



Climate Change Adaptation and Mitigation Options through Strengthening Forest Management in Bangladesh



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OUTLINE OF THE PRESENTATION

- Background
- Objectives
- Climate Change and Forests in Bangladesh
- Forest Management in Response to Climate Change
- Climate Change Adaptation and Mitigation Options for Bangladesh through Forest Management

BACKGROUND

- Bangladesh is one of the most vulnerable countries due to climate change
- Sustainable Forest Management is a practice which offers numerous adaptation and mitigation options
- Adaptation and mitigation are two mechanisms/options to cope with or to confront the undesirable climate change
- Adaptation is local specific while mitigation demands collective efforts of global communities



OBJECTIVES

- To highlight the forest management initiatives to cope with climate change impacts
- To highlight the mitigation options generated strengthening forest management in Bangladesh

Forests of Bangladesh

Types of Forest	Area (m ha)	(%)
Natural Mangrove Forest and Plantations	0.73	4.95
Tropical Evergreen and semi-evergreen Forest	0.67	4.54
Tropical Moist Deciduous Forest	0.12	0.81
Total	1.52	10.03

Source: Bangladesh Forest Department



Source: Bangladesh Forest Department, 1999

Major Forests of Bangladesh



CLIMATE CHANGE AND FORESTS IN BANGLADESH

- The forests in Bangladesh have been experiencing detrimental impacts due to deforestation
- The **Sundarbans** are under worst condition
- Forest resource depletion resulted serious economic and environmental loss
- Bangladesh has already taken a number of initiatives to halt climate change impacts mainstreaming sustainable forest management

FOREST MANAGEMENT APPROACHES IN RESPONSE TO CLIMATE CHANGE

- ❑ Silvicultural Management
- ❑ Gene Management
- ❑ Afforestation
- ❑ Management of existing forests
- ❑ Community based forest management
- ❑ Agro-forestry, strip plantation
- ❑ Homestead plantation and woodlot (fuel wood) plantation



Coastal Afforestation for
Climate Change Adaptation



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- ❑ Monitoring and verification system
- ❑ Capacity building
- ❑ Company-Community Partnerships
- ❑ Improving governance and forest law enforcement
- ❑ Indigenous people's rights
- ❑ Containment of illegal logging



CLIMATE CHANGE ADAPTATION OPTIONS THROUGH FOREST MANAGEMENT

- ❑ Effective forest monitoring
- ❑ Effective fire management
- ❑ Restoration of forest functions after disturbances

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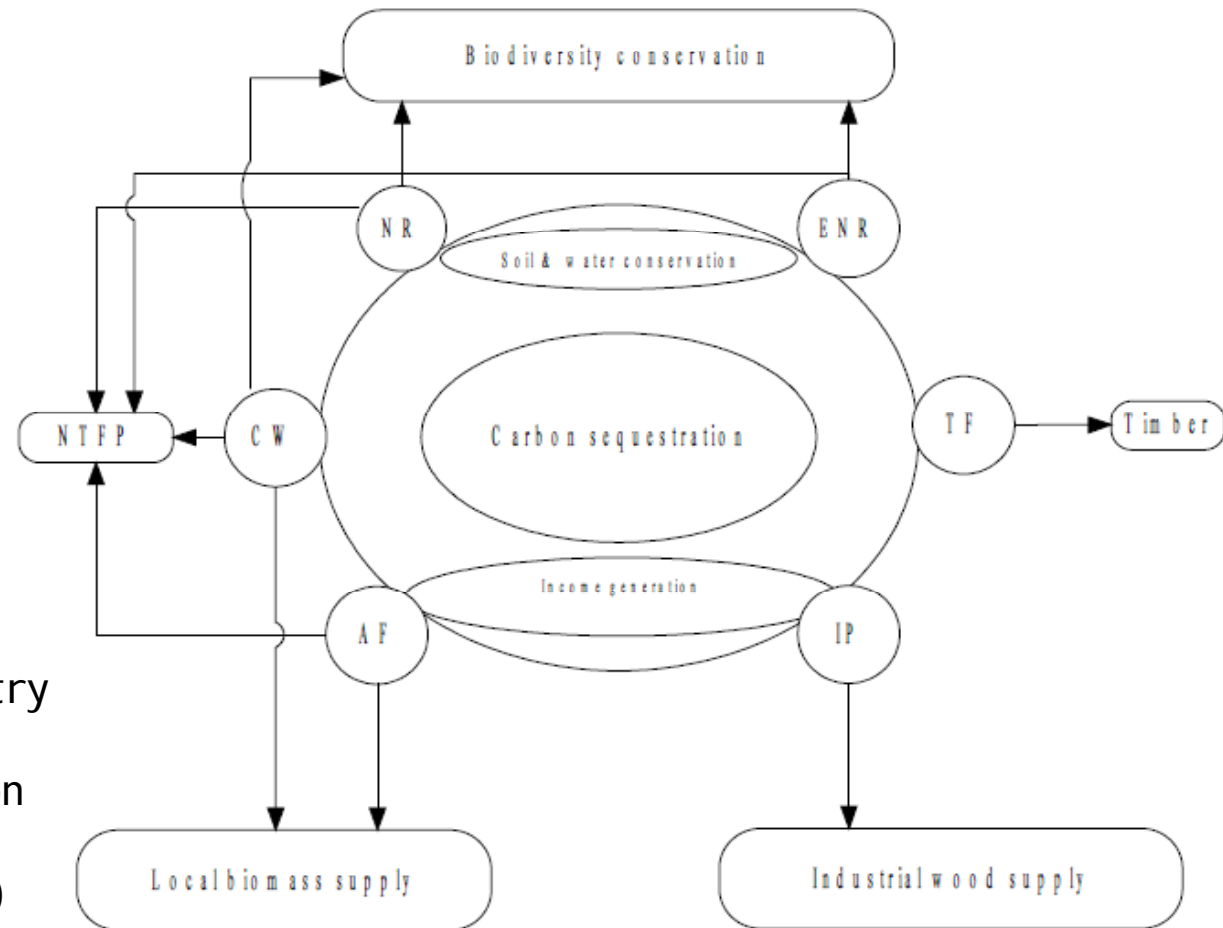
- Community plantings
- Partnership with private sectors
- Agro-forestry systems
- Shelterbelts
- Awareness campaigns through media and field demonstrations



