Project Identification Form (PIF) entry – Full Sized Project – GEF - 7

Building climate resilient livelihoods in vulnerable landscapes in Bangladesh (BCRL)

Part I: Project Information

GEF ID
10207

Project Type
FSP

Type of Trust Fund
LDCF

CBIT
No

Project Title
Building climate resilient livelihoods in vulnerable landscapes in Bangladesh (BCRL)

Countries
Bangladesh

Agency(ies)
FAO

Other Executing Partner(s)
Department of Environment

Executing Partner Type
Government

GEF Focal Area
Climate Change

Taxonomy
Climate Change, Focal Areas, Climate Change Adaptation, Innovation, Ecosystem-based Adaptation, Adaptation Tech Transfer, Mainstreaming adaptation, Climate resilience, Climate information, Community-based adaptation, Livelihoods, Private sector, Least Developed Countries, Influencing models, Convene multi-stakeholder alliances, Demonstrate innovative approache, Strengthen institutional capacity and decision-making, Stakeholders, Indigenous Peoples, Local Communities, Beneficiaries, Communications, Strategic Communications, Behavior change, Awareness Raising, Education, Civil Society, Community Based Organization, Academia, Non-Governmental Organization, Private Sector, SMEs, Individuals/Entrepreneurs, Large corporations, Type of Engagement, Information Dissemination, Partnership, Participation, Gender Equality, Gender Mainstreaming, Sex-disaggregated indicators, Women groups, Gender-sensitive indicators, Gender results areas, Capacity Development, Participation and leadership, Access and control over natural resources, Knowledge Generation and Exchange, Access to benefits and services, Capacity, Knowledge and Research

Rio Markers
Climate Change Mitigation
Climate Change Mitigation 1

Climate Change Adaptation
Climate Change Adaptation 2

Duration
60 In Months

Agency Fee($)
848,580

Submission Date
4/9/2019

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount($)	Co-Fin Amount($)
CCA-1	LDCF	6,932,420	17,404,000
CCA-2	LDCF	2,000,000	4,000,000
	Total Project Cost ($)	**8,932,420**	**21,404,000**

B. Indicative Project description summary

Project Objective

Strengthening landscape resilience in Bangladesh for improved livelihoods and reduced vulnerability to climate change through institutional capacity building, supported by diffusion and scaling-up of adaptation technologies and innovations.

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
1. Strengthen national institutional capacities for climate change adaptation and resilience	Technical Assistance	1.1 Strengthened cross-sectoral collaboration through Institutional capacity building to mainstream climate change adaptation and resilience. Indicators: *(i) Number of collaborating inter-ministerial agencies with formally established focal points.* *(ii) The number of MoUs/Contracts/LoAs have been established between national and regional stakeholders.* *(iii)* cross-*sectoral action plans on climate resilient livelihood development.* <u>Indicative targets:</u>	1.1.1 National stakeholders engaged through climate vulnerability reduction platform and cross-sectoral coordination mechanism covering government, local stakeholder and the private sector. 1.1.2 Cross-sectoral country action plans developed to address climate change vulnerability and climate resilient livelihood and land management. 1.1.3. Collaboration with global/regional and national initiatives enhanced. 1.2.1. Updated climate change vulnerability and adaptation related information and existing investment gap addressed in the national country investment plan (CIP) for the environment, forest, and climate change (EFCC) sectors.	LDCF	450,000	4,750,000

	(i) Ten focal points appointed *(ii) fifteen MoUs/Contracts/LoAs* *(iii) four cross-sectoral action plans*	1.2.2. Institutional coordination and public-private partnerships enhanced for the implementation of the adaptation action plan in four climate vulnerable landscapes (3.1.3).
1.2 National institutional capacities strengthened to benefit from climate finance and implement adaptation and climate resilient livelihoods measures.	Indicators: *(i) # review report outlining the updated vulnerability and adaptation related information and address the existing investment gaps in four landscapes to support the national country investment plan for the EFCC sectors.* *(ii) # of collaborating private/ research/higher education institutions.* *(iii) # of staff from inter-ministerial agencies with capacity strengthened.* Indicative targets: *(i) One review report.*	1.2.3. Enhanced capacity of national entities to develop, plan, implement and monitor climate-resilient and adaptation projects and update national policies and plans.

		(ii) Ten collaborating private/ research/higher education institutions. *(iii) Three comprehensive training programs on climate resilient livelihood organized.* *(iv) 260 staff from inter-ministerial agencies with strengthened capacities*				
2. Climate-resilient livelihoods and adaptation decision-making processes strengthened	Investment	2.1 Climate-resilience and adaptation knowledge enhanced by stronger climate vulnerability decision-support services. Indicators: *(i) # Data sharing protocols among the inter-ministerial. agencies on climate vulnerability and adaptation.* *(ii) # Operational combined early warning system (EWS) for major hazards in collaboration with BMD and FFWC.* *(iii) # of long-term value chain adaptation plans developed.* Indicative targets:	2.1.1. Transparent access to climate vulnerability related information enhanced through data sharing policies, documentation and data collection, and analysis protocols. 2.1.2. A combined Early warning system (EWS) operationalized for disaster risk and loss and damage reduction. 2.1.3. Long-term value chain adaptation plans developed to manage anticipated shifts in the suitability and viability of key farming systems in targeted landscapes based on integrated climate and agroecological zone models. 2.2.1. Innovative financial instruments and investment models developed and piloted in four climate vulnerable landscapes.	LDCF	800,000	2,850,000

(i) Ten data sharing protocols among the inter-ministerial agencies on climate vulnerability and adaptation.

(ii) One operational combined early warning system (EWS).

(iii) four long-term value chain adaptation plans developed.

2.2.2. Innovation incubators created in close collaboration with research, academia, NGOs, private sector, and Government entities.

2.2 Innovative financial instruments and investments models developed and piloted.

Indicators:

(i) # of innovative financial instruments.

(ii) # Innovation incubator for climate resilient and adaptation technologies.

(iii) # of private and government financing entities investing in resilient livelihoods practices.

Indicative targets:

(i) Three different financial instruments for low income, and middle-income people and marginal women.

		(ii) One central innovation incubator for climate resilient livelihood, and adaptation technologies and practices. *(iii) Ten private and government financing entities.* *(iiii) # of people received financial support to implement climate-resilient livelihoods*				
3. Scaling-up investments in targeted landscapes to reduce vulnerability and increase resilience	Investment	3.1 Local participatory adaptation plans formulated. Indicators: *(i) #of community group created.* *(ii) Number of gender-differentiated vulnerable community resilience and adaptation action plan developed.* Indicative targets: *i) Forty community groups created.* *(iii) Four local action plans.*	3.1.1. Established local consultative groups in four (4) climate change vulnerable landscapes. 3.1.2 Participatory integrated biophysical and socio-economic resource mapping of the selected four (4) climate vulnerable landscapes conducted. 3.1.3 Participatory gender responsive four (4) vulnerable community resilience and adaptation bottom-up action plans considering water, soil and vegetation for selected vulnerable areas established. 3.2.1 Established public-private partnership agreements to finance climate resilient and adaptative solutions in the four (4) selected	LDCF	6,657,067	10,904,000

3.2 Implementation of adaptation technologies and innovations. Indicators: *(i) # of collaborating micro, small, and medium enterprises (MSMEs) entities involved.* *(ii) # people* *benefiting from the adoption of sustainable diversified livelihoods and alternative income-generating activities.* *(iii) market access established for produced crops by the superstore chain.* Indicative targets: *(i) 200 collaborating micro, small, and medium enterprises (MSMEs) entities.* *(ii) 20,000 people* *benefiting from the adoption of diversified livelihoods.* *(iii) # of climate resilient livelihood strategies piloted and alternative income generating activities implemented.*	areas based on the action plan developed in 3.1.3 (emphasizing storage, processing, transportation, value chain, market access, and local MSMEs). 3.2.2 Climate resilient livelihood strategies piloted and alternative income generating activities in the selected vulnerable areas implemented by relevant Govt. depts. such as DoE, DAE, BFD, DoF, SRDI, BMDA, and CHT board. 3.2.3 Create market opportunities by linking private investments and superstore chain.	

		(iv) # of superstore chain engaged with resilient livelihood activities to promote the new market opportunities.				
4. Effective knowledge management, monitoring and evaluation at local and national level	Technical Assistance	4.1 Project monitoring and evaluation ensured. Indicators: *(i) # operational protocol for data collection for M&E.* Indicative targets: *(i) One operational protocol*	4.1.1 Monitoring and evaluation framework developed and implemented 4.2.1 Knowledge management and monitoring strategies and tools for adaptation are tested, validated and operationalized at landscape level.	LDCF	600,000	1,900,000
		4.2 Enhanced knowledge management and shared learning of information. Indicators; *(i) # of collaborating international and regional institutions for climate resilient innovation and technology transfer.* *(ii) # of collaborations for technology transfer* Indicative targets: *(i) Ten collaborating international and regional institutions* *(ii) Twenty collaborations for technology transfer*	4.2.2 Multi-level and south-south cooperation established for knowledge and innovation sharing and technology transfer. 4.3.1 Horizontal and vertical exchange of information and knowledge of the lessons learned to national and local stakeholders through seminars, conferences, consultations, workshops and media. 4.3.2. Information dissemination and awareness raising on climate resilient livelihood technology and finance availability conducted through partnership arrangements with digital media houses and the private sector.			

