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REDD+ READINESS OF BANGLADESH REFERRING TO DEFORESTATION AND
FOREST DEGRADATION: A CASE STUDY FOR SYLHET FOREST DIVISION



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2017

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Dedicated To....

My beloved Parents, my brother as well as my friends

Declaration

I, Anjuara Parvin, declare that this thesis submitted for the Degree of Bachelor of Science (Honors) in Forestry to Forestry and Wood Technology Discipline, Khulna University, Khulna, is my original research work.

I, hereby, give consent for my thesis, if accepted, to be available for photocopying and for inter-library loans and for the title and summary to be made available to outside organizations.

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Approval

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Signature



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Anjuara Parvin

Abstract

The goal of this study is to know about REDD+ readiness and drivers of deforestation (Sylhet Forest Division) in Bangladesh. The goal of significantly reducing emissions from deforestation and forest degradation can best be achieved through a strong global partnership to create a REDD+ mechanism under the United Nations Framework Convention on Climate Change (UNFCCC). Bangladesh began taking steps towards REDD+ readiness in 2010 and a national REDD+ Readiness Roadmap was approved in 2012 by the MoEF. The Government of Bangladesh has taken initial steps to prepare for the implementation of Reducing Emissions from Deforestation and Forest Degradation (REDD+) activities. This study shows some important deforestation drivers those are mainly responsible to degrade and reduction of our forest area. At the same time the authority of REDD+ also identify those drivers as the main causes. Drivers those are responsible for forest degradation and deforestation are- overpopulation, poverty, lack of education, fuelwood collection, poor forest management, corruption, fires, agriculture, illegal felling etc. The socio-economic study has revealed that the people of the study area are not highly educated and illiteracy rate is very high which increases the dependency of the people on the adjacent forest for their livelihood. This case study provides, if REDD+ Readiness is successful in Bangladesh and the drivers of Deforestation and Degradation can be reduced, REDD+ implementation will strengthen sustainable management of forests resources, and sustainably managed forests enhance the resilience of ecosystems and societies, and secure livelihoods of forest-dependent people.

List of Acronyms

CDM	Clean Development Mechanism
COP	Conference of the Parties
CREL	Climate Resilient Ecosystems and Livelihood
FAO	Food and Agriculture Organization
FCPF	Forest Carbon Partnership Facility
FD	Forest Department
FIS	Forest Information System
GHG	Green House Gas
GoB	Government of Bangladesh
IP	Indigenous Peoples
IPAC	Integrated Protect Are Co-management
IPCC	Intergovernmental Panel on Climate Change
MDTF	Multi-Donor Trust Fund
MoEF	Ministry of Environment and Forests
MPTF	Multi Partner Trust Fund
MRV	Measurement, Reporting and Verification
NFI	National Forest Inventory
NP	National Programme
NRSC	National REDD+ Steering Committee
NSC	National Steering Committee
NTFP	Non Timber Forests Products

ODA	Official Development Assistance
RED	Reducing carbon Emissions from Deforestation
REDD plus	Reducing Emissions from Deforestation and forest Degradation in developing countries
REDD	Reducing Emissions from Deforestation and Forest Degradation
R-PP	Readiness Preparation Proposal
RSC	Readiness Steering Committee
RSDC	REDD+ Strategy Drafting Committee
RSF	REDD+ Stakeholders' Forum
RTC	REDD+ Technical Committee
SBSTA	Subsidiary Body for Scientific and Technological Advice
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

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CHAPTER ONE: INTRODUCTION

1.1. Background of the Study

Reducing emissions from deforestation and forest degradation (REDD) is a mechanism that has been under negotiation by the United Nations Framework Convention on Climate Change (UNFCCC) since 2005, with the objective of mitigating climate change through reducing net emissions of greenhouse gases through enhanced forest management in developing countries. (Myers, 2007).

Since the 1990's, when the Intergovernmental Panel on Climate Change (IPCC) released the first Assessment Report, increasing attention has been paid to reduce the greenhouse gas emissions. Hence, the 2001 report concluded that, in the absence of effective climate policies, we must expect a warming of between 1.4 and 5.8°C (centigrade) between the years 1990 and 2100 (IPCC, 2001). Similarly, the 1992 UN Framework Convention on Climate Change (UNFCCC) recommended to the international community to strive to prevent dangerous anthropogenic interferences with the climate system (UNFCCC, 1992).

In addition, the UNFCCC states that the stabilization of greenhouse gas concentrations in the atmosphere should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner. After adaptation of the Kyoto Protocol by international communities in 1997, developed countries were allowed to reduce their emission by investing in developing countries through the Clean Development Mechanism (CDM) as a way of mitigating climate change through afforestation and reforestations. Ultimately, reduction of deforestation was excluded as an option to mitigate climate change (Stephan, 2013). As a result, in 2005, in Montreal Canada negotiations started at COP 11 of UNFCCC, a coalition of rainforest nations wanted reduction of deforestation to be included as one of mitigating strategies to GHG emissions in the post 2012 regime. So, REDD-plus began at the 11th Conference of the Parties (COP 11), which was held in Montreal in 2005, when Papua New Guinea and Costa Rica jointly presented a proposal called "Reducing Emissions from Deforestation and forest Degradation in developing countries." This proposal, which was adopted as an agenda item by the Subsidiary Body for Scientific and Technological Advice (SBSTA), is referred to as REDD.

REDD+ is gradually made up by four sections as below-

RED: "Reducing carbon Emissions from Deforestation". **REDD:** "Reducing Emissions from Deforestation and Forest Degradation". **REDD+ (or REDD-plus):** "Reducing Emissions from Deforestation and forest Degradation in developing countries, and the "plus" includes afforestation, poverty alleviation, biodiversity conservation and improved forest governance, enhancement of forest carbon stocks in developing countries" (UNFCCC, 2009). **REDD++:** Includes emissions from other land conversion (e.g. agriculture).

Initially, the SBSTA intended to discuss the proposal for two years and then to report the results of those discussions at COP 13, but in the course of the discussions, many developing countries requested that REDD should include mechanisms for the conservation and sustainable management of forests and enhancement of forest carbon stocks in addition to mechanisms for reducing emissions from deforestation and forest degradation.

Therefore, at COP 13, held in Bali in 2007, the proposal was broadened to include these activities and adopted as an agenda item in discussions on the development of a post-2013 framework. This broadened framework is referred to as REDD-plus. After a further two-year review, the necessity of early development of the REDD-plus framework including a financing mechanism was noted in the Copenhagen Accord, adopted by COP 15 in 2009.

It was also agreed to use the latest IPCC guidelines to establish a forest monitoring system at national or sub-national levels that uses a combination of remote sensing with a ground-based inventory, and to take into account each respective country's historical and present circumstances to establish reference level to serve as standards against which to evaluate actions.

At COP 16, held in Cancun in 2010, the basic framework for REDD-plus, which includes five targeted activities, a phased approach, and consideration of safeguards, was proposed. Thus, under the UNFCCC, this Cancun Agreement is the basis of REDD-plus. During its 16th COP in Cancun, UNFCCC came with different suggestions such as- reversing forest loss and all participating developing countries to reduce human pressure on forest.

Meanwhile, the Cancun Agreements is, gave a way to support developing countries to prepare for REDD+ policy and developed countries agreed to give financial support of

\$30 billion between 2010 and 2012, and \$100 billion every year after 2020 for climate change mitigation and adaptation activities (UNFCCC, 2009). In December 2013, COP 19 charted seven decisions on REDD+, which are known as the “Warsaw Framework on REDD+”.

