Readiness Preparation Proposal (R-PP)

for: Bangladesh

Date of submission or revision: *December 2013*

The United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries**(UN-REDD)**

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General Information

Note: For submission to UN-REDD, an additional cover page with required signatures and information should be attached, which will be provided by the UN-REDD Secretariat.

Contact Information

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Summary of the R-PP

Dates of R-PP preparation (beginning to submission):	July – November 2013
Expected duration of R-PP implementation (month/year to month/year):	1 July 2014 – 30June 2017
Total budget estimate:	USD 15.62 M
Anticipated sources of funding:	from FCPF:N/A from UN-REDD: USD 2.52 M* National government contribution: USD 2.93 M other source: USD 8.05 M other source: TBD
Expected government signer of R-PP grant request (name, title, affiliation):	Md. Shafiqur Rahman Patwari, Secretary, Ministry of Environment and Forests, GoB
Expected key results from the R-PP implementation process:	Outcome 1) : National REDD+ Management Arrangements Established and Improved Stakeholder Awareness And Effective Stakeholder Engagement Outcome 2): National REDD+ Strategy Prepared Outcome 3) National Forest Reference Emission Level and/or a Forest Reference Level established Outcome 4) Systems for National Forest Monitoring and Information on Safeguards

*Including already allocated UN-REDD targeted support activities on social and corruption risk assessment of USD 110,000 and MRV of USD 110,000.

Acronyms, Abbreviations and Technical Terms

ACCF   Assistant Chief Conservator of Forests
AD   activity data
ADP   Annual Development Programme
ADR   Alternative Dispute Resolution
AFOLU   Agriculture, Forestry and Land Use
ARR   Afforestation, Reforestation and Revegetation
AVCB   Activating Village Courts in Bangladesh
BAPA   Bangladesh *PoribeshAndolon (a Bengali* CSO*)*
BARC   Bangladesh Agricultural Research Council
BBS   Bangladesh Bureau of Statistics
BCCRF   Bangladesh Climate Change Resilience Fund
BCCSAP   Bangladesh Climate Change Strategy and Action Plan
BCCTF   Bangladesh Climate Change Trust Fund
BELA   Bangladesh Environmental Lawyers Association
BFID   Bank and Financial Institutions Division
BFIDC   Bangladesh Forest Industries Development Corporation
BFRI   Bangladesh Forest Research Institute
BGB   Border Guard of Bangladesh
BIDS   Bangladesh Institute for Development Studies
bils   flood plain depressions
BNH   Bangladesh National Herbarium
BRAC   Bangladesh Rural Advancement Committee
BRAPAP   Bangladesh REDD+ ARR in Protected Areas Project
BRDB   Bangladesh Rural Development Board
BWDB   Bangladesh Water Development Board
CBACC-CF   Community Based Adaptation to Climate Change through Coastal Afforestation project
CBD   Convention on Biological Diversity
CBFM   Community-based Forest Management
CBNA   Capacity Building Needs Assessment
CCC   Climate Change Cell
CCF   Chief Conservator of Forests
CCNWG   Climate Change Negotiation Working Group
CCU   Climate Change Unit
CCT   Climate Change Trust
CDM   Clean Development Mechanism
CDMP   Comprehensive Disaster Management Programme
CEPA   Communication, Education and Public Awareness
CF   Conservator of Forests
char   delta lands
CHT   Chittagong Hill Tracts
CHTDF   CHT Development Facility
CHTRC   CHT Regional Council
CIFOR   Centre for International Forestry Research
CMC   Co-management committees
CMOs   Co-management organizations

CoP	Conference of the Parties of the UNFCCC
DAE	Department of Agricultural Extension
dbh	diameter at breast height
DC	District Commissioners
DCCF	Deputy Chief Conservator of Forests
DCF	Deputy Conservator of Forests
DFO	Divisional Forest Officer
DLRS	Directorate of Land Records and Survey
DoE	Department of Environment
DoF	Department of Fisheries
EF	emission factors
ERD	Economic Relations Division
FD	Forest Department
FFF	Forest, Fruit, Fish
FLEGT	Forest Law Enforcement, Governance and Trade
FMS	Forest Monitoring System
FPIC	Free, Prior and Informed Consent
FRA	Forest Resource Assessment
FRMP	Forest Resources Management Project
FSMP	Forestry Sector Master Plan
GED	General Economic Division
GHG	Greenhouse gas
GHG-I	GHG inventory
GIS	Geographical Information Systems
GoB	Government of Bangladesh
haor	freshwater swamp areas in north-east Bangladesh
HDC	Hill District Council
IFESCU	Institute of Forestry and Environmental Science, Chittagong University
IFM	Improved Forest Management
ILO	International Labour Organization
IMED	Implementation, Monitoring and Evaluation Division
IP	Indigenous Peoples
IPAC	Integrated Protected Area Co-management
IPCC	Intergovernmental Panel on Climate Change (IPCC)
IUB	Independent University Bangladesh
IWM	Institute of Water Modelling
jhum	shifting cultivation in the CHT
KCA	Key Category Analysis
LULUCF	Land-use, land-use change and forestry (a category of GHG emissions)
M & MRV	Monitoring and MRV
MDG	United Nation's Millennium Development Goals
M&E	Monitoring and Evaluation
MNRCF	Chunati Wildlife Sanctuary Management of Natural Resources and Community Forestry
MoA	Ministry of Agriculture
MoCHTA	Ministry of Chittagong Hill Tracts Affairs
MoD	Ministry of Defence
MoE	Ministry of Education

MoEF	Ministry of Environment and Forests
MoF	Ministry of Finance
MoFL	Ministry of Fisheries and Livestock
MoHA	Ministry of Home Affairs
MoHPW	Ministry of Housing and Public Works
MoL	Ministry of Land
MoLGRD	Ministry of Local Government, Rural Development and Cooperatives
MoLJPA	Ministry of Law, Justice and Parliamentary Affairs
MoP	Ministry of Planning
MoU	Memorandum of Understanding
MoWR	Ministry of Water Resources
MRV	Measurement, Reporting and Verification
NAMAs	Nationally Appropriate Mitigation Actions
NAPA	National Adaptation Programme of Action
NC	National Communication to the UNFCCC
NEC	National Environment Council
NFA	National Forest Assessment
NFI	National Forest Inventory
NHRC	National Human Rights Commission
NIS	National Inventory System
NJP	(UN-REDD) National Joint Programme
NSCCC	National Steering Committee for Climate Change
PAMs	Policies and Measures
PC	Planning Commission
QA	Quality Assurance
QC	Quality Control
RECOFTC	TheCenter for People and Forests
RELs/RLs	Forest Reference Emission Levels and Forest Reference Levels for REDD
RIMS	Resource Information Management System Unit
RSC	National REDD+ Steering Committee
RSF	REDD+ Stakeholders' Forum
Sal	deciduous forests dominated by *Shorearobusta*
SBSTA	Subsidiary Body for Scientific and Technological Advice (of the UNFCCC)
SCP	Strategic Communication Plan
SEPC	Social and Environmental Principles and Criteria
SES	Social and Environmental Standards
SFR	Social Forestry Rules
SICT	Support to Information Communication Technology
SIS	Safeguard Information System
SPARRSO	Space Research and Remote Sensing Organisation
SRDI	Soil Resource Development Institute
SRF	Sundarbans Reserved Forest
SUST	Sahjalal University of Science and Technology
tCO2e	tons of carbon dioxide equivalent
TWG	Technical Working Group
UCCAs	Upazila Central Cooperative Associations
UDD	Urban Development Directorate

UNDRIP	UN Declaration on the Rights of Indigenous Peoples
UNFCCC	The United Nations Framework Convention on Climate Change
USF	Unclassed State Forest
VCF	Village Common Forest
VCM	Voluntary Carbon Market
WARPO	Water Resources Planning Organisation

Executive Summary

Bangladesh is already one of the most climate-vulnerable countries in the world. Climate change and variability have had an impact on the lives and livelihoods of people living in coastal areas and in arid and semi-arid regions of Bangladesh. Floods, tropical cyclones, storm surges and droughts are becoming more frequent and are set to become even more severe in the coming years and decades. These changes are threatening the significant achievements Bangladesh has made over the last 20 years in increasing incomes, reducing poverty and achieving self-sufficiency in rice production. For these reasons, by many accounts, Bangladesh is considered to be the country *the most vulnerable* to climate change.

As a signatory to both the UN Framework Convention on Climate Change (UNFCCC, ratified in 1994) and the Kyoto Protocol (2001), Bangladesh is also fully aware of the *causes* of climate change. According to the most recent national GHG inventory, the majority of Bangladesh's CO_2 emissions are derived from the energy sector, followed by the land-use, land-use change and forestry sector - with 32%.Hence, whilst devoting considerable resources to reducing vulnerability to climate change, and maintaining its path of economic development, Bangladesh is also striving to reduce its greenhouse gas (GHG) emissions.

The Conference of the Parties (COP) to the UNFCCC has adopted a forestry GHG emission mitigation mechanism known as "REDD+". This is defined as '*Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries'*. REDD+ will provide positive incentives to developing countries to voluntarily reduce their rates of deforestation and forest degradation, and to increase their forest carbon stocks, as part of a post-2020 global climate change agreement.

As part of its long term strategies to reduce GHG emissions, the Government of Bangladesh has taken initial steps to prepare for the implementation of REDD+ activities. It has established the national REDD+ Steering Committee. It has prepared the REDD+ Readiness Roadmap - endorsed by the REDD+ Steering Committee in December 2012. Subsequently, in June 2013, the UN-REDD Programme invited Bangladesh to submit a REDD+ Readiness Preparation Proposal (R-PP).

Bangladesh has 2.6 million hectares of forestland, equivalent to almost 18% of country's total area. There are five broad types of forest according to ecology and geographical location, these are: hill forest, plains forest (dominated by *Shorea robusta*, or sal), mangrove, coastal plantations, and wetland forest. The Government's Forest Department manages 1.6 million hectares of the forest land. According to a national forest resource assessment undertaken in 2010, 11% of the country's land is under tree cover. However, another 20% - that is approximately 2.5 million hectares - is recorded as 'other wooded land' or 'other land with trees'. Hence, there is potentially an important scope for REDD+ activities in Bangladesh.

The history of forestry in Bangladesh is one of continuous depletion of forest resources both in terms of area and quality. Traditionally, plantations and forest reservations have been the tools to combat this depletion. However, increasingly since the early 1980s, forestry in Bangladesh has witnessed a rapid succession of social forestry programmes in an attempt to redress public alienation and to allow for wider participation of local people in forest use and management.

Summary of R-PPComponents

This R-PP sets out how Bangladesh will implement its REDD+ Readiness activities and develop a comprehensive National REDD+ Strategy under Phase 1 of REDD+. The R-PP has six components.

Under Component 1, Bangladesh will establish the management structure to manage the REDD+ Readiness process and develop the National REDD+ Strategy. The National REDD+ Steering Committee will be enhanced to involve a comprehensive range of governmental and non-governmental stakeholders. It will be supported by three Technical Working Groups providing guidance and coordination support, and by a REDD+ Cell to provide day-to-day operational support. The Forest Department in the Ministry of Environment and Forests will be at the core of the management structure, and it will Chair the National REDD+ Steering Committee.

The Government of Bangladesh will engage a broad range of non-government stakeholders in the REDD+ process. To achieve this, the REDD+ Stakeholders' Forum will be established. This Forum will be a mechanism for stakeholder consultation and engagement both within the non-government sector, and between the non-government sector and government. The Forum will nominate representatives among itself to sit on the National REDD+ Steering Committee and Technical Working Groups. The Forum will nominate representatives to sit on the National REDD+ Steering Committee and will include representatives from all stakeholders interested in climate change and the REDD+ process.

A Consultation and Participation Plan will also be developed under Component 1. This Plan will address the need for public awareness raising on REDD+ and for educating key stakeholders on REDD+. Related to this, National Guidelines on Free, Prior and Informed Consent (FPIC) will be developed and field-tested. A REDD+ Grievance Mechanism will also be developed and tested, building on existing systems and processes where feasible.

Under Component 2, Bangladesh will prepare its National REDD+ Strategy. The steps to preparing this include:
- Develop a full understanding of the pertinent legal, policy and institutional framework, including the semi-autonomous governance framework in the Chittagong Hill Tracts;
- Identify the priority drivers of deforestation and forest degradation;
- Undertake an in-depth analysis of the drivers of deforestation and forest degradation, accounting for the specific conditions of the five forest types and for diversity across the country;
- Identity possible strategies to strengthen the legal, policy and institutional framework and to address the drivers. Many strategies will be site-specific, for example adapted to conditions and needs in a given district. Packages of REDD+ interventions will be designed for pilot districts.

Component 2 will also establish the implementation framework for REDD+. This will include the operationalization of the entities identified in component 1. It will include identifying and designing the optimal national mechanism for receiving international REDD+ contributions or carbon credits. It will also include identifying and designing the optimal mechanisms for distributing REDD+ funds to communities in order to incentivize behavioral changes that lead to decreased deforestation and forest

degradation. Finally, Component 2 includes the design and establishment of the Social and Environmental Safeguard Policy Framework.

Under Component 3, Bangladesh will establish its national forest Reference Emission Level and/or forest Reference Level (RELs/RL), with sub-national forest RELs/RLs as potential interim measures. The RELs/RLs will provide the benchmarks against which future forest carbon emissions reductions and removals will be measured. The emphasis of this Component will be the collection of data on historical land use trends and the analysis of relevant national circumstances, as well as the development of specific capacities to further develop and implement these activities under a full National REDD+ Strategy.

Under Component 4, Bangladesh will develop a forest and activity monitoring system. This system will cover all MRV requirements, it will also cover monitoring of compliance with safeguards and monitoring of key co-benefits generated by REDD+ strategies. Component 4a includes the necessary operations and actions to establish an operational forest monitoring and information system, and the associated capacity development to ensure there is a sustainable and complete system for measuring, reporting and verification (MRV). Component 4b includes the necessary activities to build capacity to identify co-benefits and to prioritize the co-benefits to be pursued, and to monitor and provide information on safeguards and key co-benefits. The capacity built and information generated through 4b will feed into the forest monitoring system established under 4a.

Workplan, Budget and Sources of Finance

The Table below contains a summary of the three-year workplan and budget. The total estimated budget of the R-PP is $15,625,840. A detailed budget is provided in Component 5. The detailed monitoring framework, with indicators and targets, is in Component 6.

Output	Three Year Budget (US$)
Component 1: National REDD+ management arrangements established; improved stakeholder consultation and engagement	
1a: National REDD+ Readiness Coordination Mechanism Established	570,000
1c.1: Public Awareness Raised	1,070,000
1c.2: Consultation and Participation Plan	310,000
1c.3: National FPIC Guidelines	245,000
1c.4: REDD+ grievance Mechanism	120,000
Sub-total Component 1:	**2,315,000**
Component 2: National REDD+ Strategy prepared, with implementation framework and demonstration activities	
2a.1:Strengthen legal, policy and legislative framework for REDD+	295,000
2a.2: Drivers of deforestation and forest degradation identified	230,000
2b.1: Detailed understanding on the priority drivers of deforestation and forest degradation	200,000
2b.2: REDD+ strategies to address drivers of deforestation and forest degradation	495,000
2b.3: District level activity packages and cost norms	295,000
2c.1: Operationalizing the Organizations and Individuals Involved in REDD+ Implementation	1,670,000
2c.2: Creating the transparent system for national level management of REDD+ finances in place	100,000
2c.3: Creating the transparent system for local distribution of REDD+ incentives	100,000

2d.1:Establish Bangladesh's National REDD+ Social and Environmental Safeguard Management Framework	210,000
2d.2: REDD+ Strategy	90,000
Sub-total Component 2:	**3,685,000**
Component 3: Reference emission levels and reference levels developed	
3.1 Capacities for the development of Reference Emission Level strengthened.	410,000
3.2 National circumstances considered for RELs/RLs.	130,000
3.3 National forest monitoring systems established	195,000
Sub-total Component 3:	**735,000**
Component 4: National forest monitoring system and safeguards information system developed	
4a.1: Capacities to implement the GHG inventory for the forest sector strengthened	344,000
4a.2: National Satellite Forest Monitoring System established;	542,000
4a.3: National Forest Inventory Designed and established.	4,250,000
4a.4: Scientific research on key issues enhanced.	470,000
4a.5: MRV Implementation Support	850,000
4a.6:Integrated forest information system developed	1,061,000
4b: Information systems for measuring multiple-benefits, other impacts, governance and safeguards established	330,000
Sub-total Component 4:	**7,847,000**
Component 6: Monitoring and Evaluation	
Sub-total Component 5:	**300,000**
Sub-Total	**14,912,000**
Administrative Costs and Overheads (7%)	1,043,840
Grand Total	**15,625,840**

The Table below summarizes the sources of finance for the R-PP. <u>Figures are to be confirmed.</u>

Confirmed Activities Directly Contributing to REDD+ RPP Programme		
Organization/Activity	**Activity**	**Amount (USD)**
Government of Bangladesh	All around support to all components and activities. This includes in-kind support only.	2,937,000
UN-REDD Joint Programme	Strategic interventions into all four components through FAO and UNDP	2,300,500
UN-REDD targeted support	Strategic interventions into components 1, 2 and 3 through FAO and UNDP	220,000
USAID	Mostly to support to establishing a NFI (Component 4), and some all round support.	5,2940,000**(to be confirmed)**
Parallel Activities that support REDD+ Readiness		
Organization/Activity	**Activity**	**Amount (USD)**
USAID/FAO (*Capacity Development*	Institutional and capacity	868,000[1]

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[1] The project is implemented in parallel to the REDD+ Readiness process. Almost one third of the project activities contribute to processes directly linked to the REDD+ Readiness process. Approximately one-half of the associated funding is considered, in this table, to contribute to the REDD+ Readiness.

for MoEF)	development, contribution to components 1a, 1c and 2c.	
USAID/CREL and FS Projects	Community strengthening is related to components 1c and 2c. Forest monitoring and carbon measuring is related to Components 3 and 4.	Total budget is $36 million over five years. Approximately one third is natural resource management (in forests).
EU Seals Project	To components 1c, 2b and 4a	568,000 **(to be confirmed)**
World Bank through SRC for Wildlife Protection Project	Components 1c, 2a, 2b, 4a and 4b	576,000 **(to be confirmed)**
BCCRF	Components 1c, 2a, 2b, 2c, 3, and 4a	776,000**(to be confirmed)**
UNDP – Climate Finance Analysis		**(to be confirmed)**To be determined
UNDP CHTDF		**(to be confirmed)**To be determined
Government of Germany/GiZ	Work on Fiduciary Standards	**89,000 (to be confirmed)**To be determined

Introduction, Context and Justification

The UNFCCC Framework for REDD+

The Intergovernmental Panel on Climate Change (IPCC) has identified deforestation and forest degradation as a major contributor to global greenhouse gas (GHG) emissions, contributing over 17% of total emissions in 2004 (IPCC Working Group 3, 2007). In an attempt to reduce these emissions from the forest sector in developing countries, the United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties (CoP) is in the process of designing a mitigation mechanism entitled "*Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countrie*s". This is generally referred to as REDD+.

REDD+ is a voluntary mechanism whereby developing countries can undertake mitigation actions in their forest sectors. Its purpose is to provide an incentive for developing countries to reduce their emissions from deforestation and forest degradation, and to increase their forest carbon stocks.

UNFCCC COP Decision 1/CP.16 (Para. 70) lists five categories of REDD+ activities, namely:

  (a) Reducing emissions from deforestation;
  (b) Reducing emissions from forest degradation;
  (c) Conservation of forest carbon stocks;
  (d) Sustainable management of forests, and;
  (e) Enhancement of forest carbon stocks.

Once REDD+ becomes operational under the UNFCCC, activities will be implemented and monitored at the national scale. All changes in forest carbon will be measured at the national level – which will reduce the risks of emissions leakage within the country. Moreover, the implementation of REDD+ activities will require the formulation and coordination of policies and measures at the national level, although these may be implemented at the sub-national level. Hence, under the UNFCCC, REDD+ activities are not project-based – unlike the Clean Development Mechanism (CDM).

The UNFCCC CoP has adopted a series of decisions relating to REDD+ that provide a framework for implementation (though, as of June 2013, this guidance was not yet complete). The guidance published to date requires developing countries to implement REDD+ activities through a phased approach, in order to allow a learning-by-doing approach. The three phases of REDD+ can be interpreted as follows (see Figure 1 below):

  (i)   **Phase 1**: Preparation: Development of necessary capacities and institutions to implement REDD+ at the national level, and development of strategies and action plans;
  (ii) **Phase 2**: Demonstration and piloting of policies and measures: field testing of practical measures and strategies may be done, through demonstration activities, in addition to continuous capacity building and development of new policies and legislation;
  (iii) **Phase 3**: Implementation of REDD+: a national performance-based system of resource distribution or benefit sharing.

Figure 1: Three-Phased Approach to REDD+ under UNFCCC Framework

Phases 1 and 2 together lead to "REDD+ Readiness". During these phases, countries build capacity, develop strategies and action plans, test different approaches to REDD+ implementation at demonstration/pilot sites and subsequently refine their approaches based on feedback. In practice, the three phases need not be fully consecutive – with demonstration and capacity building activities overlapping.

Bangladesh is presently in the early stages of Phase 1. It is focusing on building initial capacity and planning for REDD+ and the development of strategy documents. These strategy documents include the present REDD+ Readiness Preparation Proposal (R-PP) and will include the National REDD+ Strategy.

Bangladesh is a party to both the UNFCCC (ratified in 1994) and the Kyoto Protocol (2001). Bangladesh has taken initial steps to prepare for the implementation of REDD+ activities. The Government has prepared and approved the REDD+ Readiness Roadmap (endorsed by the national REDD+ Steering Committee in December 2012). Subsequently, in June 2013, the UN-REDD Programme invited Bangladesh to submit anREDD+ Readiness Preparation Proposal (R-PP).

The purpose of this R-PP is to set out how Bangladesh will implement its REDD+ Readiness activities and develop a comprehensive National REDD+ Strategy under Phase 1 of REDD+. The R-PP acts as a coordinating and guidance platform for all stakeholders in REDD+ in Bangladesh.

Country Overview

Geography and Climate

Bangladesh is situated in the north-eastern part of South Asia between 20° 34' to 26° 38' North and 88° 01' to 92° 41' East(See Figure 2). It lies on the delta of three major rivers: Padma, Meghna and Jamuna. It covers an area of 147,570 km^2 and is bounded by India on the west, north and east and by Myanmar to the south-east, with the Bay of Bengal to the south. The coast of Bangladesh includes the famous Sundarbans Mangrove Forest. Most parts of Bangladesh are less than 12 m above sea level. There are hilly regions in the north-east and south-east with an average elevation of 244m and 610m respectively.

Bangladesh has a sub-tropical monsoon climate with average temperatures varying from 18 to 29°C (BBS, 2011), while annual rainfall ranges from 1429 – 4338 mm. The country has four main seasons, Winter (December-February), Summer (March-May), Monsoon (June-September) and Autumn (October-November). Flash floods affect about 80% of the land area in Bangladesh, particularly during the monsoon season.

Demographics and History

Figure 2: Bangladesh: Borders and Major Settlements

Apart from some small city states and territories such as Singapore and Hong Kong, Bangladesh has the highest population density in the world, with an average of 964 people per km^2. The areas around Dhaka, the capital, and Comilla in the east, are the most densely populated. The Chittagong Hill Tracts (CHT) on the south-eastern border with Myanmar (see Figure 2) are the least densely populated areas. Bangladesh is largely ethnically homogeneous, with Bengalis comprising 98% of the total population of approximately 142 million (BBS, 2011a). About 90% of Bengalis are Muslims and the remainder are mostly Hindus.

The non-Bengali sections of the population, numbering between 2-3 million people, are concentrated in the CHT. They are of Sino-Tibetan descent and differ markedly from the Bengali majority in terms of their social customs, religion and language. Their languages are from the Tibeto-Burmese group and the majority are Buddhist. The main tribes are the Chakmas, Marmas, Tipperas and Mros. Smaller groups include the Santals in Rajshahi and Dinajpur, and Khasis, Garos, and Khajons in Mymensingh and Sylhet regions (Government of Bangladesh/UN-REDD, 2013).

Bangladesh became an independent state in 1971, after a war of secession from Pakistan, of which it was formerly the eastern part. Many Bengali migrants moved from the densely populated lowlands into the relatively sparsely-populated CHT both before and after independence, resulting in significant demographic changes in the area. This led to a period of civil unrest in the CHT, culminating in the 1997 signing of a Peace Treaty between the Government of Bangladesh and the ParbattyaChattagram Jana SamhatiSamiti, representing the tribal people. The treaty paved the way for the creation of the Ministry of Chittagong Hill Tracts Affairs (MoCHTA) and the devolution of some powers to an elected Hill District Council (HDC), covering the three districts of the CHT area.

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Economy and Land Use

Bangladesh is predominantly an agricultural country in terms of land use. The agriculture sector contributes 18.6%of GDP and employs 48.1% of the labour force (BBS, 2011b). Urbanization is proceeding rapidly, and it is estimated that in the future only 30% of the population will enter the labour force as agricultural workers, although many are likely to find other kinds of work in rural areas.

Land is a very scarce and important resource in Bangladesh. Figure 3 shows the pattern of land use in the country in 2006. About 75.8% of the total area of the country (11.19 Mha) is under agriculture. Forest land, concentrated mainly in the Sundarbans and the CHT, covers 17.1% (2.5 Mha) and the remaining 7.1% (about 1.05 Mha) is comprised of urban areas, water bodies and land which is regularly submerged according to tides or seasons (shrimp cultivation, salt beds and mudflats). During the 30 years between 1975 and 2004, the area under agriculture expanded by 0.68 Mha, i.e. approximately 4.6% of the total land area. This expansion occurred primarily due to the permanent conversion of fallow lands, mudflats, seasonally-submerged islands in the delta (*char* lands), marsh land (*bil*) and other wetland (*haor*) areas (Clark and Clark, 2000). Time and population pressure were found to be the major driving forces to determine land use and land use changes in Bangladesh (Clark et al, 2001).

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Major Landuses of Bangladesh
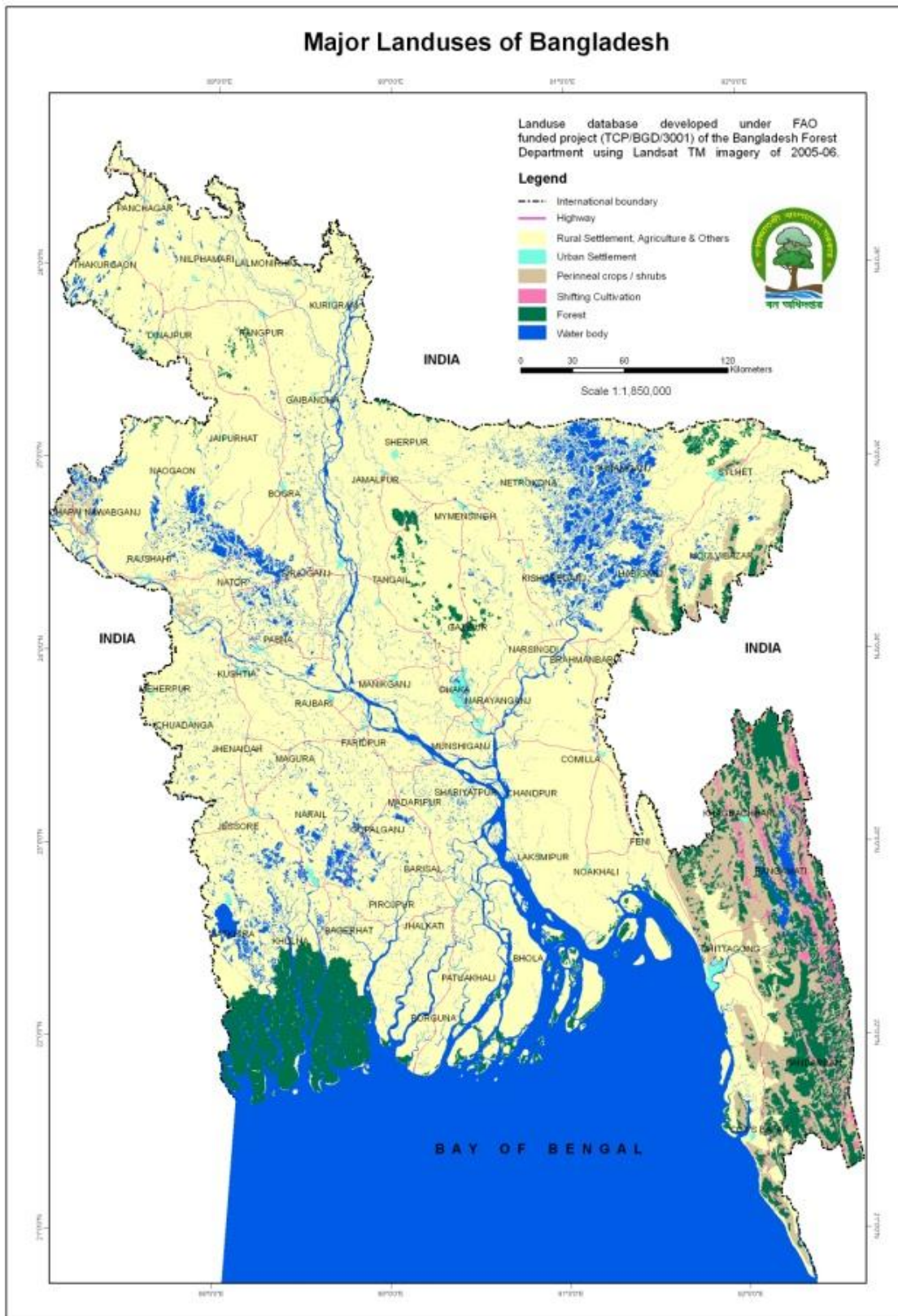
Figure 3: Bangladesh Land Use Map

Source: Bangladesh National Forest and Tree Resources Assessment (2007)

The key strategy document to map out socio-economic development is the Bangladesh Sixth Five Year Plan (2011 – 2015). This focuses on accelerating growth and reducing poverty. It has a full chapter developed to climate change, environmental management and disaster management. Under forestry, the main objectives are to expand forest resources, make forests productive, develop institutional capabilities and to encourage people's participation. This Plan also emphasizes that mass initiatives should be undertaken regarding REDD.

Bangladesh and Climate Change

Vulnerability

Bangladesh is one of the most, if not the most, vulnerable countries to the impacts of global climate change, and these impacts are becoming ever more visible (IUCN, 2011). Despite its relatively small area, Bangladesh's high population and high vulnerability to natural disasters, such as flooding and cyclones, gives it prominence in international climate change negotiations. Changes observed include increasing temperature, changes in patterns of natural disturbances such as flooding (GED, 2009), changes in the frequency and intensity of rainfall and increasing frequency of storms of hurricane intensity (Quadir and Iqbal, 2008), saline water intrusion (SRDI, 1998)and sea level rise (Khan et al, 1999).For the future, Table 1 shows a number of different scenarios for climate change impacts on Bangladesh.

Table 1: Climate Change Scenarios for Bangladesh

Model	Year	Temperature Change (^{0}C) Mean (standard deviation)			Precipitation Change (%) Mean (standard deviation)			Sea level rise (cm)
		Annual	DJF	JJA	Annual	DJF	JJA	
GCM	2030	1.0	1.1	0.8	5	-2	6	14
PRECIS RSM	2030 (max)	-0.3	0.02	1.3	4	-8.7	3.8	
	2030 (min)	1.18	0.65	1.87				
GCM	2050	1.4	1.6	1.1	6	-5	8	32
PRECIS RSM	2050 (max)	0.2	0.07	0.89	2.3	-4.7	3.0	
	2050 (min)	1.24	0.59	1.65				
Key: GCM: General Circulation Model – a three-dimensional model of the global atmosphere PRECIS RSM: 'Providing Regional Climates for Impacts Studies' Regional Scale Model JJA: June, July, August DJF: December, January, February								

Source: General Economic Division (GED) 2009

Source and sinks of greenhouse gases in Bangladesh

According to the most recent national GHG inventory, the majority of CO_2 emissions are derived from the energy sector (63%), followed by the land-use change and forestry (or LULUCF) sector with 32% (MoEF, 2002). The agricultural sector accounts for 94% of total methane (CH_4) emissions, largely due to the use of synthetic fertilizers. Bangladesh emitted 0.053billion tonnes - less than 0.2% of the world total GHG emissions - reflecting its extremely low consumption of energy (MoEF, 2008).Recent national

reports identify the forestry sector as a potential sector to support national mitigation efforts (MoEF, 2002, 2008 and 2009).

National strategiesresponding to climate change in Bangladesh

Climate change is likely to affect multiple sectors and economic activities in Bangladesh, with adaptation measures required to address and mitigate the potential adverse impacts. The Government of Bangladesh (GoB) recognizes that tackling climate change requires an integrated approach involving a number of different ministries and agencies, civil society and the private sector. The GoB has made climate change an integral part of its Poverty Reduction Strategy, which lays the foundations for continuing efforts to achieve the United Nation's Millennium Development Goals (MDGs) and to build a fair, equitable and just society in Bangladesh.

The Bangladesh Climate Change Strategy and Action Plan (BCCSAP) is a 10-year programme (2009-2018) to build the capacity and resilience of the country to meet the challengesbrought on by climate change. The needs of the poor and vulnerable, including women and children, will be mainstreamed in all activities under this Action Plan.

In order to implement the BCCSAP, a multi-donor trust, the Bangladesh Climate Change Resilience Fund (BCCRF), was established in 2010. The BCCRF is to be administered by the World Bank on behalf of the contributing development partners, and in consultation with the GoB, ensuring sound fiduciary management, transparency and accountability.

In addition, the GoB has recently established the Bangladesh Climate Change Trust Fund (BCCTF) that will focus mainly on making resources available for adaptation efforts. Bangladesh is also looking beyond its borders to find common cause with neighboring countries to manage climate change impacts through regional action plans. In this broader context, the National Adaptation Programme of Action (NAPA) was launched in 2005 and provided a response to the urgent and immediate adaptation needs and identified priority programmes.

Forests in Bangladesh

The areaof forestland in Bangladesh is 2.6Mha, which is 17.78% of the country's total area. Bangladesh Forest Department (FD) manages 1.6Mha of this forestland (FD, 2013). According to Bangladesh's most recent Forest Resource Assessment (FRA), 11% of the land area is under tree cover (FAO, 2010). However, another 20% (approximately 2.5 Mha) of the country is recorded under the FRA categories 'other wooded land' or 'other land with trees'. The latter category alone, which includes farm woodlots and other agroforestry systems, accounts for more than half of the combined area under any sort of tree cover. See Box 1 for the working definition of Forests in Bangladesh.

The history of forestry in Bangladesh is one of continuous depletion of forest resources both in terms of area and quality (MoEF, 1994). Most deforestation in government forests has occurred due to the inadequacy of the bureaucratic custodian approach to forest management (Khan, 2001).

Since the early 1980s, forestry in Bangladesh has witnessed a rapid succession of social forestry programmes in an attempt to redress public alienation and to allow for wider participation of local people in forest use and management (Mustafa, 2002). These programmes focus on the establishment of plantations on degraded forestland and on marginal lands. The Forestry Sector Master Plan(1994) identified about 4.65 Mha of such land for future rehabilitation and restoration through the current Social Forestry programme.

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Forest land, i.e. land under the control of the Forest Department, is governed according to the Forest Act of 1927, which dates back to the time when Bangladesh, along with India and Pakistan, was part of the British Empire. According to this Act, forests are divided into two main classifications according to the legality of forest operations. In short, in **Reserved Forest** areas, all operations are prohibited unless explicitly permitted. In **Protected Forest** areas, all operations are permitted unless explicitly prohibited. A third category, Acquired or Vested Forest, covers areas which are not under GoB ownership, but where the ownership is under dispute or under process of settlement and have therefore been placed under the control of Forest Department staff for the purposes of environmental protection or security.

The Forest Department recognizes five broad types of forest according to ecology and geographical location; Hill Forest, Plains forest (dominated by *Shorearobusta*, or sal), Mangrove, Coastal Plantations, and Wetland Forest.

Unclassed State Forest (USF) is forest land that is under GoB ownership, but is administered by district-level government rather than directly by the Forest Department. Table 2 breaks down the area under the control of the Forest Department by forest type and legal status.

Table 2: Forest Land under Forest Department Control: Forest Type and Legal Status

Forest types	Legal status	Location (Districts)	Area (thousand ha)
Hill Forest (Semi - evergreen forest)	Mostly Reserved Forest, smaller areas of Protected forest and Acquired/Vested forest	The three districts of the CHT (Rangamati, Khagrachari ,Bandarban) and six other districts in the east and north-east(Chittagong, Cox's Bazar, Sylhet, Moulavibazar, Hobigong and Sunamgonj)	647
Sal forest (Deciduous forest)	Mostly Reserved Forest, small areas of Protected Forest and Acquired/Vested forest	North and north-west districts (Mymensingh, Tangail, Gajipur, Dhaka, Tangail, Rangpur, Pacnchagar, Dinazpur, Thakurgaon, Naogaon, Nilphamari and Comilla)	120
Mangrove Forest (Sundarbans Reserved Forest)	Reserved Forest	South-west districts (Khulna, Satkhira, Bagerhat and Patuakhali)	610
Coastal Plantations (Artificial Mangrove Forest)	Mostly Reserved Forest, more recent plantations yet to be declared	South central and south-east districts (Noakhlai, Laxmipur, Feni, Bhola, Lakshmipur, Patuakhali, Barguna, Pirozpur, Chittagong and Cox's Bazar)	200
Wetland Forest (Swamp Forest)	Mostly Reserved Forest, more recent plantations yet to be declared	North-east districts (Sylhet and Sunamganj)	23
Unclassed State Forest (USF)	Under district administration	CHT districts: Bandarban, Rangamati and Khagrachari	17.35
Total area			**1,617.35**

Source: Management PlanningUnit, Forest Department, Bangladesh; National Tree Campaign and Fair, FD, 2013

All other land with tree cover is either under private ownership or under the control of other departments within the GoB. There are currently no reliable figures on the classification of these areas

according to forest type, legal status or management objectives. Some of these areas, such as farm woodlots, agroforestry or strip plantations, fall under the Social Forestry Rules but are not included under the definition of 'forest' (see Box 1) adopted by the National Forest Assessment (NFA). However, these areas, combined, sequester a considerable amount of carbon under the management and stewardship of local landowners and communities.

Box 1: Definition of 'Forest' in Bangladesh

A forest is an area of land spanning more than 0.5 ha with trees higher than 5m and a canopy cover of more than 10%, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use. Forest is determined both by the presence of trees and the absence of other predominant land uses. Areas under reforestation that have not yet reached but are expected to reach a canopy cover of 10% and a tree height of 5 m are included, as are areas which are temporarily unstockedas a result of human intervention or natural causes, which are expected to regenerate. It includes: areas of bamboo and palm, provided that height and canopy cover criteria are met; forest roads, firebreaks and other small open areas; forest in national parks, nature reserves and other protected areas such as those of specific scientific, historical, cultural or spiritual interest; windbreaks, shelterbelts and corridors of trees with an area of more than 0.5 ha and width of more than 20 m; plantations primarily used for forestry or protective purposes, such as rubber-wood plantations. Excludes: tree stands in agricultural production systems, for example in fruit plantations and agroforestry systems; trees in urban parks and gardens.

Source: National Forest and Tree Resources Assessment 2005-2007(NFA)

Component 1: Organize and Consult

Component 1a: National Readiness Management Arrangements

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Standard 1a the R-PP text needs to meet for this component:

National readiness management arrangements

The cross-cutting nature of the design and workings of the national readiness management arrangements on REDD, in terms of including relevant stakeholders and key government agencies in addition to the forestry department, commitment of other sectors in planning and implementation of REDD+ readiness. Capacity building activities are included in the work plan for each component where significant external technical expertise has been used in the R-PP development process.

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1.Objective of Component 1a

The success of Bangladesh's efforts to develop and implement a National REDD+ Strategy will depend greatly on the effectiveness of the management structures. The Objective of this Component is therefore to set up the necessary institutional structures and supporting arrangements to manage and co-ordinate the REDD+ Readiness process in Bangladesh. These institutional structures should:

- Ensure that the national REDD+ implementation framework is supported by technical capacity, effective communication capacity (including awareness raising and consultation), capacity building and human resource development;
- Mainstream REDD+ into broad and cross-cutting development plans and programmes, including national development goals, green development goals and climate change goals;
- Link REDD+ into pertinent sectoral planning and programmes; and,
- Ensure that REDD+ implementation is underpinned by the necessary decision-making authority, expertise, and wide-ranging stakeholder participation at varied societal levels.

This section provides an analysis of the existing institutional framework relevant to REDD+. It then provides an overview of the existing institutional arrangements established specifically for REDD+. It then proposes a management structure for REDD+ in Bangladesh. It then sets out the steps and activities required to establish the management structure - in the form of an indicative workplan for Component 1a.

The capacity development required to operationalize the management arrangements is to be addressed through Component 2c.