	4.3 Awareness about resilient livelihoods and adaptation enhanced. Indicators: *(i) # of collaborating private digital media houses).* *(ii) # of people informed about the lessons learnt.* <u>Indicative targets:</u> *(i) Three of collaborating private digital media houses).* *(ii) 200,000 people informed about the lessons learnt.*		
		Sub Total ($)	**8,507,067**	**20,404,000**
Project Management Cost (PMC)				
		LDCF	425,353	1,000,000
		Sub Total($)	**425,353**	**1,000,000**
		Total Project Cost($)	**8,932,420**	**21,404,000**

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

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
GEF Agency	The Food and Agriculture Organization of the United Nations (FAO)	Grant	Investment mobilized	15,404,000
Government	Krishi Gobeshona Foundation	Grant	Investment mobilized	1,000,000
Government	Bangladesh Forest Department, Department of Environment, Department of Agriculture Extension, Department of Fisheries, Bangladesh Agricultural Research Council, Bangladesh Water Development Board	In-kind	Recurrent expenditures	5,000,000
			Total Project Cost($)	21,404,000

Describe how any "Investment Mobilized" was identified

Not Applicable

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

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
FAO	LDCF	Bangladesh	Climate Change	NA	8,932,420	848,580	9,781,000
				Total GEF Resources($)	**8,932,420**	**848,580**	**9,781,000**

E. Project Preparation Grant (PPG)

PPG Amount ($)

200,000

PPG Agency Fee ($)

19,000

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
FAO	LDCF	Bangladesh	Climate Change	NA	200,000	19,000	219,000
				Total Project Costs($)	**200,000**	**19,000**	**219,000**

Part II. Project Justification

1a. Project Description

1) Global environmental and/or adaptation problems

1a.1 Problem, root causes and barriers to be addressed

1a.1.1 Bangladesh is a deltaic country with a total land area of 143,998 km^2 covering 130,168 km^2 land, and 13,830 km^2 water. The country has the highest population density in the world, with a total population in 2017 of 164.7 million. In 2018, Bangladesh became a lower middle-income country and eligible to eventually graduate from the LDC group. As a sign of its economic transition, the country has achieved over 6% GDP growth during the last decade, with highest-ever 7.86% GDP growth in the 2017-18 fiscal year[1]. Though the country has made advances, impacts from climate change, income inequality, environmental degradation and unsustainable use of natural resource are major areas of concern, which may undermine its development and future socio-economic stability.

1a.1.2 Bangladesh is increasingly facing climate change stress as evident in its natural systems, population, economic sector, and in particular the socio-economic status of poor communities due in part to its low-lying geographical location[2]. The country is already experiencing significant adverse effects of floods, storms, tropical cyclones, droughts, sea level rise, hydro-morphological changes, river bank erosion, and salinity intrusion[3]. According to the climate risk index 2018, *Bangladesh is the13th most vulnerable country due to climate change induced impacts and variability*. During the period of 1992 to 2012, 242 extreme climate change events devasted Bangladesh with a total loss of USD 1.83 billion in terms of Purchasing Power Parity (PPP)[4]. Furthermore, a projected 0.7 m in sea level rise by 2100 is expected to submerge 25% of the country's present wetland area[5]. Increased water logging, salinity intrusion, and decreased water availability will affect the socio-economic conditions of rural and marginal communities[6] who have limited adaptive capacities to cope with the effects of climate risks and hazards. In addition, there is currently a lack of financial resources and incentives for improving climate resilient livelihoods development, technology adoption, direct market access, monitoring of adaptation initiatives, vulnerability warning systems, and insufficient stakeholder involvement for bottom-up climate change adaptation decision making. Most importantly, inadequate enabling conditions, lack of institutional coordination, and human capacity at the national level also hinder the development of robust adaptation and resilient livelihood development. Altogether, the increased intensity and frequency of extreme weather events combined with low-socioeconomic development pose serious challenges to both human and ecological coping mechanisms, resulting in high vulnerability across landscapes and communities such as (i) High Barind Tract (HBT) ii) waterlogged areas, (iii) saline-prone areas, and (iv) Chittagong Hill Tracts (CHT) (Please see Annex A: *Figure 1* for the geographical location of these climate vulnerable landscapes) [7].

1a.1.3. In northern Bangladesh, HBT consists of twenty-six agroecological regions of the country and occupies an area of 1,600 km^2 in the north-west part of the country (*Figure 1*). The HBT differs from other parts of the country due to its topography and distinct physiography of terraced lands at about 30 m above sea level[8]. The HBT region is mostly located in Rajshahi division covering18,213 km^2, of which 9% is HBT. The climate of HBT is sub-tropical humid monsoon and is characterized by very high temperatures and erratic and low (1,075 mm) rainfall as compared to the national average (over 2,410 mm/year)[9]. The HBT areas also experience impacts from climate hazards such as the depletion of ground and surface water resources, reduced soil fertility and crop yields, and

drought[10]. The HBT region is mostly dependent on subsistence agriculture, with 80% of the land (132,600 hectares) under crop cultivation[14]. During the dry season, almost 80% of irrigation comes from groundwater resource which causes severe groundwater depletion and poses a threat for future groundwater availability and irrigation[11]. Irregular rainfall is not sufficient to ensure the replenishment of groundwater resources. According to the Bangladesh Agricultural Research Institute (BARI), the soil organic matter declined by 47.6 % from 1970 to 2000. The depletion of soil organic matter leads to reduced nutrient retention capacity and water holding capacity and as a result soils become more susceptible to drought. In consequence, the livelihood, agricultural practice and socio-economic conditions of the rural and marginal people in HBT are highly vulnerable to climate change.

1a.1.4. In the southwest part of the country, the increase of waterlogged areas is a severe problem particularly in Khulna, Satkhira, and Jessore districts (*Figure 1*). Currently, around 5% of the total land of Bangladesh is affected by waterlogging[12] which may further increase to 14% by 2100 due to climate change impacts[13]. The major causes of increased waterlogging in the area are: (i) siltation of area rivers, (ii) creating river beds higher than polders and floodplains, (iii) encroachment of river banks, (iv) drainage blocking due to infrastructure, (v) unplanned aquaculture, blocking water flows to create ponds, and (vii) sea-level rise and frequent and intense rainfall due to climate change. Except for Abhaynagar and Manirampur Upazila (sub-district) of Jessore district, all the upazilas of Satkhira and Khulna district have been suffering from the increased waterlogging since 2006 (*Table 1*). On average waterlogging areas increased by 34% over the period of 2006 to 2013. Agricultural lands, residential houses, health and education services, and markets are affected by waterlogging, resulting in loss of livelihood activities, food production, and degradation of the land and natural resources.

1a.1.5. In the south-western coastal region of Bangladesh, salinity intrusion has an adverse impact on agriculture, land, and water in the coastal areas (Figure 1). There are 19 coastal districts, covering 32% of the country and accommodating more than 35 million people where primary production system, coastal biodiversity, and human health are in numerous risks to salinity intrusion. The total amount of salinity affected land in the country was 0.833 million hectares in 1973, which jumped to 1.02 million hectares in 2000, further increased to 1.06 million hectares in 2009, and continues to rise (SRDI, 2010)[14]. In the last four decades, salinity has increased by 28% in the country. Changes in river water discharge triggered by climate change, upstream intervention, sedimentation-induced drainage congestion, flooding with saline water, cyclone, storm surge, sea level rise, and shrimp farming are the major drivers of salinity intrusion in south-west Bangladesh. Salinity intrusion drastically affects drinking water, irrigation, agriculture, fishing, livelihood, and precious cropland[15]. About 200 ha grazing/fodder crop areas have been affected each year in the coastal zone due to salinity intrusion which causes food crisis for the livestock[16]. In Kalapara coastal belt of south-west Bangladesh, 90% of crop areas are adversely affected during 2014-15 due to salinity[17]. The World Bank predicted that an increase in soil salinity may lead to a reduction in High Yield Variety (HYV) rice yield by 15.6% and drastically diminish the income of the coastal farmers[18].

