



GEF-6 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Medium-sized Project

TYPE OF TRUST FUND: Capacity Building Initiative for Transparency (CBIT)

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(1) PART I: PROJECT INFORMATION

Project Title:	Strengthening capacity for monitoring environmental emissions under the Paris Agreement in Bangladesh		
Country(ies):	Bangladesh	GEF Project ID: ¹	9986
GEF Agency(ies):	FAO	GEF Agency Project ID:	648280
Other Executing Partner(s):	Department of Environment (DoE) under Ministry of Environment and Forest	Resubmission Date:	14 May 2018
GEF Focal Area(s):	Climate change (CBIT)	Project Duration(Months)	36 months
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/>		Corporate Program: SGP <input type="checkbox"/>
Name of parent program:	[if applicable]	Agency Fee (\$)	82,008

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES²

Objectives/Programs(Focal Areas, Integrated Approach Pilot, Corporate Programs)	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
(select)(select)CBITOI 3: MRV systems for emissions reductions in place and reporting verified data.	CBIT	431,621	500,000
(select)(select)CBITOI 7: Number of countries meeting Convention reporting requirements and including mitigation contributions.	CBIT	431,621	500,000
Total Project Cost		863,242	1,000,000

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: Strengthened institutional and human capacities to meet the Enhanced Transparency Framework (ETF) requirement and track the progress against priority actions identified in Bangladesh's NDC for agriculture, forestry and land use (AFOLU) and waste sectors.						
Project Components	Financing Type ³	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
1. Institutional arrangements to meet the Enhanced Transparency Framework and monitoring of NDC activities.	TA	1.1 Institutional arrangements to integrate Agriculture, Forestry and Other Land Use (AFOLU) and waste sectors information and data to comply with ETF processes and reports enhanced.	1.1.1 Capacity gaps and needs of DoE for meeting the requirements of the ETF identified with particular focus on AFOLU and waste sectors. 1.1.2. Systematic and updated documentation and archiving system established in DoE with particular focus	CBIT	200,000	150,000

¹Project ID number will be assigned by GEFSEC and to be entered by Agency in subsequent document submissions.

² When completing Table A, refer to the excerpts on [GEF 6 Results Frameworks for GETF, LDCF and SCCF](#) and [CBIT guidelines](#).

³ Financing type can be either investment or technical assistance.

			<p>on ETF requirements for the AFOLU and waste sectors.</p> <p>1.1.3 Established collaboration and coordination mechanism among national entities involved in AFOLU and waste sector for data sharing.</p> <p>1.1.4 National ETF monitoring and reporting road maps prepared and adopted involving AFOLU and waste sectors.</p> <p>1.2.1 Strengthened multi-sectoral coordination mechanism focusing on AFOLU and waste sector for national and international reporting.</p> <p>1.2.2 AFOLU and waste sectors lessons learned at the national level are replicated at the division level.</p>			
		1.2 Best practice ETF reporting process, information gathering, system infrastructure and module sharing for the priority sectors of NDC, and regional CBIT ETF programme.				
2. Strengthened technical capacity to assess the emissions and removals, and monitor mitigation activities of NDC.	TA	2.1 Reporting on inventories of emissions sources and sinks and emissions reduction activities with particular focus on AFOLU and waste sector, and monitoring of mitigation activities strengthened.	2.1.1 Enhanced technical capacity of DoE through specific training program on institutional source software on GIS using Open Foris tools for land cover change analysis, data collection, management, and statistical analysis and reporting related	CBIT	434,765	650,000

			<p>with greenhouse gas (GHG) emissions and removals.</p> <p>2.1.2 Established GIS unit at DoE with necessary hardware, institutional source software and network in DoE.</p> <p>2.1.3 Established national environment database in DoE with comprehensive datasets for transparent monitoring and reporting different environmental aspects including pollutions and GHG emissions.</p> <p>2.1.4 Established interoperability national environmental monitoring system equipped with GHG information monitoring system under DoE.</p>			
3. Strengthened capacity to monitor and report adaptation activities in support of the NDC.	TA	3.1 Monitoring and reporting progress of the adaptation actions.	<p>3.1.1 Assessment prepared for good practice methodologies and frameworks for transparent monitoring and reporting of adaptation measures.</p> <p>3.1.2 Nationally appropriate indicators, monitoring and reporting framework developed for NDC priority adaptation activities in the AFOLU sectors.</p> <p>3.1.3 Established adaptation information management system (AIMS).</p>	CBIT	150,000	200,000

			3.1.4 Enhanced capacity of relevant national entities through training program at different levels on monitoring and reporting processes for NDC priority adaptation activities in the AFOLU sectors.			
			3.1.5 National reports prepared and submitted on priority adaptation activities in the AFOLU sectors consistent with latest UNFCC guidance.			
Subtotal					784,765	1,000,000
Project Management Cost (PMC) ⁴				CBIT	78,477	
Total Project Cost					863,242	1,000,000

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

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

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
Recipient Government	Department of Environment	In-kind	1,000,000
Recipient Government			
GEF Agency			
GEF Agency			
GEF Agency			
GEF Agency			
Total Co-financing			1,000,000

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

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b) ^{b)}	Total (c)=a+b
FAO	CBIT	Bangladesh	Climate Change	Cross-Cutting Capacity	863,242	82,008	945,250
Total GEF Resources					863,242	82,008	945,250

a) Refer to the [Fee Policy for GEF Partner Agencies](#).

⁴ For GEF Project Financing up to \$2 million, PMC could be up to 10% of the subtotal; above \$2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

E. PROJECT PREPARATION GRANT (PPG)⁵

Is Project Preparation Grant requested? Yes No If no, skip item E.

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

Project Preparation Grant amount requested: \$50,000					PPG Agency Fee: 4,750		
GEF Agency	Trust Fund	Country/ Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee ⁶ (b)	Total c = a + b
FAO	CBIT	Bangladesh	Climate Change	Cross-Cutting Capacity	50,000	4,750	54,750
Total PPG Amount					50,000	4,750	54,750

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS⁷

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	<i>Hectares</i>
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	<i>Hectares</i>
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	<i>Number of freshwater basins</i>
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	<i>Percent of fisheries, by volume</i>
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO _{2e} mitigated (include both direct and indirect)	<i>metric tons</i>
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	<i>metric tons</i>
	Reduction of 1000 tons of Mercury	<i>metric tons</i>
	Phase-out of 303.44 tons of ODP (HCFC)	<i>ODP tons</i>
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	<i>Number of Countries: 1</i>
	Functional environmental information systems are established to support decision-making in at least 10 countries	<i>Number of Countries: 1</i>

PART II: PROJECT JUSTIFICATION

1. *Project Description.* Briefly describe: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline projects; 3) the proposed

⁵PPG requested amount is determined by the size of the GEF Project Financing (PF) as follows: Up to \$50k for PF up to \$2m (for MSP); up to \$100k for PF up to \$3m; \$150k for PF up to \$6m; \$200k for PF up to \$10m; and \$300k for PF above \$10m. On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

⁶PPG fee percentage follows the percentage of the Agency fee over the GEF Project Financing amount requested.

⁷Provide those indicator values in this table to the extent applicable to your proposed project. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the [GEF-6 Programming Directions](#), will be aggregated and reported during mid-term and at the conclusion of the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF, SCCF or CBIT.

alternative scenario, GEF focal area⁸ strategies, with a brief description of expected outcomes and components of the project; 4) [incremental/additional cost reasoning](#) and expected contributions from the baseline, the GEFTF, LDCF, SCCF,CBIT and [co-financing](#); 5) [global environmental benefits](#) (GEFTF) and/or [adaptation benefits](#) (LDCF/SCCF); and 6) innovation, sustainability and potential for scaling-up.

- *Problem, root causes and barriers to be addressed.*
1. Bangladesh has a total land area of 143,998 km²consisting of 130,168 km² land, and 13,830 km² water. The physical geography of the country is varied and has an area characterized by two distinctive features: a broad deltaic plain subject to frequent flooding, and a small hilly region crossed by swiftly flowing rivers. The geography of the country is divided between three regions. Most of the country is dominated by the fertile Ganges-Brahmaputra delta; the northwest and central parts of the country are formed by the Madhupur and the Barind plateaus. The northeast and southeast are home to evergreen hill ranges. The Ganges delta is formed by the confluence of the Ganges, Brahmaputra, and Meghna rivers and their respective tributaries. The country has 57 trans-boundary rivers, in most cases, as the country is a lower riparian state to India. The country is predominately rich fertile flat land. Most parts of it are less than 12 m above sea level, and it is estimated that about 10% of its land would be flooded if the sea level were to rise by 1 m. Around 14% of the country is covered by forests and 12% is covered by hill systems. About 10,000 km² of the total area of the country is covered with water, and larger areas are routinely flooded during the monsoon season⁹. The country has a tropical monsoon climate characterized by wide seasonal variations in rainfall, high temperatures, and high humidity. Regional climatic differences in this flat country are minor. Three seasons are generally recognized: a hot summer from March to June; a hot, humid and rainy monsoon season from June to November; and a warm-hot, dry winter from December to February. In general, maximum summer temperatures range between 38 and 41 °C. April is the hottest month in most parts of the country. January is the coolest month, when the average temperature for most of the country is 16–20 °C during the day and around 10 °C at night. Natural hazards, such as floods, tropical cyclones, tornadoes, and tidal bores occur almost every year¹⁰. The country is the 8th most populous nation in the world with a population of 163 million during 2016, and is growing at an average annual rate of 1.1%¹¹.
 2. *Agriculture Sector Overview:* The Gross Domestic Product (GDP) growth rate of the country reached to 7.05 percent in 2016 from the previous year. GDP growth rate of the country is averaged 5.72 percent from 1994 until 2016, reaching an all-time high of 7.05 percent in 2016. The country has had a GDP growth rate of over 6% since 2011¹².Agriculture is a significant source of economic activity, accounting for 19.6% of GDP and providing employment for 47% of the population in 2016¹³. The agriculture sector comprises crops, forests, fisheries and livestock. Of the agricultural GDP, the crop sub-sector contributes 71%, forest 10%, fisheries 10% and livestock 9%¹⁴.The agricultural GDP growth was driven by increased output of key crops including rice, wheat, maize, sugarcane, minor cereals, and other vegetables.
 3. Agriculture and land-use activities are crucial to the livelihoods of Bangladesh’s people. Though industrial scale agriculture and mechanization are increasing in the country, most farmers are still smallholder households who often face constraints due to factors including land tenure issues, inadequate access to and management of land and water resources, lack of access to improved/sustainable inputs and technology, traditional farming skills, and limited infrastructure (e.g. irrigation and roads).Bangladesh’s rural economy, and specifically agriculture, have been powerful drivers of poverty reduction in the country since 2000. Indeed, agriculture accounted for 90% of

⁸For biodiversity projects, in addition to explaining the project’s consistency with the biodiversity focal area strategy, objectives and programs, please also describe which [Aichi Target\(s\)](#) the project will directly contribute to achieving.

