



Bangladesh REDD+ Readiness Roadmap

UN-REDD PROGRAMME

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Abbreviations

ACCF	Assistant Chief Conservator of Forests
AD	Activity Data
ADB	Asian Development Bank
ADP	Annual Development Programme
ADR	Alternative Dispute Resolution
AFOLU	Agriculture, Forest and Other Land Use
AWG-LCA	Ad-hoc Working Group on Long-term Cooperative Action (under the UNFCCC)
BAPA	Bangladesh Paribesh Andolan
BARC	Bangladesh Agricultural Research Council
BBS	Bangladesh Bureau of Statistics
BCAS	Bangladesh Centre for Advanced Studies
BCCRF	Bangladesh Climate Change Resilience Fund
BCCSAP	Bangladesh Climate Change Strategic Action Plan
BCCTF	Bangladesh Climate Change Trust Fund
BELA	Bangladesh Environmental Lawyers Association
BFIDC	Bangladesh Forest Industries Development Corporation
BFRI	Bangladesh Forest Research Institute
BGDP	Bangladesh Green Development Programme
BRAC	Bangladesh Rural Advancement Committee
BRDB	Bangladesh Rural Development Board
CBA	Community-Based Adaptation
CBAP	Capacity Building Action Plan
CBACC-CF	Community-Based Adaptation to Climate Change through Coastal Afforestation
CBD	Convention on Biological Diversity
CBNA	Capacity Building Needs Assessment
CCC	Climate Change Cell
CCF	Chief Conservator of Forests
CCIF	Climate Change Investment Fund
CCNWG	Climate Change Negotiation Working Group
CCRF	Climate Change Resilience Fund
CCU	Climate Change Unit
CDM	Clean Development Mechanism of the Kyoto Protocol
CDMP	Comprehensive Disaster Management Programme
CEPA	Communication, Education and Public Awareness
CF	Conservator of Forests
CHT	Chittagong Hill Tracts
CHTDF	Chittagong Hill Tracts Development Facility (UNDP-supported project)
CMC	Co-management Committee
CMO	Co-management Organisation
COP	Conference of the Parties
CRISP	Collaborative REDD/IFM Sundarbans Project
CSO	Civil Society Organisation
DAE	Department of Agricultural Extension
DC	District Commissioner
DCCF	Deputy Chief Conservator of Forests
DCF	Deputy Conservator of Forests
DFO	Divisional Forest Officer
DLRS	Division of Land Records and Survey
DoE	Department of Environment
EF	Emission Factor
EIA	Environmental Impact Assessment
ERD	Economic Relations Division
ESIA	Environmental and Social Impact Assessments
FAO	Food and Agriculture Organisation of the United Nations
FCPF	Forest Carbon Partnership Facility

FD	Forest Department
FFF	Forest, Fruit, Fish
FIS	Forest Information System
FLEG	Forest Law Enforcement and Governance
FLEGT	Forest Law Enforcement, Governance and Trade
FMS	Forest Monitoring System
FPIC	Free, Prior and Informed Consent
FSMP	Forestry Sector Master Plan
FSO	Forest Settlement Officer
GED	General Economics Division
GEF	Global Environment Facility
GHG	Greenhouse Gas
GHG-I	Greenhouse Gas Inventory
GIS	Geographic Information System
GIZ	German Development Cooperation
GoB	Government of Bangladesh
HDC	Hill District Council
IFM	Improved Forest Management
IPAC	Integrated Protected Area Co-management (USAID-funded project)
IPCC	Intergovernmental Panel on Climate Change
IUCN	World Conservation Union
IWM	Institute of Water Modelling
KCA	Key Category Analysis
LDCF	Least Developed Countries Fund
LULUCF	Land Use, Land Use Change and Forestry
M & MRV	Monitoring and MRV
MDGs	Millennium Development Goals
MoA	Ministry of Agriculture
MoCHTA	Ministry of Chittagong Hill Tract 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-C	Ministry of Local Government, Rural Development and Cooperatives
MoLJPA	Ministry of Law, Justice and Parliamentary Affairs
MoP	Ministry of Planning
MoWR	Ministry of Water Resources
MRV	Measurement, Reporting and Verification for REDD+
NAMA	Nationally Appropriate Mitigation Actions
NAPA	National Adaptation Programme of Action
NC	National Communication
NEC	National Environment Council
NEP	National Environment Policy
NFA	National Forest Assessment
NFI	National Forest Inventory
NFP	National Forestry Programme
NGO	Non-Governmental Organisation
NHRC	National Human Rights Commission
NRM	Natural Resource Management
NSCCC	National Steering Committee on Climate Change
NTFP	Non-Timber Forest Product
PA	Protected Area
PCJSS	Parbattya Chattagram Jana Samhati Samiti

PDD	Project Design Document
PF	Protected Forest
PPCR	Pilot Program for Climate Resilience
QA/QC	Quality Assurance/Quality Control
R-PP	Readiness Preparation Proposal
RECOFTC	Regional Community Forestry Training Center – Center for People and Forests
REL/RL	Reference Emission Level / Reference Level
REDD	Reduced Emissions from Deforestation and forest Degradation
REDD+	REDD, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks
REDD+ SC	REDD+ Steering Committee
RF	Reserved Forest
RIMS	Resource Information Management System
RSF	REDD+ Stakeholder Forum
SAT	State Acquisition and Tenancy
SCP	Strategic Communication Plan
SES	Social and Environmental Standards
SF	Social Forestry
SFM	Sustainable Forest Management
SFMC	Social Forest Management Committee
SFR	Social Forestry Rules
SIA	Social Impact Assessment
SICT	Support to Information Communication Technology
SPA	Strategic Priority to Adaptation (Fund under the GEF)
SPF	Social/Participatory Forestry
SPARRSO	Space Research and Remote Sensing Organisation
SRDI	Soil Resource Development Institute
tCO ₂ e	Tons of CO ₂ equivalent (a measure of GHG emissions)
TWG	Technical Working Group
UNCCD	United Nations Convention on Combating Desertification
UNDP	United Nations Development Program
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations REDD Programme
USAID	United States Agency for International Development
USF	Unclassed State Forest
VCF	Village Common Forest
VCM	Voluntary Carbon Market
WCMC	UNEP World Conservation Monitoring Centre
WG	Working Group
WWF	World Wide Fund for Nature

Introduction

Country Profile

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. It lies on the delta of three major rivers; Padma, Meghna and Jamuna. The country covers an area of 147,570 sq.km and is bounded by India from 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 hill regions in the north-east and south-east with an average elevation of 244m and 610m respectively.

The country 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

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 km². 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 1), are the least densely populated areas of the country. Bangladesh is largely ethnically homogeneous, with Bengalis comprising 98% of the total population of about 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, or 1.5 – 2% of the total, are mostly tribal peoples, 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.

Bangladesh became an independent state in 1971, after a war of secession from Pakistan, of which it was formerly the eastern part. Before and after independence, many Bengali migrants moved from the densely populated lowlands into the relatively sparsely-populated CHT, resulting in significant demographic changes in the area.



Figure 1: Bangladesh; borders and major settlements

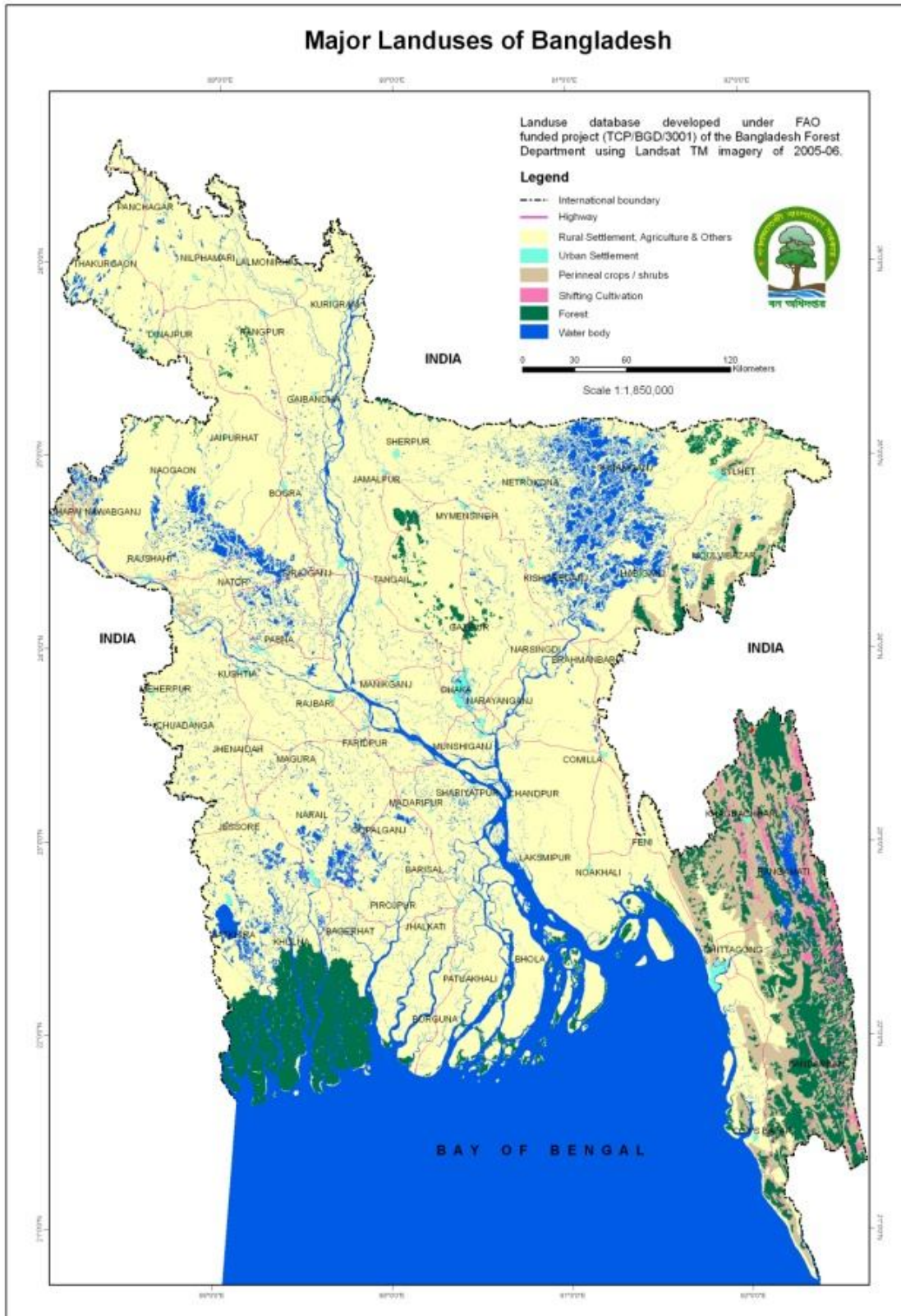
This led to a period of civil unrest in the CHT, culminating in the 1997 signing of a Peace Treaty between the Government of Bangladesh and the Parbattya Chattagram Jana Samhati Samiti (PCISS), representing the tribal people. The treaty paved the way for the creation of the Ministry of Chittagong Hill Tracts Affairs (MoCHTA) and the devolution of some powers to an elected Hill District Council (HDC), covering the three districts of the CHT area.

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 only 30% of the population entering the labour force in the future will be absorbed into agriculture, although many are likely to find other kinds of work in rural areas.

Land is a very scarce and important resource in Bangladesh. Figure 2 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). Over the 30 years between 1975 and 2004, the area under agriculture expanded by 0.68 Mha, about 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).

Figure 2: Bangladesh land use map, Source: Bangladesh National Forest and Tree Resources Assessment, Bangladesh Forest Department and FAO, 2007



Bangladesh and Climate Change

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. Bangladesh is one of the most vulnerable countries to the impacts of global climate change, and these impacts are becoming ever more visible (IUCN 2011). 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). 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 ($^{\circ}$ 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				

Source: General Economic Division (GED) 2009

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 and sinks of greenhouse gases in Bangladesh

The last national Green House Gas (GHG) inventory reports that the majority of CO₂ emissions are derived from the energy sector (63%) followed by 32% from the land-use change and forestry, or LULUCF, sector (MoEF, 2002). The agricultural sector accounts for 94% of total methane (CH₄) emissions, largely due to the

use of synthetic fertilizers. Bangladesh emitted 0.053 billion tonnes - less than 0.2% of the world total GHG emissions - reflecting its extremely low consumption of energy (MoEF, 2008).

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

National strategy to tackle climate change in Bangladesh

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 Government of Bangladesh has recently established a Climate Change Trust Fund (BCCTF), which will focus mainly on making resources available for adaptation efforts. Bangladesh is also looking beyond its borders to find common cause with neighbouring countries to manage climate change impacts through regional action plans. 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.

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 challenge brought on by climate change. The needs of the poor and vulnerable, including women and children, will be mainstreamed in all activities under the Action Plan.

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

Bangladesh Forest Sector

The area of forestland is 2.5 Mha which is 17.08% of the country's total area. Bangladesh Forest Department (FD) manages 1.52 Mha of forestland. According to Bangladesh's most recent Forest Resource Assessment (FRA) to FAO, 11% of the land area is under tree cover (FAO, 2010). However, another 20% (about 2.5 Mha) of the country is recorded under 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.

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. About 4.65 million ha of such land has been identified for future rehabilitation and restoration purposes through the current Social Forestry programme (see Section 1).

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 recognises five broad types of forest according to ecology and geographical location; **Hill Forest**, **Plains forest (dominated by Shorea robusta, 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)	638.06
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)	120.69
Mangrove Forest (Sundarbans Reserved Forest)	Reserved Forest	South-west districts (Khulna, Satkhira, Bagerhat and Patuakhali)	607.7
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)	130
Wetland Forest	Mostly Reserved Forest, more recent plantations yet	North-east districts (Sylhet and	23.59

(Swamp Forest)	to be declared	Sunamganj)	
Unclassed State Forest (USF)	Under district administration	CHT districts: Bandarban, Rangamati and Khagrachari	17.35
Total area			1,537.39

Source: Management Plan Division, Bangladesh FD

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 unstocked as 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)

Background: International Framework for REDD+ Implementation

Reducing Emissions from Deforestation and forest Degradation [plus] conservation of forest carbon stocks, sustainable management of forests and enhancement of forest carbon stocks, all now encompassed by the acronym **REDD+**, has become a prominent discussion track, in recent years, within negotiations under the United Nations Framework Convention on Climate Change (UNFCCC). The objective of this discussion track is agreement on the design of a mechanism that rewards **developing countries** for their achievements in climate change mitigation through the forest sector. The topic was formally introduced to the Conference of Parties (COP) at its 11th session in Montreal in 2005 and was confirmed as an integral part of a future global climate change protocol at the 16th session in Cancun, Mexico in 2010; the Cancun Agreements.

How REDD+ works

REDD+ activities are grouped into five categories (see Annex 1), based on the full definition of the term given in the paragraphs above. Figure 3 outlines the basic mechanism of REDD+. At the national level, a REDD+ strategy can be expressed in terms of three **Elements**:

1. A system of **Measurement, Reporting and Verification (MRV)**, which provides all the data required to accurately monitor and record changes in forest cover and condition, amounting to a revised Forest Information System (FIS).
2. The **Policies and Measures** required to achieve reductions in deforestation, forest degradation and enhancement of forest carbon stocks.
3. A system of **Benefit Distribution** to ensure that resources that flow into the forest sector are allocated in such a way as to induce sustained changes in behavior among actors which result in the desired long-term outcomes on the ground.

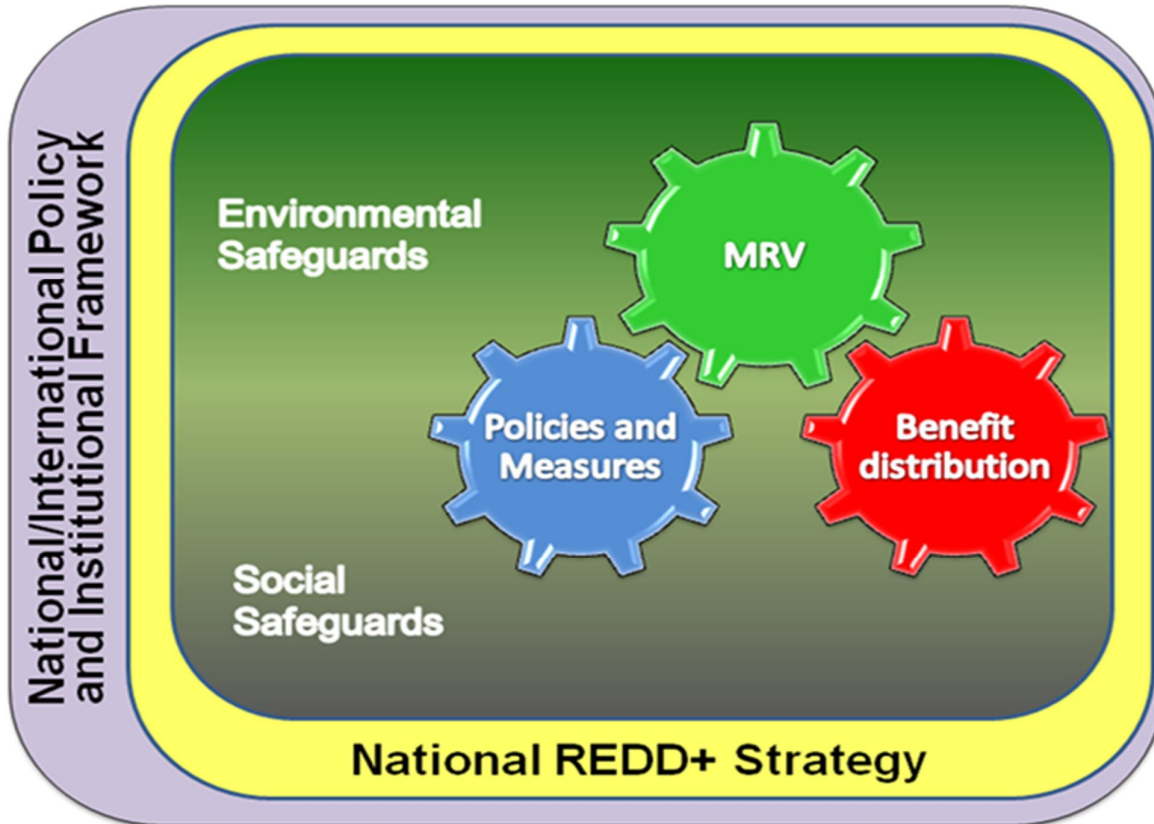
These three elements will only result in the long-term outcomes of reduced deforestation, reduced forest degradation and enhancement of forest carbon stocks if they are all interlinked. For example, a country with a well-functioning MRV system but inappropriate Policies and Measures or inefficient Benefit Distribution will simply amass excellent records of continuing decline in forest area and condition.

Furthermore, because the forest sector affects the livelihoods and well-being of many people, and forest ecosystems are but one part of the biosphere, REDD+ mechanisms must be accompanied by a number of **Safeguards** against negative impacts. These safeguards are specific to national circumstances but will include:

- **Environmental:** Provisions to ensure that REDD+ measures do not result in conversion of natural vegetation, do not result in reduced biodiversity and do not merely displace environmentally unsustainable practices from one location to another
- **Social:** Provisions to ensure that REDD+ measures do not increase poverty, decrease equity or negatively affect the livelihoods of any vulnerable stakeholders. These safeguards will include full multi-stakeholder participation in all REDD+ decision-making processes, adjustments in forest governance to minimize the opportunity for corrupt practices, and commitment to the principle of obtaining the Free, Prior and Informed Consent (FPIC) of all directly-affected stakeholders at each stage of implementation of a national REDD+ strategy.

All these national-level elements and safeguards cannot be implemented in a vacuum. They require a set of enabling frame conditions; including networks of institutions which are efficient, transparent and stable at international, national and sub-national levels, and a conducive political environment in order to maintain sufficient support for REDD+ and awareness of the problems which it must address.

Finally, the international financial systems must be in place. If the national REDD+ strategy is successful, emission of GHGs (mainly CO₂) will be reduced. Positive benefits for REDD+ will flow if the international community recognizes the value of these reductions and implements a transparent system for countries to be rewarded for their performance. Therefore, REDD+ can only be viable in the long-term, in the context of an international agreement on climate change that includes enforceable commitments to emission reductions.

Figure 3: The Elements of REDD+

The generic rules underlying the implementation of REDD+ by developing countries were agreed upon at the 15th UNFCCC Conference of Parties (COP15) in Copenhagen in 2009 and were finalised as part of any future international climate change agreement at the 16th COP in Cancun in 2010. The agreed text on REDD+ formed part of the **Cancun Agreements**, which is the accepted name for the outcome of the work of the Ad-hoc Working Group on Long term Cooperative Action (AWG-LCA) under the UNFCCC¹. See Annex 1 for a summary of the REDD+ text of the Cancun Agreements, to which the Bangladesh REDD+ Readiness Roadmap must adhere, including:

- Scope of REDD+
- Financing of REDD+
- Phases of Implementation
- Scale of Implementation
- Methods for Monitoring and for Establishing REDD+ Strategies
- Setting National Baselines
- REDD+ Safeguards

Background: Bangladesh REDD+ Readiness Roadmap

¹ The Cancun Agreements can be downloaded from:

unfccc.int/files/meetings/cop_16/application/pdf/cop16_lca.pdf

This development of this document, and its structure, has been designed to align with the FCPF/UN-REDD Readiness Preparation Proposal (R-PP) template version 6.0 (November 2011). It also draws substantially on the experience of other countries in the Asia-Pacific region, particularly with reference to the following documents:

- Cambodia Readiness Plan Proposal on REDD+ (Cambodia REDD+ Roadmap), v 4.0, March 2011
- Nepal Readiness Preparation Proposal, September 2010
- Philippines National REDD-plus Strategy (PNRPS), August 2010
- Sri Lanka draft R-PP, January 2012

The Roadmap

The Bangladesh REDD+ Readiness Roadmap describes a plan of activities which, when implemented together, in a logical and practical order, prepares the country for phase 2 of a national REDD+ programme. The Roadmap leads towards the point at which the Government of Bangladesh, at the end of phase 2, is able to make a decision, based on the most accurate and up-to-date information, on whether or not to implement REDD+ at the national level, and has the necessary resources and systems in place to act on that decision without delay.

The Roadmap is a **living document**. It is not intended to be a fixed and unchangeable set of instructions for REDD+ Readiness activities, nor should it be used as such. It should be reviewed and updated on a regular basis to reflect the developing experiences and capacities within Bangladesh and the progression of REDD+ tools and approaches internationally.

Phases of REDD+

The development of the Roadmap is the first step of the Bangladesh REDD+ process. The remaining steps, and their approximate timeline, are as follows:

Phase 1: Implementation of the Roadmap, during which Bangladesh will put in place the necessary capacities and institutions to implement REDD+ at the national level. This phase also includes identification of the possible actions (or 'candidate strategies') that may achieve net emission reductions from the forest sector. This phase can begin as soon as the Roadmap is endorsed by the MoEF.

Phase 2: This phase will involve field testing of candidate strategies through **demonstration activities**, to establish which of the strategies may achieve efficient and cost-effective results on a national scale without undermining any of the REDD+ safeguards. This phase could also include further capacity-building, and development of new policies and legislation. Some demonstration activities may begin in specific areas of the country before all phase 1 activities are completed at the national level. The country will fully enter phase 2 when all Readiness activities have been completed, within two years of the completion of the Roadmap.

Phase 3: Only during this phase would Bangladesh start to implement REDD+ activities, through a national performance-based system of resource (benefit) distribution. The implementation of phase 3 depends on decisions undertaken by the UNFCCC. Bangladesh may therefore be ready for phase 3 as early as 2015, but may need to continue with demonstration activities for some time thereafter.

Support for REDD+ in Bangladesh

International support for REDD+ Readiness is currently being channelled through three separate modalities:

1. Bilateral agreements between developed and developing countries, for both national-level Readiness activities (e.g. Government of Norway with Tanzania, Australian Government with Indonesia), and project-level demonstration (e.g. Australia and Germany with Indonesia).
2. Forest Carbon Partnership Facility (FCPF). The World Bank launched the FCPF at the COP13 in Bali in 2007. It includes two funds: a Readiness Fund to support national-level REDD+ Readiness, and a Carbon Fund to purchase emissions reductions from participating countries. The Readiness Fund initially contained pledges of just over \$100 million, and was designed to support only 20 countries. However, a total of 37 countries have now applied to join the FCPF and been accepted, although only the first 20 are currently eligible for support.
3. UN-REDD Programme. The UN-REDD Programme was launched in 2008 and focuses exclusively on national REDD+ Readiness (Phase 1). Initially covering nine countries, several additional countries have applied to join and been accepted as full country partners. There are now 14 countries receiving funding through the UN-REDD policy board for their country programmes. Another 21 countries have been accepted as partners, including Bangladesh. They have observer status on the UN-REDD policy board and do not receive funding through UN-REDD for their national REDD+ Readiness and Implementation activities.

The FCPF is no longer considering applications from additional countries. The Bangladesh REDD+ Readiness Roadmap will therefore be used as the basis for the following resource mobilisation strategies:

1. A Readiness Preparation Proposal (R-PP), in the event of an invitation from the UN-REDD Policy Board.
2. Proposals for financial and technical assistance through other bilateral and multilateral agencies

Funding for the preparation of the Bangladesh REDD+ Readiness Roadmap has been provided by UNDP and FAO, with the technical support of the UN-REDD Programme.

Sections of the Roadmap

The six main sections of the Bangladesh REDD+ Roadmap are:

1. National REDD+ Readiness Management Arrangements
2. Stakeholder consultation and participation
3. Development and selection of REDD+ strategies
4. Implementation framework (including resource distribution and safeguards)
5. Development of the Reference Level for REDD+ against which performance will be measured (Reference Levels or Reference Emissions Levels, RLs/REs)
6. Development of the Monitoring and Measurement, Reporting and Verification (MRV) systems

Section 1: Management of REDD+ Readiness

Definition: How REDD+ Readiness activities will be coordinated and managed in Bangladesh

Key parts:

Existing institutional arrangements (climate change and forests),

- Description of existing institutions relevant to climate change and forests e.g. BCCSAP, Green Development Programme, NAPA, BCCTF, BCCRF, NSCCC, etc.
- Institutional networks, coordination and decision-making (existing legislative and procedural arrangements), roles and responsibilities of different line agencies
- Projects, programmes, NGOs and private sector involvement in forest sector (potential partners in REDD+ Roadmap),
- Gaps in existing institutional arrangements which REDD+ Readiness must address

Proposed REDD+ Readiness management arrangements:

- Proposed institutional setup for management arrangements of the national REDD+ process,
- Adaptation of existing institutions, creation and justification of new institutions (achieved and planned) to fit the proposed arrangements
- Composition and ToRs for: Decision-making body (REDD+ Steering Committee), implementing body (REDD Cell), REDD+ Stakeholder forum, Technical Working Groups; how will they be adapted, created, developed and managed?

Existing Climate Change policy framework in Bangladesh

Climate Change Strategy

The Bangladesh Climate Change Strategy and Action Plan (MoEF, 2009) prioritizes adaptation in the short to medium-term. The BCCSAP is built on six pillars, which are:

- 1) Food security, social security and health;
- 2) Disaster management;
- 3) Infrastructure development;
- 4) Research and knowledge management;
- 5) Mitigation and low carbon development, and
- 6) Capacity building and institutional development.

The BCCSAP includes a total of 37 programmes under these six pillars. Forestry is only explicitly included under mitigation and low carbon development through a programme to expand afforestation and reforestation, particularly in coastal areas. However, REDD is mentioned within this programme as a way to involve local communities in reforestation efforts through providing a new source of funding. As an action

under this programme, the BCCSAP highlighted the need to 'study the scope for REDD' as early as 2008 (MoEF, 2009).

Besides contributing directly to pillar 5, a comprehensive REDD+ programme will also contribute directly to pillar 4, by ensuring that Bangladesh is networked into the expanding global knowledge network on REDD+, and to pillar 6 by building the capacities of existing and new institutions in order to sustain good forest management practice in the long term.

National Adaptation Programme of Action (NAPA)

The strategic goal and objective of Bangladesh's NAPA are to reduce adverse effects of climate change including variability and extreme events such as the frequency of cyclones, while promoting sustainable development. The plan suggests appropriate coping mechanisms and recognizes the importance of community involvement in these projects. It also recognises the importance of mangrove ecosystems as a part of Bangladesh's coastal defences. A REDD+ strategy that incorporates restoration and establishment of mangroves would therefore serve a unique double purpose in Bangladesh's efforts to combat climate change, as both a mitigation and an adaptation strategy.

Bangladesh Climate Change Trust Fund (BCCTF)

The GoB created the BCCTF, through the CCTF Act of 2010, with the objective of implementing the actions and programmes of the BCCSAP. A Climate Change Unit (CCU) was created under the MoEF specifically to administer the BCCTF. The BCCTF is financed by internal GoB resources, and the Government has so far allocated about 21 billion Taka (253 million USD) for the three year period 2009-12.

To facilitate the approval of projects under BCCTF, sub-Committees have been formed for each of the Six Thematic areas of BCCSAP (see above). A 12-member Technical Committee under the chairmanship of the Secretary, Ministry of Environment and Forest has been formed in order to scrutinize the projects and programmes recommended by sub-committees. A 17-member Trustee Board under the chairmanship of the Minister has been formed in order to scrutinize and approve the projects and programmes recommended by the Technical Committee.

Bangladesh Climate Change Resilience Fund (BCCRF):

With a view to building a medium- to long-term program for enhancing resilience to climate shocks and facilitating low carbon and sustainable growth, Bangladesh launched the BCCSAP at the UK-Bangladesh Climate Change Conference in London in September, 2008. This was later updated in 2009. In the wake of the London conference, a multi-donor trust fund for climate change was proposed as a modality for the development partners to support Bangladesh in implementing the BCCSAP. This became the BCCRF, endowed with an amount of US\$ 110 million.

The overall objective of the BCCRF is to protect and improve the lives of 10 million climate vulnerable people in Bangladesh by 2015 through climate change adaptation, mitigation and disaster risk reduction measures. The purpose is to support the Government of Bangladesh with the implementation of the BCCSAP. Donors also assured the government of providing more assistance to the BCCRF to cope with the adverse impacts of climate change. The Ministry of Environment and Forests has taken an initiative to set up the BCCRF Secretariat.

The BCCRF is being managed and implemented by the Government of Bangladesh. A technical assistance portion of the BCCRF is executed by the World Bank with agreement of the Government of Bangladesh. Besides, the World Bank group and Asian Development Bank have initiated a project entitled Pilot Program for Climate Resilience (PPCR) with an amount of US\$110 million from the global Climate Change Investment Fund (CCIF).

Bangladesh Green Development Programme (BGDP):

The BGDP would, for example, facilitate and advocate across society broad attitudinal changes towards green development. Analytical work would be expected to determine how equitable and sustainable growth of green jobs can help reduce energy consumption, decarbonize the economy, and protect and restore ecosystems to arrest biodiversity decline. This programme would be responsive to the articulated demands of the government to create and strengthen a network of green business actors and organizations. In the near term it could assist the thinking of the Bangladesh Government as it prepares for Rio 20+.

This is an umbrella initiative to explore new programming opportunities in the areas of environment, energy and climate change and in fulfilling the programming needs so that vulnerable people benefits from better natural resource management and access to low carbon energy. The programme will support low emission development in areas of pro-poor and pro-gender renewable energy, energy efficiency, climate technology, and demand side management. This will also provide support to environmental governance and pro-poor ecosystem management through pollution abatement of land degradation, coastal, wetland and other biodiversity management, and sustainable urban management.

In partnership with government, donors, and private sector, national capacity will be enhanced for forest resource management including REDD+ implementation. Forest resource management, especially REDD+ readiness, will be part of national capacity forest resource management. There is a need for enhanced capacity in forest management and keen interest from GoB for support from UNDP to enhance its capacity to comply with REDD readiness requirements. A series of inter-related activities for backstopping GoB's ongoing efforts on initial REDD+ readiness process as well as for preparing grounds for future UN-REDD country programme in Bangladesh is planned.

Key Policies and Laws relevant to Climate Change and Forests

The Constitution of the Peoples' Republic of Bangladesh, 1972, the country's fundamental legal document, did not initially contain any specific provision on forest resource management, but was amended in 2000 to endorse the importance of environment and biodiversity conservation and to incorporate provisions for Social Forestry. A number of provisions in the Constitution have implications for forest regulation. The basic laws regulating forestry resources in Bangladesh are the Forests Act, 1927 and its subsequent amendments² and the Private Forests Ordinance, 1959³. The Forest Policy of 1994 outlined the Forestry Sector Master Plan (FSMP) for 1995-2015, which is currently the main policy document for natural resource management in the country. The FSMP provides the basis for the people-oriented forestry programmes of recent years. The GoB has also adopted further the Social Forestry Rules of 2004, which were amended in 2010 and 2011. Some other laws also have relevant provisions regarding forest resource management, as outlined below.

² Act No. XVI of 1927

³ Ordinance No. XXXIV of 1959

Relevant Provisions of the Constitution of Bangladesh, 1972

Part II of the Constitution lays down Fundamental Principles of State Policy and some of the articles provided the guidance for forest resource management. Article 13 of this part recognizes the validity of State, Co-operative and Private ownership⁴. Article 15 declares that the State has a responsibility to promote economic growth and to assure provision of food, clothing, shelter, work and recreation to citizens. Article 16 puts special emphasis on the development of rural communities⁵. Article 31 of Part III of the Constitution recognises the right to life, and notes that this includes the right to a healthy and stable environment. Furthermore, an amendment in 2011 led to the addition of Article 18A, which states that, 'the state shall endeavour to protect and improve the environment and preserve and safeguard the natural resources, bio-diversity, wetlands, forest and wild life for the present and future citizens.'

The Forest Act, 1927

The Forest Act provides for the constitution of Reserved Forests, Village Forests, Protected Forests, and the control over forest land which is not the property of Government. It provides for the collection of duties on timber and other forest products, control on the transportation of these products, collection of drift and stranded timber, penalties and procedures, and the role of forestry officers.

The Forest Act of 1927 is the key law regulating forest resources in Bangladesh. This Act encompasses the provisions for conservation and protection of Government-owned forests, and also of some private forests. This Act stipulates the provisions for establishing Reserved Forests (RF) and Protected Forests (PF) and assigns responsibility to the Forest Department (FD) for managing forests with these designations. Moreover, the Act provides scope for participatory management approaches in the context of joint management and establishment of village forests.

Chapter II of the Act encompasses Reserved Forests. Most of the lands under the Forestry Department's management today are RFs, established according to the rules under this chapter. The Government may establish RFs on lands that it owns. It stipulates that the establishment of an RF must be accompanied by the appointment of a Forest Settlement Officer [FSO] to investigate and adjudicate regarding any competing claims to such lands, and sets out the procedures that the FSO must follow. The Act also provides to scope of appeal to the Divisional Commissioner against a decision passed by Forest Settlement Officer. The FD must publish a declaration of the reservation in an official Gazette, with a description of the forest's boundaries, before the RF is confirmed.