These decisions addressed a work programs. In December 2014, however COP 20 did not come with any new decisions on REDD+. At COP 21, held in Paris in 2015, aims to eradicate poverty and to mitigate climate change. At COP 22, held in Morocco in 2016, aims to reduce greenhouse gas concentrations in the atmosphere.

As a signatory to both the UN Framework Convention on Climate Change (UNFCCC, ratified in 1994) and the Kyoto Protocol, Bangladesh is also fully aware of the causes of the climate change. The Conference of the Parties (COP) to the UNFCCC has adopted a forestry Green House Gas (GHG) emission mitigation mechanism known as “REDD+”. REDD+ will provide positive incentives to developing countries to voluntarily reduce their rates of Deforestation and Forest Degradation, and to increase their forest carbon stocks, as part of a post - 2020 global climate change agreement.

1.2. Deforestation in Bangladesh Context

Deforestation is the conversion of forest to another land use type (Allen and Barnes, 1985). Often, it is a result of human activities. Deforestation leads to reduction of forest area and loss of ecosystem services. Deforestation reduces the area; quality and quantity of vegetation cover and alter the spatial structure of landscape through the process of fragmentation (Noss, 1999; Fitzsimmons, 2003). Deforestation occurs when land occupied by forests are converted for alternative uses. People often convert forest lands into other uses for short-term economic gains that lead to deforestation and permanent loss of ecosystem services.

Bangladesh lost about 2.8% (~58,000 ha) of its forest coverage between 2000 and 2012 (Hansen *et al.*, 2014, 2013), and still has one of the highest rates of deforestation in Asia (Poffenberger, 2000). Most of the country’s state-owned forests are degraded in nature (Biswas and Choudhury, 2007). Rural people's dependence on forests and diverse stakeholder engagement make forest management in the country very complex and challenging (Rashid *et al.* 2013; Mukul *et al.* 2012).

For this reason, REDD+ implementation is important for Bangladesh.

1.3. Research Problem

The management of REDD+ process has been a difficult task. Accurate information is necessary to complete this process. The main problems for the Bangladesh forest sector are deforestation and forest degradation relating to REDD+ process. Coordination arrangements, integration and mainstreaming into national development planning, policies, budgeting and institutional capacity are necessary to manage the REDD+ readiness process. Measurement, Reporting, and Verification must be highly accurate before economic incentives. A forest monitoring system is indispensable for accurate measurement of forest carbon stocks and their changes at the national level.

1.4. Process of the REDD+ Readiness Roadmap

- Management of REDD+ Readiness
- Stakeholder Engagement
- Development and Selection of REDD+ Strategies
- REDD+ Implementation Framework
- Reference Emission Level and Reference Level
- Measurement, Reporting and Verification (MRV) of Forest Carbon Stocks.

1.5. Objectives of the Study

- To know about REDD+ Readiness in Bangladesh.
- To know about drivers of Deforestation and Forest Degradation.

CHAPTER TWO: LITERATURE REVIEW

2.1. The Concept of UN-REDD Programme

The UN-REDD Programme is the United Nations cooperative initiative on Reducing Emissions from Deforestation and forest Degradation in developing countries. The Programme was propelled in 2008 and builds on the convening role and technical expertise of the Food and Agriculture Organization of the United Nations (FAO), the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP).

These three UN Agencies have collaborated in the establishment of the UN-REDD programme, a multi-donor trust fund that allows donors to pool resources and provide funding with the aim of significantly reducing global emissions from deforestation and forest degradation in developing countries.

The overall development goal of the Programme is "to reduce forest emissions and enhance carbon stocks in forests while contributing to national sustainable development"

The UN-REDD Programme supports nationally-led REDD+ processes and promotes the informed and meaningful involvement of all stakeholders, including Indigenous Peoples and other forest-dependent communities, in national and international REDD+ implementation.

The Programme supports national REDD+ readiness efforts in 64 partner countries, spanning Africa, Asia-Pacific and Latin America and the Caribbean.

In addition to the UN-REDD Programme, other initiatives assisting countries that are engaged in REDD+ include the World Bank's Forest Carbon Partnership Facility, Norway's International Climate and Forest Initiative, the Global Environment Facility, Australia's International Forest Carbon Initiative, the Collaborative Partnership on Forests, and the Green Climate Fund.

The UN-REDD Programme works both at the national and international levels.

2.1.1. Support to Partner Countries

The UN-REDD Programme supports its Partner Countries through-

- Direct funding and technical support to the design and implementation of National REDD+ Programmes; and,

- Complementary tailored funding and technical support to national REDD+ actions.

2.1.2. The Governance of REDD+

The basic framework for REDD+ is based on the hypothesis that if countries receive a rent equal to the opportunity cost of conserving a forest they will change their behaviour and forgo clearing the forest – this will in practice raise the private cost of deforestation towards the overall social cost. In this framework it is assumed that the government is a rational agent, and is capable of taking action to implement and enforce policies that can reduce deforestation.

The UN-REDD Programme's 2016-2020 governance arrangements allow for the full and effective participation of all UN-REDD Programme stakeholders – partner countries, donors, indigenous peoples, civil society organizations, participating UN agencies – while ensuring streamlined decision-making processes and clear lines of accountability.

The governance arrangements are built on and informed by five principles: inclusiveness, transparency, accountability, consensus-based decisions and participation.

The UN-REDD Programme 2016-2020 governance arrangements include:

2.1.2.1. Executive Board

The UN-REDD Programme Executive Board has general oversight for the Programme, taking decisions on the allocation of the UN-REDD Programme fund resources. It meets bi-annually, or more frequently as required to efficiently carry out its roles and responsibilities. The UN-REDD Programme assembly is a broad multi-stakeholder forum with the role to foster consultation, dialogue and knowledge exchange among UN-REDD Programme stakeholders.

2.1.2.2. National Steering Committees

National Steering Committees facilitate strong country ownership and shared decision-making for National REDD+ Programmes, and include representatives of civil society and indigenous peoples. Each National Steering Committee provides oversight for National Programmes, addressing any delays, changes or reorientation of a programme

and ensuring alignment with and delivery of results as expected and approved by the Executive Board.

2.1.2.3. Multi-Party Trust Fund Office

The Multi-Party Trust Fund Office provides real-time funding administration to the UN-REDD Programme. REDD+ is financed primarily through bilateral country programs (Simula, 2010). Multilateral funds are the second largest source of financing for REDD+. The private sector is expected by many to play a key role in the later stages of REDD+ implementation. REDD+ countries have also invested their own resources in getting ready for REDD, but in many cases it is hard to track how much money was spent from domestic resources on REDD+ specific initiatives.

2.1.2.4. Donors

The UN-REDD Programme depends entirely on voluntary funds. Donors to the UN-REDD Programme have included the governments of the European Commission, Denmark, Japan, Luxembourg, Norway, Spain and Switzerland—with Norway providing a significant portion of the funds. The various international initiatives funding REDD+ have different objectives and rules of operation. In some cases, multiple funds and donors interact with the same recipient country that must navigate the various governance structures of these funds.

2.1.2.5. Transparency

The UN-REDD Programme adheres to the belief that information is fundamental to the effective participation of all stakeholders, including the public, in the advancement of REDD+ efforts around the world. Information sharing promotes transparency and accountability and enables public participation in REDD+ activities.