⁹Ali, A (1996). "Vulnerability of Bangladesh to climate change and sea level rise through tropical cyclones and storm surges". Water, Air, & Soil Pollution. 92 (1–2): 171–179.

¹⁰"After Major Cyclone, Bangladesh Worries about Climate Change". PBS News Hour. 28 March 2008. Archived from the original on 22 January 2014.

¹¹World Bank (2017). World Development Indicators 1960 – 2016. The World Bank. Last updated 01-Jul-2017.

¹²World Bank (2017). World Development Indicators 1960 – 2016. The World Bank. Last updated 01-Jul-2017

¹³"The World Factbook". Central Intelligence Agency. Retrieved 2 August 2017.

¹⁴Agriculture. SDNP Bangladesh. Sustainable Development Networking Programme (SDNP).Retrieved 2 August 2017.

the poverty reduction in between 2005 and 2010. More than 70% of Bangladesh’s population and 77% of its workforce lives in rural areas. Nearly half of all of country’s workers and two-thirds in rural areas are directly employed by agriculture, and about 87 percent of rural households rely on agriculture for at least part of their income¹⁵.

4. Significant environmental problems in the country due to improperly managed municipal solid waste (MSW) are already documented because of the fast population growth and ongoing rapid industrialization. All of the municipalities like Dhaka, Chittagong, Rajshahi, Khulna, Borishal, Sylhet, and Rangpur, as well as around 308 municipalities and 208 other urban centers disposed MSW in open dump sites after collection from households or large waste containers on roadsides. The estimated total MSW generation per year was 5.11 million tonnes during 2015, which is expected to reach 12-19 million tonnes by 2050¹⁶ because of economic growth, associated expansion of urban area and the urban population growth of 3.44% per year¹⁷.
5. While expansion of the agriculture sector has been and will continue to be crucial for ensuring growth, poverty reduction and development in the country, recent trends associated with the expansion of agriculture output, particularly of crops, highlight numerous environmental and climate-related risks that require greater attention and scrutiny to ensure growth is sustainable and addresses the inherent vulnerabilities associated with agriculture livelihoods. Moreover unsustainable existing waste management practices demand proper utilization of data on waste to track emissions, and initiate mitigation activities in these two sectors.
6. *Crops*: Crops are the major agriculture sub-sector in the country and the key source of agricultural growth. As mentioned this sector contributes 71% of the agricultural GDP. Bangladesh agriculture has historically depended on subsistence rain-fed systems centered on rice production often with inadequate access to irrigation. However, over the past decade production has increased significantly largely due to a combination of irrigation expansion and use of high yield crop varieties. Permanent cropland accounts for 6.38 %of land area. Agricultural irrigated land accounts for 52.62 %of total agricultural land¹⁸. The dominant food crop of the country is rice, accounting for about 75% of agricultural land use and 28% of GDP¹⁹. The country is the fourth-largest rice producer in the world. In spite of the decline in the country’s arable land since its independence in 1971 because of conversion to settlement, the rice area harvested increased from almost 10 million ha in 1995 to nearly 12 million ha in 2010. Rice yield also improved in the last decade, from a low of 2.7 t/ha in 1995 to almost 4.3 t/ha in 2010. These increases in rice yield and area harvested contributed to growth in rice production, which nearly doubled from over 26 million t in 1995 to 50 million t in 2010. The major rice ecosystems in the country are upland (direct-seeded pre-monsoon aus), irrigated (mainly dry-season boro), rainfed lowland (mostly monsoon-season transplanted aman, 0–50 cm), medium-deep stagnant water (50–100 cm), deep water (>100 cm), tidal saline, and tidal non-saline. The country receives about 400 mm of rain during the pre-monsoon months of March to May, which enable farmers to grow a short-duration drought-resistant crop²⁰. While rice remains the most important crop for Bangladesh’s agriculture, production of other important crops including wheat, sugarcane and maize have increased significantly. The NDC has a particular focus on 20% scaling up rice cultivation using alternate wetting and drying irrigation. Production of major food crops for the years 2006 to 2012 are shown in
7. Table 1.

TABLE 1. PRODUCTION (IN METRIC TONNES) OF MAJOR FOOD CROPS FOR THE YEARS 2006 TO 2012 ²¹

¹⁵Bangladesh: Growing the Economy through Advances in Agriculture. The World Bank 2016. Retrieved 2 August 2017.

¹⁶ Islam (2018). Municipal solid waste to energy generation: An approach for enhancing climate co-benefits in the urban areas of Bangladesh. Renewable and Sustainable Energy Reviews 81, 2472–2486

¹⁷Islam, K.M.N (2017). Greenhouse gas footprint and the carbon flow associated with different solid waste management strategy for urban metabolism in Bangladesh. Science of the Total Environment 580, 755–769.

¹⁸World Bank (2017). World Development Indicators 1960 – 2016. The World Bank. Last updated 01-Jul-2017.

¹⁹"Bangladesh: A Country Study:Rice". Library of Congress, Washington, D.C. September 1988. Retrieved 5 August, 2017.

²⁰Bangladesh. Ricepedia. Retrieved 5 August, 2017.

²¹BBS(2012). Statistical Year Book 2012. Bangladesh Bureau of Statistics.

Year	Rice	% change	Wheat	% change	Maize	% change	Potato	% change	Sugarcane	% change
2006	26530000	5.46%	735462	4.64%	521525	46.38%	5368400	10.57%	5511000	4.20%
2007	27319000	2.97%	736893	0.19%	902150	72.98%	5167000	-3.75%	5770000	4.70%
2008	28931000	5.90%	844145	14.55%	1346470	49.25%	6648000	28.66%	4984000	-13.62%
2009	31317000	8.25%	849046	0.58%	729629	-45.81%	5268000	-20.76%	5233000	5.00%
2010	31975000	2.10%	901490	6.18%	887391	21.62%	7930000	50.53%	4491000	-14.18%
2011	33542000	4.90%	972085	7.83%	1018287	14.75%	8326389	5.00%	4671000	4.01%
2012	33889000	1.03%	995356	2.39%	1297717	27.44%	8205470	-1.45%	4603000	-1.46%

8. *Farm chemicals*: Use of chemical fertilizers and pesticides is growing in parallel with crop production. The World Bank has found that increased use of urea and other types of chemical fertilizers was particularly common for rice and vegetable production and expected to grow in the future while also expanding to other crops such as maize and sugarcane²². Table 2 presents the use of fertilizer and pesticide. While increased application of chemical inputs has been linked to flow-on issues including soil acidification, low soil fertility, and increased GHG emissions, the current capacity of government to monitor the purchase and use of farm chemicals remains limited. Use of chemical inputs is largely unregulated²³.

TABLE 2. ILLUSTRATIVE USE OF FERTILIZERS, 1994 AND 2014²⁴

Agrochemicals	Unit	1994	2014
Urea	Metric tonnes	1,578,955	2,461,681
TSP		234,185	8,8261
DAP		28,675	40,415
Gypsum		86,051	70,546
Insecticide		7,100	16,085
Fungicide		52	15,137
Herbicide		139	3,420
Rodenticide		66	80

9. *Livestock and fisheries*: Livestock contributes 9% of agriculture sector GDP and an important source of food, income and labor for rural Bangladesh households. The annual rate of growth is 5.5%²⁵. Livestock population in the country is currently estimated to comprise 25.7 million cattle, 0.83 million buffaloes, 14.8 million goats, 1.9 million sheep, 118.7 million chicken and 34.1 million ducks. The density of livestock population per acre of cultivable land is 7.37. About 20% of the population of the country earn their livelihood through work associated with raising cattle and poultry. 83.9% of total households own livestock (animals or poultry or both). About 45.9% households possess bovine stock, and 76.3% possess poultry. On average, each household owns 1.52 bovine animals, 0.9 goat and sheep and 6.8 chicken and ducks²⁶. Draught power for tilling the land, the use of cow dung as manure and fuel, and animal power for transportation make up a significant portion of the GDP. In addition, hides and skins, bones, feathers, etc., help in earning foreign exchange. Livestock resources also play an important role in the sustenance of landless people. Though no quantified reduction target is set for livestock, but the NDC do mention about the 50% reduction in numbers of draft cattle to lower methane emissions, as well as 35% increase of the share of organic manure to reduce the use of chemical fertilizer.
10. Fisheries with 10% contribution to agriculture GDP is also another important sector covering freshwater bodies such as lakes, rivers and rice paddy fields and coastal water bodies. It is an important source of food security and nutrition for Bangladesh's households. About 1.4 million people are directly employed by the fisheries sector, and

²²World Bank (2017). World Development Indicators 1960 – 2016. The World Bank. Last updated 01-Jul-2017.

²³Mohammad,N. (2012). The Agricultural Governance in Bangladesh: A Case Study. International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering, 6(3), 348-353.

²⁴ BBS (2015). Statistical Year Book 2015. Bangladesh Bureau of Statistics.

²⁵BBS (2015). Agricultural Statistical Year Book 2015. Bangladesh Bureau of Statistics.

²⁶Livestock. Banglapedia-The National Encyclopedia of Bangladesh. Retrieved 5 August, 2017.

another 11 million people indirectly earn their livelihood out of activities related to fisheries²⁷. From 2000 and 2016, aquaculture production increased from 712,640 and 2,060,408 metric t, a much larger quantity than wild capture production (1.023 million t) in 2016. The growth rate of fish production during the last seven years averaged at 6.5%²⁸. Fishing is largely conducted using netting and fish traps.

11. *Forestry*: The productive forest coverage of the country was 13.20% during 2014²⁹. These resources are under growing pressure from land clearing and agricultural expansion. National level deforestation was 2600 hectares/year during 2010³⁰, and has reduced the productive capacity of the country's forest ecosystem services and agro-ecological flows, impacted water quality and its availability to agriculture. The existing forests are also degraded mostly in the Chittagong hill tracts³¹. Forest resources are still an important source of energy for Bangladesh's households with many still reliant on fuel wood for cooking. Non-timber forest products are also an important, alternative source of income for rural households³¹.
12. *Land tenure*: The absence of clear definitions and demarcation of different types of land remain a key challenge for the more sustainable management and monitoring of natural resource use in the country. Moreover, population growth has increased pressure on land. Agricultural land per capita has also decreased significantly (from 0.135 ha in 1972, to 0.048 ha in 2014). Land ownership is governed by some laws like The Land Survey Act 1875, The Bengal Tenancy Act 1885, The Transfer of Property Act 1882, The Land Reform Board Ordinance 1989, The Land Management Manual 1990. An inappropriate land administration and management system is the root cause for unplanned growth, and this eventually generates problems in development of the country. For this, it becomes an important agenda in the Seventh Five Year Plan document to establish a sustainable land administration and management system. An increasing number of small farms presents several significant challenges for effective monitoring and reporting of agriculture activity data³¹. In view of climate change risk and adaptation need for the agriculture sector of Bangladesh, land tenure issue is important for informed decision making.
13. *GHG emission profile*: The AFOLU sector and waste are the key sources of GHG emissions in Bangladesh, and a contributor to global anthropogenic climate change. According to the National Communications to the UNFCCC, the contribution of AFOLU and waste sectors decreased from 77% in 1994 to 72% in 2005 to 56% in 2012. While the contribution to the national emission decreased significantly, both sectors altogether are still the highest contributor to GHG emissions at the national level (Table 3).