Table 1: Distribution of water-logged areas of 8 selected Upazilas under three districts

Districts	Upazila	Water Logged Area in ha 2006 (ha)	Water Logged Area in ha 2013 (ha)	% change
Jessore	Abhaynagar	4475	2198	-50
	Keshabpur	6322	7905	25
	Manirampur	8374	5596	-33
Satkhira	Kalaroa	1292	3741	190
	Satkhira Sadar	9086	16046	77
	Tala	4904	13683	243
Khulna	Dumuria	14370	16813	17
	Phultala	2101	2210	5
Total		50924	68194	34

Source: FAO, 2019

1a.1.6. The CHT covers 13,184 km^2 in the South-eastern part of the country (*Figure 1*). The CHT comprises Khagrachari, Rangamati, and Bandarban districts. The total population of CHT is 1,676,842, with more than half of them belonging to 12 ethnic tribal groups. Two-thirds of the CHT area is characterized by steep slopes and the remaining area encompasses of undulating topography. Steep slopes combined with heavy seasonal rainfall pose serious restrictions to arable agriculture. Only 6% area of the CHT is considered suitable for intensive cultivation[19]. Shifting cultivation, locally known as Jhum, is the foremost land-use in the CHT. Shifting cultivation and associated burning has affected almost 37% of the total forest cover in CHT[20]. Farmers have been forced to shorten the fallow period leading to increased soil erosion and nutrient depletion[21]. During 1981-2003, green biomass and net primary productivity have declined over 62% of the land area[22]. Climate stresses such as irregular rainfall, warmer temperatures, water scarcity, and low soil moisture have adversely affected the agriculture, production system and livelihood practices of the indigenous people in CHT. Most of the people of CHT are poor and are uniquely reliant on agriculture and the natural resource base for their well-being. They have limited access to modern technology, improved agricultural inputs, and finance, and possess limited knowledge on sustainable farming systems which makes them more vulnerable to the impacts of climate change.

1a.1.6. A long term solution to reduce the climate vulnerability risk of these four landscapes will, therefore, demand that: (i) enabling environment and institutional capacities are in place to systematically implement and monitor climate resilient livelihood practice through plans and investments covering agriculture, forestry, infrastructure, water management including irrigation, and overall stakeholder awareness development; (ii) Operational legal / regulatory incentives and financial mechanisms to deliver both livelihood development and adaptation benefits; (iii) Climate resilient livelihoods and land use practices are established at a local level and necessary mechanism for scaling up to initiate a transformational change across the climate vulnerable landscapes.

However, there are number of barriers that prevent such solutions from being realized as described below table 2.

Table 2: Barriers, causes, and measures to address barriers

Barriers	Causes	Key measures to address barriers
Limited institutional and human resource capacity and cross-sectoral collaboration on vulnerability reduction.	· Inadequate comprehensive training on climate resilient livelihood. · Climate change vulnerability and adaptation related information are not frequently updated. · Inadequate cross-sectoral national action plan. · The absence of a common platform for stakeholder collaboration. · Insufficient coordination among the national and local agencies.	· Organize comprehensive and targeted training program on climate resilient livelihood and adaptation technology at the national and local level. · Updating climate change vulnerability and adaptation related information of the national country investment plan. · Develop cross-sectoral country action plans to address climate change vulnerability and climate resilient livelihood. · Enhance institutional coordination and public-private partnerships for the implementation of the adaptation action plan. · Enhance the capacity of national entities to plan, implement and monitor climate-resilient and adaptation projects. · Establish a climate change vulnerability platform to engage national and local stakeholders.
Limited innovation and informed decision support system.	· Inadequate innovative financial instrument. · Limited documentation of the existing resilient livelihood and adaptation technologies. · Limited landscape specific guideline for innovative technologies and resilient livelihood. · Lack of initiative for new knowledge gathering and innovative tech	· Develop innovative financial instruments and investment models. · Document existing climate resilient livelihoods and adaptation technologies. · Establish innovation incubators in close collaboration with a research organization, academia, NGOs, the private sector,

	nology.	and Government entities.
Inadequate integrated measures on climate resilient livelihoods and adaptation technology to reduce vulnerability of smallholders.	· Insufficient participatory bottom-up adaptation action plan. · Scarcity of integrated resilient livelihood and adaptation measures for water, soil, and vegetation. · Lack of value chain for resilient livelihood options.	· Improve climate early warning system for risk and vulnerability reduction · Mapping participatory integrated biophysical and socioeconomic resource in four vulnerable landscapes. · Produce participatory gender-differentiated adaptation bottom-up action plan for selected vulnerable areas. · Implement resilient livelihood and adaptation measures for water, soil, and vegetation in four vulnerable landscapes. · Long-term value chain adaptation plans developed based on integrated climate and agroecological zone models
Limited financial resources and market support for enhancing resilient livelihoods.	· Limited local level financial instrument/solution to adopt resilient livelihood and adaptation technology. · Limited public-private partnership for financial solution. · Inadequate alternative climate resilient income generating activities. · Lack of market opportunities for climate resilient livelihood options.	· Develop financial influential instrument (interest-free loan, installment) to support resilient livelihood activities. · Established public-private partnership agreements to finance climate resilient and adaptive solutions in the four (4) vulnerable landscapes. · Implement alternative climate resilient income generating activities in the four (4) vulnerable landscapes. · Create market opportunities by linking private investments and superstore chain in climate re

		silient livelihood and adaptatio n measures.
Inadequate awareness among loc al people and stakeholders and lac k of effective knowledge manage ment, monitoring, and evaluation.	· Inadequate effective monitoring a nd reporting systems on climate ch ange vulnerability. · Lack of awareness among the sta keholders about resilient livelihood, and adaptation technology.	· Horizontal and vertical exchan ge of information and lessons le arned among the stakeholder thr ough seminars, conferences, co nsultations, workshops, and me dia. · Establish cross-level and south -south cooperation for knowledg e and innovation sharing and tec hnology transfer. · Build a partnership with digital media houses and the private se ctor to disseminate information and knowledge materials to rais e awareness on climate resilient livelihood and adaptation techno logy. · Develop effective and results-o riented monitoring and evaluatio n framework · Test, validate and operationaliz e knowledge management and monitoring strategies in differen t landscapes.

2) Baseline scenario and associated baseline projects

Baseline Scenario

The **Bangladesh Climate Change Strategy and Action Plan (*BCCSAP) 2009*** gives importance to poverty eradication, and increased wellbeing of vulnerable groups with special attention on resilient livelihoods through access to basic security improved disaster preparedness and management system, gender sensitivity, and research and knowledge management. The ***7th Five Year Plan (2016-2020)*** also focuses on issues related to the development of rural areas of Bangladesh and identification of priority areas, such as increasing local production, crop diversification, livelihood protection, poverty reduction, community

resilience, and climate change capacity at the local and national levels. Further, the recent ***Agricultural Policy (2018)*** aims to promote an improved early warning system, reduction of post-harvest loss, dissemination of market information, agro-processing, women empowerment, stimulation of investment, ICT, agricultural cooperatives, and technical and financial coordination.

The intervention approaches of the proposed GEF LDCF project is designed considering the priority targets in the aforementioned national plans and policy documents, and to support their operationalization. The project is informed by and will build upon these to reduce climate change vulnerability at the local level and promote innovations through the landscape-based approach to scale up climate-resilient livelihood development in Bangladesh. As food security and livelihood protection, vulnerability reduction, ecosystem-based adaptation and community-based conservation, are the key priorities in the BCCSAP, NAPA, NDC, 7FYP, and recent agricultural policy, the activities of the proposed project will help operationalize the prioritized interventions to assist the government and local communities to achieve key national targets. Component 1 of the project will improve the enabling condition and institutional capacities through cross-sectoral collaboration, and institutional and human capacity building, component 2 will trigger research and innovations to reduce livelihood and landscape level vulnerability; Component 3 will promote resilient livelihoods through biophysical and socioeconomic resource mapping, producing landscape level local adaptation action plan and piloting innovative adaptation and technologies (drought, saline and flood-tolerant varieties, resilient cropping practice, irrigation technology, crop processing, and storage), soft/interest free loan, private sector engagement in agro-processing, diffusion of technology, availability of low cost modern agricultural inputs, market system and value chain development. Component 4 will strengthen monitoring and information management systems to ensure quality intervention, measure change, knowledge management, and awareness building.

Specific Baseline Projects and Programs

I. Government programs

Barind Multipurpose Development Authority (BMDA): In the northern region of Bangladesh, the Barind Multipurpose Development Authority administered by the Ministry of Agriculture works to alleviate desertification, improve livelihoods, and advance agricultural expansion. To this end, the BMDA supports and invests in numerous development projects. This includes substantial programs for irrigation, seed production, marketing, and features water pricing arrangements to encourage judicious use of groundwater, and buried pipe schemes to minimize evaporation losses. However, BMDA has not yet promoted improved irrigation technologies and climate change adaptation practices where the proposed LDCF project will contribute to address those gaps.

Extension Services Program: Bangladesh has a broad, well-established extension service network for agriculture. For instance, the Department of Agricultural Extension (DAE) has more than 26,000 staff. There are more than 14,000 field-level Sub Assistant Agricultural Officers (SAAOs) situated throughout the country. In the four Upazilas covered by the proposed project, there are 75 SAAOs who are responsible for extension and monitoring. The SAAOs work and report according to a well-defined diary of tasks. Ideally, there should be three SAAOs at a Union level (smallest rural administrative units of Bangladesh). However, in some Unions, the number of SAAOs is not sufficient to deliver quality services to farmers. In addition, the SAAOs have still low technical knowledge on farming practices and there is a need for implementation of well-designed capacity building activities to ensure a sustainable extension service delivery system. Hence, the project will enhance the technical capacity of DAE to effectively pilot the resilient livelihood options and collaborate with its existing programs/project related to the proposed project activities.