The collaborating UN agencies of the UN-REDD Programme – FAO, UNEP and UNDP are committed to creation information about the Programme and its operations available to the public in the interest of transparency. As part of this commitment, the Programme publishes annual and semi-annual programme progress reports.

2.1.3. (2016-2020) Strategic Frameworks

The work of the UN-REDD Programme is guided by its 2016-2020 Strategic Framework, with the goal to: Reduce forest emissions and enhance carbon stocks in forests while contributing to national sustainable development.

In order to realize its goal and target impacts, the Programme has set three outcomes and supporting outputs for its 2016-2020 work programme:

- Contributions of REDD+ to the mitigation of climate change as well as to the provision of additional benefits have been designed.
- Country contributions to the mitigation of climate change through REDD+ are measured, reported and verified and necessary institutional arrangements are in place.
- REDD+ contributions to the mitigation of climate change are implemented and safeguarded with policies and measures that constitute results-based actions, including the development of appropriate and effective institutional arrangements.

2.2. The Concept about REDD+

“REDD” means “Reducing Emissions from Deforestation and Forest Degradation”. “REDD+” (or REDD-plus) refers to “reducing emissions from deforestation and forest degradation in developing countries, and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries”(UNFCCC, 2009).

REDD+ is introduced locally, regionally and nationally where institutional and organizational changes take place to accommodate new policy change. REDD was proposed by Papua New Guinea and Costa Rica at the 11th Conference of the Parties (COP 11) to the United Nations Framework Convention on Climate Change (UNFCCC), as a climate change mitigation framework.

At COP 13, REDD was expanded to encompass measures for forest conservation, sustainable management of forests, and enhancement of forest carbon stocks. This expanded version is known as REDD+. REDD is a strategy that seeks to reduce GHGs

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emissions due to deforestation by providing financial incentives to conserve rather than to exploit forests (Miles & Kapos, 2008).

2.2.1. The UNFCCC Framework for REDD+

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

2.2.2. Status of REDD+ in Bangladesh

Bangladesh requested admission to the UN-REDD Programme in May 2010, and were formally accepted into the Programme in August 2010. So, Bangladesh became a UN-REDD Programme partner country in August 2010. The following year the country held its first public consultations with support from UNDP and FAO, and began drafting its REDD+ Readiness Roadmap. It has prepared the REDD+ Readiness Roadmap, officially endorsed in December 2012. Subsequently, Bangladesh's Readiness Preparation Proposal (R-PP) was approved in 2013. As a partner country of the UN-REDD programme, the Government of Bangladesh has signed the UN-REDD National Programme Document in July 2014 to assist with the implementing of Bangladesh's REDD+ Readiness Roadmap.

The R-PP gave rise to formulation of two initiatives: (1) the Strengthening National Forest Inventory and Satellite Land Monitoring System in support of REDD+ project (NFI), and (2) the UN-REDD Bangladesh National Programme (NP). The NFI project was approved in December 2015 and UN-REDD National Programme was endorsed in June 2016. Although RED, REDD and REDD+ began at the 11th Conference of the Parties (COP 11) since 2005, they officially began in Bangladesh since 2010.

This National Programme Document (NPD) describes how the Bangladesh UN-REDD National Programme will contribute to the objectives of the R-PP. The overall goal of the Bangladesh UN-REDD National Programme is to support the Government of Bangladesh in initiating the implementation of its REDD+ Readiness Roadmap by establishing necessary REDD+ management processes, identifying strategic readiness options for completing its National REDD+ strategy, and developing the capacities required to begin implementation of REDD+.

The R-PP is a revision of the REDD+ Readiness Roadmap endorsed by the RSC in December 2012. It sets out how Bangladesh will implement its REDD+ Readiness activities and develop a comprehensive National REDD+ strategy. The R-PP acts as a coordinating and guidance platform for all stakeholders in REDD+ in Bangladesh.

2.2.3. Objectives of REDD+

REDD+ offers a new way of curbing CO₂ emissions through paying for actions that prevent forest loss or degradation. These transfer mechanisms can include carbon trading, or paying for forest management. Some objectives are as below:

- to contribute to the global battle against climate change
- to ensure, maintain or increase the continued flow of commercial timber from tropical forests to avoid the possible rising of timber price
- to strengthen forest governance
- to ensure that preventable deforestation and forest degradation can be reduced to the maximum
- valorizing information transparency
- public participation in the decision making process
- action coordination among stakeholders.

2.2.4. Eligible REDD+ activities

The decisions on REDD+ enumerate five "eligible activities" that developing countries may implement to reduce emissions and enhance removals of greenhouse gases:

Reducing emissions from deforestation: Emissions of greenhouse gases from forest land can be reduced by slowing down the rates of deforestation.

Reducing emissions from forest degradation: Emissions of greenhouse gases from forest land can be reduced by slowing down the rates of forest degradation.

Conservation of forest carbon stocks: Intensive management of REDD+ significantly increase carbon sequestration. Under participatory system of forest management the potential for carbon sequestration will be much higher.

Sustainable management of forests: Successful REDD+ implementation will strengthen sustainable management of forests resources.

Enhancement of forest carbon stocks: Sustainable managed forests enhance the resilience of ecosystems and societies, and secure livelihoods of forest-dependent people.

The first two activities reduce emissions of greenhouse gases and they are the two activities listed in the original submission on REDD+ in 2005 by the Coalition for Rainforest Nations. The three remaining activities constitute the "+" in REDD+. The last one enhances removals of greenhouse gases, while the effect of the other two on emissions or removals is indeterminate but expected to be minimal.

2.2.5. REDD+ strategy

REDD+ strategies will fall into two broad categories-

- **Activity Packages**

An activity package is a set of practical measures which 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.

- **Governance Measures**

A governance measure addresses existing gaps or inefficiencies in the implementation framework for REDD+. 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.

At the national level, a REDD+ strategy can be expressed in terms of three Elements:

- A revised Forest Information System (FIS) which provides all the data required to accurately monitor changes in forest cover and condition through improved Measurement, Reporting and Verification (MRV) tools.
- The Policies and Measures required achieving reductions in deforestation, forest degradation and enhancement of forest carbon stocks.
- 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.

2.2.6. Phased Approach

Generally, the UN-REDD National Programme is designed in three phases – towards achievement of REDD+ readiness. The UN-REDD Bangladesh National Programme is in its first phase of readiness. The basic concept of REDD+ is to provide performance-based economic incentives, for which MRV of forest carbon stocks is needed. Many developing countries, however, do not have adequate historical data, and they also differ in their implementation capacities. This phased approach was reviewed and agreed by COP 16.

According to this agreement, REDD+ can be implemented in three phases:

Phase 1: Readiness: National capacity building and strategy formulation.

Phase 2: Implementation: Implement policies and measures of the national strategy.

Phase 3: Full implementation: Full implementation of activities for which economic incentives based on the achievement of emission reductions is provided.

During the first phase, highly accurate MRV of forest carbon stocks by developing countries is not expected; therefore, phase 1 MRV cannot be regarded as equivalent to MRV during phase 3. Thus, during phase 1, it is recommended that Official Development Assistance (ODA) and other funds be provided.