TABLE 3. CONTRIBUTION OF DIFFERENT SECTORS TO THE NATIONAL GHG EMISSIONS

Sector	Sectoral contribution (% in parenthesis) reported in different national communication in million tonnes CO _{2eq}		
	Initial National Communication for the inventory year 1994	Second National Communication for the inventory year 2005	Third National communication (draft) for the inventory year 2012
Energy	15 (22)	39 (26)	74 (43)
Industrial Processes	1 (2)	3 (3)	2 (1)
Agriculture	43 (62)	64 (44)	58 (33)
Land use, land use change from forestry (LULUCF)	8 (11)	18 (12)	8 (5)
Wastes	2 (3)	23 (15)	32 (18)
Total	69	147	174

²⁷Fisheries. Banglapedia-The National Encyclopedia of Bangladesh. Retrieved 5 August, 2017.

²⁸Shamsuzzaman, M. M., Islam, M. M., Tania, N. J., Al-Mamun, M. A., Barman, P. P., & Xu, X. (2017). Fisheries resources of Bangladesh: Present status and future direction. Aquaculture and Fisheries.

²⁹GED (2015). 7th Five Year Plan (2016-2020) Dhaka, Bangladesh, General Economics Division (GED), Planning Commission, Government of the People's Republic of Bangladesh: 736.

³⁰ Global Forest resources assessment 2015.

³¹ Islam, S. (2015). Land Rights, Land Disputes and Land Administration in Bangladesh—A Critical Study. Beijing Law Review, 6, 193-198.

Note: All the values are rounded to the nearest whole number.

14. While the AFOLU sector is a major source of emission (38%) and a key category for GHG emission reduction in Bangladesh, lack of relevant data and monitoring capacity influence the decision of Bangladesh not to set a quantified emission reduction target for the AFOLU in the NDC.
15. *Nationally Determined Contribution – Because of The AFOLU and waste sector data unavailability the NDC of Bangladesh focused on the quantified emission reduction from industry, transport and energy sector only. Enhanced monitoring and planning systems for AFOLU sector activities for adaptation to climate change impacts; as well as reducing emissions from these two sectors are crucial for fostering more sustainable and climate friendly development in Bangladesh as specified in the Bangladesh Climate Change Strategy and Action Plan 2009. This crucial nature of action in the AFOLU and waste sectors to address climate change impacts and drivers is reflected in first NDC, which was ratified on 21 September 2016 and entered into force on 4 November 2016. As mentioned, the NDC not set any quantified emission reduction target for AFOLU and waste sectors because of data unavailability, but specific priority mitigation actions are mentioned for the AFOLU and waste sectors (Table 4). In order to execute the NDC mitigation action on AFOLU and wastes sectors, enhanced monitoring and planning system is crucial for the country.*

TABLE 4. NDC PRIORITY MITIGATION ACTION FOR THE AFOLU AND WASTE

SPECIFIC MITIGATION ACTION	IMPROVED MONITORING AND REPORTING SYSTEM IMPACT ON NDC IMPLEMENTATION
<p><i>Agriculture:</i></p> <ul style="list-style-type: none"> ➤ Increase mechanisation in agriculture leading to a reduction in numbers of draft cattle (and therefore lower methane emissions); ➤ Increase the share of organic manure in the used fertilizer mix; ➤ Scale up rice cultivation using alternate wetting and drying irrigation. <p><i>Land use, land use change and forestry:</i></p> <ul style="list-style-type: none"> ➤ Continuation of coastal mangrove plantation; ➤ Reforestation and afforestation in the reserved forests; ➤ Plantation in the island areas of Bangladesh; ➤ Continuation of Social and Homestead forestry. <p><i>Waste</i></p> <p>Increase composting of organic waste;</p> <ul style="list-style-type: none"> ➤ Promote landfill gas capture and power generation 	<ul style="list-style-type: none"> ➤ Improved assessment of the progress related to actual and potential emissions reductions periodically ➤ Coordinated reporting of national communication and FREL/FRL to the UNFCCC ➤ Coherent national GHG inventories with regularly updated data, resulted into transparent monitoring and reporting of agriculture and land-use mitigation actions ➤ Better identification and informed decision on potential mitigation actions in the agriculture and land-use sectors ➤ Gradual reduction of emissions based on reliable assessment as well as realistic emission reduction target with respect to agriculture and land-use emissions ➤ Support to the international community for finance, technology transfer, and capacity building based on reliable, consistent, accurate and complete data based evidence

16. *Climate risk for agriculture:* The trends in agricultural output and management of natural resources combined with anticipated climate change and persistent capacity constraints mean that Bangladesh’s agriculture sectors are highly at risk from adverse climate variability and climate change. The most profound impacts of climate change in the country will be in agriculture and food security, coastal areas, water, biodiversity and ecosystem changes. Farmers relying on rain-fed production systems will face the most significant challenges. Probable seasonal variability of precipitation will combine with increased temperature and evapotranspiration to put additional pressure on available water resources. The incidence of heavy rainfall events, flood and drought are also projected to increase. 4 °C temperature increase could affect the country in the long run by declining 30% rice production, 50 % wheat production, and 70 % potato production by 2050. Flood water and saline intrusion will also undermine agricultural productivity in the country. Fish stocks of local species are currently reported to be in decline due to

early flooding, temperature fluctuations and river bed siltation. However, predicting fish stocks is complex and multiple overlapping factors will all contribute to future availability of fish supply³².

17. Adaptation priorities: Based on a detailed analysis of the anticipated impacts of climate change the Government has also identified a number of key climate vulnerabilities including food security, livelihood and health protection (including water security), building climate resilient infrastructure, flood control and erosion protection, ecosystem based adaptation (including forestry co-management), policy and institutional capacity building, and capacity building at individual and institutional level to plan and implement adaptation programmes and projects in the country. To address these drivers and impacts of climate change in AFOLU and waste sectors the Government of Bangladesh has highlighted 15 specific actions in its NDC covering both adaptation and mitigation across a wide range of sub-sectors including livestock, field crops, water, forestry, and wastes. Key areas for adaptation particularly relevant for the AFOLU and waste sectors in the current NDC are summarized in the Table 5. Improved capacity for monitoring and reporting could accelerate the achievement target of these adaptation actions.

TABLE 5. NDC ADAPTATION PRIORITIES MOST RELEVANT FOR THE AFOLU AND WASTE SECTORS

KEY AREAS AND ADAPTATION PRIORITIES	IMPROVED MONITORING AND REPORTING SYSTEM IMPACT ON NDC IMPLEMENTATION
<p><i>Key Areas:</i></p> <ul style="list-style-type: none"> ➤ Food security, livelihood and health protection (incl. water security); ➤ Comprehensive disaster management; ➤ Coastal Zone Management including Salinity Intrusion control ➤ Flood Control and Erosion protection ➤ Ecosystem based adaptation (including forestry co-management) ➤ Community based conservation of wetlands and coastal areas ➤ Policy and Institutional Capacity Building <p><i>Adaptation Priorities:</i></p> <ul style="list-style-type: none"> ➤ Capacity Building at individual and institutional level to plan and implement adaptation programmes and projects in the country; ➤ Biodiversity and ecosystem conservation; ➤ Adaptation on local-level perspectives; ➤ Stress tolerant (salinity, drought and flood) variety improvement and cultivation (including livestock and fisheries); ➤ Inland monsoon flood-proofing and protection; ➤ Tropical cyclones and storm surge protection; ➤ Disaster preparedness and construction of flood and cyclone shelters; ➤ Improved Early warning system for tropical cyclone, flood, flash flood and drought. 	<ul style="list-style-type: none"> ➤ Better visualization of adaptation need through established indicators to prepare national baseline scenarios and transparent monitoring of progress on achievement of adaptation ➤ Reporting on adaptation actions to the national stakeholders and international community backed by improved data and analysis ➤ Transparent adaptation requirement assessment and associated reporting will lead informed adaptation actions, avoid duplication, and prioritization of the finance and technical support needed ➤ Enhanced capacity may initiate identification of adaptation co-benefits, and monitoring of realization of co-benefits ➤ Enhanced capacity on identification of best practices related adaptation and replication and further scaling up the success story will lead increasing resiliency, particularly within the rural poor community and most vulnerable people

³² MoEF (2009). Bangladesh National Adaptation Program of Action (NAPA). In Dhaka, Bangladesh. Dhaka, Bangladesh. : Ministry of Environment and Forests (MoEF), Government of Bangladesh., 48.

18. Root causes and barriers: The implementation of the above mentioned priority mitigation and adaptation actions requires improved institutional coordination and a robust system for capturing precise data and information that is accurate and credible in reporting on GHG inventories (e.g. by sources and sinks). This requires that Bangladesh have systems in place to track progress in achieving NDC activities covering both mitigation and adaptation covering the sectors with highest uncertainty like AFOLU sector. Despite the past and ongoing project to build monitoring and reporting capacity for GHG inventories and mitigation and adaptation actions, Bangladesh's SNC prepared in 2012 indicated that insufficient technical and financial resources are still major constraints to the preparation of national communications on a continuous basis. Absence of data driven decision making process is another cause of weak monitoring capacity of NDC activities. Hence, robust data driven decision making process needs to be improved.
19. General and sector specific barriers and constraints currently limit the capacity of Bangladesh to meet ETF requirements for the AFOLU and waste sectors. General barriers include: (1) lack of data generating and sharing structures/platform; (2) inappropriate data archiving, referencing and documentation; and (3) the absence of a robust institutional set-up to manage and coordinate ETF processes. Based on a synthesis of the SNC findings regarding capacity and ongoing national consultations and stocktaking exercises with responsible ETF stakeholders in Bangladesh, a number of sector specific constraints for effective preparation of GHG inventories and monitoring and reporting mitigation and adaptation activities have also been identified. These barriers and constraints are presented in the Table 6.