2. Institutional Framework in Bangladesh Pertinent to REDD+

 REDD+ will fit within the existing framework of government institutions as follows (see Figure 4):

The National Steering Committee for Climate Change (NSCCC)

The NSCCC is responsible for preparing, coordinating and facilitating all national actions related to climate change (MoEF, 2009). The NSCCC is comprised of the Secretaries of all line Ministries, excluding those with no direct relation to climate change issues, and also includes representatives of civil society and the private sector.It was formed by the Government of Bangladesh (GoB) immediately after the Bali

Conference (CoP 13). It is headed by a lead Adviser (currently the Minister of Environment and Forests)and is tasked with developing and overseeing implementation of the national BCCSAP. Five technical working groups have been constituted under the NSCCC, but they are not yet fully operational.
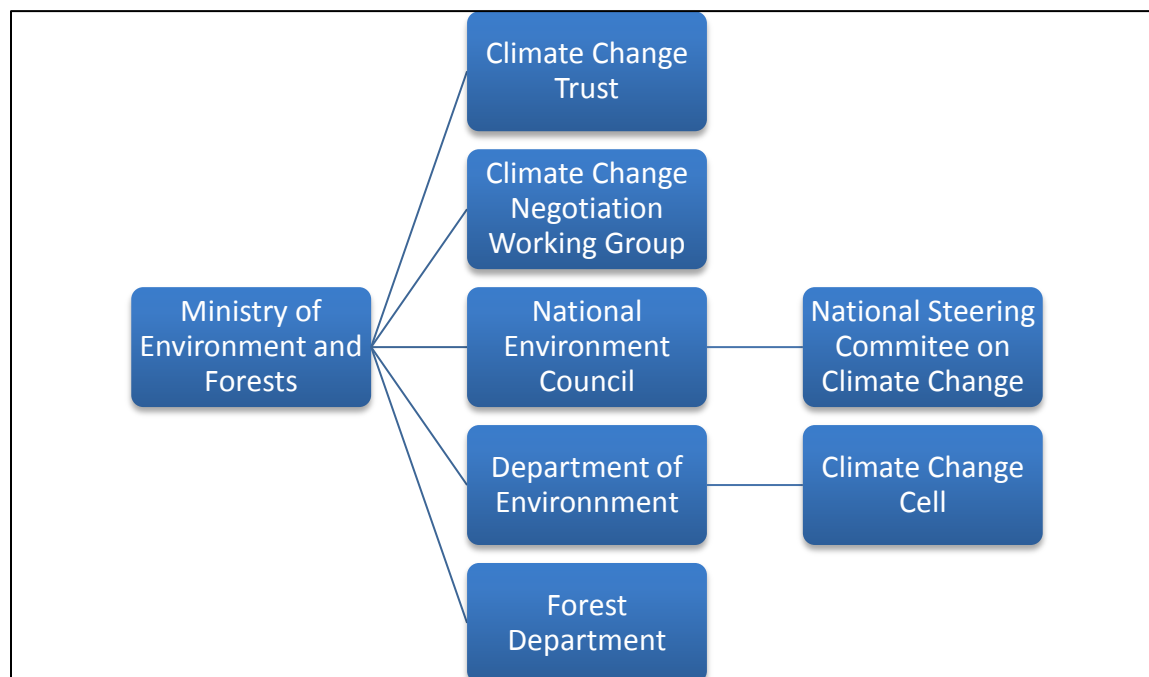
Figure 4: National Climate Change Coordination Framework

National Environment Council (NEC)

The NSCCC is directly accountable to the NEC, which is the main advisory body to the Minister of Environment and Forests and is chaired by his Chief Adviser. The NEC provides strategic guidance and oversight to the NSCCC but is not directly involved in the strategic decisions of the Steering Committee.

Climate Change Negotiation Working Group (CCNWG)

The CCNWG develops and coordinates the GoB position on climate change negotiations. It discusses all relevant issues related to the five NSCCC working groups, benefitting from their advice. The CCNWG recommends positions on each issue to the NSCCC for all major negotiation events. It is directly accountable to the MoEF for these positions.

Climate Change Trust (CCT, formerly Climate Change Unit)

The Government established the CCTF from its revenue budget to support implementation of BCCSAP. The CCTF has the legal mandate by the climate Change Trust Act 2010. In this process, first the Climate Change Unit (CCU) was established in 2010 as project based entity under Bangladesh Climate Change Trust Fund (BCCTF, see above). The CCU initially served as Secretariat for the BCCTF. The initial CCU setup and associated activities were supported by the project "*Strengthening Institutional Capacity of*

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the Climate Change Unit" under BCCTF. Next, the Climate Change Trust (CCT) was constituted on 11 September 2012. The major activities of the CCT are therefore:

- Management of the BCCTF;
- Implementation of projects under the BCCTF, following the advice of the BCCTF Trustee Board;
- Monitoring and Evaluation of approved projects under the BCCTF; and,
- Facilitation of the activities of the Technical Committee and sub-committees.

Climate Change Cell (CCC)

The CCC was established in the Department of Environment (DoE) in 2004 under the Comprehensive Disaster Management Programme (CDMP) with the objective of enabling the management of long-term climate risks and uncertainties as an integral part of national development planning. The Cell provides the central focus for the Government's climate change adaptation work. It facilitates capacity building of stakeholders; builds partnership with government agencies, NGOs, academics and private sector; ensures effective participation of local communities and promotes adaptation in development planning and processes. The Cell completed its first phase of operation in 2009. The second phase started in 2010 under CDMP II through the "*Support to the Department of Environment's Climate Change Cell, Bangladesh*" project.

The Ministry of Environment and Forests (MoEF)

The MoEF is the host of all the climate change-related institutions listed above (Figure 4). It is also the host of the national Climate Change Focal Point (housed within the CCT). The MoEF has also designated one expert to cover REDD+ issues during the negotiation process, to report to the CCNWG. The MoEF is responsible, through the CCT and NSCCC, for ensuring that Bangladesh meets its international commitments under the UNFCCC, including the submission of national communications and participation in CoPs and other climate change negotiations.

The MoEF is the nodal agency for the planning, promotion, co-ordination and implementation of environmental and forestry programmes. It oversees all environmental matters in the country and is a permanent member of the Executive Committee of the NEC.

The principal activities undertaken by the Ministry consist of conservation and surveys of flora, fauna, forests and wildlife, prevention and control of pollution, afforestation and regeneration of degraded areas and protection of vulnerable areas against environmental risks (see Box 2 for more details). The Ministry is responsible for developing legislation to facilitate these tasks. The organizational structure of the Ministry includes a number of Divisions, Directorates, Boards, Subordinate Offices, Autonomous Institutions, and Public Sector Undertakings.

> o Environmental and ecosystem management.
>
> o Matters relating to environment pollution control.
>
> o Conservation of forests and development of forest resources (government and private), forest inventory, grading and quality control of forest products.

o   Afforestation and forest regeneration

o   Sustainable extraction of forest products.

o   Plantation of exotic cinchona and rubber.

o   Botanical gardens and botanical surveys.

o   Tree plantation.

o   Preparation and coordination of forest management plans.

o   Research and training in forestry.

o   Mechanized forestry operations.

o   Protection of wild birds and animals and establishment of sanctuaries.

o   Matters relating to marketing of forest products.

o   Liaison with international organizations and matters relating to treaties and agreements with other countries and world bodies relating to subjects allotted to this Ministry.

Box 2: Major Functions of the Ministry of Environment and Forest (MoEF)

MoEF is the focal ministry for all work on climate change, including international negotiations. It represents the GoB on the international environmental conventions to which it is a party, including UNFCCC, the Convention on Biodiversity (CBD), the UN Convention on Combatting Desertification, and the RAMSAR convention on wetlands.

There are five departments working under MoEF. These are: the Department of Environment (DoE); the Forest Department; the Bangladesh National Herbarium (BNH); the BangladeshForest Research Institute (BFRI) and the Bangladesh Forest Industries Development Corporation(BFIDC)(see Figure 5).
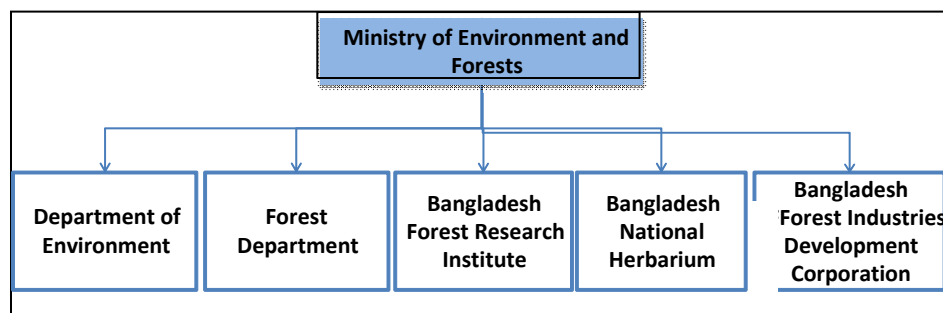
Figure 5: Departments under the Ministry of Environment and Forest

Forest Department

The Forest Department (FD) is the focal government organization under the MoEF responsible for the conservation, management, protection and development of forests, biodiversity and wildlife which fall

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under the ownership of the GoB. Apart from forests owned by GoB and managed by the FD, Bangladesh also contains: Unclassified State Forest (USF), which is managed by Deputy Commissioners (DC) and their administrations; and private forests, including tea gardens and home gardens, which are managed by individual landowners. See Box 1 for the definition of 'forest' in the context of Bangladesh.

As an organization, the FD has multi-dimensional functions of forest resource conservation and management; protection and management of wildlife, biodiversity and watersheds; and optimising the contribution of forests to the economic and ecological development of the country. The Forestry Sector Master Plan (FSMP) of 1995 and the Forest Policy 1994 (see Annex 2a) are the principal guiding documents for the current strategy of the FD. The legal framework for all FD activities is still the 1927 Forest Act and its recent amendments. The FD's current main objective, according to the FSMP, is to optimize the contribution of forest resources for environmental stability and socio-economic development through people-oriented forestry programs.

The FD is divided into four independent wings; Planning Wing, Forest Management Wing, Social Forestry Wing, and Education and Training Wing.

The Planning Wing contains four units; Monitoring and Evaluation Unit, Development Planning Unit, Management Planning Unit, and Resource Information Management System Unit (RIMS). RIMS is responsible for satellite based forest assessment, monitoring and data archiving. This unit supports sustainable forest management practices by compiling information on land use change within designated forest lands, facilitating a process of data sharing and exchange and supporting decision making. Since 1995, RIMS has used Geographical Information Systems (GIS) for data management, mapping and analyzing forest ecosystem dynamics.

Four other units (Finance, Budget & General Direction Unit, Establishment Unit, Public Relations Unit and Legal Unit) work under the Conservator of Forests (CF) of Administration & Finance at the FD Head office.

The Social Forestry Wing contains three Circles which in turn are divided into a total of thirteen Social Forest Divisions working at the sub national level. Under the Forest Management Wing there are five Circles and a total of 24 territorial forest divisions. There are also seven divisions under the Wildlife management and Nature Conservation circle, reporting directly through theConservator of Forests (CF) to the Chief Conservator of Forests (CCF). There are three Management Plan Divisions at three different locations in the country to provide survey and monitoring support to policymakers.

Each Wing is headed by a Deputy Chief Conservator of Forests (DCCF). Units are headed by Assistant Chief Conservators of Forests (ACCF) or by a Deputy Conservator of Forests (DCF). Field level forest division offices are headed by Divisional Forest Officers (DFOs) with the same rank as ACCFs. Units are responsible for the collection of related information from the DFOs, through the FD Head Office, to the CCF. Territorial Forest division offices are responsible for establishing nurseries, raising seedlings, establishing plantations, maintaining plantations, silvicultural operations, forest administration, and implementation of the development programmes, conservation and protection of forest. Forest division offices communicate and exchange information to CCF through the respective Circle offices, headed by a CF.Social forest Circles and division offices are responsible for extension of social forestry activities (nursery raising, seedling distribution etc.) and their management.

Under the Training and Education Wing, there is one Forest Academy, three Forestry, Science and Technology Institutes and one Forest Development and Training Centre (FDTC).

Department of Environment

The Department of Environment (DoE) is the agency of MoEF which is directly responsible for providing policy support to the Ministry on environment-related issues including climate change. The DoE's mission is to help secure a clean and healthy environment for the benefit of present and future generations through:

(i)   fair and consistent application of environmental rules and regulations;
(ii)   guiding, training, and promoting awareness of environmental issues; and
(iii)   sustainable action on critical environmental problems that demonstrate practical solutions, and that galvanize public support and involvement.

As a technical arm of the MoEF, the DoE is responsible for preparing the National Communications (NC) to the UNFCCC, including the GHG inventory (GHG-I). The first NC was completed in 2002 and the second was completed in 2012. The DoE also hosts the Climate Change Cell (see above), responsible for coordinating and implementing practical measures to protect vulnerable areas and communities from the impacts of climate change.

Other Departments in the Ministry of Enviroment and Forests

Bangladesh Forest Industries Development CorporationTheBFIDC was instituted in 1961, as a state corporation, to develop rubber plantations in the districts of Chittagong, Sylhet, Mymensingh and Tangail. BFIDC currently manages over 13,000 ha of rubber plantation on 15 estates in these districts.

Bangladesh Forest Research Institute :TheBFRI was established in 1955 under the MoEF and mandated to provide research support to the forestry sector, including to FD, BFIDC, NGOs and private enterprises. BFRI's research activities aim to develop appropriate technologies to maintain sustainable productivity of forest land and of forest industries without resource depletion. BFRI has developed facilities for research, education, extension and training. These facilities are open to all individuals and institutions. The expected impacts of the research programme, in line with the FSMP, include job creation, environmental conservation, women's participation in the forestry sector and the achievement of national goals in forest productivity. Current research programmes include:

- providing research backup to forestry and agro-forestry in waste and marginal land for optimum and sustainable utilization;
- rational utilization of forest products through the application of technological inputs;
- Helping in the conservation of biodiversity and environmental balance in national and rural forests;
- Increasing the liaison with regional and global organizations and networks;
- BFRI was involved in carbon estimation work of the Integrated Protected Area Co-management (IPAC) project in the Sundarbans, based on which IPAC has developed the CRISP project (see below). BFRI developed growth volume and yield equations for different tree species that might be useful in the carbon estimation work in other potential REDD+ project sites.

<u>Bangladesh National Herbarium</u> BNH is engaged in plant survey, collection, identification and conservation. It collects samples and documents plant biological diversity of the country. The BNH serves as a repository of technical information on plant genetic resources and advises the Government on technical botanical issues. It also provides direction on the implementation of policies related to plant biodiversity and conservation.

<u>Other Line Ministries</u>

As an element of Bangladesh's BCCSAP, a future REDD+ programme will fall within the pre-existing institutional framework described above. Moreover, as a mechanism focused clearly on the forest sector, the burden of implementation of such a programme will fall on the Forest Department within the MoEF.

However, many line Ministries also have important responsibilities that are relevant for the management of a REDD+ programme and the implementation of the REDD+ Strategy. These are listed in Table 3, along with an indication of their responsibilities related to REDD+.

Table 3: Ministerial Responsibilities for REDD+ Readiness in Bangladesh

Ministry	Responsibilities with relevance to REDD+
Agriculture (MoA)	Responsibility for administration over a significant, but unquantified, proportion of the >50% of land under tree cover which does **not** fall under the jurisdiction of the FD (see Introduction). Goals of improved agricultural yields, development of export markets for cash crops, and promotion of agricultural sector through subsidies, all potentially conflict with the goals of a national REDD+ Programme. **Bangladesh Agricultural Research Council (BARC)** coordinates research and development activities of MoA and other ministries (including MoEF) to improve agricultural productivity. Research into intensification of certain crops and development of agroforestry models may contribute to REDD+ strategy options. The **Department of Agricultural Extension (DAE)** operates a national network of grassroots-level trainers which could be mobilized in the context of REDD+. The **Soil Resource Development Institute (SRDI)** is responsible for maintaining records of soil composition and fertility.
Defence (MoD)	Administration of SPARRSO and the national Survey of Bangladesh. <u>Space Research and Remote Sensing Organisation (SPARRSO)</u> - SPARRSO was created in 1980 and was made an autonomous agency of the Ministry of Defence in 1991. It acts as the centre of excellence and national focal point for Remote Sensing and GIS in Bangladesh and advises the Government in all matters relating to space technology applications and policy. SPARRSO disseminates research results, satellite data and information to the relevant public, autonomous and private agencies for their development and policymaking activities and also performs advisory expert services on request.

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	SPARRSO has worked jointly with FD to map national land use and coastal afforestation. The Organization is doing research on above-ground forest biomass and carbon stock estimation using optical, radar and terrestrial sample based inventory data.
Education (MoE)	The Development Wing is responsible for the integration of climate and forest issues into national curriculum, and the University Wing for monitoring quality of degree courses related to climate change and forestry.
Finance (MoF)	**Economic Relations Division (ERD)** is responsible for mobilizing external resources for the country's socio-economic development, also for coordination of donors to ensure, for example, that investments in REDD+ Programme are complementary. **Bank and Financial Institutions Division (BFID)** will be important for exploring potential strategies for resource distribution (benefit sharing) of REDD+ revenues and alignment, as required, of regulations governing microfinance and microcredit.
Fisheries and Livestock (MoFL)	**Department of Fisheries (DoF)** is responsible for preserving fishery resources and securing socio-economic well-being of the communities' dependent on these fisheries. These responsibilities will be important in designing social safeguards for REDD+ activities in the Sundarbans and other coastal zones.
Hill Tracts Affairs (MoCHTA)	MoCHTA is responsible for overall coordination and administration of development activities within the CHT. Supported by an Advisory Committee, which will have a significant impact on decisions regarding REDD-related activities in the region. Direct administrative responsibilities are transferred to the CHT Hill Council (see below), but the Ministry retains overall responsibility for implementation of the 1997 Peace Accord and liaison between national security forces and the Hill Council.
Home Affairs (MoHA)	**Border Guard Bangladesh (BGB), Bangladesh Police, Bangladesh Coastguard, Rapid Action Battalion** may be important stakeholders in REDD+ activities.
Housing and Public Works (MoHPW)	**Urban Development Directorate (UDD)** is responsible for land use plans regarding expansion of urban areas and provision of infrastructure and services for these areas. These plans may potentially conflict with land-based REDD+ strategies.
Land (MoL)	MoL is responsible for all land administration matters throughout Bangladesh, including CHT, with offices at all levels of local government, therefore a central role in planning and implementation of all land-based (and some policy-based) REDD+ strategies. **Directorate of Land Records and Survey (DLRS)** is responsible for cadastral survey, mapping and property records and is thus important for ensuring clarity of tenure and resource use rights relating to land under REDD+ activities.
Law, Justice and Parliamentary Affairs (MoLJPA)	MoLJPA is implementing the project 'Promoting Access to Justice and Human Rights in Bangladesh', supported by UNDP. This includes support to the **National Human Rights Commission (NHRC)**, Alternative Dispute Resolution (ADR) promotion of access to pro bono legal services and human rights training for law officers, all of which are

	essential for the development of an effective grievance mechanism which could be applied to REDD+.
Local Government, Rural Development and Cooperatives (MoLGRD-C)	The **Bangladesh Rural Development Board (BRDB)** operates a network of grassroots extension services, particularly in agricultural practice and tree plantation, through village-level cooperative groups which are organized into **Upazila Central Cooperative Associations (UCCAs)**. These cooperatives and the extension workers, may be co-opted for REDD+ strategies at the local level.
Planning (MoP)	**The Planning Commission** oversees the **Annual Development Programme (ADP)**, including all activities under projects and programmes (e.g. national REDD+ Programme) registered with the GoB. The Commission also develops **Sectoral Plans** for Bangladesh, including forestry sector and will be responsible for coordinating policy support requirements for REDD+ from other sectors. The **General Economics Division (GED)** of the Planning Commission ensures fiscal probity of the ADP. The**Implementation, Monitoring and Evaluation Division (IMED)**coordinates all projects nationwide. The**Bangladesh Bureau of Statistics (BBS)** compiles all empirical data on natural resources and land use activities and can provide advice on survey and data collection methods (www.bbs.gov.bd). The**Support to Information Communication Technology (SICT)** Task Force under the Planning Commission provides advice and inter-sectoral coordination for development of websites and information platforms for public benefit (e.g. REDD+ database) (www.sict.gov.bd).
Water Resources (MoWR)	The **Bangladesh Water Development Board (BWDB)** is responsible for climate change adaptation activities related to Flood Control and Drainage (FCD), which may overlap with programmes of the FD, e.g. Social Forestry Programme, in the context of erosion control. The **Water Resources Planning Organisation (WARPO)**is responsible for Coastal Zone Policy and Integrated Coastal Resources Database. It will be important for REDD+ strategies in Sundarbans and other coastal areas. The Minister of the MoWR chairs the autonomous Institute of Water Modelling (IWM), which develops tools for flood forecasting and control and other technical support services. **Centre for Environmental and Geographic Information System** is responsible for supporting the management of natural resources for sustainable socio-economic development using integrated environmental analysis, geographic information systems, remote sensing and information technology.
Industry; Communication (Roads and Highways Department); Railways; Civil Aviation and Tourism, and; Commerce.	All are important ministries in REDD+.

Administrative Frameworks for the Chittagong Hill Tracts

The Government administrative system in the Chittagong Hill Tracts is different from other parts of Bangladesh. At present there are three different types of administrative systems in the CHT: (i) the General Administrative System; (ii) the Decentralised Local Government System and (iii) the Traditional Administrative System.

The general administrative system is part of the central government and in CHT it includes the Office of the Deputy Commissioner, the UpazilaParishad, Union Parishad and Pourasova. The Pourasova is the local government institution for municipalities. The Union Parishad is the lowest tier under the general administrative system.

In CHT, a decentralised Local Government system is also being followed, with responsibilities for the management of public services delegated to the Regional Council and three Hill District Councils. MoCHTA is responsible for overseeing all activities in the CHT and approves the staffing for the Regional Council and the three Hill District Councils (see below). The Hill District Councils recruit 3rdand 4thclass employees of the transferred departments, officers of the transferred departments are appointed by the concerned Ministry. All departmental staff report to departmental heads. The departmental heads are required to report to the Hill District Council Chairman.

Alongside the central and decentralised local government systems, the CHT practices a traditional system of administration based on the customs and practices of the indigenous peoples. Although this traditional system has been in place for hundreds of years, the administrative areas in existence today, known as 'Circles' were not formally constituted until the CHT Regulation of 1900 (Act No. I of 1900).There are three administrative Circles in the CHT (Mong, Chakma and Bohmong) each with their own Chief or Raja. The administrative areas of the Mong, Chakma and Bohmong Chiefs broadly correspond to the decentralised Local Government administrative areas of Khagrachari, Rangamati and Bandarban Hill Districts. The Circle Chiefs are advisers to their relevant HDC and are also engaged in other formal governance networks.

Headmen are appointed by the Deputy Commissioners on recommendation from the Circle Chiefs, and Karbaris are appointed by the Circle Chiefs. The Headman is the traditional leader of a Mouza – an area which constitutes several Paras (villages) and the Karbari is the leader of a Para. Headmen and Karbari are considered 'learned persons' within the community with responsibilities for maintaining social law and order, revenue collection and land registration of their communities.

CHT Hill District Councils:

The CHT region remained outside the mainstream of development assistance to Bangladesh for more than 25 years due to the low level conflict in the area. In the 1990s, after decades of turmoil in the CHT region, the people of the CHT entered a new era of relative calm with the signing of the CHT Accord between the Government of Bangladesh and the PCJSS in 1997.

This created space and opened opportunities for development assistance. As a result of the 1997 Peace Accord, the three districts of the CHT region were each accorded a degree of autonomy through an elected Hill District Council (HDC). There is also a CHT Regional Council, (CHTRC) based in Rangamati, as well as the MoCHTA at national level.

As per the three Hill District Council Acts of 1989 (as amended after the 1997 CHT Accord), a total of 33 subjects are to be transferred from the Ministries to each of the three HDCs. Of these, over half have already been transferred, including health and education. The HDCs, with their own funds or funds received from the GoB, may formulate and implement development plans related to these subjects. The concerned Ministries, Divisions or Departments at national level are expected to channel their work in the CHT through the HDCs.

The responsibilities of the FD itself have not yet been devolved to the Hill Council. Therefore all Reserved Forest in the CHT is still administered directly by the FD. This sometimes results in situations of ambiguous accountability, where the duties of the FD according to central GoB policy conflicts with the decisions of the HDCs.

Moreover, as indicated in the Introduction, many forests in the Hill districts, including the CHT, are Unclassed State Forests and so fall under the administration of the local government, in this case the HDC. However, there is a lack of expertise within the HDC regarding forest management and administration. UNDP currently supports the HDC through the CHT Development Facility (CHTDF) project (see below) - in order to build the Council's capacity for good governance in sectors under its control (see below). With the assistance of the CHTDF and other development partners, the Hill Council will be an important stakeholder in the development and implementation of REDD+ strategies in the CHT.

3. Pre-existing Institutional Framework for REDD+ Readiness

The following formal and informal institutional mechanisms have so far been instrumental in the REDD+ process so far in Bangladesh: REDD+ Steering Committee, REDD+ Technical Committee, Technical Advisory Group, REDD+ Cell and Technical Working Groups. These are described in the following sections. (See Annex 1a for details of membership and ToR).

REDD+ Steering Committee

Background: Following initial stakeholder consultations in late 2010, MoEF created the inter-ministerial National REDD+ Steering Committee (RSC) in July 2011, which was tasked with overall coordination of REDD+ activities in Bangladesh and, specifically, with development of the Bangladesh REDD+ Roadmap. The RSC's initial mandate was for an indefinite period.

Composition: The RSC is primarily composed of technical officials. It is chaired by the Secretary of the MoEF and includes representatives from several other offices within the MoEF and other government departments. Due to the importance of cross-sectoral collaboration for REDD+ readiness, the RSC includes representation of a number of different government agencies, including the Ministries and Land and Agriculture, SPARRSO and the Hill Council of the CHT. Civil society representatives on the RSC include the Bangladesh Institute for Development Studies (BIDS) and the Centre for Participatory Research and Development. The UN REDD National Focal Points performs the function of member-secretary to the RSC. The RSC meets on an ad hoc basis and provides management and coordinating advice to the REDD+ Cell.

Key Terms of Reference (TOR)

- Provide overall management guidance on programme activities and enhance stakeholder and institutional consensus building;
- Provide guidance for the formulation of National REDD+ strategy, from Roadmap to Readiness and Implementation;
- Approve strategic decisions and activities relating to the development and implementation of a national REDD+ Programme;
- Enhance inter-agency and inter-sectoral coordination, effective partnership between implementing agencies and an overall collaborative approach to REDD+ programme activities.

REDD+ Technical Committee[2]

Background: The REDD+ Technical Committee(RTC) was formed alongside the RSC in order to provide it with technical advice. Like the RSC, it is chaired by the Secretary of the MoEF. However, unlike the RSC, the RTC does not include any civil society members apart from academics of Chittagong and Khulna Universities. It does include representatives of development partners in UNDP and USAID. The full list of members is in Annex 2. The Chief Conservator of Forests in the FD serves as the secretary of the RTC. The RTC is moreover empowered to co-opt additional members whenever necessary in order to maximise its technical capacity.

The RTC ToRare:

- Lead the formulation of a national REDD+ Strategy and
- Critically examine all programme and project proposals on REDD+.

Technical Advisory Group

The Technical Advisory Group was established with UNDP and FAO support to facilitate the Roadmap process and provide advice to the REDD+ SC. It has also provided direct advice and support to the TWGs.

REDD+ Cell

Background:MoEF authorized the creation of the REDD+ Cell in August 2011. The REDD+ Cell was conceived as the key implementation agency for the national REDD+ programme. It will also serve this function for the duration of the REDD+ Readiness Roadmap process. Because the REDD+ programme is government-owned and led, the REDD+ Cell is envisaged as a unit within the existing government institutional framework. The REDD+ Cell is located within the FD, which has been identified by the MoEF as the most relevant government department for REDD+. The REDD+ Cell will be supervised by the national REDD+ focal point, who holds the rank of Deputy Chief Conservator of Forests (DCCF). It will be responsible for coordination of all REDD+ activities in the country. The REDD focal point will therefore be directly accountable to the CCF. However, the REDD+ Cell will receive its strategic direction from the RSC. It will assign technical activities, as required, to Technical Working Groups.

Technical Working Groups

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[2] Note, it is proposed to replace this Committee with other bodies in the RPP phase, see subsequent chapters.

During the Roadmap development process, three ad hoc technical working groups (TWGs) were formed to provide input. These were formed during the consultation workshops on a volunteer basis, with the following areas of competence.

1. **Forest Monitoring and MRV TWG**: covering the specific technical approaches that determine the forest monitoring and Measurement, Reporting and Verification (MRV) system;
2. **Strategy TWG**: covering the analysis of drivers and causes of deforestation and forest degradation, and the policies and measures required to address them;
3. **Safeguards TWG**: covering consultation and communication approaches and meeting social and environmental standards.

4. Gaps in the Existing Management Structure

The REDD+ Roadmap must address the following challenges and shortcomings in the existing institutional architecture in order to effectively proceed with a REDD+ Readiness process:

Cross-ministerial representation: The breadth of ministerial involvement in the current REDD+ management institutions does not adequately reflect the various roles and responsibilities that the RSC should have in a REDD+ programme. The participation of other members in the RSC (such as MoA, MoD, MoE, MoF, MoFL, MoCHTA, MoHA, MoHPW, MoL, MoLJPA, MoLGRD, MoP, MoWR, Industry, Communication, Railways, Civil Aviation and Tourism, and Commerce.Should be considered, as their role and involvement will become necessary during the course of project implementation.

Inter-departmental agreement: REDD+ readiness requires exchange of ideas and expertise among the departments and universities. Coordination could be ensured through Memoranda of Understanding (MoUs) between different departments and between departments and non-government stakeholders.

Learning from potential partners: The experiences and lessons of pilot projects with relevance to REDD+, currently underway in the country, are not currently mainstreamed into the development of national-level approaches. The ToR of the RSC and other management bodies could be revised to take account of the recent activity.

Multi-stakeholder representation: The management structure includes participation of several individual experts and academic institutions but broader representation of civil society, Indigenous Peoples (IPs) and other non-government stakeholders is limited.

5. Draft Proposal for Management of Readiness

The proposed management structure for REDD+ development and implementation is provided in Figure 6. The structure is linked to the broader Climate Change Co-ordination framework through the MoEF (as indicated in Figure 5). The structure builds on the existing institutions (RSC, Technical Advisory Group, REDD+ Cell and Technical Working Groups) – with appropriate modifications.

In addition, a REDD+ Stakeholder Forum will be established, and the functions of the REDD+ Technical Committee will be taken on by other institutions. The proposals for these new bodies, and for any adjustments to existing bodies, are described below.

Figure 6: Proposed Institutional Structure for REDD+ Development and Implementation
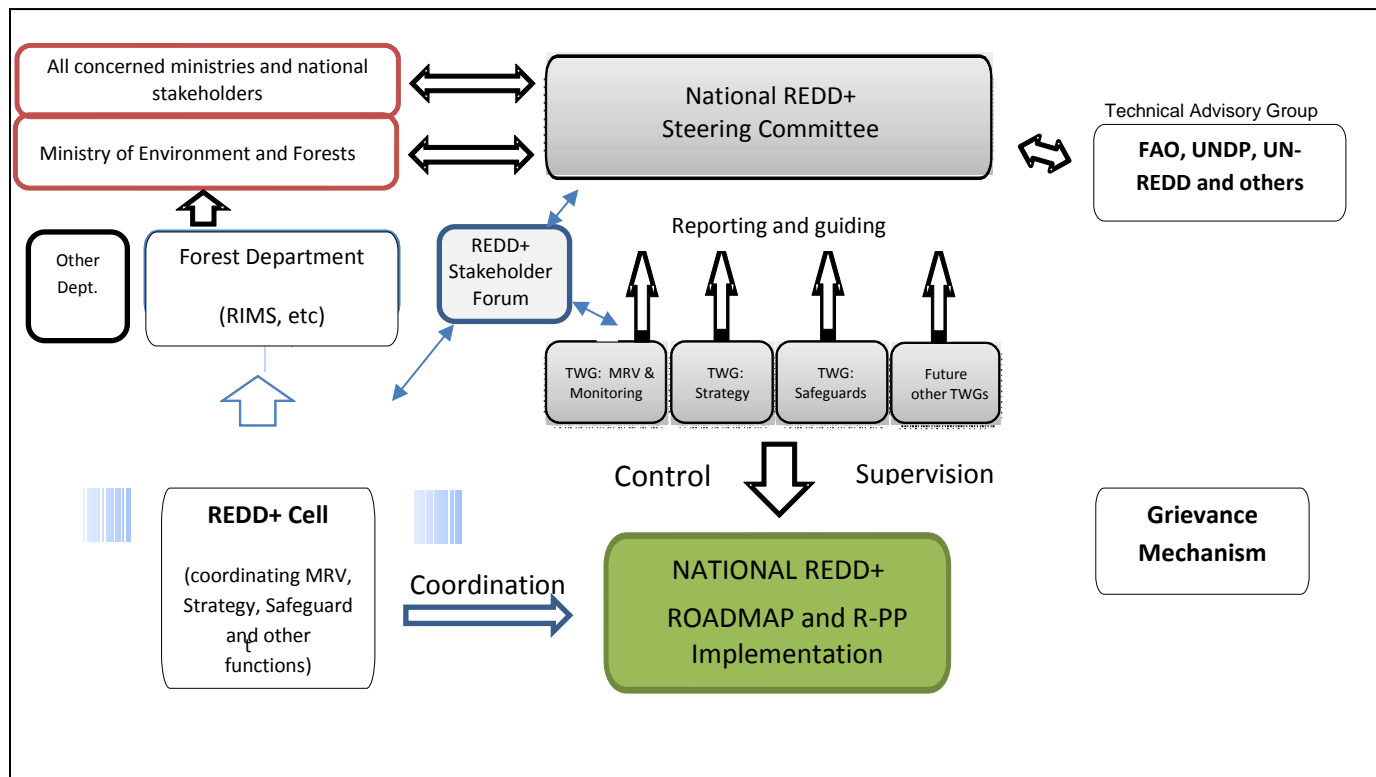
REDD+ Stakeholders' Forum (new)

A REDD Stakeholders' Forum (RSF) will serve as the principal outreach and communication platform for the REDD+ programme.

Current Social Forestry Rules allow for the creation of a Civil Society Forum to meet twice a year to discuss issues of relevance to Social Forestry design and implementation. The CCF calls these meetings and determines the representatives involved. The RSF will build on the lessons of this forum and seek to incorporate it.

The RSF will be an essential and intimate part of the management structure of the programme. In keeping with the principles of full and effective stakeholder participation, the members of the RSF will not be appointed by a government body but will be the result of an open invitation and self-selection process, ensuring that all major stakeholder groups are represented, and that these individuals can accurately and faithfully represent the views and interests of their respective constituents. The forum will include representatives from the private sector, civil society, Indigenous Peoples (IPs) media, women focussed groups, government organizations, community-based organizations, local and international NGOs, donors, academia, research organizations, and all stakeholders interested in the Climate Change and the REDD+ process. This will include diverse stakeholders, including those involved

in forestry governance, policy, forestry dependent communities, traders, etc. The RSF will be self-governed with the logical support from the REDD+ Cell.

The RSF will meet at national level, either on an ad hoc basis or at fixed intervals (to be determined). Membership of the RSF, and participation during meetings, must be open to all non-government bodies and interested individuals. The determination of the structure, membership and terms of reference for the RSF will be an important activity under the Readiness phase.

The RSF will not be part of the decision-making hierarchy of the REDD+ management structure but will instead act as an advisory body in all major decision-making processes. It will therefore have a two-way relationship with all key institutions in the management structure: the RSC, the REDD+ Cell and the TWGs (see Figure 6). A staff member of the REDD+ Cell will serve as Secretary of the RSF, facilitating logistical arrangements of meetings and recording proceedings. Any issues regarding administration and management of the RSF will initially form part of the Terms of Reference of the Safeguards TWG.

The RSF will enhance multi-stakeholder ownership of the REDD+ process and act as the main guarantor of compliance with social safeguards. Among its key roles will be the following:

- Nominate, based on a self-selection process, representatives of NGOs and other non-government stakeholders, including IPs, from the Forum to participate in REDD+ management structure institutions (RSC, TWGs);
- Act as the first point of reference for all REDD+ consultation processes and validate consultation methodologies;
- Commission, develop and approve REDD+ communication materials;
- Provide continuous feedback to the REDD+ management structure;
- Incorporate gender into information sharing and dialogue;
- Monitor compliance with Social and Environmental Safeguards;
- Act as an entry point for receiving complaints in the REDD+ grievance mechanism;
- Additional roles as determined by the RSF members themselves and mandated by the RSC.

REDD+ Steering Committee (exists, will be modified as appropriate)

Based on the breadth of interest and influence of different government departments and the need for representation of non-government stakeholders, the composition and ToR of the RSC will be reviewed (see Annex 1a for the current composition of the RSC). The RSC will oversee the work of the RSF, REDD+ Cell and WGs. In order to do so, the relationship between the REDD+ SC and the other bodies in the management structure will be clarified.

REDD+ Cell (exists, will be modified as appropriate)

The current TOR for the REDD+ Cell are described in Annex 1a, however, as the main body responsible for implementing all phases of a national REDD+ programme, it will, by default, take on additional duties, for example:

- Day-to-day management of the REDD+ Roadmap implementation and Readiness process, including coordination, programme and financial management and administrative matters;
- Liaise with relevant national institutions and development parthers;

- Support resource mobilization efforts;
- Establish and provide secretariat assistance to the RSC, RSF, Technical Working Groups and other REDD+ bodies as required;
- Oversee, facilitate and coordinate the work of the Technical Working Groups and report on their progress to the RSC;
- Ensure timely delivery of activities under the national REDD+ Roadmap and recommend adjustments or additional resource requirements to RSC;
- Contribute to the GHG inventory for the Land Use, Land Use Change and Forestry (LULUCF) sector and submit relevant information to the MoEF for inclusion in the NCs to the UNFCCC;
- Identify capacity building and coordinate training and capacity building activities within the FD and other relevant government institutions/NGOs/private sector/communities/administrative officers and policy makers that have a significant role in the REDD+ programme;
- Staff recruitment and capacity building on REDD+ issues;
- Ensure compliance with REDD+ Social and Environmental Safeguards in all activities under the REDD+ Roadmap;
- Obtain the services of consultants and advisors as deemed necessary by the Technical Working Groups and the RSC; and,
- Maintain reporting and other links with UN-REDD programme via the REDD+ focal point in the FD.

It will be necessary therefore to revise the ToRand composition of the REDD+ Cell early in the REDD+ Readiness phase, and strengthen it accordingly.

Technical Working Groups (these exist informally, they will be formalized and strengthened)

The three existing ad-hoc Technical Working Groups will be strengthened to address the following objectives:

Forest Monitoring and MRV (M & MRV)
- To develop and oversee the implementation of a M & MRV system;
- To assess the national capacities for M & MRV;
- To propose and recommend activities related to M & MRV.

Strategy:
- To recommend a process for verifying the key drivers of deforestation and forest degradation that the REDD+ programme must address;
- To recommend a process for identifying and assessing the activities on non-forest land which have an impact on forest cover and quality;
- To recommend studies and consultations for identifying candidate strategies (policies and on-the-ground measures) which may address the key drivers;
- To propose and recommend activities related to strategies, policies and measures to the REDD+ Cell, along with required investments and expenditure (consultancies, studies etc) and to provide technical oversight of these activities.

Safeguards:
- To ensure that the REDD+ consultation process is fully representative of all key stakeholder groups;
- To provide guidance for the setting up of the REDD+ Stakeholder Forum;

- To ensure that the concerns and issues raised through the Forum are addressed through the REDD+ management structure;
- Ensure the process pays due attention to gender issues and gender is mainstreamed into the R-PP process;
- To lead the development of a system of Social and Environmental (SE) Standards, composed of nationally-appropriate criteria and indicators, to monitor compliance with REDD+ Safeguards;
- To lead the development and implementation of a monitoring plan for the REDD+ SESafeguards;
- To develop a consultation process that ensures compliance with FPIC principles (see Component 1b); and,
- To propose and recommend activities, related to safeguards, to the REDD+ Cell, along with required investments and expenditure (consultancies, studies etc) and to provide technical oversight of these activities.

The TWGs will be directly accountable to the REDD+ Cell but will also provide reports and feedback to the REDD+ SC and the RSF on request. The members of the TWG will be voluntary, and will be appointed through an appropriate screening process, and the quality of their work will be supervised by the RSF and REDD+ Cell. The RSF will provide recommendations on the membership of all TWGs. The REDD+ Cell will assign members of its staff as secretaries to each TWG who will arrange logistics for meetings, maintain records and monitor follow of action points as determined by the TWGs themselves. Where possible, representatives of IPs will be involved in the groups.

The above objectives for the TWGs are provisional, to be validated by the TWGs at their initial meetings, and approved by the REDD+ SC. TWG should also prepare ToR to be validated by the REDD+ SC.

*Additional TWGs*These may be set up as and when deemed necessary. Possible scope of additional TWGs include, for example, could be to cover REDD+ Finance, RELs/RLs, communications or capacity building. The RSF and REDD+ Cell will reach agreement on the rationale and provisional ToR for any new TWG and recommend its formation to the REDD+ SC. The mandate for creation of TWGs must come from the REDD+ SC only.

REDD+ Technical Committee: (exists, may be phased out and replaced)

The advisory role of the REDD Technical Committee has been reviewed in the light of the establishment of the RSF and the Technical Working Groups. It is anticipated that the Technical Committee's roles will be covered by the mandate of these new bodies, and so the REDD+ Technical Committee will be phased out.

National Forest Inventory Unit (new)
Under FD, this Unit will take overall responsibility for preparation of the National Forestry Inventory (NFI), including REDD+ related reporting activities.

Grievance Mechanism
An effective, accessible and transparent grievance mechanism will be established (See Component 1c).

6.**Indicative Workplan for Component 1a**

Output	Indicative activities
1a1 National REDD+ Readiness Coordination Mechanism established	1. Inter-ministerial meeting on REDD+ and subsequent validation of government institution roles and responsibilities; 2. Review of current institutional mandates and TORs for the preparation of the National GHG inventory, national communication and update inventory reports for LULUCF and for other sectors; 3. Review of current institutional mandates for National REDD+ management arrangements, including REDD+ SC and REDD+ Cell; 4. Review lessons of existing REDD pilot initiativesin other countries for REDD+ management structure; 5. Draft REDD+ SC ToR, consult and finalize; 6. Redraft REDD+ CellToR, consult and finalize; 7. Hold regular meetings of REDD+ SC (at least 2 meetings each year); 8. Consult on RSF structure, membership, roles and ToR, and finalize; 9. Formally establish the of REDD+ Stakeholders Forum; 10. Regular meetings of RSF (at least 2 meetings in year 1, 4 meetings in years 2 and 3); 11. Three or four TWGs formally established and ToRs agreed; 12. Hold regular meetings of TWGs (minimum 10 meetings of each group); 13. Assessment by RSF and REDD+ Cell of technical advisory structure for REDD+, including need for additional TWGs and potential dissolution of REDD+ TC; report to REDD+ SC. As necessary, establish and support additional TWGs; 14. National REDD+ management structure formalised and mandated through MoEF policy statement; 15. Role of development partners in REDD+ structure consulted,revised and agreed.