2.3. Gender and REDD+

2.3.1. Mainstreaming Gender into the UN-REDD Bangladesh National Programme

The constitution of Bangladesh suggests for removing inequality between ‘man and woman’. This provision intends to ensure equitable distribution of wealth among citizens and to provide opportunities to attain a uniform level of economic development. According to Social Forestry Rules (2004), spouses have equal opportunity to be participants in social forestry programmes. There is a privilege under the rule that destitute women will be prioritized as participants. Besides management committees under the social forestry programme of the FD must consist of nine members, of which at least three must be women.

2.3.2. Participation of Stakeholders in REDD+ Implementation

Most of the stakeholder groups that have an interest in the REDD+ Readiness Roadmap have the means to ensure representation during consultation processes. It is therefore important to raise awareness about the need to view women as stakeholder group with specific interests which are often quite different to men. Gender inclusiveness in REDD+ strategies and decision making processes is of great importance. The UN-REDD Bangladesh National Programme will support the creation of mechanisms to ensure gender equality at all decision-making levels.

Stakeholder participation and engagement is critical to developing viable REDD+ strategies and implementation frameworks, and should begin as early as possible when a country begins considering participation in REDD+. REDD+ requires extensive consultation among interested stakeholders such as- government agencies, civil society, private sector, indigenous peoples, and development partners. Stakeholder consultation processes not only ensure wide-ranging acceptance and interest in REDD+, but also build the trust of stakeholders and support their capacity to participate in REDD+ in a meaningful and effective way. The readiness process needs to establish both formal and informal mechanisms to ensure adequate consultation among all these stakeholders.

2.4. REDD+ Implementation Policy

The scope of the current policy, designated REDD+, includes not only forests and carbon but also actions involving livelihood, land-use planning, land-use change, improved forest management, and biodiversity conservation (UNFCCC, 2010). In addition to reductions in deforestation and forest degradation, key components of REDD+ also include rural development and conservation of biodiversity, which has been referred to as “triple benefits” (Inoue, 2012). REDD+ facilitates comprehensive actions, which helps to deliver carbon mitigation outcomes that are effective, efficient and equitable (Vatn and Angelsen, 2009).

REDD+ has already generated significant attention in the research community (Fischer *et al.*, 2015). Although the primary issues for REDD+ implementation have largely focused on designing REDD+ (Strassburg *et al.*, 2009; Angelsen & Rudel, 2013), addressing issues related to MRV (Goetz *et al.*, 2015; Reimer *et al.*, 2015), understanding process of forest degradation (Putz & Romero, 2012), evaluation of REDD+ impact assessments methodologies (Pasgaard, 2013) and assessment of one or more of the triple benefits (Harvey *et al.*, 2010; Busch *et al.*, 2010; Gardner *et al.*, 2012; Phelps *et al.*, 2012; Matthews *et al.*, 2014; Murray *et al.*, 2015; Magnago *et al.*, 2015; Panfil & Harvey, 2015), other practical issues have also emerged.

One emerging issue is identifying the form of national forest governance that produces triple benefits (Thompson *et al.*, 2011). The type of forest governance adopted for REDD+ implementation is a critical factor that determines REDD+ outcomes (Sandbrook *et al.*, 2010). Hence, recent forest policy research suggested that focusing on enabling environment would deliver much of what is sought from REDD+ (Kanowski *et al.*, 2011). Both contemporary thinking and empirical evidence regarding environmental governance, suggest that an effective REDD+ policy might be based on existing national and sub-national programs for forest conservation and management (Phelps *et al.*, 2010; Sikor *et al.*, 2010).

Utilization of existing forest policy that addresses REDD+ goals is vital to maximize REDD+ effectiveness and minimize the risks associated (Angelsen *et al.*, 2009; Phelps *et al.*, 2010). The most important features of a REDD+ implementation policy are the ability to achieve triple benefits and feasibility on the ground (Inoue, 2012).

Identification of important attributes with implications for these policy characteristics is critical to adapt existing policies to REDD+ implementation.

2.5. REDD+ Readiness Roadmap

2.5.1. Background of Bangladesh REDD+ Readiness Roadmap

The Bangladesh REDD+ Readiness Roadmap describes a plan of activities which prepare the country fully for the second phase of a national REDD+ programme. The Roadmap leads towards the point at which the Government of Bangladesh is able to make a decision, on whether or not to implement REDD+ nationwide, 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. It should be reviewed and updated on a regular basis to reflect the developing experience and capacity within Bangladesh and the progression of REDD+ approaches internationally.

2.5.2. Status of REDD+ Readiness

The Government of Bangladesh requested UNDP for expedited support to the country in preparing the REDD+ Readiness Roadmap. In response, UNDP Country Office allocated resources for preparing the REDD+ Readiness Roadmap. Beyond its role in the UN-REDD Programme, UNDP is also committed to support the Government of Bangladesh on a range of environmental issues, including REDD+. Bangladesh began taking steps towards REDD+ readiness in 2010, with the request to join the UN-REDD Programme, and subsequently with the establishment of three committees. These are:

- The REDD+ Technical Committee
- The National REDD+ Steering Committee
- The REDD+ Strategy Drafting Committee.

At the request of the Government, the UNDP/UN-REDD Regional Coordinator undertook a mission to Bangladesh from June 26-30, 2011, to meet with government and other stakeholders. A National REDD+ Readiness Roadmap was approved in 2012 by the MoEF. REDD+ readiness relates to the efforts a country is undertaking, with the support of multilateral or bilateral support, to build its capacity to be ready for a REDD+ mechanism.

2.5.3. Activities of REDD+ Readiness Roadmap

The preparation of the REDD+ Readiness Roadmap will involve the following indicative activities:

- Analysis of the current legal and policy framework in support of REDD+ in Bangladesh, including all relevant sectorial policies.
- Analysis of drivers of deforestation and forest degradation, and of constraints to sustainability of past and current efforts on reforestation, conservation, and sustainable forest management.
- Analysis of required capacities for REDD+ implementation.
- Mapping of existing initiatives supported by the GoB and development partners contributing to the establishment of required capacities.
- Identification of the resulting capacity gaps, and formulation of a work-plan to address those gaps.
- Estimation a required budget to address capacity gaps.

2.5.4. Elements of REDD+ Readiness

REDD+ Readiness requires the following elements to be in place:

- A favorable policy environment which allows for the implementation of REDD+ programmes in an efficient, effective and equitable manner (the three Es);
- An institutional structure that allows for effective decision making regarding REDD+ development at a government level;
- Adequate physical and human capacity within the government, non-governmental, academic and private sectors to effectively assess forest carbon stocks and measure carbon changes and leakage;
- Clear and transparent revenue and incentive sharing mechanisms put in place; and
- A financial management system established for funds to flow to beneficiaries and stakeholders in an efficient, effective and equitable manner.

2.6. Present Situation of REDD+ Programme in Bangladesh

As part of the country's long term strategy to reduce GHG emissions, the Government of Bangladesh has taken initial steps to prepare for the implementation of REDD+ activities. As Bangladesh kicks off its recently endorsed National Programme, we look back and towards the future at the REDD+ progress made in the country. The National Project Document was approved in May 2015. The duration of the NP is from May 2015 to April 2018, with the objective to support the Government of Bangladesh in the implementation of its REDD+ Readiness Roadmap.