TABLE 6. AFOLU AND WASTE SECTORS BARRIERS AND CONSTRAINTS TO MEET ETF REQUIREMENTS

Requirements for national implementation of the ETF	Current Barriers and Constraints - Bangladesh
<i>Awareness</i> and understanding of ETF reporting requirements.	<ul style="list-style-type: none"> Lack of awareness regarding the Paris Agreement, the ETF and the need for enhanced transparency in monitoring and reporting of mitigation and adaptation activities.
Clear and robust <i>institutional arrangements</i> for coordinating sector specific information for ETF monitoring and reporting exercises	<ul style="list-style-type: none"> Lack of coordination amongst relevant Ministries in the gathering of data and information needed to report progress against NDC actions in the agriculture and land-use sectors. Lack of permanent institutional structure for data sharing, data archiving and update on regular basis on GHG inventory.
Regular and comprehensive reporting of anthropogenic emissions <i>inventories</i> by sources and removals prepared using good practice methodologies accepted by IPCC and agreed upon by the Parties to the Paris Agreement	<ul style="list-style-type: none"> Lack of activity data and local emission factors. Reliance on past IPCC methodologies for measurement and monitoring of emissions from the agriculture sectors. Insufficient financial support for regular inventory preparation Lack of national experts for GHG inventory preparation Lack of harmonized, national verification processes
Information necessary to track progress made in implementing and achieving <i>mitigation</i> contributions in the agriculture and land-use sectors	<ul style="list-style-type: none"> Limited experience with measuring, reporting and verification (MRV) systems for emissions from the AFOLU and wastes sectors Insufficient short-term and long-term planning information and data for all sectors to conduct mitigation analysis and projections of national emissions Financial constraints for mitigation analysis and the implementation of identified options Shortage of technical experts capable of conducting MRV in the agriculture and land-use sectors Absence of quality assurance or control mechanisms in the preparation and reporting of emissions inventories and emissions reduction activities
Information necessary to track progress made in implementing and achieving <i>adaptation</i> contributions in the agriculture and land-use sectors	<ul style="list-style-type: none"> Lack of harmonized indicator and monitoring systems for adaptation based on national priorities Weak capacity to implement monitor and evaluate field-level projects and activities in the agriculture and land-use sectors

Requirements for national implementation of the ETF	Current Barriers and Constraints - Bangladesh
	<ul style="list-style-type: none"> • Insufficient relevant data and information to conduct an assessment for immediate climate change adaptation action in Bangladesh under the conditions of increased likelihood of floods and droughts • Limited research conducted for related sectoral impact to climate change • Shortage of capable technical experts and financial resources for adaptation activities and accompanying monitoring exercises
Clarity on <i>support received</i> including information on government and donor contributions to strengthen UNFCCC monitoring and reporting activities	<ul style="list-style-type: none"> • Lack of financial management mechanisms to effectively implement the adaptation and mitigation options • Lack of information on activities, projects and other information related to climate-friendly technology development and transfer

- *Baseline scenario and associated baseline projects*

20. At a global scale, a fundamental challenge for the successful implementation of the Paris Agreement is ensuring that the Parties can meet the reporting requirements of the Enhanced Transparency Framework (ETF) outlined in Article 13 of the Agreement. Specifically, countries are required to provide a national inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases using good practice methodologies; and information necessary to track progress made in implementing and achieving NDC contributions for both mitigation and adaptation. While, as a Least Developed Country, Bangladesh is not required to submit biannual ETF reports as will be required by other Parties to the Paris Agreement, there are benefits to taking pre-emptive action to strengthen national monitoring and reporting systems and processes in advance of eventual graduation from LDC status; particularly in key economic sectors such as agriculture and land use.

21. In Bangladesh, preparation of first NDC was managed by the Ministry of Environment and Forests (MoEF). MoEF is responsible for the coordination of climate change activities in the country and to promote a stronger, comprehensive and effective national response to climate change³³. The country's NDC sets forth a clear framework for action to address both the impacts and drivers of climate change in the agriculture and land-use sectors as well as other sectors like wastes, and the basis for the development and strengthening of monitoring and reporting systems and processes pursuant to the requirements of the ETF. A simple projection based on the population and using the third national communication GHG emission data (draft) shows that the AFOLU and waste sectors together will continue to be the largest contributors to national emissions in 2030 (56%). However, as noted earlier, the NDC does not include an emissions reduction target for the AFOLU and waste sectors. In contrast, the NDC committed 5% emission reduction (12 million tonnes CO₂eq) from industry, transport and energy consumption. It is anticipated that with improved capacity for monitoring and reporting that quantified emission reductions measures or targets might also be able to be considered for the AFOLU and waste sectors. For example, a 5% emission reduction target could result into another 6 million tonnes CO₂eq emission reduction from AFOLU and waste sector (Table 7).

TABLE 7. PROJECTED GHG EMISSION AND REDUCTION POTENTIAL USING RECENT EMISSION DATA

Sector	^a Projected emission in 2030 (million tonnes CO ₂ eq)	5 % reduction by 2030 (million tonnes CO ₂ eq)
Energy	88	12 ^b
Industry	2	
Agriculture	68	3.5
LULUCF	10	0.5
Wastes	38	2

³³MoEF (2015). Bangladesh's Intended Nationally Determined Contributions. Dhaka, Bangladesh Ministry of Environment and Forests (MoEF), Government of the People's Republic of Bangladesh: 15.

Notes:

^aThe projected emission is calculated using projected population by world Bank and third national communication GHG data for the inventory year 2012. The equation used was 2012 per capita GHG emission× projected population in 2030.

^bNDC 5% unconditional emission reduction from industry, transport and energy.

^c This emission reduction is calculated assuming 5% reduction like NDC.

22. The proposed project's key executing partner is the Department of Environment (DoE) under MoEF. DoE is responsible for the preparation country's GHG inventory, and policies and strategies as well as serves as key organization of the Bangladesh government related to environmental issues. DoE is also responsible under the coordination of MoEF for GHG inventory, mitigation, vulnerability and adaptation, and UNFCCC implementation³⁵. DoE also supports the climate change activities of the MoEF and acts as the key implementing agency for UNFCCC reporting. Since, the national GHG inventory is based on data from industry, transport, energy, forestry, agriculture and waste sector, the current arrangement of DoE to collect those data from the relevant ministry and agency of the sector mentioned is not permanent. Most often, the data is collected by sending request letter, and after the calculation of result and presenting the result to the GHG inventory report, the data is often lost, because there is no permanent institutional arrangement involving the ministries and agencies relevant to industry, transport, energy, forestry, agriculture and waste sector.
23. In addition to the NDC, action by the Bangladesh Government to address climate change impacts and drivers in the AFOLU and wastes sector falls under the **Bangladesh Climate Change Strategy and Action Plan (BCCSAP)** 2009. The BCCSAP aims to address a range of climate change issues including adaptation, GHG mitigation, and low-carbon development. The BCCSP is an integral part of the national development plan, policies and programmes including 7th fifth year plan.
24. Under the BCCSP the Government is working to mainstream climate change at the sector level based on sector specific plans and identify opportunities to finance further adaptation activities. The BCCSAP has 6 pillars covering (1) food security, social protection, health, (2) comprehensive disaster management, (3) infrastructures, (4) research and knowledge management, (5) mitigation and low carbon development, and (6) capacity building and institutional strengthening. The proposed CBIT project will contribute to BCCSP activities covering 6 pillars to operationalize an M&E framework for climate change mitigation and adaptation; particularly for the AFOLU and wastes sectors. Sector specific development and climate change plans relevant to the implementation of the BCCSP provide a basis for capacity building, peer exchange and reporting sector specific progress to DoE.
25. The BCCSAP outlines a number specific priorities and actions that support implementation of national contributions under the Paris Agreement, and the Sustainable Development Goals. The proposed CBIT project aims to address key gaps regarding timely reporting of accurate data from lower level administrative units and the provision of systems and protocols to aggregate this information to prepare credible reports relevant to the AFOLU and waste sector priorities identified in Bangladesh's NDC and BCCSAP.
26. A number of projects have been implemented in support of these sector specific plans to try and improve monitoring and reporting of mitigation and adaptation outcomes in the sector. The country is implementing **Third National Communication to the United Nations Framework Convention on Climate Change (UNFCCC)** project under GEF financing. The project will enable the Government of the People's Republic of Bangladesh (GOB) to prepare and submit its Third National Communication (TNC) to the UNFCCC. The activities of the TNC formulation project are a continuation and an update of the work undertaken by Bangladesh in preparing its Initial and Second National Communication, which were submitted to the UNFCCC in 2002 and 2012 respectively. The proposed CBIT project will be coordinated with and build upon the efforts to prepare Bangladesh's TNC and future BUR under this programme. The CBIT project will support data sharing processes between DoE and other relevant AFOLU national entities, contribute to collect, document, archive and analyze emission factors and activity data through the establishment of a national database to support updating GHG inventory and provide information to other relevant environmental aspects. The CBIT project will support institutional development with regards to GHG emissions reductions and needs to specifically and more accurately target AFOLU sector components and supports received from international community.

27. Under the **UN-REDD Bangladesh National Programme**, the Government of Bangladesh, in partnership with FAO and UNDP, has been working to establish effective National Management Systems for the REDD+ Readiness process and stakeholder engagement. As part of these programmes a national *Forest Reference Emissions Level (FREL) and National Forest Monitoring System (NFMS)* under process of development. This CBIT project will build upon REDD+ capacity needs assessments at national and regional levels and expand to other land-use types with a particular focus on AFOLU sector. In doing so the proposed CBIT project will work to strengthen knowledge and institutional arrangements for data collection, storage and reporting for a range of land uses. Experiences accumulated by FAO and partners in developing REDD+ MRV systems including Forest Reference Emission Levels (FREL) will be used as the basis for designing and implementing MRV systems for AFOLU activities identified in Bangladesh's NDC.
28. Bangladesh Bureau of Statistics (BBS), Statistics and Informatics Division (SID) with the support from FAO has implementing the project 'Strengthening Agriculture Market Information System in Bangladesh (AMIS)'. The Bangladesh project emphasises enhancing the institutional, methodological and human resource capacity in Bangladesh for producing data and information on production, crop forecasts and food stocks with better quality, standardisation and timeliness with a particular focus on rice, wheat, maize and potato. This will provide an important basis for much of the necessary activity data for progressively enhancing the monitoring and reporting of mitigation and adaptation activities in the agriculture and land-use sectors. The information collected through the system and the network developed to implement the system will be utilized to better target and apply CBIT activities under the proposed project.
29. MoEF through Bangladesh Forest Department (BFD) has implemented the '**Climate Resilient Participatory Afforestation and Reforestation Project (2013-2016)**'. The development objective of the Climate Resilient Participatory Afforestation and Reforestation Project for Bangladesh is to reduce forest degradation and increase forest coverage through participatory planning and monitoring and to contribute in building the long-term resilience of selected communities in coastal and hilly areas to climate change. The project has four components. The first component is afforestation and reforestation program. The objective of this component is to increase the afforested and reforested areas through participatory forestry and co-management approach in the degraded forestland, marginal, fallow and newly accreted land in coastal and hilly areas. In achieving the target of participatory afforestation and reforestation, the component will also support the rehabilitation and reconstruction of the existing field offices of the BFD. The second component is alternative livelihoods to support forest communities. The objective of this component is to improve and diversify non forest-based livelihood opportunities of poor forest dependent households in selected forest communities. This component will target 6,000 households comprising no less than 25,000 people in 200 forest communities in 9 project districts with a clear and sound selection method. The third component is capacity development for forest resource planning and management. The objective of the component is to improve the technical knowledge base on forest resource assessment, program monitoring and long-term planning for the sustainable development of the forest sector. The fourth component is project management. This component will support the establishment of a Project Implementation Unit (PIU) in BFD for implementation of component one and three. The project will provide a range of quantitative and qualitative information on GHG mitigation activities in the forestry sector in programme locations, mechanisms for planning of emission reduction and targets, and will serve an example of institutional arrangements available to potential mitigation projects.
30. Bangladesh is currently implementing '**Strengthening National Forest Inventory and Satellite Land Monitoring in Support of REDD+ in Bangladesh (2016-2018)**' with the support from FAO under BFD, MoEF. Through this project, a robust forest monitoring system will be implemented for the Forest Department - supporting forest policy and critical decision making processes, and supporting actions for climate change adaptation and mitigation in forestry. Since the project is dedicated to capacity development for forestry sector, and it will provide a key entry point for the monitoring and data collection activities envisioned under the proposed CBIT project.
31. The government of Bangladesh has implemented '**Bangladesh Environmental Institutional Strengthening Project (BEISP) (2012-2019)**' under DoE, MoEF. The overall objective of the project is to increase the capacity