UN-REDD Resource Documents

In the implementation of this Component, the Bangladesh REDD+ Readiness team will refer to and, where appropriate, use the following UN-REDD programme guiding tools and documents:

- Guidelines on Stakeholder Engagement for REDD+ Readiness with a Focus on the Participation of Indigenous Peoples and Other Forrest Dependent Communities.

Component 1b:Information Sharing and Early Dialogue with Key Stakeholder Groups

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Standard 1b the text needs to meet for this component:

Information Sharing andEarly Dialogue with Key Stakeholder Groups:

The R-PP presents evidence of the government having undertaken an exercise to identify key stakeholders for REDD-plus, and commenced a credible national-scale information sharing and awareness raising campaign for key relevant stakeholders. The campaign's major objective is to establish an early dialogue on the REDD-plus concept and R-PP development process that sets the stage for the later consultation process during the implementation of the R-PP work plan. This effort needs to reach out, to the extent feasible at this stage, to networks and representatives of forest-dependent indigenous peoples and other forest dwellers and forest dependent communities, both at the national and sub-national level. The R-PP contains evidence that a reasonably broad range of key stakeholders has been identified, voices of vulnerable groups are beginning to be heard, and that a reasonable amount of time and effort has been invested to raise general awareness of the basic concepts and process of REDD-plus including the SESA.

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1.Objectives of Component 1b

*This Section provides information on stakeholder consultation in general in the forest sector in Bangladesh; it describes the stakeholders in REDD+ and potential partners; and it provides an overview of the consultation taken in the REDD+ readiness process.*More details of the steps taken so far are provided in Annex 1b-1.

Given that the concept of REDD+ is still very new to Bangladesh, much remains to be done to raise awareness, share information and enhance dialogue on REDD+. These needs are addressed through Component 1c.

2. Background to Stakeholder Consultation in the Bangladeshi Forest Sector

Stakeholder consultation and participation in forest sector projects is not new to Bangladesh, but the experience has often highlighted problems with the institutional capacity to deal with multi-stakeholder processes. A study carried out by the USAID-funded Nishorgo project (See Box 3) and EastWestCenter (Jefferson et al, 2009) on collaborative management of protected areas included several case studies on participatory planning processes. For example, in the planning and implementation of a co-management strategy for Chunati Wildlife Sanctuary for the period 2004-9, Patwary (in Jefferson et al, 2009) found that the time needed for consultations was underestimated, local people considered their participation in the process as largely passive and that the Forest Department did not have the resources or the skills available to ensure effective coordination of the activities of all other government bodies with interests in the protected area.

The USAID IPAC project continued the work of the Nishorgo project by supporting Co-Management Organisations (CMOs) in Protected Areas around the country (see Box 3). Most recently, in March 2012, CMOs from around the country assembled for a Co-management congress in Dhaka. Among the key topics under discussion at the congress was community-based mitigation and adaptation to climate change. In this regard, IPAC's work in the Sundarbanswas particularly informative. The project has organized regular consultation events with the CMOs in the Sundarbans, beginning with its inception workshop in 2009 (IRG, 2009). These have allowed for many of the local communities to become well-informed about the concepts and methodologies of this pilot REDD+ project being developed in the area, and particularly with the concepts and practice of community-based monitoring of forest carbon stocks.

Nishorgo Network is a national network of the stakeholders of CMOs (Co-management Committees, Village Conservation Forums, Peoples' Forums, Community Patrol Groups and Resource Users' Groups) of the co-managed protected forests (28), wetlands (4) and ecologically critical areas (9) of Bangladesh organized and supported by the IPAC project. The CMO network is also organized at the regional level (5 regions/clusters) involving the representatives of the CMOs of the respective region. The key objective of the Nishorgo Network is to provide a platform for, and facilitate, experience sharing, capacity development and collective efforts of the CMOs for sustainable management of the PAs and improvement of livelihood and socio-economic conditions of the forest dependent communities, including policy lobbying for that purpose. In the national REDD+ program, the Nishorgo Network may act as a watchdog for social and environmental safeguard issues with its representatives participating in the REDD+ Stakeholders' Forum (RSF) at various levels and also being involved in the supervision and coordination of local implementation of REDD+ project activities.

Box 3: The Nishorgo Network

In the context of the national REDD+ Roadmap, consultations must begin before any specific activities have been conceived. Multi-stakeholder consultation for national level *policy* processes - as opposed to projects - is not the common practice in Bangladesh and there is no equivalent of the current REDD+ Readiness process in the forest sector, although topical consultations, such as the ones organized with a multi-stakeholder group to guide the "REDD+ Integrity study"[3], have occurred. REDD+ thus represents a major departure from regular top-down strategy development and will require a considerable investment to ensure that consultation is full, effective, and meets with the principles of FPIC. The workings of the CMOs, including the experience of the national-level CMO congress, will serve as an important source of lessons and experience for a full and effective stakeholder consultation process during the REDD+ Readiness phase.

3. Stakeholder Mapping and Potential Roles of Stakeholders in REDD+

A comprehensive understanding of the categories of stakeholders involved in, and affected by, the forest sector is essential for the effective implementation of a REDD+ programme. In particular, such an understanding underpins:

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[3] Conducted with UN-REDD Targeted Support (see section on component 2.d). A draft is available at:
http://www.unredd.net/index.php?option=com_docman&task=doc_download&gid=11241&Itemid=53

- **Consultation:** by allowing for verification that all positions are transparently and accurately represented in the decision-making process;
- **Communication:** by enabling the appropriate targeting of materials and information networks; and,
- **Capacity Building:** by ensuring that all stakeholders are equipped with the skills and knowledge that they need to fulfill their roles in the REDD+ programme.

The Safeguards TWG undertook a stakeholder mapping exercise during the Roadmap development process. This process identified the following provisional categories of stakeholders[4]:

- Government institutions and agencies;
- Non-Governmental Organisations;
- Civil society and Indigenous Groups;
- Private Sector;
- Knowledge Institutions; and,
- Development Partners (Donor agencies and potential investors).

This initial assessment is summarized in Annex 1b-2. The findings will be subject to a national-level consultation process during the first months of REDD+ Roadmap implementation in order to ensure that the conclusions are complete and represent a broad consensus of opinion.This process will include consultations with key personnel in the Forest Department and correlation with the outcomes of previous stakeholder mapping exercises in the Bangladesh forest sector. Each stakeholder will then be assessed according to the following variables[5]:

- **Influence**, or potential influence within the REDD+ process: How much power does the stakeholder wield over the success or otherwise of the REDD+ programme?
- **Interest**, or degree of engagement: Are forest issues central to the stakeholder's livelihood or institutional goals or are they peripheral?
- **Scale of action**: Do the stakeholder's actions or decisions have impacts at the international, national, sub-national or local scale?
- **Motivation**, or degree of support: Is the stakeholder inclined to support or oppose the goals and objectives of a REDD+ programme in Bangladesh?
- **Potential roles**: What specific roles or responsibilities would the stakeholder perform within a future national REDD+ programme?

The accuracy and comprehensiveness of the stakeholder mapping must be ensured so that the consultation strategy throughout the Readiness phase, and beyond, is efficient and equitable. Stakeholder relationships and networks are dynamic and the analysis will therefore be periodically reviewed and updated accordingly.

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[4]In addition, a survey circulated at the national level and completed by 50 stakeholders anonymously as part of the research conducted for the REDD+ integrity study showed that 90% of respondents saw the Bangladesh Anti-Corruption Commission as an important actor to consult.
[5] The UNDP Guidance on Institutional Context Analysis may be used here as a reference.

4. Potential Partners and Roles in REDD+

There is already substantial in-country expertise in REDD+, which will enable Bangladesh to move forward swiftly and effectively with implementation of the REDD+ Roadmap. In this regard, it is appropriate to identify key partners who can work directly with the GoB and the REDD+ management bodies.

Academic and Research Institutions:

A number of academic and research institutions in Bangladesh have invested considerable effort in developing expertise and locally-specific knowledge on forests and climate change. The institutions in Table 4 are identified as potential partners and sources of expertise during REDD+ Readiness and Implementation phases.

Table 4: Academic and Research Institutions with REDD+ Relevant Expertise

Institution	Field of Expertise	Involvement in REDD-relevant activities/ projects
Institute of Forestry and Environmental Sciences, Chittagong University (IFESCU)	Plant biodiversity assessment; Assessment of livelihood; Tree volume measurement and estimation; Tree improvement	Member of REDD+ Roadmap Strategy Working Group; Involved in an ongoing research on effect of climate change on growth and yield of different forest tree species; Established seed orchards of different tree species of the hill forests of Bangladesh (including that of some critically endangered species) at the University campus.
Forestry and Wood Technology Discipline, Khulna University	Carbon estimation; Participatory forest monitoring; Particular experience on Sunderbans	Provides technical support to IPAC in Sundarban Cluster; Biodiversity assessment of Sunberban in SEAL project; Carbon estimation in different agroforestry systems.
Jahangir Nagar University (Zoology, Botany and Geography Depts.)	Biodiversity monitoring; R/S and GIS based monitoring for change detection of forests	Involved in biodiversity monitoring of the GIZ-funded Chunati project. Under an Arannayk Foundation funded project, this university has already established baseline information regarding biodiversity status of six protected forest areas that are potential candidates for REDD+ projects.
Dhaka University (Botany, Geography and Environmental Science, Zoology and Economics Depts.)	Biodiversity monitoring; Economic analysis; policy analysis	The Botany Dept. of the university worked with the Zoology (Wildlife) team of Jahangir university in the AF-sponsored biodiversity monitoring project in six protected forest areas. The Economics Dept. of this university may potentially contribute to the economic analysis of REDD+ policy options and carbon trading.
Independent University Bangladesh (IUB)	Biodiversity assessment; Research and training on environmental management	As a partner, IUB (School of Environmental Science) provides capacity building support to IPAC ;

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Institution	Field of Expertise	Involvement in REDD-relevant activities/ projects
		Some students of IUB conducted a biodiversity assessment of Lawacahra National Park.
BRAC University	Development management; Economic and policy analysis	Has the potential to contribute to economic analysis of REDD+ policy options and carbon trading.
Sahjalal University of Science and Technology (SUST), Sylhet	Forest cover and land use survey/monitoring using GIS/RS tools; Land use and forest management planning	As part of their academic research work, students of SUST developed a conservation management plan of Inani Protected Forest. An Asst. Professor (Mr.Redwan) is involved in forest cover and land use analysis using GIS/RS tools, although not associated with any particular project
North South University	Environmental policy and economic analysis of different climate change scenario	Has the potential to contribute to economic analysis of REDD+ policy options and carbon trading.
Bangladesh Forest Research Institute (BFRI)	Undertake research into all aspects of forestry, notably in its Forest Inventory Division (FID).	Has the potential to provide technical support to all Components of the R-PP.
Bangladesh Agricultural Research Institute	Development of improved varieties and management practices for fruits, vegetables, spices, wheat, corn, pulses, oilseeds and ornamental plants; training of extension workers and farmers; socio-economic impact studies	Has the potential to provide technical support in horticulture and agroforestry based livelihood development activities in REDD+ projects.
Bangladesh Fisheries Research Institute	Development of improved technologies and management policies for fresh water and marine fishes; training of fisheries extension workers and fish farmers	Has the potential to provide technical support on pisciculture-based livelihood development activities in REDD+ projects and in improved management of wetlands within forests.
Bangladesh Livestock Research Institute	Development of improved breeds and husbandry practices for poultry and livestock; training of poultry and livestock farmers, entrepreneurs and extension workers	Has the potential to provide technical support in poultry and livestock based livelihood development activities in REDD+ projects.
Bangladesh Agricultural Research Council (BARC)	Apex body of national agricultural research institutes; coordination of research and technology transfer activities of agricultural research institutes; agricultural policy formulation	A sub-organization (CSO - Forestry) is a member of the REDD+ Safeguards Working Group.
Soil Resources Development Institute	Research into soil, land classification, land-use and agro-ecological and agro-economic zones.	Has the potential to provide technical support on soil, land-use and agricultural issues.

Non-Government Organizations (NGOs)

Bangladesh has a vibrant non-government sector. Many NGOs, such as the Arannayk Foundation and IUCN, have already been directly involved in forest and climate change activities. A list of NGOs and CSOs with expertise and interests relevant to REDD+ is given in Annex 1b-3.

USAID

USAID has been supporting community based natural resource management in forested areas for many years in Bangladesh, for example through the Nishorgo Project and then the IPAC Project. Implementation of REDD+ Readiness phase will benefit immensely from work that has already been carried out by existing and previous projects. Notably, the IPAC project provided experience directly relevant to development of REDD+ strategies (see Box 4). The project focused on using participatory techniques in decision-making and forest monitoring, which provides the foundation for success.

USAID is now supporting, or considering supporting, several activities that will contribute to REDD+ Readiness in Bangladesh. These include:

The Climate Resilient Ecosystems and Livelihoods (CREL) Project. This project is implement by Winrock International and is working closely with the Government of Bangladesh and its Ministry of Environment and Forest (MoEF), Ministry of Fisheries and Livestock (MoFL) and Ministry of Land (MoL) to protect critical forest and wetland ecosystems of Bangladesh. The CREL project has an overall budget of USD 36 Million and will focus on the following areas for 2013 – 2017:management and conservation of Protected Areas and biodiversity; alternative, climate-resilient economic opportunities; fundamental weaknesses in policies and institutions regarding resource use rights, governance, forest and fisheries management, and; capacity to deal with climate change and vulnerability of human and natural systems to the impacts of climate change and climate-related risks.

CREL is undertaking many activities that contribute to the long term process to establish REDD+ Readiness and establish REDD in Bangladesh. These are notably:

- Community strengthening in forested areas;
- Forest and carbon monitoring and measuring in pilot sites, including 'blue carbon' for the first time in Bangladesh. This will help develop methodologies and parameters;
- Socio-economic support to forest dependent communities.

Capacity Development for the Ministry of Environment and Forests. Implemented with FAO, this project will undertake institutional and capacity development and notably contribute to components 1a, 1c and 2c. Approximately one third of the project activities contribute to processes directly linked to the REDD+ Readiness process.

USAID is also considering providing support to the MRV system and capacity in Bangladesh.

Integrated Protected Area Co-management (IPAC)project

The USAID-funded Integrated Protected Area Co-management (IPAC) project (2008-2012) of the Forest Department was engaged in establishing a multi-stakeholder collaborative management (co-management) system in the protected areas of Bangladesh, including 28 protected forest areas (national parks and wildlife

sanctuaries). The project aimed at enhancing carbon stocks and reducing GHG emissions through restoration, conservation and sustainable management of forests.

IPAC trained staff of the FD and other partner organizations in field and laboratory methods of measuring forest carbon pools (including above-ground biomass, below-ground biomass and soil organic carbon) providing a pool of resource persons to perform the task of carbon accounting in future REDD+ projects. IPAC has dedicated a particular effort to involving local communities in these capacity building efforts. The project management believes that direct involvement of local people in baseline development and ongoing monitoring of forest carbon pools is essential to develop the sense of local ownership and accountability required for the success of REDD+ activities.This also seems to have shown positive results in reducing some illegal logging activities, as revealed through interviews conducted for the REDD+ Integrity Study in Sreemongol.

IPAC's focus on community-based methodologies stemmed in part from the project's history as the successor to the USAID-funded Nishorgo project, which initiated the development of Co-management Organisations for Protected Areas in Bangladesh. Although IPAC phased out in 2012, the Nishorgo Network which it has helped to maintain and strengthen will be a key partner in REDD+ Readiness and Implementation in Bangladesh (see Box 3).

Box 4: An Introduction to the IPAC Project

Other Internationally supported projects

The UNDP supported Chittagong Hill Tract Development Facility (CHTDF) Project.In 2003, UNDP responded to the existing development needs with an official Preparatory Assistance project, culminating in a USD 50 million, 5-year programme signed with the Government in late 2005: *'Promotion of Development and Confidence Building in the CHT'*. In 2008, UNDP undertook a Strategic Review of the programme to identify major achievements and opportunities for the future. In 2009, in response to the review and recognizing the valuable contribution of the programme to peace and development in the CHT, the Government of Bangladesh reaffirmed their commitment to the programme and approved a continuation to September 2013 with an increased budget to USD 160.5 million.

The development purpose of the programme is to support the Government of Bangladesh and enable the institutions of the CHT and their constituent communities to pursue accelerated, sustainable socio-economic development and regional poverty reduction, based on the principles of self-reliance, local participation, and decentralized development. The key objectives of the project are:

(i)   Capacities of CHT institutions, including MoCHTA, the Regional Council, the three Hill District Councils, and the traditional institutions of the three Circle Chiefs, are enhanced;

(ii)   Economic opportunities for small local enterprises, women, youth and farmers are improved;

(iii)   Literacy is increased through improved access to a strengthened education system adapted to the local context;

(iv)   Health conditions are improved through a strengthened health system supporting community outreach and localized service delivery;

(v)   Local communities are empowered and their capacities to manage their own development are enhanced, and;

(vi)   Confidence required to find the solutions to long standing problems and encourage sustainable development and peace in the CHT is created.

The CHTDF project is helping to lay the foundations for strong governance and equitable livelihoods in the CHT region, which is a necessary precursor to any REDD+ activities in this part of Bangladesh.Particularly with respect to objectives (i), (v) and (vi), the CHTDF will have a key role to play in the facilitation of REDD+ Readiness activities in the CHT.

The UNDP/LDCFCommunity Based Adaptation to Climate Change through Coastal Afforestation (CBACC-CF) projectThe CBACC-CF project is financed by the Least Developed countries Fund (LDCF), supported by UNDP and implemented by MoEF with coastal communities since 2009. The project aims to reduce the vulnerability of coastal communities to the impacts of climate change through both adaptation and mitigation measures.

To date, the project has involved more than 18,000 households in afforestation, agriculture, livestock and fishery-based livelihood adaptation, training measures and job creation. By mid-2014, the project aims to create 9,200 ha of mangrove plantation, 444 ha non-mangrove mound and dyke plantation and 680 km of strip plantation. The average carbon sink capacity of mangrove species (97.6 ton/ha) is more than three times higher than that of non-mangrove species (29.5 ton/ha). Accordingly, the project is expected to contribute to GHG emission reductions through sequestration of more than 900,000 tons of carbon annually.

The project also demonstrates the promise of converting lands thought to be unsuitable for cultivation into productive use through the Forest, Fruit, Fish (FFF) model in barren lands, located behind coastal mangrove forests. By using a combination of protective and productive vegetation, mound and ditch land structures, the FFF model has prevented land encroachment and ensured water security through rain water harvesting in ditches, offering multiple livelihood benefits.

For the first time in the coastal areas, the project has established Co-management Committees (CMCs) in order to ensure social equity and legitimacy in resource distribution, as well as to resolve local conflicts. The CMCs conduct quarterly coordination meetings and are responsible for approving the beneficiaries and project implementing partners. Another positive transformation of the project, regarding institutional impact, is the voluntary role of FFF communities to protect the coastal forests adjacent to their resource generation models. The voluntary role of project beneficiaries in forest protection supplements the low human resource capacities of the FD.

The project demonstrates participatory approaches for restoring, improving and protecting coastal biodiversity and habitats. This is the first global adaptation project in Bangladesh where landless people and marginalized groups of coastal communities can access benefits from government lands. The actual and expected outcomes of the CBACC-CF project closely correspond to the multiple benefits expected from a national REDD+ programme and provide valuable experience for REDD+ strategies in coastal areas.

The Climate Resilient Participatory Afforestation and Reforestation Project CRPARP). CRPARP is financed by the Bangladesh Climate Change Resilience Fund (BCCRF) and implemented by the Forest Department. The project has three components as follows: 1) Afforestation and Reforestation Programme; 2) Alternative Livelihoods to Support Forest Communities; and 3) Capacity Development for Forest

Resources Planning and Management. The CRPAR project will work in 9 of Bangladesh's 19 coastal districts, namely: Cox's Bazar, Chittagong, Noakhali, Laxmipur, Feni, Barisal, Patuakhali, Barguna and Bhola. In total, 17,000 ha of block plantations and 1,672 km of strip plantations will be established, including 5,700 ha of mangrove afforestation in coastal areas.

UN-REDD

The Targeted Support (TS) fund of the UN-REDD programme was utilized for the capacity building in forest monitoring, GHG inventory preparation for the LULUCF sector and land cover classification. Different stake holders were engaged with the process. Training materials and proceedings were produced and archived. Several documents related to forest classification system and allometric equations were developed and data catalogue preparation for the GHG inventory for the LULUCF sector is an ongoing work. Land cover classification systems in the context of REDD+ in Bangladesh: a study analysis using LCCS3 is ongoing. At the time of writing, harmonization of the existing land use/cover maps of the country was about to start.

5. Stakeholder Consultation process to date

A number of stakeholder consultation activities were initiated during the Roadmap development process. The objectives of these consultations were to:

- Increase awareness and understanding of REDD+ and the Roadmap process in Bangladesh amongst key stakeholders at the national level;
- Gain input from key stakeholders within and outside of Government on the key issues facing the forest sector as part of the REDD+ strategy development process;
- Develop recommendations for a long-term consultation process as part of the REDD+ Readiness and Implementation phases in Bangladesh.

These consultations essentially consisted of two parallel tracks, as shown in Figure 7. First, a series of national-level REDD+ consultation workshops initiated to keep national-level government and civil society stakeholders abreast of the REDD+ Readiness Roadmap process. Simultaneously, a series of regional workshops was initiated to solicit information and opinions from stakeholders in relation to the different forest types around the country (Hill Forest – both CHT and elsewhere, Sal Forest, Mangrove and Coastal Plantations). These regional workshops were specifically designed to contribute to the summary of drivers of deforestation and degradation and recommended strategies, and are described further in Annex 1b-1.Full proceedings and participant lists are available on the UN-REDD workspace, Bangladesh country page.
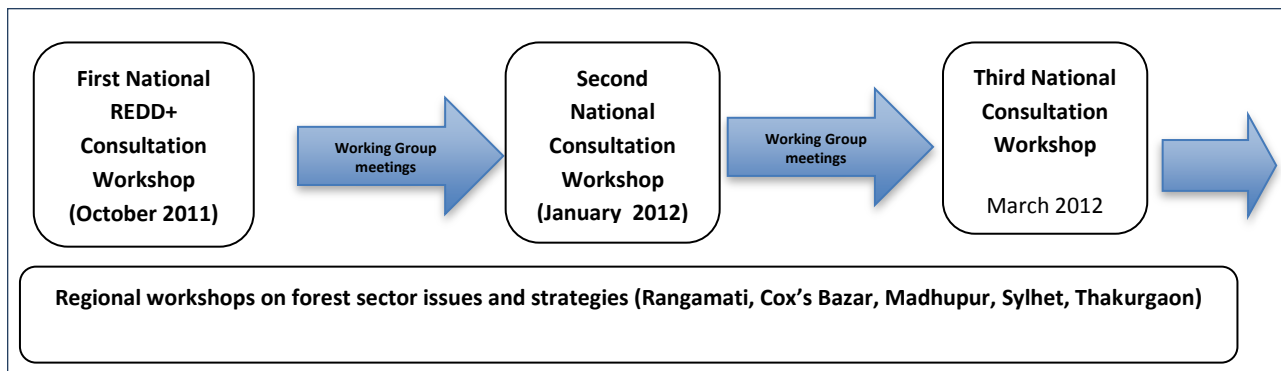
Figure 7: Bangladesh REDD+ Roadmap Consultation and Participation Process

The Regional Workshops on Forest Sector Issues and Strategies

Very few stakeholders at sub-national and local level were aware of REDD+ before the Roadmap process began, and fewer still had reliable information on the concepts behind it. In such circumstances, consultations on the REDD+ Roadmap itself could be counter-productive and may foster more misunderstandings than to provide constructive input. Therefore, the sub-national consultations focused on the practical issues that a REDD+ programme might address. It was considered that such issues could be explored without recourse to new and unfamiliar concepts.

Accordingly a facilitation guide was designed for sub-national workshops which was based around two group work sessions; a problem tree or root cause analysis of deforestation or degradation in local experience, followed by an analysis of the effectiveness of existing and potential tools for addressing these root causes.

The first sub-national workshop in Rangamati was designed to bring diverse stakeholders together in a non-confrontational setting to reach agreement on the key issues in the forest sector. This region was chosen for the first event because of the high potential relevance of REDD+ in the area; the relatively high forest cover, low population density and specific forest governance context. The workshop was not intended to provide awareness on REDD+ issues, indeed care was taken to minimize discussion on REDD+ and forest carbon in order to focus on practical forestry issues and strategies. Participants were divided into four categories of stakeholders: Forest officials, elected representatives, NGOs and media, local community representatives.

Participants noted the strong agreement between different stakeholder groups on both forest issues and potential strategies. They were surprised and encouraged by this agreement. Staff of UNDP's CHT Development Facility (CHTDF) provided the facilitation for this workshop. Continuing involvement of CHTDF in discussions between the FD and Hill Council institutions is therefore recommended.

This sub-national consultation workshop was followed by visits to two communities in the CHT with contrasting scenarios. The first visit, to Longadu sub-district, was to a community with an existing Village Common Forest (VCF) arrangement on Unclassed State Forest Land (USF), which is under the administration of the Hill Council. VCFs are unique to the CHT and currently have no formal legal basis.

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They are a system of Community-based Forest Management (CBFM) currently confined to USF areas and supported by several of the CSOs and NGOs. The second visit was to Raengkheong Reserved Forest area, which remains under the direct administration of the Forest Department, where local communities have no legal right to reside. These consultations served to cross check the conclusions drawn at the workshop and to provide an indication, within the CHT, to what extent local people's views are adequately mirrored by their representatives.

Four more workshops were held in Cox's Bazar, Thakurgaon, Madhupur and Sylhet in order to cover all the key forest types and governance contexts in Bangladesh. The combined outcomes of the consultations were used to produce the initial analysis of drivers of deforestation and degradation, and the potential candidate strategies to address them, as presented in Component 2.

As part of the REDD+ Integrity study, a series of four focus group discussions are being conducted with a focus on governance issues as root causes of degradation. Finally, prior to the approval of this document, the IP group independently reviewed the Roadmap and the R-PP and provided comments. The group presented their consolidated suggestions and recommendations for the country's REDD readiness process during the national multi-stakeholder validation meeting to approve this R-PP document in early November 2013.

UN-REDD Resource Documents

In the implementation of this Component, the Bangladesh REDD+ Readiness team will refer to and, where appropriate, use the UN-REDD programme guiding tool: *Guidelines on Stakeholder Engagement for REDD+ Readiness with a Focus on the Participation of Indigenous Peoples and Other Forest Dependent Communities.*

Component 1c: Consultation and Participation Process

Standard 1c the text needs to meet for this component:

Consultation and Participation Process:

Ownership, transparency, and dissemination of the R-PP by the government and relevant stakeholders, and inclusiveness of effective and informed consultation and participation by relevant stakeholders, will be assessed by whether proposals and/ or documentation on the following are included in the R-PP   (i) the consultation and participation process for R-PP development thus far (ii) the extent of ownership within government and national stakeholder community; (iii) the Consultation and Participation Plan for the R-PP implementation phase   (iv) concerns expressed and recommendations of relevant stakeholders, and a process for their consideration, and/or expressions of their support for the R-PP; (v) and mechanisms for addressing grievances regarding consultation and participation in the REDD-plus process, and for conflict resolution and redress of grievances.

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1. Objectives of Component 1c

The overall objective of this Component is to ensure thorough, effective and constructive stakeholder participation in REDD+ readiness and implementation. This encompasses consultation and participation of a full range of stakeholders from forest communities to national decision-makers, including private sector, NGOs, experts, international partners, etc. It relates to all aspects of REDD+: policies, activities and measures; and it coversall levels, from the community level to national policy making.

The process will draw on past experience both within Bangladesh (the FRA and REDD+ Roadmap processes, as well as REDD+ activities under IPAC and other projects) and from other countries (for example UN-REDD's efforts to develop a process for FPIC on REDD+ in Viet Nam).

In order to help ensure effective and constructive stakeholder engagement, gender aspects are considered throughout this process. This is possibly to include: gender differentiated constraints in participation, access to information and factors which could limit stakeholder engagement and consultation processes.

Component 1c has four specific sub-objectives:

  (i)   To share information and raise public awareness;
  (ii) To strengthen the national consultation process and participation in the development and initial implementation of the National REDD+ Strategy;
  (iii) To design and establish a national FPIC process and procedures that will ensure that the rights of indigenous peoples, other forest-dependent communities, and local communities are respected[6];

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[6]This process will be guided by the joint FCPF and UN-REDD Programme's Guidelines on Stakeholder Engagement in REDD+ Readiness with a Focus on the Participation of Indigenous Peoples and Other Forest-Dependent Communities, which is to inform the design, implementation, monitoring and evaluation of activities relating to stakeholder engagement at the national level. In addition, UN-REDD has Guidelines on Free, Prior and Informed

(iv) To design and establish a national Grievance mechanism.

A key mechanism to facilitate participation is the REDD+ Stakeholder Forum (RSF), which will facilitate direct input from civil society to the planning and development work. The RSF will also serve as the principal outreach and communication platform during the development and implementation of the National REDD+ Strategy. This Forum is established under Component 1a above.

This Section elaborates the approaches to: (i) raising awareness; (ii) consultation; (iii) FPIC; and,(iv) grievance mechanisms. It also sets out the steps and activities required to meet the above objectives in the form of an indicative workplan.

2. Awareness Raising Strategy:

Over 50% of stakeholders polled in the survey of the Bangladesh REDD+ Integrity Study estimated that one of the top 5 interventions to strengthen transparency and integrity in REDD+ was through "Awareness campaigns at local level on what REDD+ is and what it is not, to avoid information Asymmetry".

This strategy essentially consists of the Communication plan for the Roadmap implementation. This is the precursor for a long-term Strategic Communication Plan (SCP) for the REDD+ Readiness and Implementation phases.

A toolkit for Communication, Education and Public Awareness (CEPA) developed for the Convention on Biological Diversity (CBD) identifies ten potential steps in the development of effective communication strategies as follows (CBD/IUCN/CEC, 2007):

Step 1: Analyse the issues and role of communication based on a problem/issue identification;
Step 2: Identify target groups/audiences for communication and intermediaries;
Step 3: Determine communication targets for each target group;
Step 4: Determine communication strategy and select partners;
Step 5: Determine the best possible messages for each target group;
Step 6: Determine the means of message delivery;
Step 7: Organise communication and brief partners;
Step 8: Plan milestones and activities;
Step 9: Determine the budget;
Step 10: Determine programme evaluation methods.

This toolkit will be modified as necessary for the purposes of REDD+ in Bangladesh. For example, with regards to the first step; in the context of the REDD+ Readiness process, the role of the awareness raising strategy is to ensure that all stakeholders have access to the information they need, as determined by their existing roles in the forestry sector and their potential roles in a REDD+ programme. Beyond this, it is a neutral tool. It is therefore **not** designed to ensure support for the REDD+ programme, but will enable stakeholders to make free, informed decisions on whether and how to

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Consent, which set out the normative framework for the FPIC principle based on the provisions of the United Nations Declaration on the Right of Indigenous Peoples (2007).

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engage with the programme. It will therefore need to describe to all stakeholders the kind of behavioral changes that a REDD+ programme will require.

The identification of target groups for awareness raising will stem from the stakeholder mapping activities described in Component 1b. The communication targets, strategy (i.e. the content) and the key messages – steps 3-5 in the CEPA guideline – will be determined by the Competency framework and Capacity Building Needs Assessment (CBNA) exercises described in Component 2c.

The means of delivery for awareness raising will be broken down into broad categories:

1. Printed materials: Many leaflets and other printed materials have been produced on the subject of REDD+ since the launch of the Bali Roadmap at COP13 in 2007. Most of these materials have been produced in English or Spanish for an international audience. There is no record of any such materials being translated into Bangla. Awareness-raising materials specific to the Bangladesh REDD+ Readiness process will be developed on the recommendation of the RSF. In the meantime, existing materials, of suitable quality and content, will be distributed for consumption in Bangladesh. The Safeguards TWG will review materials, including those from the following sources among others, and recommend a selection for translation and, if necessary, adaptation of the contents to the Bangladesh context, for distribution in country:

- UN-REDD website[7]
  REDD+ Community (http://reddcommunity.org)
- REDD-net (www.reddnet.org)
- Forest Carbon Asia (www.forestcarbonasia.org)
- CIFOR (www.cifor.org)
- RECOFTC (www.recoftc.org)
- Ecosystem Marketplace (www.ecosystemmarketplace.com)

2. Multi-media: Most individuals rely more on visual and audio media sources than on printed material for their information. This is particularly the case for those of limited literacy. The importance of online communication networks is also increasingly relevant for Bangladesh. The following multi-media communication channels will therefore be employed within the awareness raising strategy:

- Internet: A national REDD+ website, or portal, for REDD+ will be the cornerstone of the long-term strategic communication plan, promoting transparency through the dissemination in a timely manner of all documents and reports relating to the national REDD+ programme.   Some advanced REDD+ countries in the region have developed their national REDD+ websites, and Cambodia, Indonesia and Viet Nam provide a useful example (Cambodia: http://www.cambodia-redd.org; Indonesia: http://www.redd-indonesia.org/; Viet Nam: http://www.vietnam-redd.org). During Roadmap implementation, an important early task for the REDD+ Cell will be the creation of this

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[7]ParticularlyUN-REDD GoREDD+ articles might be of interest - http://www.un-redd.org/RegionalActivities_GoREDDMessages/tabid/79199/Default.aspx

website. It will not only be used for online access to printed materials, but also as an essential tool for all stakeholder participation and consultation processes, as described below;

- Radio: The REDD+ Cell will assess the opportunities for radio broadcasts dealing with forest sector issues and strategies. Local and private radio stations, and local language services in the CHT region, will be explored;
- Television: The scope for television broadcasts to deliver a consistent message to a wide range of stakeholders is potentially very important for raising awareness of the importance of REDD+ strategies across the country. The cost of programming and the importance of simple, unambiguous messaging must be emphasized. The REDD+ Cell will also explore the potential of this medium for the REDD Roadmap process;
- Cell-phones: awareness messages will be communicated through cell-phones;
- Newspapers: awareness on REDD+ activities will be communicated through newspapers;
- Billboards, flyers, newsletters, posters:awareness on REDD+ activities will be communicated through these.

Extension: At the local level, person-to-person interaction is an established and effective and reliable way of spreading messages and raising awareness. The Department of Agricultural Extension (DAE) and Bangladesh Rural Development Board (BRDB) employ a large network of extension workers at the lowest administrative levels. Printed materials will be adapted for use by these workers in order to deliver key messages to forest-dependent communities. The REDD+ Cellwill coordinate production and distribution of such materials with the departments concerned. The RSF will also explore the potential for local NGO workers to provide an alternative extension network to ensure that local stakeholders have access to multiple sources of information and opinion.

3. Enhancing Consultation and Participation

The existing management structure for REDD+ does not ensure the full and meaningful representation of all stakeholders in the REDD+ Roadmap process. Each of the bodies in the structure will need to maintain the engagement of stakeholders as a priority, as follows.

REDD+ Stakeholders Forum: This is the key body for ensuring that the opinions and priorities of all stakeholders are represented in the REDD+ Roadmap implementation and in the REDD+ programme itself, as described in Component 1a. In order to meet this requirement, the participation in the RSF cannot be decided in the same way as in the previous activities[8]. The first step is to determine appropriate procedures for selecting members and establishing the RSF. Then, the REDD+ Cell will release an announcement regarding the initial RSF meeting and the Safeguards TWG will ensure that it circulates among civil society organisations, by utilising some of existing networks listed in Table 5 below. Utilising such networks is crucial to ensuring that all stakeholder groups are adequately represented in a multi-stakeholder body. Participants in RSF meetings will be held accountable by their respective networks to provide feedback and reports on progress against the concerns of their constituents. However, additional effort should be made by the Safeguards TWG to strengthen weaker, but key networks.The RSF structure and protocols for future meetings will be determined at the initial meeting, with facilitation provided by the Safeguards WG. One of the first tasks of the RSF will

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[8] For the previous consultation workshops, invitations were sent based on a list determined by the REDD+ Cell and the Technical Advisory Team in order to ensure participants had a basic level of prior awareness on REDD.

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thereafter be to review the membership of the RSC and the three TWGs and recommend refinements to their membership in order to ensure adequate representation of stakeholder views. The RSC and the REDD+ Cell (on behalf of the TWGs) will then be obliged to respond to the RSF's recommendations before their next meetings.

Table 5: Existing Civil Society and Stakeholders Networks Relevant to REDD+

Stakeholder Group	Representative Forums / Networks
Government	National Steering Committee on Climate Change
	Ministerial Climate Change Cells
	RSC
	REDD+ Cell
Forest-dependent peoples	Nishorgo Co-management Organisations (CMOs), through IPAC project
	Community-based Organisations in wetlands (through CWBMP project)
	VCF network in CHT
	Tiger victims' groups
	Community Forest Worker (CFW), Social Forest Management Committee (SFMC) and Forest Conservation Society (FCS).
	Occupational groups: Associations at district level (or below) of *mahuwali* (honey collectors) and *bahuwali*(*golpata* leaf collectors), fishermen etc.
Private Sector	Chambers of Commerce (national, district, upazila)
	Associations of sawmill owners, brickfield owners
	Association of Timber Merchants
Womens' groups	CHT women's organisation
	Mahilaparishad (national level)
Regional stakeholders	Headmans' organisation in CHT
Professionals	*Bangladesh PoribeshAndolon* (BAPA)
	Bangladesh Environmental Lawyers Association (BELA)
	EnvironmentalJournalists' Association
	Climate Change Journalists' Association
	District Press Clubs
	Upzaila Press Clubs
Religious groups	Imam's Association
	Hindu, Buddhist and Christian Association
Youth groups	Scouts and Girl Guides
	Red Crescent youth organization
	Youth Club
Marginalised and minorities	Bangladesh *adivasi*forum
Local govt representatives	Union *Parishad* forum, Union *Parishad* Association (politically-aligned bodies)
	UpazilaParishad Association

Future Consultation Programme

The consultation processes initiated during the Roadmap development will continue. There will be two parallel strands of consultation as follows:

REDD+ Management Structure development: The composition and ToRs of all bodies in the REDD+ management structure, as described in Component 1a, are provisional pending the outcome of a full and transparent stakeholder consultation process, whose proceedings will be made public. This process

will be managed by the REDD+ Cell and will involve discussions under the aegis of the RSF and feedback from the existing stakeholder networks listed in Table 5.

REDD+ Strategy Development: The series of sub-national consultations described above will continue, under the management of the REDD+ Cell and the advice of the Safeguards WG. The results of these consultations will feed into the development of candidate REDD+ strategies as described in Component 2.

Other consultations will be held during the REDD+ Roadmap implementation process as required. For example, the development of national-level indicators for REDD+ Social and Environmental Standards, as outlined in Component 2, will require a full multi-stakeholder consultation process under the oversight of the Safeguards WG.

All consultation processes under the Roadmap will follow guidelines developed by the Safeguards TWG to ensure that they are fully in line with the principles of FPIC (as outlined below).

Assuring Gender Inclusiveness

The Constitution of Bangladesh suggests for removing inequality between 'man and woman' in accordance with Article 19(2). This provision intends to ensure 'equitable distribution of wealth among citizens' and at providing opportunities to attain a uniform level of economic development. According to Social Forestry Rules (2004), spouses have equal opportunity to be participants in social forestry programmes. There is a privilege under the Rule that destitute women will be priority for being selected as participants. Besides, management committees under the social forestry programme undertaken by local communities with the FD must consist of 5 members, of which at least two must be women. However, various studies have indicated that implementation of these principles is often far from perfect.

Most of the stakeholder groups that have an interest in the REDD+ Roadmap have means to ensure representation during consultation processes. However, as highlighted by a recent REDD-net bulletin (REDD-net, 2011), it is important to raise awareness about the need to view women as a stakeholder group with specific interests which are often quite different to men. Gender inclusiveness in REDD+ strategies and decision-making processes is of great importance. In the absence of effective representation through women's networks, a strategy for mainstreaming gender issues in the Bangladesh REDD+ Roadmap will be developed under the guidance of the Safeguards WG, this will include clear and actionable items for action.

The new UN-REDD Gender Guidance will be used as appropriate.

4. Operationalizing Compliance with FPIC Principles

Although there is as yet no internationally agreement on the processes that would ensure that the principles of FPIC are upheld, the UN-REDD programme has developed detailed guidelines for country programmes, which offer a path towards compliance (UN-REDD, 2011).

Although the concept of FPIC has become explicitly associated with the rights of Indigenous Peoples over their lands and territories, particularly in the context of the UN Declaration on the Rights of Indigenous Peoples (UNDRIP), in the context of the Bangladesh UN-REDD programme it is applicable to all forest-dependent communities (see Box 5).

The processes and activities that have to adhere to FPIC include all those that may have an impact on the rights and livelihoods of these communities. Compliance with FPIC is a key criterion within any system Social and Environmental Standards in order to meet REDD+ Safeguards, and will be monitored accordingly (see Component 4). As part of the development of consultation processes, therefore, the Safeguards TWG will provide guidelines on methods for ensuring FPIC.

This process will follow the decision flowchart shown in Annex 1c-1, which was developed as part of a guideline document for FPIC in REDD+ (RECOFTC/GIZ, 2011). See also Section 4 of (UN-REDD, 2011).

> FPIC can be defined as the collective right of peoples and/or individuals to give or withhold consent regarding actions that may affect their lands, territories, and resources or their rights associated with these lands, territories and resources.
>
> FPIC is a key international instrument that can be applied across a range of land-based sectors, such as conservation, extractive industries, forestry, industrial plantations, and infrastructure development.
>
> Recognized as a key right of Indigenous Peoples under UNDRIP. In the context of UN REDD country programmes, it applies to all indigenous peoples and local communities whose rights and interests may be affected by implementation of REDD+ strategies.

Box 5: FPIC - Free, Prior and Informed Consent

Relevance of FPIC for REDD+ in Bangladesh

As a mechanism based on large-scale changes in patterns of land use and related policies, REDD+ will inevitably affect the recognition and realisation of land tenure and land use rights. Its potential impact on traditional and territorial rights therefore came to the attention of international human rights groups and indigenous peoples' groups at an early stage in negotiations. REDD+ is expected to increase the value, per unit area, of forested land in recognition of its potential as a carbon sink or source of GHG emissions. The greatest proportional increases in value are likely to occur in areas with limited existing value as sources of forest products but with some potential for conversion to non-forest land use. Such areas often coincide with indigenous peoples' territories.