On 3rd August 2016, the Government of Bangladesh (GoB), in rally with its development partners- UNDP Bangladesh and FAO Bangladesh, officially launched the Bangladesh National Programme of the United Nations Collaborative Programme on REDD+ in developing countries. In June 2016, the UN-REDD Bangladesh Programme was approved by the Government and on the backdrop of it, GoB's nodal ministry, i.e. the Ministry of Environment and Forests (MoEF), formally established the UN-REDD Bangladesh Programme's Executive Board (PEB) in 21 July, 2016.

The UN-REDD Programme has been supported nationally led REDD+ initiatives in 64 developing countries. Among developing countries, Bangladesh has recently been playing a significant promising role by taking actual measures to combat global climate change in line with its signed promises under the United Nations Framework Convention on Climate Change.

2.7. Deforestation and Forest Degradation

Forests are multiple use resources that offer a variety of goods and services. They play multiple roles in the economy, environment, and the culture of a country, and are essential for sustaining livelihoods and maintenance of ecosystem services. They also serve as repositories of biological, socio-cultural, and religious knowledge and practices.

Deforestation is a global issue. Deforestation is the removal of a forest or stand of trees where the land is there after converted to a non-forest use (Allen and Barnes, 1985). In contrast, forest degradation is a process leading to a temporary or permanent deterioration in the density and the structure of the vegetation cover or its species composition (Grainer, 1993). Globally 13 million hectares of forest are lost every year.

Beyond its destructive impacts on biodiversity and the livelihoods of forest dependent people, it is a major cause of climate change and accounts for global greenhouse gas emissions. It is estimated that greenhouse gas emissions from deforestation and forest degradation contribute up to 20% of global emissions. In the developing nations, deforestation is responsible for 62% of GHG emissions (GCCA, 2012).

Deforestation and forest degradation together reduce the area; quality and quantity of vegetation cover and alter the spatial structure of landscape through the process of fragmentation (Noss, 1999; Fitzsimmons, 2003). All currently operative phenomena that lead to significant deforestation and forest degradation are man-made. More land for food is needed to meet the demands from increasing population and demand for land is a key driving force in deforestation.

Expansion of agriculture, over-grazing, increase demand for fodder, timber and firewood, and excessive extraction of other non-timber forest products have led to deforestation and forest degradation and have negatively impacted the landscape significantly (Negi, 1982; Kissinger *et al.*, 2012; Somanathan, 1991; Sharma *et al.*, 1999; Awasthi *et al.*, 2003). Moreover, demographic changes, social inequity, gender issues and forest governance and management issues are among the diverse socio-economic factors that have been identified as responsible for deforestation/degradation in various ways.

Researchers have suggested that mitigating deforestation and forest degradation might be a relatively cost-effective measure to reduce GHGs compared to measures that focus on other types of emissions (Kindermann *et al.*, 2011), and reduction of emissions due to deforestation and forest degradation has recently become a more prominent issue in global environment discussions. This has led to interest in reducing emissions from deforestation and forest degradation- known as REDD.

A report by Kissinger *et al.* (2012) made an attempt to synthesize the findings of several studies and identify their implications for REDD+ programmes. Two broad classes of drivers appear to be used by many studies are proximate drivers and underlying drivers.

2.7.1. Proximate Drivers of Forest Degradation

Stakeholders identified proximate drivers of forest degradation with more localized impacts. Major ones include the following:

- **Illicit felling:** Even though large-scale felling operations are rare, incidents of illegal timber extraction take place in some areas. Reported numbers are usually lower than actual numbers.
- **Illegal extraction of NTFPs:** Incidents of illegal extraction of NTFPs (e.g medicinal plants, sandal wood, rattan) takes place. People sometimes use harmful methods of extraction. The damage to trees could exceed the income generated from such resources.
- **Firewood collection:** Harmful practices are done by some users. For instance, trees are peeled and barks are heavily damaged to suppress the growth. The trees will gradually die and will be then used for fuel wood.
- **Grazing lands:** This refers to creation new grazing areas by converting forests. On occasion large herds of cattle move from one area to other, damaging vegetation.
- **Occurrence of natural disasters:** Increased of natural disasters has become a major problem for deforestation and degradation.
- **Pest and disease attacks on forest trees:** Incidents of diseases and pest attacks area also reported as causing degradation.
- **Over exploitation of plant species:** Persons who enter forests either as visitors or researchers collect plant species. Visitors enter from many points other than known paths and nature trails and collect flora and fauna. The forest officers cannot control this as the area is large.

2.7.2. Underlying drivers

Underlying drivers refer to complex economic, political, social, cultural and technological processes that strengthen the deforestation and forest degradation that operate beyond the boundaries of the forest. They may operate at international,

national, regional or local levels (e.g. international markets; domestic markets, national policies, local plans etc.).

2.8. Drivers of Deforestation and Forest Degradation

2.8.1. Drivers of deforestation

Bangladesh is a small country with diverse landscapes, supporting a variety of forest types with distinct vegetation composition. 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.

The COP encouraged Parties, organizations and the private sector to take action to reduce the drivers of deforestation and forest degradation, while noting the complexity of the problem and that drivers are unique to countries' national circumstances, capacities and capabilities.

Parties, relevant organizations, the private sector and other stakeholders are encouraged to continue their work to address drivers of deforestation and forest degradation.

2.8.2. Drivers of degradation

Almost all the papers provided an indication of the causes of degradation, which in the ultimate analysis is linked to the collective impact of factors like population growth, economic changes and policy, legal and institutional factors. Population growth and increasing demand for products – especially wood fuel – is stated to be a key driver of degradation in Bangladesh. The situation in other low income economies which are highly dependent on agriculture – for example Cambodia, Laos, Nepal, Myanmar and Viet Nam – is the same. In the case of Cambodia, it is noted that some “75 percent of the rural populations are farmers or land-less families who are highly dependent on access to natural resources for essential products, energy and food particularly in times of hardships”.

Increased demand with very limited resources to sustainably manage forests inevitably results in degradation, largely through multiple factors like over-exploitation, illegal logging, shifting cultivation, expansion of agricultural land and fuelwood collection. Urbanization is also identified as an important factor contributing to degradation.

Although causes of deforestation and degradation are complex, the root cause is socio-economic. Uncontrolled logging has been blamed as the principal cause of deforestation and degradation in many forest rich economies – for example Philippines and Thailand – turning them from wood exporters to wood importers. Fire is cited as another key factor contributing to degradation as in the case of Malaysia, much of which is attributed to cultivation of oil palm.

The main driver of deforestation globally is agricultural expansion, but many other drivers play important roles in many parts of the world. For REDD+ to be successful policy-makers must first understand and then factor in these influences and policy should be designed to best solve the overall market failure. 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.

Unsustainable and out dated forest management practices, as well as natural disturbances, also play a significant role in determining the changed composition and degradation of forests. Also, the intensity and frequency of cyclones in the coastal region have increased in recent years, which give the mangrove forests less time and less chance to recover. Thus the causes of deforestation and degradation are both human and natural.

3. Methods of Data Collection

Data are collected from review of relevant documents for REDD+ Readiness and interview of local forest people for knowing about drivers of Deforestation in Sylhet.

3.1. Content Analysis

Content analysis is the method of elevating social reality with a manifest text and within a non-manifest text. According to Krippendorff (1980) content analysis is the research technique for making explicative and valid inferences from data to their context. According to Neuman, content analysis is the most appropriate method for revealing the exact, objectively significant, text, word or symbol from a large volume of text. (Neuman, 2006). Published literature and unpublished articles, administrative reports, various journals and thesis paper, laws and policy documents, past, present and future development plans etc. all are considered to be REDD+ documents. The documents are analyzed to locate the implementation of REDD+ Readiness.