for sustainable development in Bangladesh. The overall objective leads to two specific project level objectives: a) Strengthened capacity of the Department of Environment to implement their Strategic plan; and b) Strengthened capacity of civil society (including the private sector) for environmental management. The proposed CBIT project will benefit from the experiences developed under this program with knowledge sharing and preparation and implementation of planned activities. The proposed CBIT project will adapt and expand the environmental management system under this programme to aggregate adaptation monitoring and reporting activities in the AFOLU and waste sectors at the project, sub-national and national levels.

32. Under its global **Climate Finance Readiness Programme** (2015-2018), USAID and GIZ are supporting Bangladesh implement its National Adaptation Plan process. Activities that are being implemented under this programme include developing finance strategies and an implementation plan for the NAP, as well as efforts to strengthen whole of government approaches for integrating climate change considerations into sectoral planning and budgeting processes. While the NAP is an important process for better planning of adaptation across government, monitoring and reporting activities under the NAP are process based and provide only a basis for monitoring implementation of the NAP itself. As a result, NAP monitoring and reporting forms only element of the adaptation reporting requirements of the NDC. The proposed CBIT project will support the development of indicator sets and monitoring and reporting processes for sector-specific adaptation activities under Bangladesh’s NDC.
33. Bangladesh is also implementing ‘**Strengthening the Environment, Forestry and Climate Change Capacities of the Ministry of Environment and Forests and its Agencies**’ under MoEF. The project aims to strengthen the human and organizational capacity of the MoEF and its Agencies by improving their effectiveness, organization and sustainability to better address challenges in environmental, forestry and climate change issues. The project will benefit the Component 1 of the proposed CBIT project.
34. Agriculture, forestry and biodiversity are the country’s most vulnerable sectors as well as the most important due to its role in providing livelihoods for the majority of the population. Coordination, knowledge and access to information among agricultural and forestry communities at a rural, regional and national level are limited, and that targeted interventions targeting the sector could strengthen capacity to better manage climate risks. Table 6 address the BCCSAP priority actions, and the impacts of proposed project on the implementation of priority actions. Table 7 represent the baseline capacity of Bangladesh for MRV and transparency based on the GEF-6 CBIT indicator and rating system. The quality of the MRV system is very poor because of lack of permanent institutional arrangement. Anti-Corruption Commission (ACC) is the national mandated agency related with transparency issue, but their mandate is specific to climate transparency issue. So, institutional capacity related with transparency-related activities is also poor.

TABLE 8. BANGLADESH BCCSAP PRIORITY ACTIONS AND RELATED SECTOR-SPECIFIC GAPS/NEEDS THAT CAN BE ADDRESSED BY CBIT³⁴

BCCSAP Action No.	Description	Related sector-specific gaps/needs that can be addressed by CBIT	Relevant Project Outputs in alternate CBIT scenario
1	<ul style="list-style-type: none"> Increase the resilience of vulnerable group, including women and children, through development of community level adaptation, livelihood diversification. Develop climate resilient cropping systems, fisheries and livestock to ensure local and national food security. 	<ul style="list-style-type: none"> Capacity to clarify reporting against mitigation and adaptation targets through improved baselines and BAU projections covering projections for agricultural output Capacity to enhance mitigation and adaptation outcomes of target NDC interventions. 	Output 3.1.1; Output 3.1.2; Output 3.1.4; Output 3.1.5.

³⁴MoEF (2009). Bangladesh Climate Change Strategy and Action Plan (BCCSAP), 2009. Dhaka, Bangladesh Ministry of Environment and Forests (MoEF), Government of the People’s Republic of Bangladesh: 76.

BCCSAP Action No.	Description	Related sector-specific gaps/needs that can be addressed by CBIT	Relevant Project Outputs in alternate CBIT scenario
		<ul style="list-style-type: none"> Preparation of national sector specific adaptation indicators and systems capable of measuring progress against NDC adaptation priorities Preparation of systems to aggregate adaptation monitoring and reporting to capture progress toward NDC adaptation priorities Development of sector specific adaptation data management systems 	
2	Strengthen community based adaptation programme and establish them in each of the disaster prone parts of the country	<ul style="list-style-type: none"> Capacity to understand national climate-risk scenarios and adjust national sector-specific adaptation planning processes accordingly 	Output 3.1.1; Output 3.1.2; Output 3.1.3;
4	<ul style="list-style-type: none"> Model climate change scenarios for Bangladesh by applying global climate change models and methodologies at regional and national levels Monitor and research the impacts of climate change on ecosystems and biodiversity Research the linkages between climate change, poverty and vulnerability and health to increase the resilience of poor and venerable people Establish centre for research and knowledge management on climate change to ensure the access to latest ideas and technologies 	<ul style="list-style-type: none"> Knowledge and resources to better inform Bangladesh Government involvement in UNFCCC processes regarding transparency and sector-based target setting exercises Support to engage in sub-national, national, regional and global peer-to-peer exchange on ETF reporting requirements 	Output 2.1.1; Output 2.1.2; Output 2.1.3; Output 2.1.4;
5	<ul style="list-style-type: none"> Develop strategic plan to lower greenhouse gas emissions Expansion of social forestry programme Expansion of coastal greenbelt through coastal afforestation programme and mangrove planting along the shoreline Transfer of technologies to ensure low carbon growth 	<ul style="list-style-type: none"> Capacity on GHG measurement, GHG inventory and emission factor development for AFOLU and waste sectors Preparation of Bangladesh specific emission factors for key agriculture and land-use sector activities Development of sector specific GHG inventory and mitigation knowledge management systems for the AFOLU and waste sectors Capacity to understand national emission scenarios and adjust national sector-specific mitigation planning processes accordingly 	Output 1.1.1; Output 1.1.2; Output 1.1.3; Output 1.1.4; Output 1.2.1; Output 2.1.1; Output 2.1.2; Output 2.1.3;
6	<ul style="list-style-type: none"> Review and revise, where appropriate, all government policies (sector by sector) to ensure they take full account of climate change and its impacts 	<ul style="list-style-type: none"> Capacity to assess and adjust NDC ambition levels to attract international support Capacity to monitor and report donor contributions to actions to 	Output 1.2.1; Output 1.2.2; Output 3.1.1; Output 3.1.2; Output 3.1.3;

BCCSAP Action No.	Description	Related sector-specific gaps/needs that can be addressed by CBIT	Relevant Project Outputs in alternate CBIT scenario
	<ul style="list-style-type: none"> Mainstream climate change in national, sectoral and spatial development planning Build the capacity of key government ministries and agencies to take forward climate change adaptation Build the capacity of the government to undertake international and regional negotiations on climate change Build the capacity of the government to access various global climate funds 	tackle climate change drivers and impacts	Output 3.1.4;

TABLE 9. BASELINE CAPACITY FOR MRV AND TRANSPARENCY USING GEF-6 CBIT INDICATOR AND RATING SYSTEM

Indicators	Scale	Rating	Comment
Indicator 3: Quality of MRV Systems	1-10	2	Based on table 3, 4 and 5 it can be say that lack of permanent institutional setup as well as associated data sharing and archiving system resulted in poor quality data. Moreover, as reflected in the mentioned table there is lack of robust methodologies. Hence the MRV system is often of poor quality because of temporary or short term nature of the existing reporting system. The verification is often absent or limited.
Indicator 5: Qualitative assessment of institutional capacity for transparency-related activities	1-4	2	Anti Corruption Commission (ACC) was formed through an act on 2004, and state mandated agency for the transparency related issue. Through the reconstitution in February 2007, the ACC began working with renewed vigor and impetus duly acceding to the United Nations' convention against corruption that was adopted by the General Assembly on 2003. The function of ACC is governed by Anti-Corruption Commission Act, 2004. But, there exist lack of awareness and coordination among relevant authorities regarding transparency. The ACC is not familiar with the climate transparency issue and moreover under the existing system the activities, human resources as well as financial resources are not integrated with the climate transparency issue. Transparency related national institute though exist, but climate transparency related activities should be mainstream into their mandates.

35. Without intervention by the GEF through CBIT, the Government will continue to have underdeveloped capacity to meet the enhanced transparency requirements for reporting against NDC actions and related national plans, particularly in the AFOLU and waste sectors. As these sectors are particularly important to the development trajectory and emissions profile of Bangladesh, focused attention on improving transparency systems and processes in these sectors need to be prioritized. However, lessons learned from action in these sectors will also be relevant to other relevant sectors like industry, transportation, and energy, which will be engaged with and informed by the activities of this project. Without intervention, emissions from the AFOLU sector as well as others key sectors will be measured using outdated methodologies, and technology reports will be produced without proper quality assurance mechanisms. Moreover, adaptation actions will be poorly monitored and reported. The continuation of this baseline scenario is not in keeping with the spirit of the Paris Agreement, the ETF and the establishment of the CBIT.