Chapter IV defines rules of establishment Protected Forests. Like RFs, the FD can only establish PFs on Government-owned lands by following a declaration process. Unlike RFs, the Government must inquire into, and resolve, private rights before publishing the notification. Once the Government establishes a PF, the FD has extensive authority to limit the forest's use.

⁴ Bangladesh Constitution Article 13: **Principle of ownership:** The people shall own or control the instruments and means of production and distribution, and with this end in view ownership shall assume the following forms –(a) state ownership, that is ownership by the State on behalf of the people through the creation of an efficient and dynamic nationalized public sector embracing the key sectors of the economy; (b) co-operative ownership, that is by co-operatives on behalf of their members within such limits as may be prescribed by law; and (c) private ownership, that is ownership by individuals within such limits as may be prescribed by law.

⁵ Bangladesh Constitution Article 16: **Rural development and agricultural revolution:** The State shall adopt effective measures to bring about a radical transformation in the rural areas through the promotion of an agricultural revolution, the provision of rural electrification, the development of cottage and other industries, and the improvement of education, communications and public health, in those areas, so as progressively to remove the disparity in the standards of living between the urban and the rural areas.

The 1927 Act further requires the protection of right of way, right of pasture or rights to forest products or a watercourse (sections 12-15). If it becomes essential to commute such rights, the government must compensate the aggrieved persons with a sum of money or grant of land (section 16). However, the above rights cannot be alienated, sold or bartered (section 24). If the government stops any public or private right of way or watercourse in a RF, it must provide a substitute. In the case of a PF, such a notification cannot be made unless the nature and extent of the rights of the government and private persons are settled and recorded. No such action can abridge or affect any existing right of an individual (section 29). In the case of reserving any class of trees no such measure can extend beyond 30 years.

Chapter III creates the category of **Village Forests**. The Chapter was renamed “Of Village Forests and Social Forestry” by the 2000 Amendment. The Government may assign parts of RFs to particular villages for their use. The 1927 Forest Act explicitly recognizes the possibility of co-management of public and private forest. Section 28 states:

1. The Government may assign to any village community the right of management and use over any land that has been constituted RF, and may cancel such assignment. All forest so assigned shall be called village forest.
2. The Government may make rules for regulating the management of village forests, prescribing the conditions under which the community can exploit timber, other forest products or pasture, and their duties for the protection and improvement of such forests.
3. All the provisions of this Act relating to RFs shall apply to village-forests, as long as they are not inconsistent with the rules made under (2) above.

Chapter V concerns control over forests on private lands. However, the East Pakistan Private Forest Ordinance, 1959, repealed this chapter and created new authorities to regulate private lands.

The 2000 Amendment to the Forest Act sanctions Social Forestry (SF) on any government or private land and provided scope to adopt Rules and programs, which were followed up by the Social Forestry Rules of 2004 (see below).

The Private Forest Ordinance, 1959

The Private Forest Ordinance, 1959 was adopted with a view to manage private forests. It classifies private forests into Controlled and Vested Forest and defines ‘forest’ as *“any land recorded as forest in a record-of-rights prepared under Chapter IX of the Sylhet Tenancy Act, 1936 ... or under Chapter IV of the State Acquisition and Tenancy Act, 1950 or such other land containing tree growth as may by notification be declared as forest by the Government”*.

This Ordinance defines when the GoB has the right to exercise control over private forests for the purposes of conservation. 'Conservation' when used in reference to a forest, "*includes such measures as are necessary in the opinion of the Regional Forest Officer for the prevention or remedying of the erosion of the soil or any flood or landslide*". In Controlled Forest, the Government may obtain limited control of such private forest through the adoption of a working plan for the conservation of the forest or by afforestation of wasteland under private ownership. The proprietary titles to these forests do not vest with the Government. In the case of Vested Forest, the control is vested in a regional forest officer, and they are managed according to working plan developed by the officer.

The Bangladesh Wild Life (Preservation) Order, 1973

This 1973 law updated and consolidated the older provisions on wildlife. The Act has one section dealing specifically with lands, or more specifically, with creation of protected areas, while the rest of the Act deals with hunting and wildlife conservation generally. This Order earmarks the wildlife habitats of the country into three categories of Protected Area (PA); wildlife sanctuary, national park and game reserve. The forests of the country have adopted the appropriate or suitable notion of protected areas for preserving their wildlife. The Forest Department has primary responsibility for implementing the Act. On the basis of the experience of the USAID-funded IPAC project (see below), many of the provisions of this Order are due to be superseded by new Rules for Protected Area Co-management, currently under the process of approval by the MoEF.

Other Relevant Laws

A number of other sectoral laws contain provisions having bearing on the Forest Policy, including:

National Environment Policy (NEP) (1992): The National Environmental Policy was formulated with the intent of enhancing protection and sustainable management of the environment. The objectives of the Policy include maintaining the ecological balance while simultaneously supporting national development and actively engaging in international environmental initiatives.

National Environment Management Action Plan (1992): The Action Plan aims to promote better management of scarce resources and reverse trends of environmental degradation by building upon the general principles stated in the 1992 National Environment Policy and proposing concrete actions and interventions in a number of priority areas.

The Bangladesh Environment Conservation Act (1995): Legislates the conservation of environmental systems, improvement of environmental standards and control and mitigation and provides a framework for its implementation. It also calls for the protection of 'Ecologically Critical Areas'.

The Environment Conservation Rules (1997): The Environment Conservation Rules provide guidelines on declaring an area as ecologically critical, on vehicles emitting smoke injurious to health and otherwise harmful pollution or degradation of the environment.

The Bangladesh Water and Power Development Boards Order, (1972): empowers the Water Board to frame scheme for watershed management. It can direct the owner of any private land to undertake anti-erosion operations including conservation of forests and re-afforestation.

The Hill District Council Acts⁶ (1998): These Acts devolve responsibilities for 33 subjects to the Hill District Council, including forest (except reserved and protected forest), agriculture, livestock, fisheries, environment, rivers and water bodies (except Kaptai lake), shifting (*jhum*) cultivation etc.

All the laws on local government namely the City Corporation Laws, the Paurashava Law, the Union Parishad Laws and the Laws on Hill Districts have favourable provisions with regard to Street Plantation and Afforestation. The Acquisition of Waste Land Act, 1950 provides for the afforestation of such land. The Bangladesh Agricultural Development Corporation Ordinance, 1961 empowers the Corporation for the conservation of catchments and exploitation of potential areas. In addition the Corporation may direct the afforestation of any area or part thereof.

Forestry Policy, 1994

The first National Forest Policy was adopted in 1979 with the objective of greater protection and conservation of the country's forest assets while developing its rural and industrial economies. The current forest policy, introduced in 1994, represents the first shift towards recognition of the importance of people's participation in forestry and sustainable development. The new Forestry Sector Master Plan (FSMP), 1993 and the corresponding Forestry Policy, 1994, are primarily aimed at raising the total forest cover of the country to 20% by the year 2015 through '**Social/Participatory Forestry**' (**SPF**). This has been defined in the FSMP as "programmes implemented on private land, encroached *Sal* forest land or on underused land under the jurisdiction of government departments other than the Forest Department." It suggests afforestation, tree plantation and nursery establishment, development, maintenance and preservation through involving, encouraging and extending co-operation to the people. It further suggested that all State owned forests of natural origin and the plantations of the Hills and *Sal* forest will be used for producing forest resources keeping aside the areas earmarked for conserving soil and water resources, and maintaining biodiversity.

The Policy also recommended identifying inaccessible areas such as slopes of hills, fragile watersheds, swamps, etc. and keeping them as PFs. It aims to ensure the multiple use of forests, water and fish of the Sundarbans through sustained management, keeping the ecosystems of the area intact. To fulfil the aforesaid targets the Policy suggests to amend laws, rules and regulations on the forestry sector and/or to promulgate new laws and rules if necessary. It calls for simplification and updating of rules and procedures regarding transportation of forest produce in the country.

As a result of this provision for promulgation of new laws and rules, specific rules for Social Forestry and Protected Area Co-management have been instigated.

⁶ Following the CHT Peace Accord The Hill District Council Acts of Bandarban, Khagrachari and Rangamati were enacted in 1998.

Social Forestry Rules (2004, updated 2010 and 2011):

Despite there being provision within the 1927 Forest Act, SPF was not formally recognized as a strategy in Bangladesh until the early 1980s, when Social Forestry (SF) was first introduced. SF projects aimed for the creation and sustainable management of plantation forests by local communities. Farmers also received a share of the revenue from the sale of final products and could use any intermediate products from thinning or other forest operations for fuelwood and other subsistence uses. Many NGOs became involved in SF projects as intermediaries between the FD and local people.

The first SF project in Bangladesh, in the north-west of the country, was completed in 1987 with the support of the Asian Development Bank (ADB) and UNDP. More than 23,000 households have since benefited financially from the sale of timber from social forestry plantations (Muhammed *et al*, 2005), which cover more than 40,000 ha. Social forestry has now become an integral part of official forest management in Bangladesh (Khan and Begum 1997), and the government codified the rules and regulations regarding social forestry under the Social Forestry Rules (SFR), 2004 (Rasul and Karki, 2007).

The SFR define the roles of stakeholders involved in SF. The Local Community is defined as the interested local peoples who are competent to be selected as beneficiaries under the criteria of Rule 6 of the SFR. The Social Forestry Wing of the FD was established under the SFR as the main implementing agency of the programme at national level, with Divisional Forest Officers (DFOs) being responsible at the district level. Local participants are encouraged to elect 9-member Social Forestry Management Committees (SFMCs) to manage and protect the plantations. However, SFMCs have no decision-making authority. The FD and DFO identify beneficiaries and appropriate locations for plantation and the SFMC assists in implementing these decisions. An advisory committee has been formed in each participating district, comprising the local DFO, an NGO representative, and a representative from the local SFMCs. Through these advisory committees, SFMCs can request support and contribute ideas and suggestions for plantation management and benefit distribution.

Draft Protected Area Co-management Rules (2011):

In response to the provision of the 1993 Forestry Sector Master Plan (FSMP) for developing new legislation and management strategies related to SPF, the USAID-funded Integrated Protected Area Co-management (IPAC) project was initiated to develop and pilot approaches to co-management of forests and wetlands of national and international significance, including the Sundarbans and the Chunar Wildlife Sanctuary.

Largely on the basis of the IPAC experience, the FD developed a draft set of Rules for Protected Area Co-management in 2011. These rules are currently in the process of approval by the MoEF. Once they are part of the legislative framework, they will be an important source of guidance to the forestry sector for implementing community-based forest management within and around Protected Areas as well as in Reserved Forests.

Pre-existing government institutional framework

The national regulatory and institutional structure with respect to REDD+ is not yet fully defined. Some decision-making processes and chains of accountability will have to be explored and formalised during the REDD+ Readiness process itself. However, REDD+ will fit within the existing framework of government institutions as follows:

Climate Change Institutions

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 except 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 GoB immediately after the Bali Conference (COP 13). It is headed by a lead Adviser (currently the Minister 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.

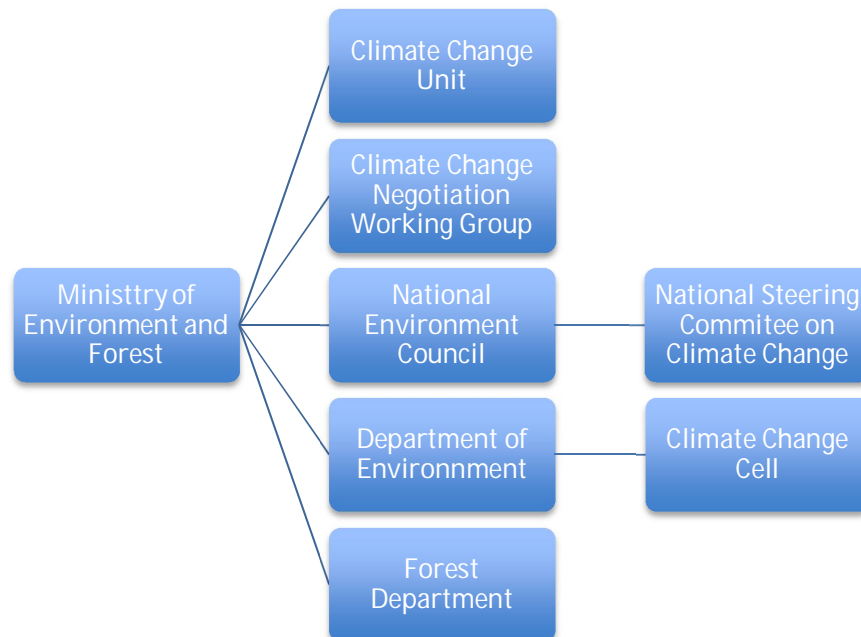


Figure 4: National Climate Change Co-ordination Framework

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 BoD position on climate change negotiations. It discusses all relevant issues related to the five NSCCC working groups, using their advice. The CCNWG recommends positions on each issue to the NSCCC for finalizing Bangladesh's position before any major negotiation events but is directly accountable to the MoEF for these positions.

Climate Change Unit (CCU)

The MoEF hosts the national Climate Change Focal Point and administers the CCU, which provides policy advice and support to the NSCCC on climate change issues. The CCU was established in 2010 with resources from the Climate Change Trust Fund (BCCTF) project “Strengthening Institutional Capacity of the Climate Change Unit”. This unit is tasked with the mainstreaming of climate change into national development planning along with the Climate Change Focal Points in other ministries. The CCU has no say in the selection of projects for support under the BCCTF. This task is the responsibility of the Trustee Board (chaired by the MoEF Minister), which acts on the advice of the BCCTF Technical Committee (chaired by the MoEF Secretary), which in turn solicits the advice of six sub-committees, one for each of the BCCSAP pillars. The major activities of the CCU 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
- 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 sectors; ensures effective participation of local communities and promotes adaptation in development planning and processes. The CCC completed its first phase of operation, according to the CDMP, 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 (see figure 4). It is also the host of the national Climate Change Focal Point, housed with the CCU. 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 CCU 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

covers number of Divisions, Directorate, Board, Subordinate Offices, Autonomous Institutions, and Public Sector Undertakings.

Box 2: The major functions of the Ministry of Environment and Forest (MoEF)

- Environmental and ecosystem management.
- Matters relating to environment pollution control.
- Conservation of forests and development of forest resources (government and private), forest inventory, grading and quality control of forest products.
- Afforestation and forest regeneration
- Sustainable extraction of forest products.
- Plantation of exotic cinchona and rubber.
- Botanical gardens and botanical surveys.
- Tree plantation.
- Preparation and coordination of forest management plans.
- Research and training in forestry.
- Mechanized forestry operations.
- Protection of wild birds and animals and establishment of sanctuaries.
- Matters relating to marketing of forest products.
- Liaison with international organizations and matters relating to treaties and agreements with other countries and world bodies relating to subjects allotted to this Ministry.

This 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, CBD, UNCCD and the RAMSAR convention on wetlands.

There are five departments are working under MoEF two of which, the Department of Environment and Forest Department, are indicated in Figure 5. The three other departments are the National Herbarium, Forest Research Institute and Forest Industries Development Corporation.

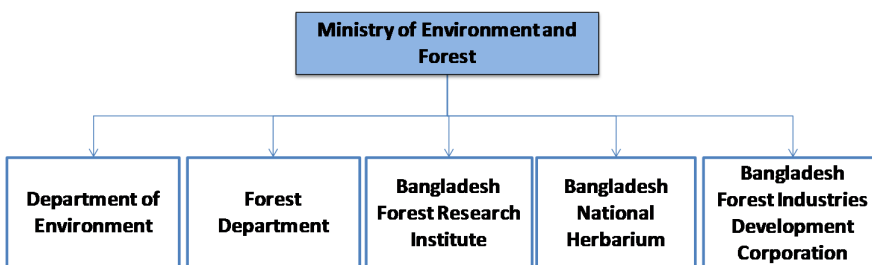


Figure 5: The departments under the Ministry of Environment and Forest.

Forest Department

Forest Department (FD) is the focal government organization under the MoEF responsible for the conservation, management, protection and development of forests and wildlife which fall 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 District Commissioners (DC) and their administrations,

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 above) 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 four divisions under the Wildlife management and Nature Conservation circle, reporting directly 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 nursery establishment, seedling raising, plantation establishment, plantation maintenance, 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 Conservator of Forests (CF). Social forest Circles and division offices are responsible for extension of social forestry activities (nursery raising, seedling distribution etc.) and their management.

There are four academic institutions under the administration of the Forest Department, including one Forest Academy for professional training and three technical institutes. The FD also operates one institute for vocational training for departmental staff.

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 National Communications (NCs) for the UNFCCC, including GHG inventory. The first NC was completed in 2002 and the second is currently under preparation. 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 MoEF Departments

Forest Industries Development Corporation

The Bangladesh Forest Industries Development Corporation (BFIDC) 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 13000 ha of rubber plantation on 15 estates in these districts.

Forest Research Institute

Bangladesh Forest Research Institute (BFRI) 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:

- Provide research backup to forestry and agro-forestry in waste and marginal land for optimum and sustainable utilization.
- Rational utilization of forest produces through the application of technological input.
- Help in conservation of biodiversity and environmental balance in national and rural forests.
- Increase liaison with regional and global organizations and networks.

Other Line Ministries

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 to the Forest Department within the MoEF.

However, several different line Ministries have responsibilities that are relevant for the management of a REDD+ programme, as outlined in table 3.

Table 3. Ministerial Responsibilities for REDD+ Readiness in Bangladesh

<i>Ministry</i>	<i>Responsibilities with relevance to REDD+</i>
Agriculture (MoA)	<p>Responsibility for administration over a significant, but unquantified, proportion of the >50% of land under tree cover which does <i>not</i> fall under the jurisdiction of the FD (see Introduction).</p> <p>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</p> <p>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.</p> <p>The Department of Agricultural Extension (DAE) operates a national network of grassroots-level trainers which could be mobilized in the context of REDD+</p> <p>The Soil Resource Development Institute (SRDI) is responsible for maintaining records of soil composition and fertility.</p>
Defence (MoD)	Administration of SPARRSO (see below) and the national Survey of Bangladesh (SoB).
Education (MoE)	Development Wing, for integration of climate and forest issues into national curriculum, and University Wing for monitoring quality of degree courses related to climate change and forestry.
Finance (MoF)	<p>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</p> <p>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.</p>
Fisheries and Livestock (MoFL)	Department of Fisheries (DoF) is responsible for preserving fishery resources and securing socio-economic well-being of 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)	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) may be an important stakeholder in REDD+ activities in border areas of the CHT
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)	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)	Ongoing project 'Promoting Access to Justice and Human Rights in Bangladesh', supported by UNDP 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)	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)	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. Implementation, Monitoring and Evaluation Division (IMED)

	<p>coordinates all projects nationwide</p> <p>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)</p> <p>Support to Information Communication Technology (SICT) Task Force under Planning Commission, providing advice and inter-sectoral coordination for development of websites and information platforms for public benefit (e.g. REDD+ database) (www.sict.gov.bd)</p>
Water Resources (MoWR)	<p>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.</p> <p>Water Resources Planning Organisation (WARPO), responsible for Coastal Zone Policy and Integrated Coastal Resources Database, will be important for REDD+ strategies in Sundarbans and other coastal areas.</p> <p>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.</p>

Space Research and Remote Sensing Organisation (SPARRSO)

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.

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.

Sub-national government bodies:

Local Government: (Responsibilities relevant to REDD+)

Administrative Frameworks for CHT

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) General Administrative System ii) Decentralised Local Government System and iii) Traditional Administrative System.

The general administrative system is part of central government and in the CHT includes the Office of the Deputy Commissioner, the Upazila Parishad, Union Parishad and Poursava. The Poursava 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. The Ministry of CHT Affairs (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 3rd and 4th class 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 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 particular *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 has 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 severe 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 supposed 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 been devolved to the Hill Council. Therefore all Reserved Forest (RF) 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 and Table 2, many forests in the Hill districts, including the CHT, are Unclassed State Forests (USF), which do fall under the administration of the local government, in this case the HDC. However, there is a lack of expertise within the Council 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.

Pre-existing institutional framework for REDD+ Readiness

REDD+ Steering Committee

Background:

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

Composition:

The REDD+ SC 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 (see Annex 2 for list of members). Due to the importance of cross-sectoral collaboration for REDD+ readiness, the REDD+ SC includes representation of a number of different government agencies, including Ministries and Land and Agriculture, SPARSO and the Hill Council of the CHT. Civil society representatives on the REDD+ SC include the Bangladesh Institute for Development Studies (BIDS) and the Centre for Participatory Research and Development (CPRD). The head of the REDD Cell performs the function of Secretary to the REDD+ SC membership. The REDD+ SC meets on an *ad hoc* basis and provides management and coordinating advice to the REDD Cell.

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.
- Approval of 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

Background:

The REDD+ Technical Committee (REDD+ TC) was formed alongside the REDD+ SC in order to provide it with technical advice. Like the SC, it is chaired by the Secretary of the MoEF. However, unlike the SC, the REDD+ TC 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 member secretary of the REDD+ TC. The TC is moreover empowered to co-opt additional members whenever necessary in order to maximise its technical capacity.

The ToR of the REDD+ TC are:

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

REDD Cell

Background:

The Ministry of Environment and Forests (MoEF) authorised 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 CF. 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 REDD+ SC. It will assign technical activities, as required, to Technical Working Groups.

Roles and Responsibilities

The REDD Cell ToR, as outlined in Annex 2, covers some of the responsibilities related to REDD+, but as the main body responsible for implementing all phases of a national REDD+ programme, it will, by default, have 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.
- Establish and provide secretariat assistance to the REDD+ Steering Committee, REDD+ Stakeholder Forum, 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 National REDD+ SC.
- Ensure timely delivery of activities under the national REDD+ Roadmap and recommend adjustments or additional resource requirements to REDD+ SC.
- 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 REDD+ SC.
- 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 ToR of the REDD Cell early in the REDD+ Readiness phase, and to strengthen the institution accordingly.

Potential Partners in REDD+ Roadmap

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.

Projects:

REDD+ Roadmap implementation will benefit immensely from the work that has already been carried out by existing projects. The USAID-funded IPAC project has directly relevant experience in development of REDD+ strategies. The project has focused on using participatory techniques in decision-making and forest monitoring, which provides the foundation for success. The UNDP-supported 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.

Integrated Protected Area Co-management (IPAC) project

The USAID-funded Integrated Protected Area Co-management (IPAC) project (2008-2013) of the Forest Department has been 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 is aimed at enhancing carbon stocks and reducing GHG emissions through restoration, conservation and sustainable management of forests. IPAC aims to create opportunities for revenue generation through projects under the Voluntary Carbon Market (VCM), bringing additional benefits to local communities and the national economy. With the aim of accessing financial support from development partners, IPAC developed Project Design Documents (PDDs) for three forestry VCM projects, including socio-economic and GHG emissions baselines. The projects are:

- (a) Collaborative REDD+ Improved Forest Management (IFM) Sundarbans Project (CRISP)
- (b) Chunati Wildlife Sanctuary Management of Natural Resources and Community Forestry (MNRCF) project
- (c) Bangladesh REDD+ Afforestation, Reforestation and Revegetation (ARR) in Protected Areas Project (BRAPAP) which includes carbon sequestration activities in seven protected areas: Dudpukuria-Dhopachari Wildlife Sanctuary, Fasiakhali WS, Teknaf WS, Rema-Kalenga WS, Inanai National Park, Medhakachapia NP and Sitakunda Botanical Garden & Eco-park.

The Chunati MNRCF project began in January 2012, with technical support from GIZ and a supplementary livelihood development fund provided by the Arannayk Foundation. The project, involving an area of 7,764 hectares involves participatory afforestation, through the social forestry programme, in 1,000 ha, enrichment planting in 3,000 ha and assisted natural regeneration in 1,000 ha, with the remaining forest areas under strict protection. The project activities are expected to result in carbon stock enhancement of 760,000 tCO₂e over its duration.

The PDDs of CRISP and BRAPAP projects are currently under review by the Forest Department for finalization and submission to potential donors for funding. The CRISP project, involving conservation of 412,000 ha of natural mangrove forests, is expected to generate over 210,000 tCO₂e annually over a 30-year project period with a total emission reduction of about 6.4 million tCO₂e. The BRAPAP project (involving a total area of 33,344 ha) is expected to generate an average of 10.37 million tCO₂e net GHG emission reductions annually over a 40-year project period, resulting in a total, projected emission reduction of 414.87 million tCO₂e.

In the meantime, IPAC has 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.

IPAC's focus on community-based methodologies stems in part from the project's history as the successor to the USAID-funded Nishorgo project, which initiated the development of Co-management Organisations (CMOs) for Protected Areas in Bangladesh. Although IPAC will phase out in 2013, 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 in section 2).

IPAC is supporting the incorporation of CMOs into a formal, two-tiered institutional arrangement for co-management of each PA. A Co-management Council, consisting of 55 members, for the PA as a whole, and a number of Co-management Committees (CMCs) for each village or community adjacent to the PA.

The effectiveness and sustainability of the system is yet to be independently verified but it has encouraged the government to initiate legal provisions for the participation of local communities in planning and management of PAs, as well as for sharing PA revenues. The system has also fostered enthusiasm among FD personnel to work in partnership with the local community to conserve natural biodiversity in the PAs.

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.

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.

Community Based Adaptation to Climate Change through Coastal Afforestation (CBACC-CF) project

The 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 of 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.

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, 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; Has established seed orchards of different tree species of the hill forests of Bangladesh (including that of some critically endangered species) at the University campus
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-GIS based monitoring for change detection of forests	Involved in biodiversity monitoring of the GIZ-funded Chunati project. Under an Arannayk Foundation funded project, JU has already established baseline information regarding biodiversity status of six protected forest areas that are potential candidates for REDD+ projects
Dhaka University (Botany, Zoology and Economics Depts.)	Biodiversity monitoring; Economic analysis; policy analysis	The Botany Dept. of DU worked with the Zoology (Wildlife) team of JU in the AF-sponsored biodiversity monitoring project in six protected forest areas. The Economics Dept. of DU may potentially contribute to the economic analysis of REDD+ policy options and carbon trading

Institution	Field of Expertise	Involvement in REDD-relevant activities/projects
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 Some students of IUB conducted 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 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)	Forest Inventory; Development of allometric equations for estimation of tree and stand volumes/biomass; Carbon estimation; Floral diversity assessment; Tree improvement (has seed orchards)	BFRI (see also above) was involved in carbon estimation work of IPAC in the Sundarbans (based on which IPAC has developed the CRISP project). It has 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 too.
Bangladesh Agricultural Research Institute (BARI)	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	Development of improved	Has the potential to provide technical support in

Institution	Field of Expertise	Involvement in REDD-relevant activities/projects
Research Institute (BFRI) ⁷	technologies and management policies for fresh water and marine fishes; training of fisheries extension workers and fish farmers	pisciculture based livelihood development activities in REDD+ projects and in improved management of wetlands within forests
Bangladesh Livestock Research Institute (BLRI)	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 (NRI); coordination of research and technology transfer activities of NRIs; agricultural policy formulation	CSO (Forestry) is a member of the REDD+ Safeguards Working Group
World Fish Centre/Bangladesh	Participatory action research on improved management of aquatic resources	Working as a partner of the IPAC project in co-managed wetland protected areas

Non-Government Organisations (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 5.

Gaps in Existing Management Structure

The REDD+ Roadmap must address the following 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 existing REDD+ management institutions does not adequately reflect the various roles and responsibilities that the various ministries will have in a REDD+ programme. The participation of other members in the REDD+ SC such as MoP, MoF, MoCHTA, MoA, MoFL and MoE should be considered, as their role and involvement will become necessary during the course of project implementation.

⁷ Bangladesh Forest Research Institute and Bangladesh Fisheries Research Institute share the acronym BFRI.

Learning from potential partners: The experiences and lessons of the 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 REDD+ SC 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 and other non-government stakeholders is limited.

Draft Proposal for Management of Readiness

The proposed management structure for REDD+ Roadmap development and implementation is given in Figure 6. The structure is linked to the broader Climate Change Co-ordination framework through the MoEF as outlined in Figure 4. In addition to the existing institutions described above, a number of additional bodies are proposed, chiefly:

- REDD+ Stakeholders Forum
- Technical Working Groups

The proposals for these new bodies, and adjustments to existing bodies, are described below.

REDD+ Stakeholder Forum

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

The 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 Free, Prior and Informed Consent (FPIC), 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, media, 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.

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 REDD+ SC, REDD Cell and 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:

- Confirm representation of NGOs and other non-government stakeholders on REDD+ management structure institutions (REDD+ SC, 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
- Monitor compliance with Social and Environmental Safeguards
- Act as the initial arbiter in the REDD+ grievance mechanism
- Additional roles as determined by the RSF members themselves and mandated by the REDD+ SC

Technical Working Groups:

During the Roadmap development process, three *ad hoc* working groups (WGs) were formed to provide input:

1. **Forest Monitoring and MRV WG:** for the specific technical approaches that will determine the forest monitoring and Measurement, Reporting and Verification (MRV) systems (section 6). In connection with the strategy group the group will guide the implementation of the activities related to RL/RELS under section 5.
2. **Strategy WG:** for establishing the key drivers and causes of deforestation and forest degradation, and the policies and measures required to address them (Section 3)
3. **Safeguards WG:** for developing effective consultation and communication approaches and a framework for meeting social and environmental standards (Sections 2 and 4)

These WGs were formed during the first national consultation workshop (see Section 2). Membership consists of volunteers drawn from the participants at the workshop. The groups are envisaged as the precursors to formal TWGs that will become a key part of the REDD+ management framework, with the following objectives:

Forest monitoring and 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
- To lead the development of a system of Social and Environmental Standards (SES), 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+ SES
- To develop a consultation process that ensures compliance with FPIC principles (see section 2)
- 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.

All 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 – i.e. they will not receive any remuneration through the REDD Cell for their services. 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.

The objectives and ToRs for all TWGs are provisional, to be validated by the TWGs at their initial meetings, and approved by the REDD+ SC. Additional TWGs may be set up, for example to pay specific attention to REDD+ Finance, REL/RLs, Communication 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+ SC review:

Based on the breadth of interest and influence of different government departments and the need for representation of non-government stakeholders, the current composition and ToR of the REDD+ SC will be reviewed. See Annex 2 for the current composition of the REDD+ SC. The Steering Committee should oversee the work of the RSF, REDD+ TC and TWGs. In order to do so, the relationship between the REDD+ SC and the other bodies in the management structure must be clarified.

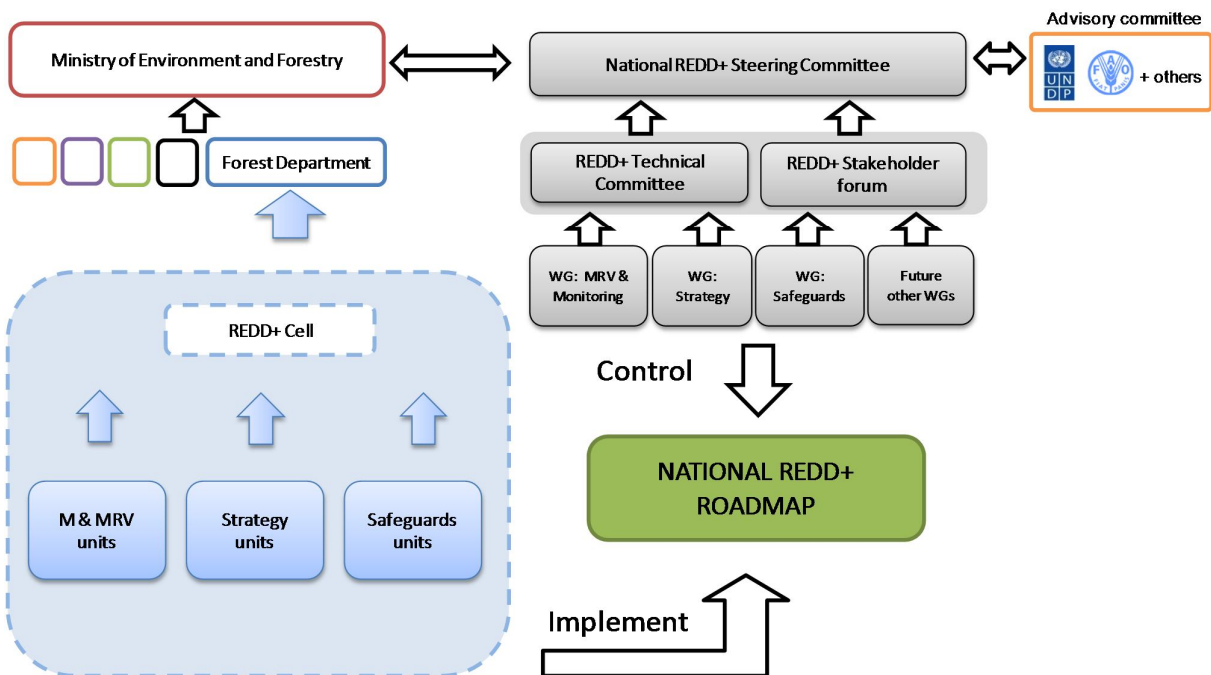
REDD+ Technical Committee:

The advisory role of the REDD Technical Committee will be 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 that the roles of the TC may therefore be taken up by the RSF and the TWGs, as appropriate. The REDD+ TC may be phased out, leaving the RSF as the main technical advisory body to the REDD+ SC and REDD Cell.

Technical Advisory Group:

The Technical Advisory Group established with UNDP and FAO support to facilitate the Roadmap process provides advice to the REDD+ SC but has also provided direct advice and support to the TWGs. After completion of the Roadmap, the need for an external Technical Advisory Group should be reviewed.

Figure 6: Draft representation of the institutional structure for REDD+ Roadmap development and implementation



Section 1: Management of REDD+ Readiness:

Output	Indicative activities
Outcome 1: Management of REDD+ Readiness	
1.1 National REDD+ Readiness Coordination Mechanism established	<ul style="list-style-type: none"> • Inter-ministerial meeting on REDD+; validation of government institution roles and responsibilities • 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 • Review of current institutional mandates for National REDD+ management arrangements, including REDD+ SC and REDD Cell • Review lessons of existing REDD pilot projects for REDD+ management structure • Draft REDD+ SC ToR revised and agreed • Redraft REDD Cell ToR revised and agreed • Regular meetings of REDD+ SC • Formal establishment of REDD+ Stakeholders Forum • RSF structure, membership, roles and ToR agreed • Regular meetings of RSF • Three TWGs formally established and ToRs agreed • Regular meetings of TWGs • 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 • National REDD+ management structure formalised and mandated through MoEF policy statement • Role of development partners in REDD+ structure revised and agreed

Section 2: Stakeholder Consultation and Participation

Rationale: How stakeholders – Government agencies, local people, civil society – will be consulted and involved throughout implementation of the Roadmap. Engaging all stakeholders transparently and effectively is essential for the national REDD+ programme to achieve broad support.