In Bangladesh, the areas of the CHT, where indigenous peoples form the majority population, are the most likely to be affected. Timber extraction from natural forest is banned and trade in other forest products is limited, but there is a growing trend of forest clearance, particularly at the margins, for tobacco, teak and other income-generating crops.

With increased value, real or perceived, comes an increase in competition for the rights to that value. In areas where rights have remained ambiguous or poorly defined, there will be increased pressure to clarify the rights to ownership, and thus the right to benefit from this increase in value. Indeed, clarity of land rights is a precondition for any potential financial transactions involving forest-based emissions, whether in voluntary carbon markets or in other performance-based payment systems. It is essential that, in this effort to define land rights, the interests and rights of indigenous peoples, and other forest-dependent communities, are not adversely affected. This provision, in line with UNDRIP, applies to both their legally-recognised statutory rights, and to traditional or customary rights.

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In the CHT, there is continuing ambiguity over the administrative duties of the Forest Department and the Hill Council authorities with regard to Reserved Forests and Unclassed State Forest land. The right of local people to manage and use these forests is also not well-defined, nor are the implications for livelihoods of any changes in legal status understood. Extensive discussions on these issues according to the principles of FPIC are essential before any activities relating to REDD+ are planned or implemented.

Issues subject to FPIC

The right to FPIC encompasses not only the right to be fully informed and consulted before activities are implemented, but also to withhold consent from these activities altogether. This does not imply that forest-dependent people hold a veto over all aspects of a national REDD+ programme, only over activities or policies with directly affect their lands or livelihoods[9]. It does mean, however, that the REDD+ management structure must make every effort to build trust, particularly through transparency in decision-making, by ensuring good faith consultations that enable the full and effective participation and representation of local people throughout the Roadmap implementation.

Consent must be sought at key stages of programme development and implementation. The stages which may trigger a consultation process to seek consent will be determined by the RSF alone, although recommendations for the process may be made by REDD+ Cell, TWGs or any external body to the REDD+ management structure. These decisions may be made at any point but an initial list of decisions or stages which will trigger consultation will be drawn up by the RSF, with facilitation of the Safeguards WG, early in the Roadmap implementation. As suggested by the UN-REDD Guidelines on FPIC, in Bangladesh these triggers may include the following, where they relate to forest land or forest resources on which indigenous peoples and local communities depend:

- Activities involving relocation/resettlement/removal;
- Activities involving the taking, confiscation, removal or damage of cultural, intellectual, religious and/or spiritual property.
- Activities involving the adoption or implementation of legislative or administrative measures that will affect the rights, lands, territories and/or resources of indigenous peoples / forest-dependent community (e.g. in connection with the development, utilization or exploitation of mineral, water or other resources).
- Activities involving mining and oil and/or gas operations (extraction of subsurface resources) on the lands/territories of indigenous peoples / forest-dependent community
- Activities involving logging on the lands/territories of indigenous peoples / forest-dependent community.
- Activities involving the development of agro-industrial plantations on the lands/territories of indigenous peoples / forest-dependent community.
- Activities involving any decisions that will affect the status of indigenous peoples' / forest-dependent community's rights to their lands/territories or resources.

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[9] Note, in some cases, governments do have the right to impact the lands of IPs if 1) they can demonstrate the activity is in the national interest; and 2) they put in place the necessary safeguards to address the impacts of those activities.

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- Activities involving the accessing of traditional knowledge, innovations and practices of indigenous and local communities.
- Activities involving the commercial use of natural and/or cultural resources on lands subject to traditional ownership and/ or under customary use by indigenous peoples / forest-dependent community.
- Activities involving decisions regarding benefit-sharing arrangements, when benefits are derived from the lands/territories/ resources of indigenous peoples / forest-dependent community.
- Activities having an impact on the continuance of the relationship of the indigenous peoples/forest dependent community with their land or their culture.

This list comprises activities for which withholding of consent must be considered binding on all stakeholders. It does not include some other planning activities, for example, the identification of drivers of deforestation and potential strategies, the development of a REDD+ Roadmap and Readiness Package, or the development of awareness raising materials and capacity building tools. Such activities do not, of themselves, carry a risk of undermining rights and are thus not trigger points to seek FPIC. They do, however, require the full and effective participation and representation of forest dependent people in order to be effective, and thus contribute to the FPIC process.

Implementation of FPIC process

One of the key properties of FPIC processes is that they are defined by the subjects themselves; i.e. the method of achieving (or withholding) consent are those that are traditionally used by local people in decision-making processes. In most of rural Bangladesh, the basic unit of traditional decision-making is the Samaj (community), headed by the Matbar, or traditional village head. In the CHT, the equivalent terms are Para (village) and Headman. An FPIC process for Bangladesh would therefore rely on these units and the traditional systems based around them.

The meaning of 'consent' is itself determined by these local units. It is important to note that it does not necessarily imply unanimity, unless this is the normal means of decision-making (which would be very unusual). Therefore, FPIC does not necessarily imply that any particular individual can wield an effective veto over REDD+ activities and decisions.

FPIC is essentially a continuous process rather than the linear progression shown in Annex 1c-1. It should be seen as an ongoing process of two-way negotiation and communication between the forest-dependent people and the REDD+ Cell, through a network of trusted intermediaries. If the awareness raising programme and consultation framework described above are both effective, then the FPIC process should run smoothly and with very little need or occasion for consent to be withheld at any point. Instead, the communication process would ensure that proposed activities are discussed until a mutually-satisfactory agreement is reached.

The Safeguards TWG will be responsible for commissioning studies into traditional decision-making systems in the CHT and in other parts of rural Bangladesh and designing a system of negotiation and communication around them, with reference to the diagram in Annex 1c-1. The activation of an effective FPIC process will also require the training of DAE or BRDB local extension officers and civil society counterparts to serve as intermediaries in the process.

5. Establishing a Grievance Mechanism for REDD+

An effective, accessible and transparent grievance mechanism is an essential fail-safe in the process of ensuring adherence to FPIC principles. In countries where independent judicial systems are perceived as equitable, and formal extra-legal systems exist for swift resolution of civil disputes, the need for a specific grievance mechanism for REDD+ is reduced. Unfortunately, few REDD+ participant countries enjoy such conditions.

Dispute Resolution for Forestry Activities

The Forest Act, 1927 (Amended in 2000) is the main law to enforce forest conservation and dispute resolution at different levels. The right to acquire forest land for reservation and the resolution of forest offences are clearly outlined in this law. These legal provisions, however, are not sufficient to address dispute resolution at the local level. This was one of the key rationales for the adoption of social forestry provisions in the Amendment of 2000 and the Social Forestry Rules (SFR) of 2004. According to Section 25 of the SFR, any dispute concerning interpretation or implementation of any agreement for social forestry, including distribution of benefits, shall be resolved conclusively by the following persons or committee:

(i) The Social Forestry Management Committee- if the dispute is among beneficiaries;
(ii) The concerned Forest Officer – if the dispute is between the Management Committee and beneficiaries;
(iii) A Forest Officer – if the dispute is betweenthe Forest Officer and the Management Committee or between Forest Officials and beneficiaries;
(iv) Appeal against any resolution, under sub-rule (1), may be referred to the concerned Upazila Chairman or in his absence to UpazilaNirbahi Officer and whose decision shall be final;
(v) According to the SFR, the Upazila Environment and Forest Development Committee shall finalise the selection of beneficiaries and resolve outstanding disputes.

These provisions for dispute resolution under the SFR must be taken into account in the design of a grievance mechanism for REDD+, and may be extended to district-level disputes, but they are not sufficient. A key characteristic of an appropriate grievance mechanism for REDD+ is that it must be independent of government line agencies, which the above procedures are not.

Existing Dispute Resolution Mechanisms

The existing mechanisms for dispute settlement within Bangladesh are outlined in Annex 1c-2. The judicial system in Bangladesh is not particularly suited to swift resolution of grievances and disputes. Many civil cases take more than 20 years to proceed through the courts; at the local level, the filing of cases has been consistently described as abused by the Forest Department as a way to enact personal revenge, while courts are inaccessible[10]. Unsurprisingly, respondents to the REDD+ integrity anonymous online survey considered that "Establishing or strengthening a complaints grievance mechanism at local level" was one of the top five priority action to promoteintegrity in REDD+. Alternative Dispute Resolution (ADR) mechanisms and extra-judiciary mediation have been explored as ways for swift and affordable justice in many sectors but, to date, no reliable national institutions exist which can support

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[10] REDD+ Integrity Study, reports from Modhupur and Sreemongol

such methods. The following pilot schemes may provide the foundation for grievance mechanisms in a REDD+ programme.

Village Courts:

At the local and family level, ADR has seen some successes in Bangladesh, which may be informative for REDD+ grievance mechanisms. UNDP has supported the operation of Village Courts to resolve civil disputes between local complainants. In this arrangement, two local representatives are nominated to represent each party in the village court, and the Chair of the Union Parishad (local government) chairs the proceedings. This programme has been promoted by a street theatre campaign to illustrate the benefits of the courts and encourage local people to take their grievances to this forum.

Most rural people still go to their local Matbars (or Headmen, in the case of CHT) in matters of local decision-making, according to the inception report of the Activating Village Courts in Bangladesh (AVCB) project (UNDP, 2010). Village courts typically deal with civil disputes between villagers. However, a grievance mechanism for forestry issues under a REDD+ programme would deal largely in disputes between villagers and external actors, such as local or national forest authorities, other government agencies, project proponents or investors in REDD+. The existing village court system is therefore not directly applicable to the REDD+ context, but provides a suitable entry point for a study into village-level access to a grievance mechanism for REDD+. In the REDD+ context, it is essential that Matbarsand Headmen are the basis of the mechanism, rather than the Union Parishad chair.

Village courts are too formal and limited. These courts deal with disputes between local individuals or groups. Disputes under REDD+ readiness or implementation are likely to be almost exclusively a matter of grievance of individuals or groups at local level against government (or possibly NGOs/private sector agencies) activities, decisions or policies. Local commissions may be better suited to the context of REDD+. Furthermore, there are national legal aid offices in all 64 districts which provide legal aid services to poor people in all matters. These services, linked to a 'Special Environmental Court' (see below), may have an important role in mediation between local communities and decision-making agencies under a REDD+ programme.

Local Commissions

To minimize the risk that the governance system underlying a grievance mechanism is compromised by association with potential parties to a dispute, it must be completely dissociated from the bodies within the REDD+ management structure. The REDD+ Cell and REDD+ SC, for instance, should not be associated with the grievance mechanism. Ideally, the mechanism should be accountable to elected representatives of local peoples. In Bangladesh, there is experience with the model of local commissions. In the context of a REDD+ grievance mechanism, these may be based on the geographical area of parliamentary constituencies and consist of three tiers of peoples' representatives: Union Parishad chairmen, UpazilaParishad chairmen and Members of Parliament themselves.

The local commission would be charged with keeping a record of all cases that are addressed by village courts in their respective area. Any unresolved cases would be referred to the commission. At this early stage in the development of a grievance mechanism, however, it is unrealistic to expect these local commissions to have the capacity, either legal or technical, to address unresolved grievances. They could, however, serve as a conduit between unresolved cases from village courts to a national-level ADR

mechanism. The nature of the disputes (which would chiefly pit local interests against national agencies), may, indeed, encourage MPs and other elected officials to be particularly diligent in referral, as association with these cases may serve to enhance their own electability. The risk of such ulterior motives to distort the systemhas been consistently raised during interviews conducted at the local level as part of the REDD+ Integrity study and should be assessed in more detail.

Special Courts on Environmental Issues

Special Environmental Courts are already operating in about 20 districts. At national level, a Special Environmental Bench was formed about 2-3 years ago. This Bench is not a formal arrangement but it is a basis on which to build a more formal national-level body to deal with climate change issues, including REDD+. A significant investment in terms of capacity building on REDD+ and 'forests and climate change' is required in national and district legal systems. It is important to start this capacity building at the national level without delay.

Bangladesh has recently developed a system of Special Courts at national level. Two national commissions are already in operation, dealing with issues of Human Rights and Anti-corruption, but they currently have no judicial power. It is too early to assess their performance against the past record of the conventional judiciary in similar cases, but the potential to establish a similar commission on environmental issues is high, particularly with the universal awareness of the importance of climate change issues.

Setting up a special court on environmental issues requires, first and foremost, a dedicated training programme for lawyers, judges and other members of the legal profession who will staff the court. The relatively low turnover in the legal profession, compared with that in governmental departments, ensures that the benefits of such training will remain within the institution in the long term.

The Special court would be tasked with addressing unresolved cases from village courts that are referred to them by the local commissions.

REDD+ Grievance Mechanism

A grievance mechanism able to address REDD+ issues is necessary to ensure safeguard compliance. However, it is important that the Grievance Mechanism set up to serve the REDD+ programme is not specifically labelled as such. Local people should not have to understand the mechanics of REDD+, and the relation of their grievance to it, before approaching village courts. Nor should village courts be empowered to dismiss cases which it deems irrelevant to REDD+, from a lack of understanding or for other reasons. One possibility would be to publicize it as a grievance mechanism for forests and environment. The development of a Grievance mechanism under the REDD+ programme will, therefore, lay the foundation for a national ADR system for environmental disputes in general.

6. Indicative Workplan for Component 1c

> **OUTCOME 1c: Improved stakeholder awareness and effective engagement**

Output 1c.1: **Public Awareness Raised**	1. Review available international materials on REDD+ and translate/adapt (into simple Bangla language) a selection, for distribution in country; 2. Develop materials specific to the Bangladesh REDD+ Roadmap (in simple Bangla language); 3. Develop materials for use by local government extension workers and provide training to the extension workers; 4. Explore opportunity for relevant NGOs and CBOs as extension agents and use them for extension work; 5. Create and maintainnational REDD+ website; 6. Awareness raising of forest dependent communities on REDD+; 7. Assess opportunities for radio, TV, cell-phone, billboard, flyer, poster, print media, loudspeaker, and broadcastsdealing with forest sector issues, and implement as appropriate.
Output 1c.2: **Consultation and Participation Plan**	1. Undertake detailed stakeholder analysis; 2. Awareness raising of stakeholders on RPP and REDD+ Readiness process; 3. Validate stakeholder analysis through a regional and national-level consultation process; 4. Engage existing CSO networks to ensure that RSF information circulates among civil society; 5. Commission studies following appropriate procedures into traditional decision-making systems, and design a system of communication focusing through the traditional decision-making systems; 6. Prepare draft Consultation and Participation Plan, including full details of audience, communication tools, responsible parties, monitoring, targets, costs, etc; 7. Elaborate a strategy for mainstreaming gender issues; 8. Based on feedback from communications, continuously review the REDD+ SC and TWG membership to reflect changing stakeholder views and patterns; 9. Undertake national and regional workshops to communicate on REDD+ management structure; 10. Undertake national and regional workshops to communicate and exchange on drivers and candidate strategies; 11. Organize regular meetings and workshops at both national and regional levels for communication and capacity building.
Output 1c.3 **National FPIC Guidelines**	1. Conduct study of international and national and customary law obligations, traditional and statutory decision-making and consent processes for forest communities for natural resource management; 2. Prepare draft National FPIC Guidelines; 3. Train extension workers as intermediaries in FPIC process; 4. Conduct field testing of draft Guidelines ; 5. Independently evaluate the field test; 6. Amend the draft FPIC Guidelines, if necessary; 7. Undertake stakeholder consultation and validation of final Guidelines; 8. Consider how to institutionalize Guidelines (e.g. in law).
Output 1c.4 **REDD+ Grievance Mechanism**	1. Conduct assessment of existing formal and informal grievance mechanisms relevant to REDD+ involving local experts; 2. Prepare options paper for independent grievance mechanism for forestry issues; 3. Prepare draft REDD+ Grievance Mechanism; 4. Validate REDD+ Grievance Mechanism with stakeholders; 5. Raise awareness of REDD+ Grievance Mechanism.

<u>UN-REDD Resource Documents</u>

In the implementation of this Component, the Bangladesh REDD+ Readiness team will refer to and, where appropriate, use the following UN-REDD programme guiding tools and documents:

- Guidelines on Stakeholder Engagement for REDD+ Readiness with a Focus on the Participation of Indigenous Peoples and Other Forest Dependent Communities;
- UN-REDD Programme Guidelines on Free, Prior and Informed Consent (FPIC).

See also: UNDP-WB Guidance Note for REDD+ Countries: Establishing and Strengthening Grievance Resolution Mechanisms(http://www.unredd.net/index.php?option=com_docman&task=doc_download&gid=10896&Itemid=53)

Component 2: Prepare the REDD-plus Strategy

The overall objective of Component 2 is to develop the Bangladesh REDD+ Strategy. The Strategy will include the priority policies and measures and institutional mechanisms needed to address the drivers of deforestation and forest degradation. These drivers are to be first assessed and analyzed through Component 2a. Potential response strategies will be identified and discussed and prioritized in Component 2b, and district specific response strategies will be prepared that are to be piloted in Phase 2 of REDD+. The framework for implementing the Strategy, for managing REDD+ funds and for the equitable and transparent distribution of positive incentives is described in Component 2c. Component 2d covers the steps and institutions required to meet the Cancun safeguards. Component 2d also brings all aspects together to produce the Strategy.

The Bangladesh REDD+ Strategy will also include a robust and transparent national forest monitoring system to monitor the outcomes of REDD+ activities and to report on the mitigation performance of REDD+ policies and measures. These are developed under Component 4.

Component 2a. Assessment of Land Use, Land Use Change Drivers, Forest Law, Policy and Governance

> **Standard 2a the R-PP text needs to meet for this component:**
>
> **Assessment of Land Use, Forest Policy, and Governance:**
>
> A completed assessment is presented that: identifies major land use trends; assesses direct and indirect deforestation and degradation drivers in the most relevant sectors in the context of REDD; recognizes major land tenure and natural resource rights and relevant governance issues and shortcomings; documents past successes and failures in implementing policies or measures for addressing drivers of deforestation and forest degradation; identifies significant gaps, challenges and opportunities to address REDD; and sets the stage for development of the country's REDD strategy to directly address key land use change drivers.

1. Objectives of Component 2a

The objectives of this Component are:

(i) To assess: the current status of land use and land use change over time; forest related laws and policy; forest related governance, and; ongoing actions for forest conservation, sustainable management of forests, and for enhancement of forest carbon stocks; and ,

(ii) To undertake an initial analysis of drivers of deforestation and forest degradation, and to select the key ones to be addressed.

2. Assessment of Existing Strategies, Policies and Legal Framework Pertinent to REDD+

Annex 2a provides an initial, but detailed, assessment of the policies, laws and strategies pertinent to REDD+ in Bangladesh. Annex 2a provides details on the framework related to:

- The Constitution;

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- Strategies and policies related to climate change;
- Policies and laws related to forest management and protection;
- Specific policies, laws and regulations related to the CHT;
- Land tenure;
- Customary rights;
- Legislative measures related to environmental protection;
- The emerging legislative framework related to community management, social forestry and co-management; and,

From Annex 2a, it is clear that large parts of the strategy, policy and legal framework necessary for implementing REDD+ are already in place. However, there are three major weaknesses:

- Gaps remain, particularly with regards to community management and decentralization, and with regards to some very specific REDD+ measures;
- There is inconsistency and overlaps, across sectors, and between national and local frameworks;
- The implementation, or enforcement, of the policies, laws and regulations lags greatly behind the framework.

Accordingly, during the REDD+ Readiness Phase, the following steps will be taken to ensure the policy and legal framework is aligned to support REDD+:

- Assesssectoralpolicies and laws whererelated to REDD+ (e.g.energy, agriculture, infrastructure) and provide policy recommendations, in particular with regards to harmonization;
- Undertake a more extensive reviewof existing legal and policy frameworks, with special focus on the CHT, to identify the scope for REDD+ to conform to existing governance mechanisms and to suggest appropriate additional legal and policy measures. This will include a study on rights to land tenure, use rights and land use related to REDD;
- Review the existing laws and mechanisms for co-management and benefit sharing, and determine the gaps and required amendments and modifications, in particular with regards to harmonization;
- Undertake research and identify the needed political initiatives to remove the conflicts and ambiguities between the legal approaches to the Chittagong Hill Tracts (CHT) and the national level framework;
- Develop tools and steps to recognize customary land rights and indigenous peoples' rights, potentially through an Independent Commission at the national level;
- Assess the institutional framework for forest management and governance (e.g. supply of forest resource, corruption risk-mapping of forest and public finance sectors, etc). This will include an assessment of current forest management and current law enforcement; and,
- Examine how the 2009 Right to Information Act would apply to REDD+, and the gaps to have it fully implemented for REDD+.

3. Assessment of Drivers of Deforestation and Degradation

Definitions

In the context of this R-PP, deforestation is taken to mean the conversion of forests to another land use or the long term reduction of the tree canopy cover to under 10%.

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Forest degradation concerns processes that negatively affect the density of a forest stand, or otherwise affect the quality of the stand or the site, but leave the tree canopy cover above 10%.

Drivers of Deforestation and Forest Degradation

Bangladesh is a small country with diverse landscapes, supporting a variety of forest types with distinct vegetation composition. These types are grouped into five broad categories:

- Mixed evergreen forests in the hills;
- Deciduous (*sal*) forests in the plains;
- Freshwater swamp forests (*bil* and *haor*) in the flood plains;
- Mangroves, and;
- Coastal plantations, including on reclaimed *char* lands.

The pattern and causes of deforestation and forest degradation in different forest types are very complex and diverse. Primarily, they are linked to the clearing of forest land, or the use of forest resources, for human settlement, agriculture, timber, fuelwood and housing materials.

Unsustainable and outdated forest management practices, as well as natural disturbances, also play a significant role in determining the changed composition and degradation of forests. Also, the intensity and frequency of cyclones in the coastal region have increased in recent years, which gives the mangrove forests less time and less chance to recover. The changed pattern is often attributed to the adverse impacts of climate change. Increased salinity due to sea level rise also contributes to the degradation of mangroves in Bangladesh. Thus the causes of deforestation and degradation are both human and natural.

Assessment method

An initial assessment of the causes behind deforestation and degradation was undertaken through the sub-national consultations described in Component 1b, followed by technical reviews in the light of past analyses of the Bangladesh forest sector and available literature. The resultingpreliminary analysis of the direct drivers and underlying causes of deforestation and forest degradation, related to each of the five forest categories, is presented in the tables below. Drivers and causes are segregated according to whether they fall within the control of the forest sector, or originate from outside the sector.

It is noted that the following is the result of a preliminary data collection, consultation and analysis. All aspects will be reviewed and verified during the implementation of the R-PP.

Hill Forests – Drivers and Direct Causes

Table 6: Drivers and Direct Causes of Deforestation and Forest Degradation in Hill Forests

Drivers	Within the forestry sector	Outside the forestry sector
Direct drivers	Unsustainable logging practice	Shifting cultivation
	Illegal logging, including involvement of some corrupt	Planned (legal) and unplanned (illegal)

		settlement
		Resettlement of population displaced by creation of Kaptai lake
		Migration of plains dwellers
		Agricultural expansion
		Forest concessions for conversion to tea, rubber, tobacco plantations
		Forest clearance by refugees from conflict-affected areas
		Urbanisation
		Infrastructure development
		Hydropower
Direct causes	Inadequate forest management plans	Weak governance
	Low institutional capacity	Insecure or disputed tenure over forest land
	Insufficient manpower	Political support for land grabbers
	Insufficient infrastructure and logistical support	Weak law enforcement
	No demarcation of forest areas or boundaries	Overlapping or unclear jurisdiction over forest matters
	Inadequate forest monitoring of implementation of management plans	Lack of coordination between line agencies
	Weak enforcement of forest legislation	Lack of political commitment to forest management
	On some occasions, low levels of multi-stakeholder participation in forest sector decision-making	Unresolved land tenure issues with CHT tribal peoples
	Growing demand for, and dwindling supply of, forest products	Population growth
	Lack of sustainable alternatives to timber for construction or wood for energy	Poverty, leading to lack of alternative livelihoods and access to finance (?)
	Inadequate finance for FD and other officials to conduct sustainable forest management	Rising incomes leading to rising demand for resources
		Increasing accessibility of forest areas
		High opportunity cost of maintaining sustainably managed forests
		Low perceived value of ecosystem services

Hill Forests –Underlying Causes

Expansion of Human Settlement and Agriculture

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Patterns of deforestation are very complex and mostly follow the pattern of human settlement and agriculture. Human activity in the hill forests started long before the declaration of the Reserved Forests. Several waves of deforestation in the north-eastern hills occurred with the establishment of tea gardens. The first commercial tea plantation was established in 1857 in Mulnichera in Sylhet. Today tea gardens occupy over 115,000 ha of the forest area. In the Chittagong Hill Tracts, 655 km^2 of forest area was submerged when the Kaptai dam was constructed in the early sixties. Due to this construction about 18,000 families lost their homes, along with 22,000 ha of their cultivable lands (Parveen and Faisal 2002). During the construction phase of the dam, approximately 66,000 ha of Kasalong RF was cleared and allocated for rehabilitation of the displaced people. Also, huge settlements of Bengalis from the lowlands, in the 1980s in particular, have put pressure on the land used by the indigenous people and have also caused massive deforestation and ecological problems.

Weak/Inappropriate Forest Management

In terms of its contribution to deforestation, the single most important failing of governments has been its inability to maintain a permanent forest estate. Sustainable forest management assumes that once the forest has been logged, it will remain a forest until the end of the rotation or to the end of the next cutting cycle and beyond. In most cases, this does not happen. When the logging is finished, the area is often either incompletely replanted or left barren due to the lack of finance. This encourages other economic uses of the land.

Forests in Bangladesh used to be managed under a system of sustainable yield of the targeted economically profitable species. The forest trees were harvested under a clear felling system. Under this system, the forest area was felled and replanted under a prescribed periodic working plan. Each defined area of forest is felled and replanted with the desired species, with a rotation period of between 40 to 80 years, depending on the growth rate of the species. However, in some cases, after felling, there is a considerable gap before replantation because of inadequate management planning or finance. Such gaps are covered by 'advance prescriptions' or 'schemes'. As a solution, some projects have been launched with loan money from World Bank or ADB - however this has not been an option in hilly areas or CHT, often due to land ownership issues. Moreover, there is no built-in mechanism to monitor the impacts of these interventions. In hilly areas, such drawbacks stand in the way of sustainable forest management, and have led to considerable barren areas in the formerly hill forest areas.

At the same time, the army has occupied large areas while huge tracts of land have been leased out to external (lowland) individuals for rubber plantations, with unfortunate results. The shortage of suitable land, misallocation of land for plantations, and misguided investment strategies have caused massive political, economic and social unrest and overexploitation of existing resources.

Shifting Cultivation

Shifting cultivation in the CHT and Chittagong Forest Division is an ancient practice, often referred to as *jhum*. However, with a developing market economy and the growing population pressure on land, the once elegant system of shifting cultivation has in many places collapsed into degradation and retrogression, influenced by factors both internal and external to the system. Areas which were once managed on a 20-year rotation of *jhum* now operate within a rotation of 5-7 years due to population pressure as well as loss of arable lands of the tribal people.

However, as populations have grown and land has become scarce, farming has become more intensive, making it unsustainable with diminishing economic returns. The farms are on soils not suited to intensive farming and, as a consequence, fields must be abandoned after two or three years of cropping, and the farmers move on to clear new forests. For most, it is a day-to-day fight for survival with their family's future dependent on the fortunes of the next uncertain crop. Their labours are rewarded by only meagre cash incomes that keep them well below the poverty line.Control or regulation of *jhum* is not effective and vast tracts of the hill regions are denuded. About 60,000 families engage in shifting cultivation,covering an area of about 85,000 ha of Reserved Forests in the hills, excluding those in the CHT.

Exodus of Rohingyas

The landscape transformation in the hills in the north-east, east and south-east is linked not only to the interests of various indigenous ethnic groups but also with groups originating from hills in neighbouring India and Myanmar, and settlers from the adjoining plain lands. In early 1992, about 268,000 refugees from Myanmar took shelter in Bangladesh in the forests of Cox's Bazar. It was estimated that about 2,000 ha of forest area was directly affected for establishing refugee camps inside the forest area. About 4,000 ha of plantations suffered due to collection of fuel wood.

Illegal Logging & Plantation Development

Fuelwood is the most important wood product in developing countries - where it accounts for 80% of all wood used. Even with the predicted fuel substitution from electricity, kerosene, and propane, it is not expected that this dependence on fuelwood will change significantly over the next decades in Bangladesh. For the most part, fuelwood collection and logging are not direct causes of deforestation, however they do produce a change in the composition of the natural forest and can increase the risk of a subsequent transition in favour of other land uses. In some circumstances, deforestation can result when harvesting occurs under very sensitive environmental conditions or when it is very intense over a long period of time. In the case of tree plantations, replacing the natural forest with plantations results in a loss of natural forest area but it often not counted as deforestation because there has been no permanent change in land use.

Industrial Developments

The first large-scale industrial development project in the CHT was the Karnaphuli Paper Mill. Financed by external resources (USD 13 million) including a World Bank loan of USD 4.2 million (Arens 1997), the Karnaphuli Paper Mill started operating in 1953. The mill had been granted rights for 99 years to extract its raw materials from the forest areas. However the mill, that became an important icon of economic development for Pakistan, set the conditions for environmental catastrophe in the CHT and misery for the hill people.

Bangladesh Forest Industries Development Corporation (BFIDC) was formed as a state owned organization in 1960, for developing timber-based activities in the CHT. It is now a semi-autonomous agency under the MoEF, owning 16 enterprises - two timber extraction units, 11 wood-based industrial units, and three board manufacturing plants. Many are inoperable or not profitable. It also has 11,700 hectares of rubber plantations spread over 12 estates of which over 5,000 hectares are in production. BFIDC employs some 4,000 persons. It has issued licenses to private individuals to convert large

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chunksof Reserved Forest area for rubber cultivation. But few of the lessees actually plant rubber on their land. The findings of an official review of the status of leased plantations in July 2009, required by the Parliamentary Standing Committee for the Ministry of CHT Affairs, indicated that many leased plots had not yet been utilized to develop plantations and some had been sublet to others in violation of the lease contracts. Members of the committee also observed that powerful land grabbers had been using these lease documents in an unscrupulous manner to evict indigenous people from their lands.

Tobacco cultivation

Tobacco cultivation is worth specific mention because of its active promotion in the CHT and its adverse environmental and social impacts. Tobacco plantations often damage the ecology of the area, with loss of trees and soil fertility. Many of the farmers of the three CHT districts of Bangladesh have admitted to losing their interest in cultivating indigenous crops like paddy, banana, maize, sesame, cotton, potato, pumpkin etc. as they became defaulters of loans provided by tobacco companies. They are forced to convert ever larger areas of forest land to tobacco plantation in order to pay back the loans.

Land Grabbing by Commercial land grabbers and dealers

A major emerging trend in the CHT during the post-Accord period is land grabbing by commercial interest groups led by influential moneylenders including private corporations and business-oriented NGOs. In addition, commercial land dealers (real estate brokers) linked to local powerbrokers have been grabbing lands in order to re-sell them to private corporations, real estate dealers, etc. Many of these land grabbers and dealers are in the business of speculation, operating through de facto land markets, without any formal titles or de jure rights.

Indeed, a new type of land grabbing is occurring in the CHT, which is characterized by the lack of concern for any legaljustification to lay claim on the land that is being forcibly taken over. These land grabbers do not even bother with titles and lease documents, but use sheer force while using their social and political connections to prevent the police and administration from intervening. They hire armed gangs to provide cover to hundreds of workers who are deployed to clear the grabbed lands, cut down trees and vegetation, and start new commercial plantations. They also use a variety of other mechanisms, including bribery to co-opt officials and induce headmen to sign the necessary papers.

Hill Forests –Causes External to the Forest Sector

Poor Governance

The policies and institutional weakness of the government agencies have significantly contributed to deforestation. As mentioned above, the conflicting policies of the government have directly contributed to the deforestation in the hill forests

Many institutional failures have been identified as contributing factors to deforestation. The FD is often at a disadvantage relative to other government departments which are concerned with other land uses. This reflects the economic power base in the country. Typically, the FD is handicapped by staff who are poorly-paid, poorly-trained and too few in number, as a result of inadequate budgets.

Corruption in the FD has also tarnished its image. This seriously affects the FD's efforts to deliver pro-forestry arguments to the political decision-makers and to the public at large. Even when there are

adequate policies and legislation in place, the weakness of the department in enforcing the law, resisting political pressures, and maintaining a field presence has bred general indifference for forestry law and officials in the CHT in particular. This has had a direct impact on people's attitudes towards the forestry departments' efforts to stop deforestation.

Although universally recognized as a problem, the lack of coordination of the policies of the various government agencies continues to frustrate sustainable development efforts. Narrow sectoral analysis and planning processes have led agencies to adopt conflicting objectives, having produced them without due consultation and consideration of their impacts on the forestry sector. Forestry sector projects generally receive lower priority than other sectors from decision-makers when allocating resources.

Throughout recent decades, forest development in Bangladesh has been characterized by centralized planning and management. Due to limited resources and inefficient resource distribution the FD has difficulties in facing the challenges posed by population increase and rising demand for forest products. The government must explore new, more democratic approaches to managing forests.

Population Pressure

Though one of the world's most densely populated countries, and with very low per capita forest area, Bangladesh has attained considerable economic growth since independence in 1971. The expansion of the economy has given rise to an expanded middle class. This in turn has resulted in an increased demand for food, fuel and housing amenities much of which is sourced from forests or leads to land being deforested to satisfy this demand. As human population continues to grow, so does the demand for forest-derived goods. Similarly, as we become more prosperous, our per capita consumption rises.

Poverty

At the same time as the country as a whole becomes more prosperous, the majority of the population remains stuck in poverty. Poorer communities, particularly in the CHT, remain dependent on forests for subsistence.

Infrastructure Development

The construction of new roads has a profound impact on the forest. Newly-built roads and highways have opened up thousands of hectares of previously inaccessible forest to colonization and expansion of the cattle industry. Main arteries are soon followed by secondary roads that penetrate deeper into the forest, eventually producing a wide swathe of deforested land on either side of the road. All roads that are constructed with the purpose of providing better access to less developed regions within a country tend to push up real estate values for non-forest uses and encourage land speculation and deforestation.

Logging roads are among the most important types of access roads that facilitate deforestation. Hydroelectric development is another important factor in deforestation. Reservoirs flood forest lands and transmission line right-of-ways are cut out of the forest to carry electricity to consumers, causing permanent losses of forest cover. Forests are also encroached upon by industrial and residential development as populations grow and cities extend outward.

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Plain Land, "Sal", Forests

Forests in the plain lands in Bangladesh are basically of two types. The elevated Pleistocene terraces known as Barind and Madhupur tracts contain dry deciduous forest dominated by *Shorearobusta*, or *Sal*. The other main type of forest is Freshwater Swamp forest, fringing the flood plain depressions (*bils*) popularly known as reed lands. Table 7 gives an outline of the drivers of deforestation and degradation as perceived by plains dwellers.

The deforestation of the *sal* forests in the north-west and central Bangladesh started much earlier than in the other areas (hills, low-lying floodplains and mangroves) due to the ideal conditions for human settlement and agriculture. Although these forests were managed by the Forest Department since 1917, very little information is available on the extent of Sal Forests in the country. Official FDreports estimate there is approximately 120,175 ha of inland Sal forest area in the country (Forestry Master Plan 1993-97). Due to lack of effective management the area has been shrinking. Even within the Madhupur National Park Area, approximately 20,000 people live inside the Park and they have cleared the forest area for cultivating rice, pine apple and other cash crops - claiming right of records or traditional users. Some of the lands are also used for industries (GoB/UNREDD, 2013).

The landscape consisting of riverine, wet low-lying areas once covered with freshwater swamps forests has also been cleared for extension of agricultures. According to a FD estimate, 23,590 ha of reedlands in the North East part of the country under Sylhet Forest Division was notified as reserve forest, of which 2,400 ha was allocated to Sylhet Paper Pulp Mill for supplying raw material, the remaining land is under FD control. According to a recent survey about 10% of the FD land is being used for agriculture and homestead by the illegal encroachers (GoB/UNREDD, 2013).

Table 7: Drivers of Deforestation and Forest Degradation in the Plains

Drivers	Within the forestry sector	Outside the forestry sector
Sal forest		
Direct drivers	Homestead agroforestry and agriculture Illegal logging made easier by corrupt practices	Overlapping /unclear jurisdictions; Demand for settlement and agriculture Demand for industrial land Infrastructure development Lack of alternate livelihood opportunities
Underlying causes	Lack of demarcation of forest areas Low institutional capacity and weak policy implementation Inadequate forest law enforcement Lack of sustainable or alternative supplies of wood and timber, including for wood energy to meet demand Demand for wood energy for domestic and industrial use	Unclear land tenure Unnecessary delays in reservation of forest land Lack of political commitment Overlapping legal jurisdictions Lack of coordination Population increase

	Low efficiency of wood conversion and use for construction, energy production, etc.	Poverty
	Lack of sanctions and/or performance incentives for Forest Department staff[11]	Rising incomes and demands for resources
	Lack of incentives for promoting sustainable management of forests	Increasing accessibility of forest areas
	Lack of adequate finance for FD	Weak Governance
	Lack of adequate manpower and logistic support.	Opportunity costs of sustainable management of forests at the local level
		Low perception of environmental value of forests
Freshwater Swamp forests		
Direct drivers	Agriculture expansion Poor management capacity	**Weak governance**
Underlying causes	Lack of finance to support sustainable forest management activities Corruption	**Demand for forest products**

Mangrove Forests

The natural mangroves and other wetland vegetation have undergone drastic changes since the Mughals invaded the area in the 4th century. In the 5th and 6th centuries, human settlement in the south extended into the fertile lands of the Sundarbans. At present, the mangrove forests in Bangladesh represent more than 50% of the total forest land in the country. Mangrove forests consist of both natural mangroves and plantations on the newly recovered lands along the coasts. Although the natural patch of mangroves were once distributed along the entire coast of Bangladesh, this natural forest type is now limited to the Sundarbans in the south-west. Since 1965, the FD has established approximately 0.2 million ha of mangrove plantations on the newly created coastal islands. Both natural and planted mangroves are deforested due to encroachment for agriculture, shrimp cultivation and salt production (see Table 8).

Table 8: Drivers in Mangrove Forests

Drivers	Within the forestry sector	Outside the forestry sector
Natural Mangroves		
Direct drivers	Illegal logging abetted by corruption	Demand for fisheries and agriculture Agriculture, shrimp, salt and homestead

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[11] As per REDD+ Integrity study

Drivers	Within the forestry sector	Outside the forestry sector
		developments
Underlying causes	Low institutional capacity and weak policy implementation Inadequate forest law enforcement Lack of finance to support sustainable forest management activities by line agencies Poor understanding of forest dynamics Lack of political commitment for forest management	Conflicting government policy Overlapping legal jurisdictions Lack of coordination Population increase Poverty Rising incomes and demands for alternative resources Increased demand for shrimp in the international market Weak Governance Unclear forest land tenure Weak enforcement of the law Low perception of environmental value of forests Sea level rise Salinity increase Cyclone and tidal surges
Coastal Plantation		
Direct drivers		Encroachment for agriculture and settlement Conflicting government policy Political support for land grabbers Weak Governance Infrastructure development Unnecessary delay in reservation of forest land
Underlying causes	Unclear management objectives Weak institutional capacity Lack of adequate finance	Overlapping/ unclear jurisdictions Weak enforcement of the law Opportunity cost of shrimp, salt production and ship breaking yards Sea level rise Salinity increase Cyclone and tidal surges

Natural Mangroves

The natural mangroves in the country were managed by the FD under two headings; the Sundarbans and the ChakariaSundarban under Cox's Bazar Forest Division. While the forest boundary of the Sundarbans remains intact, essentially devoid of any illegal encroachment for more than one and half a centuries since its reservation, the ChakariaSundarbans(with 21,000 hectares of mangrove) was converted to shrimp cultivation by government notification in 1983.

Industrial demand

In the past years, many factories and wood industries have received their raw materials from the Sundarbans.

Environmental Degradation and Diseases

The Sundarbans, the largest compact unique mangrove site in the world. It is being degraded due to environmental degradation, exacerbated by climate change. Environmental degradation in the Sundarbans is both man-made and natural. The man-made causes include increased salinity due to upstream withdrawal of freshwater (through Farrakha barrage) and sea level rise. Damage of trees and other biodiversity features is also caused due to increased frequency of cyclones and tidal surges degrading the quality of the forests.

Coastal Plantations

Establishing mangrove plantations in the newly recovered lands in the coastal area of Bangladesh is a pioneering venture in global forestry terms. Since 1965, the FD has raised about 0.2 million ha of coastal plantations, but a significant proportion of this area has since been cleared for agriculture, shrimp farming, salt production and ship breaking yards. Unlike encroachers in the hills and other plain land forests, the encroachers in the coastal areas are often backed by strong political power.

For example, over 1,000 hectares of mangrove plantation forest at Boyar Char in Noakhali district were damaged and cleared by land grabbers. To control such activities, FD requires the cooperation of the district administration, which is often not forthcoming. Often, the areas reclaimed from cleared mangroves are leased to local elites for shrimp cultivation. Subsequent changes of government have not managed to recover these encroached areas, demonstrating that the influence of land grabbers cuts across political party boundaries.

UNDP is piloting a forest management model under the CBACC-CF project in the coastal areas (see above). This project concentrates on tree plantation, fisheries and livestock rearing in the coastal wetlands by integrating climate change adaptation and mitigation concerns with expanded livelihood options for climate-vulnerable communities.It is expected to provide lessons to key stakeholders on the benefits of coastal zone plantations for protection from storms. Such plantations could constitute activities under a REDD+ programme, by establishing carbon sinks in the coastal wetlands, with the adaptation-related functions an important co-benefit.

4. Indicative Workplan for Component 2a

The above sections introduced the current situation regarding the policies, laws, drivers, causes and underlying causes of forest degradation and deforestation in Bangladesh. The above analysis is preliminary, and is an insufficient basis to design a REDD+ Strategy. Hence the following activities are required to develop a thorough understanding of the forces, drivers, issues, barriers and causes related to forest degradation and deforestation (note, this process continues through Component 2b, into the development of strategies).

