Name	Latitude	Longitude	GeoName ID
Nuwakot	27.9076	85.1913	

Location Description:

Likhu

Activity Description:

Rice cultivation through NbS; provision of climate information services; adaptation of climate resilient technologies and practices; financial inclusion; value chain

Location Name	Latitude	Longitude	GeoName ID
Nuwakot	27.8649	85.3134	

Location Description:

Shivapuri

Activity Description:

Rice cultivation through NbS; provision of climate information services; adaptation of climate resilient technologies and practices; financial inclusion; value chain

Location Name	Latitude	Longitude	GeoName ID
Parasi	27.436051	83.6653	

Location Description:

Ramgram

Activity Description:

Rice cultivation through NbS; provision of climate information services; adaptation of climate resilient technologies and practices; financial inclusion; value chain

Location Name	Latitude	Longitude	GeoName ID
Parasi	27.436273	83.7035	

Location Description:

Palhi Nandan

Activity Description:

Rice cultivation through NbS; provision of climate information services; adaptation of climate resilient technologies and practices; financial inclusion; value chain

Please provide any further geo-referenced information and map where project interventions are taking place as appropriate.

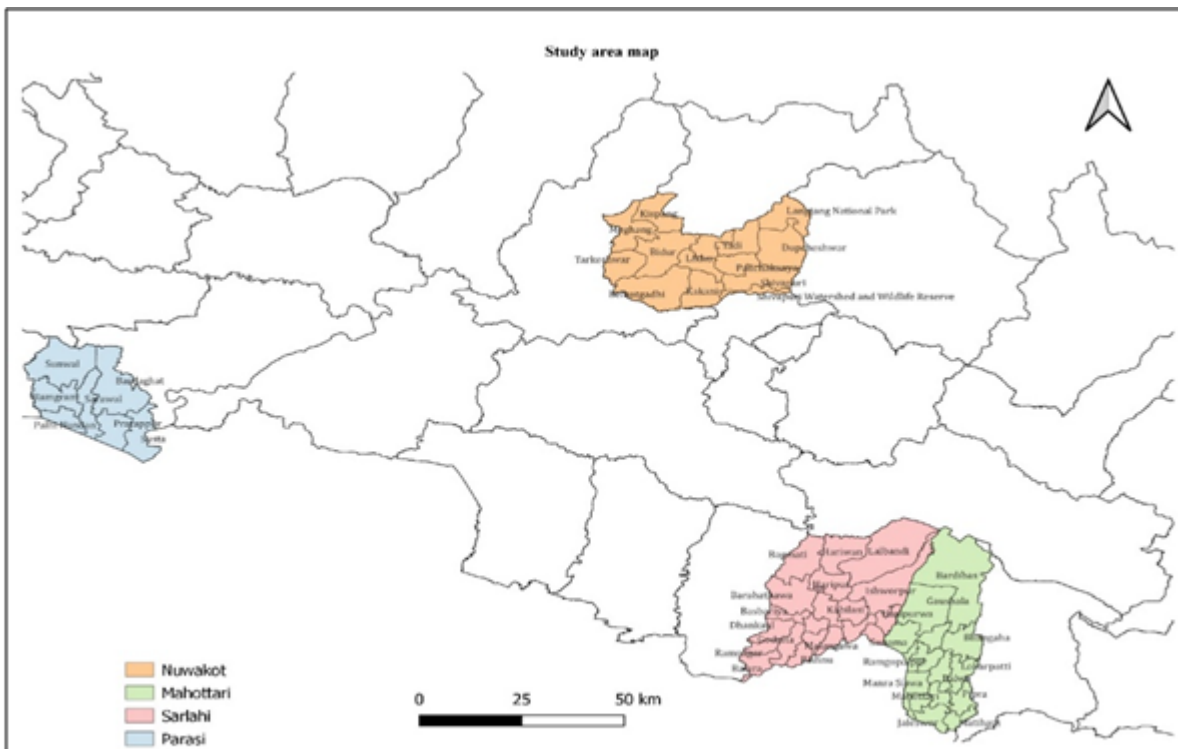
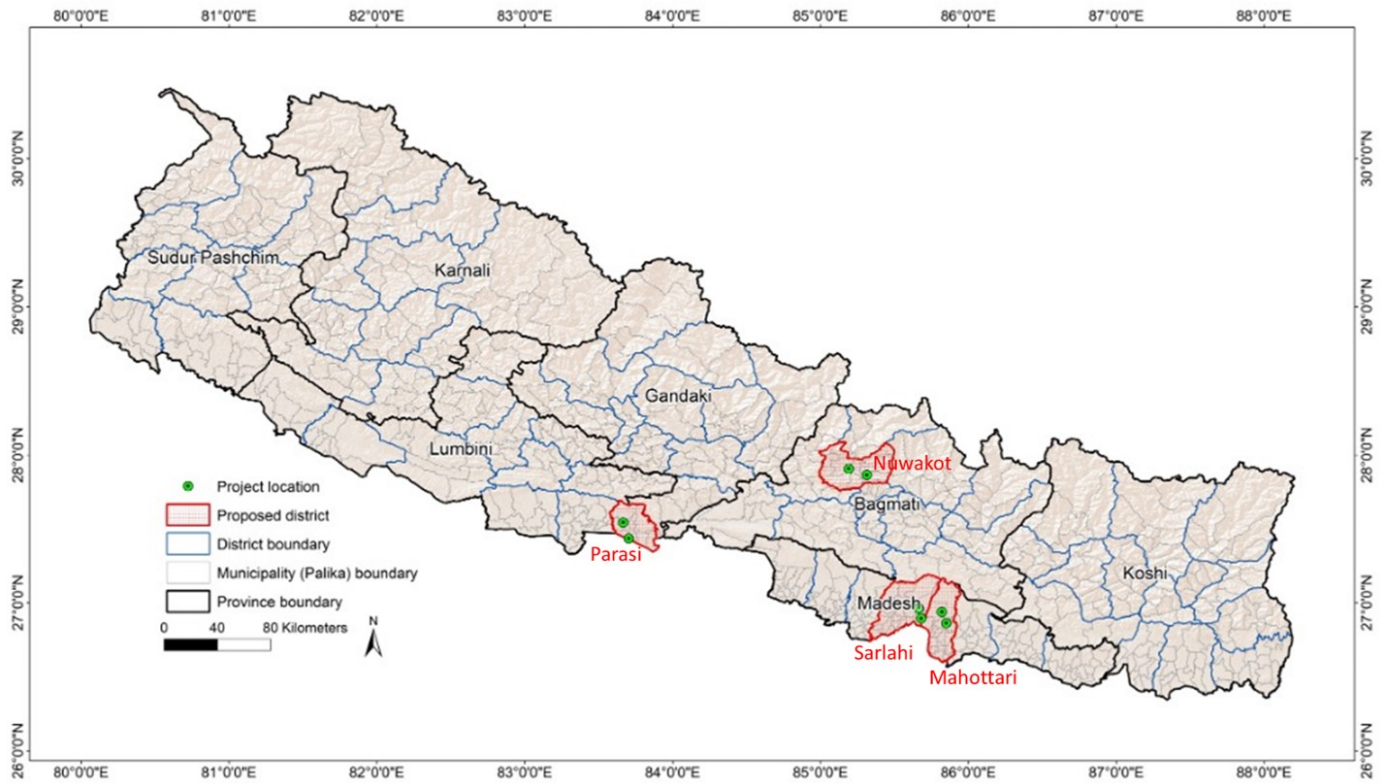


Figure E2: Map showing project districts

ANNEX F: ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREEN AND RATING

Attach agency safeguard datasheet/assessment report(s), including ratings of risk types and overall project/program risk classification as well as any management plans or measures to address identified risks and impacts (as applicable).

Title

Annex F2- Indigenous Peoples Plan CRAFT Nepal

Annex F - ESMP and Screening checklist CRAFT Nepal

ANNEX G: BUDGET TABLE

Please upload the budget table here.