Background papers: UN-REDD/FCPF Guidelines on Stakeholder Engagement, UN-REDD Draft Guidelines on Free, Prior and Informed Consent

Key parts:

Stakeholder mapping

Background to stakeholder consultation in the forest sector

Stakeholder consultation process to date:

Planned consultation processes

- *Awareness raising strategy*
- *Framework for stakeholder engagement*
- *Consultation activities planned for Management structure and REDD+ strategy development*

Gender inclusiveness

Compliance with principles of Free, Prior and Informed Consent (FPIC)

Grievance Mechanism

Full and effective consultation and multi-stakeholder participation in the REDD+ Readiness Roadmap process will support the building of capacity and trust through the development of communication networks between stakeholder groups (both formal and informal). 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 instance UN-REDD's efforts to develop a process for FPIC on REDD+ in Viet Nam).

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:

- **Consultation:** by allowing for verification that all positions are transparently and accurately represented in the decision-making process
- **Communication:** by allowing for appropriate targeting of materials and information networks
- **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 WG undertook a stakeholder mapping exercise during the Roadmap process. The key stakeholders within each of the following provisional categories were identified:

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

This initial assessment is summarized in Annex 7. 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:

- **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. An approach to stakeholder mapping is outlined in Annex 8.

Background to Stakeholder Consultation in the 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 and EastWest Center (Jefferson *et al*, 2009) on collaborative management of protected areas included several case studies of 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 has 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 Sundarbans has been 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.

Box 3: The Nishorgo Network

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.

In the context of the national REDD+ Roadmap, the consultations must begin before any specific activities have been conceived. Multi-stakeholder consultation for national level policy processes, as opposed to projects, is not common practice in Bangladesh and there is no equivalent for the current REDD+ Roadmap development in the forest sector. 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.

Stakeholder Consultation process to date

The Roadmap Technical Advisory Team therefore initiated a number of stakeholder consultation activities during the Roadmap development process itself. 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 (see section 3)
- 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. A series of national-level REDD+ consultation workshops was initiated in October 2011 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 section 3.

Figure 7. Bangladesh REDD+ Roadmap Consultation and Participation Process



Summaries of the national consultation workshops are provided in Annex 3. Full proceedings and participant lists are available on the UN-REDD workspace, Bangladesh country page (www.unredd.net).

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 these circumstances a series of consultations on the REDD+ Roadmap itself would not be productive and would be more likely to foster misunderstandings than to provide constructive input. Therefore, the approach of sub-national consultations at this early stage focussed on the practical issues that a REDD+ programme might address. These issues can 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. A sample agenda and facilitation guide is provided in Annex 3.

The first sub-national workshop, held in Rangamati on 27th October, 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 and their contribution was considered a key factor in the success of the proceedings. Continuing involvement of CHTDF in discussions between the FD and Hill Council institutions is therefore recommended.

The sub-national consultation workshop in Rangamati was followed up by visits to two communities in the CHT on 28-29th October. The locations were chosen to illustrate 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. They are a system of Community-based Forest Management (CBFM) currently confined to USF areas and supported by several of the CSOs and NGOs listed in Annex 5. 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.

Following the same facilitation guideline, four more workshops were held in Cox's Bazar (19th December 2011), Thakurgaon (15th February 2012), Madhupur (18th February) and Sylhet (20th February) 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 section 3.

The proceedings, findings and lists of participants from all workshops are available on the UN-REDD website, Bangladesh country page.

Planned Consultation Processes

The Bangladesh REDD+ Roadmap process draws on the guidance provided in the Draft Guidelines on Stakeholder Engagement in REDD+ Readiness, jointly produced by UN-REDD and FCPF in May 2011.

The **Outcome** of consultation processes under the Roadmap will be that:

All stakeholders are fully aware of the potential impacts of a REDD+ programme on their work and livelihoods and enabled to influence the development of the programme according to the principles of FPIC.

During REDD+ Roadmap implementation, the consistent engagement of all stakeholders will be maintained through three **outputs**:

1. **Awareness raising strategy:** A system of two-way communication to ensure that all stakeholder groups are kept fully abreast of Roadmap developments and equipped with the information they need to engage constructively
2. **Comprehensive framework for stakeholder engagement:** A clear, transparent arrangement for ensuring that all stakeholder opinions and priorities are adequately and accurately represented within the REDD+ management structure and reflected in the decision-making process
3. **Consultation programme:** Activities such as workshops, meetings and other interactive tools designed to ensure that the development of the REDD+ management structure and candidate REDD+ strategies are based on consensus and FPIC principles.

Awareness Raising Strategy:

This strategy essentially consists of the Communication plan for the Roadmap implementation. It will form 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: Planning milestones and activities
- Step 9: Determine the budget
- Step 10: Determine programme evaluation methods

Regarding the first step; in the context of the REDD+ Roadmap 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 quite emphatically **not** designed to ensure support for the REDD+ programme, but will enable stakeholders to make free, informed decisions on whether and how to engage with the programme. It will therefore need to describe to all stakeholders the kind of behavioural changes that a REDD+ programme will require.

The CEPA offers a decision-making framework for the role of a communication mechanism based on whether these changes in behaviour will be of net benefit or of net disadvantage to stakeholders. In the case of REDD+, the principle of *additionality* indicates that these changes would not be made in a 'no-REDD+' scenario because of the direct, indirect or opportunity costs that they entail. These changes would therefore be normally perceived as disadvantageous, or as an encumbrance on existing (or perceived) rights. Only the financial resources that a REDD+ programme will bring will therefore make these behavioural changes worthwhile. In this case, the CEPA recommends that communication be used **to support financial incentives and resources**. They will not encourage behaviour change on their own. It is therefore important to consider that awareness raising materials, particularly those targeted at forest-dependent peoples, should be delivered in parallel with practical or financial assistance, for example capacity building activities as described in section 4.

The identification of target groups for awareness raising will stem from the stakeholder mapping activities described earlier in this section. 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 section 4.

The means of delivery for awareness raising will be broken down into three 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. Materials specific to the Bangladesh REDD+ Roadmap 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 WG will review materials, including those from the following sources, and recommend a selection for translation and, if necessary, adaptation of the contents to the Bangladesh context, for distribution in country:
 - UN-REDD Workspace (www.un-redd.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 aural media sources than on printed material for their main source of 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:
- **Website:** A national website, or portal, for REDD+ will be the cornerstone of the long-term strategic communication plan, ensuring full transparency of all documents and reports relating to the national REDD+ programme. During Roadmap implementation, a key early task for the REDD Cell will be the establishment of this 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 to correspond with the ongoing consultations during REDD+ Roadmap implementation (see below). Local and private radio stations, and local language services in the CHT region, will be explored.
 - **Television:** The potential 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.
3. **Extension:** At the local level, person-to-person interaction is the most 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 must be adapted for use by these workers in order to deliver key messages to forest-dependent communities. The REDD Cell must 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.

Framework for Stakeholder Engagement

The 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 section 1. In order to meet this requirement, the participation in the RSF cannot be decided in the same way as the first and second national consultation workshops. For these 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+.

Membership of the RSF is not limited by such requirements. The REDD Cell will release an announcement of the initial RSF meeting and the Safeguards WG 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.

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 thereafter be to review the membership of the **REDD+ SC** and the three **TWGs** and recommend refinements to their membership in order to ensure adequate representation of stakeholder views. The REDD+ SC 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 networks of REDD-relevant civil society and other stakeholders

Stakeholder Group	Representative Forums / Networks
Government	National Steering Committee on Climate Change Ministerial Climate Change Cells
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 Occupational groups: Associations at district level (or below) of <i>mahuwali</i> (honey collectors) and <i>bahuwali</i> (<i>golpata</i> leaf collectors), fishermen etc.
Private Sector	Chambers of Commerce (national, district, upazila) Associations of sawmill owners, brickfield owners
Womens' groups	CHT women's organisation <i>Mahila parishad</i> (national level)
Regional stakeholders	Headmans' organisation in CHT
Professionals	<i>Bangladesh Poribesh Andolon</i> (BAPA) Bangladesh Environmental Lawyers Association (BELA) Environmental Journalists' Association Climate Change Journalists' Association District Press Clubs
Religious groups	Imam's Association
Youth groups	Scouts and Girl Guides Red Crescent youth organization
Marginalised and minorities	Bangladesh <i>adivasi</i> forum
Local govt representatives	Union <i>Parishad</i> forum, Union <i>Parishad</i> Association (politically-aligned bodies)

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 section 1, are provisional pending the outcome of a full and transparent stakeholder consultation process. 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 2.

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 section 3.

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 section 4, 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 WG to ensure that they are fully in line with the principles of FPIC, as outlined below.

Gender Inclusiveness

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 those of their menfolk. Gender inclusiveness in REDD+ strategies and decision-making processes is therefore 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. 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.

Compliance with the Principles of FPIC

As mentioned throughout this section, compliance with FPIC principles is the key indicator by which the quality of all stakeholder engagement will be assessed during implementation of the Bangladesh REDD+ Roadmap.

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 UN-REDD programme it is applicable to all forest-dependent communities (see box 4).

The processes and activities that require adherence 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 (SES) in order to meet REDD+ Safeguards, and will be monitored accordingly (see section 4). As part of the development of consultation processes, therefore, the Safeguards WG will provide guidelines on methods for ensuring FPIC.

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

Box 4: FPIC (Free, Prior and Informed Consent)

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.

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.

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 which directly affect their lands or livelihoods. It does mean, however, that the REDD+ management structure must make every effort to build trust, particularly through transparency in decision-making, by ensuring 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 body external 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 on in Roadmap implementation. As suggested by the UN-REDD Draft 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 or decisions involving relocation or eviction
- Activities or decisions involving occupation or damage of forest land
- Decisions on location and design of pilot REDD+ activities
- Decisions on land tenure regulations or forest land use rights
- Design of new forest management policies and programmes
- Design of benefit sharing or revenue distribution mechanisms, where these benefits or resources are derived from forest lands
- Decisions on access to forest lands, and enforcement of such regulations
- Trials and research activities to support the design of REDD+ strategies
- Measurement and monitoring activities to support the design of RLs/REs for REDD+
- Measurement of forest carbon stocks as part of an MRV system under REDD+

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 imply unanimity, unless this is the normal means of decision-making (which would be very unusual). Therefore, FPIC does **not** 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 4. 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 WG 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 4. 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.

Setting up 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 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:

- (a) The SF Management Committee- if the dispute is among beneficiaries;
- (b) The concerned Forest Officer – if the dispute is between the Management Committee and beneficiaries;
- (c) A Forest Officer – if the dispute is between Forest Officer and the Management Committee or between Forest Officials and beneficiaries;
- (d) Appeal against any resolution under sub-rule (1), may be preferred to the concerned Upazila Chairman or in his absence to Upazila Nirbahi Officer and whose decision shall be final.

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.

General Dispute Resolution Mechanisms

The existing mechanisms for dispute settlement within Bangladesh are outlined in Annex 6. 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. 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 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 *Matbars* and 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 local peoples' elected representatives. 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, Upazila Parishad 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 system must be assessed.

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.

Scope and Accessibility

It is important that the Grievance Mechanism set up to serve the REDD+ programme is not specifically labelled as such. To facilitate broad understanding of the purpose of the mechanism, and thus its accessibility to all potential complainants, it should be publicized as a grievance mechanism for **forests and environment**, for example. Local people should not, therefore, 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. 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.

Section 2: Stakeholder Participation and Consultation:

Output	Indicative activities
Outcome 2: Stakeholder Participation and Consultation	
2.1 Awareness raising strategy – keep all groups abreast of Roadmap development	<ul style="list-style-type: none"> • Review available materials and recommend a selection for translation and adaptation to Bangladesh context, for distribution in country • Develop materials specific to the Bangladesh REDD+ Roadmap • Materials for use by LGD extension workers, training • Explore opportunity for NGOs as extension agents • Establish website. • Assess opportunities for radio and TV broadcasts dealing with forest sector issues
2.2 Create framework for stakeholder engagement – ensuring that all opinions are reflected in REDD+ management structure and reflected in decision making	<ul style="list-style-type: none"> • Detailed stakeholder analysis according to objective variables • Validation of stakeholder analysis through a national-level consultation process • Engage existing CSO networks to ensure that RSF info circulates among civil society • Strategy for mainstreaming gender issues • Continuous review and revision of REDD+ SC and TWG membership to reflect changing stakeholder views and patterns
2.3 Continuous consultation programme	<ul style="list-style-type: none"> • National and regional workshops on REDD+ management structure • National and regional workshops on drivers and candidate strategies • Develop guidelines on methods for ensuring FPIC • Commission studies into traditional decision-making systems and designing a system of negotiation and communication around them • Training of extension workers as intermediaries in FPIC process • Study to assess options for independent grievance mechanism for forestry issues

Section 3: Development and Selection of REDD+ Strategies

Rationale: A logical process must be followed to, first, identify the direct and underlying causes (drivers) of deforestation and forest degradation and, second, to establish which of these drivers can be addressed by strategies based on one or more of the five REDD+ activities, as outlined in the Cancun Agreements

Key parts:

Assessment of land use, forest policy and governance: *The effectiveness of the forest governance system, projects and programmes in achieving policy objectives.*

Initial assessment of drivers of deforestation and degradation: *Based on studies and consultations, and differentiated by forest type.*

Framework for ongoing assessment of drivers for REDD+: *Identifying the steps involved, the roles of the actors involved, and the consultation process to be employed.*

Feasibility assessment: *Methods to analyse the feasibility of potential REDD+ strategies, including cost-benefit analysis and the institutional capacity, infrastructure and potential livelihood and conflict-related impacts.*

Planning process for REDD+ strategy implementation: *A methodology for objective identification of potential sites for demonstration activities, development of location-specific activity packages and cost norms.*

Initial Assessment of Drivers of Deforestation and Degradation

Definitions

In the context of this Roadmap, **deforestation** is taken to mean the conversion of forests to another land use or the long term reduction of the tree canopy cover below 10%.

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
- 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 played a significant role in determining the changed composition and degradation of forests. 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

For this initial assessment of the causes behind deforestation and degradation, the primary methodology was the sub-national consultations described in section 2, using the facilitation guide outlined in Annex 3. In each workshop, participants were first divided into groups as follows: Forest Department officials; other local officials and elected representatives; civil society and media organisations; local community members. Each group was asked to create a 'problem tree' relating to a specific case of either deforestation or forest degradation in their area. These were then presented and discussed in front of all participants, and adjusted if necessary.

A preliminary analysis of the direct drivers and underlying causes of deforestation and forest degradation, related to each of the forest types identified, is presented in the tables below. Drivers and causes were also segregated according to whether they lay within the control of the forest sector, or from outside the sector. This initial analysis was then reviewed in the light of past analyses of the Bangladesh forest sector and available literature.

Hill Forests

Issues relating to hill forests were addressed in three regional workshops in Rangamati, Cox's Bazar and Sylhet and are combined in table 6.

Table 6: Drivers of deforestation and forest degradation in Hill Forests

Drivers	Within the forestry sector	Outside the forestry sector
Direct drivers	Unsustainable logging practice Illegal logging, including involvement of corrupt officials	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

		<p>Infrastructure development</p> <p>Hydropower</p>
Underlying causes	<p>Lack of forest management plans</p> <p>Low institutional capacity</p> <p>No demarcation of forest areas or boundaries</p> <p>Lack of forest monitoring of implementation of management plans</p> <p>Weak enforcement of forest legislation</p> <p>Low levels of multi-stakeholder participation in forest sector decision-making</p> <p>Lack of transparency or accountability of forest decision-making and governance</p> <p>Growing demand for, and dwindling supply of, forest products</p> <p>Lack of sustainable alternatives to timber for construction or wood for energy</p> <p>Lack of finance for FD and other officials to conduct sustainable forest management</p>	<p>Weak forest governance</p> <p>Insecure or disputed tenure over forest land</p> <p>Political support for land grabbers</p> <p>Weak law enforcement</p> <p>Overlapping or unclear jurisdiction over forest matters</p> <p>Lack of coordination between line agencies</p> <p>Lack of political commitment to forest management</p> <p>Unresolved land tenure issues with CHT tribal peoples</p> <p>Population growth</p> <p>Poverty, leading to lack of alternative livelihoods</p> <p>Rising incomes leading to rising demand for resources</p> <p>Increasing accessibility of forest areas</p> <p>High opportunity cost of maintaining sustainably managed forests</p> <p>Low perceived value of ecosystem services</p>

Direct Causes

Expansion of Human Settlement & Agriculture

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 km² of forest area was submerged with the construction of Kaptai dam in the early sixties. Due to the construction of this dam 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 about 66,000 ha of Kasalong RF was cleared and allocated for rehabilitation of the displaced people. Huge settlements of Bengalis from the lowlands, in the 1980s in particular, have not only put pressure on the land used by the indigenous people but 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 and forest products companies has been their 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 sustained yield of the targeted economically profitable species. The forest trees were harvested under a clear felling system. Under this system the forest area is felled and replanted under a prescribed periodic working plan. A definite area of forest would have been 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 most cases there is a considerable gap between rotations because of inadequate management planning. Such gaps are covered by 'advance prescriptions' or 'schemes'. Often projects are launched with loan money from World Bank or ADB which do not fit with the regular forest management plan prescriptions. Due to inadequate finance in many cases these *ad hoc* plantation programmes do not cover the projected plantation area. Moreover there is no built in mechanism to monitor the impact of application of a set of prescriptions (Chowdhury 2002). Such drawbacks stand in the way of sustainable forest management, leaving considerable forest areas in the hills completely barren, devoid of forest vegetation and thus encouraged new settlers occupy the land.

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 inevitable population pressure on land, the once elegant system of shifting cultivation 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. Their farms are on soils not suited to sustainable farming and, as a consequence, they must abandon their fields after two or three years of cropping and move on to new forests to clear. 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 are denuded in the hill regions. 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 with the interests of various indigenous ethnic groups but also with those originating from the neighbouring hills of India, 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 predicted fuel substitution from electricity, kerosene, and propane, it is not expected that this dependence on fuelwood will change significantly over the next decades. 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. The corporation has issued licenses to private individuals to convert large chunks of 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 are damaging 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 legal justification 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.

Underlying Causes

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 forest department has also tarnished their 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.

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 opened up thousands of hectares of previously inaccessible forest to colonization and expansion of the cattle industry. Main arteries were 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 the energy 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.

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 *Shorea robusta*, 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 but very little information is available on the extent of Sal Forests in the country. Official forest department estimate about 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 shrunken. According to a recent study 7.2% of Tangail Range 24.6% of Rangpur Forest Range has been encroached by the illegal occupants. Even within the Madhupur National Park Area about 20,000 people live inside the Park area who has 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.

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 Forest Department 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.

Social Forestry

There is an increasing recognition in Bangladesh that traditional centralized Forest Management has failed to stop deforestation and encroachment of forest land by the human settlers. The role of the people living in and around the forest in addressing deforestation and recovering forest land is now appreciated as an important aspect of forest management. In this regard, GoB's Social Forestry programme has become the medium for reforestation of rural areas, through people's participation and in parallel with livelihood improvement objectives. Under this programme the government has established a new legal framework and rules to ensure local community participation and sharing of the benefits of the forest with the local communities on government-owned forest land.

Social Forestry activities are largely concentrated in plains districts and hill districts outside the CHT (such as Sylhet). Extension of the programme to the CHT is dependent on cooperation with the CHT Hill Councils, which has not yet been negotiated. Projects under the Social Forestry programme are generating a growing body of knowledge and experiences which will be relevant to REDD+ implementation, particularly with regard to local community participation and benefit sharing. Under the Readiness phase, activities related to enhancement of forest carbon stock could be modelled on the success of the Social Forestry programme.

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 with corrupt practices	Overlapping /unclear jurisdictions; Demand for settlement and agriculture Demand for industrial land Infrastructure development
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 Low efficiency of wood conversion and use for construction, energy production, etc. Lack of incentives for promoting sustainable management of forests	Lack of political commitment Overlapping legal jurisdictions Lack of coordination Population increase Poverty Rising incomes and demands for resources Increasing accessibility of forest areas Weak Governance 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 in 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. It consists 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 forest type is now limited to the Sundarbans in the south-west. Since 1971 the FD has raised about 1.2 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.

Natural Mangroves

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

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 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	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

Drivers	Within the forestry sector	Outside the forestry sector
	forest management	international market Weak Governance Unclear forest land tenure Weak enforcement of the law Low perception of environmental value of forests
Coastal Plantation		
Direct drivers		Conflicting government policy Political support for land grabbers Weak Governance
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

Industrial demand

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

Environmental Degradation & Diseases

The Sundarbans, the largest compact unique mangrove site in the world, is being degraded due to over exploitation and 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 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

Raising plantations of mangroves and other species in the newly recovered lands in the coastal area of Bangladesh is a pioneering venture in global forestry terms. Since 1971 the FD has raised about 1.2 million ha of coastal plantations but a significant proportion of this area has since been cleared for agriculture, shrimp farming and salt production. 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 forest at Boyar Char in Noakhali district were damaged and cleared by land grabbers. To control such activities, the forest department 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 section 1). 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.

Further Studies on drivers of deforestation and forest degradation

The analysis outlined above is preliminary and must be validated, extended and continuously updated. Key future activities to be supported under the Roadmap should therefore include:

- In-depth analysis of Drivers of deforestation and forest degradation through studies in different forest areas
- Quantitative assessment of drivers of forest degradation
- Consultation on the results of these assessments

Assessment of Policies, Laws and Rules

The analysis of drivers of deforestation and forest degradation clearly demonstrates that the lack of coherent policies, socially and ecologically conflicting centralised management regimes and poor institutional capacity are among the major drivers of deforestation and forest degradation in Bangladesh. While many of the direct drivers may be addressed by practical strategies based on improvements in forestry practice and land use, the underlying policy and governance drivers must be addressed before these strategies have a chance of success.

A thorough analysis of the effectiveness of all relevant forestry laws and policies must therefore be conducted under the Roadmap, to identify to what extent the policy framework achieves the stated objectives and thus to facilitate the development of governance-based REDD+ strategies. The key elements for this analysis will be as follows:

Forest Policy 1994

The current national forest policy is the one that was announced in 1994. The Forest Policy of 1994 is very elaborate and for the first time incorporated the participatory forestry concept in clear terms. This has opened up the avenue of co-operation between NGOs and Government Agencies in the area of participatory forest management especially under the social forestry concept. The salient features of this policy are outlined in Annex 9.

Forest Act

The basic forest law in Bangladesh is one that promulgated during the British period: The Indian Forest Act of 1927. Since then The Forest Act was amended many times, the last amendment was in 2000.

A Private Forest Act was introduced in 1945 which was followed by the promulgation of The Private Forest Ordinance 1959, to bring in some sort of management in the privately owned forests. Before this, private forests had no formal forest management framework to follow. The only practice was to harvest wood and/or clear the forest for conversion to agriculture. Under such situation the management of private forests was taken over by the government under the provisions of this Private Forest Act and Private Forest Ordinance.

Land Tenure Act

The Constitution of the People's Republic of Bangladesh, 1972 (amended 2004), provides that all citizens shall have the right to hold, acquire, transfer and dispose of property.

Key land-related legislation includes: Transfer of Property Act of 1882; Registration Act 1908; Non Agricultural Tenancy Act of 1947; State Acquisition and Tenancy Act of 1950; Acquisition of Waste Land Act of 1950; Bangladesh Land Holding Limitation Order of 1972; Land Reforms Ordinance of 1984; Land Reform Board Act of 1989; and the Chittagong Hill Tract Regulation Act of 1990 (ADB 2004; Shafi and Payne 2007).

The State Acquisition and Tenancy Act of 1950 established a 33-acre land ceiling on private landowners, with the excess transferred to the government upon payment of compensation. Local government was charged with transferring the surplus land to the landless. The Land Reforms Ordinance of 1984 placed a 21-acre (8 ha) ceiling on acquisition or holding of agricultural land and invalidated *benami* transactions, in which a person purchases land in the name of another so as to evade the land ceiling. Neither land ceiling law has been widely implemented (ANGOC 2001; Uddin and Haque 2009).

The 1984 Ordinance also provided greater tenure security to sharecroppers (*bargadars*) in sharecropping contracts with landowners, and prohibited the eviction of agricultural tenants from homestead land (Uddin and Haque 2009).

Customary rights and practices are, to a limited extent, recognized throughout Bangladesh with respect to personal laws and simple civil matters. The Chittagong Hill Tracts (CHT) region, which is the principal home of the country's indigenous people, has a separate legal regime that blends customary and formal law. Principles of land administration codified in formal law are inapplicable in the CHT region. Instead, customary law enforced by traditional institutions governs areas of personal law and natural resource use, including land. Official government institutions maintain but rarely exercise concurrent jurisdiction (Roy, 2004).

Legal Basis for Community Participation and Benefit Sharing

Social/Participatory Forestry (SPF) will be a key tool in REDD+ strategies to address the drivers of deforestation and forest degradation, as well as afforestation and reforestation efforts across the country. The legal basis for SPF and SF is summarised in section 4. Clarification of this legislative framework, and necessary improvements to facilitate mechanisms such as VCF in the CHT and expansion of co-management approaches, will be a central part of phase 2 of Bangladesh's REDD+ programme.

- **Social Forestry:** It is increasingly clear that centralized Forest Management has failed to stop encroachment and settlement of forest land in Bangladesh. The SFR therefore encourages forestry officials to co-opt people living in and around the forest by promoting people's participation and livelihood improvement through reforestation in rural areas. Under the SF programme the government

has established a new legal framework and rules to ensure sharing of forest benefits with local communities on government-owned forest land. The SF programme and related projects are generating a growing body of knowledge and experiences on community participation and benefit sharing and provides a valid model for informing resource distribution under a REDD+ programme.

- **Community-Based Adaptation (CBA):** UNDP's Community-based Adaptation to Climate Change through Coastal Forestation (CBACC-CF) project (see section 1) is piloting another model of benefit sharing through natural resource management. CBA in the coastal areas works with tree plantation, fisheries and livestock rearing by expanding livelihood options for climate-vulnerable communities. CBACC-CF is supported by the Strategic Priority to Adaptation (SPA) Fund of the Global Environment Facility (GEF).
- **Co-management:** The Integrated Protected Area Co-management (IPAC) project (see section 1) engages local stakeholders through a participatory process, empowering them with decision-making rights and positive incentives, thus promoting their interest and commitment to protection of biodiversity resources. A formal two-tiered institutional arrangement is being developed for co-management of each of the PAs; a Co-management Council of 55 members and a 19-member Co-management Committee (CMC). The effectiveness and sustainability of the system is yet to be independently verified but it has led to legal provisions from the government for sharing revenue earnings from the PA visitor's fee with local community members.

REDD+ Strategy Options

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 Annex 3.

During the sub-national workshops, participants were requested, within their stakeholder groups, to discuss the performance of existing measures that have been implemented 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, through this consultation process, identified preliminary strategic options for addressing the underlying causes of deforestation and degradation. These were grouped into a number of broad categories covering all forest types, as outlined in Table 9.

Feasibility Assessment of Potential REDD+ Strategies

During the REDD+ Readiness phase, one of the key objectives will be the effective identification of candidate REDD+ strategies which are practically feasible as well as designed to ensure success in addressing the underlying causes of deforestation and forest degradation.

REDD+ strategies will fall into two broad categories:

1. **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. The costs of implementing 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 outlined in section 6.
2. **Governance Measures:** A governance measure addresses existing gaps or inefficiencies in the implementation framework for REDD+ (see section 4). The overall impact on GHG emission reductions may be significant but cannot usually be measured directly. Governance measures may be necessary in order for some or all activity packages to be effective.

After identification of candidate REDD+ strategies, the REDD+ Readiness phase must assess the feasibility of each of them through a series of studies, which may include practical field activities. Feasibility assessment will include:

- Support required for Effective Management of Forests in accordance with existing Laws and Policies
- Conducting of analytical studies
- Consultation for Strategic Options prioritization
- Costing of selected strategic options
- Preparation and consolidation of the REDD Strategies

Planning Process for REDD+ Strategy Implementation

At the end of the Readiness phase, Bangladesh will be ready to pilot the implementation of the candidate REDD+ strategies that have been deemed feasible. In order to do so, there must be an objective planning process to identify the suitable locations for piloting and the specific activities for each location.

Identification of sites for demonstration activities

In Bangladesh, the administrative level for planning REDD+ activities will be the district because this is the level at which development planning processes generally take place, through DDCCs. They are also large-scale enough to plan for meaningful GHG emission reductions independently.

Within each district, a screening process will take place to identify, objectively, the specific forest locations (or areas for afforestation/reforestation) which are most appropriate to deliver multiple benefits from REDD+; net GHG emission reductions and net social and environmental benefits. The screening process will therefore rely on the development of maps for each of the following parameters:

- Forest cover change (based, if available, on the most accurate data from two or more sets of inventory data or remotely-sensed data at well-spaced intervals)
- Carbon density (proxy information, IPCC Tier 1)
- Socio-economic indicators (poverty rates or proxies)
- Biodiversity hotspots

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

Design of district-level activity packages and cost norms

Once the priority locations for pilot REDD+ activities have been identified, a multi-stakeholder consultation process will be conducted to establish the specific drivers of deforestation and/or degradation at each site. If the drivers thus identified cannot be addressed by a feasible candidate REDD+ strategy (see above) then no further action can be taken at this stage.

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

Activity package templates will be designed, in the first place, 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 in 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 communities concerned, as the outcome of a negotiation and contract development process in full accordance with FPIC principles (see section 2).

Table 9: Strategic options emerging from regional strategy workshops

	Driver	Underlying cause	Strategic Options
1	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 committee on REDD+
		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, Land and Law enforcement agencies at district level
		Expansion of agriculture	Demarcate and regularly monitor forest boundaries

			<p>Increase awareness to raise community participation in forest management</p> <p>Implement decentralized forest management planning with local community participation</p>
		Increasing demand for land for infrastructure and industrial development	<p>Promote policy for minimum use of forest land for infrastructure development</p> <p>Ensure integrated local level planning, monitoring and evaluation of development projects, including road construction</p> <p>Sensitise policymakers to forest-related planning issues</p>
2	Unsustainable harvesting practices	Lack of sustainable forest management plan	<p>Promote decentralized forest management planning and accountable forest governance structures</p> <p>Enhance technical capacities of stakeholders on sustainable forest management and harvesting</p> <p>Pilot and demonstrate sustainable forest management in the field</p>
		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
3	High dependence of local community on forests and forest products	Limited access to alternative sources of livelihood products, particularly fuelwood and timber	<p>Increase investment and access to alternative energy technology for forest dependent people</p> <p>Invest in subsidies for improved cook stoves and other fuel efficient technologies for poor and marginalized communities</p>
4	Illegal harvest of forest products	Weak law enforcement and corruption	<p>Establish decentralized participatory forest management system to increase accountability and transparency</p> <p>Pilot and implement effective participatory forest management and support multi-stakeholder district-level forest planning</p> <p>Improved multi-stakeholder M&E</p> <p>Create better awareness and capacity among all</p>

			<p>law enforcement agencies on forest issues</p> <p>Implement study on increasing the effectiveness of the judiciary and judicial processes with respect to forest law enforcement</p>
		Poverty and lack of livelihood alternatives	<p>Promote investment in sustainable forest management and small and medium enterprises</p> <p>Create skills-based training for alternative livelihoods</p>

Output	Indicative activities
Outcome 3: Development and Selection of REDD+ Strategies	
3.1 Consensus on drivers of deforestation and forest degradation	<ul style="list-style-type: none"> • Analyze results of national/regional consultation workshops on drivers • Assess national forest governance systems for effectiveness against drivers • Identify conflicts, and need for alignment, within existing land use policies
3.2 Preliminary options for REDD+ strategies defined	<ul style="list-style-type: none"> • Analyze results of national/regional consultation workshops on strategies • Develop options for policy-based approaches to addressing drivers • Develop locally-specific activity packages for addressing drivers in CHT and other regions • Feasibility of strategic options assessed against human and financial capacity and infrastructure needs • Methodology developed for cost analysis of candidate strategies and activity packages
3.3 District planning process for phase 2 pilot programme designed	<ul style="list-style-type: none"> • Select and justify pilot districts • Design screening process for identifying suitable sites for REDD+ activities • Produce district level maps on land use change, Tier 1 carbon stock estimates, poverty and biodiversity indicators, using best information available • Design district-specific activity packages and governance measures • Calculate cost norms for activity packages

Section 4: Implementation Framework and Safeguards

Rationale: The frame conditions within which a national REDD+ programme must operate, the activities that must be implemented to optimize these conditions, and the measures (safeguards) that must be applied to prevent negative (and promote positive) net social and environmental impacts.

Key parts:

Institutional Strengthening: Measures required to make the REDD+ management structure operational in terms of governance systems, communication and administration

Capacity Building: A comprehensive and continuous process of learning for REDD+

Information Management: Developing communication and information networks for REDD+

Policy and Legal Alignment: Review policies and ensure alignment and clarity between sectors

Forest and Land Tenure Systems: Review statutory and customary land tenure systems for potential conflicts.

Carbon Rights: Identifying the meaning (and allocation) of carbon rights in the REDD+ context

Financial framework and REDD+ resource distribution: Management of REDD+ Resources, potential sources of co-financing and methods of equitable resource distribution (benefit sharing)

Social and Environmental Safeguards: The national and international obligations of Bangladesh to comply with the safeguards according to Annex 1 of the Cancun Agreements.

Objective of this component

The REDD+ Readiness process for Bangladesh does not exist in a vacuum, but must instead rely on conducive frame conditions in order for it to be successfully implemented. The institutional frame conditions for REDD+ were introduced in Section 1. However, in addition to describing these conditions it is necessary to ensure that they are improved where necessary and sustained in the long term. The implementation framework for REDD+ is therefore the sum of all the enabling frame conditions necessary for REDD+ to be operationalized in Bangladesh. In addition to appropriate and functioning institutions, this entails legal, policy and financial conditions, the potential for capacity development and effective, transparent communication networks. Crucially, the implementation framework for REDD+ includes the social and environmental frame conditions within which the programme operates, and therefore requires a system to assess how the programme affects these important aspects. The objective of this component of the Roadmap is therefore to identify a process for developing, maintaining and monitoring the optimum frame conditions for REDD+ implementation.

Outcomes of this component

The activities under this section will contribute to two outcomes:

- Enhanced knowledge on the policy, legal, financial and institutional adjustments necessary to support implementation of REDD+ strategies; and
- Development of a system for assessing Bangladesh's compliance with REDD+ Social and Environmental Safeguards, described in Cancun Agreements (UNFCCC CoP16).

These two outcomes constitute a feedback mechanism whereby Bangladesh can continuously evaluate and improve the implementation framework for activities during REDD+ Readiness and a National REDD+ Programme, in line with national governance conditions and international obligations. These outcomes will be met through actions under the guidance of the Safeguards WG, including studies on issues such as land tenure, carbon rights, competency framework development, REDD+ safeguards development, etc.