Output	Activities
Output 2a1: Strengthen legal, policy and legislative framework for REDD+	1. Assess/reviewsectoral policies and laws related to REDD+ (e.g. energy, agriculture) to identify gaps and provide policy recommendations, in particular with regards to harmonization; 2. Undertake an extensive review of existing legal and policy frameworks pertaining to the CHT and other areas where indigenous communities exist. Identify the scope for REDD+ to conform to existing governance mechanisms in the spirit of the CHT peace accord. Suggest appropriate additional legal and policy measures or modifications. This will include a study on rights to land tenure and land use related to REDD involving local experts; 3. Review the existing laws and mechanisms for co-management, land and water related sectors, and benefit sharing, and determine the gaps and required amendments and modifications, in particular with regards to harmonization; 4. Undertake research and identify the needed political initiatives to remove the conflicts and ambiguities between the legal approaches to the Chittagong Hill Tracts (CHT) and the national level framework; 5. Develop tools and processes to recognize customary land rights and indigenous peoples' rights, potentially through an Independent Commission at the national level; 6. Assess institutional framework for forest management and governance (e.g. supply of forest resource, corruption risk-mapping of forest and public finance sectors, etc). This will include a more quantitative assessment of current forest management and current law enforcement, for which stakeholders perceptions have been assessed through the REDD+ Integrity Study; 7. Consult and validate all recommendations with all concerned stakeholders.
Output 2a2: Drivers of deforestation and forest degradation identified	1. Undertake scoping study on direct and indirect drivers of deforestation and degradation to identify new drivers and to understand priorities; 2. Initial analysis of all drivers of deforestation and forest degradation through studies in different forest areas – including quantitative assessment, and assess social issues and political economy; 3. Initial analysis of climate change induced drivers of deforestation and degradation 4. Consultation on the results of these assessments and selection of priority drivers to be addressed

Note that this list of activities will be complemented by activities under Component 2b (below).

Component 2b: REDD+ Strategy Options

1. Objectives of Component 2b

Reducing deforestation and forest degradation, and conserving, sustainably managing and enhancing forest carbon stocks, require a strategic approach to address the drivers identified in Component 2a and to enhance the policy and legal framework. The objective of this Component is to formulate the activities, policies and measures to implement REDD+ in Bangladesh. These activities, policies and measures will form a core element of the National REDD+ Strategy. This Component may include some initial piloting of REDD+ activities at the district level, in order to demonstrate successful approaches and to learn lessons that will feed into the preparation of the Strategy.

2. In-depthAnalysis of key Drivers

The key drivers were identified under Component 2a. In this component, a detailed analysis of the key drivers will be undertaken. This will include activities such as: an analysis of the results of national/regional consultation workshops on drivers of deforestation and forest degradation and analysis of the findings from 2a; the collection of information on the key selected drivers; undertake a detailed assessment of the national forest governance systems and its effectiveness against the drivers of deforestation and forest degradation; and the identification of conflicts within existing land use policies.

3. Preliminary Assessment of Strategies to Reduce Deforestation and Forest Degradation

During the REDD+ Roadmap development, an initial assessment of potential strategies to address the identified drivers and underlying causes of deforestation and forest degradation (REDD+ strategies) was carried out. This analysis, like that for the drivers themselves, was chiefly based on the outcomes of the five sub-national workshops described in Component 1b.

During the sub-national workshops, participants were requested, within their stakeholder groups, to discuss the performance of measures that have been implemented previously to address the drivers of deforestation and forest degradation, for example the Social Forestry Programme, Co-management of Protected Areas, Village Common Forests (VCFs) in the CHT etc. They were also requested to suggest alternative approaches as necessary.

The Strategy Working Group, building on this consultation process, then identified preliminary strategic options for addressing the underlying causes of deforestation and degradation. Theresults are presented in Table 9.This is a preliminary, simplified analysis. Notably, the different forest types, facing different drivers, will each require specific, dedicated strategies.

Table 9: Preliminary Strategy Options for Addressing the Drivers of Deforestation and Forest Degradation

Driver	Underlying cause	Strategy Options
Forest land conversion for settlement, agriculture, infrastructure.	Politically-induced planning processes	Sensitise political parties and develop mechanisms to ensure their commitment to neutral planning processes.
		Sensitise political parties on forest sector governance, through parliamentary standing committee on MoEF and through the Climate Change Trusted Board. .
	Unclear land tenure and land demarcation	Review legal and policy documents, promulgate legislation to clarify land rights.
		Establish forest land boundary through comprehensive survey.
		Identify and address conflicting legislation and cross-sectoral policy issues.
	Conflicting policy and planning, weak law enforcement and coordination between government agencies	Harmonise policy and planning.
		Improve coordination among Forest, District Administration, Agriculture, Fisheries and Law enforcement agencies at district level.
	Expansion of agriculture and shifting cultivation	Demarcate and regularly monitor forest boundaries.
		Enhance rotation cycle of shifting cultivation to at least 20 years, possibly by finding socio-economic alternatives.
		Increase awareness to raise community participation in forest management.
		Implement decentralized forest management planning with local community participation.
	Increasing demand for land for shrimp cultivation, salt production, ship-breaking yards, infrastructure and other industrial development	Promote policy for avoiding use of forest land for infrastructure development.
		Enhance policies that restrict the use of forest land for shrimp cultivation, salt production, ship-breaking yards, infrastructure and other industrial development.
		Ensure integrated local level planning, monitoring and evaluation of development

		projects, including road construction.
		Sensitise policymakers to forest-related planning issues.
Unsustainable harvesting practices	Inadequate sustainable forest management plan. Lack of inadequate finance for implementing sustainable forest management plans.	Promote decentralized forest management planning and accountable forest governance structures. Enhance financial and technical capacities of stakeholders on sustainable forest management and harvesting. Pilot and demonstrate sustainable forest management in the field.
	Poor scientific knowledge of Bangladesh forest types	Invest in research.
	Weak monitoring and implementation arrangements	Pilot sustainable forest management practices in the field and disseminate results to political parties, civil society and other concerned stakeholders.
High dependence of local community on forests and forest products	Limited access to alternative sources of livelihood products, particularly fuelwood and timber	Increase investment and access to alternative energy technology for forest dependent people. Invest in subsidies for improved cook stoves and other fuel efficient technologies for poor and marginalized communities.
Illegal harvest of forest products by poor people	Weak law enforcement and corruption Inadequate manpower and logistical support Poor official and residential facilities	Establish decentralized participatory forest management system to increase accountability and transparency. Pilot and implement effective participatory forest management and support multi-stakeholder district-level forest planning. Improved multi-stakeholder monitoring and evaluation (M&E). Create better awareness and capacity among all law enforcement agencies on forest issues. Implement study on increasing the effectiveness of the judiciary and judicial processes with respect to forest law enforcement.
Illegal harvest of forest products by outside forces	Weak law enforcement and corruption Inadequate manpower and logistical support No risk allowance for forest guards Poor official and residential facilities	Provide adequate manpower and support Ensure risk allowance Ensures standard and official residential facilities for forest guards Create better awareness and capacity among all law enforcement agencies on

		forest issues.
		Implement study on increasing the effectiveness of the judiciary and judicial processes with respect to forest law enforcement.
	Poverty and lack of livelihood alternatives	Promote investment in sustainable forest management and in forest friendly small and medium enterprises.
		Create skills-based training and provide post-training financial and material support, for alternative livelihoods.
Cyclones, tidal surges, sea level rise and salinity increase	Climate change	Enhance plantation of storm and salt tolerant species.

4. Selecting and Designing Strategies and Demonstration Activities

Introduction

One of the key objectives of the REDD+ Readiness phase is to identify candidate,feasible REDD+ strategies to address the underlying causes of deforestation and forest degradation.

REDD+ strategies fall into two broad categories:

(i) **Governance Measures**: A governance measure addresses existing gaps or inefficiencies and inconsistencies in the policy, legal or institutional framework related to REDD+ (see Component 2a). The overall impact on GHG emission reductions may be significant but cannot usually be measured directly. Typically, it may cover one or more sectors or large area.In many cases, governance measures are necessary for some or all activity packages to be effective. Last but not least, with a clear understanding of drivers of deforestation and forest degradation and their underlying causes, the process at this level will define Bangladesh's objectives and scope of REDD+ based on which specific REDD+ activities together with detailed strategies that Bangladesh will implement will be identified.

(ii) **Activity Packages**: An activity package is a set of practical measures which, when implemented properly and in union, will directly result in net reductions in GHG emissions. Activity packages are typically site specific, and so designed to address a limited geographical area. The costs of an activity package per unit area, unit of time or unit of labour, can be predicted with reasonable accuracy. Its impact on GHG emissions can be measured directly through implementation of MRV and Monitoring activities to be developed under Component 4.

Define and pre-appraise preliminary options for REDD+ strategies

Based on the consensus on the priority drivers of deforestation and forest degradation from Component 2a and the more in-depth analysis above, potential options for strategies will be outlined, including:

- policy-based approaches to addressing drivers;
- strengthening local government and non-government support and forest management mechanisms;
- locally-specific activity packages for addressing drivers, in the CHT and other regions.

The feasibility of each potential option will be assessed against the nationally defined objectives and scope of REDD+ in terms of human and financial capacity and infrastructure. As part of this, a methodology will be developed for cost analysis of candidate strategies and activity packages. Meanwhile, the potential impact of each option will also be considered in prioritizing the options.

Identify sites to pilot REDD+ strategies

While coordinated by the REDD+ policy and implementation framework of the central government, the administrative level for planning and managing REDD+ activities will ultimately be the District, as this is the level at which development planning processes generally take place in Bangladesh. This will be done through the District Development Coordination Committees. This level is also sufficiently large-scale to yield meaningful GHG emission reductions. On the basis of the identified options and strategies, the first step is to screen the 64 Districts in Bangladesh to select the optimal districts for piloting those REDD+ strategies.

Within each selected District, a screening process will take place to identifythe forest locations (or areas for afforestation/reforestation) which are most appropriate to deliver GHG emissions and multiple benefits from REDD+. The screening process will rely on maps for each of the following parameters:

- Forest cover change (based, if available, on accurate data from two or more sets of inventory data or remotely-sensed data at well-spaced intervals);
- Carbon density (using proxy information, IPCC Tier 1);
- Socio-economic indicators (poverty rates or proxies);
- Sectoral land use and economic development activities and plans; and,
- Biodiversity hotspots.

By overlaying these maps, the most suitable locations for REDD+ activities, in terms of multiple benefits, will be identified. These locations will prioritized in the planning process and will be used in the design of activity packages.

DesignDistrictlevel activity packages and cost norms

Once the priority locations for pilot REDD+ activities have been identified, a multi-stakeholder consultation process aided by a scientific analysis of drivers and their underlying causes from biophysical, technical, political, economic, sociocultural and demographic and other relevant aspects will be conducted to establish priority drivers of deforestation and/or degradation at each site. This will be followed by an assessment of feasibility of each candidate REDD+ strategy (see above) to identify priority actions to be tested.

For sites where the drivers can be addressed by feasible candidate strategies, activity packages will be designed. These will be based on a combination of technical interventions, labour inputs and capacity development to implement the candidate strategy at the site.

Activity package templates will be designed at district level. For each package, a cost norm will be developed per unit area of implementation. These cost norms will be used to develop fully-costed district plans for REDD+ demonstration programmes at the District. These plans will be implemented in REDD+Phase 2.

During Phase 2, the final decisions on implementation at each potential site, including the cost of the activity package implementation, will rest with the local stakeholders (e.g., communities, local governments and the private sector, etc) concerned. This will be the outcome of a negotiation and contract development process in full accordance with FPIC principles (see Component 1c).

4. Proposed Workplan for Component 2b

Output	Indicative activities
Output 2b1 Detailed understanding on the priority drivers of deforestation and forest degradation	1. Analyze results of national/regional consultation workshops on driversof deforestation and forest degradation; 2. Collect information on all drivers (both past and present, particularly in relation to specific policies, laws and regulations), including observed and anticipated causes , and undertake a scoping study of all drivers deforestation and forest degradation; 3. Assess national forest governance systems for effectiveness against drivers of deforestation and forest degradation; 4. Identify conflicts within existing land use policies and determine needs for alignment.
Output 2b2 REDD+ strategies to address drivers of deforestation and forest degradation	1. Develop options for policy and law-based approaches to addressing drivers (policies); 2. Undertake analysis of governance at the District level and determine how district-level land-use planning relates to REDD+ implementation; 3. Develop locally-specific activity packages for addressing drivers in CHT (including conflicts and land ownership issues) and other regions where indigenous communities live (measures); 1. Develop strategic options for strengthening capacity (human, financial, and infrastructure) of local Forest Department offices and staff - do the capacity building (5000 per office); 2. Undertake cost-benefit analysis of: options for policies and laws; activity packages and strengthening Forest Department. 3. Undertake capacity building of the local Forest Department Offices and other stakeholders.
Output 2b3 District level activity packages and cost norms	1. Design screening process for identifying suitable sites for REDD+ activities; 2. Produce basic district level maps (based on ERD climate financing) on forest land use change, carbon stock estimates, poverty and biodiversity indicators, using best information available (in relevant - 20 - districts); 3. Design district-specific activity packages and governance measures; 4. Identify and select 2-8 districts suitable for implementing activities in Phase 2; 5. Calculate cost norms for activity packages in each selected district; 6. For selected districts, prepared detailed multi-layer maps for environmental management, including Tier 1 carbon estimates 7. Prepare detailed district level activity packages, based on detailed multi-layer mapping, for each selected district.

Component 2c: REDD+ Implementation Framework

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Standard 2c the R-PP text needs to meet for this component:

REDD-plus implementation framework:

Describes activities (and optionally provides ToR in an annex) and a work plan to further elaborate institutional arrangements and issues relevant to REDD-plus in the country setting. Identifies key issues involved in REDD-plus implementation, and explores potential arrangements to address them; offers a work plan that seems likely to allow their full evaluation and adequate incorporation into the eventual Readiness Package. Key issues are likely to include: assessing land ownership and carbon rights for potential REDD-plus strategy activities and lands; addressing key governance concerns related to REDD-plus; and institutional arrangements needed to engage in and track REDD-plus activities and transactions.

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1. Objectives of Component 2c

The establishment of the REDD+ management structures is under Component 1a. The Objectives of this Component, 2c, are:

- To develop the required organization and individual capacity for REDD+ implementation and management structures. This will cover all agencies and stakeholders already involved in REDD+; and,
- Todesign and develop the specific elements for the financial implementation framework of REDD+. This covers both national level (to cover the receipt of funds throughan international REDD+ fund, carbon credits, or a combination of both) and local level (i.e. incentive schemes – this could potentially be a benefit distribution system).

2. Operationalising the Organzations and Individuals Involved in REDD+ Implementation

Institutional Assessment

The key institutions for Bangladesh REDD+ Readiness and Implementation are described in Component 1a. Some of these exist already,others will be established through R-PP implementation.The key existing institutions are:

- Ministry of Environment and Forestry (MoEF);
- Forest Department (FD);
- National REDD+ Steering Committee (RSC);
- REDD+ Cell.

Those that are to be established are:

- REDD+ Stakeholder Forum (RSF);

- Technical Working Groups (TWGs) on MRV, Strategy and Safeguards. As necessary, others will be established, for example on Finance. These may be established for a limited period to work on a specific issue;
- National Forestry Inventory Unit (see Component 4 for details).

For the National REDD+ Programme to be successful, all these institutions must function with optimal efficiency and effectiveness. For the MoEF and FD, this may involve some adjustment of existing policies and practices to take account of their role in REDD+, which may have unanticipated impacts (both positive and negative) on other aspects of the institution, while much of it remains unchanged. For the other bodies, including the already-formed RSC and the REDD+ Cell, their entire governing design will be determined by their roles within the National REDD+ Programme.

The establishment of new bodies and a management structure for REDD+ will be preceded by a full analysis to identify requirements in terms of institutional strengthening. This analysis, to be carried out during the Readiness phase by qualified management and institutional development experts, will identify the optimal systems and structures to allow the respective institutions to perform the required function. The conclusions will determine the priorities for institutional strengthening through the Readiness phase and later phases. The analysis will cover:

Governance and decision-making: The internal structure of institutions and the strength and complexity of links between institutions determine how efficiently decisions can be made and implemented. For national REDD+ readiness and implementation, compliance with FPIC, and a full and effective consultation process, must be matched with an institutional governance structure that facilitates effective decision-making and implementation of activities. To ensure this, leadership qualities, and the clarity of hierarchy are among the issues that must be assessed.

Communication: The ease and efficiency of the flow of information and instructions within and between institutions is critical for REDD+ Readiness and for a National REDD+ Programme. Facilitation of this process is addressed under Component 1c. The analysis will look at the depth of institutional structures (that is, how many levels of management between the decision-maker and the implementer), as well as the process of record keeping, to ensure that misunderstandings, duplication and contradictory messages are minimised. The ability of institutions to handle a two-way flow of information (witheffective feedback mechanisms) will also be assessed. This is necessary to ensure a smooth flow of communication. Initial training in better networking for partner institutions will be carried out.

Administration: Particularly for bodies with key implementation responsibilities, such as the REDD+ Cell, effective administration is essential. This includes the ability to manage finances and logistics, as well as to plan and organise events, coordinate individual and institutional calendars and schedules, and maintain transparent, accessible records.They should also be able to monitor and report the progress of implementation in a result-oriented fashion. Existing capacities will be assessed.

Capacity Assessment and Capacity Development

Following the above analysis, a comprehensive and continuous process of learning is necessary for the key institutions to successfully engage in REDD+ Readiness activitiesand to contribute towards the scaling up of activities for the REDD+ implementation phase.

All components of the Roadmap include some capacity building activities as an essential element of preparation for REDD+ implementation. However, as part of the overall readiness framework for REDD+, capacity building activities should be planned as part of an ongoing, reflective learning process designed to provide each group of stakeholders with the competencies, skills and knowledge required to fulfil their role in the REDD+ programme.

A comprehensive Capacity Building Needs Assessment (CBNA) of the MoEF was carried out in early 2012 with technical assistance from FAO[12]. This assessment covered all the capacity building needs of the institutions within the MoEF, including those required for effective implementation of REDD+. Activities related to capacity building during the REDD+ Readiness phase must therefore be developed with reference to this assessment. However, this assessment only covers capacity building strategies for MoEF, REDD+ must cover the needs of all REDD+ management bodies, partners and stakeholders.

Capacity development will be undertaken in three broad steps:

1. **Develop a Competency Framework for REDD+ in Bangladesh**: This will build on the stakeholder mapping and categorisation described in Component 1. The competency framework will identify the knowledge and skills that each stakeholder group must have in order to fulfil their role in a National REDD+ Programme.

2. **Undertake a Capacity Building Needs Assessment (CBNA) for REDD+ in Bangladesh**: Using the competency framework as a template, and drawing on the findings of the above-mentioned assessment undertaken by FAO, the CBNA will start with identifying the key capacity, skill and knowledge gaps among the stakeholder groups participating in the National REDD+ Programme. This will be prepared in parallel with the Consultation strategyin Component 1c.The REDD+ Cell will liaise with the three TWGs and create a Task Force, whose composition will be based on the advice of the RSF and authorized by the REDD+ SC. This Task Force will review the CBNA methodology and refine it accordingly. This activity will be closely related to the stakeholder mapping exercise to be carried out by the REDD+ Cell and Safeguards TWG under Component 1a.

3. **Design and Implement a Capacity Building Action Plan (CBAP) for REDD+ in Bangladesh:** The CBAP will be developed to respond to the needs identified in the CBNA. It will include activities at all levels, for example:

- Interactions with initiatives in other REDD+ countries, both at the regional and global levels, to build systemic, institutional and individual capacity of actors in Bangladesh;
- Training programmes for staff of key REDD+ institutions and other personnel involved in REDD+ strategy implementation;
- Capacity building to ensure that local communities can be involved in local management decisions, implementation and monitoring of the REDD+ programme, through existing Social Forestry programmes and established CSOs, some of which have been set up around forests to promote community involvement in forest conservation. In the CHT, this will involve developing the

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[12]MoEF/FAO, 2012

capacities required for VCF management and the extension of co-management approaches to Reserved Forests;

- Capacity building of other non-state actors, such as NGOs, that may play key roles in implementation of the National REDD+ Programme at the national level and at demonstration sites.

Information management

This aspect is essential to ensure that all institutions and stakeholders have access to accurate, up-to-date and transparent information on the national REDD+ process in general. Information management activities during REDD+ Readiness will include the design and development of a tracking and information systems, and the establishment of an information platform for REDD+ that will be continually managed and actively used by the staff and members of the institutions involved in REDD+.

These activities will be aligned with existing information database and knowledge management systems, particularly those managed by the BBS and SICT under the MoP (see Component 1a). They will also employ, where possible, the templates and systems of existing international REDD+ knowledge management systems including the REDD Desk[13], Forest Carbon Asia[14] and the UN-REDD workspace.

3. Financial Aspects – National Level Management of REDD+ Resources

In the third (and final phase) of REDD+, the country will receive 'positive incentives' for verified forest carbon emission reductions and increases in forest carbon stocks (UNFCCC COP Dec 1/CP.16, Para 73). The UNFCCC's COP has not yet decided on the form that these positive incentives will take, with possibilities including payments (from an international REDD+ fund, carbon credits, or a combination of both) or other incentives such as trade benefits. If the incentives take the form of revenues or carbon credits, this will flow to the country at the national-level, and so a national level mechanism, fund or facility to receive and manage these REDD+ payments will be necessary. In order for this to function, Bangladesh must establish a national-level facility to receive and manage these payments or carbon credits.

Sources of such support already exist in Bangladesh through the GoB (ERD under the Ministry of Finance, and the BCCRF for climate change-specific investments), through multilateral organisations such as the World Bank, and some private institutions, but coordination between such activities needs to be stepped up. Based on this experience, for REDD+ funds, the RSC will be among the principal bodies to help track and manage incoming finances against activities and outputs. The information clearinghouse for such development financing sources will be a valuable addition to the REDD+ capacity building efforts.

The participation of the Ministry of Planning and Ministry of Finance will be essential in the design of financial instruments and mechanisms to be used for the REDD+ implementation phase (as described in Component 1a). This will include defining the authority to transact international funds or/and carbon credits through REDD+ implementation.

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[13]www.theredddesk.org
[14]www.forestcarbonasia.org

During the REDD+ Readiness phase, a study will be carried out to identify and consider options for the financial arrangements. As required, an interim Financial TWG will be created to oversee this work. This will lead to the identification and definition of the most appropriate authority. The study will also produce recommendations on the terms of reference for the management of REDD+ finances. For example, the management authority may have the following attributes:

- Independent of the REDD+ management structure described in Component 1a;
- Ability to receive funds for performance based payments from both carbon market and fund-based systems and to create synergies between multiple sources of funding with clear accountability;
- Ability to enforce decisions on performance-based fund disbursement for REDD+ implementation.

It should also be noted that Bangladesh has a high capacity to build on the systems that have been followed successfully in the past in implementing large-scale development and conservation projects with adequate financial regulations.

4. Financial Aspects – Local Management and Benefit Distribution System

For REDD+ to work, it should provide positive incentives for all actors involved in reducing emissions from deforestation or degradation and/or conserving, sustainably managing or enhancing forest carbon stocks. While the cost of administering such REDD+ resources and supporting efforts at the policy and institutional levels will also need to be met, much of REDD+ benefits should flow to forest users as an incentive to them to use and manage the forests in a manner that contributes to REDD+ objectives. The incentives may be in the form of cash transfer schemes from the National level to local communities and institutions.

In other words, each potential strategy identified through Component 2b will entail direct costs on one or more groups of stakeholders. These must be compensated. In addition to the direct costs, there may be indirect costs of changing behavior, these also must be compensated. Hence, the distribution or allocation of REDD+ resources must compensate affected stakeholders, so the stakeholders have an incentive totake part in REDD+.

The costs and incentives required for implementing a particular REDD+ strategy must therefore be determined before the strategy can be adopted. Moreover, the means to allocate compensation must be determined. Under this Component, the necessary studies will be undertaken, including in conjunction with the demonstration districts.

Accordingly, a study will be undertaken of costs, the required incentives, and resource management and distribution options for the implementation of REDD+ in Bangladesh. The first step will be to assess present and past cash transfer schemes in Bangladesh (such as micro-financing schemes, Social Forestry Rules Beneficiary Mechanism (2004), Grameen Bank, BRAC, PKSF etc), particularly in terms of the fund management and distribution. Alternative mechanisms for directing REDD+ funds to private and NGO actors will be assessed. Provision for this already exists under the BCRF, which has a provision to disburse 10% of funds through existing local NGOs/CSOs.

The above will lead to a study and options paper that identifies possible mechanisms for distributing benefits from the national to the local-level in Bangladesh, including not only opportunities for direct payments but also other benefits. For example, this could involve the provision of training and tools for

forest management, or the provision of health or education facilities. Following stakeholder validation, this will lead to recommendations on how to establish an effective, transparent and equitable REDD+ positive incentives management and distribution mechanism in Bangladesh. This will be in the form of a Positive Incentive Distribution Plan.

5. Indicative Workplan for Component 2c

Output	Indicative activities
Output 2c1. Operationalising the Organizations and Individuals Involved in REDD+ Implementation	1. Analyse capacity needs of REDD+ Cell, RSC, TWGs, etc 2. Develop capacity development plan 3. Build capacity and undertake training of REDD+ Cell, RSC, TWGs, etc. 4. Support operations of REDD+ Cell
Output 2c2. Creating the transparent system for national level management of REDD+ finances in place	1. Conduct study on the design of a body for management of international transactions in funds or/and carbon credits; 2. Prepare options paper and recommendations for transparent and accountable management of national REDD+ resources; 3. Analyse past 'best practice' in Bangladesh for implementing national-scale development projects; 4. Propose a National Authority for managing the receipt of international REDD+ funds in a transparent, accountable and efficient way; 5. Undertake in-depth consultation and finalize the National Authority;
Output 2c3. Creating the transparent system for local distribution of REDD+ incentives	1. Determine the socio-economic needs of the positive incentive system for REDD+ at the local level; 2. Analyse existing benefit transfer systems in Bangladesh; 3. Prepare options paper and recommendations for transparent and accountable allocation of incentives to forest users as compensation for changed forest management and GHG emissions reduction; 4. Investigate options for lowering transaction costs for local forest managers; 5. Undertake in-depth consultation and finalize.

UN-REDD Resource Documents

In the implementation of this Component, the Bangladesh REDD+ Readiness team will refer to and, where appropriate, use the following UN-REDD programme guiding tools and documents:

- Guidelines on Stakeholder Engagement for REDD+ Readiness with a Focus on the Participation of Indigenous Peoples and Other Forest Dependent Communities;
- Social and Environmental Principles and Criteria (SEPC);
- UN-REDD Programme Guidelines on Free, Prior and Informed Consent (FPIC).

Component 2d: REDD+ Safeguards Implementation Framework

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Standard 2d the R-PP text needs to meet for this component:

Social and environmental impacts during readiness preparation and REDD-plus implementation:

The proposal includes a program of work for due diligence in the form of an assessment of environmental and social risks and impactsas part of the SESA process. It also provides a description of safeguard issues that are relevant to the country's readiness preparation efforts. For FCPF countries, a simple work plan is presented for conducting the SESA

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1. Objectives of Component 2d

The Objectives of Component 2d is: to develop the capacity and structures required to ensure environmental and social REDD+ safeguards are met in Bangladesh.

[Note: the Cancun Agreements require countries participating in REDD+ to develop a system for providing information on how the safeguards referred to in appendix I of the Cancun Agreements (COP Dec. 1/CP.16) are being addressed and respected, while respecting sovereignty. The process for establishing this safeguard information system is covered under Component 4(b)].

2. Ensuring Social and Environmental Safeguards

What are the Safeguards for?

The implementation of REDD+ carries a series of environmental and social impact risks, it also creates the potential for socio-economic benefits. A review of REDD+ Safeguards initiatives carried out on behalf of the UN-REDD partner agencies summarized the most commonly expressed risks of REDD+ programmes as (Moss et al, 2011):

(i)   The conversion of natural forests to plantations and other land use of low biodiversity value and low resilience;
(ii)   The loss of traditional territories resulting in displacement and relocation of indigenous peoples and forest dependent communities;
(iii)   The erosion or loss of rights with exclusion from lands, territories and resources;
(iv)   The loss of ecological knowledge;
(v)   The loss of traditional and rural livelihoods;
(vi)   Social exclusion and elite capture in the distribution of benefits from REDD+;
(vii)   The loss of or reduced access to forest products important for local livelihoods;
(viii) The creation of contradictory or competing national policy frameworks;
(ix)   The other benefits of forests are traded-off at the expense of maximizing the carbon benefits;
(x)   Human-wildlife conflict as population of crop raiding animals benefit from better protected forests**.**

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In response to these risks, the UNFCCC's Cancun Agreements (Dec. 1/CP.16) guide developing countries that are undertaking REDD+ activities to promote and support certain social and environmental safeguards when implementing REDD+ activities. These seven REDD+ safeguards agreed at Cancun are listed in Box 6[15].

(a) Actions *[under a REDD+ programme]* complement or are consistent with the objectives of national forest programmes and relevant international conventions and agreements;

(b) *[REDD+ programmes must have]* Transparent and effective national forest governance structures, taking into account national legislation and sovereignty;

(c) *[REDD+ programmes must demonstrate]* Respect for the knowledge and rights of indigenous peoples and members of local communities, by taking into account relevant international obligations, national circumstances and laws, and noting that the United Nations General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples;

(d) *[REDD+ prograemmes must ensure]* The full and effective participation of relevant stakeholders, in particular, indigenous peoples and local communities, in actions *[under a REDD+ programme];*

(e) Actions *[under a REDD+ programme]* are consistent with the conservation of natural forests and biological diversity, ensuring that actions referred to in paragraph 70 of this decision are not used for the conversion of natural forests, but are instead used to incentivize the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits;

(f) *[A REDD+ programme must include]* Actions to address the risks of reversals

(g) *[A REDD+ programme must include]* Actions to reduce displacement of emissions

Box 6: REDD+ Safeguards, according to Annex 1 of the Cancun Agreements (Decision 1/CP.16)

In other words, the application of social and environmental safeguards targets improving the sustainability of the National REDD+ Programme, and increasing the potential to deliver measurable lasting emission reductions and enhanced removals, as well as reducing exposure to legal, financial, and reputational risks for Bangladesh and involved donors, financiers, multilateral institutes, the private sector and civil society.

Moreover, as a UN-REDD partner country, Bangladesh's National REDD+ Programme must not only respect the safeguards listed in Box 6, but should also follow the relevant guidance from the UN-REDD programme. Jointly with the World Bank's FCPF, the UN-REDD global programme has issued guidelines for stakeholder engagement, which requires that country programmes adhere to the principles of Free, Prior and Informed Consent (FPIC) with respect to indigenous peoples and other forest dependent communities (see Box 5 above). These guidelines also oblige UN-REDD country programmes to abide by relevant provisions of UNDRIP, the UN Development Group (UNDG) Guidelines on Indigenous Peoples' Issues and the International Labour Organization (ILO) Convention number 169.

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[15] See Appendix 1, Para. 2 of the Cancun Agreements (Dec. 1/CP.16).

Bangladesh is also a Party to the Convention on Biological Diversity (CBD) and is hence obliged to adhere to the CBD articles that deal with forest conservation, including those traditional practices and knowledge that are consonant with forest conservation.

The REDD+ strategy options detailed in Component 2b may have positive and negative social and environmental impacts other than the reduction of GHG. Given the nature of these options, the safeguards for Bangladesh's National REDD+ Programme will give special consideration to livelihoods, rights (including those of Indigenous Peoples), the special protection of vulnerable groups (i.e. women, children, indigenous peoples, disabled), biodiversity, cultural heritage and will take into account gender considerations in this process.

Current status in Bangladesh

Bangladesh has systems of environmental safeguards under the Environment Conservation Act and Rules (1997) and adherence to these by national REDD+ programme will have to be ensured. The designation of Ecologically Critical Areas, as authorized under the Environment Conservation Act and Rules, provided the potential scope to enhance resource conservation and management at the landscape level and, in so doing, scale up co-management across different protected areas and ecosystems[16]. Furthermore, provisions of Environmental Impact Assessment [EIA] and compliance with Environmental Clearance Certificate can be useful for preventing environmental and social impacts from any projects like REDD+[17].

UN-REDD Targeted Support is currently supporting a REDD+ Integrity, based on field consultations, national-level interviews, literature review and an anonymous online questionnaire. This work is generating very useful information regarding corruption risks and mitigation actions. The final output depicts weaknesses and strengths in forest governance, with a focus on lack of transparency, integrity, accountability, and some implications/recommendations for REDD+. A draft is available at: http://www.unredd.net/index.php?option=com_docman&task=doc_download&gid=11241&Itemid=53

The Process to Further Develop REDD+ Social and Environmental Standards

As a core part of its REDD+ readiness process, Bangladesh will develop a set of nationally-specific social and environmental standards to ensure that the safeguards specified in the Cancun Agreements are complied with, while respecting the national interests and development goals. The processes and mechanisms necessary to identify, avoid and mitigate risk and adverse impacts, and enhance positive impacts, will be established during the REDD+ Readiness process, by monitoring progress against these safeguards. Likewise conflict resolution and grievance mechanisms will be established and are given in detail in Component 1c.

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[16] Section 3 of Environment Conservation Rules, 1997: **Declaration of Ecologically Critical Area.-**(1) The Government shall take the following factors into consideration;- human habitat; ancient monument; archaeological site; forest sanctuary; national park; game reserve; wild animals, habitat; wetland; mangrove; forest area; bio-diversity of the relevant area; and other relevant factors. (2) The Government shall, in accordance with the standards referred to in rules 12 and 13, specify the activities or processes which can not be continued or initiated in an Ecologically Critical Area.

[17] Rule 7 of the Environmental Conservation Rules, 1997, - Procedure for issuing Environmental Clearance Certificate.

Bangladesh will develop the Bangladesh's National REDD+ Social and Environmental Safeguard Management Framework in order to comply with REDD+ social and environmental safeguards, and a set of indicators to monitor performance against these standards, according to the following steps (the Safeguards TWG will take the lead in these activities):

3. Indicative Workplan for Component 2d

1. Review globally available REDD+ safeguards tools, processes and guidance mechanisms (e.g., SESA, REDD+ SE Safeguards, SEPC, etc.) and any existing national policies relevant to safeguards (e.g., EIA), and their applicability and effectiveness for REDD+ in Bangladesh. The Safeguards TWG will lead this work and will implement the review and other necessary activities[18].

2. Based on the principles and criteria in the existing national standards, draft a set of indicators against which compliance with the social and environmental standards can be assessed. Suggested means of verification for each indicator will also be suggested as order to screen the indicators for their practicality (this activity also figures under Component 4b).

3. Conduct a gender analysis of proposed national and local institutional structures for REDD+, leading to recommendations for how gender considerations can be integrated.

4. Hold an extensive process of multi-stakeholder consultations on the gender analysis and the national-level indicators. The consultation process will be designed by the Safeguards TWG, on the advice of the RSF, and sanctioned by the REDD+SC. This consultation process can take place in different formats (meetings, email feedback, written statements, etc.).

5. Compile all comments and feedback and prepare a draft of Bangladesh's National REDD+ Social and Environmental Safeguard Management Framework, along with clear description of how and why each comment has (or has not) been addressed.This will include nationally appropriate REDD+ social and environmental standards (principles and criteria), in compliance with the Cancun Agreements.

6. Hold a second round of multi-stakeholder consultations on the draft. This will include a validation process, as sanctioned by the RSF and REDD+ SC.

7. Submit the draft National REDD+ Social and Environmental Safeguard Management Framework, to the RSC for official endorsement. Based on the feedback from the second consultation period, the Safeguards TWG will produce a final draft of the standards and indicators and submit it to the REDD+ SC for approval and adoption as a normative document for REDD+ in Bangladesh.

8. Hold consultation on the results from the demonstration sites, to identify necessary risk mitigation and benefit enhancement measures. Pending clearance by the RSC, the Safeguards TWG will undertake

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[18] The UN-REDD conceptual framework document for support to countries on safeguards could be useful for this purpose, as well as to consider the sequencing here. The link is:
http://www.unredd.net/index.php?option=com_docman&task=doc_download&gid=10177&Itemid=53

stakeholder consultations to discuss risks and potential benefits in order to recommend a strategy mitigation /enhancement of risks/benefits.

Output 2d.1 Establish Bangladesh's National REDD+ Social and Environmental Safeguard Management Framework	1. A consideration of the national objectives and a national-level interpretation of Cancun; 2. Review globally-available REDD+ safeguards, processes and tools and pertinent national policies ; 3. Develop nationally-specific indicators to comply with international social and environmental principles and criteria (see also 4b); 4. Conduct a gender analysis of proposed national and local institutional structures for REDD+; 5. Undertake broad consultation; 6. Prepare a draft National REDD+ Social and Environmental Safeguard Management Framework; 7. Undertake consultations 8. Submit the National REDD+ Social and Environmental Safeguard Management Framework to RSC for endorsement 9. Consult and obtain feedback from demonstration pilot REDD+ projects.

UN-REDD Resource Documents

In the implementation of this Component, the Bangladesh REDD+ Readiness team will refer to and, where appropriate, use the following UN-REDD programme guiding tools and documents:

- Guidelines on Stakeholder Engagement for REDD+ Readiness with a Focus on the Participation of Indigenous Peoples and Other Forest Dependent Communities;
- Social and Environmental Principles and Criteria (SEPC);
- UN-REDD Programme Guidelines on Free, Prior and Informed Consent (FPIC).

4.Compilation of the National REDD+ Strategy

The National REDD+ Strategy will be developed based on the Outputs under this Component (2a, 2b and 2c and 2d1), but also on Outputs under Components 1, 3 and 4.

All the key elements (i.e., institutional arrangements, policies and measures, implementation framework, national forest monitoring system, forest RELs/RLs) taken together will be assembled into the National REDD+ Strategy, in order to harness all key strategies to achieve REDD+ Readiness.

Indicative Workplan

Output 2d2:   **National REDD+ Strategy**

1. Prepare draft National REDD+ Strategy based on all assessments and consultation (including under the Outcomes described under Components 1, 3 and 4);
2. Validate National REDD+ Strategy with stakeholders.

Component 3: Develop a National Forest Reference Emission Level and/or a Forest Reference Level

Standard 3 the R-PP text needs to meet for this component:

Forest Reference Emission Levels and Forest Reference Levels for REDD+

Present work plan for how the reference level for deforestation, forest degradation (if desired), conservation, sustainable management of forest, and enhancement of carbon stocks will be developed. Include early ideas on a process for determining which approach and methods to use (e.g., forest cover change and GHG emissions based on historical trends, and/or projections into the future of historical trend data; combination of inventory and/or remote sensing, and/or GIS or modelling), major data requirements, and current capacity and capacity requirements. Assess linkages to components 2a (assessment of deforestation drivers), 2b (REDD+ strategy activities), and 4 (MRV system design).

(FCPF and UN-REDD recognize that key international policy decisions may affect this component, so a stepwise approach may be useful. This component states what early activities are proposed.)

Rationale:

Measuring the effect of activities that reduce emissions from deforestation and forest degradation and provide carbon uptake or removals from the atmosphere through conservation of forest carbon stocks, sustainable management of forests, or enhancement of forest carbon stocks, requires an estimate of trends in forest cover and other land uses over time, in the absence of the REDD-plus policy interventions. This estimate of trends is then used to compare the performance of the interventions. Countries are encouraged to use current UNFCCC COP decision text terms "national forest reference emissions level" (REL) and/or "forest reference level" (RL) (Dec1/CP.16).

Key parts:

Historical data availability on drivers of deforestation and/or degradation and other REDD-plus activities Bangladesh socio-economic, political or environmental circumstances that might adjust the reference level proposed.

Assessment of feasibility of the REDD+ management structure to implement potential approaches to developing a national forest reference level and/or forest reference level.

1. Background and Objectives

The objective of Component 3 is to support the development of forest RELs/RLs[19] for Bangladesh. RELs/RLs will be the base against which the emissions by sources and removal by sinks of Bangladesh's REDD+ policies and interventions will be measured. Setting objectives and appropriate reference levels will ensure that emission reductions or removals are real and verifiable. Decision 4/CP.15 recognizes that developing country Parties in establishing forest reference emission levels and forest reference levels should do so transparently taking into account historic data, and adjusting for national circumstances (Article 7). According to the decision 12/CP.17 on Modalities for RELs/RLs, forest reference emission levels and/or forest reference levels expressed in tons of carbon dioxide equivalent (tCO$_2$e) per year are benchmarks for assessing each country's performance in implementing the activities referred to in decision 1/CP.16, paragraph 70 (UNFCCC, 2011). In addition, the decision 12/CP.17 stipulates that forest RELs/RLs shall be established maintaining consistency with the greenhouse gas inventory and that RELs/RLs should be updated periodically as appropriate, taking into account new knowledge, new trends and any modification of scope and methodologies.

At this stage, it is difficult to ascertain how Bangladesh's RELs/RLs will be developed to both reflect historical data, andto reflect current/future national circumstances. However, decision 12/CP.17 specifies that the development of the RELs/RLs will be performed following a step-wise approach enabling Parties to improve them by incorporating better data, improved methodologies and, where appropriate, additional pools, noting the importance of adequate and predictable support as referenced by decision 1/CP.16, paragraph 71. Countries are requested to establish forest RELs/RLs at a national level with sub-national approaches as interim measures. The previous COP 15 text takes into account use of historical data, and adjustments for national circumstances, in accordance with relevant decisions of the Conference of the Parties.

Establishing Bangladesh's RELs/RLs will involve several steps:

- Defining the national objectives for developing RELs/RLs (assessing impacts of policies and measures, providing a target to different actors, etc);
- Definition of forest and classification system (e.g. to support assessment of past, current and future forest land area change assessment);
- Selection of scope (activities, pools and gases);
- Selection of scale (national, sub-national leading to national, nested);
- Selection of approach (e.g. historical average, base period, linear projection, BAU, etc);
- Selection of time period and number of time points (yr)
- Assessment of the historical forest area change (ha/yr);
- Assessment of the emission factors (tCO$_2$e/ha);
- Assessment of the historic forest emission rates (tCO2e/yr);
- Assessment of the national circumstances and development of potential adjustment factors;
- Development of the national RELs/RLs (tCO2e/yr);

Decisions on updating requirements/modalities

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[19]Definitions of these two terms vary and are currently under negotiation. No definition attempt will, therefore, be made in this guideline to avoid confusion.