Climate Change Trust Fund (CCTF) and Bangladesh Climate Change Resilient Fund (BCCRF): The Government of Bangladesh has invested more than US$10 billion over the last 3 decades to make the country climate-resilient and less vulnerable to disasters. Bangladesh has established two innovative funds, i.e.: i) the Climate Change Trust Fund (CCTF), and; ii) the Bangladesh Climate Change Resilient Fund (BCCRF). CCTF is a self-financing mechanism of the Government to address the adverse impacts of climate change with an annual block allocation from the revenue budget of the Government. The Government has allocated a total of around US$ 400 million to the CCTF to finance priority climate change projects. The government established the BCCRF with financial support from development partners. CCTF funds were mostly used for river training, peri-urban waterlogging management, construction/reconstruction of dams/bridges, etc. The project will accumulate the knowledge and lesson learned from the past projects and collaborate with ongoing of CCTF projects working on climate livelihood protection.

Second Crop Diversification Project through Integrated Pest Management (IPM) Approach: The Government of Bangladesh implemented this project by DAE during 2013- 2018 with a total budget of US$ 6.7 million The project has established climate field schools and IPM clubs to enhance crop production. The government hopes to popularize Organic Pest Management by this project. The ultimate goal of this project is to make the country self-sufficient in food production through conservation of ecological system and biodiversity (approximately 15% of the resources has devoted to the activities in the North and North West of Bangladesh). The proposed GEF LDCF project will consider the lesson learned and address in the bottom up adaptation action plans.

Enhanced Crop Production through Farm Mechanization (Phase II, 2013-2018, US$ 22.36 million): The Government of Bangladesh implemented this project via DAE. The project intends to supply agricultural machinery to ensure increased agricultural production and sustainability in respect of limited draft power and labor. Other objectives are to reduce the production cost and crop loss and to enhance intensive cropping. The proposed GEF LDCF project promote adaption technology for the farm mechanization such as suitable tillage machine, rainwater harvesting, crop processing and less water consuming cropping technology through the engagement of MSMEs.

Enhancement of Irrigation Efficiency through Construction of Sub-Surface Irrigation Channel Project, BMDA (Funded by GoB. 2015-2019. US$17.02 Million): The major components of this project are to reduce the wastage of irrigation water by constructing sub-surface irrigation channel, extension of irrigation area through diversification of crops, providing training on irrigation water management, fertilizer use, technical cultivation, etc. and creating opportunity for employment of marginal farmers and daily workers. Lessons learned from the surface water management and crop diversification components of the projects will be used in the proposed project.

Panchogar, Thakurgah, Dinajpur, and Jaipurhat Integrated Agriculture development Project, BMDA (2014-2019, US$ 33.87 million): The main targets of this project are rehabilitating canals and ponds, enhancing irrigation facilities, creating employment opportunities for the marginal farmers and daily labors, planting timber and fruit trees for environmental conservation and social-economic development. Lessons learned from soil and water conservation practices will be taken into consideration for the proposed project and the best technologies and practices will be identified and replicated by the proposed project.

Quality Seed Production, Distribution & Farmers Training Project for crop Production Project, BMDA (2015-2020. US$ 1.23 Million): This project aims to increase crop production through distribution of quality seed; to motivate farmers to cultivate local indigenous and high yielding varieties of rice, wheat, pulse, and oilseeds through establishing demonstrations; to train farmers and officials on quality seed production and less waterlogging crop production, etc. Lessons learned from the training of the farmers and officials on conservation agriculture and quality seed production will be used for the proposed project.

II. Donor-supported programs

Sustainable Forests & Livelihoods (SUFAL) Project (2018-2023, US$ 178.90 million): Bangladesh Forest Department in partnership with World Bank is implementing the project with a view to improving collaborative forest management and increasing benefits for forest-dependent communities in targeted sites of the country. The project has four main components. The first component aims to strengthen institutions, information systems and training will focus on improving organizational capacity, administrative and operational procedures, research and information systems. The second component includes collaborative forest and protected areas management along with restoration and afforestation. The third component is designed to increase access to alternative income generating activities (AIGAs), forest extension services and trees outside forests (TOF) and the fourth component attempts to establish effective project management, monitoring and reporting in the 28 districts where field implementation will take place.

National Agricultural Technology Program Phase-II (NATP-2, 2015-2020, US$ 214.00 million): Ministry of Agriculture (MOA) and Ministry of Fisheries and Livestock (MOFL) is implementing the project in partnership with World Bank and USAID is implementing the project. The objective of the Second Phase of the National Agriculture Technology Program Project for Bangladesh is to increase the agricultural productivity of smallholder farms and improve smallholder farmers' access to markets in selected districts. NATP-II will cover 57 of the country's 64 districts and span a broad range of agro-ecological zones across Bangladesh. The proposed GEF LDCF project will build on the experiences of this project and scale up suitable interventions related to adaptation technologies.

Integrated Agricultural Productivity Project (IAPP, 2011-2016, US$ 63.55 million): Ministry of Agriculture (MoA), Ministry of Fisheries and Livestock (MoFL), with technical assistance from FAO has implemented this project with the financial assistance from World Bank. The project objective is to enhance the productivity of agriculture (crop, livestock, and fisheries) in specific agro-ecologically constrained and economically depressed areas. The project will be divided between work in southern Bangladesh in salt-affected and tidal surge areas, and in the drought-prone areas in the north. Lessons learned from this project will be used for the proposed project.

Establishing National Land Use and Land degradation profile towards mainstreaming SLM practice in sector policies (2016-2019, US$ 730,594 million): The project is being implemented by the Ministry of Environment and Forest, and Climate Change (MoEFCC) with the grant from GEF. The objective of the project is to establish a knowledge base and enabling policy and institutional environment for Sustainable Land Management (SLM). The project supports capacity building and awareness raising for strengthening the capacities of stakeholders to practice SLM. However, there is a need to further strengthen the capacities of stakeholders on climate resilient livelihood and this could be done through the proposed project.

Ecosystem-based approaches to Adaptation (EbA) in the drought-prone Barind Tract and Haor "Wetland" Area (2016- 2019, US$ 5.2 million): UNEP is implementing this project with a grant from GEF. The project is principally focused on wetland areas in northern Bangladesh. The project aims to reduce the vulnerability of communities to climate change impacts in the Barind Tract and Haor Area using Ecosystem-based Approaches to Adaptation (EbA). The project will build the capacity of government institutions to plan and implement effective local-level EbA to adaptation, undertake local level EbA interventions, and provide an evidence base of best practice for these approaches.

Decision Support for Mainstreaming and Scaling up of Sustainable Land Management (DS SLM, 2015-2019, 0.25 million): A Global Project being implemented by 15 countries' Government in association with FAO and GEF for scaling up of sustainable land management (SLM), climate change adaptation and biodiversity conservation in the Rajshahi, Chapai Nawabganj, Naogaon (drought-prone areas) and Mymensingh and Tangail for agroforestry interventions. The DS SLM project is focused on two agroecological zones. The proposed GEF LDCF project will build on the experiences of this project and consider the lesson learned in promoting resilient livelihood options and technologies.

Additional relevant projects are listed in Annex D.

3) The proposed alternative scenario, with a brief description of expected outcomes and components of the project

The proposed GEF LDCF project will help to reduce local level vulnerability to climate change and increase livelihood resilience in four (4) targeted landscapes in Bangladesh through testing and upscaling of adaptation technologies, resilient livelihood strategies and innovations, to enhance both community-level and institutional capacity and foster local private sector development.

Component 1: Strengthen national institutional capacities for climate change adaptation and resilience

Strengthened cross-sectoral collaboration and consultative investment/decision-making platforms, national institutional and human resource capacities are crucial to accelerate climate change adaptation and resilience, implementation of priority national targets and climate resilient livelihoods measures.

Outcome 1.1 will strengthen cross-sectoral collaboration through institutional and human capacity building to mainstream and foster climate change adaptation and resilience. Here, national stakeholders such as government organizations, local stakeholder and private sector will be engaged through climate vulnerability platform and cross-sectoral national coordination mechanism (output 1.1.1), develop cross-sectoral country action plans to address climate change vulnerability and climate resilient livelihood (output 1.1.2) and enhance collaboration with global/regional and national initiatives for wider benefit (1.1.3).

Outcome 1.2 intends to enhance national institutional capacity to benefit from climate finance and implement adaptation and climate resilient livelihoods measures. The endeavor will be to update climate change vulnerability and adaptation related information and identify the existing investment gap in four landscape of the national country investment plan for the environment, forest and climate change sectors (output 1.2.1.), enhance institutional coordination and public-private partnerships including research and higher education institutions for the implementation of the national adaptation plan (output 1.2.2), and strengthen capacity of national entities to develop, implement and monitor climate-resilient and adaptation projects and update national policies and plans (output 1.2.3). The capacity building activities will be finalized based on the need assessment during the project preparation period.