Data can be collected from review of relevant documents and focus group discussion among experts from each study area. The focus group discussion comprised experts that have deep knowledge of the programs and areas where the programs are implemented or intended to be implemented. Here field work is not done within the scope of this study. Secondary data collection approach is used for REDD+ readiness. Secondary data of REDD+ readiness are collected from REDD+ related articles.

This approach is used to incorporate the knowledge and implementation of REDD+ project, which will be fruitful to come in certain conclusion in any issues.

3.2. Methods of Field Data Collection

3.2.1. Description of the Study Area

Sylhet is considered one of the most pleasing and archaeologically rich regions in South Asia, and has major Islamic Sufi shrines and Hindu holy sites. The Sylhet Forest Division is extended over four districts, namely Sylhet, Sunamgonj, Moulvibazar, and Hobiganj under the central circle of the Forest Department. The forests in this area are tropical evergreen and semi-evergreen and each have several subtypes based on altitude, soil, and rainfall. The evergreen forest is composed of tropical wet evergreen

and tropical mixed evergreen. The deciduous forest consists of tropical moist deciduous and tropical open deciduous.

The area of the Sylhet Forest Division is between $23^{\circ}55'$ and $25^{\circ}02'$ North latitude and between $90^{\circ}55'$ and $92^{\circ}30'$ East longitude. The division is bounded by the Khasia and Jainta Hills of India on the North; Patharia Hills, Tripura and Assam in the East; the international boundary with Tripura State of India and Brahmanbaria District in the West (Chowdhuri, 2006).

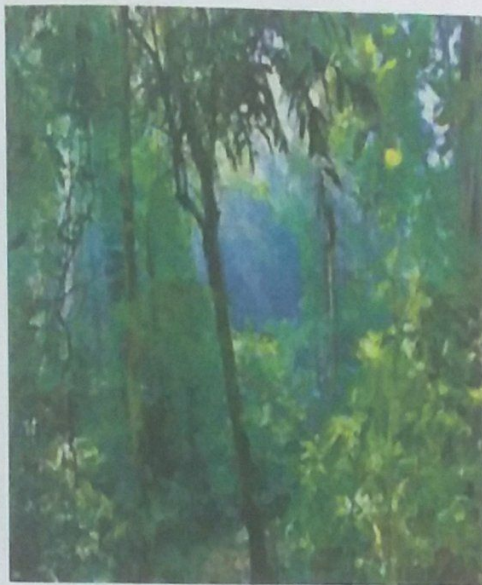


Figure: Study Area in Sylhet Forest Division

Khadimnagar National Park, previously known as Khadimnagar Reserve Forest (1957) is comprised of 679 hectares of area. It is one of the most important protected areas of Bangladesh, because of its interesting biodiversity composition. It is a resourceful mixed semi-evergreen and evergreen forest. It comprises floral resources, faunal resources, NTFPs resources, timber resources, bamboo, cane etc.

Lawachara National Park is a major national park and nature reserve in Bangladesh. The park is positioned at Kamalganj Upazila, Maulvi Bazar District in the northeastern region of the country. It is located within the 2,740 ha West Bhanugach Reserved Forest. Lawachara National Park covers approximately 1,250 ha of semi-evergreen forests Biome and mixed deciduous forests Biome. The land was declared a national park by the Bangladesh government on 7 July 1996 under the Wildlife Act of 1974.

Rema-Kalenga Wildlife Sanctuary is located in Chunarughat upazila of Habiganj. It is in very near to Srimangal of Moulvibazar district and adjacent to the Tripura border of India. It comprises four beats of Kalenga Forest Range of Habiganj District namely: Kalenga, Rema, Chanbari and Rashidpur. This is one of the natural forests in Bangladesh that are still in good condition. However, indiscriminate theft of trees and deforestation pose threat on the sanctuary.

The area of forests and Location in the Sylhet Division from where data are collected given in Table-

Table 1: Forest area and Location in Sylhet Forest Division

Forest types	Area (ha.)	Location
Khadimnagar National Park	679	Sylhet District
Lawachara National Park	1250	Maulovi Bazar District
Rema-Kalenga Wildlife Sanctuary	1795.54	Habigonj District

3.2.2. Interview of Local Forest People

In this study, primary data collection approach is used for knowing about drivers of deforestation, where two different methods are taken: a household questionnaire survey and interviews with Co-Management Committee.

A household survey is conducted in different villages of Sylhet Forest Division to assess people's dependency on forests and the economic status of households. The survey is conducted using a structured questionnaire. In each household the head of the household (or alternatively the female head or any adult member of the family) is interviewed. Moreover, livelihood-generating activities, forest visit and agricultural practices are closely observed during this research. The collected data are analyzed and presented in the result section.

3.3. Socio-economic Analysis of Drivers of Deforestation/Degradation

The socio-economic analysis identifies past and present drivers of deforestation/degradation and assesses policies and measures that can be applied to mitigate the action of such drivers. Insights from the analysis are used to make conditional assessments on likely future scenarios of deforestation and forest degradation also. The socio-economic analysis consists of the following steps:

- Analysis of socio-economic dynamics and underlying drivers of deforestation and forest degradation;
- Identification and description of proximate drivers and their associated mechanisms.

CHAPTER FOUR: RESULT AND DISCUSSION

4. Result and Discussion

After analyzing different articles related to the REDD+ readiness and analyzing field data, some important deforestation drivers are found those are mainly responsible to degrade and reduction of our forest area. At the same time the authority of REDD+ also identify those drivers as the main causes.

The natural forests, which once dominated the study area, are now under threat of intense exploitation. Some of the areas have been altered into plantations and currently the amount of natural forest stands is limited. If those areas are also under participatory system of forest management the potential for carbon sequestration under REDD+ will be much higher.

At present, local communities are actively involved in the management and protection of forest areas. They are also involved in various NGOs (IPAC, CREL, and NISORGO NETWORK) to conserve those natural forests. After involving with those NGOs, local people are now protecting forests from illegal felling and encroachment.

4.1. Different Drivers of Deforestation/ Forest Degradation

For REDD+ to proceed, it is important to understand linkages among indirect and direct drivers, in order to begin to assess the most effective areas at which to apply the programme. For this reason, driver pathway charts were developed for each set of drivers by forest type. The key indirect causes are economic mostly related to demand for forest and food products and the need for cash by poor people, the social issues of overpopulation, lack of education, and governance issues. As the indirect and direct drivers are linked by one another, and in most cases, several indirect drivers affect the magnitude of each direct driver. The common indirect drivers of overpopulation and poverty/unemployment are directly linked to the direct drivers of fuelwood harvesting, illegal timber harvesting, agricultural clearing and forest encroachment through settlements. These drivers are responsible, in part, for both forest degradation and deforestation.