- *The proposed alternative scenario, GEF focal area strategies, with a brief description of expected outcomes and components of the project*
36. By developing an archiving and documentation system for AFOLU and waste sectors related data for the GHG inventory can contribute to the sustainability of GHG reporting process by blending the past experiences. The GEF alternative scenario is to develop and implement a capacity building program that will draw upon the CBIT fund to ensure that by 2020 Bangladesh is preparing reports from the agriculture and land use sectors consistent with the requirements of the ETF, including more up-to-date inventories of emissions sources and sinks using advanced IPCC guidance and information necessary to track progress against priority actions identified in Bangladesh's NDC, and emission reduction projects like GEF climate change mitigation projects. This program will target capacity building activities under three components, and in three key areas. The targeted outputs of the first two components of institutional arrangement for a permanent GHG data platform and reporting capacity focusing on AFOLU and waste sectors will directly help the preparation of national GHG inventory by providing updated activity and emission factors data with a permanent archiving system, through regular update of GHG database, bringing all the relevant stakeholders on a single platform for data collection, analysis and interpretation. Besides, the outputs of the component three will ensure the enhanced capacity of data and information collection on adaptation to be reported in the national communication. Technical support for the preparation of data sharing infrastructure involving the national entities is fundamental for building as well as to ensure the sustainability of the overall GHG inventory system.
37. ***Component 1. Institutional arrangements to meet the Enhanced Transparency Framework and monitoring of NDC activities:*** Activities under this component will address barriers associated with institutional coordination and awareness to ensure that information and data from the AFOLU and waste sectors is coordinated and integrated into national ETF processes and reports. Activities implemented under this component will be closely coordinated with other relevant activities on mitigation and adaptation including the United Nations Programmes on “Reducing Emissions from Deforestation and Forest Degradation (UN-REDD)”; the “Strengthening the Environment, Forestry and Climate Change Capacities of the Ministry of Environment and Forests and its Agencies”; and the “Bangladesh Climate Change Resilience Fund (BCCRF)”.
38. Outcome 1.1. will support coordination, education and capacity building activities that include: establishment of institutional coordination mechanisms for ETF reporting in the AFOLU and waste sectors (*Output 1.1.1*); establishment of systematic and updated documentation, archiving system of AFOLU and waste sectors (*Output 1.1.2*); establishment of collaboration and coordination mechanism among relevant stakeholders for data sharing (*Output 1.1.3*); national ETF monitoring and reporting road map will be prepared and adopted for AFOLU and waste sectors (*Output 1.1.4*). Under this Outcome support will also be provided to relevant agencies from MoEF, and other relevant agencies of different ministries to engage in global capacity building efforts in the lead up to the Paris Agreement commitment period.
39. With Outcome 1.2, the proposed project will ensure the best practice ETF reporting process, information gathering, and system infrastructure being implemented in the country. Activities under the Outcome 1.2 specifically targets Strengthened coordination mechanism of relevant stakeholders with DoE for the UNFCCC reporting(*Outputs 1.2.1.*) and replication of the experiences learned to the regional level (*Outputs 1.2.2.*)A strategy will be developed to disseminate data, enhance information systems, lessons learned and relevant tools from the AFOLU and waste sectors under the proposed CBIT project.
40. ***Component 2: Strengthened technical capacity to assess the emissions and removals, and monitor mitigation activities of NDC:*** Under this component, activities will be designed to address barriers for improved reporting of GHG emissions and removals from the AFOLU and waste sectors and establish more advanced measurement, monitoring and reporting systems for emissions reduction actions as specified in the NDC and BCCSAP. Activities implemented under this component will draw upon baseline projects and initiatives for example GHG inventory data used for “Third National Communication (TNC) to the UNFCCC” and forest reference emission level (FREL) will be archived in common data sharing platform. Country specific emission factors developed under the TNC

and FREL will be archived. Moreover, the data collection channel used for the TNC will be used as a baseline to develop a permanent institutional arrangement.

41. Under Outcome 2.1 the proposed CBIT project will work towards regular, reliable and systematic archiving processes, including quality assurance and control for data and information produced and reported for sector-specific inventories of GHG source and sinks. Several datasets exist for the AFOLU and waste sectors with different national entities with limited accessibility. Data accessibility and documentation has been identified in national consultation as an important step to improve GHG inventory system³⁵. Technical capacity on GHG reporting will be enhanced through land use change analysis and using open source geospatial tools such as Open Foris, Collect Earth, SEPAL, and interoperable platform can be developed using already existing spatial geodatabase system using Geonode. Technology transfer to enhance measurement, monitoring and reporting of mitigation activities in the AFOLU and wastes sectors, will also be a core element of capacity building activities under this output including collaborations to link FAO international partners with local research institutions and universities offering emissions measurement services and environmental science education (*Output 2.1.1 to Output 2.1.4*).
42. A dedicated, interoperable national environmental monitoring system involving investment in basic, but critical IT hardware and system infrastructure to store and manage existing and projected GHG and other environmental emissions data and information requirements and drawing together data and information from relevant agencies and projects will be established. These investments will be supplemented with training and capacity building activities for the DoE officials and other relevant agency officials to adhere to reporting protocols and data standards (*Output 2.1.2 to Output 2.1.4*).
43. **Component 3. Transparency for monitoring and reporting adaptation activities in support of the NDC:** Under this component, activities will be designed to establish the basic frameworks and infrastructure for enhanced monitoring and reporting of adaptation activities focusing on the AFOLU sectors. Activities under this component will be linked to the National Adaptation Plan of Action (NAPA) and supporting improved integration of the AFOLU and waste sectors into national adaptation planning processes. This component will be designed to focus largely on the policy and institutional capacity building priorities identified in the NDC as well as specific activities to link adaptation in the AFOLU sector with the ecosystem based adaptation and forestry co-management adaptation priorities identified in the NDC.
44. Activities under Outcome 3.1 will be designed to address barriers to monitoring and reporting of priority NDC adaptation action. Based on a review of the NDC priority on policy and institutional capacity building, and relevant planning documents including the Bangladesh climate change strategy and action plan 2009 and 7th five year plan, AFOLU sector specific indicators, methodologies, frameworks and interventions will be identified (*Outputs 3.1.1 and 3.1.2*). Establishing adaptation information management system (AIMS) will help to build upon AFOLU sector-specific institutional capacity building utilizing experiences from mainstreaming climate resilience into development planning programmes. Moreover, indicators and reporting measures will be designed to better account for biodiversity and ecosystem conservation co-benefits from adaptation activities in the AFOLU sector and contribution to NDC priorities on these topics. The final output under this Outcome will be agriculture and land-use sector contributions to national communications consistent with latest UNFCCC guidance on reporting adaptation contributions (*Output 3.1.5*). The budgetary allocation for this component is based upon projected costs associated with stocktaking existing, relevant M&E systems, setting up adaptation MIS and knowledge management systems and building country specific capacity to monitor, report and aggregate information from numerous relevant adaptation programs at a national level. These activities involve investments in capacity building for indicator development, knowledge management system management, and coordination as well as investments in hardware for database management and connectivity.

³⁵ Islam, K.M.N., Poultouchidou, A., Mariam, A., Matieu, H. (2016), Proceedings of the National Training Workshop on data sharing, institutional arrangements and tools for GHG gases for the Agriculture, Forestry and Other Land use sector (AFOLU), December, 2016, Bangladesh Forest Department and Food and Agriculture Organization of the United Nations, Dhaka, Bangladesh.

45. As the implementing entity of the proposed CBIT project, FAO will draw upon its deep technical understanding of the AFOLU sectors and with the help of the waste sector experts wide range of tools and methods for development of emissions inventories, measuring and monitoring emissions, quality assurance protocols and adaptation planning and monitoring to enhance the adaptation priority on individual and institutional capacity building.
- *Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF/SCCF, CBIT and co-financing:*
46. Without the CBIT project, necessary conditions for meeting the Paris ETF will not be met in Bangladesh. The country has prioritized emissions reductions and adaptation actions in the AFOLU and waste sectors as part of its NDC. These actions will need to be monitored and reported under the Paris ETF. Without assistance from CBIT, the serious capacity and institutional gaps identified above will continue to result in incomplete, inconsistent and inaccurate reporting of GHG inventories and possible emissions reductions from the most important economic sectors in Bangladesh. In addition, adaptation actions will continue to be reported in a sporadic, piecemeal fashion based upon individual projects with little or no aggregation to inform national adaptation priorities or NDC reporting requirements.
47. *With respect to GHG inventories and emissions reporting*, although good inroads have been made for the forestry sector due to national REDD+ activities, the necessary activity data and emission factors using the latest IPCC guidelines (2006) are not available for compiling robust national GHG inventories for the AFOLU sectors. The technical rigor of Bangladesh's National Communications to date have also been inconsistent; particularly for the AFOLU sectors. Moreover, due to data unavailability and more complexity the quantified GHG emissions mitigation target in not set for the AFOLU sector. A Biennial Update Report (BUR) has not been submitted to date. Apart from the forestry sector data available from the REDD+ FRL/FREL activities, no efforts have been made to improve the capacity to compile and analyze information on GHG inventories and emission reductions from other agriculture and land-use sectors. Given the significant expansion of the agriculture sectors in Bangladesh over the past decade, it is essential that this CBIT project intervene to address the lack of robust GHG inventory data and reporting on emissions from the agriculture sectors. Poor information on these important economic sectors is a crucial impediment to effective overall transparency and will restrict the Bangladesh government's ability to identify and program activities that could improve farm productivity and efficiency, while also reducing emissions.
48. *With the CBIT project*, the country's national capacity to track progress of priority actions on climate adaptation from the agriculture and land use sectors as identified in the NDC will be strengthened, and the information on climate adaptation will be collected in a systematic manner to fulfill both Paris ETF requirements. Secondly, with the support of the project, Bangladesh will improve the quality and coverage of data collected and reported on GHG emissions from the agriculture, land use and waste sectors by transitioning from Revised IPCC 1996 Guidelines (Agriculture and LULUCF) to the IPCC 2006 Guidelines (AFOLU) for national GHG inventories, and from Tier 1 to Tier 2 emission factors where possible and practical. Moreover, with an increased national capacity to measure, monitor, and report against the priority actions identified in the NDC, it will put the country in a better position to increase its level of ambition on including more ambitious emissions reductions activities in the agriculture and forestry sectors.
49. This CBIT project will provide incremental support for necessary hardware and systems to coordinate adaptation reporting and to aggregate sector specific M&E processes in the agriculture, forestry and land use sectors to provide coherent national reporting on adaptation activities and progress toward NDC adaptation targets. Finally, the project intervention will enhance Bangladesh's long term vision for climate change reporting and transparency improvement over time through enhanced institutional capacity and arrangements targeting wider/national sector emissions and adaptation accounting.