Component 2: Climate resilient livelihoods and adaptation decision-making processes supported by research and innovations

Component 2 will promote climate vulnerability decision-support systems, climate resilient research and innovation and build foster climate-resilience and adaptation knowledge, climate innovation, and build awareness about climate change vulnerability, climate-resilient livelihoods.

With outcome 2.1 transparent access to climate vulnerability related information will be enhanced through data sharing policies and documentation and data collection and analysis protocols (output 2.1.1). Here, the project will make available national and project level climate vulnerability data through common data sharing mechanism and establish combined early warning system (EWS) for major hazards (i.e. floods, drought, heavy rainfall, storm, heat wave) to reduce loss and damage, and protect livelihood (output 2.1.2). Further, the existing early warning provided by different govt. entities does not reach to the local people most of the cases. To improve this situation, the proposed EWS will be utilized to share information to national stakeholders and local people on hydrological and meteorological issues through a website, mobile app, and SMS. In addition, long-term value chain adaptation plans will be developed to manage anticipated shifts in the suitability and viability of key farming systems in targeted landscapes based on integrated climate and agroecological zone models (output 2.1.3).

Outcome 2.2 will develop innovative financial instruments and investment models (to be further pinpointed and assessed in PPG) and pilot in four climate change vulnerable landscape (output 2.2.1). Here, interest-free loan and financial incentive for low- and medium-income people and marginal women will be developed to support climate resilient livelihoods implementation. Then, innovation incubator will be created in close collaboration with research, academia, NGOs, the private sector, and government entities (output 2.2.2). The major intention of the innovation incubator is to generate new ideas, facilitate new startup in the areas of beneficial and improved climate service, develop mobile app for the farmers containing farming guide, weather update, market and transport information and provision of product display and selling. low-cost technology, and vulnerability reduction. Further, incubator will be designed to provide business management and entrepreneurial guidance to farmers to identify opportunities to connect them with other value chain actors, evaluate their operations, better assess climate change risks to their operations and receive guidance on options to address risks and enhance productivity/profits. Participants in the incubators will be first movers to apply financial instruments and investment models developed under the project linked to improved risk mitigation and more reliable supply of product for local value chain actors. Incubator participants will also be linked directly to the activities under outputs 3.2.1 and 3.2.2 and 3.2.3.

Component 3: Scaling-up investments in the targeted landscapes to reduce vulnerability and increase resilience

Component 3 of the proposed GEF LDCF project intends to formulate local gender-differentiated participatory adaptation plans, implement an innovative financial solution, investment models, climate resilient livelihoods, and create market opportunities for the livelihood options. This will help strengthen local resilience in the vulnerable landscape and promote diversified sustainable livelihood and earning opportunity.

With outcome 3.1 local climate resilient and adaptation consultative groups will be established in the four climate change vulnerable landscapes (output 3.1.1), participatory integrated biophysical and socioeconomic resource mapping will be conducted in the four vulnerable landscapes (3.1.2) and participatory gender-differentiated community resilience and adaptation action plans will be prepared for the four vulnerable areas (3.1.3).

Under outcome 3.2 public-private partnership agreements will be established to finance climate resilient and adaptative solutions in the four (4) selected vulnerable areas based on the action plan developed in 3.1.3. (this includes sustainable production & consumption, storage, transportation, improved value chain & MSMEs, stronger access to markets, etc.) (3.2.1). Then, climate resilient livelihoods piloted and alternative income generating activities will be implemented to reduce the vulnerability of the local people (3.2.2). Here, market opportunities will also be created by linking private investments and superstore chain in climate resilient livelihood and adaptation measures to promote the crops (3.2.3).

Activities under outcome 3.3 will be designed to establish public-private partnership agreements to finance climate resilient and adaptive solutions in the four selected vulnerable areas based on the action plan developed in 3.1.3. (this includes sustainable production, storage, improved and low-cost agricultural inputs, transportation, improved value chain & SMEs, stronger access to markets, etc.) (output 3.3.1). Then, alternative climate resilient income generating activities in the selected four vulnerable areas will be implemented to protect the income of poor people (output 3.3.2), and market opportunities will be created by linking private investments and superstore chain in climate resilient livelihood and adaptation measures (output 3.3.3).

Component 4: Effective knowledge management, monitoring, and evaluation at local and national level

With outcome 4.1 the proposed project will ensure the monitoring and evaluation framework for different activities. Here, an effective monitoring and evaluation framework will be developed with a view to monitoring and evaluating the project activities (output 4.1.1).

Outcome 4.2 is concentrated on effective knowledge management for monitoring and evaluation to seize the planned benefits of the project and track progress. Here, knowledge management and monitoring strategies and tools for adaptation will be tested, validated and operationalized at the landscape level with systematic approaches (output 4.2.1) and ultimately establish multi-level and South-South cooperation for knowledge and innovation sharing and technology transfer (output 4.2.2) which will foster shared benefits and social prosperity in the global south.

Outcome 4.3 aims to raise awareness about climate change vulnerability, adaptation technology, and resilient livelihoods among vulnerable people, the public and private sectors through planned and integrated approaches which will play an important role to accelerate the vulnerability reduction activities, institutional coordination, and collaboration in Bangladesh. To attain this goal, horizontal and vertical exchange of information and knowledge of the

lessons learned will be shared with the national and local stakeholders through seminars, conferences, consultations, workshops and media (output 4.3.1). The partnerships will be arranged for direct engagement with digital media houses (TV, Radio, and newspaper) and the private sector to develop and telecast outreach communication materials and documentary. Here, information dissemination and awareness raising activities will be carried out on climate resilient livelihood technology and finance availability for the target audience using digital media such as TV, Radio, newspaper, and SMS (output 4.3.2). This will help to spread the project benefit in other vulnerable landscape during the post-project period.

4) Alignment with LDCF Strategy and GEF focal area

GEF-7 Programming Strategy for the LDCF/SCCF

The proposed project is in direct alignment with the LDCF Strategy 2018-2022 and its first two objectives.

Considering the 1st Objective of the LDCF Strategy (Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation), the project activities are designed to support Bangladesh to adopt transformational shifts to climate resilient livelihoods and landscapes, poverty reduction and enhanced social wellbeing, which are also the key target of Bangladesh's 7th five year plan, NAPA and its NDC. To attain this, the project will promote and strengthen climate resilient livelihoods through interventions targeted at the landscape-level as well as in communities to improve food security and employment opportunities. The available list of all adaptation interventions and alternative income generating activities can be found in Annex D which will be further developed and prioritized during the full project preparation period.

Moreover, the private sector will be engaged in investing and promoting these adaptation options and technologies with suitable financial arrangement (i.e. interest-free loan, selling with installment) for wider diffusion. Further, to sustain the livelihood strategies, value chain and agribusiness development, low cost storage, processing and transport technologies will be enhanced for suitable commodities in the targeted landscape which will help to increase food production and protect livelihoods and income, improve market system and foster private sector investment.

In line with the 2nd objective of the LDCF Strategy (Mainstream Climate Change Adaptation and Resilience for Systemic Impact), the project will support the upgrading and establishment of systems (i.e. climate vulnerability platform, landscape specific adaptation action plans, knowledge materials, media activities, enhanced institutional and multi-stakeholder collaboration) to provide an evidence base for more effective adaptation technology in the agriculture, water, and land-use sectors. Additionally, the proposed project will improve knowledge management, enhance cross-sectoral coordination, promote innovation with a view to enabling the Bangladesh Government with greater opportunity to combat climate change impacts and vulnerabilities.

Other Global Environmental Benefits

The proposed project is also aligned with the GEF-& Programming Directions and is expected to deliver co-benefits across all three GEF focal areas. For instance, through the project activity focusing on harnessing biodiversity for sustainable agriculture, the project will contribute to the biodiversity focal area through improved biodiversity protection and sustainable use of agro-biodiversity. Additionally, the project will contribute to GHG mitigation (sequestration and

avoidance) through climate-resilient land use practices, like: cultivating the leguminous plant, returning more organic matter to the soil through plant residue retention, minimizing soil disturbance. Sustainable land management practices such as the use of appropriate fertilizer amount and type, conservation tillage, and diversification of crop and livestock systems will offer co-benefits in terms of land degradation prevention restoration. Besides, use of organic fertilizer generated through livestock manure management, and retention of organic matter in the crop field through crop residue retention in the four targeted landscapes will ensure avoidance of agrochemicals, which is in line with the Chemicals and Waste focal area.