The development of Bangladesh's RELs/RLs will use historical information and also national circumstances, including current forest conservation laws, policies and strategy as well as sustainable development needs. RELs/RLs will be designed to meet international standards and requirements under the REDD+ mechanism and based on the decisions taken under the UNFCCC, the approach and methodology to develop the RELs/RLs will be adapted.

RELs/RLs framework

Decision 12/17 (UNFCCC, 2011) acknowledges that sub-national forest RELs/RLs may be elaborated as an interim measure, while transitioning to national forest RELs/RLs. The national strategy for REDD+ implementation will define how sub-national and national activities will be articulated and how sub-national activities will be integrated into the national framework and contribute to the national strategy. In this respect, the GoB will have to clearly identify the objectives in terms of emission reductions through REDD+. Methodological guidance for the definition and the assessment of the sub-national RELs/RLs will need to be clarified. Once the GoB has in place a framework for the integration of sub-national activities, it will be possible to have a system that could use the demonstration activities to test policies and measures and emission reductions.

Forest cover change in Bangladesh

The data available on forest cover change are limited in Bangladesh. Until present, only one national land use assessment has been undertaken at the national scale (FAO, 2007). Several sub-national land use/cover analyses were performed (see Annex 3) but these cannot contribute directly to the national statistics or to assessing national performances because they are not integrated and are not consistent with the data available at national scale. For example, the forest definitions and classifications used to develop the maps are not consistent from one sub-national map to another.

Bangladesh National Circumstances

The importance of national circumstances for the implementation of REDD+ was recognized through Decision 1/CP.16, paragraph 74. Information on national circumstances provides the opportunity for detailing the national or, as relevant, regional development priorities, objectives and circumstances. Information provided on national circumstances is critical for understanding a country's vulnerability, its capacity and its options for addressing its GHG emissions within the broader context of sustainable development. Information on national circumstances should be clearly linked to information provided in concerned chapters of the national communication.

Bangladesh could also include information on the linkages between REDD+ activities and forest and environmental policies. This section could contain the following information:

- Geographical characteristics, including climate, forests, land use and other environmental characteristics;
- Population: growth rates, distribution, density and other vital statistics;
- Economy, including energy, transport, industry, mining, tourism, agriculture, fisheries, waste, health and services sector;
- Education, including scientific and technical research institutions;
- Any information considered relevant by Bangladesh.

It is envisaged that in the REDD+ implementation stages, GoB will undertake studies, analyse national circumstances, collect data, improve the approach, and work on establishing national (or as an interim measure, sub-national) RELs/RLs.

This approach may evolve over the course of the early work, as and when the international policy process provides further guidance, as more data becomes available and domestic understanding of methods and tools are refined. Early work is crucial to allow GoB to have the capacity to identify the necessary approach.

2. Approach to Preparing RELs/RLs in Bangladesh

Based on the country's experiences and needs, three Outputs are required:

   i.   Capacities for the development of RELs/RLs strengthened;
  ii.   National circumstances and historical data considered for RELs/RLs.;
 iii.   RELs/RLs tested.

Based on the country's experiences several activities need to be implemented to deliver these three outputs.

Output 1: Capacities for the development of Reference Emission Level strengthened;

Activity 3.1.1: Capacity need assessment

Following a formal capacity needs assessment among all groups involved in the RELs/RLs development process, capacity building will be carried out to address the needs identified. A hierarchical management system for developing RELs/RLs will be further developed. Institutional, legal and procedural arrangements will need to be established to allow this system to function. Roles and responsibilities of various institutions will be clearly defined to ensure the necessary coordination to achieve common goals and outputs. This will involve formalization of existing and proposed collaboration and cooperation among key agencies and organizations (both governmental and non-governmental) leading to improved sharing of data and information that is vital to implementing the RELs/RLs for REDD+.

Under this activity several sub-activities will be implemented as follows:

   i.   National and sub-national consultations for the development of RELs/RLs;
  ii.   Stakeholder mapping to identify activities that contribute to the elaboration of RELs/RLs;
 iii.   Assess and suggest development of human, technical and financial capacities to support RELs/RLs;
  iv.   Support necessary institutional arrangements to set up sub-national and national RELs/RLs.

Expected outputs:

   i.   Report of the national stakeholder consultations;
  ii.   List of the stakeholders and relevant institutions involved in RELs/RLs development at national and sub-national levels (including relevant activities undertaken to support RELs/RLs);

iii.   Report on the assessment of the national capacities for RELs/RL;
iv.   Recommendations for the institutional arrangements for RELs/RLs.

Activity 3.1.2: Building capacities in developing RELs/RLs

Methods to develop reference levels need to be tested and validated before being used by stakeholders in charge of their implementation. Technical expertise for the development of RELs/RLs concern remote sensing, forestry, biometry, forestry statistics, data management etc. It is furthermore crucial, for the adequate implementation, and sustainability of the activities of Component 3, that adequate capacities are in place with adequate knowledge, experience and equipment. Recent assessment of the capacities of the Ministry of environment and forestry revealed that existing national capacities need to be reinforced.

Under this activity several sub-activities will be implemented as follows:
  i.   Procurement of equipment to support RELs/RLs development;
  ii.   Design training programme to support RELs/RLs development;
  iii.   Support specific trainings on remote sensing, inventory, data management, forestry statistics etc. provided;
  iv.   Regular consultations on RELs/RLs;
  v.   Support Bangladesh's contribution to UNFCCC discussion on RELs/RLs.

Expected outputs:

  i.   Equipment installed;
  ii.   Training programme;
  iii.   Specific trainings;
  iv.   Regular consultations documented;
  v.   Contribution of Bangladesh to RELs/RLs discussion.

Output 2: National circumstances and historical data considered for RELs/RLs.

Proposed activities to support Output 2 are listed below:

Activity 3.2.1: Assess Bangladesh's National Circumstances

The core elements of the National Communications (NCs) for both Annex I and non-Annex I Parties are information on emissions and removals ofGHGs and details of the activities a Party has undertaken to implement the Convention. NCs usually contain information on national circumstances, vulnerability assessment, financial resources and technology transfer, and education, training and public awareness.

The First NC from Bangladesh was submitted on 12 November 2002 and the second NCwas submitted on 2012. The third NC is being prepared by the DoE.

Under this activity several sub-activities will be implemented as follows:

  i.   Further assessment of land-use policy, forest policy and governance;

ii. Analysis of existing and historical social, political and economic data affecting land use and land use change;
iii. Analysis of existing conservation laws and policies;
iv. Assessment of land related forest cases and identify constraints of its rapid disposal;
v. Analysis of projected future development in Bangladesh taking into account national strategic objectives;
vi. Assess vulnerability to climate change and adaptive capacity;
vii. Assess potential forest cover and carbon stock changes, and;
viii. Collection of historic data that demonstrate contributions to conservation goals and sustainable development priorities, including circumstances that will have a significant impact on the successful implementation of REDD+.

Expected outputs:

i. Report on assessment of impact of land-use policy, forest policy and governance on land use and land use changes;
ii. Assessment of Existing conservation laws and policies toward REDD+;
iii. Assessment of vulnerability to climate change and adaptive capacity;
iv. Projected future LUC in Bangladesh taking into account national strategic objectives (including potential impact on carbon stock change);
v. Recommendations to the national REDD+ strategy are provided in line with existing national forest policies, capacities and past land use and land use changes.

Activity 3.2.2: Historical assessment of drivers of deforestation and forest degradation

Historical data collection may be problematic since it is not possible to assess extraction of forest products using remote sensing. It is therefore necessary to develop and test proxy methods using different sources of data. Fires can be detected on a daily basis using coarse resolution satellite imageries. While assessment of fire land areas is not accurate using remote sensing, detection of fire can be very relevant to reinforce forest management measures. A combination of field measurements and remote sensing information need to be tested to develop adapted methods to monitor forest fires. This is particularly relevant in the context of REDD+ and disaster management, which is a priority in Bangladesh.

Under this activity several sub-activities will be implemented as follows:

i. Identify drivers of deforestation and forest degradation with reference to output 2a2;
ii. Identify sources of information to assess historical evolution of drivers of deforestation and forest degradation;
iii. Assess the present land tenure practice;
iv. Assess the implementation of of conservation acts, rules and policies;
v. Assess the impacts of national development projects on forestry sector;
vi. Undertake any additional analysis and develop adequate methods to assess historical drivers of deforestation and forest degradation;
vii. Develop and test adequate methods to monitor forest fires using a combination of remote sensing technologies and field measurements.

Expected outputs:

i. Documentation on identification of drivers of deforestation and forest degradation done;
ii. Recommendation for the amendment of existing forest act;
iii. Proper and more controlled execution of acts and regulations;
iv. Improved coordination amongst the government organizations;
v. Analysis of fire evolution during the past 20 years;
vi. Additional methods to assess drivers developed;
vii.

Activity 3.2.3: Data collection to support reference levels

Reference levels are based on historical data and national circumstances. Bangladesh does not possess an adequate archiving system and information and data related to land use change are not appropriately stored and archived. This limits the preparation of the GHG inventory and limits assessment of land use change and support for adequate natural resource management strategies. It is crucial to setup a system to allow adequate data archiving and sharing among the various institutions involved in REDD+. The first step before designing such an archiving system is the data collection process. During the data collection process, data and information will be differentiated depending on their size, the type, the quality, variables and ownership. Arrangements will be made appropriately in order to ensure appropriate data collection and archiving.

Under this activity several sub-activities will be implemented as follows:

i. Identified different types of data to support establishment of reference levels and support national strategy for REDD+;
ii. Develop adequate documents (agreements) to support the data collection process;
iii. Data collection and storage into a central archiving system;
iv. Document data collection process;
v. Gap analysis on database management and archiving at sub-national or field level;
vi. Identify gaps and needs to improve current data collection process (efficiency, quality, etc.).

Expected outputs:

i. List of data to be collected;
ii. Documents to access data developed;
iii. Data to support RELs/RLs archived;
iv. Data collection documented with adequate data management system;
v. Quality of data assessed and gaps and needs identified.

Output 3: RELs/RLs tested

Proposed activities to support output 3 are listed below:

Activity 3.3.1: Combine and harmonize historical forest area changes

Combining historical area changes (deforestation, afforestation/reforestation, forest degradation, improved forest management, areas undergoing carbon stock enhancement) with other supporting data that provide information about the likelihood of future change is important. This will allow the

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identification of (1) currently forested areas that are under threat of deforestation and forest degradation, or (2) areas that could undergo sustainable forest management or carbon stock enhancement in the future (e.g. through afforestation/ reforestation activities). It will also enable identification of currently non-forested areas that are suitable for supporting enhancement of forest carbon stocks. The data could include biophysical data such as elevation, rainfall, slope, soil type; land use trends in the country; location of existing forest plantations, roads, protected areas; previously burned areas; agricultural lands; and infrastructure development. A spatial analysis will be performed combining all of these types of data layers to identify areas within Bangladesh that are most suitable for each proposed REDD+ strategy intervention. This analysis will contribute to the district-level mapping exercises described under Output 2b3.

Under this activity several sub-activities will be implemented as follows:

i. Identify gaps of existing historical data for deforestation, afforestation/reforestation, forest degradation, forest management, national park;
ii. Assess the weaknesses of forest land recording system;
iii. Develop a land cover classification system to harmonize existing historical data;
iv. Harmonization of existing data when possible;
v. Recommendations on the use of historical data to develop RELs/RLs at national and sub-national levels;

Expected outputs:

i. Historical data to support RELs/RLs harmonized;
ii. Proper records of forest land;
iii. Recommendations on the use of historical data to develop RELs/RL(s) at national and sub-national scale for the five REDD+ activities produced.

Activity 3.3.2: Develop a methodology to assess past forest land area changes

Remote sensing data are vital to map past forest land area changes for the five REDD+ activities. The feasibility of using remote sensing techniques depends on the availability of past satellite imageries, the quality, spatial, temporal, and spectral resolution of the satellite imageries and the available human, technical and financial capacities. Several satellite imageries are already used in Bangladesh and were used to develop past land cover and land use maps. At current status one national forest land map has been developed. The use of the satellite imageries may be limited by several constraints e.g. cloud cover. Furthermore, it is preferable to use a mix of medium resolution and high resolution imagery and different sensors to detect past forest cover changes at the national scale.

Under this activity several sub-activities will be implemented as follows:

i. Assess the quality of past satellite imageries in comparison with currently available satellite imageries for the forest monitoring system;
ii. Assess past forest land area change in one demonstration sites;
iii. Analysis of the compatibility of the past forest land area assessment with the results; obtained from the forest monitoring system;
iv. Test the method in demonstration sites;
v. Propose methodology and recommendations;

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vi.   Assessment of past forest land area changes implemented at national scale.

Expected outputs:

i.   Past forest land area change assessed for demonstration sites;
ii.   Proposed method to integrate existing past and current satellite imageries to assess past and present forest land area changes developed;
iii.   Proposed method is verified and quality is controlled;
iv.   Assessment of past forest land area changes provided.

Activity 3.3.3: Testing different RELs/RLs and possibilities of sub-national RELs/RLs

For defining historical emissions and removals, and for developing RELs/RLs, advice will be required from national and international experts trained in modeling land-use change, and land management and forest policies.
Under this activity several sub-activities will be implemented as follows:

i.   Identifying and learning from RELs/RL(s) methodologies from in-country and other countries;
ii.   Identification of existing sub-national RELs/RL(s) in Bangladesh;
iii.   Developing and testing RELs/RL(s) at sub-national scale with the objective of scaling up to national scale in the future;
iv.   Workshop to discuss the development of RELs/RLs;
v.   Propose recommendations and methodology to integrate sub-national actions into the national REDD+ strategy.

Expected outputs:

i.   Analysis of the RELs/RL(s) methodologies from other countries provided;
ii.   Proposed methodology to integrate sub-national RELs/RL(s) at national scale developed;
iii.   RELs/RLs tested at sub-national and national levels;
iv.   Recommendations for RELs/RLs are provided.

3. Indicative Workplan for Component 3

The development of RELs/RLs will be led by the MoEF. The TWG onMonitoring and MRV and the national forest monitoring systemwill meet regularly to discuss activities and guide the implementation of this Component.The process of developing RELs/RLs will be coordinated with other ministries and development partners that are active in Bangladesh.

Output	Activity
3.1 Capacities for the development of Reference Emission Level strengthened.	Activity 3.1.1: Capacity need assessment
	Activity 3.1.2: Building capacities in developing RELs/RLs
3.2 National circumstances and historical data considered for RELs/RLs.	Activity 3.2.1: Assess Bangladesh's National Circumstances
	Activity 3.2.2: Historical assessment of drivers of deforestation and forest degradation

	Activity 3.2.3: Data collection to support reference levels
3.3 RELs/RLstested	Activity 3.3.1: Combine and harmonize historical forest area changes
	Activity 3.3.2: Develop a methodology to assess past forest land area changes
	Activity 3.3.3: Testing different RELs/RLs and possibilities of sub-national RELs/RLs

<u>UN-REDD Resource Documents</u>

In the implementation of this Component, the Bangladesh REDD+ Readiness team will refer to and, where appropriate, use the following UN-REDD programme guiding tools and documents:

- The Monitoring and Measurement, Reporting and Verification (M & MRV) Functions for REDD+ Mitigation Actions.

Component 4: Design a System for Integrated National Forest Monitoring and Information, including Coverage of Safeguards and Co-Benefits

Parties aiming to undertake REDD+ activities under the Convention are requested to develop a robust and transparent national forest monitoring system to support monitoring and reporting of REDD+ activities. The system to be developed in Bangladesh is to cover forest monitoring and MRV requirements.

Component 4a includes the necessary operations and actions to establish an operational forest monitoring and information system, and the associated capacity development to ensure there is a sustainable and complete system for measuring, reporting and verification (MRV). Component 4b includes the necessary activities to build capacity to identify co-benefits and to prioritize the co-benefits to be pursued and, to monitor and provide information on safeguards and key co-benefits. In reality, the capacity built and information generated through 4b will complement that generated through 2d and will feed into the unique forest monitoring system established under 4a.

Component 4a: Integrated National Forest Monitoring and Information System

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Standard 4a the R-PP text needs to meet for this component:

National Forest Monitoring System

The R-PP provides a proposal and workplan for the initial design, on a stepwise basis, of an integrated monitoring system of measurement, reporting and verification of changes in deforestation and/or forest degradation, and forest enhancement activities. The system design should include early ideas on enhancing country capability (either within an integrated system, or in coordinated activities) to monitor emissions reductions and enhancement of forest carbon stocks, and to assess the impacts of the REDD-plus strategy in the forest sector.

The R-PP should describe major data requirements, capacity requirements, how transparency of the monitoring system and data will be addressed, early ideas on which methods to use, and how the system would engage participatory approaches to monitoring by forest–dependent indigenous peoples and other forest dwellers. The R-PP should also address the potential for independent monitoring and review, involving civil society and other stakeholders, and how findings would be fed back to improve REDD-plus implementation. The proposal should present early ideas on how the system could evolve into a mature REDD-plus monitoring system with the full set of capabilities.

Background and Introduction

Parties to the UNFCCC are committed to share information on their mitigation and adaptation policies and measures, and on the results they obtain through their implementation. To report these results, countries should collect information that allows a comprehensive assessment of the outcomes, including carbon stocks and other relevant information that a country may need to fulfill the information requirements under the UNFCCC. Monitoring for REDD+ can go beyond the assessment of carbon, and may include other elements such as forest health; biological diversity; productive, protective and socio-economic functions of forests; and legal and policy frameworks related to forests. Much of this information could be relevant for addressing and respecting some of the safeguards as outlined in Appendix 1 of the Cancun Agreements (Decision 1/CP.16). The monitoring system for REDD+ could

therefore contribute to the national system as well as for purposes not directly related to REDD+, such as reporting requirements under other Conventions.

This component focuses on identification of the necessary operations and actions that should be undertaken to achieve an operational forest monitoring system and the capacity development required to move forward and develop a full system for measuring, reporting and verification (MRV). The purpose of the component is to design: a) a national forest monitoring system for emissions and removals of greenhouse gases due to avoided deforestation and forest degradation, enhancement of forest carbon stocks, conservation and sustainable management of forests; and b) a system for providing information on how safeguards are being addressed and multiple benefits are being secured throughout the implementation of REDD-plus activities. These two systems are complimentary, and can assist the country in its effort towards readiness.

Progress on National Forest Monitoring Systems to date

With technical support from FAO, the M & MRV working group prepared a MRV Action Plan for Bangladesh, which was included as an annex to the REDD+ Readiness Roadmap and on which components 3 and 4 of this R-PP are largely based. Since the last national Roadmap consultation workshop in April 2012, the working group has begun implementing the activities outlined in the MRV Action Plan. The UN-REDD programme, through FAO, provided targeted support for capacity building in forest monitoring, GHG inventory preparation for the LULUCF sector and land cover classification. This included the production of country-specific training materials and proceedings of the training events. Other documents produced through this targeted support include:

- Forest Classification System in Bangladesh
- Tree volume and biomass allometric equations for Bangladesh
- Study Analysis using Land Cover Classification System (LCCS) 3 (ongoing)
- Data catalogue for the GHG inventory of the LULUCF sector (ongoing)

Within 2013, targeted support will be used to initiate the harmonization of the existing land use/cover maps of the country and a data sharing agreement (MoU) between FD and FAO.

Methodological guidance for National Forest Monitoring Systems

For the monitoring of REDD+ activities, Bangladesh will define specific methods, criteria and indicators to reflect national circumstances. The National Forest Monitoring System is primarily a domestic tool to allow Bangladesh to assess the results of REDD+ activities, as implemented by different stakeholders and institutions. The development of monitoring tools builds important experience and capacity in a country towards the establishment of a complete and accurate national GHG inventory for the LULUCF sector. In this way the development of the monitoring system will support Measurement, Reporting and Verification of emission reductions.

Proposed methodological approach

To implement Parties' commitments under Article 4, paragraph 1(a), of the Convention text, the COP requested the IPCC to develop guidance and guidelines that would result in a methodological framework

for "comparable methodologies". The IPCC methodological framework mainly applies to the MRV function of the NFMS, however they could be applied to the monitoring function as well to ensure consistency in estimations, for example to directly estimate emissions reductions for a demonstration activity rather than relying only on proxy indicators or measurements. When following the IPCC's Good Practice Guidance (IPCC, 2003) or the Guidelines for National GHG Inventories (IPCC 2006), the simplest methodological approach consists of combining information on the extent of human activities (called 'activity data' – AD) with coefficients that quantify emissions or removals per unit activity (called 'emission factors' – EFs).

Proposed pillars to support the National Forest Monitoring System

The three technical pillars or building blocks of the NFMS that are essential to support its MRV function can be described as follows:

- Pillar 1: A Satellite Land Monitoring System (SLMS) to collect and assess, over time, the Activity Data (AD) related to forest land (equivalent to AD);
- Pillar 2: National Forest Inventory (NFI) to collect information on forest carbon stocks and changes, relevant for estimating emissions and removals and to provide emissions factors (EF);
- Pillar 3: A national GHG Inventory as a tool for reporting on anthropogenic forest-related GHG emissions by sources and removals by sinks to the UNFCCC Secretariat (Emissions).

These pillars could support the implementation of a NFMS (Decision 1/CP.16 paragraph 71(c); Decision 4/CP.15 paragraph 1(d)), with the dual functions of monitoring and MRV for REDD+.

Proposed phased approach to implement the three pillars

The three pillars of the NFMS can be developed along the three phases for REDD+ described in Decision 1/CP.16, allowing for the implementation of results-based demonstration activities in Phase 2 and the full MRV of performance of REDD+ activities in Phase 3. Following this strategy, each phase aims to strengthen capacities and prepare for the next phase, resulting in a degree of overlap between phases, notably in terms of capacity building. In Phase 2, monitoring for REDD+ becomes operational, through the SLMS and other relevant proxies. The transition into Phase 3 is achieved by monitoring REDD+ activities at the national level, a National Forest Inventory (NFI) to produce EFs and a LULUCF GHG inventory. Monitoring for REDD+ should be developed throughout the REDD+ Phases as follows.

Phase 1 involves the planning and development of tools for the Monitoring function for REDD+. It includes the selection of technical systems, capacity building and technology transfer, and the testing of methods, while defining national REDD+ policies, measures and institutional arrangements, and developing an action plan for the NFMS.

In Phase 2 the implementation of the national REDD+ policies and measures may lead to results–based demonstration activities, i.e. resulting in measureable positive outcomes. In order to assess these outcomes, monitoring of demonstration activities is required. In Phase 3 monitoring for REDD+ will ultimately be expanded to cover the national territory to assess the outcomes of REDD+ activities being implemented and thus which Policies and Measures (PAMs) are truly results-based.

Pillar 1: the Satellite Land Monitoring System

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Pillar 1 concerns the collection of AD, i.e. data on land use and forest area change as a result of human activities, through a SLMS. Satellite remote sensing can be a useful and cost effective tool for collecting data on forest area changes. The satellite remote sensing is a central tool for monitoring for REDD+.

Pillar 2: the National Forest Inventory

Pillar 2 concerns the NFI. It is considered an important tool for measuring forest carbon stocks and stock changes. The NFI contributes to estimate anthropogenic GHG emissions and removals by sinks associated with forests because it includes field measurements that will allow the estimation of forest carbon stocks and changes, i.e. standing volume, necessary data for biomass expansion factors, and allometric equations. Ultimately, the NFI allows countries to calculate country-specific EFs for each relevant land use category, as well as subcategories based on stratification of forest land.

Pillar 3: the National GHG Inventory

Pillar 3 concerns a tool for reporting on anthropogenic forest-related GHG emissions by sources and removals by sinks. Countries are requested to estimate forest-related GHGs by sources and removal by sinks if they want to implement REDD+ activities under the UNFCCC. Under the UNFCCC, the information disseminated through GHG inventories is the basis for assessing the progress on the implementation of the UNFCCC in achieving its ultimate objective. The GHG inventory provides estimates for emissions by sources and removals by sinks (using data on land use provided through the SLMS and data on carbon stock changes from the NFI), and uncertainty estimates are provided. The quality of the GHG inventory depends not only on the robustness of the results from the measurements made and the credibility of estimates, but also on the manner and method in which the information is collated and presented. The information must be documented following the reporting guidelines required by the UNFCCC, as decided by the COP. The IPCC methodologies should be used as the basis to generate information and estimates on anthropogenic GHG emissions and removals, Countries should aim to meet the five UNFCCC reporting principles: Transparency, Consistency, Comparability, Completeness and Accuracy when developing and reporting GHG inventory estimates.

Outputs and Activities Related to the National Forest Monitoring System

Based on the country's experiences and needs, six Outputs are required:

(i) Capacities to implement the GHG inventory for the forest sector strengthened;
(ii) National Satellite Forest Monitoring System established;
(iii) National Forest Inventory Designed;
(iv) Scientific research on key issues enhanced;
(v) MRV Implementation Support Facility
(vi) Integrated forest information system designed and supported.

Based on the country's experiences several activities need to be implemented to deliver these six outputs.

Output 4.1.: Capacities to implement the GHG inventory for the forest sector strengthened

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Activities of this output are designed for the country to use the IPCC guidance and guidelines asa basis for estimating anthropogenic forest-related greenhouse gas emissions by sourcesand removals by sinks, forest carbon stocks and forest area changesin order to comply with the five reporting principles: Transparency, Coherence, Comparability, Completeness and Accuracy.

Activity 4.1.1: Review and updating of MRV Action Plan

Update the MRV Action plan with updatedarrangements in terms of institutional, scientific tools and methodologies for MRV operations to provide capacity building at local through to national levels to support and maintain REDD+ MRV operations.

Under this activity several sub-activities will be implemented as follow:

- Update information on technical requirements and competences of the various government and research entities in relation to the MRV development process, as well as existing institutional, legal and procedural arrangements made to date;
- Update the information to generate and estimate Activity Data (AD), Emission Factors (EF) and GHG inventory;
- Update information with current capacities and gaps to implement a forest monitoring and MRV systems;

Expected outputs:

- MRV action plan updated to provide the information regarding country's current context on MRV and capacity building needs for REDD+;
- Adequate dialogue and consultation between relevant stakeholders is ensured and documented.

Activity 4.1.2: Organization of regular MRV meetings

Regular meeting and compilation of the information in many regards related to MRV activities is necessary for the successful implementation of MRV.

Under this activity several sub-activities will be implemented as follows:

- Develop a list of all the institutions and staff involved in MRV;
- Develop a calendar for all the MRV meetings to be held during the period of the programme;
- Identify the topics to be discussed in each of the meetings and relevant contributors;
- Contribute to the organization of each of the MRV trainings;
- Prepare the minute of each of the MRV meeting;
- Store and archive all the documents produced during the MRV meetings;
- In collaboration with the all relevant stakeholders contribute to the national consultation on national forest definition, forest monitoring system and GHG inventory.

Expected outputs:

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- List of the MRV stakeholders of Bangladesh with contact address and associated institution names prepared;
- Work plan and calendar for the period of the programme published;
- Minute of the meetings produced;
- Archive all the documents produced;
- Report of the national consultations generated.

Activity 4.1.3: Support to Institutional Arrangements for GHG National Inventory System for the LULUCF sector

To produce high quality GHG inventories, a Party needs a strong national inventory system which incorporates all the elements necessary for estimating GHG emissions and removals. Ideally, this should include a central coordination agency as well as arrangements between the agencies and institutions that provide data. To do so, the Party should identify experts (from environmental agencies, universities, research institutes, non-government organisations, etc.) to compile the estimates and to perform procedures for GHG inventory development. Therefore preparing a national GHG inventory and setting up a National Inventory System (NIS) requires coordination and collaboration across a great number of individuals and organizations. It is important to establish institutional arrangements with data providers to ensure access to data that will be used to develop the GHG emission estimates.

Under this activity several sub-activities will be implemented as follows:

- Assessment of the existing institutional arrangements (NFI, RIMS Unit, GHG Unit, sharing platform);
- Propose institutional arrangement for effective implementation;
- Identify the role, organization, coordination mechanism and contact information for those providing relevant data for estimating emissions in LULUCF sector;
- Provide information on lead agencies, identify inventory management team members, Information for additional contacts for each sector, the status of the institutional arrangements in a concise tabular format;
- Identify policy support necessary for institutional arrangement and obtain govt. Approval (e.g. govt. Notification on institutional structure, role, mandate) for effective implementation;
- Identify the strengths in and recommend for potential Improvements in Management Structure of National Inventory System for LULUCF;
- Conduct workshop to validate the assessment results and share the proposed proposal for the organisations;
- Review the report if necessary.

Expected Outputs

- Essential information documented in a concise format;
- Standardized tasks defined for all agencies, in order to compare and contrast results;
- Roles and responsibilities clarified;
- Objective and efficient system for identifying priorities for future improvements provided.

Activity 4.1.4: Technical capacity building for the GHG inventory for the LULUCF sector

The country has a very limited experience in MRV national GHG inventory for the LULUCF sector. The objective of this activity is to provide preliminary trainings and identify the future training needs in order to prepare inventory plan, implementation of inventory, data compilation and reporting with the aim to promote the establishment of the national system.

Under this activity several sub-activities will be implemented as follow:

- Provide trainings on GHG inventory for the LULUCF sector;
- Identify the training needs on inventory planning, data collection, data compilation, reporting, and uncertainty estimation;
- Develop training manuals and deliver training programme as necessary;
- Technical support in identifying the UNFCCC software and tools for data compilation and reporting;
- Develop QA/QC plans for data collection and compilation;
- Prepare a checklist for QA/QC;
- Design a user-friendly manual for the GHG-I reporting process.

Expected outputs:

- Trained manpower in GHG inventory for LULUCF sector;
- Software and tools to support the GHG inventory for LULUCF sector provided;
- Manuals, plans, designs of data collection, compilation and QA/QC procedure developed.

Activity 4.1.5: Support development of the catalogue of data to support the GHG inventory for the LULUCF sector and particularly for forestry

Bangladesh submitted INC and SNC to the UNFCCC. For the LULUCF sector, secondary data was collected from the departments, respective web pages and expert judgment was used for emission calculation for both the communications. Third National Communication (TNC) is under the process for implementation. Thus prior to starting the data collection for TNC, a catalogue could be compiled which would make all the related data/information available for the LULUCF sector for TNC.

Under this activity several sub-activities will be implemented as follow:

- Identification of all relevant information to support the GHG inventory for the LULUCF sector, taking into consideration national and international databases and scientific literature;
- Documentation of the data collection procedure;
- Storage of the various source of data (shapefiles, spreadsheets, text, hard copies etc.);
- Harmonization into a central and accessible database;
- Data are tested and quality is controlled.

Expected outputs:

- List of all documents containing activities data and emission factors for LULUCF sector is provided;
- Functional database containing harmonized emission factors and activity data.

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Output 4.2.: NationalSatellite Forest Monitoring System

REDD+ requires reliable and timely information on the state of the forests. Satellite imagery is the only effective way of mapping such vast areas on a regular basis and producing easily-understood maps of forest cover change. There is no monitoring system for the identification of land use change in the forest in Bangladesh. Development of a national system for forest monitoring will enable a decision-making environment where reliable, accurate, and current information on forests and forest resources is readily available and therefore authorities can take actions upon this information. Several activities are listed below that need to be accomplished for the implementation of a satellite forest monitoring system.

Activity 4.2.1: Development of land cover map index

Several organizations are involved in land cover as well as forest cover mapping for different purposes using different classification systems and definitions. Development of a map index will show the present status and previous initiatives taken under different organizations for land cover mapping and monitoring.

Under this activity several sub-activities will be implemented as follows:

- Identify the data set to be shared among the organizations;
- Archive and organize in a database all available satellite and/or aerial imageries;
- Assess the quality of these data in terms of spatial coverage, temporal availability, cloud contamination, spatial and spectral resolutions, and image registration in order to select appropriate images for the national forest monitoring system;
- Identify possible additional images from other sensors suitable for the national forest monitoring and analyze the cost of these new acquisitions or collection;
- Analyze in this context the impact of the use of different forest definitions on the system for national forest monitoring;
- Provide recommendations for the use of imagery for past and possible current forest cover assessment, forest stratification and monitoring of REDD+ activities;
- Produce index maps for the various sensors and/or aerial imageries available.

Expected outputs:

- Database containing descriptive information to be used to facilitate the design of the national forest monitoring system;
- One archive containing all satellite and aerial imageries for Bangladesh;
- Technical documentation and a draft working paper as per FAO publication guidelines providing descriptive information and recommendation for forest monitoring system;
- Index maps are produced;
- Final report including license type for all satellite imagery in the database and recommendation for terms of use and data sharing agreement between data owners and users.

Activity 4.2.2: Satellite image characterization for forest monitoring

The selection of the types of satellite imagery will depend on their quality, cloud cover, spatial, temporal and spectral resolution, and their cost. It is therefore necessary to decide the parameters to be collected

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using remote sensing to accurately monitor forest cover change and provide information on some of the REDD+ safeguards. It is also important to decide on the use of correct levels of resolution, to accurately monitor forest degradation or enhancement of forest carbon stocks by way of distinguishing forest landscape feature changes or forest area changes. Mid-resolution data is available with FD but REDD+ interventions will often occur at finer spatial scales and may not result in a significant change in land cover (e.g. afforestation, degradation etc) and therefore may be difficult or even impossible to monitor with such data. FD procured high resolution data for forest cover assessment in 2012. Therefore the possibility of identifying the REDD+ interventions could be evaluated using high-resolution imagery within the forest.

Under this activity several sub-activities will be implemented as follow:

- Organize all available satellite and/or aerial imageries for the country;
- Assess the quality of these data in terms of spatial and temporal coverage, cloud cover, spatial and spectral resolution, and image registration;
- Analyze the impact of different spatial resolution in identifying the deforestation, degradation on the system for national forest monitoring ;
- Provide recommendations for the use of imagery for past and future forest cover assessments, forest stratification and monitoring of REDD+ activities.

Expected outputs:

- Existing satellite imageries for Bangladesh identified;
- Freely available satellite imageries archived and transparently available for the national entities involved in MRV;
- Recommendation on satellite imageries to monitor REDD+ activities in Bangladesh provided.

Activity 4.2.3: Rationalization of land cover classification system

This activity involves setting the National Forest Definition and classification for land representation. It is important to have an appropriate national definition of forest and land representation system allowing feasible, effective and sustainable monitoring tools of forest resources. The national definition adopted during National Forest and Tree Resources Assessment 2005-2007(NFA) in Bangladesh is provided in page **Error! Bookmark not defined.**. Under the UNFCCC, forest definitions are provided based on biophysical thresholds. The forest thresholds will need to be within the thresholds identified by the UNFCCC.

Box 7: Defining forest land under the Kyoto Protocol

"Forest" is a minimum area of land of 0.05-1.0 hectares with tree crown cover (or equivalent stocking level) of more than 10-30 per cent with trees with the potential to reach a minimum height of 2-5 metres at maturity in situ. A forest may consist either of closed forest formations, where trees of various storeys and undergrowth cover a high proportion of the ground, or open forest. Young natural stands and all plantations which have yet to reach a crown density of 10-30 per cent or tree

> *height of 2-5 metres are included under forest, as are areas normally forming part of the forest area which are temporarily unstocked as a result of human intervention, such as harvesting or natural causes, but which are expected to revert to forest[20].*

Currently,differentclassifications and definitionsare used formappingnatural resources in Bangladesh. The classification systems are using by the organizations also varies for a single thematic area. Therefore the data cannot be compared between types, locations and different time periods; on the other hand, different data have been developed for different purposes, regardless of a national framework for monitoring forest cover in space and time. In order to support a system for monitoring forest and land cover, in the context of REDD+ and the preparation of the GHG inventory for the UNFCCC, the various forest and land cover classification efforts need to be harmonized. The different legends and collected field data should be used to develop a common and functional classification system that could be used for mapping, assessment and monitoring the land cover using remote sensing.

Under this activity several sub-activities will be implemented as follows:

- Collect existing land cover and land use maps of Bangladesh and identify the different forest and other land use definitions and criteria used to develop the maps;
- Identify the different forest definitions used in neighboring countries;
- Organize consultations on national forest definition and forest classification;
- Assess the impact of different forest definitions on the feasibility, sustainability and efficiency of methods for forest monitoring;
- Provide recommendations on forest definitions, forest classification and forest stratification;
- Develop a harmonized classification system of land use;
- Test the suitability of the use of Land Cover Classification System (LCCS) in identifying the land cover for different purposes including REDD+.

Expected outputs:

- Recommendations on National Forest definition and harmonized land use classification for mapping provided;
- National stakeholders involved during national consultations;
- Manual of defining forest and classifying land categories provided;
- Minutes of the national consultations provided;
- Harmonized land use classification system provided.

Activity 4.2.4: Development of a satellite forest monitoring framework and system

Remote sensing is the simplest way to determine land cover types and land area, as well as changes, and is the main tool for monitoring deforestation in developing countries. The forest monitoring system will be a crucial element to monitor the implementation of the REDD+ policies and measures and to provide forest cover and area change data generated through RS. The operationalization will provide AD across

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[20]definitions, modalities, rules and guidelines relating to land use, land-use change and forestry activities under the Kyoto Protocol, Decision 11/CP.7

the entire national territory (wall-to-wall) as part of the forest monitoring system, as well as allowing monitoring of the outcomes of national REDD+ policies and measures.

Under this activity several sub-activities will be implemented as follows:

- Reviewing of past attempts to develop satellite based forest monitoring systems;
- Organize national consultation on FMS and identify and validate parameters for forest monitoring;
- Develop operational methodology for monitoring the forests;
- Carry out field test of the monitoring system for selected demonstration activities;
- Integrate field demonstration activities in the national system;
- Undertake a cost-benefit analysis for the forest monitoring system.

Expected outputs:

- Report on recommendations for FMS in Bangladesh;
- Report of the consultation to identify the adequate parameters to monitor;
- Appropriate forest monitoring system developed;
- Results from demonstration sites integrated.

Activity 4.2.5: Capacity building on geospatial data processing and database management

There are no adequate technical staff in the relevant government agencies for analyzing the satellite imagery and database management. Stakeholders will be strengthened with proper technical knowledge in data processing, capture, analysis and management. Training programmes will be designed and provided to the stakeholders for monitoring the REDD+ activities.

Under this activity several sub-activities will be implemented as follows:

- Identify the training needs on GIS and Remote sensing and database management;
- Develop and deliver training programmes on satellite data geo-rectification, interpretation, classification, field data collection, accuracy assessment, change matrix generation;
- Develop and deliver training program on GIS database structure, data capture including metadata, data editing and retrieving, data visualization, data analysis, mapping, modeling;
- Provide guidelines and training on data archiving and database management.

Expected outputs:

- Capacity on GIS, RS data handling and database management enhanced;
- Training materials and guidelines on GIS and remote sensing provided;
- Training materials and guidelines on data archiving and management implemented.

Activity 4.2.6: Forest boundary delineation

Some of the risks involved in REDD+ implementation include the displacement of deforestation or forest degradation from the demonstration activities to other forest areas, leading to lower actual net carbon

savings by the project. The entire demonstration area needs to be delineated in order to be effectively managed and monitored.

Under this activity several sub-activities will be implemented as follow:

- MoU between Ministry of Environment and Forest, Ministry of Land (DGRL) will be signed for forest land survey and coordination;
- Collect forest/field maps/ Reconnaissance Survey sheet maps of forest boundaries ;
- Assess existing boundary databases of the forests;
- Provide orientation and training for forest land survey using maps and GPS ;
- Field demonstration of forest land survey and boundary sign fixation;
- Boundary demarcation plan by region along with budget;
- Identify the potential organisations involved in GIS database building for forest boundary digitization and contract for GIS data generation;
- Provide guideline for GIS boundary generation.

Expected outputs:

- Demonstration sites identified;
- Forest boundary defined and mapped;
- Documents of forest boundary delineation provided;
- GIS boundary layer for the forest developed.

Activity 4.2.7: Development of a national land cover map and different legends using LCCS

Land use and land cover maps for the country are available for the years of 1996, 2004 and 2007 using the aerial photo and landsat imageries. Land use data of 1996 and 2004 was used to prepare the 2nd national communication. Department of Environment is about to start the 3rd national communication for GHG inventory. It is necessary to develop another land cover database for the country to calculate emissions in the LULUCF sector.

Under this activity several sub-activities will be implemented as follows:

- Review and harmonize the previous datasets;
- Collect the recent imagery;
- Develop the legends and definitions for different organization using LCCS;
- Identify the land cover and development.

Expected outputs:

- Land cover and change matrix to calculate emission for LULUCF provided;
- Standardized classification system elaborated;
- Recommendations on land cover data preparation developed.

Activity 4.2.8: Development of real-time forest fire detection and monitoring system

Small scale firesareoften deliberately started in Hill forest areas for the purpose of shifting cultivation. A forest fire occurrence map of Bangladesh (2000-2013), prepared by ICIMOD has shown that the practice of shifting cultivation in hill forest areas is playing a significant role indeforestation. This should be detected and monitored properly so that timely mitigation measures could be taken. SPARSSO receives regular real time MODIS data and could provide support, in coordination with ICIMOD, to FD for providinga real time fire warning system for the forest areas. Such a system is crucial to support any REDD+ activities but also to contribute to the national disaster response programme in mangrove and hill forests.

Under this activity several sub-activities will be implemented as follows:

- Explore the possibility to what extent SPARSSO could provide support on forest fire;
- Co-ordinate with ICIMOD and SPARRSO to get assistance to develop a system for fire detection;
- Support agreement between institutions to develop a functional system for fire detection;
- Develop manual/ document;
- Provide training for maintenance of the system.

Expected outputs:

- Operational fire alert system developed ;
- Trainings on monitoring forest fires provided;
- Recommendations on institutional arrangement to support the fire detection system supported;
- Manual and documentation provided.

Output 4.3.: National Forest Inventory Designed and Established

The National Forest Inventory will provide information that show the condition of forests across wide areas within the country. It will provide the relevant data to support national forest policy and provide the data to support the preparation of the GHG inventory to report for REDD+ under the UNFCCC. Several activities need to be addressed for capacity building to produce the country's NFI data for REDD+. This sub-component focuses on designing and implementation of NFI, providing adequate trainings and manuals for field measurement that will be used for demonstration activities in order to collect the necessary data to assess the EFs.

