

## Objective of this Workshop

- Present study report
- Receive feedback on the report and recommendations for finalization
- Listen to presentations on selected topics covered in the report
- Discuss options for development and growth in the Northeastern Region

## Natural Resources, Water and the Environment Nexus for Development and Growth in Northeast India

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### The Study

- NER: Great abundance of natural resources, esp. water, forests and mineral resources
- Potentially wealthy region of India, but great development needs
- Gol wants World Bank to focus on development in Northeastern Region
- MoDONER and the World Bank jointly carrying out the present study, with the assistance of national and international experts in the various fields

### Overall study objectives

- develop a broad vision for water and natural resource development and management leading to sustainable and equitable economic development and growth in the region

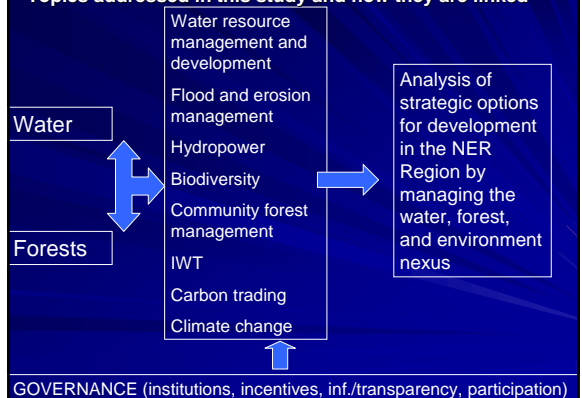
### Objectives of the study (cont.)

- ◆ identify **critical institutional reforms** necessary for the more effective development and management of the region's water and natural resources
- develop an **analytical framework** that can help identify and **prioritize high-return investments** in **physical and institutional infrastructure** based on an **inclusive** and **participatory** approach
- ◆ create **platform** for interaction with stakeholders

### Focus of the Study

- 2 key renewable resources
  - Water
  - Forests
- Political-institutional framework dealing with their management

### Topics addressed in this study and how they are linked



## Study Process

- Technical seminars and stakeholder workshops
- State-level workshop in each of the 8 northeastern states
- Website [www.mdoner.gov.in](http://www.mdoner.gov.in)

## Some key features of the NER

- 8 states
- 39 m inhabitants
- Ethnic and cultural diversity
  - > 240 tribes



## Some key features of the NER

- Abundant water resources:
  - Barak and Brahmaputra rivers – 1/3 of India's total run-off
  - About 60,000 MW hydropower potential
  - Significant groundwater resources
  - wetlands

## Some key features of the NER

- Abundant forest/biodiversity resources:
  - Indo-Burma biodiversity hotspot
  - northernmost limit to true tropical rainforests worldwide
  - Plant endemism
  - 836 of the 1,200 bird species from Indian subcontinent
  - Pigmy hog, Indian rhino, wild water buffalo, elephants, tigers

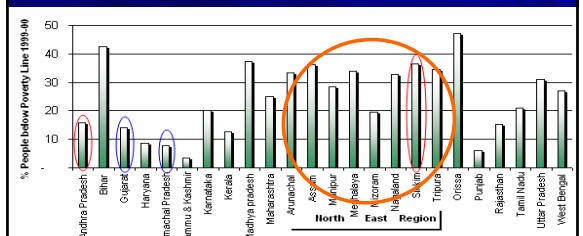
## Some key features of the NER

- The other side of the coin:
  - 25 to 35% people under poverty line
  - NER called “backward”
  - political violence
  - forests are being cut down and biodiversity and livelihoods lost
  - in spite of large investments in flood control increasing damages
  - 1999 – 2004: 4 m people flood affected; 7 billion rupees in damages

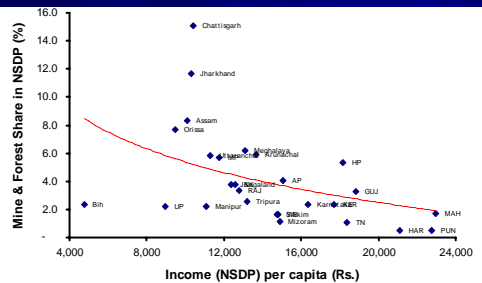


## Some insights from economics

- A case of resource curse?
  - natural wealth, but high poverty



## Mineral and forest share and per capita income by state



## Some insights from economics

- Natural resource wealth ≠ societal wealth
- Resource dependent economies: slow economic growth, institutional erosion and conflict closely linked
- institutional strengthening and reform must be at the center of any resource-intensive growth strategy:
  - Incentives for actors (politicians, government officials, community leaders, the “common” man and woman) to preserve their natural resources and develop them for the good of all
  - Transparency, participation help enforce rules and regulations
  - Building trust

## Study findings

### Institutional Environment

- 5 key themes cutting across all sectors:
  - Centre dominance of decision-making
  - Very complex but incomplete institutional arrangements
  - Incomplete and partly inaccessible knowledge base regarding natural resources
  - Public sector goals focus on input and output, not on outcome

### The case for regional cooperation

- Water resources
  - trade-off analysis (flood/hydro/ecology/social)
  - increasing the pie and benefit sharing
- Forests and Biodiversity
  - create knowledge base
  - develop regional enabling environment for productive and sustainable use and management (agriculture, ecotourism, etc.)