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

The GEF LDCF funding will be used to ensure that local stakeholder groups and agriculture extension workers will have the necessary skills and knowledge to develop resilient livelihood practices, such as-drought and saline resilient crop varieties, alternative crop, mixed cropping systems, dyke cultivation, rice prawn farming, floating agriculture, short rotation crop varieties, and support for peer-to-peer training between farmers in Farmer Field Schools to catalyze this transformation. LDCF funding will be also used to support water, soil and vegetation specific agriculture, and conservation farming that protect fragile forests, stabilize the land and deliver livelihood and adaptation benefits to the vulnerable communities in the targeted landscape. Conservation engineering activities such as the construction of water harvesting catchment ponds, irrigation canal improvements, protection of water sources and stream embankments will be implemented with direct engagement of local people and indigenous communities. Additionally, LDCF resources will be targeted at strengthening local MSMEs through value chain and agribusiness development as well technology transfer and uptake for value-adding activities such as processing and storage.

LDCF funding will be also used to support project baseline initiatives and undertake much-needed comprehensive climate vulnerability risk assessments and early warning system/analysis and address, especially in the most critical, degraded and climate vulnerable landscapes. Apart from geophysical and hydrological assessments, institutional, legal (especially existing land use practices) and socio-economic conditions will be reviewed. Technologies, tools and methods will be introduced to facilitate climate resilient livelihood strategies like short rotation crop variety, drought and saline resilient variety, bench terrace cultivation, alternative crop, trellis agriculture, gabion dam and brushwood check dam and floating agriculture across the landscapes. Generated data will be used in hydrological and hydro-economic models to facilitate a well-informed, climate responsive sectoral decision-making and policy formulation. Both observation and modeling capacities will be strengthened and/or established through a dedicated training program and inter-ministerial coordination under a comprehensive country program.

LDCF funding will be used to develop a comprehensive monitoring and evaluation framework for integrated climate vulnerable risk reduction and resilient livelihood development, including the enabling mechanisms and financial incentives for widescale adoption of resilient livelihood practices. LDCF funds will be used to organize and facilitate consultations and dialogue among the government, private sector, and community; as part of the horizontal and vertical integration of stakeholders, and ways to involve private investors and financing institutes to finance the potential resilient livelihood practices. Such a mechanism may compensate to the local and indigenous community for not clearing forested slopes for farming, thereby reducing erosion and saving the streams and rivers to minimize negative effects on irrigation networks function.

6) Adaptation benefits (LDCF/SCCF)

The proposed project will provide direct adaptation benefits to at least 120,000 people who are the residents of the four targeted landscapes as well as 20,000 people at national level, while project measures will reach out to over 200,000 indirect beneficiaries. The project will work with local government agencies, national and local stakeholders in each of the selected areas to promote and implement resilient livelihood strategies and innovative technology solutions. A total area of 12,000 ha will benefit from climate-resilient landscape management through an innovation incubator, developed in close collaboration with academia, NGOs, private financing institutes, and government entities.

The project will deliver adaptation benefits through the introduction of a broad array of strategies, technologies and practices that are depicted in detail in Annex E. These interventions are expected to deliver adaptation benefits at across the landscape through ecosystem resilience and in communities through diversified income opportunities.

7) Innovation, sustainability, and potential for scaling-up

Innovation, sustainability, and potential for scaling up of the project are embedded in its comprehensive three-pronged strategies of (i) strengthened multi-sectoral collaboration, (ii) scaling-up investment by directing private sector finance through planning and cross-sectoral linkage creation, and (iii) effective monitoring and evaluation framework and awareness building. The successful outcome will be scaled up through investment by the govt/private financing institute, and direct market access through the private chain super shop, involving the existing local and indigenous community organization channel developed by the NGOs operating in the climate vulnerable landscape.

The project is innovative as it takes an integrated landscape approach to identify and scale up market opportunities in ways that will foster climate resilience and adaptive livelihoods in the targeted areas. By promoting cross-sectoral collaboration and integration, the project will help to strengthen multi-agency coordination, capturing synergies and avoiding duplication of efforts. Innovations at the landscape will include the application of agro-ecological modeling, while innovative financial instruments will be introduced to foster local agribusiness, MSME and value chain development. Through the engagement with research institutions, private entities and civil society, the project will also create an innovation incubator to support new ideas and startups for diversified livelihood development in the targeted areas.

The successful technology options will be scaled up through financing from private/govt. financing institutes and technology dissemination through existing local and indigenous community organization channel developed by the NGOs. The potential technology options like drought and saline resilient variety, floating agriculture, zero tillage and strip tillage farming, relay cropping, rain water harvesting, hydroponic fodder, and rice prawn farming will be piloted and

upscaled by linking the private sector for financing and direct market access. These critical functions and direct invention at the local level will increase livelihood development opportunities, increase the stability of the climate vulnerable landscape, and reduce exposure to flood and drought risks. Most importantly, empowering women and increasing their stewardship role will be a central theme of the proposed project strategy.

To ensure the sustainability, the project will design the activities in such as way so that benefit generation process continues during post project period. Here, the private sector engagement in value chain development and market system improvement, financial mechanism, early warning system and resilient livelihood practices will run after the project period and continue to generate benefits. Specific training to Govt. officials, establishment of local consultative groups in four landscapes, participatory adaptation action plans and massive awareness building activities on climate vulnerabilities and resilient livelihoods will contribute to better resilience and sustainability of the project results. In particular, climate resilient livelihood measures supported by the proposed project will reach out to over 200,000 indirect beneficiaries in the four landscapes. Additionally, an estimated additional 40,000 hectares will advance resilient livelihood in different upazilas within 5 – 10 years after project closure. The cumulative impact of resilient livelihood practices will result in a much more improved landscape and market operations in northern, southwest and southeastern Bangladesh.

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1b. Project Map and Coordinates

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

The project will be implemented in the four climate vulnerable landscapes of Bangladesh such as High Barind Tract (HBT) of Northwest region, Chittagong Hill Tracts (CHT) of Southeastern region, waterlogging and saline area of Southeast Bangladesh. Table 3 provides the district coordinates - see Annex A for the project map.

Table 3: District coordinates of the four landscape

Districts	Longitude	Latitude	Landscapes
Bagerhat	89.743804	22.328862	Saline prone area
Bandarban	92.364905	21.804203	Chittagong hill tracts
Barguna	90.109298	22.127908	Saline prone area
Barisal	90.367775	22.822487	Saline prone area
Bhola	90.770787	22.294963	Saline prone area
Ch. Nawabganj	88.264024	24.715584	High barind tract
Gopalganj	89.899499	23.105501	Saline prone area
Jessore	89.174229	23.090325	Waterlogging area + Saline prone area
Jhalokati	90.184083	22.572716	Saline prone area
Khagrachhari	91.956456	23.171941	Chittagong hill tracts

Khulna	89.452910	22.366887	Waterlogging area + Saline prone area
Naogaon	88.751647	24.900248	High barind tract
Narail	89.578910	23.130778	Saline prone area
Patuakhali	90.407355	22.165415	Saline prone area
Pirojpur	89.992140	22.531973	Saline prone area
Rajshahi	88.650740	24.468403	High barind tract
Rangamati	92.281343	22.824200	Chittagong hill tracts
Satkhira	89.143378	22.307972	Waterlogging area + Saline prone area

2. Stakeholders

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

Indigenous Peoples and Local Communities Yes

Civil Society Organizations Yes

Private Sector Entities Yes

If none of the above,please explain why:

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

The project has been discussed at length in one-to-one consultation with Bangladesh Forest Department (BFD), Department of Environment (DoE), Department of Agriculture Extension (DAE), Department of Fisheries (DoF), Bangladesh Water Development Board (BWDB), Bangladesh Agricultural Research Council (BARC), Krishi Gobeshana Foundation (KGF), Soil Resource Development Institute (SRDI), IFAD and USAID. During all meetings, the national entities mentioned above expressed the crucial need for this project with the cross-sectoral approach to provide climate change adaptation, build local resilience, promote alternative livelihoods and sustainable markets. Furthermore, the proposed intervention of the project is developed based on the outcome of national and sub-national consultation of ongoing FAO-MoEFCC project “Decision Support for Mainstreaming and Scaling up of Sustainable Land Management (DS-SLM)” where local communities, indigenous people and women’s groups are actively participating[1],[2],[3]. In depth discussion will be carried out with local stakeholders during the PPG phase. Further, key stakeholders from the public, private sector, CSOs and local level, particularly indigenous people of CHT, rural and marginalized people in waterlogging, saline prone and HBT areas, with a major direct role in the project, will be identified during PPG and consulted throughout different stages of the proposed project. For further details on the stakeholders consulted during the PIF preparation, please see Annex F for a complete stakeholder list.

It is mentionable that, several ministries, government agencies, and private sector association will be the key partners in project implementation. Approximately, 75% of the total funds of the project will be provided to the respective implementing agencies of the government through LoA to implement various activities of the project. All activities will be implemented under the guidance from the Project Director (PD) including procurement of National and international consultants following national rules and regulation. In procuring the consultants, consultation would be done with FAO, if necessary. will be done by FAO in consultation with PD. Besides, private sector association such as Bangladesh Frozen Foods Exporters Association, Bangladesh Fruits, Vegetables and allied products exporters association, and Bangladesh Agro Processor’s Association will be the responsible Partners of the proposed project and work in the areas of value chain development, market access, agro-processing, and financing. As a result of involving the most relevant national institutes, the project is to be implemented through an adaptive and collaborative management approach. This will ensure that key stakeholders are involved during early and throughout project execution. All activities related to this project would be done by the guidance of the Ministry of Environment Forest and Climate Change.