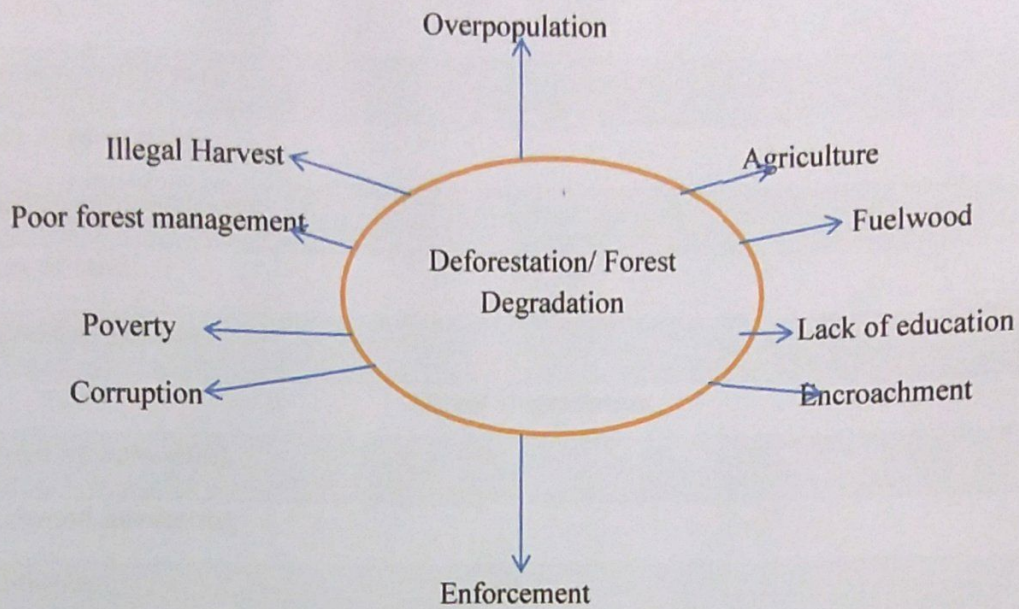


Figure: Different Drivers of Deforestation/ Forest Degradation

Table 2. Rank of Direct and Indirect Drivers of Deforestation and Forest Degradation in the Sylhet Forest Division, Bangladesh.

Drivers	Literature Rank
Direct Deforestation	
Agriculture	1
Excessive harvesting	2
Encroachment	5
Fuelwood harvesting	5
Fires	3
Infrastructure	5
Indirect Deforestation	
Overpopulation	1
Poor forest management	3

Corruption	5
Poverty	5
Unclear land tenure	2
Poor enforcement	5
Insufficient manpower	5
Lack of land	4
Lack of education	5
Direct Degradation	
Excessive harvesting	1
Fuelwood harvesting	5
Plantations	5
Fires	5
Indirect Degradation	
Overpopulation	1
Unclear land tenure	1
Corruption	5
Poor management	5
Poor enforcement	5
Poverty	1

Here Highest Rank = 1 and Lowest Rank = 5

Table 3: Dependency on Forests

Area	Family Types	Fuelwood Dependency from Forest	Timber Extraction	Fruits Collection
Khadimnagor National Park	CMC member	High	Moderate	Low
Lawachara National Park	Khasia tribal	Moderate to High	Low	Moderate
Rema-Kalenga Sanctuary	Wildlife Tripura tribal	High	High	High

4.2. Percentage of Direct and indirect Drivers

More than 80% of the rural population is directly or indirectly dependent on free access natural resources for subsistence. Over 90% of rural people cook with fuelwood, which amounts to 80% of the wood used in the country. Nevertheless, a 2014 survey suggested that there has been a decline from 44% to 35% of people cooking with fuelwood, overall, between 1991 and 2011. This would mean a decline in fuelwood use to about 11 million m³ by 2050 (FMP 2016). Millions of Bangladeshis are dependent directly on forests for their survival, for foods, fuelwood, and as a source for cash for trees illegally cut (e.g., Hossain et al. 2013).

Here, 8 household questionnaire survey data and 7 CMC survey data are analyzed. The results are shown below the graph.

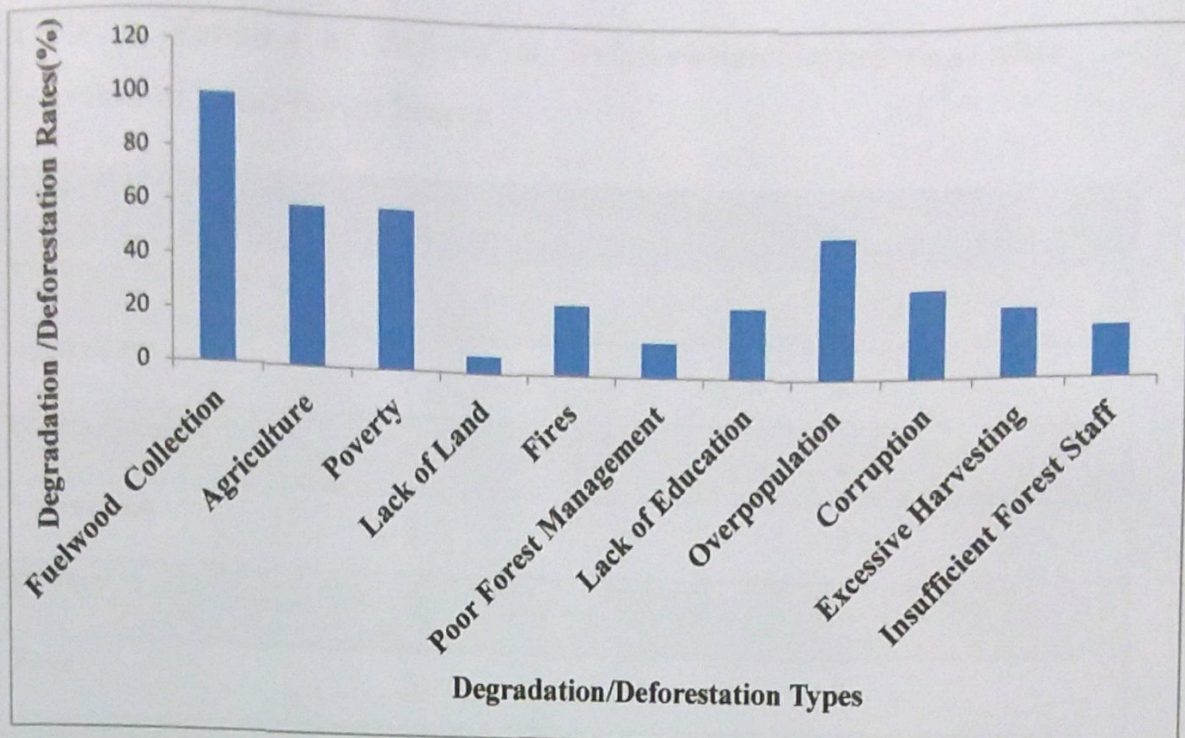


Figure: Deforestation/Degradation Category

Percentage of Deforestation/Degradation Drivers ranges from 6 to 100 (%). The highest value obtained at Fuelwood and the lowest value obtained at lack of land considering deforestation rates.

Poor governance, corruption and illegality in the forest sector put at risk forest dependent populations who rely on timber and non-timber forest products for their livelihoods and survival. For forest degradation, the main indirect drivers are overpopulation, poverty, corruption, poor management, and unclear land tenure, which led to degradation from both legal and illegal logging. The main direct drivers are agriculture, fires and excessive harvesting.

The socio-economic study has revealed that the people of the study area are not highly educated and illiteracy rate is very high which increases the dependency of the people on the adjacent forest for their livelihood. Participatory forest management taking advantage of REDD+ opportunities will not only conserve the forest as a carbon sink but also help in improving the socio-economic conditions of the local communities.