Elements of the REDD+ Implementation Framework

An effective implementation framework is the foundation needed to facilitate such arrangements to be built and operated. The most appropriate REDD+ strategies may not be feasible unless this framework is in place. Key questions that need to be addressed under this framework are:

Institutional: Are the institutions required to implement REDD+ strategies in place, and can they operate effectively together? What needs to be done to make the REDD+ management structure outlined in Section 1 operational? The REDD+ SC will be able to address these questions by initiating a study to review all existing related institutions and policies to identify gaps, efficiency loopholes, and the need for general improvements to institutions/departments. With this, suitable and necessary amendments will be proposed to enable a suitable institutional and policy framework for REDD+ implementation.

Legal: Do the laws and regulations of Bangladesh allow for REDD+ strategies to be implemented? Are there any legal provisions that need to be changed and/or created and, if possible, how can this be done? Legal provisions in place should be supportive of REDD+ activities. A National REDD+ Policy should eventually be formulated, based on the REDD+ strategies developed under this Roadmap, to ensure the smooth implementation of REDD+ mechanisms and processes in line with the country's national policies. In addition, adjustments to existing laws and policies may be necessary to ensure a conducive legal framework. These issues will be addressed through the Safeguards WG and legal experts, as required. A study will have to be carried out to identify these gaps so that they are addressed early and effectively once the National REDD+ Policy is developed.

Financial: How will the financial resources necessary for implementation of REDD+ be distributed effectively? Can existing distribution channels be used and, if necessary, how can new channels be set up? A study will be required to assess whether the currently existing distribution channels through the ministries and/or outside of the public sector (e.g., micro-credit banking systems, microfinance institutions, NGOs and CMOs) can be used.

Operationalising the Institutional Structure

Institutional Strengthening

The key institutions for Bangladesh REDD+ Readiness and Implementation are presented in Section 1. Some of these are pre-existing and others will be established through R-PP implementation.

Key pre-existing institutions, as presented in Section 1, are:

- Ministry of Environment and Forestry (MoEF)

- Forest Department (FD)
- National REDD+ Steering Committee (REDD+ SC)
- REDD Cell

Those that will be established under the Readiness phase are:

- REDD+ Stakeholder Forum (RSF)
- Technical Working Groups (TWGs) on MRV, Strategy, Safeguards, Finance (and others)

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 REDD+ SC and 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+, described in Section 1, must therefore be accompanied by a full analysis to identify institutional strengthening requirements for:

Effective operation of the REDD+ management structure

Effective operation of each of the six key institutions and bodies

This analysis, to be carried out during the Readiness phase by qualified management and institutional development experts, will cover the following aspects of institutional operations, identifying the optimal systems and structures to allow the respective institutions to perform the required function. The conclusions will determine the priorities for institutional strengthening during the Readiness phase and continuing throughout the National REDD+ Programme.

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. 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 Section 2. The depth of institutional structures (that is, how many levels of management between the decision-maker and the implementer) is important, 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 (with effective feedback mechanisms) must 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 during REDD+ Readiness.

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.

Capacity Building

A comprehensive and continuous process of learning is necessary for the key institutions to successfully engage in REDD+ Readiness activities and 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. As part of the overall readiness framework for REDD+, however, 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 FAO⁸. This exercise 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 study. However, capacity building strategies for REDD+ must also incorporate the needs of all REDD+ management bodies, partners and stakeholders and will therefore be much more wide-ranging.

This part of the implementation framework will therefore require three broad steps:

- 1. Develop a Competency Framework for REDD+ in Bangladesh:** This will build on the stakeholder mapping and categorisation described in Section 2. The competency framework will identify the knowledge and skills that each stakeholder group must attain in order to fulfil their role in a National REDD+ Programme. This activity will be undertaken by the Safeguards WG.
- 2. Design and conduct a Capacity Building Needs Assessment (CBNA) for REDD+ in Bangladesh:** Using the competency framework as a template, the CBNA will involve identifying the key capacity, skill and knowledge gaps among the stakeholder groups that will have to implement the National REDD+ Programme. This will be carried out in parallel with the Consultation strategy outlined in Section 2 and will help to manage stakeholders' expectations with regard to capacity building. The REDD+ Cell will liaise with WGs and deliver capacity building services according to their guidance, and will create a Task Force, whose composition will be based on the advice of the RSF and authorised by the REDD+ SC. This Task Force will review the CBNA methodology after the exercise is completed, and refine it accordingly. During REDD+ Readiness, the CBNA exercise will then be conducted on a regular, periodic basis to provide real-time feedback on the results of capacity building activities, and to identify new

⁸ Shaheduzzaman, forthcoming

requirements. This activity will form part of the stakeholder mapping exercise that would be carried out by the REDD+ Cell and Safeguards WG when initiating the institutional structure described in Section 1.

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:
 - a. Interactions with initiatives in other REDD+ countries, both at the regional and global level to build systemic, institutional and individual capacity strengthening of actors in Bangladesh.
 - b. Training programmes for staff of key REDD+ institutions and other personnel involved in REDD+ strategy implementation.
 - c. 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 capacities required for VCF management and extension of co-management approaches to Reserved Forests
 - d. 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 section 1). They will also employ, where possible, the templates and systems of existing international REDD+ knowledge management systems including the REDD Desk⁹, Forest Carbon Asia¹⁰ and the UN-REDD workspace.

Legal Aspects

⁹ www.theredddesk.org

¹⁰ www.forestcarbonasia.org

Policy and legal alignment

As described in Sections 1 and 3, Bangladesh has a multitude of environmental and land-related laws that need to be aligned with REDD+ implementation. It will also be necessary to review laws and policies that affect sectors dealing with water, agriculture, energy and others that have a major impact on the forestry sector with a view to implementation of candidate REDD+ strategies. Stakeholder mapping for these sectors, and key laws, policies and plans within these areas have already been identified through the multi-stakeholder process described in section 2.

Due to the importance of aligning the National REDD+ Programme with the national environmental programme and laws as well as development programmes and the land use policy, studies on legal alignment will continue throughout the REDD+ Readiness phase, to ensure the smooth running of the national REDD+ Readiness process (see also Section 1). The main tools to support policy alignment are the BCCSAP and the Annual Development Programme (ADP) and sectoral plans created by the MoP (see section 1). Responsibility for this ongoing work rests with the REDD+ SC.

Clarifying land tenure and land use rights (including indigenous peoples' rights)

The right to be recognised and rewarded for REDD+ performance is essential to the efficiency of the National REDD+ Programme. As most activities under the Programme will inherently involve changes in land cover, land use or land use plans, it is imperative that land tenure and rights pertaining to land use are clarified.

Forest Ownership and Use Rights: Statutory Law in Bangladesh

Relevant Provisions of the Constitution include Article 42, which provides the right to hold the property by the citizens of the country and requires legal authority and compensation for Government acquisition of any such property. Article 47 qualifies the Article 42 in two important ways. The Parliament can pass laws to acquire property in pursuit of the national policy goals spelled out in Part II of the Constitution and a group of existing laws, including the State Acquisition and Tenancy (SAT) Act, 1950. Article 84 requires all revenues received by the Government to “form part of one fund to be known as the Consolidated Fund”. This Article might imply for reserving forest revenues for reinvestment in forest management or for payment to participants in community forestry programs needs to be considered in drafting any legislation.

The Constitution of Bangladesh prescribes measures to remove inequality between ‘man and man’ [Article 19(2)]. It aims at ensuring ‘equitable distribution of wealth among citizens’ and at providing opportunities to attain a uniform level of economic development. It is a fundamental principle of State policy to ‘adopt measures to conserve the cultural traditions and heritage of the people.’ The above principles of State policy explicitly enshrine the protections of private rights and traditions from all forms of exploitation and interference. The forest laws and the laws governing tenancy are mostly pre-constitution laws, but these are to be interpreted and applied within the letters and spirit of the Constitution.

Moreover, it is a fundamental right of every citizen not to be discriminated on ground of religion, race, caste, sex or place of birth, rather the government is empowered to adopt special provision for the advancement of any backward section of citizens. The laws recognizing rights through prescription or adverse possession applies to all tribal and non-tribal people living in or around a forest, if the nature of their exercise or

enjoyment of rights falls within the scope of the law. Special legal provisions are also ample to protect the cultural integrity and territoriality of tribal population. These rights should not be regarded as inferior to other forms of rights. It is submitted that all regular legal provisions are equally valid for tribal people's rights in or over forests and the special laws are specific addition to other existing provisions.

Customary Rights and the Statutory Law

Recognition of customary land rights and rights through prescription had been one of the undertones of the development of tenancy laws in Bangladesh. Under the Bengal Tenancy Act, 1885, the Courts had to take into account local custom while determining whether a tenant is a tenure holder or *raiyat* (right to hold land for the purposes of cultivation). Every person who for a period of twelve years had continuously held land as a *raiyat* situated in any village, whether under lease or otherwise, was deemed to have become a settled *raiyat* with a right of occupancy.

The legal provisions clearly demonstrate the fact that in Bengal, customs and customary rights were active in regulating land tenure issues and the law recognized them with some qualifications. As a matter of fact, the origin of many of the rights of present title-holders of land were initially based on or developed from customary rights or prescriptions that were variably endorsed in numerous modalities by the *zamindars*. The SAT of 1950 did not repeal the 1885 Act but "so much as has not been repealed," rather further divested the tenurial rights from the landlords to the occupants.

An important provision in the SAT recognizing especial tenurial status of lands falling within traditional domain of aborigines is section 97. The section empowered the government to declare by notification any aboriginal castes or tribes as 'aboriginal' for the purpose of the section, but it did not define 'aboriginal' that are certain to create confusion in Bangladesh.

However, the explicit mention in the provision that an aboriginal can only transfer his land in favour of another aboriginal 'domiciled and permanently residing in Bangladesh' projects the reality of the nature of frequent movements of some tribals to and from their ancestor's land in India. The law, in this case, recognized the individual land holding rights of aboriginal and not in the form of 'common property rights'. But the law does not restrict the transfer of land to another tribe or caste coming from other part of Bangladesh as long as the transferee permanently resides or domiciled in the country. The application of the SAT has been restrained to the Chittagong Hill Tracts where a large number of tribal peoples live under a customary system headed by tribal chiefs.

Customs and the Forest Law

During the period that preceded the codification of forest laws in 1865, it was practically difficult to identify State forests where various private or community rights were not being exercised. The existence of customary rights in State forests is, indirectly but well recognized in the subsequent Forest Acts. The best examples are the penal provisions such as theft and mischief. Many of forest offences would fall under these categories of crimes, which are already heavily dealt with by Penal Code, 1860 providing imprisonment up to 7 years. But the same offences have been traditionally dealt with very leniently in the forest law, until recently, providing a

maximum sentence of actual practice of communities which have been the 'custom from time immemorial' to do certain acts in forest not as crime but as tradition.

To enquire and judiciously decide upon the legal merits of every claim made under the Forest Act, 1927, it has been made mandatory to appoint a Forest Settlement Officer (FSO) for that purpose. These claims may be of various natures including claims to land or to forest produce. The 1927 Act never lost sight of these rights in forest whether originating from customary rights or from other operations of law. In law, traditional rights and rights emerging from prescription or adverse possession had been legally recognized. Long-term possession creates rights by prescription. According to the Limitation Act, 1908, rights exercised or enjoyed uninterrupted for twenty years, on any private property, or sixty years in case of government property create a legal right.

In light of the provisions of the Limitation Act, 1908 one may rightfully assert that before the vesting of any forest in the government, if the same was a part of a private estate of a landlord, then a proof of uninterrupted possession or enjoyment for twenty years would be required by law. In cases where forests have been the *khas* property of the State, sixty years would be the period for acquiring titles.

In some parts of rural Bangladesh, for example, there are people living in forest areas, but with no clear title as yet. Some of these 'forest villagers', particularly in Reserved Forest areas in the CHT, are officially encroachers but have been resident in these forests for decades. Many such villagers are indigenous peoples who retain some aspects of their traditional hunter-gatherer lifestyle. Such indigenous peoples' groups, and other forest-dependent communities, may still wish to claim customary rights to ecosystem services or to use or gather certain forest products to maintain their traditional lifestyle. They may also claim specific territorial rights to areas of particular significance, for cultural or other reasons. All of these rights are protected under international conventions and declarations such as the UN Declaration on the Rights of Indigenous Peoples (UNDRIP), to which Bangladesh is a signatory.

The blurred line between formal and informal tenure and rights, and between statutory and customary rights, is a serious impediment to REDD+. Activities under REDD+ strategies may potentially constrain or limit the customary rights of local and indigenous communities. Currently, however, there is no reliable information on what constitutes customary rights, or how to resolve conflicts between formal and informal systems.

Community-based Forest Management and Co-management

Community based management and co-management are acknowledged globally as approaches for improving the management of common pool natural resources (Thompson, ???). Community Based Organizations [CBOs] are important new actors in natural resource governance and, at the local level, are often empowered to influence the decision making process to reflect their interests and priorities, particularly through CMOs in PAs and VCFs in the CHT districts. It is therefore important to establish to what extent this bottom-up approach to CBFM is reflected in the legislative framework of Bangladesh.

The Forest Act of 1927 explicitly recognizes the possibility of co-management of public and private forest. Section 28 specifically endorses the Village Forest model and the Social Forestry approach. The Social Forestry Rules, 2004 finally recognised this provision and elaborated rules and procedures accordingly. However, the SFR did not explicitly endorse a co-management approach in forest PAs, and neither did the Wildlife Order of 1974. The draft Amended Bangladesh Wildlife Preservation Order of 2008 introduced the concept of co-management of Protected Areas but this draft is yet to be approved. Trials of participatory approaches and co-management has proceeded faster in other sectors, particularly community based fisheries management, and

the concepts developed for the fisheries sector have been applied in water management, disaster preparedness and community-based adaptation (CBA) programmes, as well as the forest sector (Khan, ???). However, The Fish Act, 1950 does not contain any provision on community management or co-management of fisheries resources.

The Forest Policy, 2004 recognized the importance of co-ordination between the Government, NGOs and local communities in order to achieve 'self-reliance in forest products and maintenance of ecological balance.' To realize these objectives, the Policy further stressed:

- involvement of disadvantaged groups, i.e. women, landless and poor communities;
- local government authorities, including municipalities; local federations of private sector bodies;
- self-formed groups, carrying out activities for common benefit;

The 2004 Policy also noted the importance of encouraging afforestation programmes in the denuded hilly areas of the CHT, particularly in the USF areas under the control of the HDCs. It stipulated that both government and private sector afforestation initiatives in the CHT should ensure the participation and rehabilitation of local *jhum* cultivators in cooperation with the Ministry of Land and the Hill Councils, with the aim of securing local land tenure and use rights. Under the Policy, tribal people in the CHT should be granted ownership of a certain amount of forest land through a negotiated settlement process. The rest of the forest land would be brought under permanent protection. However, this settlement process has not yet proceeded according to this provision.

Other policies supporting co-management approaches to natural resource management in Bangladesh include the FD's Nishorgo Vision 2010 (the basis of the draft PA Co-management Rules currently under the approval process), which focuses on co-management and community partnerships as strategies for strengthening the management of PAs. The National Biodiversity Strategy Action Plan for Bangladesh, 2004 (MoEF, 2004) described co-management as, '*the sharing of authority, responsibility and benefits between government and local communities in the management of natural resources*'. This Plan also calls for enhanced PA management, including co-management, and urges the adoption of participatory mechanisms to promote biodiversity conservation, use, and benefit sharing with local communities and other partners. The Poverty Reduction Strategy Paper 2005 and the BCCSAP both explicitly emphasised the importance of participatory natural resource management.

The Social Forestry Rules Amendment 2010 is currently the key legal instrument that ensures local community participation in afforestation activities in the Government Forest land. The SFR are formulated to ensure participation of local community in planning and management of social forestry programmes with clear allocated share of the beneficiaries in the final production. The Rules provide a transparent system of beneficiary selection for the social forestry activities. They also provided institutional arrangements involving FD representatives, beneficiaries, local council representative, ethnic minorities, NGOs and CSOs at national level for policy formulation and consultation.

Specific Laws Applicable for the Chittagong Hill Tracts

In 1860, when the British took control of the Hill Tracts, they recognized it as an indigenous area distinct from the rest of the country, and as a matter of policy its administration, including that pertaining to land matters,

has always been distinct from the plains districts. However, as the indigenous system of land tenure in the CHT differed considerably from British concepts of land administration, the colonial administrators proceeded to restructure the land revenue system and to bring it into greater conformity with their systems of land tenure. In keeping with this approach, a series of administrative and legislative measures were passed culminating in Regulation 1 of 1900. This Regulation remains the principal instrument regulating the transmission of land rights in the Hill Tracts today (Roy, 2000).

Chittagong Hill Tracts Manual, 1900

One of the principal changes enforced by the Regulation was the formal demarcation of the Hill Tracts into three separate “Circles”, and the designation of the three traditional leaders as “Chiefs”, according to the Chittagong Hill Tracts Manual. Further, these leaders, who had enjoyed the status of heads of state within their territories for centuries, now required the national authorities to recognize their right to rule and were merely “charged” with the administration of the Hill Tracts. The British formally divided the CHT into territorially defined administrative units known as *mauzas* to replace the earlier system of *taluks*. A headman was appointed as the responsible authority for each *mauza*, his responsibilities included the collection of revenue. Each *mauza* comprised a number of villages, each of which was generally headed by a *Karbari*. The land use structure of the indigenous people provided the basis for the revenue administration, with specific taxes levied on each category of land. These Regulations still form the basis for the civil, revenue and judicial administration of the CHT, although there have been several amendments to the rules and several new laws have been made applicable to the CHT between 1900 and up to the present.

The government does not formally recognize the rights of the indigenous people to the common lands as a collective right. It regards these lands as state-owned. They are also known as *khas* lands, i.e. state lands, while the Forest Department categorises these lands as USFs. The lands not demarcated as Reserved and Protected Forests, which are not settled or leased out in the name of any private individual or corporate body, are regarded as USF by the national administration for purposes of forest extraction and export.

Forest area in the CHT which is not designated as Reserved Forests falls under the category of USF. In this area, the local people are allowed to practice *jhum* or shifting cultivation and to extract any forest produce (fuelwood, bamboo and house construction poles and timber) to meet their domestic requirements. Initially, under British rule, USF land was divided into units (*mauzas*) by district administrations, in consultation with the Chiefs and headmen. Over time, more USF land was allocated to individuals for agriculture or horticulture, and for all practical purposes these now fall within the juridical regime of private property rights (Roy, 2000).

Chittagong Hill Tracts Peace Accord, 1997

The Chittagong Hill Tracts Peace Accord, 1997 is also important to deal with CHT land issues. The agreement recognized the distinct ethnicity and special status of the tribes of the Chittagong Hill Tracts. Under this Accord a Regional Council was established consisting of the local government councils of the three districts of the Hill Tracts. The council was to be composed of men and women from all hill tribes, and representatives of Bengali communities; and the delegates would be elected by the HDCs. The central government would therefore be required to consult the regional councils over all issues concerning the Hill Tracts.

Hill District Council Act(s) 1998

The Hill District Council Act(s) 1998 of Bandarban, Khagrachari and Rangamati was adopted with the view of decentralising the local governance and transferring different subjects to three hill district councils. A number of 33 subjects are listed to transfer to Hill District Councils. The Council is formed with the 33 elected councillors and one Chairman with tenure of 5 years.

CHT Regional Council Act 1998

The CHT Regional Council Act 1998 provides scope of coordinating and supervising all development activities in the Chittagong Hill Tracts. It is also notable that regarding any new law concerning the Council or the Chittagong Hill Tracts, according to the Regional Council Act, the government shall take necessary measures for making the law in consultation with the Council and the concerned Hill District Council and after by considering the advice of the Council.

CHT Land Dispute Settlement Commission Act, 2001

The GoB adopted the Local Government Councils Bills 1989¹¹ to establish local councils in the three Hill districts of Rangamati, Khagrachari and Bandarban. The provisions of these Bills were superseded by the HDC Acts of 1998. However, the Chittagong Hill Tracts Land Dispute Settlement Commission Act, 2001¹² was adopted with a view to settle the some of the land disputes of Chittagong Hill Tracts which remained unresolved after the HDC Acts. In implementing this Act, a Commission was formed in order to settle land disputes particularly for settlers and it provided that, all these disputes would be settled in accordance with the laws applicable to Chittagong Hill Tracts and customs¹³. However, this section is not the subject to State land acquisition, reserved forest, Kaptai Hydro power project, government own industries and recoded land in favor of national government or local governments. The decision of the Commission would be deemed as the Decree of a Civil Court and there is no appellate jurisdiction against the decision passed by the Commission¹⁴.

Carbon rights

The concept of 'Carbon rights' is completely new to Bangladesh, as it is to all REDD+ participant countries. It is commonly understood as a novel type of property right, but the idea that the carbon in forest ecosystems can be isolated, 'owned', and traded separately from other physical products and ecosystem services creates many philosophical, moral, practical and legal difficulties.

If, however, the owners, managers and users of forest resources will be rewarded, under REDD+, directly on the basis of carbon stocks in their respective forest areas, then Bangladesh must develop a clear system for

¹¹ Acts 19, 20 and 21 of 1989

¹² Act No, 53 of 2001

¹³ Section 3, Chittagong Hill Tracts Land Dispute Settlement Commission Act, 2001

¹⁴ Ibid, Section 16

defining which stakeholders have the right to make decisions which affect forest carbon stocks, and which have the right to benefit from any financial rewards that accrue as a result.

These are complex legal questions, and they are intimately linked to the system of resource distribution (or 'benefit sharing') that Bangladesh will adopt for REDD+ implementation (see later in this Section). During REDD+ Readiness, a thorough study on the meaning of 'carbon rights' in the Bangladesh context will be conducted and, if necessary, transparent rules on the allocation of carbon rights will be developed. This will have implications beyond the Readiness phase, by enabling state or non-state actors to engage in REDD+ with confidence. This will be carried out under the Safeguards WG.

Potential activities to develop appropriate legal frame conditions

- Further extensive review, with special focus on the CHT, on existing legal and policy frameworks is needed to identify the scope for REDD+ to conform to existing governance mechanisms and to suggest appropriate additional legal and policy measures
- There is a growing trend to ensure peoples' participation at the project level, but the trend is largely ad hoc and needs legal back up to be institutionalized. Some sectoral laws require participation, but lack detailing of modes and consequences. So, further legal effort is needed.
- Existing some of laws provided the foundation for co-management and benefit sharing, however, it needs to review, amend and also in some cases new enactment
- The newly enacted Right to Information Act and Anti Corruption Law can be utilized to ensure the adequate information on REDD+ schemes and to avoid ensure the accountability of various actors
- Further analysis is required on REDD+ safeguard principles and their implementation and monitoring mechanisms
- To remove the conflict and ambiguities from legal approaches between Chittagong Hill Tracts (CHT) and national level, research study and political initiative are needed.
- Recognition of customary land rights and Indigenous peoples' right an Independent Commission can be formed at the national level
- A CHT-specific Roadmap process may be initiated to take account of the administrative and legal framework in this region.
- Government initiative is required for capacity building of relevant professionals

Financial Aspects

Management of REDD+ resources

The third and final phase of a national REDD+ mechanism, according to the Meridian Options Assessment Report (Angelsen *et al*, 2009), is performance-based payments. A national approach to REDD+, as envisaged under the Cancun Agreements, will see carbon credits accrue at the national level. A national-level facility to receive and manage these payments must therefore exist in order for a country to progress to full REDD+ implementation.

Coordination of various donor support for the National REDD+ Programme and the use of transparent and efficient systems for managing donor resources will be part of the Terms of Reference of the REDD+ SC.

The REDD+ SC will be among the principal bodies to help track and manage incoming finances against activities and outputs. Sources of such support already exist in Bangladesh through the GoB (ERD under the Ministry of Finance, and the BCRF for climate change-specific investments), multilateral organisations such as the World Bank, and some private institutions, but coordination between such activities needs to be stepped up. 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 help to formulate the design of financial instruments and mechanisms to be used for the REDD+ implementation phase (as described in Section 1). This will include defining the authority to transact international carbon credits through REDD+ implementation.

During the REDD+ Readiness phase, a study will be carried out by a Finance TWG in order to identify and define this authority, and to recommend options for the establishment of suitable arrangements. The study will also produce recommendations on the terms of reference for management of REDD+ finances. For example, the management facility may have the following attributes:

- Independent of the REDD+ management structure described in Section 1
- 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 fund disbursement for REDD+ implementation

It should also be noted that Bangladesh has 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.

Resource distribution (benefit sharing)

The forests resources not only the source of livelihoods of the forest community but also the determination factor of cultural values and norms. Therefore depletion of forest resources or barrier to access to forests will be threatening to right to livelihood of the forest community, intimately which results in causing harm to their

right to lives. Right to life is the fundamental human right guaranteed by all the international human rights instruments and recognized almost all the national constitutions all over the world. Therefore, access and benefit sharing is the fundamental issues in implementing any projects or activities in forest.

The Convention on Biodiversity provides an opportunity for forest-dwelling and local communities to secure benefits from forests' genetic resources¹⁵. Ongoing negotiation on REDD mechanisms under UNFCCC is going on to offer economic benefits to forest community gained from the forest. Ownership, or substantive use rights of forests, should be the first step for determining the entity most likely to have rights to carbon sequestered by forests. We might presume that forest owners and right holders will be the direct beneficiaries of carbon sequestration rights. In light of recent international developments underlining the key role of forest ecosystems in climate change mitigation and adaptation, national governments are increasingly adopting legislation aimed at regulating forest carbon rights (Robles and Peskett, 2011).

Article 84 of the Constitution of Bangladesh requires all revenues received by the Government to "form part of one fund to be known as the Consolidated Fund". This Article might imply for the potential revenues from carbon sequestered by forests through carbon market mechanisms and hence payment to forest community participants in REDD+ activities would be the legitimate claim in accordance with distribution and decision-making process. However, in the context of carbon rights social forestry mechanisms and practices in Bangladesh would be worthy to develop further policy framework in Bangladesh ensuring transparent and affordable conflict resolution and objection submission mechanisms.

The distribution of REDD+ finances from a national facility to the actors that can implement the practical activities under REDD+ strategies is essentially a matter of designing economic incentives that will induce the appropriate changes in behaviour of certain stakeholders.

Each potential strategy identified through Section 3 will entail direct costs on one or more groups of stakeholders. In addition to meeting these direct costs, the distribution of REDD+ resources must usually recognise the indirect costs of changing behaviour, so that the stakeholders involved actually recognise a benefit for themselves from taking part in REDD+.

If REDD+ resource distribution systems, including unit costs for activities, are set up autonomously, therefore, they are unlikely to deliver the necessary incentives. The cost of implementing a particular REDD+ strategy must therefore be determined through studies of any existing systems of fund distribution and consultations with the stakeholders. Under REDD+ Readiness, studies will be conducted to determine the appropriate mechanisms and negotiation processes for REDD+ resource distribution.

Accordingly, the (to-be-formed) Finance WG will be responsible for setting up a Task Force which will explore resource management and distribution options for the implementation of REDD+ in Bangladesh, which will specifically investigate the following:

- Any existing relevant benefit sharing mechanisms (such as micro-financing schemes, Grameen Bank, BRAC, PKSF etc) to be compared during the REDD+ Readiness.

¹⁵ **The Convention on Biological Diversity, 1992** Article 1: The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources

- Mechanisms for directing REDD+ funds to private and NGO actors. Provision for this already exists under the BCRF, for which provision to disburse 10% of funds through local NGOs/CSOs already exists
- Models for actions that can lower transaction costs for local actors.
- Financing options for the establishment of a mechanism for performance-based payment and benefit sharing.

Social and Environmental Safeguards

The core objective of REDD+ is to contribute to the global battle against climate change and the UNFCCC. To achieve this in a socially and environmentally sustainable way as set out in Annex 1 of the Cancun Agreements, a list of seven specific safeguards should be 'promoted and supported' (see Box 4 and Annex 1 of this document).

What are the Safeguards for?

The application of social and environmental safeguards is targeted at improving the sustainability of the National REDD+ Programme and the potential to deliver measurable lasting emission reductions and enhanced removals, as well as reduce exposure to legal, financial, and reputational risks for donors, financiers, multilateral institutes, the private sector and civil society. 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 when implemented without due consideration of social and environmental impacts (Moss *et al*, 2011).

1. The conversion of natural forests to plantations and other land use of low biodiversity value and low resilience;
2. The loss of traditional territories resulting in displacement and relocation of indigenous peoples and forest dependent communities;
3. The erosion or loss of rights with exclusion from lands, territories and resources;
4. The loss of ecological knowledge;
5. The loss of traditional and rural livelihoods;
6. Social exclusion and elite capture in the distribution of benefits from REDD+;
7. The loss of or reduced access to forest products important for local livelihoods;
8. The creation of contradictory or competing national policy frameworks;
9. The other benefits of forests are traded-off at the expense of maximizing the carbon benefits;
10. Human-wildlife conflict as population of crop raiding animals benefit from better protected forests.

As a UN-REDD partner country, Bangladesh's National REDD+ Programme must not only respect the safeguards listed in Box 4 but also follow the relevant guidance from the UN-REDD programme. Jointly with the World Bank's FCPF, the 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 3 and section 2). 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.

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.

Bangladesh has systems of environmental safeguards under the Environment Conservation (EC) Act and Rules and adherence to these will have to be ensured through the national REDD+ programme. The designation of Ecologically Critical Areas, as authorized under the EC Rules, 1997 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 is needed¹⁶. Furthermore, provisions of Environmental Impact Assessment [EIA] in compliance of issues Environmental Clearance Certificate can be useful for preventing environmental and social impacts from any projects like REDD+¹⁷.

The REDD+ strategy options detailed in Section 3 will have positive and negative social and environmental

Box 4: REDD+ Safeguards, according to Annex 1 of the Cancun Agreements (Decision 1/CP.16)

- (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+ programmes 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

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; archeological 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.

impacts that are beyond the reduction of GHG. Given the nature of these options, the safeguards for Bangladesh's National REDD+ Programme would give special consideration to livelihoods, rights (including those of Indigenous Peoples), the special protection of vulnerable groups, biodiversity, cultural heritage and gender.

Development of REDD+ Social and Environmental Standards

As a core part of its REDD+ readiness process, Bangladesh will accordingly 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 REDD+ Readiness, by monitoring progress against these safeguards. Likewise conflict resolution and grievance mechanisms will be established and are given in detail in Section 2.

Bangladesh will develop a set of nationally-appropriate standards to comply with REDD+ social and environmental safeguards, and a set of indicators to monitor performance against these standards, according to the following steps:

1. Review globally available REDD+ safeguards tools (e.g., SESA, REDD+ SES, SEPC, etc.) and any existing national policies relevant to safeguards (e.g., EIA), and their applicability and effectiveness for REDD+ in Bangladesh. The Safeguards WG will lead this work and will implement the review and other necessary activities. Based on the review, nationally appropriate REDD+ social and environmental standards (principles and criteria), in compliance with the Cancun Agreements, will be proposed and a validation process, as sanctioned by the RSF and REDD+ SC, will be conducted
2. Based on the principles and criteria in the standards, a set of indicators will be proposed by the Safeguards WG 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.
3. Hold an extensive process of multi-stakeholder consultations on the national-level indicators. The consultation process will be designed by the Safeguards WG, 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.)
4. Compilation of comments and feedback on the draft standard and national-level indicators and incorporation into a second draft document, along with clear indications of how and why each comment has (or has not) been addressed
5. A second round of multi-stakeholder consultations on the second draft
6. Official Endorsement of the National REDD+ social and environmental standards by the REDD+ SC. Based on the feedback from the second consultation period, the Safeguards WG 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.

7. Confirm means of verification and develop information gathering methodologies (consultations, secondary data, statistics and survey) and a change monitoring approach through demonstration activities. The Safeguards WG will review any existing data collection mechanisms (e.g., national census, forest inventory, socio-economic and conservation studies of forest protection and management plans, etc.) in Bangladesh and consult with relevant stakeholders to develop methodologies for information gathering and a process for monitoring status change through demonstration activities.
8. Collect and analyse information against REDD+ Social and Environmental indicators using the methodologies identified, on a demonstration basis.
9. Consultation based on analysis results to identify risk mitigation and benefit enhancement measures. Pending clearance by the REDD+ SC, the Safeguards WG will undertake stakeholder consultations to discuss risks and potential benefits in order to recommend a strategy mitigation /enhancement of risks/benefits.
10. Link safeguards information into the central database and archiving system. The information generated and risks/benefits identified and monitored should be provided through a central database where all the other REDD+ information and data are collected and maintained.

Compliance with Safeguards

Once finalized, the National REDD+ social and environmental standards and indicators for Bangladesh will be used to assess the quality of the REDD+ readiness and implementation phases, as part of the MRV approach described in Section 6. Therefore, the National REDD+ social and environmental standards will inform the design of REDD+ strategies and monitor the implementation of the National REDD+ Programme in order to ensure Bangladesh's compliance with the safeguards as set out in the Cancun Agreements.

These activities may include strengthening and adjustment of:

1. Legal, regulatory, and policy frameworks, as described in this Section;
2. Institutions and institutional networks, as described in Section 1
3. Mechanisms for stakeholder engagement, as described in Section 2

Output	Indicative activities
Outcome 4: Frame Conditions for REDD+ Implementation in place	
4.1 Institutional and stakeholder capacities for REDD+ developed	<ul style="list-style-type: none"> • Analyse institutional strengthening requirements of key bodies in REDD+ management structure, including internal governance, communication and administration • Develop a national competency framework for REDD+ • Undertake a full Capacity Building Needs Assessment for REDD+ • Design a national REDD+ Capacity Building Action Plan • Develop a national REDD+ information management system
4.2 Legal rights regarding land tenure and resource use clarified	<ul style="list-style-type: none"> • Assess clarity of land and forest tenure systems, analyse gaps in legislation • Study on the meaning and application of 'carbon rights' in national context • Incorporate forest and land rights issues into new Right to Information Act and Anti-corruption law • Form independent commission for customary land rights in CHT and at national level
4.3 Transparent system for management of REDD+ finances in place	<ul style="list-style-type: none"> • Conduct study on the design of a body for management of international transactions in carbon credits • Analyse past 'best practice' in Bangladesh for implementing national-scale development projects • Analyse existing microfinance schemes for potential roles in resource distribution within REDD+ • Investigate options for lowering transaction costs for local forest managers • Develop options for a performance-based payment mechanism for forest sector activities, accessible to private and non-government actors
4.4 Nationally-appropriate and internationally-compliant standards for social and environmental safeguards developed	<ul style="list-style-type: none"> • Review globally-available REDD+ safeguards tools • Develop nationally-specific indicators to comply with international social and environmental principles and criteria • Comprehensive multi-stakeholder validation process for social and environmental indicators • Develop and test monitoring methodology against indicators

Section 5: Developing a National Forest Reference Emission Level (REL) or Reference Level (RL)

Rationale:

REDD+ is based on a continuous assessment of forest-based Greenhouse Gas emissions. This assessment must be compared against a 'no-REDD+' scenario in order to be meaningful. A participating country must determine its Reference Level (or Reference Emission Level) to be eligible.