Activity 4.3.1: Harmonization of all existing inventory data and development of a robust database

The history of forest inventory at sub-national level is more than 200 years old. The first inventory survey was implemented as early as 1769-1773 but it was limited to selected forest areas like Sundarban Reserved Forest. The first management plan for the SRF was prepared in 1892. Detailed inventory was carried out during 1961 under *ForestalForestry* project followed by 1982-83 and 1995-96 under ODA and FRMP respectively. Hard copy maps and inventory reports are available. Ground inventory was undertaken for the CHT during 1961 and contour maps were generated by *Forestal Forestry* project. Detailed inventory of the hill forest for Chittagong, Cox's bazaar, Sylhet forest divisions and mangrove plantation for the coastal forest division were carried out during 1995-96 under the world bank funded FRMP. Detailed field inventory was conducted for the sal forest during 1999-2000 under the Asian Development Bank funded *Forestry Sector Project*. Other sporadic ground inventory was also conducted to the forest areas in different time.

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The first and full scale national forest inventory was implemented in the year 2005-06 with the help of FAO under its support to National Forest Assessments (NFA) initiative. While there is no plan to implement a second national forest inventory in the short term, it appears that several forest inventories are implemented at a pilot scale. In order to ensure the comparability of the data collected and to improve the estimates of forest biomass and carbon stocks, existing data should be stored in a central database and used to support the design of the next national forest inventory.

Under this activity, the following sub-activities will be implemented:

- Consult with the relevant stakeholders involved in forest inventories;
- Develop a plant species database;
- Collect, review all available existing inventory data and land cover maps;
- Develop a robust geo-reference database;
- Harmonize existing data and assess the variability of the biomass and carbon stocks in the various forest types.

Expected outputs:

- List of the stakeholders involved in forest inventories provided;
- Central database containing the available and harmonized data developed;
- Statistical method for data harmonization and accuracy assessment elaborated.

Activity 4.3.2: Review existing inventory designs and provide recommendations for NFI design

NFI collect many variables, such as volume, biodiversity, forest condition and socio-economic interactions with forest resources. Comprehensive reviews of existing inventory designs are required to develop a multi-purpose NFI design that will allow measuring and reporting of the emissions from the forestry sector as well as providing necessary information on other variables. The NFI will identify the existing carbon pools (above-ground biomass, below-ground biomass, litter, soil and dead wood). Assessment of forest carbon stocks and carbon stock changes is necessary to calculate EFs. Adequate sampling design and strategies are necessary to allow the development of a cost-efficient NFI and provide the adequate data with the targeted accuracy.

The design will take into consideration IPCC guidelines to ensure that the outputs from the NFI will be in line with the UNFCCC reporting requirements. The NFI will be designed to provide the necessary data for the calibration of satellite data interpretation. This implies that methods for NFI and the satellite monitoring system must be consistent.

Under this activity several sub-activities will be implemented as follows:

- Set up a technical working group on NFI;
- Collect all data compiled to support the design of the NFI design;
- Identify the objectives of the NFI;
- Identify the targeted parameters to be assessed and variables to be measured;
- Assess the existing NFI designs in the region;
- Assess the variability of the targeted variables;

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- Identify the capacity needs to implement an NFI;
- Review options for national sampling design taking into account costs, forest types, accessibility, accuracy assessment and consistency of assessment in time;
- Assess the cost of carrying out a multipurpose NFI (different scenarios with given budgets);
- In close collaboration with national institutions, provide recommendations and produce the multipurpose design including description of assessment of forest volume and biomass, emission factors, accuracy assessment and error propagation;
- Recommend follow up actions for adoption of the multipurpose NFI;
- Design the field forms and manual for data collection;
- Organize regular meetings on NFI.

Expected outputs:

- Technical working group formally set up;
- Existing data on forest inventory are made available;
- Targeted variables identified during a national consultation;
- Field forms provided;
- Report on the status and design of the NFI in the region, capacity needs; and recommendations;
- Minutes of the regular meetings published.

4.3.3. Activity: Validation of NFI design

NFI design will be validated /tested through field inventory at pilot sites in different forest ecosystems.

Under this activity several sub-activities will be implemented as follows:

- Identification of the sample plots in the field;
- Data collection from pilot plots, data processing and statistical analysis;
- Report preparation for pilot sites and recommendation for the refinement of the NFI design;
- Consultation with stakeholders on the outcome and recommendations of validation process and finalization of NFI design.

Expected outputs:

- An appropriate NFI design formulated;
- NFI manual and guidelines improved;
- NFI facilitated.

Activity 4.3.4: Strengthening of forest inventory capability of stakeholders

The last NFI was implemented during 2005-06. Inventory for carbon assessment was conducted during 2010 and 2011 in SRF and other 6 protected areas respectively. These demonstrate that capacity for forest and carbon inventory exists in the forest department. Students and local communities were also engaged with the inventory and data collection process. The present technical capacity of these stakeholders needs to be assessed in the following areas: field data collection, inventory plot layout, data recording and analysis, emission factor calculation andallometric equation calculation, for

example.Based on this assessment, their skills and knowledge must be enhanced in order to fulfil QA/QC requirements and to produce accurate EFsfor reporting to the UNFCCC.

Under this activity several sub-activities will be implemented as follows:

- Define training needs for the stakeholders and deliver training program on forest inventory (data collection, compilation, analysis etc.)
- Organize training on NFI to the relevant stakeholders;
- Develop training manuals and field guides for NFI;
- Provide trainings on data processing, data management, and statistical analysis.

Expected outputs:

- National capacities to implement the NFI enhanced;
- National expertise reinforced for assessing EFs;
- Training materials and list of trained staff provided.

4.3.5 Activity: Implementation of National Forest Inventory

An inventory of the forest resources in Bangladesh will be conducted to establish and update forest resource description database and to provide information for future planning and management.

Under this activity several sub-activities will be implemented as follows:

- Preparation of Inventory Planning Guidelines;
- Preparation of Inventory Fieldwork Guidelines including field Inventory plan, equipment list, plan for plot measurement and data recording etc.;
- Preparation of Field Inventory Data Management System;
- Training of Field Crews;
- Field Implementation of Inventory activities;
- Monitoring and Control of Inventory Activities;
- Data Processing and Compilation of results;
- Preparation of Report and sharing with stakeholders;
- Publication of report.

Expected Outputs:

- NFI manual and guideline prepared;
- Forest growing stock ascertained;
- GHG inventory for the LULUCF sector facilitated;
- NFI report containing updated forest resource information published.

Activity 4.3.6: Development and upgrading of the existing NFA tree species database

The NFA, in 2005-06, developed a database on the species found in the sample plots of the country. These sample plots did not properly represent all the forest types. It is important to know the plant species biodiversity in and around the forest area. The existing NFA database needs to be updated with

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the plant species list found during the past inventories. Department of National Herbarium is also maintaining records of the plant species for the forest areas. In coordination with the departments a robust database could be developed which would clearly show the plant diversity in the forest area.

Under this activity several sub-activities will be implemented as follows:

- Identify and collect the existing data and databases (E.g. botanical database, references etc.);
- Develop/standardize geo-reference data list with the help of existing NFA species data list and taking into consideration to the past inventories;
- Tree species list documented and provided.

Expected outputs:

- Modification of existing plant species list explained;
- Geo-referenced species data list developed;
- Species list archived.

Activity 4.3.7: Development of allometric equations for important species based on ecological regions

Forest Department and Bangladesh Forest Research Institute (BFRI) has developed allometric equations under different projects for commercially important tree species in Bangladesh. Many allometric equations are developed for volume estimation rather than biomass estimation. So, forest volume needs to be estimated first and then converted to biomass using wood density ratio, whenever available. These ratios vary with species, the portion of wood, either sapwood or heartwood, from stem or branches, or even with the geographical position. The ratios are not available for all the species available in the forests of Bangladesh.

Under this activity several sub-activities will be implemented as follows:

- Compilation of the databases of existing allometric equations, wood density and volume data for Bangladesh;
- Develop biomass expansion factors and identify adequate and available wood density data;
- Develop procedure for assessing national forest variables (including diameter/height relationships, and biomass calculation);
- Update and finalize the database on forest biomass and carbon stocks;
- Develop protocols for field data collection (preference is given to non-destructive measurements);
- Undertake data collection from different forest ecosystems.
- Develop allometric equations for the tree species, herbs, shrubs, bamboos for major forest types in Bangladesh.
- Identify and deliver training as necessary to develop the allometric equations.

Expected outputs:

- National database for tree allometric equations, wood density and biomass expansion factors;
- Detailed procedure for calculation of national forest biomass;
- Updated database for forest biomass and carbon stocks;

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- Protocol for collecting volume and biomass to develop tree allometric equations;
- Database of raw data including documentation and meta-data;
- Skill for the development of allometric equations;
- Report including new allometric equations for Bangladesh produced.

Output 4: Scientific research on key forestry issues enhanced.

The implementation of the National Forest Monitoring System in Bangladesh will be limited by lack of scientific researches. It is crucial to support the development of scientific analysis on key issues related to the implementation of NFMS in Bangladesh. Following are the thematic research areas which need to be considered.

Activity 4.4.1: Enhance national capacities in volume, biomass and carbon stock calculation

Carbon assessment was done for SRF and other six protected areas in the country. Several default values from the IPCC guidelines were used to calculate the biomass or other values for carbon calculation. Default values produce results which could be either under or overestimates. Research should be carried out with the existing and default values to see how far those values could be useful or develop such values to increase the accuracy in carbon calculation.

Under this activity several sub-activities will be implemented as follows:

- Training course on forest statistics;
- Training on allometric equation generation, volume calculation and biomass assessment using the allometric equations;
- Training on data analysis and management;
- Provide recommendation for enhancing capacities in assessment of forest variables.

Expected outputs:

- Report of the training course on forest statistics (including training materials on forest statistics, exercise and list of participants) produced;
- Report of the training course on allometric equations (including training materials on forest statistics, exercise and list of participants) produced;
- Report of the training course on data analysis and management generated;
- Report on recommendation for assessing forest variables published.

Activity 4.4.2: Strengthen spatial modeling expertise

Available capacities in the areas of modeling and GIS simulation are very limited in Bangladesh, particularly in the Forest Department.This calls for strengthening of spatial modeling expertise. Models of varying complexities are used for estimating trends in carbon pools. Robust models that combine data sources need to be developed for the wide range of operational monitoring situations expected under REDD+. This includes considering application of manual or more automated methods for estimation.

Under this activity several sub-activities will be implemented as follows:

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- Conduct climate change modeling in the forest areas through case study;
- Ascertain the role of natural calamities in forest degradation through modeling;
- Carry out ecological risk assessment of forest through modeling;
- Application of flash flood modeling in the water logged forest areas;
- Project forest degradation factors (e.g. soil erosion, landslides, draught, and other disasters) through modeling;
- Conduct forest growth modeling.
- Provide training on forest related modeling

Expected outputs:

- Future prediction and estimation of different forest carbon pools depending on the various variables and parameters assessed;
- Present and future climate change scenarios in the forestry sector for the various regions of the country known.
- Capacity enhanced in modeling.

Activity 4.4.3: Support to forestry research in the area of forest ecology, productivity, ecosystem services and climate change impact on forestry

Research in the area of forest ecology and productivity are not progressed enough to use them to increase accuracy in GHG emission calculation for the LULUCF sector. No permanent sample plots are remaining in the hill forest, sal forest (except Sundarban) due to biological interference. New permanent sample plots could be established for ecology and productivity research. Some of the research has been conducted by the BFRI to assess the density of some species in natural forests and plantations. Further study/research could be conducted to assess the wood density and net primary productivity of the species of natural and plantation forests to use them in biomass as well as GHG calculation.

Under this activity several sub-activities will be implemented as follows:

- Compilation of scientific literature on forest ecology and productivity for trees available in Bangladesh;
- Review of available tree growth models relevant for forest types of Bangladesh;
- Undertake gap analysis and need assessment to ensure permanency of permanent sample plots;
- Support permanent sample plots to assess forest productivity;
- Update existing forest growth models;
- Review and update the existing wood density databases;
- Assess net primary productivity of different plantations and natural reserve forest.

Expected outputs:

- Report on annotated scientific literature on forest productivity in Bangladesh generated;
- Report providing a review of current existing forest growth models in Bangladesh produced;
- Recommendation on the use of permanent sample plots to support development of emission factors suggested;
- Database on wood density updated;
- Net primary productivity figures for different plantations and natural forests updated.

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Output 4.5 - MRV Implementation Support Facility

This covers the inputs and activities to support undertaking of Component 3 and Component 4a.

Output 4.6: Integrated forest information system designed and supported

Proposed activities to support Output 4.1 are listed below:

Activity 4.6.1: Support integration of sub-national activities into the national system

Forest Department is responsible to assess and monitor the forest areas in the country. Mapping the pilot sites for REDD+ activities will also be the mandate of the department. Some other stakeholders like BFRI, NGOs and communities will also be responsible to generate activity data. These initiatives have to be combined to get complete information on the activities. A mechanism/system could be developed to combine sub-national level information into the national level which would ultimately support the national information system.

Under this activity several sub-activities will be implemented as follows:

- Identification and mapping pilot and sub-national activities relevant to the five REDD+ activities;
- Facilitate dialogues among stakeholders involved in national and sub-national activities in order to identify gaps and needs and propose recommendations for a functional national system for REDD+;
- Collection of data on different national and sub-national activities to support the national information system, subject to data restriction and intellectual properties.

Expected outputs:

- Detailed information for the different national and sub-national activities collected;
- Meetings and consultations are documented;
- Recommendations and draft agreements provided;
- List of relevant data and terms of use to support the national forest monitoring system (including national and sub-national activities) produced.

Activity 4.6.2: Development of participatory tools for forest monitoring

Since the 1970s, several community forestry programmeshave been started in Bangladesh (e.g. Betagi-pomora community forestry project, Rehabilitation of Jhumia families in the CHT) which were mainly focused on strip plantations, fuelwood plantations, agroforestry, replenishment of depleted homestead woodlots and training courses. Currently, the Forest Department is expanding social forestry practices through which people are empowered and become responsible for management.

These initiatives, and similar initiatives in other countries in the region, have shown that local communities, with sufficient training and incentives, can conduct forest monitoring activities reliably and with a degree of accuracy that is sufficient for the purposes of sustainable forest management. Participatory tools for forest monitoring may therefore allow Bangladesh to amass useful data on the impacts of REDD+ activities, in phases 2 and 3, in a cost effective way. In order for this opportunity to be

grasped, national standardised methodologies should be developed and the information which may reliably be generated from such tools should be clearly identified.

Under this activity several sub-activities will be implemented as follows:

- Selection of demonstration sites based on transparent criteria (in connection with Component 2c);
- Identification of various potential REDD+ demonstration activities in selected community forestry demonstration sites;
- Socio-economic diagnostic of the potential involvement of forest communities in forest monitoring within a national forest monitoring system for REDD+;
- Provide recommendations on the involvement of forest communities in forest monitoring within a national forest monitoring system for REDD+.

Expected outputs:

- List of demonstration sites provided;
- Cost and effectiveness of the involvement of the forest communities in national forest monitoring systemsanalyzed;
- Information on forests, safeguards and co-benefits generated by these communities are well managed and archived.

Activity 4.6.3: Facilitate data sharing agreement between relevant institutions

Co-ordination among the organizations for developing a database for a single area could significantly reduce the cost of data production and duplication effort for data gathering. Therefore accountability & transparency will also be maintained. Data sharing agreement could be designed to exchange/share the land cover data among the organizations. Harmonization of the available land cover data would be useful for GHG inventory for the LULUCF sector of REDD+.

Under this activity several sub-activities will be implemented as follows:

- Use land cover map index (Activity 1 under Development of a Satellite Forest Monitoring System) to identify the data to be shared among the organizations;
- Organize seminars to exchange the views of the organizations;
- Development of data sharing agreement and signed by different organizations for allowing exchange of data between different institutions and users;

Expected outputs:

- Data sharing agreement to facilitate the GHG inventory in the LULUCF sector signed
- Data sharing among the stakeholders performed;
- Transparency established.

Activity 4.6.4: Support to logistics, equipment and software for the forest information system

For forest inventory data collection, compilation, reporting and archiving, efficient and adequate manpower together with necessary logistics, equipment and software is a prerequisite. The departments responsible for the inventory lack adequate logistics and hardware for implementation of the national forest monitoring system for REDD+.

An archiving system is essential for the preparation of the NFI and GHG-I reports. It allows estimates to be easily reproduced, safeguards against data and information loss, and allows reproducibility of the estimates. A common archiving procedure has to be developed in order to secure the REDD+ data related to monitoring and MRV but also the information on the safeguards. The archiving system will be used by the relevant institutions and the documents and data will be shared in order to ensure that the activities are implemented in time. The archiving system will host a central database whose structure will allow effective, efficient and transparent QA/QC procedures.

Under this activity several sub-activities will be implemented as follows:

- Identify the necessary logistics required (GHG inventory Unit (DoE), NFI, M&E and RIMS Unit of FD, Inventory Division of BFRI);
- Identify the software and tools required for the units for data processing and compilation;
- Identify the measurement equipment needs for the units;
- Assess the needs for establishment of a central server;
- Assess existing data base management, archiving and sharing mechanism;
- Develop design of a specialized data base structure ;
- Standardized the existing data and integrate in the specialized data structure;
- Recommend and finalize on the requirements of logistics, equipment and software;
- Procure logistics, equipment and software as required for the above units;
- Procure necessary equipment to establish servers and associated equipment;
- Identify operational cost to maintain the instrument for inclusion into regular budget;
- Identify training needs for operation of the instrument, software procured and maintenance of the archiving system;
- Prepare training plan, manual and provide training to operationalize the system

Expected outputs:

- List of the necessary equipment for the relevant entities prepared;
- Report on the assessment of the existing data and needs for an archiving system produced;
- Necessary equipment for the forest monitoring system procured;
- Training plan, manual and reports provided.
- archiving system for data sharing developed;
- Technical staff to operationalize the system trained;
- Transparent national system created.

Activity 4.6.5: Documentation of methods and data collection for forest monitoring

This is needed to assist NFI and GHG-Iteams in documenting and reporting the origin of methodologies, activity datasets and emission factors used for estimation of emissions or removals and other relevant information to report for REDD+ such as national forest programmes, national forest governance structures, respect for the knowledge and rights of indigenous peoples, participation of relevant

stakeholders in REDD+ activities, conservation of natural forests and biological diversity, risks of reversal and in-country displacement of emissions.

Future inventory teams can refer to the completed documents and reportsto determine what information was collected, how the data was obtained, and what methods were used.

Under this activity several sub-activities will be implemented as follows:

- Provide detailed information/methods about monitoring and MRV on forest,
- Provide information about the method used to estimate emissions/removals;
- List the activity data used to estimate emissions and removals, emission factors and carbon-stock change factors, estimation on all types of uncertainties for forest monitoring, including the value, units, and year and provide reference of this data and other relevant information
- Provide detailed information on safeguards and multiple benefits, base scenario, indicators and monitoring methods.

Expected outputs:

- Detailed information on the methods used and results obtained from Monitoring and MRV system produced;
- Emission and removal information including estimation methods and other related information on forest monitoring in a concise format produced
- Standardized tasks defined, to allow for comparing and contrasting of results;
- Support for the development of instruction manuals provided.

Activity 4.6.6: information system supported by adequate data management system and calculation process

For supporting the GIS analysis and report preparation, adequate knowledge on data interpretation, analysis and management is essential. Free, user-friendly software is available on the internet. As licensed software for GIS processing is costly, it is preferable to train personnel in free source software. It may be beneficial to explore the free resources for GIS data processing and interpretation to support the REDD+ implementation process.

Under this activity several sub-activities will be implemented as follows:

- Training and technology transfer on open source remote sensing, GIS and data interpretation;
- Produce and analyse results for change statistics on the available data in Bangladesh and other relevant data;
- Produce a users' manual and final report;
- Support data organisation in a database as well as permanent data storage solutions.

Expected outputs

- Training documents are developed and provided (including training materials and list of participants);
- Procedure for data collection, and analysis is provided (including decision trees and codes);

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- Final report and manual generated.

Activity 4.6.7: Development of a web based platform for data sharing between national stakeholders, and distribution system for hardcopy information materials

As a vulnerable country to climate change, Bangladesh needs to update and monitor its land use and land cover change and disturbances in different times and seasons to identify the needs of mitigation actions. Such a system should allow accessing to the necessary data for the preparation of the national GHG inventory but also reporting for REDD+ to the UNFCCC. This activity is linked to the implementation of activity 4.5.4 to facilitate data sharing.

Under this activity several sub-activities will be implemented as follows:

- Review and identify the land use land cover data to be shared through the platform;
- Standardize the data format;
- Design and develop web based platform to share the data;
- Identify the cost for regular and long term maintenance;
- Training on the maintenance of the platform.

Expected outputs:

- Data sharing platform established;
- Manual and documentations developed;
- Capacity enhanced.

Activity 4.6.8: Establishment and Management of the Forest Management Information System

Information and monitoring systems for the forest sector have become important tools for forest planning and reporting. Forest Management Information Systems (FMIS) have to be developed to support the decision makers as well as ensure transparency of data under REDD+. This is as envisaged under the Cancun Agreement (paragraph 71 (c) of document FCCC/CP/2010/7/Add.1 decision 1/CP.16. In this context, an FMIS is an overall integrated system that meets the requirements for an NFMS for REDD+ as well as a Safeguards Information System.

This information system will host all the databases of all activities related to the REDD+ including safeguards and co-benefits and acts as a central database (from Component 4b). Currently, there is no appropriate information and monitoring system. A needs assessment is required to activate the existing system. The system will involve documentation at all levels including meta data, development of data dictionary and manuals for use, storage and retrieval and update of forestry related data for all times. This will provide the basis for a transparent monitoring system for forestry in Bangladesh.

Under this activity several sub-activities will be implemented as follows:

- Review, harmonize, standardize existing statistical and spatial data information related to the forest sector and identify additional information requirements;
- Develop database structure for the Forest Management Information System;

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- Review and capacity building need assessment of the existing Forest Management Information System;
- Develop the detailed design for hosting the web based GIS platform for data base management;
- Standardize the existing GIS and RS data and integrate them into the system;
- Develop training materials for management and maintaining the system;
- Develop technical documentation and deliver training on system management.

Expected outputs:

- Forest Management Information System operationalized;
- Documentation of the system design, data flow, storage and retrieval models developed;
- Web based system design and database management system developed;
- User Manual produced.

Institutional arrangements for the implementation of the MRV activities

This section describes the necessary institutional arrangements for a functional national forest monitoring system (**Error! Reference source not found.**).

In Phase 1, Bangladesh will define the institutional structure for Monitoring REDD+ activities; initiate capacity building of all the institutions involved in MRV as well as for the development and implementation of an Information System and the monitoring of national level policy and measures. The objective is to operationalize these institutional arrangements for the monitoring of REDD+ demonstration activities in Phase 2. This section recommends the institutional arrangements of NFMSfor Bangladesh based on existing capacities and capabilities for building the strengths where ever necessary. In Phase 2, Bangladesh will define the institutional structure for MRV of REDD+ activities to be operationalized in Phase 3. The recommended set of institutional arrangements is based on the UNFCCC reporting requirements and the phased approach for REDD+.
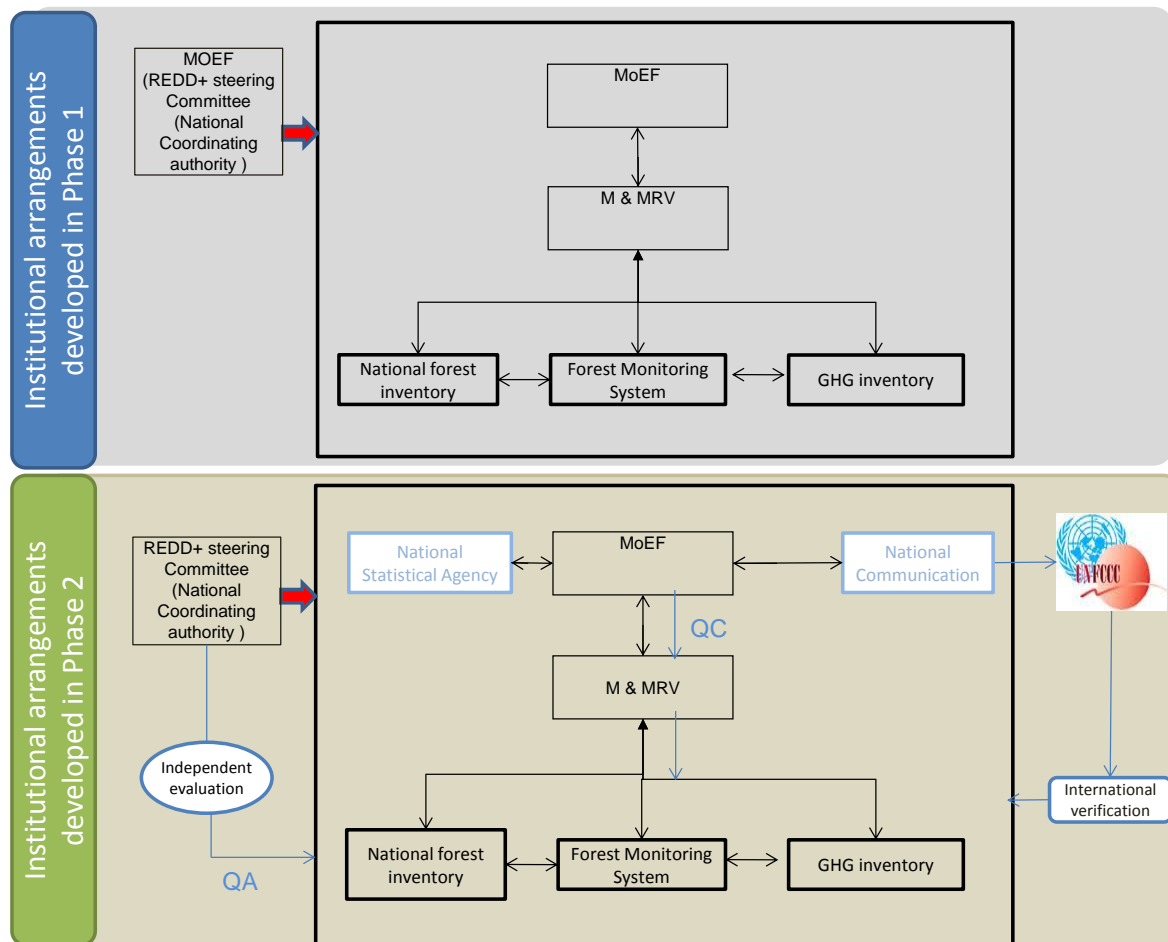
Figure 8: potential institutional arrangements forMRV for REDD+ in Bangladesh.

The components presented in the upper part of **Error! Reference source not found.**, represent the elements required for Phase 1 of REDD+. The components contained in the lower part are required for Phase 2. The arrows represent the flow of information between the entities. In Phase 2, Bangladesh needs to obtain results on national forest policies from demonstration activities, ensuring they are results-based through a national forest monitoring system, and develop a system for providing information as set out by the UNFCCC. Therefore, in the Readiness phase (phase 1) Bangladesh needs to put in place the infrastructure, personnel and systems necessary to implement these demonstration activities.

The proposed REDD+ management structure outlined in **Error! Reference source not found.**must ensure that the appropriate guidance for developing monitoring and MRV systems reaches the key stakeholders in Bangladesh. The REDD+ Steering Committee (**Error! Reference source not found.**), as the key decision-making body in the structure, bears the main responsibility with the MRV Working Group providing key technical advice. In addition, a number of additional bodies will have specific roles to play, as follows.

MoEF

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The policy guidelines for the GHG inventory in LULUCF sector lies with the MoEF. The MoEF will be the entry point for DoE to have access to the GHG inventory data in the LULUCF sector for the preparation of national communication and transmission to the UNFCCC. The MoEF should earmark a set of officials who will familiarize themselves with the UNFCCC process, decisions and reporting requirements, and IPCC Guidance and Guidelines.

M & MRV

REDD+ Cell will be responsible for overseeing the M &MRV of the REDD+ activitiesin Bangladesh. It will play coordinating role for all MRV related activities in the country. This Cell will act as a bridging arm between the office of the Chief Conservator of Forests and the two technical units (NFI and RIMS) under Development Wing.

The REDD+ Cell should have a key structure for the internal monitoring of the outcomes of national REDD+ policies and measures.Additional technical assistance may be needed for the cell for the assessment of REDD+ activities through NFI and FMS. As a part of regular and approved functions of the Monitoring and Evaluation Unit, the unit will make necessary arrangement for internal monitoring and evaluation of REDD + activities.A coordination body should be developed through Memorandum of Understanding (MoU) to include other technical organizations/ministries (e.g. DoE, BFRI, BFIDC, BNH, SPARRSO, SoB, CEGIS, IWM, BCAS, etc.) to obtain technical guideline/assistance for the successful and timely implementation of the NFI and FMS.

NFI Unit

The Forest Department has the mandate to implement the NFI and monitor the state forest areas. At the sub national level currently three Management Plan Divisions conduct the inventory under the guidance and supervision of Development Planning Wing. There is no NFI unit in FD to conduct the national forest inventory and reporting. The proposed arrangement to conduct the NFI would be as follows:At the national level a NFI Unit should be established in the Forest Department under Development Planning Wing. This unit will act as coordinating body among other stakeholders of the MRV components. It will coordinate NFI activities through NFI sub-units established in Management Plan Divisions at the sub-national level, and GHG – I activities through GHG-I sub-unit to be established at FD's Headquarter.

The NFI unit will comprise two sets of staff. One set of staff will be responsible for developing inventory plans, preparing data entry format, providing training for data collection, recording of data, providing necessary guidance to the inventory teams of the sub-units during data collection and overseeing the inventory process.

The other set of staff will shoulder the responsibility for the preparation of carbon assessment & calculation, REL development, calculation of the EF's and generation of report for the GHG-I for LULUCF. The staff of this set must be familiar with the UNFCCC process, decisions and reporting requirements, and IPCC Guidance and Guidelines.

At the sub national level, NFI sub-units will work under the guidance / supervision of respective Divisional Forest Officers, Management Plan Divisions to collect and record NFI data from the field and

onward transmission to NFI Unit. Existing three Management Plan Divisions cannot support the entire NFI data collection within the period of reporting. New Management Plan Divisions established as well as sub-units under the NFI unit in the Management Plan Divisions need to be established to cover all forest areas including social forestry areas for the timely implementation of the NFI. BFIDC, BNH, BFRI, and FD should work together for generating allometric equations, biomass calculation and preparing carbon assessment plans. Data collected through NFI will be used to calculate EFs that will be used in the calculation of GHG-I for LULUCF. It will be a part of the country's National Communication to the UNFCCC. This unit will compile the GHG-I data for LULUCF based on information generated through FMS and NFI and transmit the same to the Ministry through REDD+ Cell under Development and Planning Wing and CCF. Coordination mechanism should be developed for sharing the data/information among the stakeholder organizations.

RIMS Unit

A Forest Monitoring System (FMS) could provide comprehensive land representation and all the information on forest cover and other land uses required for the monitoring and MRV systems, including information on some of the safeguards (e.g. displacements, risk of reversal). These works need to be supported by continuous development of software and systems. It is required to stay up to date with the latest remote sensing (RS) developments, continuously improve the accuracy, quality and cost-efficiency of the data. The system will produce vast amount of data which will need to be managed, processed and archived in ways that will be easily accessible to all of the stakeholders. Currently, there is no specific forest monitoring system at FD using RS and GIS.

The RIMS unit of the FD equipped with hardware & GIS, RS data processing software and expertise are the prerequisites for implementing FMS. RIMS unit will be responsible for implementing the FMS that will be developed for monitoring of the REDD+ activities. This unit will generate Activity Data (AD), data on forest areas and area of LULUCF through GIS and RS. Coordination mechanism should be developed for sharing the information among the stakeholder organizations.

National Statistical Agency

The national statistical agency will beresponsible for collecting and providing data to the Government and all other stakeholders. It will ensure consistency of the various data provided by the national entities. The Bangladesh Bureau of Statistics (BBS) is responsible for providing technical and administrative guidance to all official statistical programmes of the country.

BBS can servethe function for LULUCF and GHG-I data collection from the MoEFand disseminate the same to all stakeholders while ensuring compatibility and consistency with other national statistical information. The BBS can also archive the data. The key information to archive are: activity data; methods; EFs; documentation of how these data, factors and estimates were obtained; and documentation of Quality Assurance (QA) and Quality Control (QC) procedures, reviews and key categories; and National Inventory Improvement Plan.

National Communications and Biennial Update Reports to the UNFCCC

Previous sections described the Parties' responsibilities for NCs under the Convention. The MoEF will be the communication link for DoE to receive necessary information for NC preparation to the UNFCCC.

Organizational capacities should be developed/upgraded to ensure efficient and time-bound preparation and submission of NCs and GHG-I reports every two years.

Quality Assurance and Quality Control

Quality Assurance and Quality control (QA/QC) is a system of routine technical activities to measure and control the quality of the inventory. The QC system is designed to provide routine and consistent checks to ensure data integrity, correctness and completeness, identify and address errors and omissions, and document and archive inventory material and record all QA/QC activities. There should be an independent evaluation entity with responsibility to coordinate with all stakeholder organizations that are involved in the GHG inventory to perform QC activities as planned.

The ToR for REDD+ Steering Committee will include identification of theindependent evaluation entityfor external quality assurance of the GHG-inventory. Necessary measures should be taken to develop the capacity of the entity along with allocation of financial and technical resources.

Indicative Workplan for Component 4a

Output	Activities
4a.1: Capacities to implement the GHG inventory for the forest sector strengthened	1. Review and updating of MRV Action Plan 2. Organization of regular MRV meetings 3. Support to Institutional Arrangements for GHG National Inventory System for the LULUCF sector 4. Technical capacity building for the GHG inventory for the LULUCF sector 5. Support development of the catalogue of data to support the GHG inventory for the LULUCF sector and particularly for forestry
4a2: National Satellite Forest Monitoring System established	1. Development of land cover map index 2. Satellite image characterization for forest monitoring 3. Rationalization of land cover classification system 4. Development of a satellite forest monitoring system 5. Capacity building on geospatial data processing and database management 6. Forest boundary delineation 7. Development of a national land cover map and different legends using LCCS 8. Development of real-time forest fire detection and monitoring system
4a.3: National Forest Inventory Designed and established	1. Harmonization of all existing inventory data and development of a robust database 2. Review of existing inventory designs and provide recommendations for NFI design 3. Validation of NFI design 4. Strengthening of forest inventory capability of stakeholders 5. Establish NFI 6. Development and upgrading of the existing NFA tree species database 7. Development of allometric equations for important species based on ecological regions

4a.4: Scientific research on key issues enhanced	1. Enhance national capacities in volume, biomass and carbon stock calculation 2. Strengthen spatial modelling expertise 3. support to forestry research in the area of forest ecology, productivity, ecosystem services and climate change impact on forestry.
4a.5: MRV Implementation Support	1. Create and maintain MRV support facility
4a6: Integrated forest information system developed	1. Support integration of sub-national activities into the national system 2. Development of participatory tools for monitoring 3. Facilitate data sharing agreement between relevant institutions 4. Support to logistics, equipment and software needs for the information system 5. Documentation of methods and data collection for forest monitoring 6. information system supported by adequate data management system and calculation process 7. Development of a web based platform for data sharing between national stakeholders, and distribution system for hardcopy information materials; 8. Establishment and Management of the Forest Management Information System

UN-REDD Resource Documents

In the implementation of this Component, the Bangladesh REDD+ Readiness team will refer to and, where appropriate, use the following UN-REDD programme guiding tools and documents:

- The Monitoring and Measurement, Reporting and Verification (M & MRV) Functions for REDD+ Mitigation Actions.

Component 4b:Designing anInformation System for Multiple Benefits, Other Impacts, Governance, and Safeguards

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Standard 4b the R-PP text needs to meet for this component:Designing an Information System for Multiple Benefits, Other Impacts, Governance, and Safeguards:

The R-PP provides a proposal for the initial design and a workplan, including early ideas on capability (either within an integrated system, or in coordinated activities), for an integrated monitoring system that includes addressing other multiple benefits, impacts, and governance. Such benefits may include, e.g., rural livelihoods, conservation of biodiversity, key governance factors directly pertinent to REDD-plus implementation in the country.

(The FCPF and UN-REDD recognize that key international policy decisions may affect this component, so a staged approach may be useful. The R-PP states what early activities are proposed.)

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This section introduces co-benefits and safeguard and explains the importance of collecting information related to them. It then looks at which co-benefits could be the priorities in Bangladesh, and how to select the most important co-benefits for Bangladesh. It states how information on safeguards will be collected in line with the Cancun agreement. It then defines the objective, outputs and activities under this Component.

This Component will lead to an information system for co-benefits and safeguards. This system will be an integral part of the Forest Monitoring System established under Component 4a. The information generated by the monitoring under 4b will provide information to the integrated information system in 4a.

1. Background

Forests provide a number of ecosystem services and provisions. When REDD+ activities are implemented to prevent the loss or the degradation of forest, in addition to protecting or enhancing carbon stocks, the REDD+ activities can generate co-benefits. Thesemay be:

- *Ecosystem-based benefits*: such as conservation of forest biodiversity,wildlife habitat improvement, watershed management, micro-climate regulation, providing forest foods, coastal protection, soil conservation and increased fertility and providing non-timber forest and medicinal products;
- *Socio-economic benefits*:sustainable fisheries, diversification of livelihoods,ecotourism possibilities, increased productivity, employment, increased income, food security and reduction of poverty.

REDD+ can also help secure benefits such as improving rights, strengthened ownership of land resources and services, improved participation in decision-making (including by women), improvement of governance in the forest sector, and cross-sectoral coordination to address emissions resulting from land use changes[21].

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[21]FAO/UNDP/UNEP, 2010.*Perspectives on REDD*

The types, mixture and scale of co-benefits from REDD+ activities will vary between approaches and locations. Various factors also affect the extent to which these benefits are delivered: the type, location and condition of the forests involved; the type of REDD+ activity implemented, and the level of dependence of the local population on forest resources.

However, implementation of REDD+ activities can also lead to *negative* impacts on some members of the population or some aspects of the environment. For example, in many countries, valid concerns have been raised regarding the potentiallyharmful effects to ecosystems from the implementation of REDD+ activities and the increase in inequality across various groups. In response to these social and environmental risks, a series of safeguards have been developed to ensure that REDD+ activities do not produce negative impacts (these are discussed under Component 2c).

In accordance with Decision 1/CP.16, Bangladesh will need to collect information on how the Cancun safeguards are being addressed and respected. Although there are clear synergies and relationships between forest monitoring systems and systems to monitor co-benefits/safeguards, gaps do exist, and it may be necessary to collect and process additional information regarding co-benefits and safeguard compliance. With careful planning and use of existing monitoring systems and data, cost-effective solutions can be devised for joint monitoring (FAO/UNDP/UNEP, 2010).

2. Identifying Priority Co-Benefits and Collecting Information

The first step is to identify the co-benefits on which information shall be collected. This is determined mostly by (i) the potential significance of that co-benefit in Bangladesh and (ii) the availability of information and expertise to collect the necessary information.

A workshop with all relevant agencies and invited specialists previously involved with monitoring co-benefits will be convened. This workshop will initiate the following steps:

- Develop a full list of the potential socio-economic, environmental, governance and other co-benefits and study the potential co-benefits;
- Assess and review existing monitoring systems related to the multiple benefits;
- In consultation with stakeholders, prioritize the co-benefits to be monitored;

For the selected co-benefits, detailed data on the precise parameters currently being measured by each agency will be collected, together with important statistical characteristics including the frequency and intensity of sampling and the location of site-specific sampling such as river flow. Potential indicators to monitor the various benefits will be identified, as well as gaps in current monitoring arrangements using any guidelines produced by UNFCCC. Information on the format in which the data is recorded will be assembled, as well as the quantity of data generated annually for each of the indicators identified.

In view of the number of agencies that will need to be involved and the extent and complexity of the current monitoring arrangements, more than one workshop is likely to be required, but the aim will be to complete this first step within 6-12 months. The results of the workshop(s) will be publicized for further stakeholder inputs.

After assembling information on the parameters being monitored, and the quantity, quality and format of the data, the TWG on Forest Monitoring and MRV and concerned experts will assess and recommend how to integrate this data into a Safeguards Information System and into the NFMS. It is expected that this step will be completed in year two. This will be followed by consultations with relevant agencies that will be required to monitor aspects of implementation and by in-depth discussions on procedures for sharing data. At the same time,assessments will be carried out to select sites for demonstration activities under Component 2b, and as these are identified, arrangements for relevant stakeholders to contribute to the monitoring will be discussed, agreed and approved.

Two to three yearsare required to identify pilot sites and conduct consultations with participating stakeholders. Collecting information on co-benefits will be an integral part of the monitoring system piloted at the selected sites. Monitoring results from the demonstration activities will be collected and evaluated and the national co-benefit information system will be refined and approved, as necessary.

The role of Stakeholders in the Monitoring System

The roles of local communities, NGOs, government agencies and the private sector will need to be determined in detail during the design stage of each of the demonstration activities. Voluntary participation will be critical, following the principles of FPIC outlined in Component 1c. The scope for community monitoring of forests mightalso be extended, if determined necessary, to include, for example, community monitoring of biodiversity and water quality. Successful low-cost community monitoring of stream flow and water quality has been developed in other countries and similar methods based on international experience will be piloted in Bangladesh.

The cooperation and participation of government agencies that have a mandate to monitor relevant social and environmental parameters will be sought and their roles and responsibilities agreed. The roles and responsibilities of private sector actors will also be clarified and discussions will be held with them regarding their current arrangements and experiences with monitoring the performance of their initiatives.

Information, Indicators and Monitoring Systems

The overall, long-term aim is to have a unified monitoring system that covers changes in forest cover as well as co-benefits and safeguards. The forest monitoring system and GIS interface that will be developed as part of the NFMS described under Component 4a, will use the information and systems developed under 4b to contribute tomonitoring of co-benefits and safeguards.

Information on co-benefits and safeguards may be posted on the NFMS's web-GIS portal to facilitate accessibility and sharing of data both nationally and internationally. It may also be diffused through the REDD+ Communication Plan (see Component 1c).