FAO Cost Category	Comp 1- Total	Comp 2- Total	Comp 3- Total	Comp 4- Total	M&E	PMC	Responsible Entity
5011 Salaries professionals							
<i>Detailed job title for each profile</i>	0	0	0	0			
	0	0	0	0			
5011 Sub-total salaries professionals	0	0	0	0	0	0	
5012 GS Salaries							
	0						
	0						
5012 Sub-total GS salaries	0	0	0	0	0	0	
5013 Sub-total of Consultants	194100	50100	31700	38400			
Agronomist/ Climate Change Specialist	32800	16400	16400	16400			OP
Knowledge Management and Communications Specialist	0	0	0	15000			OP
M&E Specialist	14000	7000	7000	7000			OP
Private Sector engagement and Value chain specialist	0	15000	5000	0			OP
GESI Specialist	10800	5700	3300	0			OP
Safeguard Specialist	14000	6000	0	0			OP
Nature-based solution Specialist	55700	0	0	0			OP
Soil health specialist	20000						OP
FFS and Capacity Development Specialist	30000	0	0	0			OP
Agri Engineer	16800	0	0	0			OP
Associate Finance cum Admin specialist						60,000	OP
Sub-total national Consultants	194,100	50,100	31,700	38,400	0	60,000	0
5013 Sub-total consultants	194,100	50,100	31,700	38,400	0	60,000	0
5014 Contracts and LoAs							

Develop farmers' feedback mechanism for the weather forecast information and agro-advisory services	55,000	0	0	0			OP
Strengthening digital agriculture extension system of Agriculture Information and Training Centre (AITC)	0	0	25,000	0			OP
Municipal level VRA and agriculture development and climate change adaptation plans including NbS (LoA)	0	0	160,000	0			OP1
Develop green infrastructure for soil and water conservation and ground water recharging	800,000	0	0	0			OP
Introduction and trials of climate resilient germplasm of rice (LoA)	50,000			0			OP1
Strengthen the capacity of NARC and private rice breeders for climate resilient rice variety development (speed breeding facility) (LoA)	60,000			0			OP1
Document rice-related indigenous knowledge				31,750			OP
Demonstrations of climate resilient rice production technologies and conservation agriculture (LoA)	600,000	0	0	0			OP1
Conduct adaptability trials of new varieties accessed from Seeds Without Border Initiatives and produce breeders' seeds of successful varieties (NARC)	90,000	0					OP
Strengthen local value chain infrastructure including farmers markets	0	63,750					OP
Develop and rehabilitate irrigation system	1,500,000	0	0	0			OP
Private agencies and producers organizations to pilot new technologies and innovative onfarm climate-resilient water management for agriculture and food system	0	320,000	0	0			OP
Develop climate resilient farm management guidelines for rice-based cropping system and it piloting (LoA)	0	0	75,000	0			OP1
Feasibility study for weather index-based agro-insurance	0	0	36,000	0			OP
Support services for private sector entities and CSO for climate adaptation and resilience building of value chain enterprises	0	0	100,000	0			OP
Spot check				0	30,000		FAO
Share knowledge using UNICT for improved monitoring and reporting				0	40,000		FAO

Conduct indicator surveys (midterm and terminal)	0	0	0	0	60,000		FAO
Conduct Mid-term evaluation of the project	0	0	0	0	35,000		FAO
Conduct Terminal evaluation of the project	0	0	0	0	60,000		FAO
Final reporting	0	0	0	0	6,550		FAO
5650 Sub-total Contracts and LoAs	3,155,000	383,750	396,000	31,750	231,550	0	
5021 Travel							
<i>(Lump sum) International/Regional Travel for Learning Visit for OP</i>	26950	0	0	0			OP
<i>(Lump sum) National travel for OP expert</i>	59450	59450	59450	59450	12000	25000	OP
<i>(Lump sum) Travel for training/workshops and meetings</i>	51750	51750	51750	51750			OP
5021 Sub-total travel	138150	111200	111200	111200	12000	25000	
5023 Training							
Workshop of NbS Networks to plan location specific NbS and green infrastructures	16,000	0	0	0			OP
Farmers training on NbS	21,400	0	0	0			OP
Training on operation of green infrastructure	16,000	0	0	0			OP
Analysis of value-chain networks	200,000	0	0	0			OP
Trainings on operation of custom hiring	32,000	0	0	0			OP
Mechanical/maintenance training on custom hiring centres	96,000	0	0	0			OP
Organise TOT (2) and year round crop cycle FFS (32)	272,000	0	0	0			OP
Training of extension service providers and other value chain actors to access and adopt weather and climate information and agro-advisory services	267,000	0	0	0			OP
Farmers training to access and adopt weather and climate information and agro-advisory services	64,000	0	0	0			OP
Workshop in model business plans considering climate risks in critical nodes of crop specific value chains	0	8000	0	0			OP
Training of value chain actors to develop their own business plans through financial education and business literacy	0	4000	0	0			OP
Training of value chain actors on risk assessment and management	0	8000	0	0			OP