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3. Gender Equality and Women's Empowerment

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

The new GEF Gender Policy underscores the importance of gender equality and women's empowerment for the GEF's work. In line with the GEF Gender Implementation Strategy, the project will pursue a gender-responsive approach whereby women's participation in training workshops, pilot activities, and management committees will be strongly promoted. In line with the GEF improved gender reporting, the project's monitoring and evaluation efforts will be disaggregated by gender, and women-led economic and subsistence issues will be covered by the project's overall monitoring and evaluation framework. In addition, during project inception, the final management and decision-making framework will make certain that issues of gender are well incorporated. At the design stage, gender analysis and assessment will provide the basis for understanding gender roles and relations, identifying existing structural and socio-cultural constraints but also opportunities for women's meaningful participation in the project. As the GEF Gender Equality Policy aims to promote gender equality and women empowerment, the project will design its gender strategy to ensure there is gender equality in all the project activities to empower the local women and build the capacity of female farmers. Here, the farmer's field school (female) will be strengthened including through the post-harvest activities, MSMEs and agribusinesses to make them financially and socially empowered. Further, the project will actively incorporate a strong gender component in all stages, from analysis of vulnerability drivers, preparation of local adaptation plan, promoting resilient livelihood, awareness building, knowledge sharing, and stakeholder involvement in all programming and capacity building opportunities.

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

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

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

generating socio-economic benefits or services for women. Yes

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

Yes

4. Private sector engagement

Will there be private sector engagement in the project?

Yes

Please briefly explain the rationale behind your answer.

The private sector will be highly involved in the proposed project through outcome 3.2 (Innovative financial instruments and investments models piloted) and outcome 3.3 (Implementation of adaptation technologies and innovation). This will help to mobilize financial resources and technical capabilities of the private enterprises, leverage the efforts of governments and engage local efforts including through MSMEs and value chain development. As the private entities deal with the investments in many areas related to technology, it is expected that the involvement of private sector will increase investment in the priority areas for livelihood development and vulnerability reduction in the four landscape. Private entities are expected to be instrumental in the testing delivery of useful adaptation services such as early warning systems, resilient livelihood technologies (rain water harvesting, zero tillage machine, solar powered kiln), stress-tolerant varieties, market development, financial inclusion, and water management technologies. The potential private entities for these activities are producer-organizations, agro-industry non-commercial banks for developing financial instruments (i.e interest free loans), super shops and SME associations for market system development, and ICT firms for the improvement of early warning system. See Annex E for an outline of the specific private entities related to each of the targeted landscapes.

5. Risks

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

Table 5: Risk and mitigation measures

Risk	Probability and Impact (Scale 1-5)	Mitigation measures
Limited cross-sectoral coordination among concerned ministries and local government authorities	P=3, I=2	Clear cross-sectoral arrangements for implementing project and pilot activities that specify the roles and responsibilities of the relevant organization will be maintained throughout the project. The project will further ensure effective inter-agency collaboration and engagement in the project activities.
Limited information sharing between national the local stakeholders	P=2, I=3	Local stakeholder meetings will be organized on different hotspots such as waterlogged, saline prone and HBT area to share the technical specifications of the best practices and implement in the field. This type of local meeting will also build a network among the stakeholders for shared prosperity.
Gender mainstreaming may be hindered by resistance from local and national stakeholders	P=3, I=3	Rich communication on gender equality and empowerment will be maintained since the inception of the project. The project indents to develop a participatory local adaptation plan where gender responsiveness will be considered carefully. Besides, substantial women participation will be maintained in the project activities and events.
Private sector may not adequately engage in the activities if there is no profit.	P=3, I=3	The area of profit generation will be clearly identified before engaging the private sector in the proposed activities.
The severity of extreme events may limit the success of interventions	P=4, I=3	The project is formulated specifically to build climate resilience and reduce vulnerability in four landscape. Here, the project activities and output will attempt to enhance the technical capacity of farmers, local government agencies and other stakeholders to properly address climate change impacts in the future.

6. Coordination

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

The proposed project will be supported by another GEF financed CBIT project for access to climate change adaptation and mitigation data and the GEF financed project on Biannual Update Report (BUR), which can provide support to this project on terms of access to relevant data. This can provide the necessary data and information support on risks of climate vulnerability like floods, flash floods and landslides of observed frequency and intensity that threaten local rural infrastructure and livelihoods. Further, the project will coordinate with other projects of relevance such as IFC's "Promoting Climate Resilient Agriculture and Food Security", and the GCF-supported "Enhancing Climate Resilience in the Third Pole" to avoid duplication, enhance knowledge sharing and lessons learned while capturing synergies. Additionally, this proposed project will also closely collaborate with Bangladesh Meteorological Department (BMD) and Flood Forecasting & Warning Centre (FFWC) for the development of combined early warning system. Such coordinated action will be particularly necessary for relation to climate risk data management as well as other aspects of institutional and technical capacity development for climate risk reduction.

The proposed project will also work closely with the Green Climate Fund (GCF) supported project on titled as "'Enhancing adaptive capacities of coastal communities, especially women, to cope with climate change induced salinity,' to avoid duplication of activities in the salinity prone area. This GCF supported project is targeted to reduce the adverse impacts on agricultural livelihoods that are freshwater dependent, and to address the availability and quality of drinking water in vulnerable coastal communities. This project is particularly focused on community-based approaches in planning and managing climate-resilient water supply targeting the highly vulnerable, specifically women and girls. Coordination and synergies with this GCF supported project will be beneficial for the proposed project in the areas of risk assessment, knowledge management, monitoring and evaluation, climate resilient livelihood technologies in the saline and waterlogging prone area. The project will best utilize the climate vulnerability reduction web platform to maximize the lesson learned, disseminate project output, and enhance collaboration with other projects and stakeholders which will also serve the purpose of knowledge action network.

To ensure the effective project management and activities implementation the project will run through a project management unit (PMU). The PMU will coordinate the daily execution of the project's activities. The PMU will be housed in the DoE office, Dhaka and will comprise National Project Director (NPD), national and international experts, technical consultants and administrative staff appointed to execute the tasks covering the project components. The PMU will arrange execution of the project through various forms of agreements (e.g., MoUs, LoAs, data sharing contracts, procurement, and coordinated activities) with appropriate stakeholders. To accelerate the project implementation and ensure the quality of the work a Project Implementation Committee (PIC), Technical Working Group (TWG) and Project Steering Committee (PSC) will be formed with representatives from relevant government departments and agencies, NGOs, private sector, academia, think tank and civil society. The ToR and constitution of these committees will be developed during the PPG phase.

7. Consistency with National Priorities

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

Yes

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

The proposed LDCF project is fully aligned to Bangladesh's National Adaptation Programme of Action (2009), which gave priority to basic national issues of Bangladesh such as a) food security, b) water security, and c) livelihood security (including right to health) and respect for the local community on resource management and extraction.

The project is also directly aligned to the country's Nationally Determined Contribution (NDC) 2015, which outlines the primary goal for adaptation is to protect the population, enhance their adaptive capacity and livelihood options, which will ensure the overall economic development and wellbeing of the country. It has identified food security, livelihood and health protection, disaster management, coastal zone management including salinity control, ecosystem-based adaptation, community-based conservation, and policy and Institutional capacity building as a key area to reduce the adverse impacts of climate change.

Further, the Technology Needs Assessment (TNA) report of Bangladesh identified and prioritized sector-specific adaptation technologies that have synergies with the long-term development priorities of the country. This is also in alignment with the interventions of the proposed project, given that adaptation technologies have been prioritized for the agriculture and water sector.

The proposed project therefore directly assists Bangladesh in attaining its climate change adaptation goals and targets outlined in its NDC, NAPA (2009), the third national communication (TNC), TNA, and BCCSAP (2009) and National Agriculture Policy (2018). Further, the objective and outcomes of the project will ultimately support several national and sub-national priorities for building climate resilience and reducing vulnerability. The targets of the national plans and policy documents supported by this project are:

I. Bangladesh Country Investment Plan for Environment, Forestry and Climate Change (2016-2021) (EFCC CIP) 2017
II. Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009
III. 7th Five Year Plan (2016-2020)
IV. Bangladesh National Adaptation Program of Action (NAPA) 2009
V. National Sustainable Development Strategy 2010-21 (NSDS)
VI. Perspective Plan of Bangladesh 2010-2021: Making Vision 2021 A Reality
VII. National Agriculture Policy 2018
VIII. Technology Needs Assessment (TNA) 2012
IX. Bangladesh National Conservation Strategy (2016-2031)
X. The Election Manifesto 2018 of the newly elected government

8. Knowledge Management

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

Knowledge management is an integral part of this proposed project. The project will develop and record lessons learned, elaborate cutting-edge training modules to train relevant government and civil society organizations, private sector, farmers, and other partner organizations and local community and user groups, to use and transfer resilient livelihood, technology, and innovative practices, to develop “how-to” guidelines for use by farmers and to monitor and record project results. The project will also take initiatives to disseminate the research output, training, and knowledge materials and guiding document through workshop, seminar, conference, vulnerability platform and electronic and print media for the wider impact. Institutional and human capacity building through comprehensive training will be an important part of this project’s components which will foster knowledge-based development and vulnerability reduction in the four landscape. Finally, the project will enable stakeholders at the national, regional and local level to have access to improved knowledge and data through development of mechanisms for peer-to-peer learning, systematic long-term approaches to capacity building, and dissemination of useful information.