Key parts:

Historical data availability on drivers of deforestation and degradation

Bangladesh socio-economic, political or environmental circumstances that may affect the development of a reference level or reference emission level

Assessment of feasibility of the REDD+ management structure to develop REL/RLs with regard to institutional and technical capacity

Objectives of this component

The objective of section 5 is to support the development of forest RELs/RLs 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 objective and correct 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 adjust for national circumstances (Article 7). According to the decision 12/CP.17 on Modalities for REL/RLs, forest reference emission levels and/or forest reference levels expressed in tons of carbon dioxide equivalent (tCO₂e) 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).

At this stage, it is difficult to ascertain how Bangladesh's RELs/RLs will be developed and based historical data, and/or adjusted on historical data. However, decision 12/CP.17 specifies that the development of the REL/RLs will be performed following a step-wise approach enabling Parties to improve the forest REL/RLs 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.

Establishing the REL/RLs involves five steps:

- Assessment of the historical forest area change (ha/yr)
- Assessment of the emission factors (tCO₂e/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 REL/RLs (tCO₂e/yr)

The development of the 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 REL/RLs will be adapted.

REL/RL framework

Decision 12/17 (UNFCCC, 2011) acknowledges that sub-national forest REL/RLs may be elaborated as an interim measure, while transitioning to a national forest reference emission level and/or forest reference level. 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 term of emission reductions through five REDD+ activities. Methodological guidance for the definition and the assessment of the sub-national REL/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. At current status only one national land use assessment was performed at national scale (FAO, 2007). Several sub-national land use/cover analyses were performed (see Annex 10) but these cannot contribute directly to the national statistics and assessing the national performances because they are not integrated and 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. Figure 8 represents the variation of forest land area in all forest and planted forests. The total forest land area does not vary mainly because of limited frequency of repeated forest land area assessment.

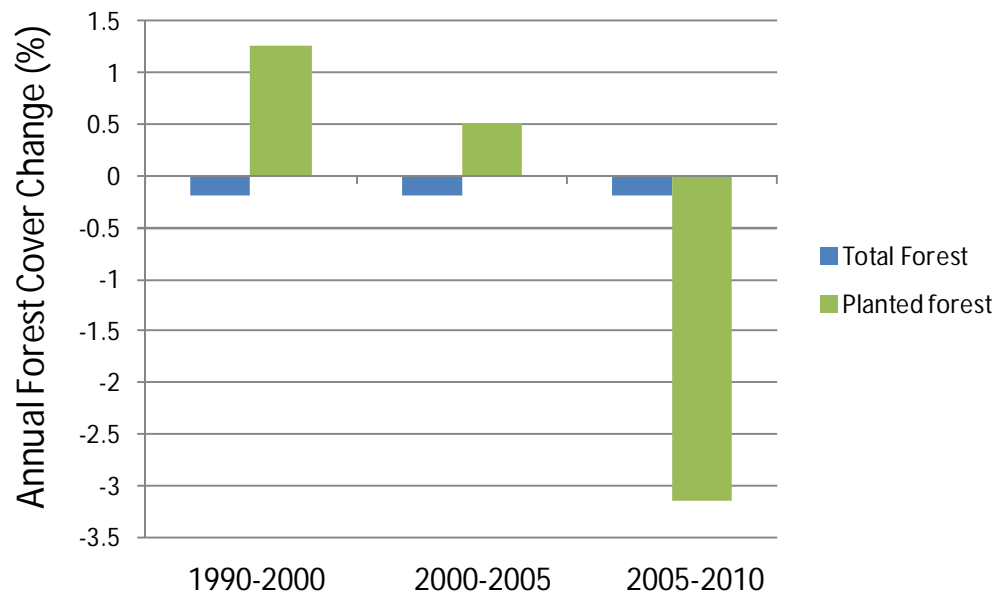


Figure 8: Annual forest cover change rates in Bangladesh

Bangladesh National Circumstances

The importance of national circumstances for the implementation of REDD+ was recognised 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 other chapters of the national communication.

Bangladesh could also include information on the linkages between the 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 implementation stage, GoB will undertake studies, analyse the national circumstances, collect data, improve the approach, and work on establishing a 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, more data become available and domestic understanding of methods and tools are refined.

Activities under Section 5

Activity 1: Capacity need assessment

Following a formal capacity needs assessment among all groups involved in the REL/RL development process, capacity building will be carried out to address the needs identified. A hierarchical management system for developing RELs/RLs is proposed 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 REL/RL for REDD+.

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

- 1) A workshop will be held representing the various stakeholders involved in REDD+;
- 2) The stakeholders for REL/RL development are identified;
- 3) REL/RL human, technical and financial capacities will be assessed;
- 4) Training on REL/RL will be provided;
- 5) The necessary institutional arrangements will be identified;

Expected outputs:

- 1) Report of the national stakeholder consultation
- 2) List of the stakeholders and relevant institutions involved in REL/RL development at national and sub-national levels;
- 3) Report on the assessment of the national capacities for REL/RL;
- 4) Recommendations for the institutional arrangements for REL/RL

Activity 2: 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 of GHGs 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. The second NC report is currently being finalized. Bangladesh Centre for Advanced Studies (BCAS), a non-governmental research institute, has been awarded the project to develop the second NC by the DoE.

Evaluating the national circumstances of Bangladesh will be based on:

- (i) Analysis of existing and historical social, political and economic data;
- (ii) Existing conservation laws and policies;
- (iii) Analysis of projected future development in Bangladesh,
- (iv) Vulnerability to climate change and adaptive capacity; and
- (v) Potential forest cover and carbon stock changes.

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

- 1) Further assessment of land-use policy, forest policy and governance;
- 2) Assessments undertaken as part of the REDD+ Strategy analysis;
- 3) 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:

- 1) Historical data are identified and collected;
- 2) The contribution of historical data to develop REI/RL is analysed;
- 3) Recommendations to the national REDD+ strategy are provided in line with existing national forest policies;

Activity 3: 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 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.

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

- 1) Comparison of existing historical data for deforestation, afforestation/reforestation, forest degradation, forest management, national park;
- 2) Harmonization of existing data when possible;
- 3) Recommendations on the use of historical data to develop REL/RL at national and sub-national levels;

Expected outputs:

- 1) Report providing recommendations on the use of historical data to develop REL/RL(s) at national and sub-national scale for the five REDD+ activities.

Activity 4: 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:

- 1) Assess the quality of past satellite imageries in comparison with currently available satellite imageries for the forest monitoring system;
- 2) Assess past forest land area change in one demonstration sites;
- 3) Analysis of the compatibility of the past forest land area assessment with the results; obtained from the forest monitoring system;
- 4) Test the method in one demonstration site;
- 5) Propose methodology and recommendations;

Expected outputs:

- 1) Past forest land area change assessed for one demonstration site;
- 2) Proposed method to integrate existing past and current satellite imageries to assess past and present forest land area changes.

Activity 5: Testing different RELs/RLs and possibilities of sub-national RELs/RLs

For defining historical emissions and removals, and for developing REL/RL, advice will be required from national and international experts trained in modelling land-use change, and land management and forest policies.

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

- 1) Identifying and learning from REL/RL(s) methodologies from other countries;
- 2) Identification of existing sub-national REL/RL(s) in Bangladesh;
- 3) Developing and testing REL/RL(s) at sub-national scale with the objective of scaling up to national scale in the future;
- 4) Workshop to discuss the development of RELs/RLs;
- 5) Propose recommendations and methodology to integrate sub-national actions into the national REDD+ strategy.

Expected outputs:

- 1) Analysis of the REL/RL(s) methodologies from other countries
- 2) Proposed methodology to integrate sub-national REL/RL(s) at national scale.

Bangladesh REDD+ Readiness Roadmap

	Indicative activities
Scaling up national Reference Emission Levels (RELs) or Reference Levels (RLs) acquired	
	<ul style="list-style-type: none"> • A workshop will be held representing the various stakeholders involved in REDD+; • The stakeholders for REL/RL development are identified; • REL/RL human, technical and financial capacities will be assessed; • Training on REL/RL will be provided; • The necessary institutional arrangements will be identified.
	<ul style="list-style-type: none"> • Further assessment of land-use policy, forest policy and governance; • Assessments undertaken as part of the REDD+ Strategy analysis; • Collection of historic data will provide the contribute to conservation goals, sustainable development priorities, objectives and projects, and circumstances that will have a significant impact on the successful implementation of REDD+.
	<ul style="list-style-type: none"> • Comparison of existing historical data for deforestation, afforestation/reforestation, forest degradation, forest management, national park; • Harmonization of existing data when possible; • Recommendations on the use of historical data to develop REL/RL at national and sub-national levels.
ESS	<ul style="list-style-type: none"> • Assess the quality of past satellite imageries in comparison with currently available satellite imageries for the forest monitoring system; • Assess past forest land area change in one demonstration sites; • Analysis of the compatibility of the past forest land area assessment with the results; obtained from the forest monitoring system; • Test the method in one demonstration site; • Propose methodology and recommendations.
S	<ul style="list-style-type: none"> • Identifying and learning from REL/RL(s) methodologies from other countries; • Identification of existing sub-national REL/RL(s) in Bangladesh; • Developing and testing REL/RL(s) at sub-national scale with the objective of scaling up to national scale in the future; • Workshop to discuss the development of RELs/RLs; • Propose recommendations and methodology to integrate sub-national actions into the national REDD+ strategy.

Section 6: Development of Monitoring and MRV systems

Rationale: The REDD+ Readiness phase must put in place the capacities, infrastructure and systems necessary to conduct accurate national forest inventories, monitoring of forest condition, and measurement, reporting and verification (MRV) of forest-based greenhouse gas (GHG) emissions.

Key parts:

Description of existing national forest monitoring systems and the gaps that need to be filled during REDD+ Readiness

Measuring, reporting and verification (MRV) system for REDD+: what are the objectives of the MRV system and how would it be implemented?

National Forest Inventory: How can the MRV system be integrated into the NFI

National Greenhouse Gas inventory: How can the MRV system be integrated with the GHG inventory

Describe a work plan for development of the MRV system

Objective of this component

This **section** is intended to address the requirements set out by the UNFCCC for **non-Annex I Parties for the development of the Monitoring and Measurement, Reporting and Verification systems**. It focuses on identification of the necessary operations and actions that should be undertaken to achieve an operational forest monitoring system for phase 2 and the capacity development required to move forward and develop a full MRV system in phase 3.

Implementation of forest Monitoring and MRV systems using a phased approach

At COP16 Parties also agreed to a series of rules to formally structure REDD+. Importantly, with paragraph 73 of the Decision, the COP “decides that the activities undertaken by Parties referred to in paragraph 70 [the five REDD+ activities] should be implemented in phases” The three phases of national REDD+ programme development were referred to in the Introduction to this Roadmap and are presented in detail in Figure 9, along with the specific activities relating to MRV. The phased approach is significant as it allows developing countries to undertake a learning-by-doing approach, and allows the participation of all potential REDD+ countries regardless of their current national circumstances. Paragraph 73 outlines the activities to be undertaken in each of the three REDD+ phases as follows:

Phase 1: “*Development of national strategies or action plans, policies and measures, and capacity-building*”. Activities here focus on capacity building, awareness raising and implementation planning, as well as the

development of documents such as the present one, to describe the development and implementation of components for information, monitoring and MRV;

Phase 2: "Implementation of national policies and measures and national strategies or action plans that could involve further capacity building, technology development and transfer and results-based demonstration activities". This phase requires the implementation of demonstration (pilot) activities to test strategies and methodologies, as well as i) a system to make freely available information on how the REDD+ safeguards are being respected and ii) a REDD+ monitoring system to monitor the outcomes of the demonstration activities;

Phase 3: "Evolution of all the REDD+ activities into results-based actions that should be fully measured, reported and verified". REDD+ is integrated with other mitigation mechanisms under the UNFCCC and national policies and measures are implemented across the country. The information system continues to provide information on the REDD+ safeguards as relates to national implementation; the REDD+ monitoring system is upgraded to monitor the outcomes of national REDD+ policies and measures; the MRV system assesses GHG emissions and removals in the forestry sector and to reports this to the UNFCCC Secretariat in a transparent, accountable and verifiable manner.

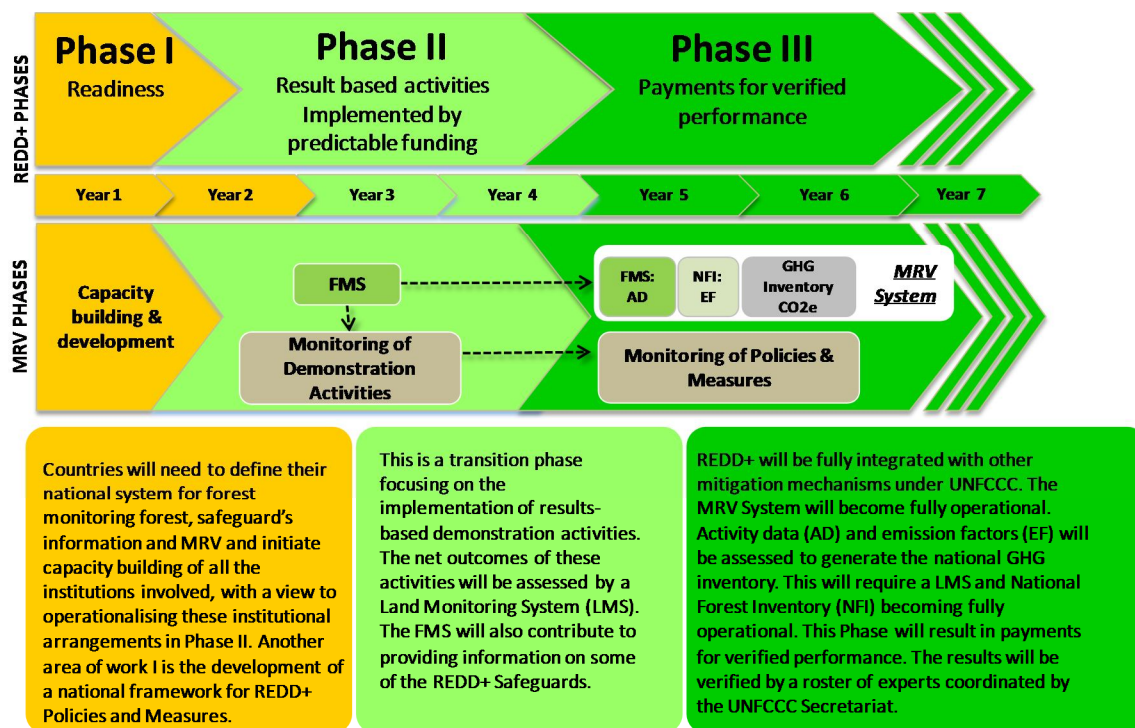


Figure 9: Multiphase implementation of REDD+ through MRV development and components of the Information, Monitoring and MRV System for REDD+.

Methodological approach for forest monitoring system

Decision 1/CP.16 calls for the development of a national forest monitoring system for the *monitoring and reporting* of REDD+ activities, which reflects the need for two separate, but closely linked, systems. The monitoring system will perform different functions according to the phases of REDD+, as follows:

In Phase 2:

- Validates that sub-national demonstration activities are results-based (i.e. result in measurable positive outcomes), which is a requirement of the Convention (Decision 1/CP16 Para. 73) – through a Demonstration Activities Monitoring System;
- Provides basic national-level coverage data, e.g. forest cover changes and the location of fires (which should feed into the REDD+ Safeguards Information System, to provide information on safeguards such as forest governance structures, the conservation of natural forests, permanence and leakage).

In Phase 3:

- Validates that the implementation of national policies and measures on all the national territory are results-based (i.e. determines how much of each REDD+ activity is taking place over the national territory and how these are changing) – through a National Performance Monitoring System; and
- Continues to provide basic national-level coverage data.

Methodological approach to MRV

The purpose of an MRV System is to assess and report on anthropogenic GHG emissions by sources and removals by sinks related to forest land. This system must enable identification and tracking of actions and processes related to the five activities identified under REDD+.

In the IPCC's Good Practice Guidance the most common methodological approach to the "**Measurement**" component of MRV is to collect information on the extent to which a human activity takes place (activity data, AD), and coefficients which quantify the emissions or removals per activity unit (emission factors, EF). AD and EF are combined to develop a GHG inventory (GHG-I) for the REDD+ activities (Figure 10). To collect this data, the MRV system requires:

1. A Satellite Forest Monitoring System (FMS) to assess AD on forest area and forest area changes;
2. A National Forest Inventory (NFI) to assess EFs on carbon stocks and carbon stock changes.

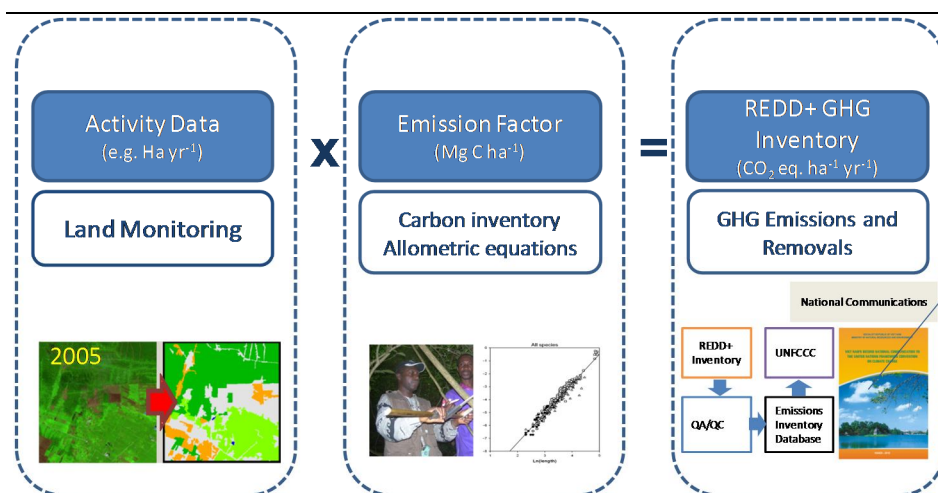


Figure 10: The IPCC's methodological approach to calculate anthropogenic GHG emissions by sources and removals by sinks related to forest land.

“Reporting” refers to the compilation and publication of national data, statistics and information in the format of a GHG-I. The GHG-I for REDD+ will form part of Bangladesh’s National Communication to the UNFCCC Secretariat. Reporting requirements to the UNFCCC (National Communications) may cover issues other than just those subject to measurement. The core elements of the national communications are information on emissions and removals of GHGs and details of the activities a country has undertaken to fulfil its commitments under UNFCCC.

“Verification” refers to the subsequent process of independent review (checking of the accuracy and reliability), undertaken by the UNFCCC Secretariat through its roster of experts, of reported information and the procedures used to generate information. This process will involve a team of experts visiting the country to review the methods used for compiling the GHG-I. A complete MRV System should allow countries to access international performance-based REDD+ finance.

Once it is fully operational in Phase 3 of REDD+, the MRV System should also be able to be used to MRV other Nationally Appropriate Mitigation Actions (NAMAs) in the Agriculture, Forestry and Land Use (AFOLU) sector (Annex 4 of Decision 1/CP.16) that Bangladesh chooses to undertake.

Information, Monitoring and MRV Systems should be developed following the three phases of the REDD+ mechanism, ensuring results-based demonstration activities in the Phase 2, and fully measured, reported and verified (i.e. performance-based) REDD+ mitigation actions in Phase 3. Each phase aims to build capacity and prepare for the subsequent phase, meaning that there can be an element of overlap between phases, e.g. preparing and building capacity for the NFI and REDD+ GHG-I in Phase 2. The length of time it takes to progress through the three phases will vary from country to country, depending on existing capacities and capabilities, national circumstances and levels of international support received.

Institutional arrangements for the implementation of the forest monitoring and MRV activities

Under paragraph 13 of the UNFCCC guidelines for the preparation of the national communications (decision 17/CP.8), Non-Annex I Parties are encouraged to describe procedures and arrangements undertaken to collect and archive data for the preparation of national GHG inventories, as well as efforts to make this a continuous process, including information on the role of the institutions involved. Parties are welcome to provide information about the procedures and arrangements (e.g. institutional) established in order to sustain the process of data collection and archiving. This is intended to help make inventory preparation a continuous process.

In accordance with the Cancun Agreements, Non-Annex I Parties should submit their national communications to the Conference of the Parties, in accordance every four years or in accordance with any further decisions on frequency by the COP taking into account a differentiated timetable and the prompt provision of financial resources to cover the agreed full costs incurred by non-Annex I Parties in preparing their national communications. In addition, the Cancun Agreement mentioned the need to ensure consistency with any guidance regarding measuring, reporting and verification (MRV) agreed for NAMAs. Thus, it is expected that Bangladesh will produce update bi-annual GHG-I. To do so, institutional arrangements for the forest monitoring and the MRV activities are necessary.

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 in Phase 2. In Phase 2, Bangladesh will define the institutional structure for MRV REDD+ activities to be operationalized in Phase 3.

Taking into account the existing capacities in Bangladesh, and the potential for their further improvement, figure 11 recommends a system of institutional arrangements for MRV in the country. The recommendation is based on the UNFCCC reporting requirements and the phased approach for REDD+.

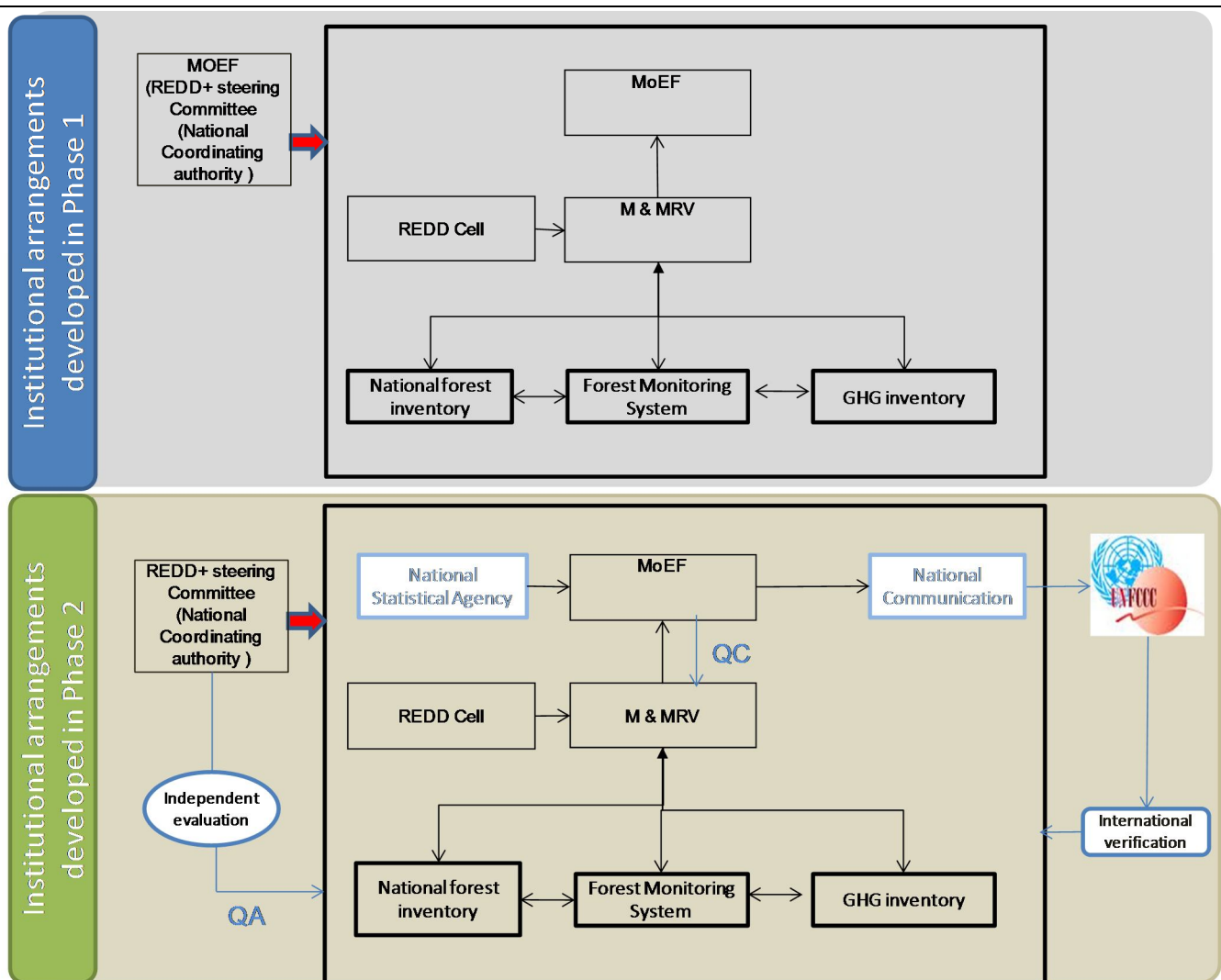


Figure 11: Institutional arrangements for MRV for REDD+ in Bangladesh.

The components presented in the upper part of figure 11 represent the elements required for Phase 2 of REDD+. The components contained in the lower part are required for Phase 3. 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 REDD+ management structure outlined in section 1 must ensure that the appropriate guidance for developing monitoring and MRV systems reaches the key stakeholders in Bangladesh. The REDD+ Steering Committee, 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

MoEF will play the role in guiding/collecting the GHG inventory data for LULUCF from FD. This entity will coordinate the information of GHG inventory for LULUCF to the DoE for the preparation of national communication to the UNFCCC. Staffs will be engaged with the GHG inventory process must be familiar with the UNFCCC process, decisions and reporting requirements, and IPCC Guidance and Guidelines.

M & MRV unit

This entity will be in charge of the monitoring and MRV of the REDD+ activities in Bangladesh, and providing an overall coordination and oversee all MRV related activities. This entity should not limit to REDD+ but also have the mandate to manage, oversee and guide all activities relating to MRV.

Recommendation:

The REDD cell should be in charge for M & MRV and 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 REDD+ cell for the assessment of REDD+ activity through NFI and FMS. A coordination body should be developed through a Memorandum of Understanding (MoU) to include other technical organizations/ministries (e.g. DoE, BFRI, BFIDC, SPARRSO, SoB, CEGIS, IWM, BCAS) in the process for technical guide line/assistance for successful and timely implementation of the NFI and FMS.

GHG inventory

The responsibilities of the GHG inventory for LULUCF falls within the mandate of the REDD Cell.

Recommendation:

There should have separate entity/unit responsible for GHG inventory for LULUCF. The staffs will be engaged with the GHG inventory for LULUCF must be familiar with the UNFCCC process, decisions and reporting requirements, and IPCC Guidance and Guidelines. They must compile forest-related GHG inventory for the preparation of the report for the National Communication to the UNFCCC.

Forest Monitoring System

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 developments and to continuously improve the accuracy, quality and cost-efficiency of the data. The system will produce vast amounts of data which will need to be managed, processed and archived in ways that will be it easily accessible to all the stakeholders. Several organizations are involved in satellite based land uses data generation such as FD, SPARRSO, SoB, MoA and other private organizations.

Recommendation:

Well-equipped GIS and Remote Sensing laboratory along with technical trained staff is prerequisite for accurate representation of land use from remote sensing imagery. The RIMS unit in FD is equipped with hardware and

GIS and Remote Sensing software and expertise. RIMS unit will be responsible for the satellite based forest monitoring for the REDD+ activity. Coordination mechanism should be developed for sharing the information among the stakeholder organization.

National Forest Inventory

The forest department has the mandate to implement the national forest inventory and monitor the state forest areas. Decentralized Management Plan Division offices of FD conduct the inventory under the guidance and supervision Development Planning Wing. In the past, the laboratory of BFRI was used to measure the soil samples as well as the inventory unit developed allometric equations for biomass and carbon stock calculation for the protected areas. FD should collect the necessary data through field inventory to assess the EF for the REDD+ activity which will be a part of the country's NC to the UNFCCC.

Recommendation:

There is no unit exclusively responsible to conduct the inventory at the central level. Monitoring and Evolution Unit under the Development Planning Wing could play the role for collecting all inventory data from field divisions and compiling the data for the preparation of national forest inventory report. Only three management plan division offices at the field level are not enough to conduct the field inventory. This number should be increased to cover all forest areas including social forestry for the timely implementation of the national inventory. BFIDC, BFRI, and FD could work together for carbon stock assessment and calculation of EF for REDD+.

National Statistical Agency

The national statistical agency will be responsible for collecting and providing data to the government and public. It ensures 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 Bangladesh.

Recommendation:

BBS could serve this function for LULUCF and GHG-I data collection from M & MRV for dissemination to the government and public, while ensuring compatibility and consistency with other national statistical information.

The BBS could also contribute to archive the data. A robust archive can greatly reduce the efforts that future teams have to invest in understanding and recalculating the estimates. The key information to archive are: activity data; methods; EFs; documentation of how these data, factors and estimates were obtained; and documentation of QA/QC procedures, reviews and key categories; and National Inventory Improvement Plan¹⁸.

¹⁸ See reporting elements for the preparation of the national communication http://unfccc.int/resource/docs/publications/09_resource_guide3.pdf

National Communication

See section 5 for a description of Parties' responsibilities for NCs under the Convention. *Capacities should be allocated to this in order to allow the development of NCs every four years and updated GHG-I reports every two years.*

Quality Control

Recommendation:

There is a need to identify one entity through MoEF to implement the internal quality control procedures/plans for the LULUCF GHG-I and to allocate resources for the capacity development of the entity.

Building capacities to implement the GHG inventory for the forest sector

Estimating forest-related GHGs by sources and removal by sinks is a request of the UNFCCC (Decision 4/CP.15, paragraph 1(d) and (d) (i)) which country Parties must meet. Under the UNFCCC, the information disseminated through GHG inventory provides the tool by which the COP can observe progress achieved by the Parties in fulfilling their commitments and achieving the ultimate objective of the Convention.

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 coherently following the reporting demands required by the UNFCCC Guidelines. Countries must use the most recent Intergovernmental Panel on Climate Change guidance and guidelines, as adopted or encouraged by the Conference of the Parties, as appropriate, as a basis for estimating anthropogenic forest-related greenhouse gas emissions by sources and removals by sinks, forest carbon stocks and forest area changes in order to comply with the five reporting principles: Transparency, Coherence, Comparability, Completeness and Accuracy.

Based on the country's experiences several activities needs to be implemented are listed below.

Activity 1: Develop the REDD+ MRV action plan

Identifying appropriate arrangements 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 is essential. Development of a MRV action plan will provide the information regarding country's current context on MRV and capacity building needs for REDD+.

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

- 1) Provide 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;
- 2) Provide a description of the information needed to generate and estimate Activity Data (AD), Emission Factors (EF) and GHG inventory;
- 3) Provide a description of the current status of the AD, EF and GHG inventory in Bangladesh;
- 4) Provide the current institutional arrangement to generate the AD, EF and GHG inventory;

- 5) Assess the current capacities and gaps to implement a forest monitoring and MRV systems;
- 6) Provide recommendations on setting up the forest monitoring and MRV systems for REDD+.

Expected outputs:

- List of the maps and sources used to develop REDD+ M& MRV action plan
- Report containing the M & MRV action plan for REDD+ in Bangladesh for phase 1

Activity 2: Organize 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 follow:

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

Expected outputs:

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

Activity 3: Support 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 follow:

- 1) Assessment of the existing institutional arrangements
- 2) Propose institutional arrangement for effective implementation
- 3) Identify the role, organization, coordination mechanism and contact information for those providing relevant data for estimating emissions in LULUCF sector
- 4) 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
- 5) Identify policy support necessary for institutional arrangement and obtain govt. Approval (e.g. govt. Notification on institutional structure, role, mandate) for effective implementation
- 6) Identify the strengths in and recommend for potential Improvements in Management Structure of National Inventory System for LULUCF

Expected Outputs

- Essential information in a concise format and avoid unnecessarily long written reports documented;
- Standardize tasks, to compare and contrast results provided;
- Roles and responsibilities clarified;
- Objective and efficient system for identifying priorities for future improvements provided;

Activity 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:

- 1) Provide trainings on GHG inventory for the LULUCF sector;
- 2) Identify the training needs on inventory planning, data collection, data compilation, Quality Assessment/Quality Control (QA/QC) procedures, reporting, uncertainty estimation;
- 3) Develop training manuals and deliver training programme as necessary;
- 4) Technical support in identifying the UNFCCC software and tools for data compilation and reporting;
- 5) Develop QA/QC plans for data collection and compilation;
- 6) Design reporting manual.

Expected outputs:

- 1) Trained manpower in GHG inventory for LULUCF;
- 2) Manuals, plans, designs of data collection, compilation and QA/QC procedure developed;

Activity 5: Rationalize forest definition and establish a harmonized classification system for land representation

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. 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.

Defining forest land under the Kyoto Protocol (Definitions, modalities, rules and guidelines relating to land use, land-use change and forestry activities under the Kyoto Protocol, Decision 11/CP.7)

Definition of forest adopted during National Forest and Tree Resources Assessment 2005-2007(NFA) in Bangladesh is given in the Introduction (Box 1).

This classification systems are using by the organizations varies for a single thematic area. These data could hardly correspond the trends on the state of land use change. Therefore the classification system will have to be adopted for measuring and monitoring the REDD+ activities.

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

- 1) 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;
- 2) Identify the different forest definitions used in neighboring countries;
- 3) Organize consultations on national forest definition and forest classification;
- 4) Assess the impact of different forest definitions on the feasibility, sustainability and efficiency of methods for forest monitoring;
- 5) Provide recommendations on forest definitions, forest classification and forest stratification;
- 6) Develop a harmonized classification system of land use;

Expected outputs:

- 1) National Forest definition and harmonized land use classification for mapping
- 2) Manual of the definitions and classification systems;
- 3) Minutes of the national consultations.

Activity 6: Identify the logistics, equipment and software needs for GHG inventory for the LULUCF sector and complete their procurement

For inventory data collection, compilation, reporting and archiving, efficient and adequate manpower together with necessary logistics, equipment and software is a prerequisite. The departments involved with the inventory, lacks adequate logistics and other related things that needs to be provided for GHG-I implementation for REDD+.

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

- 1) Identify the necessary logistics required for the related institution
- 2) Identify the software and tools required for the units for data processing and compilation;
- 3) Identify the measurement equipment needs for the units;
- 4) Recommend and finalize on the requirements of logistics, equipment and software;
- 5) Procure logistics, equipment and software as required for the above units;

- 6) Identify operational cost to maintain the instrument for inclusion into regular budget;
- 7) Identify training needs for operation of the instrument, software procured;
- 8) Prepare training plan, manual and provide training Output
- 9) Identify needs for logistics, software and equipment identified and procured accordingly;
- 10) Support the development of capacities to run procured software and equipment.

Expected outputs:

- 1) List of necessary equipment for the different entities involved for the preparation of the LULUCF GHG-I;
- 2) Training plan, manual and reports.

Activity 7: Procure and establish a central database and archiving system

An archive system is an inexpensive yet critical step in the sustainability of the National Inventory System. An archive system allows estimates to be easily reproduced, safeguards against data and information loss, and allows reproducibility of the estimates.