On site supports to value chain actors for designing, installation and operationalization of climate resilient processing technologies and post-harvest handling infrastructures for seeds and farm products	0	12000	0	0			OP
Training of government officials on identifying climate risks and vulnerabilities and planning appropriate adaptation responses using NbS and climate resilient value chains (8+4+2)	0	0	42000	0			OP
Workshop on climate resilient farm management strategies for rice-based cropping system	0	0	8000	0			OP
Workshop on strategy for institutional partnerships and coordination mechanisms	0	0	4000	0			OP
Conduct multistakeholder dialogues with private sector entities, CSOs and government agencies	0	0	24000	0			OP
Workshop on learning agendas, and project's capacity development strategy for collaborative and adaptive learning and adoption in the climate resilient rice-based agriculture landscapes	0	0	0	4000			OP
Safeguard and gender sensitiation training to the cluster officials and other stakeholders on streamlining the inclusion	3,000	0	0	0			OP
Safeguard awareness session to Dalit and indigenous peoples to ascertain the benefit to the targeted community		0	4000	0			OP
SEP: Consultation meetings with supermarket/agri-marts for market linkages		2000		0			OP
IPP: Gender promotion, sexual exploitation and abuse, sexual harassment (SEA/SH) and gender-based violence (community level) for indigenous men and women				4000			OP
IPP: Awareness session on the complete procedures of FPIC to project staffs and IP				4000			OP
Organize inception workshop, annual review and planning workshop, reflection workshops, and final dissemination workshop (1+14+1+3+1)	0	0	0	20000			OP
5023 Sub-total training	987,400	34,000	82,000	32,000	0	0	
5024 Expendable procurement							
Soil health management inputs	80,000	0	0	0			OP

Inputs support for IPM demonstration	40,000	0	0	0			OP
Inputs for large scale demonstration of climate resilient conservation agriculture practices	40,000	0	0	0			OP
Materials for seed multiplication, processing, quality control and marketing of stress tolerant crop varieties and landraces with gender and youth responsive resilient seed system	203,200	0	0	0			OP
Inputs for community seed banks	56,000	0	0	0			OP
Inputs for agribusiness incubation services (Competitive Grant and Participatory Gurantee Scheme)	0	107,550	0	0			OP
	16,000	0	0	0			OP
GAP: Women led organizations/agriculture cooperatives/enterprises received subsidized improved seed, stress tolerant crop varieties							
Publications of knowledge products	0	0	0	20,000			OP
5024 Sub-total expendable procurement	435,200	107,550	0	20,000	0	0	
6100 Non-expendable procurement							
Seed processing plants (Madhesh)	80000	0	0	0			OP
Machines for custom hiring centres	800000	0	0	0			OP
Machines for resilient processing technologies and post-harvest handling infrastructures for seeds and farm products	0	800,000	0	0			OP
Electronic equipments (desktops, laptops, printers, copiers, etc. for PMU & PCU)	45000	45,000	0	0			OP
Motorcycles for PMU (3), PCU (6), AKC (4)& Municipalities (8)	60000	0	0	0	3000		OP
6100 Sub-total non-expendable procurement	985,000.00	845000	0	0	3000	0	
5028 GOE budget							
Rental Vehicle						130000	OP
Utilities (telephone, internet, cleaner, fuel and vehicle maintenance, etc) for PMU and CPU						190170	OP
6300 Sub-total GOE budget	0	0	0	0	0	320,170	
TOTAL	5,894,850	1,531,600	620,900	233,350	246,550	405,170	
Summary	Total						
Component 1	5,894,850			0			
Component 2	1,531,600						
Component 3	620,900						
Component 4	233,350						
M&E Budget	246,550						

Subtotal	8,527,250
Project Management Cost (PMC)	405,170
SubTotal (Component+PMC)	8,932,420
TOTAL GEF	8,932,420

Please explain any aspects of the budget as needed here

ANNEX I: RESPONSES TO PROJECT REVIEWS

From GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF.