- *Global environmental benefits (GEFTF), and adaptation benefits (LDCF/SCCF)*

50. The global environmental benefits targeted by this proposed capacity building program will flow from the improved coordination and capacity to monitor and report action to address the drivers and impacts of climate change in a transparent manner.
51. In the short-term the project will support the upgrading and establishment of systems to provide an evidence-base for more effective mitigation and adaptation in the agriculture, forestry and land-use sectors. Over time the systems supported by the project will allow policy makers and planners at national and provincial levels to design interventions to address climate change drivers and impacts based upon a more complete understanding of what works. In the longer-term the improved understanding of mitigation and adaptation potentials made possible through the project will provide the Bangladesh Government with greater opportunity to increase levels of ambition for both mitigation and adaptation in future iterations of Bangladesh's NDC and better articulate the magnitude and types of financial and technical support required to meet national priorities.
52. The project directly supports Bangladesh to adopt transformational shifts towards low carbon and climate resilient development, which the key target of 7th fifth year plan. Global environmental benefits can also be expected in the form of enhanced contributions from Bangladesh to collective global efforts to work towards aggregate emission pathways consistent with holding the increase in the global average temperature to well below 2 °C above pre-industrial levels. The number of tons of CO_{2e} to be mitigated (including both direct and indirect) will be determined during the PPG phase.

- *Innovation, sustainability and potential for scaling-up:*

Innovation:

53. The proposed CBIT project will facilitate scientific innovation through investment in infrastructure and systems to update and modernize the measurement and monitoring capacities of the Bangladesh Government and local technical and research institutions. The project will facilitate investment and technology transfer for new and updated equipment at local universities and labs to measure and monitor emissions from a wide range of agriculture and land-use activities. The project will also facilitate investment in dedicated knowledge management information systems and IT hardware for the more effective management and reporting of data and information related to transparency of both mitigation and adaptation actions. Field monitoring systems will be overhauled under the project through the upgrading of data collection processes with the wider application of mobile telecommunications, app-based data collection platforms and cloud-based data storage and transfer services where appropriate. Systems upgraded through the project in the DoE under MoEF, will be able to replicate in other national ministries, and at reduced effort and cost.
54. These systems will be designed to benefit from recent advances and tools for estimating GHG emissions from the crops, livestock, forestry and waste sectors. FAO, with partners, has developed or is currently developing a suite of tools for standardizing emissions monitoring and reporting at Tier 2 levels. For example, the Global Livestock Environment Assessment Model (GLEAM) establishes baselines and assesses the impacts of different mitigation and adaptation scenarios at local and national scale. Based on IPCC Tier 2 methodology and GIS based modeling of livestock distribution, GLEAM allows the assessments of all major GHG emissions from livestock and the impacts of all actions to reduce emissions from the sector. Similar tools are under development for field crops based on projects including a global program on Mitigating Agricultural Greenhouse Gases (MAGHG) and support for countries in South Asia to prepare Nationally Appropriate Mitigation Actions for different field crops.
55. With the application of GHG estimation tools such as GLEAM and those developed under MAGHG, Bangladesh national institutions will have enhanced capacity to measure progress toward NDC priorities in AFOLU sectors. At global level, evidence tested and compiled in Bangladesh will facilitate the improvement of scientific knowledge of GHG emissions reduction potential from AFOLU sectors, consequently improving our knowledge to estimate global environmental benefits. These systems once implemented and operational will support the

potential for improved understanding of mitigation and adaptation potentials and the possibility for increased levels of ambition and quantification of support required in future iterations of Bangladesh's NDC in the lead up to and during the commitment period of the Paris Agreement.

Sustainability:

56. With the project support, Bangladesh will be able to articulate a clear plan of action with regards to national reporting of its NDC, utilizing the monitoring and reporting roadmap, coordination mechanisms, and technical guidelines prepared by the project. All stakeholders will be empowered to access, archive, analyze, and monitor the necessary information and activities with regards to AFOLU and waste sectors, as well as to inform processes by lessons learned in other sectors.
57. Through the capacity building activities, the capacities of the officials of the DoE as well as other relevant agencies will be improved. The soft skills and knowledge acquired will be retained through the systematic support put in place through the establishment of needed database, Management Information System (MIS).
58. The core outcome of the project is to establish an enabling institutional coordination mechanism to ensure greater collaboration among relevant ministries, in particular, Ministry of Environment and Forest (MoEF), Ministry of Agriculture (MoA), Ministry of Fisheries and Livestock (MoFL) and the city corporations at different major cities. Furthermore, the transfer of GHG measurement and estimation technologies supported through improved national capacity in the AFOLU and wastes sectors is expected/will potentially help Bangladesh to improve its GHG emissions reductions ambitions.

Potential for scaling-up:

59. The project specifically embeds opportunities to scale-out and scale-up the measures implemented. As highlighted, the relative importance of the agriculture and land-use sectors to the Bangladesh economy and the significant technical challenges and capacity gaps for enhanced transparency in these sectors in the Bangladesh context necessitate a focused, sector specific approach. However, the information management systems and infrastructure for monitoring and reporting mitigation and adaptation actions in the agriculture and land-use sectors established under the project will be designed in way to allow for easy replication and adoption for other sectors like transportation, industry and energy.
60. Hardware, capacity building and training provided to national and local level stakeholders will be developed as modules that they can be adapted to improve data collection methods and analysis across all sectors. By working through and strengthening the institutional mechanisms in place for transparency of climate change actions the project will be able to better facilitate this process of scaling out project-developed systems and processes. The enhanced capacity provided by the project will enable regular national reporting of actions to address climate change drivers and impacts as envisioned under Paris Agreement, Article 13.
61. Outcome 1 of the project will also facilitate Bangladesh's engagement in international transparency-related processes under the UNFCCC. With the enhanced institutional capacity and engagement with international process, the government of Bangladesh will be capacitated to identify potential partners to further develop scaling-up actions and investment opportunities for further improving transparency over time, as well as to benefit other countries in the region to develop more transparent, accurate, complete, consistent and comparable monitoring and reporting systems.
62. The government will use a combination of national budget, and planned international support for fulfilling its reporting requirements to the Convention and ensure continued application and sustainability of the transparency systems and infrastructure for the other sectors.

2. Stakeholders. Will project design include the participation of relevant stakeholders from [civil society organizations](#) (yes /no) and [indigenous peoples](#) (yes /no)? If yes, identify key stakeholders and briefly describe how they will be engaged in project preparation.

63. The project will be implemented in close cooperation with relevant stakeholders at the national, provincial and district levels. Key executing entities will include:

TABLE 10. CBIT PROJECT STAKEHOLDERS AND ROLES

Agency	Role or mandate	Involvement in CBIT Project
Department of Environment (DoE), Ministry of Environment and Forest (MoEF)	The Department is responsible for project technical oversight, policy guidance, review and endorsement. The department with the support from MoEF will play a key role in coordination with other relevant ministries and stakeholders.	<ul style="list-style-type: none"> Lead agency for all coordination and decision-making on ETF issues Overall lead of CBIT project activities and integrating CBIT project learning into ETF activities of other relevant sectors.
Department of Agricultural Extension, Ministry of Agriculture	The department is responsible for supporting the implementation and coordination in capacity development within the sector, and ensure that information and data from the agriculture sectors is collected and integrated	<ul style="list-style-type: none"> With respect to the agriculture and land-use sectors will provide support to better coordinate and database development activities.
Bangladesh Forest Department (BFD), Ministry of Environment and Forest (MoEF)	BFD is responsible for development, technical support and regulation of all forestry activities with their mandates	<ul style="list-style-type: none"> Will provide support for capacity building activities; particularly sharing experiences with REDD+, forest reference levels and MRV.
Department of Livestock Services (DLS), Ministry of livestock and fisheries	The department is responsible for supporting the implementation and coordination in capacity development within the sector, and ensure that information and data from the livestock sectors is collected and integrated	<ul style="list-style-type: none"> With respect to the livestock sectors will provide support to better coordinate and database development activities.
Ministry of Water Resources (MoWR)	MoWR is responsible for addressing scientific and political issues related to water resources both domestic and international.	<ul style="list-style-type: none"> Will provide support for technical issues related to water sector adaptation measures identified in the NDC.
Ministry of Women and Children Affairs (MoWCA)	MoWCA is responsible for encouraging public institutions, civil society and the private sector to integrate gender equality and child safety and right into their policies and programs, and acts as a coordinator and facilitator for gender mainstreaming across government.	<ul style="list-style-type: none"> Will provide advice regarding integration of CBIT activities with Women's affairs and the Gender Mainstreaming Policy and Strategy.
City Corporations at the major divisional cities	They are responsible for the waste management in major cities and also responsible for implementation and coordination of activities at city level for effective capacity, monitoring and reporting.	Will be responsible for coordinating and supporting capacity development, consultation and data collection related with the wastes at city levels.

64. In addition, relevant and specialized national agencies and sectors will be engaged to enhance data and information collection and coordination with the DoE, MoEF and other relevant sectors as prioritized in the Bangladesh's NDC.

65. Civil Society Organizations (CSOs) and research institutions have been and will continue to be engaged in the design and implementation of the project, including the baseline assessment and stocktaking of the existing activities and systems. The institutional and coordination structure will consider including dissemination strategies for effective data management and reporting processes.

3. *Gender Equality and Women’s Empowerment.* Are issues on [gender equality](#) and women’s empowerment taken into account? (yes /no). If yes, briefly describe how it will be mainstreamed into project preparation (e.g. gender analysis), taking into account the differences, needs, roles and priorities of women and men.

66. The project will ensure the preparation of the necessary documentation and publications in which principle of gender sensitive and specific data and information are included. Gender concepts, gender equity and issues in agriculture and climate change will be mainstreamed during the implementation, making sure a better participation of women in the project activities. Through cooperation with the government partners, the project intervention will be in line with the GEF Gender Equality Action Plan and the existing policy and strategy in the country specifically including the National Women Development Policy 2011 of Ministry of Women and Children Affairs and Ministry specific policy directives in relation to Women's advancement. The project will ensure that women's specific needs are met, that women enjoy equal access to project activities and that women benefit equitably from the project’s activities.

67. In terms of overall socio-economic benefits, the project will benefit society and economy of Bangladesh by supporting the Government in advancing its NDC implementation, monitoring progress of national mitigation and adaptation priority activities in the NDC. An appropriate transparency framework can generate multiple social, economic and environmental co-benefits such as human capacity, local and national institutions, cost-effective national budgeting and planning, reduced vulnerability of its food systems, and the national resources and ecosystems that the food systems depend upon. Through improved and more transparent data, the project also supports improved and better targeted local, regional and national investment and decision making in relation to the natural resources management.