A range of potential indicators that may be used to monitor REDD+ multiple co-benefits in Bangladesh is provided in Table 10. These indicators may also be useful for determining the elements of a Safeguard Information System as outlined in component 2d.

Table 10: Potential Indicators to Monitor REDD+ Multiple Co-benefits

Parameters to be monitored	Potential Indicators

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Policy and governance	• Development of relevant policies, regulations and procedures for REDD+ implementation; • Availability and accessibility of information in the public domain, measured by actual usage; • Number of conflicts over the use of resources;
Alignment of development plans	• Area of forest under sustainable management; • Area and number of people engaged in sustainable grazing practices; • Forest area planted and species; • Enforcement of EIA and land use plans; • Evidence of REDD+ concerns in district development plans;
Biodiversity	• Population of endemic species – losses and gains; • Degraded forest areas rehabilitated; • Identification of key species that characterize ecosystem health; • Protected areas: establishment of new ones and conservation status of existing ones;
Poverty	• Food security; • Employment: gains or losses related to REDD+ activities; • Income: gains or losses; • Technologies made available and accessible; • Access to education and health; • Gender equity;
Environmental	• Water yield; • Soil fertility; • Rainfall; • Air pollution; • Area of shelter belt
Social	• Level of conflict; • Gender status; • Changes in gender status and decision making as a result of REDD+ activities; • Local level institutions and decision making;
Private sector	• Forest certification; • CSR linked to promoting/implementing REDD+ activities.

Monitoring Capacity and Future Capacities Required

Discussions will take place with the various government agencies to evaluate the existing facilities and capacity for collecting information and monitoring co-benefits during the implementation of demonstration activities. The roles and responsibilities of participating departments and national institutions, the selection of indicators and the design and implementation of both the indicators and compliance with social and environmental safeguards will be negotiated during the first year of implementation. The need for capacity building, training and additional hardware and software will be assessed and a capacity development plan prepared.

Sub-National Level Monitoring

Information on co-benefits maybe collected at the sub-national level as required (e.g., District level) as part of the NFMS. Ultimately, integrated monitoring of co-benefits may be considered as part of the NFMS-related research proposed in Component 4a.

3. Collecting Information on Social and Environmental Safeguards

The UNFCCC COP Decision in Durban (Dec. 12/CP.17, para. 2) requires REDD+ countries to provide information on how all of the safeguards referred to in Appendix 1 to the Cancun Agreements are being addressed and respected in relation to a country's REDD+ activities. In order to ensure that the implementation of REDD+ activities in Bangladesh is consistent with the Cancun Agreement, and that all safeguards to protect disadvantaged and vulnerable communities are being observed, a Safeguards Information System will be designed.

The Safeguard information System, to the extent possible, will complement and be integrated into the NFMS developed under component 4a.

4. Approach and Indicative Workplan for Monitoring Multiple Benefits, Other Impacts, Governance, and Safeguards

Component 2d set out the process for developing a REDD+ Social and Environmental Safeguard Policy Framework in Bangladesh. Activities in Component 4b relate to the system for collecting information on these safeguards and reporting as required. Activities in Component 4b also address information collection to support monitoring of co-benefits. Collectively, this is generally referred to as a Safeguard Information System.

Bangladesh will use the following process to design and set up its information system for safeguards, multiple-benefits and governance:

(i) Develop a full list of the potential social, environmental and other co-benefits according to the potential policies and measures of the REDD+ strategy, as identified through component 2b. Study the potential benefits. Prioritise amongst this list for co-benefits to be monitored;

(ii) Develop a full list of potential social, ecological or governance impacts that should be covered by the Safeguards (most of this work will be done through the preparation of Bangladesh's National REDD+ Social and Environmental Safeguard Management Framework - see Component 2c above - that is based on but may go beyond the minimum standards for safeguards established under the Cancun Agreements (Dec. 1/CP. 16));

(iii) Identify and assess related in-country national and international initiatives related to governance, and other REDD+ safeguards, such as FLEGT;

(iv) Establish baselines and indicators for: (i) all co-benefits to be monitored and; (ii) all safeguards. Baselines and indicators on the National REDD+ Safeguards may have been established in Component 2c. This might include conducting a Strategic Social and/or Environmental

Assessment and/or undertaking a participatory forest governance assessment based on UNDP's Participatory Governance Assessment framework (see Box 8)[22].

(v) Develop a system to monitor changes in the selected elements, including a Safeguard Information System that ensures that all results are made publicly available and easily accessible. This 'Bangladesh Safeguard Information System (SIS)'will be developed through a consultation process, and it will provide publically available information on the status and progress on the REDD+ Safeguards, and on how they are being addressed and respected. This system will build on and support the national forest monitoring system (see Component 4a). The SIS will have an objective to report a summary of safeguards information to national communication to an international audience.

(vi) Consult stakeholders to validate all outputs and recommendations.

Bangladesh will consider undertaking a Participatory Governance Assessment, NFMS and any other relevant approaches to assist it to develop a clear and mutually acceptable basis for how the Safeguards will be addressed and respected.

Participatory Governance Assessments under the UN-REDD Programme involve a four-step process:

1. Bringing together relevant stakeholders (such as government officials, civil society representatives, indigenous peoples/local forest community, and academics);
2. Reaching agreement on the targets and indicators that will be measured (e.g. human rights, anti-corruption, forest law enforcement, transparency on REDD+ funding, land tenure issues, etc.), how they will be measured and by whom (e.g. State Specialized Inspection Agency, National Human Rights Commission, Independent Commission Against Corruption, Auditor's Office, National Statistics Office, etc);
3. On-going analysis of the results and recommendations for policy reform to the national REDD+ programme; and
4. Training and capacity development of government officials on how to provide information, and training of non-state actors on how and where to demand relevant information.

Box 8: Participatory Governance Assessments and REDD+

In addition to the above steps, the UN-REDD conceptual framework to support countries on safeguards[23] may provide useful guidance on how to approach the development of nationally-appropriate safeguards measuring system, and what tools may be available.

The TWG on Safeguards will have primary responsibility for overseeing this work. Open and transparent participation by all stakeholders in the development and implementation of the SIS will be of key importance in this process.

Output	Activity

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[22]If selected, this process will be undertaken in accordance with the UN-REDD Programme's, Participatory Governance Assessments for REDD+: Planning document 2011-2015, dated 25 August 2011.
[23]http://www.unredd.net/index.php?option=com_docman&task=doc_download&gid=10177&Itemid=53

Output 4b	1. Develop a full list of the potential socio-economic, environmental, governance and other co-benefits and study the potential co-benefits;
Information systems for measuring multiple-benefits and safeguards established	2. Assess and review of existing monitoring systems of multiple benefits;
	3. In consultation with stakeholders, prioritize the co-benefits to be monitored;
	4. Identify and assess related in-country national and international initiatives related to all REDD+ safeguards;
	5. Determine the framework of safeguards that are to be monitored
	6. Establish baselines and indicators for (i) all co-benefits to be monitored and (ii) all safeguards;
	7. Develop a system to monitor changes in the values for the selected indicators and to share this information – the Safeguard Information System (SIS);
	8. Integrate monitoring of safeguards and co-benefits into the integrated forest monitoring system (4a)
	9. Provide capacity development to organizations in order to collect and analyze relevant data and undertake monitoring of co-benefits and safeguards;
	10. Consult stakeholders to validate all above outputs and recommendations.

UN-REDD Resource Documents

In the implementation of this Component, the Bangladesh REDD+ Readiness team will refer to and, where appropriate, use the following UN-REDD programme guiding tools and documents:

- The Monitoring and Measurement, Reporting and Verification (M & MRV) Functions for REDD+ Mitigation Actions;
- Social and Environmental Principles and Criteria (SEPC);
- Participatory Governance Assessment;
- Guidelines for Monitoring the Impacts of REDD+ on Biodiversity and Ecosystem Services;
- UN-REDD conceptual framework to support countries on safeguards;
- An Annotated Guide to Useful Resources for Monitoring the Impacts of REDD+ on Biodiversity and Ecosystem Services.

Component 5: Schedule and Budget

This Work Programme identifies the activities required to complete Phase 1 of REDD+ in Bangladesh. This will bring Bangladesh to a point where it can commence Phase 2.

It is noted that further stakeholder consultation on the contents of this Roadmap may lead to changes in the proposed outcomes, outputs and activities.

Overall Objective: By the end of this Work Programme, Bangladesh will have established its REDD+ management processes, completed its National REDD+ Strategy, and developed the capacities required to begin implementation of REDD+ (Phase 2). It is proposed that this work be linked to the delivery of Bangladesh's strategies to address mitigation to climate change, in order to facilitate coordination and reporting through the UNFCCC framework. It should also be linked to Bangladesh's strategies to adapt to climate change, particularly in coastal and delta regions.

Summary Budgets

Table 11 summarizes the required budget and the principal sources of finance. The total estimated budget is $15,625,840. Of this, $9,197,940 has been secured from Government, UN-REDDD, USAID (to be confirmed). The remaining $6,428,840 is to be mobilised, mostly through parallel sources.In many cases, a potential source has been identified, and consultations are ongoing.

Table 12 provides additional information on both the confirmed and parallel sources of finance. As can be seen, there is the potential to fully finance the R-PP through the use of parallel related activities.

Table 13 provides more detailed information on the costs of activities, outputs, outcomes and components.

Table 11: Summary of Estimated Budget over Three Years

Budget ($US)					
Component/Outcome	Total cost	GoB	Confirmed Other	UN-REDD JP	Parallel financing and gap
OUTCOME 1a: National REDD+ ManagementArrangements Established OUTCOME 1c: Improved Stakeholder Awareness AndEffective Stakeholder Engagement	2,315,000	710,000	50,000*	300,000	
OUTCOME 2: NATIONAL REDD+ Strategy prepared	3,685,000	660,000	60,000*	800,000	
OUTCOME 3: National Forest Reference Emission Level and/or a Forest Reference Level	735,000	17,250		540,000	
OUTCOME 4: Systems for National Forest Monitoring and Information on Safeguards	7,847,000	1.172.000	3,760,000** 110,000***	460,000	

R-PP Implementation Monitoring and Evaluation	300,00	185,000		50,000	
Administrative costs and overheads (7%)	1,043,840	192,000		150,500	
TOTALS	**15,625,840**	**2,937,000**	**3,960,000**	**2,300,500**	**6,428,840**

* estimated contribution from UN REDD Targeted Support Programme through UNDP

** USAID is currently considering investment in this sector

*** estimated contribution from UN REDD Targeted Support Programme through FAO

Table 12: Co-financing to the Implementation of the Bangladesh National REDD+ Roadmap

The Table below summarizes the sources of finance for the R-PP. Figures are to be confirmed.

Activities Directly Contributing to REDD+ RPP Programme		
Organization/Activity	**Activity**	**Amount (USD)**
Government of Bangladesh	All around support to all components and activities. This includes in-kind support only.	2,937,000
UN-REDD Joint Programme	Strategic interventions into all four components through FAO and UNDP	2,300,9000
UN-REDD targeted support	Strategic interventions into components 1, 2 and 3 through FAO and UNDP	220,000
USAID	Mostly to support to establishing a NFI (Component 4), and some all around support.	5,2940,000 **(to be confirmed)**
Parallel Activities that have a direct support to Readiness		
Organization/Activity	**Activity**	**Amount (USD)**
USAID/FAO (*Capacity Development for MoEF*)	Institutional and capacity development, contribution to components 1a, 1c and 2c.	868,000[24]
USAID/CREL and FS Projects	Community strengthening is related to components 1c and 2c. Forest monitoring and carbon measuring is related to Components 3 and 4.	Total budget is $36 million over five years. Approximately one third is natural resource management (in forests).
EU Seals Project	To components 1c, 2b and 4a	568,000 **(to be confirmed)**
World Bank through SRC for Wildlife Protection Project	Components 1c, 2a, 2b, 4a and 4b	576,000 **(to be confirmed)**
BCCRF	Components 1c, 2a, 2b, 2c, 3, and 4a	776,000 **(to be confirmed)**

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[24] The project is implemented in parallel to the REDD+ Readiness process. Almost one third of the project activities contribute to processes directly linked to the REDD+ Readiness process. Approximately one-half of the associated funding is considered, in this table, to contribute to the REDD+ Readiness.

UNDP – Climate Finance Analysis		**(to be confirmed)**To be determined
UNDP CHTDF		**(to be confirmed)**To be determined
Government of Germany/GiZ	Work on Fiduciary Standards	**(to be confirmed)**To be determined

Results Framework and Three-year Budget

The activities and Sub-Activities required to achieve the objective of REDD+ readiness are set out in Table 13.These activities take place over a period of three years

Table 13: Summary Activity Framework and Budget

OUTPUTS	ACTIVITY No.	ACTIVITIES	Total
OUTCOME 1a: NATIONAL REDD+ MANAGEMENT ARRANGEMENTS ESTABLISHED			
Output 1a: National REDD+ Readiness Coordination Mechanism Established	1	Inter-ministerial meeting on REDD+ and subsequent validation of government institution roles and responsibilities;	10,000
	2	Review of current institutional mandates and TORs for the preparation of the National GHG inventory, national communication and update inventory reports for LULUCF and for other sectors;	-
	3	Review of current institutional mandates for National REDD+ management arrangements, including REDD+ SC and REDD+ Cell;	60,000
	4	Review lessons of existing REDD pilot initiatives in other countries for REDD+ management structure (study tour and attending relevant regional/international meetings);	150,000
	5	Draft REDD+ SC ToR, consult and finalize;	10,000
	6	Redraft REDD+ Cell ToR, consult and finalize;	10,000
	7	Hold regular meetings of REDD+ SC (at least 2 meetings each year)	100,000
	8	Consult on RSF structure, membership, roles and ToR, and finalize;	30,000
	9	Formally establish the of REDD+ Stakeholders Forum	50,000
	10	Regular meetings of RSF (at least 2 meetings in year 2, 4 meetings in years 2 and 3);	60,000
	11	Three-four TWGs formally established and ToRs agreed;	5,000
	12	Hold regular meetings of TWGs (minimum 10 meetings of each group - 30 meetings)	45,000
	13	Assessment by RSF and REDD+ Cell of technical advisory structure for REDD+, including need for additional TWGs and potential dissolution of REDD+ TC; report to REDD+ SC. As necessary, establish and support additional TWGs;	20,000
	14	National REDD+ management structure formalized and mandated through MoEF policy statement;	10,000
	15	Role of development partners in REDD+ structure consulted, revised and agreed.	10,000
Sub-total Outcome 1a			**570,000**
OUTCOME 1c: IMPROVED STAKEHOLDER AWARENESS AND EFFECTIVE STAKEHOLDER ENGAGEMENT			

Output 1c.1: Public Awareness Raised	1	Review available international materials on REDD+ and translate/adapt (into simple Bangla language) a selection, for distribution in country	30,000
	2	Develop materials specific to the Bangladesh REDD+ Roadmap (in simple Bangla language)	45,000
	3	Develop materials for use by local government extension workers and provide training	50,000
	4	Explore opportunity for relevant NGOs and CBOs as extension agents and use them for extension work	250,000
	5	Create and maintain website	15,000
	6	Awareness raising of forest dependent communities on REDD+	80,000
	7	Assess opportunities for radio, TV, cell-phone, billboard, print media and loudspeaker broadcasts dealing with forest sector issues, and implement as appropriate.	400,000
Output 1c.2: Consultation and Participation Plan	1	undertake detailed stakeholder analysis	40,000
	2	Awareness raising of Stakeholders on RPP and REDD+ Readiness process	20,000
	3	Validate stakeholder analysis through a national and regional level consultation process;	10,000
	4	Engage existing CSO networks to ensure that RSF information circulates among civil society;	15,000
	5	Commission studies, following appropriate procedures, into traditional decision-making systems, and design a system of communication focusing through the traditional decision-making systems	50,000
	6	Prepare draft Consultation and Participation Plan, including full details of audience, communication tools, responsible parties, targets, costs, etc;	50,000
	7	Elaborate a strategy for mainstreaming gender issues;	50,000
	8	Based on feedback from communications, continuously review the REDD+ SC and TWG membership to reflect changing stakeholder views and patterns;	5,000
	9	Undertake national and regional workshops to communicate on REDD+ management structure;	10,000
	10	Undertake national and regional workshops to communicate and exchange on drivers and candidate strategies;	10,000
	11	Organize regular meetings and workshops at both national and regional level for communication and capacity building.	50,000
Output 1c.3: National FPIC Guidelines	1	Conduct study of international and national and customary law obligations, traditional and statutory decision-making and consent processes for forest communities for natural resource management;	30,000
	2	Prepare draft National FPIC Guidelines;	30,000
	3	Train extension workers as intermediaries in FPIC process;	80,000

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	4	Conduct field testing of draft Guidelines ;	60,000
	5	Independently evaluate the field test;	15,000
	6	Amend the draft FPIC Guidelines, if necessary;	10,000
	7	Undertake stakeholder consultation and validation of final Guidelines;	10,000
	8	Consider how to institutionalize Guidelines (e.g. in law).	10,000
Output 1c.4: REDD+ grievance Mechanism	1	Conduct assessment of existing formal and informal grievance mechanisms relevant to REDD+ involving local experts;	30,000
	2	Prepare options paper for independent grievance mechanism for forestry issues;	30,000
	3	Prepare draft REDD+ Grievance Mechanism;	20,000
	4	Validate REDD+ Grievance Mechanism with stakeholders;	10,000
	5	Raise awareness of REDD+ Grievance Mechanism. Drivers of deforestation and forest degradation identified	40,000
Sub-total Outcome 1c			**1,745,000**
Total cost OUTCOME 1			**2,315,000**
OUTCOME 2: NATIONAL REDD+ STRATEGY PREPARED			
Output 2a1: Strengthen legal, policy and legislative framework for REDD+	1	Assess/reviewsectoral policies and laws where related to REDD+ (e.g. energy, agriculture) to identify gaps and provide policy recommendations, in particular with regards to harmonization;	50,000
	2	Undertake an extensive review of existing legal and policy frameworks pertaining to the CHT and other regions where indigenous communities exist to identify the scope for REDD+ to conform to existing governance mechanisms in the spirit of the CHT peace accords and to suggest appropriate additional legal and policy measures or modifications. This will include a study on rights to land tenure and land use related to REDD involving local experts;	75,000
	3	Review the existing laws and mechanisms for co-management, land and water related sectors, and benefit sharing, and determine the gaps and required amendments and modifications, in particular with regards to harmonization;	20,000
	4	Undertake research and identify the needed political initiatives to remove the conflicts and ambiguities between the legal approaches to the Chittagong Hill Tracts (CHT) and the national level framework;	30,000
	5	Develop tools and steps to recognize customary land rights and indigenous peoples' rights, potentially through an Independent Commission at the national level;	50,000
	6	Assess the institutional framework for forest management and governance (e.g. supply of forest resource, corruption risk-mapping of forest and public finance sectors, etc). This will include an assessment of current forest management and current law enforcement.	50,000
	7	Consult and validate all recommendations with all concerned stakeholders.	20,000
Output 2a2: Drivers of	1	Study on drivers deforestation and forest degradation to identify new drivers and to understand priorities	50,000

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deforestation and forest degradation identified	2	Initial analysis of all drivers of deforestation and forest degradation through studies in different forest areas – including quantitative assessment and assess social issues and political economy;	75,000
	3	Initial analysis of climate change induced drivers of deforestation and degradation	75,000
	4	Consultation on the results of these assessments and selection of priority drivers to be addressed	30,000
Sub-total 2a			**525,000**
Output 2b1: Detailed understanding on the priority drivers of deforestation and forest degradation	1	Analyze results of national/regional consultation and 2a workshops on drivers of deforestation and forest degradation;	20,000
	2	Collect detailed information on priority drivers, including new ones, and undertake a detailed analysis of the drivers including detailed field level analysis	100,000
	3	Assess national forest governance systems for effectiveness against drivers of deforestation and forest degradation;	60,000
	4	Identify conflicts within existing land use policies and determine needs for alignment	20,000
Output 2b2 REDD+ strategies to address drivers of deforestation and forest degradation	1	Develop options for policy and law-based approaches to addressing drivers (*policies*);	15,000
	2	Undertake analysis of governance at the District level and determine how district-level land-use planning relates to REDD+ implementation	15,000
	3	Develop locally-specific activity packages for addressing drivers in CHT (including conflicts and land ownership issues) and other regions where indigenous communities live (*measures*);	35,000
	4	Develop strategic options for strengthening capacity (human, financial, and infrastructure) of local Forest Department offices and staff - do the capacity building (5000 per office);	50,000
	5	Undertake cost analysis and benefit analysis of: options for policies and laws; activity packages and strengthening Forest Department.	80,000
	6	Undertake capacity building of the local Forest Department Offices and other stakeholders	300,000
Output 2b3 District level activity packages and cost norms	1	Design screening process for identifying suitable sites for REDD+ activities;	10,000
	2	Produce basic district level maps(based on ERD climate financing) on forest land use change, carbon stock estimates, poverty and biodiversity indicators, using best information available (in all - 20 – relevant districts);	50,000
	3	Design district-specific activity packages and governance measures;	30,000
	4	Identify and select 2-8 districts suitable for implementing activities in Phase 2;	15,000
	5	Calculate cost norms for activity packages in each selected district;	20,000
	6	For selected districts, prepared detailed multi-layer maps for environmental management, including Tier 1 carbon estimates	150,000
	7	Prepare detailed district level activity packages, based on detailed multi-layer mapping, for each selected district.	20,000

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Sub-total 2b			990,000
Output 2c1: Operationaliz ing the Organization s and Individuals Involved in REDD+ Implementati on	1	Analyze capacity needs of REDD+ Cell, RSC, TWGs, etc	40,000
	2	Develop capacity development plan	30,000
	3	Build capacity and undertake training of REDD+ Cell, RSC, TWGs, etc.	300,000
	4	Support operations of REDD+ Cell (4/6 people + office + equipment + operating costs + logistics) for 3 years	600,000
	5	International support programme management arrangements	700,000
Output 2c2: Creating the transparent system for national level management of REDD+ finances in place	1	Conduct study on the design of a body for management of international transactions in funds and/or carbon credits;	30,000
	2	Prepare options paper and recommendations for transparent and accountable management of national REDD+ resources;	20,000
	3	Analyse past 'best practice' in Bangladesh for implementing national-scale development projects;	10,000
	4	Propose a National Authority for managing the receipt of international REDD+ funds in a transparent, accountable and efficient way;	15,000
	5	Undertake in-depth consultation and finalize the National Authority;	25,000
Output 2c3. Creating the transparent system for local distribution of REDD+ incentives	1	Determine the socio-economic needs of the positive incentive system for REDD+ at the local level;	20,000
	2	Analyse existing benefit transfer systems in Bangladesh;	20,000
	3	Prepare options paper and recommendations for transparent and accountable allocation of incentives to forest users as compensation for changed forest management and GHG emissions reduction;	20,000
	4	Investigate options for lowering transaction costs for local forest managers;	20,000
	5	Undertake in-depth consultation and finalize.	20,000
Sub-total 2c			1,870,000
	1	A consideration of the national objectives and a national-level interpretation of Cancun;	10,000
Output 2d.1:Establis h Bangladesh's National REDD+ Social and Environment al Safeguard Management Framework	2	Review globally-available REDD+ safeguards, processes and tools and pertinent national policies;	20,000
	3	Develop nationally-specific indicators to comply with international social and environmental principles and criteria (see also 4b);	-
	4	Conduct a gender analysis of proposed national and local institutional structures for REDD+;	30,000
	5	Undertake consultation on gender and indicators;	30,000
	6	Prepare a draft National REDD+ Social and Environmental Safeguard Management Framework;	40,000
	7	Undertake broad consultations on the draft framework	30,000
	8	Submit the National REDD+ Social and Environmental Safeguard Management Framework to RSC for endorsement	20,000
	9	Consult and obtain feedback from demonstration pilot REDD+ projects.	30,000

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Output 2d.2: REDD+ Strategy	1	Prepare draft National REDD+ Strategy based on all assessments and consultation (including under the Outcomes described under Components 1, 3 and 4);	50,000
	2	Validate National REDD+ Strategy with stakeholders.	40,000
Sub-total 2d			**300,000**
TOTAL COST OUTCOME 2			**3,685,000**
OUTCOME 3: National Forest Reference Emission Level and/or a Forest Reference Level			
Output 3.1 Capacities for the development of Reference Emission Level strengthened.	1	3.1.1 Capacity need assessment	60,000
	2	3.1.2: Building capacities in developing RELs/RLs	350,000
Output 3.2 National circumstances and historical data considered for RELs/RLs.	1	3.2.1: Assess Bangladesh's National Circumstances	35,000
	2	3.2.2: Historical assessment of drivers of deforestation and forest degradation	70,000
	3	3.2.3 Data collection to support reference levels	25,000
Output 3.3 RELs/RLs tested	1	3.3.1Combine and harmonize historical forest area changes	35,000
	2	3.3.2 Develop a methodology to assess past forest land area changes	45,000
	3	3.3.3 Testing different RELs/RLs and possibilities of sub-national RELs/RLs	115,000
TOTAL COST OUTCOME 3			**735,000**
OUTCOME 4: Systems for National Forest Monitoring and Information on Safeguards			
Output 4a.1: Capacities to implement the GHG inventory for the forest sector strengthened;	1	4.1.1: Review and updating of MRV Action Plan	20,000
	2	4.1.2: Organization of regular MRV meetings	12,000
	3	4.1.3: Support to Institutional Arrangements for GHG National Inventory System for the LULUCF sector	100,000
	4	4.1.4: Technical capacity building for the GHG inventory for the LULUCF sector	200,000
	5	4.1.5: Support development of the catalogue of data to support the GHG inventory for the LULUCF sector and particularly for forestry	12,000
Output 4a2: National Satellite	1	4.2.1: Development of land cover map index	10,000
	2	4.2.2: Satellite image characterization for forest monitoring	35,000

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Forest Monitoring System established;	3	4.2.3: Rationalization of land cover classification system	15,000
	4	4.2.4: Development of a satellite forest monitoring system	90,000
	5	4.2.5: Capacity building on geospatial data processing and database management	100,000
	6	4.2.6: Forest boundary delineation	120,000
	7	4.2.7: Development of a national land cover map and different legends using LCCS	165,000
	8	4.2.8: Development of real-time forest fire detection and monitoring system	7,000
Output 4a.3: National Forest Inventory Designed and established.	1	4.3.1: Harmonization of all existing inventory data and development of a robust database	85,000
	2	4.3.2: Review of existing inventory designs and provide recommendations for NFI design	60,000
	3	4.3.3 validation of NFI design	260,000
	4	4.3.4: Strengthening of forest inventory capability of stakeholders	200,000
	5	4.3 5 establish NFI	3,500,000
	6	4.3.6 Development and upgrading of the existing NFA tree species database	15,000
	7	4.3.7: Development of allometric equations for important species based on ecological regions	130,000
Output 4a.4: Scientific research on key issues enhanced.	1	4.4.1: Enhance national capacities in volume, biomass and carbon stock calculation	85,000
	2	4.4.2: Strengthen spatial modeling expertise	250,000
	3	4.4.3: support to forestry research in the area of forest ecology, productivity, ecosystem services and climate change impact on forestry	135,000
Output 4a.5: MRV Implementation Support	1	4.5.1: Create and maintain MRV support facility	850,000
4a6:Integrated forest information system developed	1	4.6.1: Support integration of sub-national activities into the national system	55,000
	2	4.6.2Development of participatory tools for monitoring	100,000
	3	4.6.3Facilitate data sharing agreement between relevant institutions	6,000
	4	4.6.4 Support to logistics, equipment and software needs for the information system	525,000
	5	4.6.5 Documentation of methods and data collection for forest monitoring	90,000
	6	4.6.6. Information system supported by adequate data management system and calculation process	85,000
	7	4.6.7. Development of a web based platform, and platform for distributing hard copies, for data sharing between national stakeholders	70,000
	8	4.6.8: Establishment and Management of the Forest Management Information System	130,000
Sub-total 4a			**7,517,000**

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Output 4b: Information systems for measuring multiple-benefits, other impacts, governance and safeguards established	1	Develop a full list of the potential socio-economic, environmental, governance and other co-benefits and study the potential co-benefits.	30,000
	2	Assess and review of existing monitoring systems of multiple benefits	30,000
	3	In consultation with stakeholders, prioritize the co-benefits to be monitored	20,000
	4	Identify and assess related in-country national and international initiatives related to all REDD+ safeguards;	30,000
	5	Determine the framework of safeguards that are to be monitored	20,000
	6	Establish baselines and indicators for (i) all co-benefits to be monitored and (ii) all safeguards;	30,000
	7	Develop a system to monitor changes in the values for the selected indicators and to share this information – the Safeguard Information System (SIS);	30,000
	8	Integrate monitoring of safeguards and co-benefits into the integrated forest monitoring system (4a)	20,000
	9	Provide capacity development to organizations in order to collect and analyze relevant data and undertake monitoring of co-benefits and safeguards;	100,000
	10	Consult stakeholders to validate all above outputs and recommendations.	20,000
Sub-total 4b			**330,000**
TOTAL COST OUTCOME4			**7,847,000**
OUTCOME 6: Programme Monitoring and Evaluation			
SUB TOTAL Monitoring and Evaluation			**300,000**
Total for 3-year National REDD+ Programme (excluding admin costs)			14,912,000
Admin costs and overheads (7%)			1,043,840
Total cost for National REDD+ Roadmap			15,625,840

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Component 6: Programme Monitoring and Evaluation Framework

Objective of this Component: to set out a monitoring and evaluation framework for this Roadmap.

The Results Framework in Component 5 above does not include indicators, baseline values, targets and risks that will be used for monitoring, reporting and evaluating the programme. Table 14 below sets out these parameters.

Implementation of the Roadmap will be monitored and evaluated every six months through internal reviews. This will provide opportunities to validate the implementation of the Roadmap and to make adjustments as required. Information from this monitoring will also be used to make improvements or to reinforce the process of developing the national REDD+ strategy, as well as to provide useful data for evaluation.

The details of this monitoring and evaluation framework will be subject to further consultation and are therefore subject to change.

Final evaluation: There will be a final evaluation carried out by an independent reviewer at the end of the implementation process to assess achievements and lessons, and to make recommendations related to future phases and to REDD+ Roadmap implementation in other countries.

Table 14: Draft Monitoring and Evaluation Framework

Outcomes/Outputs	Indicators (with baselines, targets and proposed timeframe)	Means of Verification	Collection Methods (with indicative timeframe and frequency	Responsibilities	Risks and Assumption
Overall Roadmap objective: *To prepare a National REDD+ Strategy and to develop the necessary capacity to complete Phase 1 of REDD+ readiness*					
OUTCOME 1a: National REDD+ management arrangements established					

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Outcomes/Outputs	Indicators (with baselines, targets and proposed timeframe)	Means of Verification	Collection Methods (with indicative timeframe and frequency)	Responsibilities	Risks and Assumption
Output 1a: National REDD+ Readiness Coordination Mechanism Established	Baseline: existing National REDD+ Steering Committee established, draft ToR available, but membership not fully comprehensive Target(s): • By 6 months, national RSC is established and meeting regularly, with full representation of all stakeholders.	Decree establishing RSC Reports and minutes of regular RSC meetings	Collection of reports and minutes on a quarterly basis		Political support for national REDD+ programme maintained
	Baseline: draft ToRfor REDD+ Cell available and preliminary consultations have been held Target(s): • By 9 months, proposal to establish REDD+ Cell agreed • By 12 months, REDD+ Cell established and operational.	Decree Reports from RSC.	Collection of reports, minutes and guidelines		Constructive cooperation between government agencies leads to an agreement on how to structure REDD+ Cell
	Baseline: no existing stakeholder consultation mechanism Target(s): • By 6 months, draft stakeholder mapping completed • 9 months, a draft proposal agreed to establish RSF, with ToR • By 12 months, RSF established and operational, and civil	Minutes of RSC Minutes of RSF	Collection of reports, minutes and plans		Diverse stakeholders are able to work effectively to establish the Forum and sub-Forums

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Outcomes/Outputs	Indicators (with baselines, targets and proposed timeframe)	Means of Verification	Collection Methods (with indicative timeframe and frequency)	Responsibilities	Risks and Assumption
	society is happy with the framework.				
Outcome 1c: Improved stakeholder awareness and effective engagement					
Output 1c.1: Raised Public Awareness	Baseline: not known Target(s):to be determined.	Results of surveys	Surveys undertaken by REDD+ partners		Public retains an interest overall in environment and global issues.
Output 1c.2: Consultation and Participation Plan	Baseline: • Roadmap includes process for preparing Consultation and Participation Plan • No existing materials on REDD+ Target(s): • By 6 months, Consultation and Participation Plan prepared. • By 9 months, implementation of Plan has commenced and some REDD+ materials available • 12 months, website operational.	Plan available Reports of consultation and participation activities (e.g. workshop reports)	Collection of reports and minutes and work plans		CSO/non-government stakeholders support development of CPP Strong stakeholder interests and enabling conditions are maintained
Output 1c.3: National FPIC Guidelines	Baseline: no FPIC Guidelines Target(s): • Study on decision-making completed by 12 months • by 15 months, draft National	Study available Draft FPIC Guidelines available	Collection of studies and reports		Political support is obtained for FPIC process Sufficient technical capacity exists to conduct FPIC work

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Outcomes/Outputs	Indicators (with baselines, targets and proposed timeframe)	Means of Verification	Collection Methods (with indicative timeframe and frequency)	Responsibilities	Risks and Assumption
	FPIC Guidelines prepared • By 2.5 years, national FPIC Guidelines field tested and finalized.	Field report available from pilot			
Output 1c.4: REDD+ Grievance Mechanism	Baseline: some existing grievance mechanisms in Bangladesh Target(s): • By 12 months, draft Grievance Mechanism prepared • by 18 months: a national grievance mechanism agreed and ready to function	Documents available	Project reports		Political support for REDD+ Grievance Mechanism
OUTCOME 2: National REDD+ strategy prepared					
Outputs 2a: • Strengthen legal, policy and legislative framework for REDD+ • Drivers of deforestation and forest degradation identified	Baseline: preliminary work on drivers by preliminary TWGs Target(s): • by 18 months, national study to identify and assess drivers completed • by 18 months, study completed on legal alignment of laws and policies	Studies available	Project reports		

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Outcomes/Outputs	Indicators (with baselines, targets and proposed timeframe)	Means of Verification	Collection Methods (with indicative timeframe and frequency)	Responsibilities	Risks and Assumption
Outputs 2b: : 1) 2b1: Detailed understanding on the priority drivers of deforestation and forest degradation 2) 2b2: REDD+ strategies to address drivers of deforestation and forest degradation; 3) 2b3: Design district level activity packages and cost norms	Baseline: preliminary assessment on strategies through workshops and preliminary design activities Target(s): • draft list of strategies prepared by 18 months • by 2 years, national study completed to identify and assess strategies	Studies available	Project reports		
Output 2c: Implementation framework for REDD+ developed					
Output 2c1:Operationalising the Organizations and Individuals Involved in REDD+ Implementation	Baseline. RSC, REDD+ Cell and TWGs working on a preliminary and temporary basis, not fully in line with guidance, and with limited operational capacity. Target . RSC, RSF, REDD+ Cell and TWGs all permanently established and functioning (after two years),	Minutes of meetings. Concerned outputs.	Project reports.	Project and REDD+ Cell	
Output 2c2: Creating the transparent system for national level management of REDD+ finances	Baseline understanding is limited, no management system in place, although systems exist for other funds with other objectives.				

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Outcomes/Outputs	Indicators (with baselines, targets and proposed timeframe)	Means of Verification	Collection Methods (with indicative timeframe and frequency)	Responsibilities	Risks and Assumption
	Target After two years, mechanisms for receiving international carbon credits are fully designed and being established- to international standards and in line with REDD+ guidance.				
Output 2c3: Creating the transparent system for local distribution of REDD+ incentives	Baseline understanding is limited, no management system in place, although systems exist for other funds with other objectives. Target After two years, mechanisms for allocating incentives or funds are fully designed and being established- to international standards and in line with REDD+ guidance.				
Output 2d.1 Establish Bangladesh's National REDD+ Social and Environmental Safeguard Management Framework					
Output 2d2: National REDD+ Strategy prepared	Baseline: no current strategy, there is the Roadmap Target(s): • By 3 years, National REDD+ Strategy prepared and in final stages of approval	National REDD+ strategy available and adopted by stakeholders and Government	Project reports		All elements of work are completed to support comprehensive REDD+ strategy

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Outcomes/Outputs	Indicators (with baselines, targets and proposed timeframe)	Means of Verification	Collection Methods (with indicative timeframe and frequency)	Responsibilities	Risks and Assumption
Outcome 3: Reference emission levels and reference levels developed					
Output 3.1 Capacities for the development of Reference Emission Levels strengthened	Baseline: almost no capacity in Bangladesh specific to preparing REL /RLs Target(s): • by 15 months, data on existing forest cover collated • by 3 years, REL / RL field tested at pilot site	Documents available Minutes of TWG	Project reports		
Output 3.2 National circumstances considered for RELs/RLs	Baseline: some existing material on climate change impacts Target(s): • by 18 months, assessment of Bangladesh's national circumstances completed • Complete set of data regarding historical forest trends and drivers over an appropriately lengthy period.	Documents available Minutes of TWG	Project reports		
Output 3.3. National forest monitoring systems established.	Baseline: no forest monitoring system in Bangladesh Target(s): • Sub-national REL known • Agreed methodology for assessing land-use change known and understood widely.				

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Outcomes/Outputs	Indicators (with baselines, targets and proposed timeframe)	Means of Verification	Collection Methods (with indicative timeframe and frequency)	Responsibilities	Risks and Assumption
Outcome 4: National Forest Monitoring System and Safeguards Information System Developed					
Output 4a.1: Capacities to implement the GHG inventory for the forest sector strengthened;	Baseline: no MRV process in Bangladesh Target(s): • By 12 months, Assessment of monitoring and MRV capacity gaps and needs completed • By 6 months, a national forest monitoring system Action Plan completed • By 12 months, a national forest definition is adopted. • By 3 years, QA/ QC procedures are operational.	Reports, minutes, training materials and mechanism	Collection of reports and minutes on a quarterly basis		Government and non-government institutions work cooperatively
Output 4a.2: National Satellite Forest Monitoring System established	Baseline: • no REDD+ Monitoring System in Bangladesh Target(s): • By 18 months, existing satellite imagery for Bangladesh are analysed • By 18 months, training on remote sensing and GIS is provided • By 18 months, the REDD+ monitoring system (beta-version) is operational • By 2 years, a reference forest map is completed.	Reports, minutes, training materials and web-GIS platform	Collection of minutes, reports, data, and materials		National consensus is reached to identify the forest land and to monitor forest land

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Outcomes/Outputs	Indicators (with baselines, targets and proposed timeframe)	Means of Verification	Collection Methods (with indicative timeframe and frequency)	Responsibilities	Risks and Assumption
Output 4a.3: National Forest Inventory Designed and established.	Baseline: some existing national forest inventory data, but not on emission factors Target(s): • By 12 months, new NFI is designed, including field manual • By 18 months, tree species and forestry database is established • By 18 months, the central database is populated with existing data on forest inventories • By 12 months, the National forest inventory is designed.	Reports, minutes, training materials	Collection of minutes, reports, and materials		Adequate technical capacities exist to design the NFI.
Output 4a.4: Support Scientific Research on Key MRV Related Issues	Target Scientific research recognized as contributing to global knowledge base on REDD+				
Output 4a.5 MRV Implementation Support	**To be determined**				
Output 4a.6. :Integrated forest information system developed	**To be determined**				

Outcomes/Outputs	Indicators (with baselines, targets and proposed timeframe)	Means of Verification	Collection Methods (with indicative timeframe and frequency)	Responsibilities	Risks and Assumption
Output 4b: Information systems for measuring multiple-benefits, other impacts, governance and safeguards established	Baseline: no safeguard information system in place ; No strategy on co-benefits in place. Target(s): • By 15 months, nationally appropriate safeguards and indicators are identified, and agreement on co-benefits to be monitored • By 2 years, National REDD+ safeguards and co-benefit indicators are tested and submitted for official endorsement • By 2.5 years, the safeguards/co-benefits information is made available in the central database.	National REDD+ Safeguards and indicators, monitoring and information provisioning systems	Collection of minutes, reports and policy statements		Safeguards can be agreed between all stakeholders. Sufficient political support to adopt safeguards.

Activities and inputs required for M&E

In order to perform monitoring and evaluation, the following activities and inputs will be necessary:

- One full-time national M&E officer;
- Occasional sub-contracts to collect data required and prepare M&E publications;
- Independent, external evaluations at the mid-term and end of the Phase.

UN-REDD Resource Documents

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In the implementation of this Component, the Bangladesh REDD+ Readiness team will refer to and, where appropriate, use the following UN-REDD programme guiding tools and documents:

- National Programme's Planning, Monitoring and Reporting Framework.

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Social and Environmental Principles and Criteria (SEPC)

The Monitoring and Measurement, Reporting and Verification (M & MRV) Functions for REDD+ Mitigation Actions

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Guidelines for Monitoring the Impats of REDD+ on Biodiversity and Ecosystem Services

An Annotated Guide to Useful Resources for Monitoring the Impacts of REDD+ on Biodiversity and Ecosystem Services

National Programme's Planning, Monitoring and Reporting Framework

ANNEXES

Annex 1a: National Readiness Management Arrangements
See separate file with annexes.

Annex 1b-1: Information Sharing and Early Dialogue with Key Stakeholder Groups
See separate file with annexes.

Annex 1b-2: Results of Initial Stakeholder Mapping Exercise for Bangladesh REDD+ Programme
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Annex 1b-3: Bangladesh NGOs/CSOs with stakes in REDD+
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Annex 1c-1: Process to Respect the Right of Communities to FPIC
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Annex 1c-2: Existing Dispute Resolution Mechanisms in Bangladesh
See separate file with annexes.

Annex 2a: Assessment of Existing Strategy, Policy and Legal Framework Pertinent to REDD+
See separate file with annexes.

Annex 3: Assessment of Forest Land Area in Bangladesh
See separate file with annexes.

Annex 4a: Experiences in Assessing Emission Factors for the Forest Sector
See separate file with annexes.

Annex 4b: Experiences in Developing the GHG Inventory
See separate file with annexes.