Secretariat's Comments	Details	Responses of IA		
		Core Indicator	PIF	PPG
1. Result figure for the core indicator under the section 2	<p>Secretariat's Comments</p> <p>11/24/2023: GEFSEC. Thank you for the requested amendment.</p> <p>Cleared with understanding that figure for the rest of the core indicator will be revisited during the PPG phase for upward revision.</p>	1. Direct beneficiaries	148,000	162,800
		2. Area of land managed for climate resilience (ha)	10,000	10,000
		3. Number of policies/plans/frameworks/institutions for to strengthen climate adaptation		
		4. Number of people trained or with awareness raised	22	60
		5. Number of private sector enterprises engaged in climate change adaptation and resilience action	4,840	7,400

			60	72
2. Component funding allocation under section 3.3 a	<p>Secretariat's Comments</p> <p>1/24/2023: GEFSEC. Some funding allocation under the Component 2 (Output 2.1) can be TA. Please consider the revision during the PPG phase. Cleared for now.</p>	<p>Three activities are put under TA:</p> <p>Activity 2.1.1. Develop model business plans considering climate risks in critical nodes of crop-specific value chains;</p>		
3. Role of agency execution on providing part of TA support under section 5.3 b	<p>1/24/2023: GEFSEC. Thank you for the revision. Cleared. However, please note that clearance of this section cannot be taken as an approval of the agency to execute a part of</p> <p>TA support of the project. Instead, the agency is requested to submit a request letter</p> <p>signed by official GEF OFP as per the template, upon which GEFSEC will carryout</p> <p>analysis on the reasoning for this request.</p>	<p>A request letter signed by official GEF OFP as per the template is included.</p>		
4. Address the comments relating to ESS under section 8.7	<p>Secretariat's Comments</p> <p>11/24/2023: Cleared. However, during the PPG, please provide plans for further</p> <p>environmental and social impacts assessment and development of environmental and</p> <p>social management plan to avoid, minimize and mitigate the impacts</p>	<p>An environmental and social management plan (ESMP) is developed during the PPG phase to avoid, minimize and mitigate the impacts. The Plan proposes further environmental and social impacts assessment.</p>		

STAP's assessment

Concur - STAP acknowledges that the concept has scientific and technical merit

X Minor - STAP has identified some scientific and technical points to be addressed in project design

Major - STAP has identified significant concerns to be addressed in project design

STAP recommends the following:	Responses of IA
<p>Include plausible future narratives that go beyond climate to ensure that proposed interventions are the most appropriate and likely to result in optimal outcomes. Include impacts under RCP4.5 as described above.</p>	<p>Rationale section gives a plausible future narrative to justify the project and TOC links the proposed interventions to the result in optimal outcomes. Impacts under RCP4.5 are used to explain.</p>
<p>The project notes that “Traditional and indigenous technologies and practices are becoming inadequate in the face of increasing climate variability and extreme events.” Use the STAP Decision Tree to understand how proposed interventions under this project relate to existing practices to avoid maladaptation.</p>	<p>The STAP decision tree for adaptation rationale is taken as a method to identify traditional practices promising for scaling up (Rationale and project description sections).</p>
<p>Select one of the two ToCs featured in this PIF, and add a causal pathway for scaling (particularly since this element was highlighted as lacking in the FFS project). Carefully consider project specific risks (not general) and incorporate them, along with assumptions in a ToC narrative to better explain project rationale.</p>	<p>Considering the suggestions, the ToC is completely revised adding a causal pathway for scaling.</p>
<p>The rationale for the 4th project site (Nuwakot) – located in the centre of the country – is less clear</p>	<p>Nuwakot is a one of the hill districts in Nepal with high quality indigenous rice landraces which have high potential to develop value chain to niche markets. The adaptation technology tested and validated in this site can be replicated in other hill areas in Nepal.</p>