The archiving system is essential for the preparation of the national inventory reports. No common archive system exists for data base management. 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 follow:

- 1) Assess the needs for server establishment
- 2) Assess existing data base management, archiving and sharing mechanism
- 3) Develop design of a specialized data base structure
- 4) Standardized the existing data and integrate in the specialized data structure
- 5) Design of a web based platform sharing the data
- 6) Procure necessary equipment to establish servers and associated equipment
- 7) Establishment of servers;
- 8) Identify training needs and deliver training programs for the operation and maintenance of the archiving system;
- 9) Develop necessary training manuals;
- 10) Provide training to operationalize the system.

Expected outputs:

- 1) Report on the assessment of the existing data and needs for GHG inventory server;
- 2) List of the necessary equipment for the relevant entities;
- 3) Web based data sharing and archiving system for data sharing;
- 4) Technical staff trained to operationalize the system;
- 5) Transparency national system created.

Activity 8: Methods and Data Documentation

To assist inventory teams in documenting and reporting the origin of methodologies, activity datasets, and emission factors used to estimate emissions or removals. Future inventory teams can refer to the completed template for each source and sink category to 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 follow:

- 1) Provide information about LULUCF, and details about emissions and removals from this category
- 2) Provide information about the method used to estimate emissions/removals from LULUCF.
- 3) List the activity data used to estimate emissions and removals from LULUCF, including the value, units, and year and provide reference of this data and other relevant information
- 4) List emission factors and carbon-stock change factors used to estimate emissions and removals from each category, including the value and units and provide a reference for this data and other relevant information
- 5) List the current year's emissions for LULUCF for which an uncertainty estimate has been assigned. Also, include the assigned lower bound and upper bound uncertainty estimate and the resulting lower and upper bound estimate when the uncertainty bounds are applied to the current estimate.

Expected outputs:

- 1) Emission and removal information including estimation methods and other related information on LULUCF in a concise format produced
- 2) Standardize tasks, to compare and contrast results provided;
- 3) Support the development of instruction manuals.

Activity 9: Support the development of the GHG inventory;

A Key Category Analysis (KCA) provides information, according to IPCC criteria, on which sources or sinks are the most important and should be the focus of improvement efforts. It is important to assess the quality of data collection, compilation and analysis in order to have error estimates and improve future measurements. Quality Control (QC) procedures are internal to the process of inventory preparation, while Quality Assurance (QA) consists of an external (independent) assessment of the quality of the reported estimates. It should also be noted that the UNFCCC Secretariat, through its roster of experts, will verify the methods and data in the National GHG Inventory that Bangladesh uses to report.

To guide Bangladesh through the establishment of a cost-effective QA/QC program to improve transparency, consistency, comparability, completeness, and confidence in national greenhouse gas emission inventories, the following sub-activities could be implemented:

- 1) Identify the key Categories Based on Contribution to Total National Emissions;
- 2) Trend Analyses and with Incorporated Uncertainty;
- 3) Develop QA/QC manual and plan;
- 4) Identify QA/QC personnel and list down the QA/QC responsibilities;
- 5) Prepare a checklist for QA/QC

Expected outputs:

- 1) Instruction manuals to perform the KCA;

- 2) Instruction manuals to perform the QA/QC procedures;
- 3) Interim national inventory improvement plan.

Develop a Satellite Forest Monitoring System

The current UNFCCC SBSTA¹⁹ negotiation text refers to the need to establish monitoring systems that use an appropriate combination of remote sensing and ground-based forest carbon inventory approaches with a focus on estimating anthropogenic forest-related greenhouse gas emissions by sources, removals by sinks, forest carbon stocks and forest area changes. It is agreed that the IPCC Good Practice Guidelines on Land Use Land Use Change and Forestry (LULUCF) provide suitable and agreed methods and procedures to estimate and report on carbon stock changes for deforestation, forest degradation, forest conservation, reforestation, afforestation etc.

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 produce 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 forest and its resources and therefore authorities can take actions upon this information. Several activities are listed below that needs to be accomplished for the implementation of satellite forest monitoring system.

Activity 1: 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 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 that 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 is currently procuring the high-resolution data for forest cover assessment. 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:

- 1) Identify and organize all available satellite and/or aerial imageries for the country;
- 2) Assess the quality of these data in terms of spatial and temporal coverage, cloud cover, spatial and spectral resolution, and image registration;
- 3) Analyze the impact of different spatial resolution in identifying the deforestation, degradation on the system for national forest monitoring;

¹⁹ UNFCCC SBSTA 30 decision and draft text for Copenhagen negotiated in June 2009 <http://unfccc.int/resource/docs/2009/sbsta/eng/109.pdf>

- 4) Provide recommendations for the use of imagery for past and future forest cover assessments, forest stratification and monitoring of REDD+ activities;

Expected outputs:

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

Activity 2: Support the establishment of the Forest Management Information System

Information and monitoring systems MRV for the forest sector have become important tools for forest planning, monitoring and reporting. Forest Information Systems (FIS) needs to develop to support the decision makers as well as ensure transparency of data under REDD+. It is envisaged under the Cancun Agreement (paragraph 71 (c) of document FCCC/CP/2010/7/Add.1 decision 1/CP.16.

Existing information monitoring system is not operational. Need assessment is required to activate the existing system. The system will be involved, documentation at all levels include meta data, development of data dictionary and manuals for use, storage, manipulation, 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:

- 1) Review, harmonize, standardize existing statistical and spatial data information related to the forest sector and identify additional information requirements;
- 2) Develop database structure for the Forest Management Information System;
- 3) Review and capacity building need assessment of the existing Forest Management Information System;
- 4) Develop the detailed design for hosting the web based GIS platform for data base management;
- 5) Standardize the existing GIS and RS data and integrate them into the system;
- 6) Develop training materials for management and maintaining the system;
- 7) Develop technical documentation and deliver training on system management .

Expected outputs:

- 1) Operationalise the Forest Management Information System;
- 2) Documentation of the system design, data flow, storage and retrieval models;
- 3) Web based system design and database management system;
- 4) Functional User Manual.

Activity 3: Capacity building on geospatial data processing and database management

There are no adequate technical staffs for analysing the satellite imagery and data base management. Stakeholders will be strengthened with proper technical knowledge in data processing, capture, analyse 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 follow:

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

Expected outputs:

- 1) Capacity enhanced on GIS, RS data handling and data base management;
- 2) Training materials and guidelines on GIS and remote sensing;
- 3) Training materials and guidelines on data archiving and management.

Activity 4: Forest boundary delineation in the field and GIS boundary generation for demonstration activities

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 for it to be effectively managed and monitored.

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

- 1) Land reform commission involving concerned agencies and stake holders;
- 2) Collect forest/field maps/ Reconnaissance Survey sheet maps of forest boundaries ;
- 3) Assess existing boundary databases of the forests;
- 4) Provide orientation and training for forest land survey using maps and GPS ;
- 5) Execute a forest land survey with the coordination with MoEF, MoL and other ministries, local stake holders and boundary delineation;
- 6) Boundary demarcation plan by region along with budget;
- 7) Identify the potential organisations involved in GIS database building for forest boundary digitization and contract for GIS data generation;
- 8) Provide guideline for GIS boundary generation.

Expected outputs:

- 1) Demonstration sites identified;
- 2) Forest boundary defined and mapped;
- 3) Training materials for forest delineation.

Activity 5: Develop a forest monitoring 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 operationalisation to provide AD across the entire national territory (wall-to-wall) as part of the MRV System, as well as monitor the outcomes of national REDD+ policies and measures.

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

- 1) Reviewing of past attempts to develop satellite based forest monitoring systems;
- 2) Organize national consultation on FMS and identify and validate parameters for forest monitoring;
- 3) Develop operational methodology for monitoring the forests;
- 4) Carry out field test of the monitoring system for selected demonstration activities;
- 5) Integrate field demonstration activities in the national system.

Expected outputs:

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

Design a National Forest Inventory

The principal aim of the National Forest Inventory (NFI) for the MRV system is to obtain information on GHG emission factor (EF) by sources and removals by sinks for each of the land use sub categories as identified in the IPCC guideline. At present there is no existing national forest inventory that could provide emission factors. EF is specific to local conditions due to site quality, tree species etc. EF does not change over time and thus specific areas need to be estimated once.

The NFI will be a multi-purpose forest inventory. This inventory will be carried out to assess EFs on carbon stocks and carbon stock changes. Inventory data will 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 necessary data to report for REDD+ under the UNFCCC. Several activities should be addressed for capacity building to produce the country's NFI data for REDD+. This section focuses on designing the NFI, providing adequate trainings and providing a manual for field measurement that will be used for demonstration activities in order to collect the necessary data to assess the EFs.

Activity 1: Harmonize all existing inventory data and develop 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 Sundarbans. During 1992-94, Bangladesh updated its sub-national inventories, using models and some ground-based surveys during formulation of the FSMP in 1995. In 1998, a management inventory was carried out for the Sundarbans,

Chittagong, Cox's bazar and Sylhet Forest Divisions and four Coastal Afforestation Divisions. The technical assistance was provided by the World Bank under the "Forest Resource Management Project".

The first full-scale national forest inventory was implemented in the year 2005 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 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:

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

Expected outputs:

- 1) List of the stakeholders involved in forest inventories;
- 2) Central database containing the available and harmonized data;
- 3) Statistical method for data harmonization and accuracy assessment;

Activity 2: Review of existing inventory designs and provide recommendations for NFI design

NFI not only focus on the forest carbon parameters also other variables are usually collected, such as volume, biodiversity, forest condition and socio-economic interactions with forest resources. Comprehensive review of existing inventory designs is required to develop a multi-purpose NFI design that will allow reporting the emission from forestry sector as well as would provide necessary information for forest management plans development. 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.

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

- 1) Assess the existing NFI designs in the region;
- 2) Identify the capacity needs to implement an NFI;
- 3) Provide recommendations for NFI design in Bangladesh;
- 4) Organize regular meetings on NFI.

Expected outputs:

- 1) Report on the status of the NFI in the region, capacity needs; and recommendations;

- 2) Minutes of the regular meetings.

Activity 3: Strengthen the capability of forest inventory of the stakeholders to collect and analyze the needed information on forests

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 capacity for forest and carbon inventory is exists in the forest department. Students, community people also were engaged with the inventory and data collection process. There need to be assess the present technical capacity of the stake holders (field data collection, inventory plot layout, data recording and analysis, emission factor calculation, allometric equation calculation etc.) for forest and carbon inventory to provide and upgrade knowledge in respect to QA/QC procedure and produce the necessary emission factors to report to the UNFCCC for the forest sector.

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

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

Expected outputs:

- 1) National capacities to implement the NFI;
- 2) National expertise developed for assessing EF;
- 3) Training materials and list of trained staff in the MoEF.

Activity 4: Design the multi-purpose National Forest Inventory

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:

- 1) Set up a technical working group on NFI;
- 2) Identify the objectives of the multi-purpose NFI;
- 3) Identify the targeted parameters to be assessed and variables to be measured;
- 4) Assess the variability of the targeted variables;
- 5) Assess the cost of different NFI designs;
- 6) Design the multi-purpose NFI.

Expected outputs:

- 1) Formal NFI technical working group set up
- 2) Report on the NFI design.

Support scientific research on key issues

The implementation of the MRV 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 MRV in Bangladesh. Following are the thematic research areas which need to be considered for an adequate implementation of MRV.

Activity 1: Development of a database of existing tree and stand allometric equations

Models for volume, biomass or nutrient content within the trees belong to the same class and methodologies for sampling trees and for fitting and using the equations are similar. All these models have the objective of evaluating some non-easy to measure tree characteristics from easy collected data such as dbh (diameter at breast height), total height, or tree age. Despite their apparent simplicity, these models have to be built carefully, using the latest regression techniques. An unsuitable application of biomass equations may lead to considerable bias in carbon stocks estimations. For example, the application of the tropical moist forest equation (Brown, 1997) to a tropical wet forest (Clark and Clark, 2000) over estimates aboveground biomass by 79% (Clark *et al*, 2001). Therefore, in case of using general equations developed from biome-wide database, GPG-LULUCF 2003 indicates that it is good practice to verify the applied equation by destructive sampling.

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

- 1) Training on allometric and volume and biomass assessment;
- 2) Development of a database of existing allometric equation, wood density and volume data for Bangladesh;
- 3) Provide recommendation for additional destructive tree measurements and development of new allometric equations;
- 4) Develop allometric equations for major forest types based on based on ecological regions;
- 5) Update and finalize the database on forest biomass and carbon stocks.

Expected outputs:

- 1) A database containing all relevant data and information for volume, biomass and carbon stocks assessment for forest in Bangladesh
- 2) Allometric equations for biomass estimation for major forest types based on ecological regions;
- 3) Improve personnel capacity for research institutions for further implementation of REDD and GHG inventory

Activity 2: Explore the development of participatory tools for forest monitoring and MRV

At current status, the forest department has the mandate to implement the National Forest Inventory. However, since 1970s, several community forestry programme started in Bangladesh (e.g. *Betagi-pomora* community forestry project, Rehabilitation of *Jhum* families in the CHT) and mainly focused on: strip plantations, fuelwood plantations, agroforestry, replenishment of depleted homestead wood lots and trainings.

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

- 1) Selection of demonstration sites based on transparent criteria;
- 2) Identification of the various community forestry activities in selected demonstration sites;
- 3) Socio-economic diagnostic of the potential involvement of forest communities in MRV;
- 4) Provide recommendations on the involvement of forest communities in MRV.

Expected outputs:

- 1) List of demonstration sites
- 2) Diagnostic on the cost and effectiveness of the involvement of the forest communities in MRV.

Output	Indicative activities
Outcome 6: Monitoring and MRV Procedures for REDD+ Developed	
6.1 Build capacity for GHG inventory in the forest sector	<ul style="list-style-type: none"> • Organize regular MRV meetings. • Support Institutional Arrangements for GHG National Inventory System for the LULUCF sector supported; • Technical capacity building for the GHG inventory for the LULUCF sector; • Rationalize forest definition and establish a harmonized classification system for land representation; • Identify the logistics, equipment and software needs for GHG inventory for the LULUCF sector and complete their procurement; • Procure and establish a central database and archiving system; • Methods and Data Documentation; • Support the development of the GHG inventory.
6.2 Develop a satellite forest monitoring system	<ul style="list-style-type: none"> • Satellite image characterization for forest monitoring • Support the establishment of the Forest Management Information System • Capacity building on geospatial data processing and database management • Forest boundary delineation in the field and GIS boundary generation for demonstration activities • Develop a forest monitoring system
6.3 Design a national forest inventory	<ul style="list-style-type: none"> • Harmonize all existing inventory data and develop a robust database; • Review of existing inventory designs and provide recommendations for NFI design; • Strengthen the capability of forest inventory of the stakeholders to collect and analyze the needed information on forests; • Design the multi-purpose National Forest Inventory.
6.4 Support scientific research on key issues for MRV	<ul style="list-style-type: none"> • Develop allometric equations for major existing tree species and forest types • Explore development of participatory tools for forest monitoring and MRV

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Annex 1: Extracts of The Cancun Agreements relating to REDD+

Decision 1/CP.16 Article III C: Policy Approaches and Positive Incentives for REDD+

Note: This is a simplification of the language in the Cancun Agreements. The full, unabridged text can be downloaded from the website of the UNFCCC at:

unfccc.int/files/meetings/cop_16/application/pdf/cop16_lca.pdf

Preamble:

- Parties should collectively aim to slow, halt and reverse forest cover and carbon loss, according to national circumstances
- REDD+ needs to promote broad country participation in all phases, including through the provision of support

69:

- Implementation of REDD+ activities should be carried out in accordance with annex I *[see next page]*
- The safeguards referred to in paragraph 2 of annex I to this decision should be promoted and supported;

70: Developing country parties should undertake any of the 5 REDD+ activities, as they deem appropriate and in accordance with their respective capabilities and national circumstances. The 5 REDD+ activities are:

- (a) Reducing emissions from deforestation**
- (b) Reducing emissions from forest degradation**
- (c) Conservation of forest carbon stocks**
- (d) Sustainable management of forests**
- (e) Enhancement of forest carbon stocks**

71: Parties undertaking REDD+ activities should:

- Be provided with adequate and predictable financial and technical support
- Develop a national strategy or action plan
- Develop a national forest reference emission level and/or forest reference level⁶
- Develop a robust and transparent national forest monitoring system
- Develop a system for providing information on how the safeguards referred to in annex I to this decision are being addressed and respected

72: Parties undertaking REDD+ should:

- Address drivers of deforestation and forest degradation, land tenure issues, forest governance issues, gender considerations and the safeguards identified in paragraph 2 of annex I

- Ensure the full and effective participation of relevant stakeholders, inter alia, indigenous peoples and local communities;
- 73:** Parties should prepare for and implement REDD+ in three phases (REDD+ readiness, policies and measures, and results-based payments)
- 76.** Developed country Parties should support, through multilateral and bilateral channels, the first two phases of REDD+ readiness, including through capacity building, technology development and transfer and results-based demonstration activities
- 77.** The Ad Hoc Working Group on Long-term Cooperative Action under the Convention should explore financing options for REDD+ Readiness activities and full implementation of REDD+ and report on progress made
- 78.** Parties should ensure coordination of REDD+ activities

Decision 1/CP.16, Annex I: REDD+ Guidance and Safeguards

1. Activities referred to in paragraph 70 of this decision should:

- (a) Contribute to the achievement of the objective set out in Article 2 of the Convention: *“stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system”*
- (b) Contribute to the fulfilment of the commitments set out in Article 4, paragraph 3, of the Convention: *“provide resources needed by the developing country Parties to meet the agreed full incremental costs of implementing measures”*
- (c) Be country-driven
- (d) Take into account the multiple functions of forests and other ecosystems;
- (e) Be in accordance with national development priorities and should respect sovereignty;
- (f) Be consistent with national sustainable development needs and goals;
- (g) Be implemented in the context of sustainable development and reducing poverty
- (h) Be consistent with the adaptation needs of the country;
- (i) Be supported by adequate and predictable financial and technology support, including support for capacity-building;
- (j) Be results-based;
- (k) Promote sustainable management of forests;

2. When undertaking activities referred to in paragraph 70 of this decision, the following safeguards should be promoted and supported:

- (a) Actions complement or are consistent with the objectives of national forest programmes and relevant international conventions and agreements;
- (b) Transparent and effective national forest governance structures, taking into account national legislation and sovereignty;
- (c) 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) The full and effective participation of relevant stakeholders, in particular, indigenous peoples and local communities, in actions referred to in paragraphs 70 and 72 of this decision;
- (e) Actions 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) Actions to address the risks of reversals;
- (g) Actions to reduce displacement of emissions.

Annex 2: REDD+ Management Bodies

REDD+ Steering Committee Membership

	Designation	Role
1	Secretary, MoEF	Chairperson
2	Secretary, MoL	Member
3	Director General, DoE	Member
4	Chief Conservator of Forests, FD	Member
5	Director, BFRI	Member
6	Join Secretary (Environment), MoEF	Member
7	Deputy Secretary (Environment-1), MoEF	Member
8	Director (Climate change and International Convention), DoE	Member
9	One representative from MoA	Member
10	One representative from Local council of CHT	Member
11	One representative from SPARRSO	Member
12	Chairman, Institute of Forestry and Environment Science, Chittagong University	Member
13	Dr. Qazi Kholiquzzaman Ahmad, Chairman, Palli Karma Sahayak Foundation (PKSF)	Member
14	Dr. Ainun Nishat, VC, BRAC University	Member
15	Dr. M. Asaduzzaman, Research Director, Bangladesh Institute of Development Studies (BIDS)	Member
16	Professor Dr. Ansarul Karim, Environment Expert	Member
17	Deputy Chief Conservator of Forests, Planning Wing, FD	Member
18	Mr. Md. Shamsuddoha, Chief Executive, Center for Participatory Research and Development (CPRD)	Member
19	Mr. Haradhan Banik, UN-REDD National Focal Point and Project Director of Bamboo, cane and Murta plantation project of Forest Department.	Member Secretary

REDD+ Technical Committee Membership

	Designation	Role
1	Secretary, MoEF	Convener
2	Joint Secretary (Environment), MoEF	Member
3	Dr. A	Member
4	Professor Dr. A	Member
5	Director, BFRI, Chittagong	Member
6	Deputy Chief Conservator of Forests, Planning Wing, FD	Member
7	Deputy Secretary (Environment-1), MoEF	Member
8	Director (Climate change and International Convention), DoE	Member
9	Representative, Institute of Forestry and Environment Science, Chittagong University	Member
10	Representative, Forestry and Wood Technology Discipline, Khulna University	Member
11	Representative, BFIDC, Matijhil, Dhaka	Member
12	Conservator of Forest, Social Forest Circle, FD	Member
13	Representative, UNDP, Dhaka office	Member
14	Representative, USAID, Dhaka office	Member
15	Chief Conservator of Forest, FD	Member Secretary

REDD Cell Membership and Terms of Reference

Considering the growing importance to deal with the matters of Reducing Emissions from Deforestation and Forest Degradation (REDD) and REDD related activities and realizing the potential need for establishing a REDD CELL under Forest Department (FD) of Bangladesh, the Chief Conservator of Forest (CCF) is pleased to establish a REDD CELL within the Forest Department with following members:

1.	Deputy Chief Conservator of Forests (DCCF), Planning Wing, Forest Department.	Convener
2.	Conservator of Forests and Focal Point, UN REDD Programme	Member
3.	Conservator of Forests, Wildlife and Nature Conservation Circle, Dhaka	Member
4.	Deputy Conservator of Forests (DCF), Legal Unit, Forest Department	Member
5.	Assistant Chief Conservator of Forests (ACCF), Development Planning Unit, Forest Department	Member
6.	Deputy Conservator of Forests (DCF), Monitoring Unit, Forest Department	Member
7.	Deputy Conservator of Forests (DCF), RIMS Unit, Forest Department	Member
8.	Md. Abdullah Abraham Hossain, Assistant Conservator of Forests, Development Planning Unit, Forest Department	Member Secretary

Terms of reference for the REDD CELL are as follows:

1. Recommendation for policy decision;
2. Site selection for REDD projects;
3. Coordinate carbon inventory and reporting through involving Management Plan Divisions and RIMS Unit;
4. Coordinate MRV operation through coordination of Monitoring Unit, Management Plan Division and RIMS Unit;
5. Resolve legal issues by involving the Legal Unit;
6. Oversee preparation of project for carbon inventory through Development Planning Unit;
7. Endorse research and development of REDD related activities done by other agencies in Bangladesh;
8. Operate REDD register and keep records of REDD related activities of Bangladesh;
9. Keeping liaison with Ministry of Environment and Forests (MoEF) and other national and international agencies;
10. The committee will sit twice in a year and may sit as and when will be required;
11. The committee may co-opt new member if deemed necessary

Annex 3: Consultation Workshops under the Roadmap Process

First National REDD+ Consultation Workshop

25th October 2011, Dhaka

The objective of this workshop was to initiate national-level technical discussions on the national REDD+ Roadmap. The workshop effectively launched the Bangladesh Roadmap process, with facilitation from the Secretary of the Ministry of Environment and Forests and the Deputy Director General of the Forest Department. The programme was designed for those with at least a basic familiarity with the concept of REDD+ and included over 80 participants from the government, civil society, academics, donor partners and the media. Participants were invited directly from a list prepared by the Technical Advisory Team and the Forest Department.

The first session was organized as an expert panel session, with questions from the chair and the floor designed to give a brief update on the theory and potential benefits of REDD+, the current state of international negotiations and the relevance of the mechanism for Bangladesh. There followed presentations on the REDD+ Roadmap process according to the latest R-PP template, updates on the latest developments in monitoring systems for REDD+ and a proposal for the management of the Roadmap process in Bangladesh (see Section 1). The second half of the workshop was devoted to three parallel, facilitated group sessions on MRV, Strategy and Safeguards. These groups became the precursors of the TWGs described in section 1. In this way, the TWGs thus formed were able to continue discussions on their respective themes after the workshop had concluded.

The sessions of the workshop were organised as follows:

Session One: Setting the Scene

Expected Outcome: Participants are up-to-date on basic information on REDD+ negotiations, policy and practice and in-country progress

Panel discussion: Status of REDD+ in Bangladesh: briefings, questions and answers on:

- The latest news from UNFCCC negotiations
- Relevance of REDD+ for Bangladesh
- The diverse benefits of REDD+
- Capacity development needs
- Lessons from ongoing field activities

Session Two: What is the REDD+ Roadmap

Expected Outcome: Participants are familiar with the concept, process and outcomes of the REDD+ Roadmap

Presentations on:

- Introduction to the REDD+ Roadmap
- Management of the Roadmap process
- UN-REDD approach to MRV

Session Three: Technical Working Group discussions

Expected Outcome: Comprehensive plans for the activities of three technical working groups have been developed

Three parallel sessions with participants divided into groups on the basis of interest in:

- Monitoring and MRV
- Strategy
- Safeguards

Second National Consultation Workshop on REDD+ Readiness Roadmap

17th January 2012, Dhaka

This workshop, held on 17th January 2012, had the objective of updating national-level stakeholders on the progress made since the previous workshop, particularly the follow-up meetings of the Working Groups and the outcomes of the regional-level consultation workshops on forestry issues and strategies (see below). The programme gave an opportunity for participants to respond to the proposed outline of the Roadmap. This workshop was followed up by circulation of the Roadmap outline by the Working Groups to a wider audience for comment and feedback.

Minutes of the Proceedings**Introduction**

The second national stakeholder consultation workshop on the REDD+ Readiness Roadmap for Bangladesh took place on 17th January 2012 at the Pan Pacific Sonargaon hotel, Dhaka. The objective of this workshop was to share and discuss national and local perspectives on issues relating to Strategies, Safeguards and MRV (Measurement, Reporting and Verification), as they relate to the forest sector and potential approaches of a REDD+ programme. A total of 80 participants attended the workshop, from government bodies and NGO/CSOs. The participant list is attached.

The workshop was divided into an inaugural session and a technical session. The sessions were chaired by the Chief Conservator of Forests, Mr Ishtiaq Uddin Ahmad, and Mr Yusuf Ali (Deputy CCF) respectively. Dr. Nasir Uddin, Joint Secretary, MoEF gave the welcome address. The chief guest, Mr. Mesbahul Alam, Secretary MoEF, gave a speech during the inaugural session, alongside UNDP country director Mr. Stefan Priesner and FAO representative Mr. Dominique Burgeon. The session also included a briefing by the technical advisory team (represented by Ben Vickers and Dr Ansarul Karim) on progress with the Roadmap, and the challenges, opportunities and benefits of REDD+ for Bangladesh.

Technical session: summary of presentations

In the technical session, the technical advisory team presented more details on Roadmap progress. Ben Vickers and Dr. Matieu Henry began with an outline of the Roadmap sections and contents and illustrations of Roadmap development in other countries in the Asia-Pacific region and the lessons for Bangladesh.

Dr. Karim gave a summary of the drivers of deforestation and degradation, and the key issues facing the forest sector around the country, based on the outcomes of sub-national workshops in Rangamati and Cox's Bazar and meetings of the Strategy Working Group.

Dr Henry and Dr Mariam Akhter outlined the activities of the MRV Working Group to date, and the work that will lead towards an Action Plan for MRV under the Roadmap. This presentation covered the importance of the phased approach to REDD+, the National Forest Monitoring System and Inventory.

Mr Vickers summarized the issues to be covered under the Safeguards Working Group, including the development of a consultation process in accordance with the principles of Free, Prior and Informed Consent (FPIC) and the development of national-level indicators for Social and Environmental Standards within a future REDD+ programme.

Issues raised by the participants, and the responses of the technical team were as follows:

Strategy:

- The participants agreed with the general assessment of drivers of deforestation and potential strategic interventions outlined by the technical advisory team.
- Representative from Chittagong University agreed that obtaining the correct rate of deforestation in Bangladesh is not currently possible. He also inquired about the methods of carbon stock calculation. *Response: The MRV section of the Roadmap will outline activities to test appropriate measurement methods in Bangladesh.*
- Arannayak Foundation highlighted the exceptional regenerative capacity of the soil in Bangladesh, and suggested that the country therefore has the potential to recover from much of the environmental degradation it has suffered in recent years. There may therefore be more cause for hope than is assumed by some other participants and REDD+ stands a chance of demonstrating swift positive results.
- Arranayk further proposed that independent private organizations with appropriate capacity could potentially serve as the REDD+ accounting hub, as another option besides the Forest Dept.
- Deputy Secretary, MoEF, opined that existing Unclassified State Forests (USF) should also be considered in formulating REDD+ Readiness roadmap. *Response: They must be considered.*
- Forest Department officials highlighted two major issues that must be addressed within the REDD+ Readiness Roadmap; land tenure clarification and capacity building for all sectors.
- Government sponsored settlement is a major driver of deforestation.
- Trans-boundary issues have, in the past, impeded forest area survey by aerial photos because of alleged national security issues. Satellite imagery does not face this problem.
- Representative from Coastal Land Zoning System (CLZS) informed that the drivers of deforestation should also include the increasing salinity of water and suggested that there should be a plan to control the flow of water in the rivers. He also offered to share the updated aerial images captured by the CLZS for future reference.
- Participant from Dhaka University requested to consider the impacts of growing eco-tourism industry in Bangladesh. Establishment of Bagan Baris (Farm House) in several forest areas by influential elites was flagged and attention has been sought in this particular regard.

Safeguards:

- Existing policies and legislation must be reviewed before the REDD+ programme is fully developed. This may require the creation of formal links between village courts and the formal Judiciary systems – both lower and higher courts. Environmental disputes should be dealt with under a dedicated dispute resolution system. *Response: Review of existing policies is a key part of Roadmap development. The development of a Grievance Mechanism for REDD+ must indeed include clear links between dispute resolution mechanisms at local and national levels.*
- Officials from the Bangladesh Water Development Board enquired whether individually owned forest lands can be included under the REDD+ programme in Bangladesh. *Response: the programme should be developed so that actions on private lands can be included in a national REDD+ accounting system.*
- Raising awareness within the Forest Department itself is very important. The department needs to be very clear about the scope and limitations of REDD+ so that expectations do not get out of hand. Public expectations must also be managed through targeted awareness programmes.
- Representatives from the Department of Environment noted that the second national communication report made by the department on Inventory of Emissions has already been made, and highlighted the need for progress on REDD+ to be included in the upcoming third national communication so that duplication of effort can be avoided.
- Participants from POUSH (NGO) reiterated the need for community-based organisations to have a central role in dealing with deforestation and forest degradation.

MRV:

- A question was raised regarding the appropriate government ministry for dealing with the MRV related aspects of a REDD+ programme in Bangladesh. It was recommended that MoEF could take the lead in initial stages but in due course some responsibilities may be shared with other ministries e.g. Ministry of Agriculture, Ministry of Land.
- Forest Department officials suggested more inclusion of local people in decision making and policy analysis and also enquired about the probable mechanism to ensure participation in MRV. They also focused on setting up of a dedicated institutional framework, distinct from the current FD structure, to look after the MRV related aspects and communication with UNFCCC.
- It was recommended that a new permanent forest inventory unit should ensure continuity with the work done by FD units in the past.
- Representatives from SPARSO recommended the use of GIS and other recent technological developments in the REDD+ programme for Bangladesh.

Conclusion:

During the workshop, support and enthusiasm for the REDD+ programme in Bangladesh was evident. It was also agreed, in principle, that the comments and recommendations from the participants recorded in this workshop will be incorporated in the REDD+ Readiness Roadmap, as appropriate. Mr. Yunus Ali, DCCF, FD concluded the technical session and expressed his gratitude towards UNDP and FAO in supporting the national REDD+ Readiness Roadmap process.

Third National Consultation Workshop on REDD+ Readiness Roadmap

27th March 2012, Dhaka

Introduction

The Third national stakeholder consultation workshop on the REDD+ Readiness Roadmap for Bangladesh took place on 27th March 2012 at Hotel Ruposhi Bangla, Dhaka. The objective of this workshop was to share, discuss and validate the draft national roadmap document among the key stakeholders in Bangladesh. A total of 72 participants attended the workshop, from government bodies and NGO/CSOs.

The workshop was divided into an inaugural session and a technical session. Mr. Munjurul Hannan, Deputy Secretary, Ministry of Environment and Forests (MoEF) inaugurated the event. Mr. Aparup Chowdhury, secretary in charge, MoEF, was Chief Guest and delivered the opening address on behalf of Dr. Hasan Mahmud, Hon'ble Minister of Environment and Forests. Stefan Priesner, UNDP Country Director and Dominique Burgeon, FAO Country Representative, spoke as Special Guests. Mr. Md. Yunus Ali, Chief Conservator of Forests presented the keynote speech. This was followed by the technical session, chaired by Tim Boyle, Regional Coordinator (UN-REDD), Asia-Pacific Region.

Strategy Presentation:

This presentation captured the feedback from all the regional stakeholder consultation workshops regarding the drivers and underlying causes of deforestation and forest degradation in different forest areas. The presentation generated the following comments.

- Individual consultant Ms. Shireen Syed appreciated the pace of the REDD+ Readiness Roadmap preparation in Bangladesh and the summary made by Dr. Karim. She opined that there needs to be capacity development doorways for the forest department officials. She also cited World Banks Wild Life Conservation project and expressed her intention whether more new projects can be identified from the existing effort of REDD+.
- Centre for Natural Resources Studies (CNRS) emphasized on the policy level support that needs to be there to support co-management.
- Representative from POUSH categorically focused on the arrangement of ministry level coordination that needs to be clarified and how this will be done.
- Nature Conservation Management (NACOM) mentioned that there needs to be other options of house hold needs/dependency on forest and in this connection active involvement of Upazilla council, local government was cited.
- Prof. Alamin from Chittagong University felt the strong need for research work on REDD+ in Bangladesh as it is a new theme
- Representative from Chittagong Hill Tracts Development Facility (CHTDF) opined that Chittagong Hill Tracts and its governance structure is different from the rest of the country. In this context the executive body for the CHT area known as Hill District Council needs to be under serious consideration specially its up-

gradation of capacity. He also advised that the best practices/examples of village common forest management needs to be identified and promoted for future replication.