Table 4. Ranking of Drivers of Deforestation/Degradation after interview of Local Forest People

Drivers	Literature Rank	Study Rank
Fuelwood Harvesting	5	1
Agriculture	1	2
Overpopulation	1	2
Corruption	5	3
Poverty	1	2
Fires	5	4
Lack of Education	5	4
Excessive Harvesting	1	4
Insufficient Forest Staff	5	5
Poor Forest Management	5	5
Lack of Land	4	5

4.3. Discussion of the Study Area

After analyzing the field data, some important information's are found about study area. In **Rema-Kalenga Wildlife Sanctuary** under Kalenga Beat, deforestation had occurred 8 months ago and those areas are converted into lemon plantations. The main drivers of deforestation of this area are agricultural encroachment, illegal felling, poor forest management, fuel wood collection, forest fires, illiteracy, etc. The Government already takes initiative measures to conserve this forest. But the local communities are not happy because the Forest Department and Government are not conscious about this programme. Degradation rates are low in this region.

Various NGOs have taken effective measures to conserve this forest. IPAC, CREL and NISORGO network are working with Co-Management Committee.

In **Lawachara National Park**, the biodiversity of the park faces many threats as the locals are directly dependent on many forest resources and engage in the issues of clear felling and illegal timber felling. IPAC is working to promote co-management system for sustainable natural resource management and biodiversity conservation.

In **Khadimnagar National Park**, the local people have always been dependent on the park mainly for their daily needs of fuel wood, construction materials, food, etc. They also collect some non-timber forest products for their household needs. The biodiversity of the park faces many threats as the locals are directly dependent on many forest resources and engage in the issues of clear felling and illegal timber felling. The main drivers of deforestation are illegal felling, insufficient staff, poor forest management, illiteracy, poverty etc.

The rate of deforestation is low (5-10%). The main drivers of degradation are illiteracy, demand for food, fuelwood, construction etc. In 1986-1987, some mature trees were cut and then bamboos were planted there. At that time the Forest Department also helped to cut down trees. In 2014-2015, some medicinal plants were planted there.

Various NGOs have taken effective measures to conserve this forest. CREL is working to promote and institutionalize co-management system for sustainable natural resource management and biodiversity conservation.

4.4. Comparison with Other Countries Related To REDD+ in Bangladesh

In India, there is no specific legislation for regulating sources of GHG emissions, but the recent initiatives for mitigating GHG emissions, the sectorial approach is being considered as an important tool to combat climate change by regulating sources of GHG emissions related to various sectors of the economy, including the forest sector.

The Philippines is one of the more dynamic countries in Asia with respect to responding to the changing environment of forest policy. The country developed and adopted the Philippine National REDD+ Strategy (PNRS), which provides the framework for phased engagement in REDD+ initiatives.

Although the REDD+ programme in Sri Lanka is in preparation and has not yet been implemented, the Farmers Woodlot Programme is a strong candidate strategy for REDD+ implementation.

Thailand's REDD+ Readiness Preparation Proposal (R-PP) has identified the national parks and wildlife sanctuary selected for the greenhouse gas reduction pilot program. To achieve successful implementation it is necessary to important that consensus among stakeholders is ensured.

In Bangladesh, REDD+ is needed because destroying tropical forests, releases about as much CO₂ as the entire global transport system. Without a solution to deforestation, there won't be a solution to climate change. Tropical forest also sustained half of all life on earth and generates vital services for the planet. Such as- producing rainfall in the land surface and over a billion of the world's poorest people also depend on these forests for their survival.

Conclusion

Bangladesh is a densely populated country where land is one of the scarce resources. As forests are indispensable for livelihood, they are being depleted. This case study clearly indicates how to reconstruct forest from its deforested and degraded status and hence, act as a better option for the implementation of REDD+ in Bangladesh.

In Bangladesh, the implementation of REDD+ mechanism could be hindered by several challenges. The Forest Department, Government and various NGOs should take effective measures to reduce such deforestation and degradation and conserve natural forests.

If those problems can be reduced, REDD+ Readiness will be successful in Bangladesh and the drivers of Deforestation and degradation will also be reduced. REDD+ implementation will strengthen sustainable management of forests resources, and sustainably managed forests enhance the resilience of ecosystems and societies, and secure livelihoods of forest-dependent people.

RECOMMENDATIONS

Generally, data can be collected from household questionnaire survey, key individual interview, and focus group discussions. In the Sylhet Forest Division the drivers of deforestation/degradation are already ranked. We went to the sylhet to complete our working plan. So, it is the opportunity for me to know about drivers of deforestation from the local forest people. The data are collected from the interview of local people perceptions and then recalibrated. After collecting information, it is proved that the rank of field data and literature rank are almost same. The recommendations from interviews are-

- CMC should have legal basis.
- Coordination between FD and other agencies and stakeholders
- Empower Forest Department with staffs and logistic
- Everyone should play responsible role.
- Forest land demarcation
- Mother trees to be identified for conservation
- Motivation and awareness creation among local people
- Natural regeneration should be protected
- Strong political and social commitment.

Limitation

Obtaining the relevant documents has been the biggest methodological challenge of this study.

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**APPENDIX: SUMMARY OF DRIVERS AS REPORTED FROM 35 STUDIES
IN THE PUBLISHED LITERATURE FOR THE HILL FOREST IN
BANGLADESH-**

Forest type	Deforestation		Degradation		Source
	Indirect Drivers	Direct Drivers	Indirect Drivers	Direct Drivers	
Hill Forest	Overpopulation, migration to area, uncertain land tenure	Over-harvesting	Overpopulation, migration to area, uncertain land tenure	Over-harvesting	Miah <i>et al.</i> 2014
	Lack of alternative livelihoods, unclear tenure	Militarization, industrialization, shifting cultivation, illegal logging, encroachment	Lack of alternative livelihoods, unclear tenure	Militarization, industrialization, shifting cultivation, illegal logging, encroachment	Ahmed 2008
		Excessive shifting cultivation		Illegal logging	Hossain 2011
	Overpopulation, land scarcity, unclear land tenure, poor government policy (migration)	Excessive shifting cultivation, dam impoundments, illegal logging, overexploitation			Thapa and Rasul 2006
	Inefficient technology (wastage), overpopulation, poor government	Agriculture, excessive shifting cultivation, uncontrolled logging, fuelwood, grazing, fire		Fuelwood	Kibria <i>et al.</i> 2011

	policy				
	Poverty, lack of land use planning, uncertain tenure	Agriculture/shifting cultivation			Hossain <i>et al.</i> 2008
	Overpopulation and migration, poor government policy, poverty, lack of land, lack of full valuation of forest value	Encroachment, dams, militarization	Overpopulation and migration, poor government policy, poverty, lack of land	Plantations	Iftexhar and Hoque 2005
	Poverty, over population, lack of land, lack of technology, uncertain land tenure, top-down management by FD, under capitalization	Fires, soil erosion, excessive shifting cultivation	Poverty		Rahman <i>et al.</i> 2012
	Overpopulation, lack of proper policy and poor land management, land scarcity	Agriculture, industrialization, settlement, sand mining			Biswas <i>et al.</i> 2012
	Overpopulation, Poor governance	Shifting cultivation, overharvesting	Overpopulation, Poor governance	Shifting cultivation, overharvesting	Salam <i>et al.</i> 1999