### River basin management

- Incomplete and inaccessible **knowledge** on Brahmaputra and Barak
- **Brahmaputra Board** experience: without active cooperation by states no development nor management of northeastern rivers
- **New/reformed agency** built on decentralization, participation, transparency and with changed incentives for performance **needed**

## Hydropower

- Hydro sector one of best development opportunities in the NER
- Direct financial benefits
- Indirect benefits in services, transport and tourism
- Potential doubling of NER's net state domestic product



## Hydropower cont'd

- Key issues:
  - Social and environmental concerns
  - Ensure benefits accrue to local stakeholders
  - Carry out in-depth and transparent trade-off analysis (no development vs run-of-river vs storage) and discuss cost and benefit sharing mechanisms
  - Identify low-impact projects as a start?
  - Decommission existing dams?

## Flood and erosion management

- Current situation:
  - Floods affect annual average of 1.25 million ha of land
  - More than 5,000 km of embankments exist in NER



## Increasing Flood Damage partly due to increasing population and economic activity

Flood Damage Trends in the Brahmaputra Valley

Period	Average Annual Area Flooded (mha)		Flooded Crop as % of Total Inundated	Average Annual Population Affected	Affected Population per ha of flooded area	Average Annual Damage (INR million)	Value of Crop lost as % of Total Damage
	Total	Cropped					
1953 – 59	1.13	0.10	8.85	860,000	0.8	58.6	66
1960 – 69	0.75	0.16	21.33	1,520,000	2.0	75.7	92
1970 – 79	0.87	0.18	20.69	2,000,000	2.3	151.8	89
1980 – 88	1.43	0.40	28.05	4,550,000	3.2	1,455.2	96
1999 – 05	1.07	0.38	35.65	4,586,000	4.3	7,171.7	34

## ■ Erosion, the silent enemy:

- 386,000 ha eroded since 1954
- 90,000 families
- 2,500 villages
- 8,000 ha/year
- US\$790 m foregone production



## Flood and erosion management

- Key issues to be addressed:
  - Strategic asset management
  - Incentive structures at national/state levels need to be changed
    - budget allocation mechanisms
    - Interaction with communities
    - Include agricultural adaptation
  - Linkage to overall water resource management systems in the NER, including monitoring and knowledge base enhancement
  - Living “intelligently with floods”
  - Climate change implications

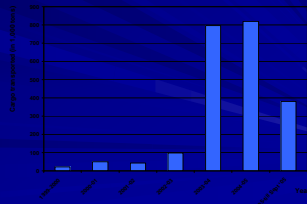
## Inland water transport

### ■ Current situation:

- Geographical isolation of NER
- Limited cargo movements within NER and through Bangladesh

But:

Great potential for increased IWT



## Inland Water Transport

### ■ Key Issues

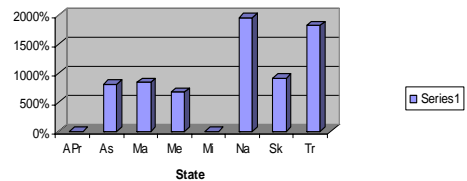
- Development of waterways between India and its **neighbors** (Myanmar, Bangladesh)
- Increase in flexibility of **protocol routes**, especially Bangladesh
- **Integration** with **other modes** of transport
- Increase strategic connectivity of **rural communities**
- Provide **enabling** environment for **private sector** investments



## Forest management

- Tradition of community-based forest management in NER slowly eroding
- Population pressure, cultural change

Population change in the NER 1901 - 2001



## Forest management

- Communities in NER legally own their land and forests
- Joint Forestry Management schemes appropriate for pensinsular India, less for NER
- Chance to build on already existing legal, cultural and social structures to sustainably manage forests and livelihoods

## Forest management

### ■ Key issues:

- Community involvement, devolution of decision making
- Work *with* communities
- Land/forest classification



## Biodiversity

- NER is a global hotspot
- Biodiversity is important for local livelihood
- **Key Issues:**
  - Strategic development of a regional knowledge base
  - Build enabling environment (legal, education, etc.) to manage biodiversity and enhance livelihoods
  - Carbon trading?

Bringing it all together....

- Major benefits from regionwide investments in “hardware” and in “software”
- In parallel with “systemic” regionwide investments, benefits must be created at local levels
- Change and reform in institutional framework and incentives for stakeholders
- High risk that benefits will not materialize if institutional framework is not addressed upfront - > business as usual = results as usual

## Priority activities

Sector	Regional-level activities	Local-level activities
Water resources	Institutional	Institutional
Flood/erosion management		
Hydropower	physical	physical
IWT	.....	
Forest and biodiversity management		

## Conclusions

- Avoid the resource curse by addressing the underlying institutional framework
- NER natural resource assets can be to the benefit of the region
- Clear priorities emerge

## Conclusions

- Change needed at Centre, state and local levels:
  - Incentives to encourage regional cooperation (“TVA for the NER”)
  - Transparency in decision making in order to increase accountability (and responsibility!) of actors
  - Devolution of decision making power to lower levels
  - Trust in benefit sharing mechanisms

## Conclusions

- Institutional change and investments at regional and local levels need to go hand in hand