- Arannayk Foundation critically emphasized on the scope of the strategy specifically whether it covers national or regional challenges
- Forest Department representative drew that historically it took long time to include local community with the existing forest management policy and keeping that in mind particular attention needs to be there to ensure/clarify the process of inclusion of the community into REDD+ mechanism
- Another Forest Department official felt the need to formulate a new law as "Forest Conservation ACT"

Legal Issues Presentation:

The main focus of this presentation was to highlight the legal implications of REDD+ in Bangladesh. Subsequently other relevant legal issues were discussed and the following comments were recorded:

- Representative from LRI enquired how the existing laws/framework will deal with the REDD+. He also envisaged on the integration of fragmented laws(human rights) and the probable mechanisms to include indigenous people.
- Another Forest Department official cited that the existing REDD+ effort shouldn't take much time to formulate new rules/regulations simultaneously he enquired whether that needs to go through the parliament or amendment will serve the purpose
- Suggestion came from the presenter that the REDD+ initiative has created a new doorway to rethink about the probable legal framework and its full-fledged review

Stakeholder Mapping Presentation:

This presentation helped to understand the process been followed to map the stakeholders in the REDD+ Readiness Roadmap for Bangladesh. Subsequent comments are mentioned below:

- Chief Conservator of Forests enquired on what ground Parliamentary Standing Committee can be considered as a stakeholder.
- Representative from Poush cited that it will be cumbersome to come up with a stakeholder heavy project as coordination will be difficult and might end up with conflicting situation.
- Ubinig representative emphasized that it will be much easier to be under one law instead of several acts
- Arannayk Foundation representative categorically emphasized that the weightage ascertained in the Stakeholder Mapping exercise is confusing

MRV Presentation:

FAO representative Dr. Henry and consultant Dr. Akhter jointly presented the draft MRV action plan. The following comments came up after the presentation:

- Institute of Water Modeling (IWM) representative transmitted the participants about the modeling experience they have and offered to extend their expertise as needed.
- SPARRSO representative enquired how the reviewers from REDD review team will verify the ground inventory part and also focused on the training need for Forest Department officers in this regard
- Forest Department official cited whether there will be a gap for the context of MRV in Bangladesh as explained in the IPCC or GHG guideline and how it will be minimized
- Representative from Chittagong University shared that Bangladesh Bureau of Statistics(BBS) have their own way of doing census and survey and how the requirement for REDD+ will be satisfied when it comes about statistical support from an organization like BBS
- Bangladesh Centre for Advance Studies(BCAS) resource person wanted to know how the carbon estimation will be made or the volume will be calculated subsequently whether RIMS unit had that capacity or not
- In this connection Additional Secretary, MoEF elaborated that as a least developed country Bangladesh got preferential treatment/higher opportunities to get the funding for capacity development of Forest Department but necessary ground work needs to be done to find the donors. He also emphasized the need on coordinated effort from the Government Ministries

Group Discussions:

At the end of the technical session three groups were formed to represent the Strategy, Safeguard and MRV Working Groups. The groups were asked to address the following questions:

- What activities remain to complete the Roadmap?
- How do we achieve them?

Conclusion:

During the workshop, support and enthusiasm for the REDD+ programme in Bangladesh was evident. It was also agreed, in principle, that the comments and recommendations from the participants recorded in this workshop will be incorporated in the REDD+ Readiness Roadmap, as appropriate. Mr. Haradhan Banik, national REDD+ focal point chaired the group presentation. Mr. Ratan Kumar Mazumder, Deputy Conservator of Forests, FD concluded the technical session and expressed his gratitude towards UNDP and FAO in supporting the national REDD+ Readiness Roadmap process.

Regional Stakeholder Consultation Workshop, sample agenda and facilitation guide**Forests in the Chittagong Hill Tracts: Local Issues and Potential Approaches,**27th October 2011

Time	Session
09:00	Welcome and Introduction <i>Rationale for the workshop, in the context of national REDD+ Roadmap process</i>
09:20	What is Driving Deforestation and Forest Degradation in the CHT? <i>Group work (see below)</i> <i>Objective: To reach consensus on the direct and root causes of deforestation and forest degradation in the region</i>
10:30	Morning tea break
10.45	Group work continued
11.15	Group presentations and discussion
12.00	Lunch
13.00	Sustainable Approaches to Forestry in the CHT <i>Objective: To identify existing and potential future tools and approaches to address the drivers of deforestation and forest degradation in the CHT</i>
14.45	Afternoon tea break
15.00	Group presentations and discussion
15.45	REDD+ Q+A <i>Objective: To address pressing concerns about the impact of a national REDD+ process on the people and forests of CHT</i>
16.30	End

Facilitation Guide: Session 1

“What is Driving Deforestation and Forest Degradation?”

OBJECTIVES

At the end of the session participants will be able to:

- Identify the direct and underlying (or root) causes of deforestation and forest degradation.
- Identify and prioritize which ‘causes’ of deforestation and forest degradation must be considered when establishing forest management and protection strategies

MATERIALS: Flip charts, Marker pens, Index cards, Glue or tape

TIME: 2 hours

PREPARATION

- Write up three flip charts with a definition of ‘Forest’, ‘Deforestation’ and ‘Forest Degradation’ (see session support material).
- Photocopy sample Deforestation Root Cause Analysis for each participant (see Session Support Material). Distribute only if required (see below)

STEPS

1. Present a flip chart with the following definitions:

- Deforestation
- Degradation

Make sure participants clearly understand the difference between forest degradation and deforestation.

2. Explain that direct causes of deforestation and forest degradation are often only symptoms of more complex, underlying causes or ‘root’ causes. Explain that gaining a full understanding of both causes of deforestation and forest degradation is important to develop a long-term and successful approach to forest management and conservation.

3. Break participants into small groups based on stakeholder type, for example:

- a. Local forestry officials
- b. Community members and small forest owners
- c. Media and civil society
- d. Elected representatives

Explain the following small group work:

- Each group is to clearly identify a geographical area that is currently being deforested or degraded – even if not all group members have intimate knowledge of the particular area, they should at least be able to provide input to the discussion.
- Write the deforestation or degradation problem or issue on a card and place at the top of the flip chart (refer to Session Support Material to illustrate – Step 1).

- The group is then to brainstorm the direct (or proximate) causes leading to deforestation or degradation. Each reason should be written on a card and placed below the main heading on the flip chart (Step 2).
 - Then, for each of the direct causes identified, the group should work 'downwards' by asking 'why this event or activity is happening'. At each level participants should clearly identify the reason, or cause. These reasons need to be written on a card to help fully explore the 'roots' of the problem (Steps 3-10).
 - Once the first direct cause has been fully explained, participants need to explore the second direct cause (Step 11) and so on.
 - The group members need to continue to ask 'why' until the 'root causes' of the problem are identified.
 - Due to time constraints each group may only be able to explore 3-5 'direct' causes.
 - Finally the group members should connect all the index cards with lines that show the linkages between cause and effect. Remind participants to check their logic by repeating the process of asking 'why?' down through the levels of cause.
4. The facilitator will need to spend some time with each of the groups to ensure that the groups have understood the task and that their logic in asking 'why?' and responding is correct.
 5. If groups are experiencing difficulty with the exercise, hand out copies of the sample 'Deforestation Root Cause Analysis' (see Session Support Material) to illustrate the 'problem tree'. If the exercise is going smoothly, distribute these copies only at the end of the session, to allow participants to compare their efforts with this abstract example.

Facilitation Guide: Session 2

"Sustainable Approaches to Forestry in the region"

OBJECTIVES

At the end of the session participants will be able to:

- Identify the existing approaches to forest management in the region
- Assess the relative strengths and weaknesses of these approaches in addressing the root causes of deforestation and degradation.
- Identify potential new, sustainable approaches to forest management in the region, in the light of the root cause analysis

MATERIALS: Flip charts, Marker pens, Index cards, Glue or tape

TIME: 1 hour

PREPARATION: Session 1 is the preparation for this session

STEPS

1. Participants stay in their small groups from session 1
2. Put the completed flipchart from session 1 on the wall

3. Explain to the participants that they are now going to work back from the root causes of deforestation/degradation to identify potential solutions
4. Give participants 5 minutes to review the output of the previous session
5. Ask them to list the forest policy tools and approaches that are currently used in the region (e.g. social forestry, protected area, biodiversity corridor, commercial forestry concessions)
6. For the first identified tool/approach, compare with the first identified 'root cause' according to the session 1 results and ask:
 - a. Does this tool/approach contribute to addressing this root cause?
 - b. If yes, what are the key factors in success (look up the flowchart from the root cause to see which factors are affected by this tool)
 - c. If no, what are the key blocks to success (look up the flowchart from the root cause to see which factors are not addressed by the tool)
 - d. Proceed to the next root cause and repeat a to c.
7. Repeat step 6 for each identified tool/approach and record answers on a flipchart
8. Ask the group to consider what are the most common blocks to success of existing forest tools/approaches and list the key factors that any potential new tool/approach would need to ensure success.

TO CONCLUDE

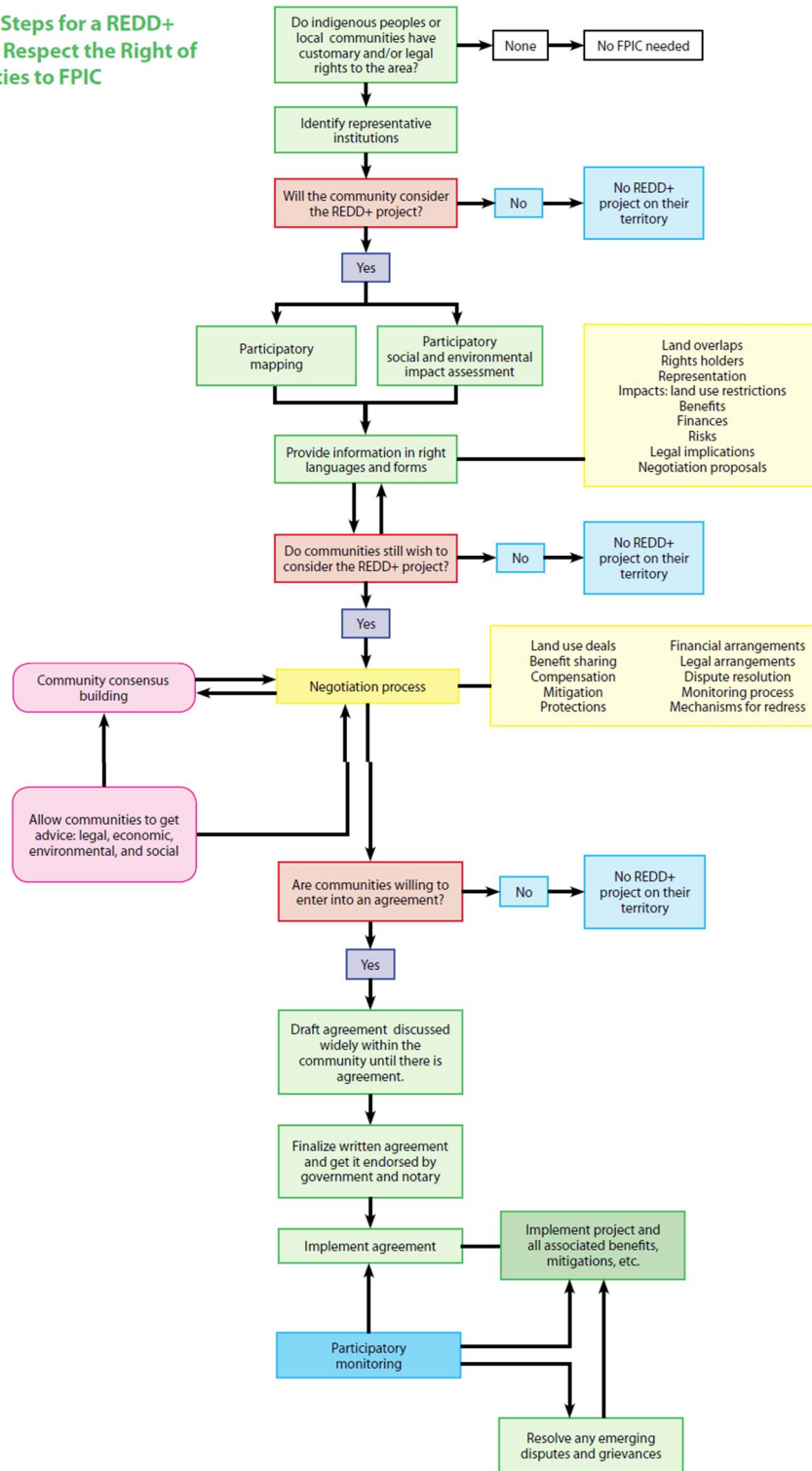
1. When the small-group work is completed, ask each group to post their flip charts on the training room wall and then get all participants to walk around the room examining the other groups' outcomes.
2. Initiate a discussion with the following questions:
 - How does this activity help us think about the causes of deforestation and degradation?
 - What activities and mechanisms can be put in place to stop deforestation and forest degradation?
 - How does this activity help us to think about possible strategies to reduce deforestation and degradation?
3. Conclude that any forestry strategy must not only consider the obvious or apparent causes of deforestation and degradation, but also the underlying causes, which are generally institutionally entrenched in a county's economic and social systems.

COMMENT:

- The time provided for this exercise is quite short therefore care must be taken in clearly explaining the steps and purpose of the exercise.
- The root cause analysis tool (or problem tree) is useful for participants to explore and understand the context and interrelationship of the problems, and the potential impacts when targeting projects and programs toward specific issues.
- Many of the linkages will be based on assumptions. Areas where more information is required should be noted as the analysis is being conducted.

Annex 4: Process to Respect the Right of Communities to FPIC in REDD+²⁰

Indicative Steps for a REDD+ Process to Respect the Right of Communities to FPIC



²⁰ RECOFTC/GIZ (2011), "Free, Prior and Informed Consent in REDD+: Principles and Approaches for Policy and Project Development"

Annex 5: Bangladesh NGOs/CSOs with stakes in REDD+

NGO/CSO ²¹	Field of Expertise	Experience relevant to REDD+
Arannayk Foundation	Management of environmental funds; planning, implementation (in partnership with field level NGOs and resource organizations), monitoring and evaluation of forest and biodiversity conservation projects; promotion of alternative livelihood of forest dependent communities; knowledge management	Implementing forest co-management projects in five protected areas and reserved forests in collaboration with FD and partner NGOs; six projects on sustainable management of community conserved forests in the Chittagong Hill Tracts; two projects on community based conservation and restoration of fresh water swamp forests; one project on biodiversity (flora, fauna) monitoring in six protected forest areas and one project on conservation and restoration of critically endangered tree species of Bangladesh forests in collaboration with two Universities (JU, IFESCU); involving alternative livelihood development of forest dependent people in about 20 projects including the GIZ-funded Management of Natural Resources and Community Forestry (MNRFC) project at Chunati Wildlife Sanctuary that aims to eventually sell carbon credits in voluntary or off-set market (REDD+ pilot)
IUCN	Policy research, policy formulation, advocacy and knowledge management, and networking on nature (ecosystem, biodiversity) conservation issues; implementation of community based natural resource management projects in	Key player in the formulation of various national policies related to sustainable management of environmental resources (forests, wetlands) of Bangladesh. Participates in national REDD+

²¹ The list is not comprehensive. There are many other NGOs and CSOs that are involved in social forestry project implementation and environmental conservation movements at national and local levels

NGO/CSO ²¹	Field of Expertise	Experience relevant to REDD+
	partnership with local NGOs and government line agencies	stakeholders consultation meetings and should be included in RSF.
Bangladesh Centre for Advancement of Science (BCAS)	Policy research, policy formulation and advocacy on environmental issues; implementation of community based natural resource management and climate change adaptation projects in partnership with local NGOs and government line agencies	Ditto
Bangladesh Environmental Lawyers' Association (BELA)	Policy analysis; legal support to natural resource dependent poor and indigenous communities; legal movement for environmental safeguard issues	May be included in the RSF (national level)
Bangladesh Paribesh Andolon (BAPA)	Creating mass awareness and organizing social movement for environmental protection	Ditto
BRAC	Microcredit operations; microfinance (SME); primary and mass education; socio-economic research; community empowerment; health and sanitation; social forestry. Operations throughout Bangladesh	Has implemented social forestry projects in many places of Bangladesh in collaboration with Forest Department
Proshika	Microcredit operations; primary and mass education; socio-economic research; community empowerment; health and sanitation; social forestry. Operations throughout Bangladesh	Ditto
CNRS	Implementation of community based natural resource management (NRM) projects; policy research and policy advocacy on NRM issues	Implementing IPAC projects (sustainable management of protected areas and livelihood improvement of forest dependent people through co-management approach) in Sylhet and Modhupur clusters
NACOM	Ditto	Was involved in the implementation of Nishorgo project (predecessor of IPAC) dealing with conservation and

NGO/CSO ²¹	Field of Expertise	Experience relevant to REDD+
		sustainable management of PA forests through co-management approach
CODEC	Implementation of community based NRM (biodiversity conservation, sustainable forest management, afforestation) and livelihood development projects in the coastal regions of Bangladesh	Implementing IPAC projects (sustainable management of protected areas and livelihood improvement of forest dependent people through co-management approach) in Sundarban and Cox's Bazar clusters
SHED (Teknaf)	As above (CODEC)	Implementing the Arannayk Foundation funded Inani Protected Area Co-management project and the GIZ-funded MNRCF project at Chunati Wildlife Sanctuary (REDD+ pilot)
Uttaran	Implementation of community based NRM and livelihood development projects in the coastal region in the southwest of Bangladesh with particular experience on disaster management and adaption to climate change	Implementing an AF-funded coastal biodiversity conservation project in Satkhira
YPSA	As above (Uttaran)	Implementing a FD-AF collaborative project on community based restoration and conservation of the degraded hill forests in Sitakunda and Mirsarai (Chittagong) that may be eventually brought under REDD+ program
Anando	Implementation of sustainable hill farming and biodiversity conservation, community empowerment and peace building projects in CHT	Has the potential to contribute to alternative livelihood development activities in REDD+ projects
Taungya	Networking of civil society organizations and capacity development of indigenous communities in CHT for conservation of natural resources, ecosystem, culture and customary rights of people	Has the potential to implement REDD+ projects in CHT and to facilitate networking among the stakeholders of the community conserved forests (Village

NGO/CSO ²¹	Field of Expertise	Experience relevant to REDD+
		Common Forests) in CHT
Hill Flower	Implementation of community based NRM (biodiversity conservation, sustainable forest management), livelihood development, and health projects in Rangamati Hill District of CHT	VCF in CHT
Green Hills	As above	VCF in CHT
Humanitarian Foundation	Implementation of community based NRM (biodiversity conservation, sustainable forest management), livelihood development, and health projects in Banderban Hill District of CHT	VCF in CHT
Tahzingdong	As above	VCF in CHT

Annex 6: Existing Dispute Resolution Mechanisms in Bangladesh

Higher Judiciary

Article 102 empowers the High Court Division of the Supreme Court of Bangladesh to issue orders enforcing the fundamental rights of Part III of the Constitution. Article 102, provides that, when ‘no other equally efficacious remedy is provided by law – ‘on the application of any person aggrieved...’ the High Court Division of the Supreme court of Bangladesh can exercise its extraordinary jurisdiction. The primary requirement, therefore, to establish ‘standing’ is that the petitioner has to be any ‘person aggrieved’. In 1994, Bangladesh Environmental Lawyers Association (BELA), an NGO first filed a petition which become the turning point in the history of Public Interest Environmental Litigation in Bangladesh²².

Therefore, any aggrieved person, or community or any compatible organization can bring any legitimate claim of violation of fundamental rights before the High Court Division of the Supreme Court of Bangladesh. As such, violation of fundamental rights due to implementation of REDD+ activities can be subject to the higher judiciary in Bangladesh in the absence of any other established dispute resolution mechanisms.

The Subordinate Courts and Tribunals

The Subordinate Courts are the basic courts of the judicial system in Bangladesh. These subordinate courts can be classified broadly as 1) Criminal Courts and 2) Civil Courts.

These are further subdivided as:

1) Criminal Courts:

- a) Sessions Courts
- b) Metropolitan Session Courts
- c) Special Criminal Courts
- d) Metropolitan Magistrate Courts
- e) Magistrate Courts

2) Civil Courts:

- a) Assistant Judge Court
- b) Senior assistant Judge Court
- c) Joint District Judge Court
- d) Additional District Judge Court
- e) District Judge Court
- f) Family Court

²² FAP case, 49 DLR, 1997, AD), The appellate Court commented that an aggrieved person need not suffer directly. In the case of violation of fundamental right affecting particularly the weak, downtrodden or deprived section of community or that there is a public cause involving public wrong or public injury, any member of the public or organisation, whether being a sufferer himself or not, become a person aggrieved if it is for the realization of any if the objectives or purposes of the constitution.



- g) Money loan Court
- h) Bankruptcy Court

Criminal courts deal with serious criminal offenses, some of which may even lead to a death sentence. The Session Courts have three layers of Judges: namely, Sessions Judges, Additional Session Judges, and Joint Session Judges. The Session Judge and the Additional Session Judge have more powers than the Joint Session Judge. The Session Court Judges also hear civil matters. The Metropolitan Session Court Judges only deliver judgments over criminal matters. Such courts also have a system for providing justice in lesser time as compared to the regular system, which may take ten or more years for resolving such criminal matters. The Metropolitan Session Courts of Bangladesh are located at Dhaka and Chittagong. The different types of tribunal courts in Bangladesh include but are not limited to: income tax, administrative, election, and public safety tribunals.

Special Environmental Court

The Environment Court Act, 2000²³ provides for establishment of environmental courts in all the six divisional headquarters of the country, and also beyond if needed. The Courts shall deal exclusively with environmental offences under the “environmental laws” and are meant to ensure speedy trial. Environmental laws in turn shall mean the Environment Conservation Act, 1995 and such other laws as may be defined as environmental law from time to time by official notification. This has created a great deal of confusion as to the jurisdiction of the courts. While the Act of 1995 only provides punishment for vehicular pollution, industrial pollution and offences related to the ECAs and no other sectoral law was subsequently notified as ‘environmental law’, a vast range of issues remained outside the purview of the Environment Courts. Therefore, question arises whether this specific court would be able to deal with conflicts related to REDD+ activities.

Village Courts

The Village Courts are created in Bangladesh under The Village Court Ordinance, 1976²⁴ with a view to get easy access to justice without any cost for the poor villagers. The ultimate objective of the Village Court is to provide a forum for disputant parties to solve their problems by themselves with a little or necessary assistance from these dispute resolution forums. However, the Village Court Act 2006 was enacted which repealed the Village Court Ordinance, in accordance with the section 21(1) of the said Act. Section 3 of the Act of 2006 specified the particular suits which can be tried by the village court. It has power to deal with the disputes both in civil and criminal nature.

In a union the chairmen of that union shall constitute village court on the basis of an application from the parties of the dispute. The court shall be constituted with two members of each party and the chairman of Union Parishad shall act as the chairman of that court. From the two member of each party one must be a

²³ Subsequently amended in 2010

²⁴ Ordinance No. LXI of 1976)

union member²⁵. The jurisdiction of the court shall be limited to that union where the causes of action arise or offence committed (section 6). Power of village court- for the offence mentioned in the first schedule of the Act it can award 25000 tk as compensation. For the matter mentioned in the second schedule it can order to give that amount of money mentioned in the said schedule or can give order to give back the property or the possession of it to its original owner (section-7).

The decision of the court is binding on the parties and no appeal shall lie against if it is given with the vote of all four members or with the vote of 4:1 or 3:1 member. But if decision is given with support of two third majorities in the matter of offence mentioned in the 1st schedule an appeal shall lie before the first class magistrate who have territorial jurisdiction. But it must be file within 30 days. For the matter mentioned in the 2nd schedule an appeal shall lie before the assistant judge (Section 9). Compensation awarded under the Act can be recovered under the public Demand Recovery Act 1913. It is worth mentioning that the Village Courts are statutory courts and are composed of with local government (Union Parishad) representatives (as community leaders) and members from disputant parties. But these courts are legally required to follow informal procedure of trial or dispute settlement, meaning thereby that the application of Code of Civil Procedure, Code of Criminal Procedure and Evidence Act has been barred. Also is barred the appointment of lawyers.

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 *Matbars* and Headmen are the basis of the mechanism, rather than the Union Parishad chair.

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 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:

- (e) The SF Management Committee- if the dispute is among beneficiaries;
- (f) The concerned Forest Officer – if the dispute is between the Management Committee and beneficiaries;
- (g) A Forest Officer – if the dispute is between Forest Officer and the Management Committee or between Forest Officials and beneficiaries;
- (h) Appeal against any resolution under sub-rule (1), may be preferred to the concerned Upazila Chairman or in his absence to Upazila Nirbahi Officer and whose decision shall be final.

According to the SFR, Upazila Environment and Forest Development Committee shall finalise the selection of beneficiaries. In the finalization process, relevant disputes must also be resolved by the committee. The application of this mechanism may be extended to the district level by minor amendment in order to make it compatible with a REDD+ programme.

²⁵ Section 4 and 5 of the Village Court Act 2006

Annex 7: Results of initial Stakeholder Mapping exercise for Bangladesh REDD+ programme

ACTORS / STAKEHOLDERS	STAKES	POTENTIAL ROLES
LOCAL LEVEL REDD + STAKEHOLDERS		
<ul style="list-style-type: none"> ▪ Local level communities are the main beneficiaries of REDD+. The main role of district and national level stakeholders is to coordinate so that benefits are received by these local stakeholders. ▪ The Local Communities who have traditionally owned, occupied or otherwise used or acquired rights to forest resources. Or who have traditionally been enjoyed certain right on the ecosystem. 		
<p>1. Local people traditionally dependent on forest. (Villagers living in and around the Forest). Local people were segregated or grouped by their profession. This group includes vulnerable groups, affected people, marginal and poor people. - Local women – destitute women, marginal, landless and poor women, widows and elderly women fall within the forest community.</p> <p><i>Vulnerable groups and poverty issues are discussed separately while identifying the stakeholders as these have different levels and scales --</i></p> <ul style="list-style-type: none"> ▪ <i>A Vulnerability index can be used with the occupational categories</i> ▪ <i>There are various risk factors. A risk matrix can be used to identify that</i> 		
<p>a. Resource collectors and extractors (Fuelwood / timber collectors, honey extractors, fishers, crab collectors, shrimp farmers, shrimp fry collectors, Golpata collectors / harvesters, bamboo collectors and etc.)</p> <p>b. Animal Collectors, hunters, poachers</p> <p>c. Farmers,</p> <p>d. Non wood forest product extractors / collectors</p> <p>e. Other minor forest product collectors</p> <p>f. Primary few levels of actors of the product</p>	<ul style="list-style-type: none"> ▪ Enjoy or been enjoying certain ecosystem of the forest. ▪ Livelihood fully or partially depends on forest resources extraction or collection from the forest. ▪ May be impacted due to REDD+ activities. ▪ Farmers are engaged in farming within forest impact zone. ▪ The dadon-dars may not live in the community but they play a major role in resources extraction from the forest. ▪ The forest based entrepreneurs depend on forest resources for their businesses. ▪ Some of them may cause degradation to the forest. ▪ They enjoy some traditional rights on the forest. 	<ul style="list-style-type: none"> ▪ May be engaged as the major beneficiaries for the REDD+. ▪ Local community may protect the forest through con-management. ▪ May secure the carbon and be part of the local monitoring system. ▪ Take local level action for the protection of the forest areas. ▪ May work as watch-dog for reducing degradation and enhancing forestations. ▪ May maximize protection for conservation by obtaining alternative for the livelihoods.

<p>value chain (Dadon-Dar²⁶ / Money lenders)</p> <p>g. Forest based entrepreneurs (s mills, wood traders, brick field owners, furniture), business; small and medium Industries</p>		
<p>2. Local Decision Making Formal and Informal bodies</p>		
<p>- Traditional decision making entity – <i>Shomaj</i>²⁷; and <i>Matabbors</i> lead the entity.</p> <p>- Local elites / teachers (although local elites may overlap with the <i>Shomaj</i>.)</p>	<ul style="list-style-type: none"> ▪ as local decision making entity, the <i>Shomaj</i> of the forest village has significant influence onto the decision making regarding success or failure of the REDD+ ▪ Are able to motivate the forest villagers as the forest villagers follow their <i>Matabbors</i>. 	<ul style="list-style-type: none"> ▪ May influence and mobilize the community for the REDD+ activities. ▪ Give a community level decision for the protection.
<p>- Religious leaders: imams, Purohits, Bhikkhus, Fathers etc. -</p> <p>- Religious institutions</p>	<ul style="list-style-type: none"> - can influence the Forest Community - can mobilize the community for greater interest 	<ul style="list-style-type: none"> ▪ May influence and mobilize the community for the REDD+ activities.
<p>- Community Based Organizations. Co-management organizations etc.</p> <p>- Also other social clubs and associations.</p>	<ul style="list-style-type: none"> - Already are in action for certain services in the community. - motivational activities for the greater interest of the community - Some of their activities may depend on forest related activities, may be resources extraction or protection. - already are in action in co-managing the forest 	<ul style="list-style-type: none"> ▪ May mobilize and motivate community in alternative income generation and getting benefits from the carbon stocks.
<p>- Local Youth Groups / clubs</p>	<ul style="list-style-type: none"> - recipients of forest eco-system 	<ul style="list-style-type: none"> ▪ May work as key mobilizers for the community as they

²⁶ Dadon-dar, means who gives Dadon. This does not necessarily means money lender but similar to that. It provides opportunities with complexity. The terms and conditions are also complex than that of the money lenders.

²⁷ *Shomaj* is the lowest tire of the traditional decision making entity at the village or Gram level. *Matabbors* are the head of the *Shomaj*.

and school children	<p>services</p> <ul style="list-style-type: none"> - have potential impact in mobilizing the community. 	<ul style="list-style-type: none"> can influence their parents and elderly.
- Local media and information system.	<ul style="list-style-type: none"> - are involved with the local information and are secondary participants for the REDD+ 	<ul style="list-style-type: none"> ▪ May be provocative in favor of the REDD+.
- Local Politicians	<ul style="list-style-type: none"> - are secondary participants of REDD+. And get the by product benefit of the REDD+ 	<ul style="list-style-type: none"> ▪ Influence the people in favor of forest protection. ▪ May ensure the benefits of REDD+ to the community.
- Local Governments (Union Parishad & Upazila Parishad)	<ul style="list-style-type: none"> - As the LGI of the local areas, they play a major role in the local decision making and work as a bridge between the government and the people. 	<ul style="list-style-type: none"> ▪ Take local decision as LGI; ▪ Able to motivate and mobilize the communities; ▪ Initiator of the local development. ▪ Watch dogs for the new intervention
- NGOs working in the area; and similar service providers	<ul style="list-style-type: none"> - The local development service providers are already in action through forming different groups in the local areas. - Many of them are well aware of the issues, relevance, trend and tradition of those local areas. 	<ul style="list-style-type: none"> ▪ May act as the service provider for the REDD+ activities management.. ▪ They may be able to relate the local issues to benefit from the REDD+.
Union Disaster management Committee (UDMC) / Union Relief and Rehabilitation Committee (URRC)	<ul style="list-style-type: none"> - play major role in managing the disaster at Union level. The committee is involved in various activities, taking the local people with them. 	<ul style="list-style-type: none"> ▪ May adopt REDD+ in managing the disaster at the local level. ▪ Conduct relief and rehabilitation from the carbon stocks.
Upazila Development Coordination Committee (UDCC)	<ul style="list-style-type: none"> - Major player for the Development at the Upazila level. 	<ul style="list-style-type: none"> ▪ May consider REDD+ as part of their development initiative for the greater good of the community.
Upazila level LGI – <i>Upazila Parishod</i>	<ul style="list-style-type: none"> -Major decision maker in Upazila regarding the local development and issue. 	<ul style="list-style-type: none"> ▪ May influence and mobilize the Upazila community in favor of the REDD+. ▪ Motivate the communities

	- can influence the decision at the Upazila Level.	to participate with REDD+ activities.
<p><u>Indigenous people</u></p> <p>- Have traditionally owned, occupied, or otherwise used or acquired.</p> <p>- Who have traditionally been enjoyed certain right on the ecosystem.</p>		
- Indigenous Communities	<p>- Enjoy certain traditional right on the forest.</p> <p>- Receive certain ecosystem services as forest community.</p> <p>- Marginal people of the community, these people are expected to have more dependency on the forest. - And for sharing benefit they get more priority within the community.</p>	<ul style="list-style-type: none"> ▪ May be engaged as the major beneficiaries for the REDD+. ▪ Local community may protect the forest through con-management. ▪ May secure the carbon and be part of the local monitoring system. ▪ Take local level action for the protection of the forest areas. ▪ May maximize protection for conservation by obtaining alternative for the livelihoods.
- Village Headman / Karbari / LGI for the indigenous Community	- They control the decision of the tribal community. The voice of the community may be heard through them.	<ul style="list-style-type: none"> ▪ Take local decision as LGI; ▪ Able to motivate and mobilize the communities; ▪ Initiator of the local development. ▪ Watch dogs for the new intervention
Same as <u>section - 1</u>	- same as above like <u>section-1</u>	
<p>DISTRICT LEVEL STAKEHOLDERS</p> <p>District level Stakeholders are those who may not be the direct beneficiaries of the REDD+; but represent the local level stakeholders as an upper tire. Their major role is to monitor that if the local level stakeholders are getting the benefits. Some of the district level stakeholders may be direct beneficiaries if they are located with in the Forest Impact Zone.</p>		

<p>1. Communities at district level living in and around Forest</p>	<p>- Enjoy certain eco-system services from the forest.</p> <p>- As many of their livelihood is depended on forest they may be subject to be impacted by the REDD+ activities.</p>	<ul style="list-style-type: none"> ▪ Potential roles as con-management group / REDD+ beneficiaries. ▪ Also can be mobilizer for the REDD+.
<p>- Small / medium / large industries / entrepreneurs based on forestry.</p>	<p>- As the industries running based on agro-forestry the may be impacted by the REDD+ activities.</p> <p><i>i.e. Dada Match Factory, newsprint paper mills etc.</i></p>	<ul style="list-style-type: none"> ▪ Mange the industry worker in favor of the REDD+. ▪ Reduction of forest degradation. ▪ Emphasize in Forest management.
<p>2. Government agencies / local service providers</p>		
<p>Forest Department / DFO</p>	<p>- They are the district level implementing agency for the REDD+.</p>	<ul style="list-style-type: none"> ▪ Coordinating agencies for the REDD+ activities and its management at district level. ▪ Watch dog for the REDD+ benefits.
<p>Land administration (ADC Revenue)</p>	<p>- Important stakeholders at district level as they do the district level land administration.</p>	<ul style="list-style-type: none"> ▪ Administration of the land in favor of the REDD+. ▪ Ensure protection for the REDD+
<p>Local Government Engineering Department (LGED)</p>	<p>- As they are engaged in building local infrastructure for communication and trade, they are important stakeholders for the REDD+.</p>	<ul style="list-style-type: none"> ▪ More involved with REDD+ as government line service agencies. ▪ Help in required infrastructural development for the REDD+ activities. ▪ Can also generate carbon stocks in building infrastructures and facilities.
<p>Department of Agricultural Extension (DAE)</p>	<p>- The DAE is involved in administering the extension services for agriculture to the communities living within the forest impact zone.</p>	<ul style="list-style-type: none"> ▪ Give extension services to the farmers in favor of the REDD+.
<p>Department of Fish (DoF)</p>	<p>- are involved activities related to</p>	<ul style="list-style-type: none"> ▪ Involve fish activities in more numbers to increase

	fishing and development in the forest areas.	carbon stocks by reducing degradation and providing alternative income options for the people.
Bangladesh Water Development Board (BWDB)	- are involved in water related activities and building water infrastructures in the forest areas.	<ul style="list-style-type: none"> ▪ Increase carbon stocks while building water infrastructures.
Police / law enforcement agencies	- They are partner with REDD+ as they are to provide support for the enforcement of the law and order in the area.	<ul style="list-style-type: none"> ▪ Protection of the carbon stock by enforcement procedures.
Department of Environment (DoE)	- They are the agency for monitoring the environment and enforcing the environmental law.	<ul style="list-style-type: none"> ▪ Enforce environmental standards for the REDD+ in the country.
District Level LGI – Zila Porishod (District Council) and Pouroshova	<p>- This body represents and protects the interest of the people in the local area at district level.</p> <p>- They are influential decision making body, both formal and informal, at district level.</p> <p>- They are also good mobilizer for the community at the district.</p>	<ul style="list-style-type: none"> ▪ Take district level decision in favor of the REDD+. ▪ Mobilize the communities for the REDD+ activities. As the safeguards for the REDD+ benefits on be half of the respective communities.
Hill district Councils	Major player in community decision making at the district level.	<ul style="list-style-type: none"> ▪ Influence the decision of the Indigenous communities in favor of the REDD+
Social Welfare	- playing a major in social safety net and in the local development of the communities.	<ul style="list-style-type: none"> ▪ Create more opportunities for the social safety net by safeguarding the carbon stock in the forest areas.
Department of Cooperative (DOC)	<p>- The federation of Co-management-Committee or similar organization represents the perceptions of the local level organizations of similar kinds at Upazila level.</p> <p>- They also protect the interest of the community at local level on behalf of the local CMC or similar organization, at the Upazila level.</p>	<ul style="list-style-type: none"> ▪ Manage the cooperative activities for the REDD+ beneficiaries through different trainings on financial management and other cooperative activities.