Social forestry practices
in Bangladesh

CLIMATE CHANGE MITIGATION OPTIONS THROUGH FOREST MANAGEMENT

❑ Carbon Sequestration and Conservation



The utility of forestry options while sequestering carbon

(Source: Miah & Shin)

Notes: AF= Agroforestry; CW= Community Woodlot; ENR= Extended Natural Regeneration; IP=Industrial Plantation; NR= Natural Regeneration; NTFP=Non Timber Forest Products; TF=Timber Forestry

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Options for Carbon Sequestration in Forests

✓ **Afforestation**

- most recognized and studied option for mitigation

- a forest that is growing can remove 5-11 tons CO₂ per hectare per year (approximate)

✓ **Reductions in deforestation**

- a relatively low cost option

- about 50% of the mitigation potential could be achieved by reducing deforestation (IPCC, 2007)



Rural afforestation

FOREST MANAGEMENT AND CLIMATE CHANGE ADAPTATION AND MITIGATION OPTIONS IN BANGLADESH

Forest Management	Climate Change Adaptation	Climate Change Mitigation
Rural Afforestation	<ul style="list-style-type: none">-Protection of bank erosion of rivers, canals and ponds.-Increased forest coverage.-Employment generation-Poverty alleviation.	<ul style="list-style-type: none">-Carbon sequestration
Coastal Afforestation	<ul style="list-style-type: none">-Protection against storm surges and tropical cyclones .	<ul style="list-style-type: none">-Carbon sequestration

Forest Management	Climate Change Adaptation	Climate Change Mitigation
Mangrove plantation	Buffers the land against storm surges, strong winds and sea level rise.	Increase in carbon storage
Participatory forest management (PFM), Joint forest management, Co-management and Community-based forest management	Reduce soil erosion, improve soil and water quality, and conserve biodiversity.	-Scope of carbon sequestration
Social Forestry	<ul style="list-style-type: none"> -Halt deforestation and soil degradation. -Reduce the vulnerability from air pollution, noise pollution, drainage congestion etc. 	REDD (reducing the emission of carbon)

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- ❑ Conservation of forests and carbon sinks
- ❑ Reforestation in barren lands
- ❑ Afforestation in newly accredited lands
- ❑ Effective enforcement of existing forest laws and regulations

Forest types	Carbon stock tC ha ⁻¹
Closed large-crowns	121
Closed small-crowns	87
Distributed closed	110
Distributed open	49
Average	92

Carbon density in the forests of
Bangladesh
(Shin et al., 2007)

CONCLUSION

- Forest management is an effective tool in response to climate change through proper adaption and mitigation measures
- All the forestry management initiatives are found effective both in economic as well as their environmental sustainability
- More forestry management initiatives should be undertaken in future

CONCLUSION

- Forest management programmes must be designed in order to achieve environmental sustainability.
- All those programmes must be coincided with the future climate change.
- Forestry management must be incorporated in the national development policies.



THANK YOU

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