4*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 11. RISKS TO CBIT PROJECT IMPLEMENTATION AND MEASRUES TO ADDRESS THEM

No.	Description of risks	Types of risks	Probability and Impact (Scale 1-5)	Measures to address the risks
1	Lack of political will to support the project activities due to change government	Political	P=3 I=5	Risk management measures will include awareness raising among key decision makers of relevant ministries combined with a strong stakeholder involvement plan.
2	Lack of coordination among concerned ministries and local government authorities	Organizational	P=2 I=4	Clear project institutional arrangements that specify roles and responsibilities of relevant organization.
3	Limited cooperation on data and information sharing among stakeholders	Organizational	P=3 I=5	Clear agreement and developing data sharing policy of the stakeholders to collect and hand over required data and information.
4	Inability for the government to fund the ETF related activities beyond the project cycle	Financial	P=4 I=4	The proposed CBIT project will include measures to mainstream ETF activities into government budgetary and extra-budgetary processes, as well as international finance.
5	Gender mainstreaming hindered by resistance from local and national stakeholders	Cultural	P=3 I=3	Clear initial communication on gender equality as one of the key monitoring element for tracking progress of the project focusing on adaptation monitoring and co-benefits.

No.	Description of risks	Types of risks	Probability and Impact (Scale 1-5)	Measures to address the risks
6	Transparency related work loses momentum as the Paris Agreement is not adopted	Political	P=1 I=4	Potential mitigation measures associated with improved data collection, monitoring and reporting of agriculture, forestry and land-use sector mitigation and adaptation activities as priority need of the country. These approach will go beyond the lifetime of the Paris Agreement.

5. *Coordination.* Outline the coordination with other relevant GEF-financed and other initiatives.

68. The proposed CBIT project will complement past, ongoing and pipeline activities to support the Government of Bangladesh to enhance management and monitoring practices in the AFOLU and wastes sectors (Table 8).

TABLE 12. OTHER INITIATIVES THAT WILL BE COORDINATED WITH UNDER PROPOSED CBIT PROJECT

Other Ongoing and Pipeline Initiatives	Areas of complementarity with the proposed CBIT Project
<p>Strengthening National Forest Inventory and Satellite Land Monitoring System in Support of REDD+ in Bangladesh (Bangladesh Forest Inventory Project), USAID, FAO, Silva Carbon USD 6.5M (2015-2018)</p> <p>This project aims to build a robust forest monitoring system will be implemented for the Forest Department - supporting forest policy and critical decision making processes, and supporting actions for climate change adaptation and mitigation in forestry..</p>	<p>The proposed CBIT project will ensure coordination to ensure contributing to enhance transparency-related processes; and vice versa by learning from strengthening adaptive capacity and resilience of forest-dependent communities, reduced greenhouse gas emissions from forestry sector, collaborative activity and value chain development, and community-based sustainable natural resource management.</p>
<p>UN-REDD Bangladesh National Programme, FAO, UNDP (2015-2018)</p> <p>As part of the country's progressive measures, the UN-REDD Bangladesh National Programme has brought together the United Nations specialized agencies – the Food and Agriculture Organization of the United Nation (FAO), and the United Nations Development Programme (UNDP) with the GoB's nodal ministry, i.e. the Ministry of Environment and Forests (MoEF), to build the capacities required to formulate and implement Bangladesh's national REDD+ strategy, develop FREL/FRL, safe guard information system and forest monitoring system.</p>	<p>The project will support better capacity and enabling environment for Forest and Landscape Restoration activities in Bangladesh, resource mobilization and implementation to replicate the successful experiences and modality to restore Forest Landscape and reduce forest degradation and deforestation.</p> <p>The proposed CBIT project will ensure smooth institutional coordination and capacity development on new initiatives and systems to be developed by the UN-REDD national project as well as will complement for a better data collection and reporting.</p>
<p>'Country Investment Plan (CIP) for Environment, Forestry and Climate Change(2016-2021)', under USAID-funded (USD 4.5 million) project 'Strengthening the Environment, Forestry and Climate Change Capacities of the Ministry of Environment and Forests and its Agencies'</p> <p>The main Goal of the project is to strengthen human and organizational capacity in the country to deliver more effective, coordinated, sustainable and country-driven investment programs in environmental protection, sustainable forest management and climate change adaptation and mitigation. The project also aims at addressing the crosscutting role of gender, and at promoting inclusive participation from the private sector and the civil society.</p>	<p>This project aims to build national capacity for investment under four pillars namely sustainable development and management of natural resources; environmental pollution reduction and control; adaptation, mitigation and resilience to climate change and environmental governance, gender, and human and institutional capacity development</p> <p>The proposed CBIT will directly benefit and ensure coordination and capacity development on data collection and production, and data availability and transparency as well as the monitoring.</p>

6. *Consistency with National Priorities.* Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? (yes /no). If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, NDCs, etc.

69. The proposed capacity building program is drawn directly from the priorities outlined in Bangladesh’s NDC, which is based upon existing national laws, regulations, and policies on issues related to climate change and the agriculture and land-use sectors. These policies such as the BCCSAP were outlined in the baseline section. The proposed CBIT project will also contribute to and build upon additional policies related to sustainable development in the agriculture and land-use sectors.

TABLE 13. RELEVANT POLICY FRAMEWORKS FOR CBIT

Policy Framework	Relevance
National Sustainable Development Strategy 2010-21 (NSDS)	National Sustainable Development Strategy(NSDS) is prepared with target to achieve sustainable development. Sustainable development is one of the many challenges confronting the country in its attempt to attain the middle-income country status by 2021. This NSDS has been formulated to guide the country to face the challenge for sustainable economic growth with environmental safety and ensuring social justice. The vision of the strategy, which has been developed through extensive consultation with the stakeholders, is “achieving a happy, prosperous enlightened Bangladesh which is free from hunger, poverty, inequality, illiteracy and corruption and belongs completely to its citizens and maintains a healthy environment”. The NSDS underpins the NDC and this CBIT project will be relevant for monitoring the effective implementation of the NSDS as it relates to agriculture, forestry, land use, and wastes sector.
7th Five Year Plan (2016-2020)	The is the key planning document for long term program to guide the implementation of individual projects and actions aimed at improving food security, sustainable development, and economic growth. Monitoring and reporting systems developed under this CBIT project will be relevant for monitoring the effective implementation of the 7th Five Year Plan.
National Conservation Strategy (NCS) (2016-2031)	The Government of Bangladesh is committed to conserve its natural resources guided by policy, law, strategies, international treaties and conventions, and also as enshrined in its constitution. The Bangladesh National Conservation Strategy is a key government document to be the guideline for the purpose. A key pillar of the NCS is strengthening the institutional capacity and increasing natural resources conservation, which is highly relevant to the activities under the proposed CBIT project.
The Perspective Plan (2010-2021)	The Government’s Vision 2021 is an articulation of where this nation needs to be in 2021 – the year which marks the 50th anniversary of Bangladesh’s independence. The “Perspective Plan of Bangladesh (2010-2021): Making Vision 2021 a Reality” is a strategic articulation of the development vision, mission, and goals of the Government in achieving a prosperous Bangladesh grounded in political and economic freedoms a reality in 2021. The visions including:(i) every citizen has equal opportunities to achieve his/her fullest potential; (ii) all citizens enjoy a quality of life where basic health care and adequate nutrition are assured; (iii) all citizens have access to a modern, technical, and vocational education tailored to meet the human resource needs of a technologically advancing nation; (iv) sustainability of development is ensured through better protection from climate change and natural disasters; (v) there is respect for the principles of democracy, rule of law, and human rights; (vi) gender equality is assured; so are the rights of ethnic populations and of all other disadvantaged groups including persons with disability; and(vii) the diversity and creativity of all people are valued and nurtured. Monitoring and reporting systems developed under this CBIT project will be relevant for monitoring the effective implementation of the Vision 2021 as it relates to agriculture, forestry, land use, and wastes sector.
National Biodiversity Strategy and Action Plan’ (NBSAP)	This natural framework embodies Bangladesh’s strategic approach to conserving the nation’s biological diversity as well as the action plan for fulfilling our obligations as a signatory to the CBD, drawn from the extensive consultation process involving a variety of stakeholders from all walks of life, including government officials, NGO representatives and donor communities nationwide. The key objective of the increasing natural resources conservation, is highly relevant to the activities under the proposed CBIT project.

Policy Framework	Relevance
National Adaptation Programme of Action (NAPA)	The National Adaptation Program of Action (NAPA) was developed by the MoEF. The main goal of the NAPA is to provide a framework to guide the coordination and implementation of adaptation initiatives through a participatory approach, and to build synergies with other relevant environment and development programmes. The NAPA identified priorities actions for adaptation is mentioned in the Bangladesh's NDC. As a result, the proposed CBIT project will contribute to national efforts to better report progress toward NAPA priorities.

70. Based on the above detailed analysis, the proposed capacity building program is highly consistent with the national priorities of Bangladesh with respect to efforts to tackle the drivers and impacts of climate change.

7. *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.

71. The project adopts two core knowledge management approaches: 1) Dissemination, maintenance, archiving and update of online based database and data sharing forums; and 2) Promotion of knowledge and data sharing culture and coordination among the relevant agencies. To successfully implement these approaches, the project plans to employ a national communication specialist who will produce key knowledge products in locally acceptable formats using electronic materials for webpage, radios, paper, or other electronic means. Knowledge products will be fully translated into local languages for better dissemination and integration. Secondly, project aims to promote knowledge and data sharing culture, and coordination for environmental and natural resources data collection and analysis in Bangladesh. This includes an enhanced coordination among relevant ministries, agencies, and local level offices working together towards improved transparency in climate change related data for the AFOLU and waste sectors. Moreover, success story by similar other CBIT project in other country implemented by the FAO will be shared in the country, and vice. This will lead to increased collaboration for knowledge management. Moreover, the Global Coordination Platform of the Capacity-building Initiative for Transparency (CBIT) will be used to facilitate knowledge exchange from CBIT projects among countries, maximize learning opportunities, and enhance coordination among transparency practitioners.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT³⁶ OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):

(Please attach the [Operational Focal Point endorsement letter](#)(s) with this template. For SGP, use this [SGP OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE(MM/dd/yyyy)
Mr. Istiaque Ahmad	Secretary	Ministry of Environment and Forests	11/20/2017

³⁶ For regional and/or global projects in which participating countries are identified, OFP endorsement letters from these countries are required even though there may not be a STAR allocation associated with the project.

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies³⁷ and procedures and meets the GEF criteria for project identification and preparation under GEF-6.

Agency Coordinator, Agency name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email
Alexander Jones, Director, Climate Change and Environment Division FAO Rome		14 May 2-18	David Doolan FAO Deputy Representative in Bangladesh	+88029101212	David.Doolan@fao.org
Jeffrey Griffin FAO Senior Coordinator GEF Unit Jeffrey.Griffin@fao.org Tel: +390657055680			Yurie Naito Programme Officer, GEF Unit	+390657053172	Yurie.Naito@fao.org

C. ADDITIONAL GEF PROJECT AGENCY CERTIFICATION (APPLICABLE ONLY TO NEWLY ACCREDITED GEF PROJECT AGENCIES)

For newly accredited GEF Project Agencies, please download and fill up the required [GEF Project Agency Certification of Ceiling Information Template](#) to be attached as an annex to the PIF.

³⁷ GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, SCCF and CBIT