<p>District level federation of CMOs/ similar organization or their federations</p>	<p>- The federation of Co-management-Committee or similar organization represents the perceptions of the local level organizations of similar kinds at District level.</p> <p>- They also protect the interest of the community at local level on behalf of the local CMC or similar organization, at the District level.</p>	<ul style="list-style-type: none"> ▪ Work as representative of the local CMOs through a body of their federation or similar things. ▪ Protect the interest of the CMOs of the district through advocacy, and various motivational activities.
<p>Civil Society Organization (CSOs) / Activists / Pressure Groups</p>	<p>- The district level CSO deals with the greater interest of the community and are in action for continuous advocacy on interested issues.</p> <p>- They perceive the societal interest at district and Upazila level.</p>	<ul style="list-style-type: none"> ▪ May work as pressure group in favor of the REDD+.
<p>NGOs</p>	<p>- They are in action for delivering the development services in the local areas, related to forest.</p> <p>- They mobilize the community through forming different groups and other means for the causes.</p>	<ul style="list-style-type: none"> ▪ May work more effectively as a development service provider for the REDD+. ▪ Mobilize the community in favor of the REDD+.
<p>District level Media</p>	<p>- interested about local issues.</p> <p>- impacted and influenced by the local issues.</p>	<ul style="list-style-type: none"> ▪ Provocative measures may be taken to protect the interest of the REDD+.
<p>District Development Coordination Committee (DDCC)</p>	<p>- interested about local issues.</p> <p>- Major player in initiating the district level development.</p>	<ul style="list-style-type: none"> ▪ Initiate the REDD+ activities in the local development framework.
<p>NATIONAL LEVEL STAKEHOLDERS</p>		
<p>National level stakeholders are involved, in most of the cases, to facilitate and overall administrative</p>		

<p>support for the REDD+. They set out strategies, tactics, policy support and etc. for smooth operation of REDD+. Their primary job is to improve the REDD+ as a continuous process. Some of the categories of this National Stakeholders groups are the visionaries, implanting partners, and secondary beneficiaries for REDD+.</p>		
Ministry of Environment and Forest (MoEF)	<p>- Strategic decision of Policy Support for REDD+</p>	<ul style="list-style-type: none"> ▪ Formulate and support REDD+ friendly policies and strategies.
Forest Department (FD)	<p>- Project 'implementation participants' with REDD+.</p> <p>- They manage and responsible for the all aspects of the REDD+ activities.</p> <p>- Management of peoples' participation with the REDD+.</p>	<ul style="list-style-type: none"> ▪ Smooth Operation of REDD+ management. ▪ Enforcing protectional activities for the REDD+. ▪ Encourage co-management in higher degree for the overall forest management and REDD+.
Department Of Environment (DOE)	<p>- Enforce the environmental standard through various monitoring system.</p> <p>- have specific mandate from the government regarding monitoring the environmental standards.</p>	<ul style="list-style-type: none"> ▪ Enforce the environmental standard and regulation for the REDD+. ▪ Watchdog for the REDD+ and the Carbon stocks.
Department Of Fisheries (DoF)	<p>- Public stakeholders of forest fisheries.</p> <p>-</p>	<ul style="list-style-type: none"> ▪ Tactical action for the enhancement of the REDD+ activities relating fisheries.
Ministry of Agriculture	<p>- Responsible for making the agricultural policy and overall agricultural administration in the country.</p>	<ul style="list-style-type: none"> ▪ Strategic approach in agricultural development by taking REDD+ activities in account.
Department of Agricultural Extension (DAE)	<p>- Responsible for giving extension services to the farmers in the forest areas and all over the country.</p>	<ul style="list-style-type: none"> ▪ Mobilize the farmers in favor of the REDD+. ▪ Tactical activities from the Extension services considering the REDD+.
Ministry of Law	<p>- Responsible for making and improving the legal framework of the environmental and forest related laws.</p>	<ul style="list-style-type: none"> ▪ Favorable law to support the smooth operation of the REDD+.

Ministry of Land	Responsible for Land administration of the country.	<ul style="list-style-type: none"> Strategic action incorporating REDD+ activities and issues in the land administration system.
Ministry of Food and Disaster Management	Responsible for Food security, and disaster management in the country.	<ul style="list-style-type: none"> Bring REDD+ into the food safety issue and social safety-net.
Ministry of Chittagong Hill tract Affairs	Responsible for the policies and strategic planning for the development of the Chittagoing Hill Tracks.	<ul style="list-style-type: none"> Consider the REDD+ in the planning of the ministry's future activities for the Hill tracks.
Chittagong Hill Tracks Development Foundation (CHTDF)	Tactical intervention for the development of the Chittagong Hill Tracks developments.	<ul style="list-style-type: none"> Bring REDD+ as part of CHTDF interventions also. Strategic support for the smooth operation of the REDD+.
Ministry of Local Government, Rural Development & Cooperatives	Major ministry in developing rural infrastructure and market communications, and cooperatives.	<ul style="list-style-type: none"> Incorporate REDD+ activities into the ministry's tactical intervention for the development of rural infrastructures and connectivity.
Ministry of Industries	<ul style="list-style-type: none"> Responsible of industrial development within the country. make effective industrial policies. 	<ul style="list-style-type: none"> Formulate and implement REDD+ friendly policies.
Ministry of Finance	<ul style="list-style-type: none"> Financial management and sectoral financial policy formulation for the country; and allocation of budget. 	<ul style="list-style-type: none"> Budgetary allocation for the smooth operation of the REDD+ to the concern and relevant departments.
Ministry of Water Resources	<ul style="list-style-type: none"> Strategic Planning for the water related intervention (Medium – 1000 Hectors – 2500 Hectors and Large Scale – above 2500 Hectors). engaged in building water infrastructures. 	<ul style="list-style-type: none"> Incorporate REDD+ activities in building water structures as much as possible.
Ministry of Planning	<ul style="list-style-type: none"> planning for the ADP; and sectoral plans for Bangladesh. 	<ul style="list-style-type: none"> Smooth policy support for the REDD+.
External Resources Division (ERD)	<ul style="list-style-type: none"> Manage external Resources for Bangladesh. 	<ul style="list-style-type: none"> Generate funding for the carbon stocks / REDD+ activities.
Civil Societies Organizations (CSOs) / Activists (BAPA,	Work as a National level pressure groups.	<ul style="list-style-type: none"> May work as national level pressure group. Protect general interest of

BELA)		the REDD+ beneficiaries.
Politicians	Influence and interest on the matter.	<ul style="list-style-type: none"> ▪ Motivate and promote REDD+ in persuasions.
INGOs, NGOs relevant to Forest / NR management	Development service providers.	<ul style="list-style-type: none"> ▪ Smooth operation and management of the REDD+ activities as service provider.
Think Tank Academia, Research Institutions (BARC, BARI, BRRI, SRDI, BIDS, IWM, CEGIS, SPARSO, Universities)	<ul style="list-style-type: none"> - Conduct research in the related fields how more benefits can be derived for the stakeholders in managing REDD+. - Some of them also work as pressure groups. 	<ul style="list-style-type: none"> ▪ Conduct research on the REDD+ to understand that how community can be more benefited? ▪ Pressure and advocacy group for smoother operation of REDD+
Donors / Investors	<ul style="list-style-type: none"> - Invest money - give donation for various activities. 	<ul style="list-style-type: none"> ▪ Keep the investment pipeline on for the REDD+.
Association of Banks / insurances.	- perceive the view of the bankers or insurance companies.	
Bangladesh Forest Research Institute (BFRI), Bangladesh Fish Research Institute (BFIRI)	<ul style="list-style-type: none"> - Government Agencies; engaged in Forest and Fisheries Research. - 	<ul style="list-style-type: none"> ▪ Conduct research on REDD+ to understand that how community can be more benefited?
Bangladesh Forest Industrial Development Corporation (BFIDC)	- engaged in forest based industrial development for the country.	<ul style="list-style-type: none"> ▪ Improvement of forest industries by not harming the REDD+ activities.
FBCCI	- This Federation has a national stake regarding business, commerce and industries in Bangladesh.	<ul style="list-style-type: none"> ▪ Spokesman of the business community in favor of the REDD+.
Media	<ul style="list-style-type: none"> - Influence by the national issues. - Secondary participants of the REDD + 	<ul style="list-style-type: none"> ▪ Interests can be inclined to the REDD+.
Board of Investment	- Potential investor in the Carbon trade and related issues.	<ul style="list-style-type: none"> ▪ Seek investors for the REDD+ activities.
Network of CBOs / federation of CMOs or	- convey the perception of the CBOs /	<ul style="list-style-type: none"> ▪ Spokesman for the Community and the

similar organization	<p>CMOs.</p> <p>- Protect the interest of the CBOs / CMOs</p>	beneficiaries for the CMOs or similar organizations.
Parliamentary standing Committee	Parliamentary committee on Forest and environmental matters.	<ul style="list-style-type: none"> ▪ Strong Monitoring for the REDD+.

Annex 8: Stakeholder Mapping Methodology

Modeling techniques can be used to build a group or team (stakeholders) for a specific undertaking within a specific environment.

Stakeholders have different concerns and interests. Sort out different concerns and determine which stakeholders have the leverage or influence to promote or hinder project success.

Identifying and Ranking Stakeholders

Success Modeling Approach.

- This technique produces **numeric values** to establish the **power of the stakeholders** and the **degree of difficulty of their goal**.

- In evaluating project stakeholders success two things are considered:
 1. Characteristics of the goal (difficulties, conflict with other goals)
 2. The power that each stakeholder has (to impact project resources, success and so on).

- A simple **1 to 5 scale** is used to **rate each factors**. Each rating is multiplied by the **factor's weight** to obtain the **weighted scale**. The scales and weights should reflect management requirements.

- The **final weighted scores** are then used to develop a **stakeholders' success grid**. The success grid shows the **relationship** between **the difficulty of stakeholders' goals** and **their power to influence project success**.

The table on the following page provides an example of the stakeholder groupings and weights that may be used. This is an example only, and will be amended based on further discussions within the Safeguards WG during Roadmap implementation.

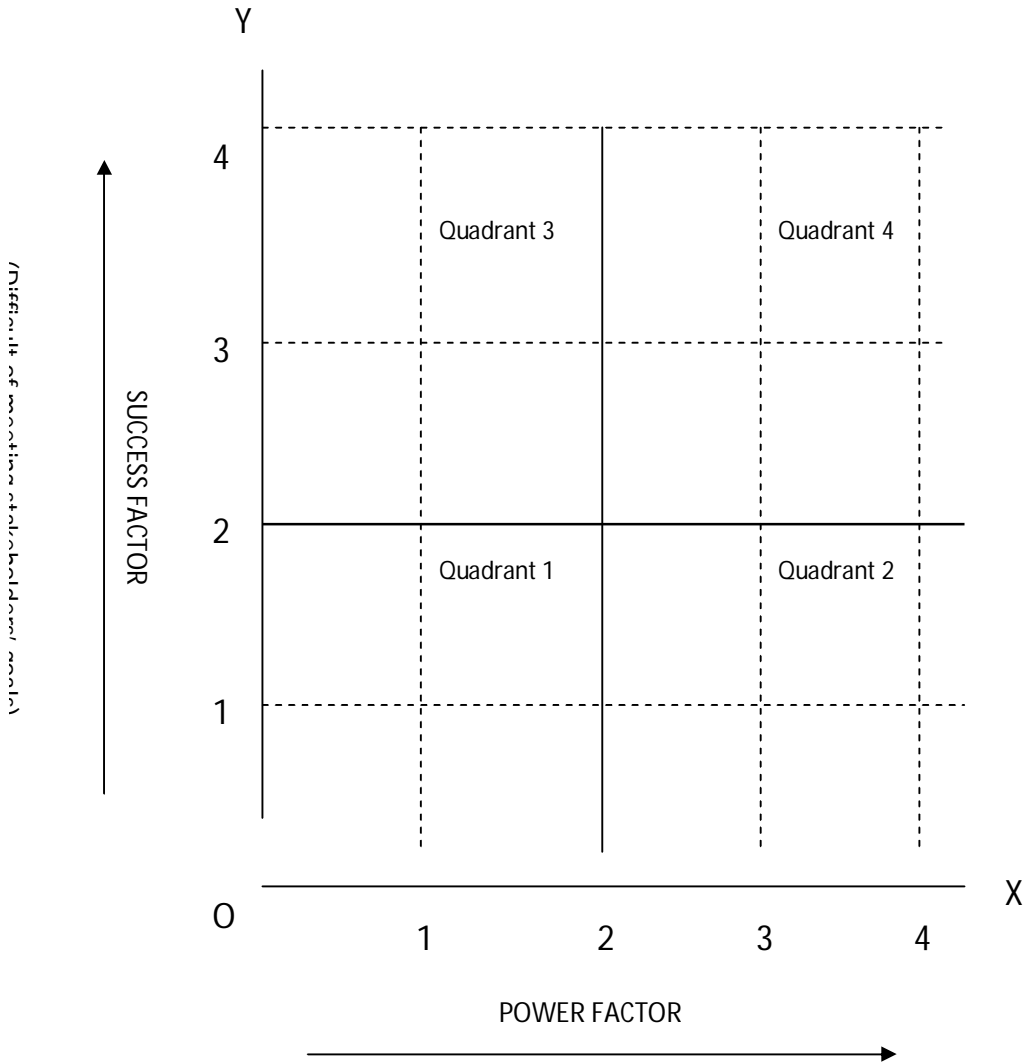
Stakeholders	Power Factors and Weight			Success Goal factors and Weight			
	Impact Resources (0.35)	Impact Success (0.65)	Weighted Score (x-Axis)	Difficulty (0.50)	Risk (0.35)	Conflict (0.15)	Weighted Score (y-Axis)
REDD+ Champions							
GoB officials							
Politicians (local and national level)							
Community Leaders (Shomaj – Matabbors, Headmen)							
Academic experts							
REDD+ Implementers							
Forest Department (DOF)							
REDD Cell							
Other relevant Govt. Dept							
NGOs							
Multilateral/bilateral development agencies							
REDD+ investors							
GoB/community intermediaries							
REDD+ Beneficiaries							
Co-management organisations, Social Clubs, Cooperatives, Associations							
Activists / Environmentalist / Special Interest Groups							
Religious Leaders							
Different Social and Ethnic Groups							
Political Groups at Community Level							
REDD+ Interested Parties							
Politicians							
Journalists							
Media / Internet etc.							
Activists							

DRAWING SUCCESS GRID

Drawing a **Stakeholders Success Grid** based on the table (**x** and **y** axis).

Divide the figure into **4 Quadrants**.

- Quadrant One - Major impact on success
- Quadrant Two - Significant impact on success
- Quadrant Three - Some impact on success
- Quadrant Four – Little impact on success



Annex 9: Salient features of the Forest Policy 1994

1. The government shall take all endeavours to bring 20% of land under forest by the year 2015 to maintain the ecological balance and attain self-sufficiency in forest products. To achieve this objective the government shall work jointly with NGOs and ensure peoples participation.
2. Since the area under government-managed forest is very limited, afforestation activities shall be extended to village areas; newly reclaimed mud-flat areas and in the denuded areas of USFs in the CHT.
3. People will be encouraged to plant trees on their own fallow and marginal land, on homesteads and on the banks of village ponds. Technical advice and assistance will be provided for agroforestry, as required. While introducing agroforestry on state owned or private land, priority will be given to producing fodder and to maintaining herb and shrub cover.
4. GoB will encourage people to plant up in the premises of public institutions like union council offices, schools, idgah, mosques, maktabs, temples, orphanages, madrassas and their surrounding areas. Technical and logistical assistance will be provided.
5. In the state owned marginal lands like the roadsides, railway tracksides and both the sides of the embankments, the government will undertake afforestation with peoples" participation and with assistance from the NGOs.
6. To ensure pollution control in the cities, the government shall take up special afforestation activities in all the municipal areas of the country. To achieve this goal, the municipalities, town development authorities and other related autonomous bodies shall help the government in the implementation of the programs by way of zoning and allotting land for tree plantation. The town planning authorities must keep provision for tree planting in their development plans by setting aside specific sites for the purpose.
7. In the hill districts of Banderban, Rangamati and Khagrachari massive afforestation programs will be undertaken in the USF (Unclassed State Forest) by public and private agencies. The local government bodies holding the land rights retained by the MoL will execute the program.
8. In order to preserve the soil, water and biodiversity, the natural forests of the hilly areas and the catchments of the rivers within the country shall be declared as Protected Areas, Game Sanctuaries, and National Parks. It will be the endeavourer of the government to keep 10% of the national forests as "Protected Area" by the year 2015.
9. An integrated management plan will be prepared for Sunderbans incorporating the management of forest, water and wildlife.
10. State owned hill and sal forests will be managed as production forest except those declared as "Protected Areas" for preserving soil, water and biodiversity. The production forests will be managed on commercial basis with due consideration to environment.
11. The critical areas like steep hill slopes, vulnerable watersheds, wetlands will be designated as „forests" and will be managed as Protected Areas.

12. Denuded and encroached government forest lands will be identified and brought under afforestation program with people's participation on benefit sharing approach preferably under agroforestry wherein NGOs may be associated.
13. Modern and appropriate technologies will be introduced as attempts to minimize the loss at all steps of collection and processing of forest produces.
14. Emphasis will be laid on the modernization of forest-based industries to maximize the utilizations of forestry raw materials.
15. Steps will be taken to bring in competitive and profit-oriented management to the state owned forest based industries under the purview of open market economy.
16. Labor intensive small and cottage industries based on forest products will be encouraged in the rural areas.
17. Forest transit rules will be made simpler to meet the present day needs.
18. Since wood deficit exists, the ban on export of logs will continue. Processed wood products can however be exported. Import of wood and wood products will be liberalized, but reasonable import duties will be levied on forest products that are abundant in the country.
19. Due to shortage of forest area in the country, no forestland will be allowed to be used for any purpose other than afforestation, without the permission of the head of the government.
20. In absence of clearly defined land ownership, the tribal people inhabiting adjoining forest lands in some parts of the country, cultivate any where in the forest land. Clearly delineated forest land will be set aside for them through forest settlement operation and the rest will be brought under permanent forest management.
21. Training, technical assistance and financial support will be enhanced towards private afforestation and tree based rural development programs, from the funds received as international grants and from donors.
22. Women folk will be encouraged more in programs such as homestead afforestation, rural tree farming and participatory forestry.
23. Eco-tourism will be encouraged keeping in mind the carrying capacity of the forest and the nature.
24. To create massive awareness about afforestation, protection and utilization of forests and forest products, mass media campaigning shall be taken up both in Government and in Non Government channels.
25. Under forestry programs, fruit tree planting shall be encouraged in addition to timber, fodder, fuel wood trees and other non wood products, in the habitations.
26. Steps will be taken to modernize the methodology of extraction of forest produces to minimize loss and increase efficiency.
27. Forest Department will be strengthened to achieve the objectives and goals of the policy and a new social forestry department will be established.

28. The research institutions, education and training institutions related to forest will be strengthened to achieve the policy targets and their roles will be enhanced and integrated.

29. In the light of the aims, objectives and targets set up in the policy statement the acts and rules related to forestry shall be modified, amended and if necessary new Acts and Rules will be promulgated.

Annex 10: Assessment of forest land area changes in Bangladesh

Wall-to-wall Landsat TM satellite imagery was used to identify the land use classes during National Forest Assessment (NFA). With the technical assistance of SPARRSO, RIMS Unit of BFD was engaged to generate land use maps of Bangladesh using NFA data, to scales of 1:1,000,000 and 1: 100,000. **Error! Reference source not found.**

Sub-national experiences

Preparation of forest maps using aerial photos started in early 1960s in BFD. RIMS unit of BFD has been conducting since the mid 20th century. These are mostly focused on forest inventories for determining extent of forest cover, type, and growing stocks, regulations and to feed forest resources information to prepare the forest management plans. Figure i shows the different forest areas that were assessed in different time by the FD. There are other government, autonomous and private or trustee organisations also engaged in mapping the land uses using remote sensing. Among them SPARRSO, BWDB, CEGIS, BCAS etc. could be mentioned in this regard. **Error! Reference source not found.** Table i gives a list of land use and land cover maps prepared by different the organisations in of the country.

Table i: List of the land use and land cover maps developed for different areas of Bangladesh

Title	Organisation	Scale
Cox's Bazar Forest Division	FD	1: 650,000
Map of Bhawal National Park	FD	1: 80,000
Map of Dudpukuria Dhupachari Wildlife Sanctuary	FD	1:75,000
Map of Himchari National Park	FD	1:50,000
Map of Inani National Park	FD	1: 95,000
Map of Khadimnagar National Park	FD	1: 45,000
Map of Medhakachhapia National Park	FD	1: 25,000
Map of Madhupur National Park	FD	1: 75,000
Map of Remakalenga Wildlife Sanctuary	FD	1: 70,000
Chittagong Hill Tracts	FD	1: 800,000
Digital Elevation Model	IWM	1 cm = 2 km

Sundarbans Reserved Forest	FD	1: 200,000
Landuse pattern of Lawachara landscape	BCAS	1 cm = 500 m
Landuse of Teknaf	BCAS	1 cm = 1 km
Proposed sustainable landscape management recommendations of Lawachara	BCAS	1 cm = 500 m
Proposed sustainable landscape management recommendations of Teknaf	BCAS	1 cm = 1 km
Digital elevation model of Hail Haor	BCAS	1 cm = 500 m
Sylhet Forest Division	FD	1: 1,000,000
Mangrove Plantation of Bangladesh	SPARRSO	1 cm = 50 km
Landuse/cover map of Madhupur National Park, 2003	CEGIS	1: 50,000
Landuse/ cover map of Madhupur National Park, 1967	CEGIS	1: 50,000
Landuse map of Dudpukuria Wildlife Sanctuary	CEGIS	1 cm = 2.5 km
Landuse map of Fashiakhali Wildlife Sanctuary	CEGIS	1 cm = 1 km
Landuse map of Rema-Kalenga Wildlife Sanctuary	CEGIS	1 cm = 1 km
Landuse map of Teknaf Wildlife Sanctuary	CEGIS	1 cm = 2 km
Land use maps of Sundarbans Forest regions 2010	SPARRSO	1 cm = 20 km
Shore changes in the Sundarbans Mangrove Forest (Bangladesh Part, 1973-2010)	SPARRSO	1 cm = 20 km

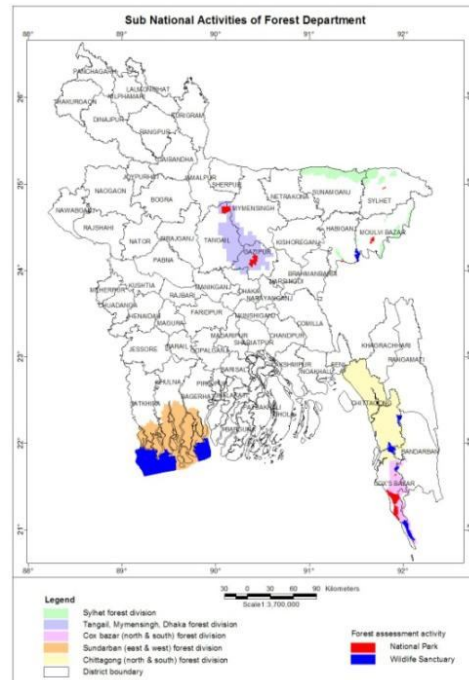


Figure i: Sub national activity of Forest Department using remote sensing

Further progress in developing land use and land cover maps

Mapping of the forests with larger scale throughout the country is ongoing using high resolution satellite imageries. The forest of Bangladesh is distributed widely and , fragmented throughout the country. FD is raising plantations in the hill forest areas. These plantations appear as scattered patches along with the natural forests. Sal forest spread over the Central and Northern districts of Bangladesh. This forest is scattered and intricately mixed with habitations & agriculture fields. Lot of small to large patches of plantations is distributed throughout the coastal areas. Single largest forest patch can only be found in the PAs. Larger scale maps will be used in preparing the management plans for certain specific location. Previously prepared smaller scale maps for the scattered small forest patches could not be used in planning purpose for the areas but larger scale maps of SRF are being frequently used by tour operators, district administration, police, coast guard, mongla port authority, navy and other organizations to plan their related issues.

SOB -the national mapping agency, initiated Improvement of Digital Mapping System (IDMS) project (2009-2016) aimed to produce detailed digital topographic maps and geospatial data for the users and stakeholders using very high resolution aerial photography for whole of Bangladesh.

Annex 11: Experiences in assessing emission factors for the forest sector

Experience from different inventory shows that, inventories are designed mainly based on project requirements and conducted to develop long-term (5-10 years) management plans. Field inventory designs are varied in different interventions. For example, circular cluster plots at 1 minute interval was applied in FRMP inventory (1996-97) throughout the forest areas, whereby NFA (2007) applied 1sq.km sample tracts with 250m X 20m rectangle plots at 10 minute and 15 minute interval. A unique inventory design throughout the forest landscapes and over time is crucial.

Permanent Sample Plots

Regarding Permanent Sample Plots (PSPs), hill forest PSPs, set in early 1980s, are no longer available due to heavy biotic interference while 120 PSPs in the Sundarbans mangrove are still being maintained with sporadic re-visits based on availability of finance. Largely, there is no regular data collection mechanism available in any of the forest tracts in the country.

At this stage, comprehensive review of existing inventory designs is required while site specific PSPs need to be laid which would provide necessary information for forest management plans development as well as other requirements like assessments of carbon pool. Inventory interval, required funding sources and overall design including satellite as well as ground assessment designs need to be accepted by GoB and other concerned stakeholders.

The national Forest and Tree Resources Assessment of Bangladesh

Country level NFA was undertaken for the first time during 2005-07 with the technical assistance of FAO. The NFA was designed under “Strengthening capacity to generate quality information on forest resources” project of FD.

Topographical sheets of 1: 50,000 scale maps produced by the Survey of Bangladesh were used to delineate the tracts. 299 tracts were identified and they were systematically distributed throughout the country at an interval of 15 degrees latitude and 10 degrees longitude. A globally harmonised classification system was developed and five major land use classes were identified for the inventory. Finally, 29 land use classes were identified for field data collection. Field data collection comprises multiple functions of forests and trees, covering their socio-economic, environmental as well as productive functions, associated with a wide range of variables and collected using different methods. A group of trained field crews collected the data. Wall-to-wall Landsat TM satellite imagery was used to identify the land use classes. Ground truth data was collected to classify the imagery. The country was divided into four parts and the images were accordingly mosaicked. These mosaics were used for visual interpretation of the land use types and on screen digitization was carried out to separate the classes. Accuracy was not checked for the classified images.

The forest Carbon inventory for the natural mangrove



FD has an experience on carbon inventory on SRF under the USAID-funded IPAC project during 2010. For this carbon inventory, a Tier 3 approach (IPCC guideline) was considered. The carbon inventory methodology followed a similar sampling design and data collection methodology that was used in forest inventory of 1995 for the forest. Systematic sample grids and a clustered plot composed of five circular subplots were employed for data collection. 150 plots were measured to calculate the carbon. Trees, non-tree vegetation, dead wood, and soil were measured for the forest. Several trained inventory team collected the data from the forest. Strict precautionary measures were taken in the process of data collection and data entry to minimize errors. Aboveground and root Carbon pools were computed using both locally derived allometries (via destructive harvests of various shrub species outside the plots) and international standard common mangrove tree allometries combined with local tables of wood density by tree species. Soil C storage was calculated as the product of soil Carbon concentration, soil bulk density, and soil depth range. FD staffs and other team members were trained on field data collection, data recording, standardized measurement procedure/techniques, field plot layout, soil sample collection by the project prior to starting the inventory.

Chunoti Wild Life Sanctuary Carbon Inventory

Chunoti carbon inventory was conducted during 2008 by Inventory Division of BFRI. Soil organic carbon, above-ground biomass, below-ground biomass, and on-ground biomass were measured for the WS. Trained crews were collected the data. FD and Co-management Committee (CMCs) staffs were included in the inventory team for data collection. Growing stocks were estimated for each of seven identified land-use categories by using the field data and growing stock models as developed by the Forest Inventory Division of BFRI. Carbon sequestration rates were then estimated by following the methods as developed under CDM/IPCC procedures. Soil carbon analyses were done in the laboratory of the Soil Sciences Division of BFRI.

The forest inventory data was analyzed for estimating growing stock in terms of volume, biomass and carbon stock changes in baseline and mitigation scenario for different reforestation technologies. The use of volume equations for different tree species as developed by BFRI was examined for their application.

Forest carbon inventory for protected areas

USAID funded IPAC project of FD conducted Carbon inventory for other six PAs. Tier 3 approach (IPCC guideline) was adopted for field inventory and carbon assessments. Clustered plot composed of five circular subplots was employed to collect tree, non-tree vegetation, leaf litter, dead wood data and forest soil by trained field crews. Total number of plots was estimated for different PAs as: 41 plots for Medakchapia NP, 72 plots for Fasiakhali WS, 62 plots for Dudpukuria-Dhopachari WS, 56 plots for Inani forest reserve, 35 plots for Sitakunda hill reserve and 54 plots for Teknaf WS. Variable square grids with appropriate minute intervals were laid out on the maps by RIMS Unit depicting these plots. Plot locations were set systematically.

Aboveground and root carbon pools were computed using both published documents mainly of the BFRI and FD and locally derived allometries (via destructive harvests of various shrub species outside the plots). Local tables of wood density by tree species as published by the BFRI were used in estimation of biomass whereas

internally accepted conversion factors were used for the estimation of carbon. Soil carbon analyses were conducted in the laboratory of the soil sciences division of the BFRI.

Regional activities on forest inventories

Meanwhile FD strengthens its capacity towards to conduct carbon inventory for the forest areas. The South Asian Association for Regional Cooperation (SAARC) arranged a five day international training workshop that conducted by the FD's trained staff to disseminate the carbon inventory methodology to the international community.

Assessment of volume and biomass using allometric equations

The accurate measurement of above-ground forest biomass and carbon stocks requires destructive sampling, which is an expensive and time-consuming process. Tree felling and measurements are sometimes difficult and need administrative approval due to the prohibition of felling. Allometric equations are often used in the estimation forest volume or biomass. Bangladesh Forest Research Institute (BFRI) has developed allometric equations for commercially important tree species in Bangladesh. Khulna University has developed two allometric equations for the mangrove species. The accuracy of such estimation relies on the accuracy of those relationships. Moreover, the respective equations are not available for all the species found in the natural forests in Bangladesh, because the forests located in the tropical regions are very rich in biodiversity. So, generic equations developed for mixed species needs to be utilized, which will incur a certain degree of errors.

The second problem of using allometric equations in Bangladesh is that many allometric equations are developed forest volume estimation rather than biomass estimation. So, it needs to estimate forest volume 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. In this situation, it needs to use a generic constant ratio, which will incur errors as well.

Annex 12: Experiences in developing the GHG inventory

Bangladesh as a Non-Annex-1 country party to the UNFCCC has to prepare a national Communications to the Conference of the parties in accordance with article-4, paragraph-3 of the convention. Department of Environment, Ministry of Environment and Forests prepared its Initial National Communication to the UNFCCC in October 2002. At present, DoE has completed the study on Second National Communication and the final report is under preparation. At present DoE conducts the national communication with the support of different research organization and experts.

Initial National Communication

Bangladesh has prepared its Initial National Communication (INC) and this includes the National Circumstances; Greenhouse Gas Inventory (for 1994), Vulnerability and Adaptation, Mitigation and Climate Change Response Strategies. According to this communication report, the main areas of GHG generation are energy, industrial process, agriculture, land-use change and forestry and waste sectors. The national GHG inventory was carried out for a base year 1994 following “Sectoral Approach” of revised IPCC guideline 1996. The Initial communication report exhibits that in Bangladesh, CO₂ emission has been the largest from the energy sector (62.74%) followed by land-use changes and forestry sector (32.26%) [11] respectively.

According to the INC report, total carbon uptake was 6155.73 Gg and carbon released was 8293.36 Gg in 1994. That means that there is a net Carbon emission of 2137.62 Gg, which is equivalent to 7837.97 Gg of CO₂ emissions from Land Use Change and Forestry sector [11].

Second National Communication

Bangladesh has initiated Second National Communication (SNC) project to fulfil its voluntary obligations to the UNFCCC. The project has completed its tenure and the final report is about to be published. Five major activities are covered under the inventory, which include: (i) Energy (including biomass burning, transport sector, etc.); (ii) Industry (cement manufacturing, fertilizer, pulp and paper, etc.); (iii) Agriculture (ruminant livestock, livestock and manure management, wet rice cultivation, etc.); (iv) Waste and refuse management (municipal waste, waste water treatment/ management, etc.); (v) Land use change and forestry (change in forest cover and woody biomass, change in forest land use, etc.). *For SNC*, the estimation of emissions from Land Use Change and Forestry (LUCF) focus upon four sub-sectors which are sources or sinks of carbon dioxide. These sectors are: (a) change in forest and other woody biomass stocks; (b) Forest and grassland conversion; (c) Abandonment of managed lands; (d) Change in soil carbon (MoEF 2012).

According to the draft report of SNC, there is a decreasing trend in the carbon dioxide emission in the LUCF sector during 2000/01 – 2004/05 years. Total carbon emission due to LUCF was 28418.97 Gg in 2000/01 and 18205.52Gg in 2004/05. This decreasing trend may be attributed to the increase in the social forestry (MoEF 2012) .