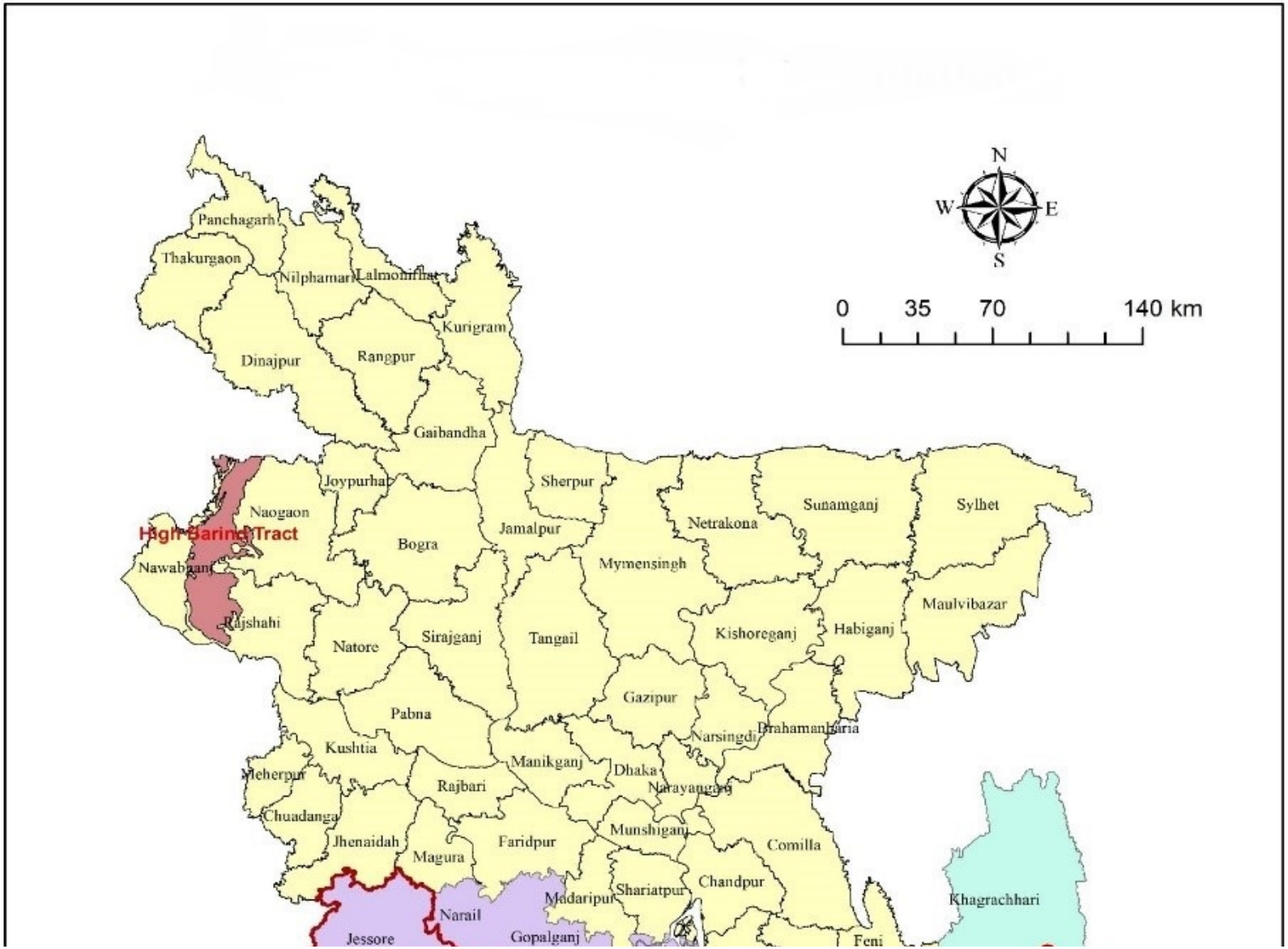
Part III: Approval/Endorsement By GEF Operational Focal Point(S) And Gef Agency(ies)

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

Name	Position	Ministry	Date
Abdullah Al Mohsin Chowdhury	GEF Operational Focal Point	Ministry of Environment, Forest and Climate Change	4/17/2019

ANNEX A: Project Map and Geographic Coordinates

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



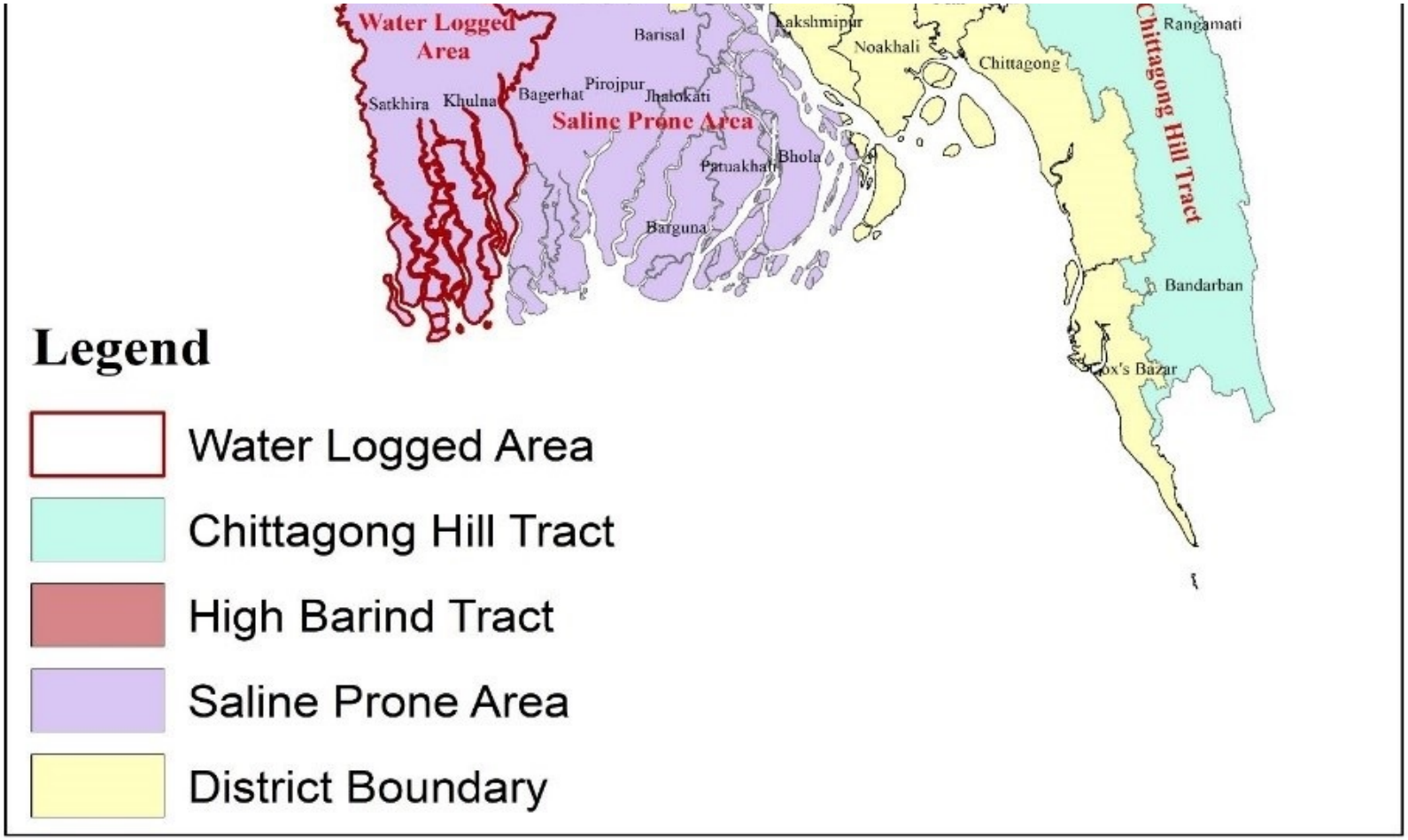


Figure 1: Geographical location of the four targeted landscapes of Bangladesh.