“Land Use Policy Implications of Mangrove Afforestation in Accreted Char-lands of Bangladesh Coastal Areas: A Case Study from Hatiya Island of Noakhali District”

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15 December, 2014
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• Background
• Research Hypothesis and objectives
• Location of the study area
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• Primary discussion
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Background: Forest coverage of Bangladesh

Mangrove plantation has been continuing in the accreted lands by the Bangladesh Forest Department (BFD) since 1965.

Forest Coverage (% of Total land area):
- 11.1% (World Bank, 2013a)
- 11.26% (BFD, 2011)

Deforestation Rate: 0.2% (World Bank, 2013)

- Natural mangrove forest 4.08%
- Planted mangroves 0.89%
- Non-mangrove forest 6.29%
- Non forest area 88.74%
Background: Land accretion and formation of Island in the Bay of Bengal

- **Discharge of Deltaic deposit by the Meghna River**
- **Formation of new Islands (Accreted land) in the Bay of Bengal**
- **Erosion & Accretion occur**
- **Mangrove afforestation to stabilise the new land**

### Annual net land gain in the Meghna Estuary: 18.82 km²

<table>
<thead>
<tr>
<th>Period</th>
<th>Accretion</th>
<th>Erosion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973-1979</td>
<td></td>
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<td>1979-1984</td>
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<td>1984-1990</td>
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<td>1990-1996</td>
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<td>1996-2000</td>
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<td>1973-2000</td>
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</tbody>
</table>

[Source: The Meghna Estuary Study (MES), Ministry of Water Resource, 2001]
Background: Settlement and afforestation in the accreted lands

Afforested Mangrove forest

Accreted lands or Char-lands

Extraction of Resources

Resettled river erosion victim

Mangrove afforestation started in 1965-66 by Bangladesh forest department (BFD, 2011)

Prioritized in the National Forest Policy, 1994

Mangrove Plantation 196,000 hectare

Resettlement started in 1985 under Rehabilitation Program of the Government (Matin, 1986)

Prioritized in the National Land Use Policy, 2001 (GOB, 2001)

Resettled Victims 28,000 (2001-2013)
Background: Problem Statement

Why and How it declined?

Research Questions?
1. Does resettlement program affect mangrove afforestation?
2. Do the priority components of the national land use policy (NLUP) and the forest policy (NFP) affect each other?
Objectives of the Study:

- To examine the impacts of the government’s resettlement program of river erosion victims on mangrove afforestation in accreted lands around Hatiya Island.

- To Review policy framework for accreted land management and mangrove afforestation in Bangladesh.

Background: Hypothesis and Objectives
Location of the study area

Geographical Location: 22°08′01.93″N to 91°04′43.19″E

Hatiya Island is located in the Northern tip of the Bay of Bengal and a part of the central coast of Bangladesh under Noakhali District.

Area: 1507 km²
Population: 452,463;
Density: 300 per km² (BBS, 2011)

Accreted Land area: 380,000 acres (Hatiya + adjacent islands)
Area of Mangrove afforested Land: 196,788 acres
Methodology

Structured questionnaire
Survey (n=128 HHs)

- Interview
  Of district land & forest officials

- Secondary data
  From government agencies and previous studies

Data input and analysis

Result and discussion

Planted mangrove forests
(Sonera apetala)
Local name: Kerfa/keora

Village 1: Zorekhali
19 households
110 HH members
Estd. 1998

Village 2: Borodail
35 Households
221 HH members
Estd. 1998

Village 3: Batayan
44 households
264 HH members
Estd. 1988

Village 4: Ananda
30 households
171 HH members
Estd. 1988

Hatiya Main Island
Nijhum Island

Survey (n=128 HHs)
Interview
Of district land & forest officials
Structured questionnaire
Secondary data from government agencies and previous studies
Data input and analysis
Result and discussion

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44 households
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Data input and analysis
Result and discussion
Result of the questionnaire analysis
Result: Sex ration and household size of the respondents

Respondents’ gender feature (N=128)

- Female: 51%
- Male: 49%

[Source of the district and national average: BBS, 2011]
Result: Literacy status among the respondents

Gender based literacy status among the respondents (N=128)

<table>
<thead>
<tr>
<th>Villages</th>
<th>Male Literates</th>
<th>Female Literates</th>
<th>Male Illiterates</th>
<th>Female Illiterates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borodail</td>
<td>13</td>
<td>5</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Zorekhali</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Batayan</td>
<td>16</td>
<td>3</td>
<td>22</td>
<td>9</td>
</tr>
<tr>
<td>Ananda</td>
<td>17</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
</tbody>
</table>

Literacy status of the respondents (N=128)

- Can Sign only: 23%
- Neither sign nor read: 77%
- Literate: 29
- Illiterate: 98

Indicates high rate of illiteracy <lack of awareness on sustainable resource use>.
Result: Income range and sources

Sources of Income:
- Fishing
- Agriculture
- Daily Labor
- Firewood Collection
- Small Business

Annual Average Income of respondent households (N=128)

Per Capita Income: 829 USD (World Bank, 2013b)

Per 1 JPY = 0.7446 BDT (Exchange rate of 31 Aug 2014)

http://www.exchangerates.org.uk/JPY-BDT-exchange-rate-history.html
Result: Respondents’ previous settlement

Respondents’ first habitat was in the Northern part of the Island and adjacent Islands.

Migration trend was Southward where accreted and afforested lands exist.

[Developed by imposing the survey data on the map of the www.bangladepedia.org]
Result: Consumption of Mangrove for construction

**Ceiling**
- Only Wood: 28.13%
- Wood and Log: 71.88%

**Roof**
- Straw: 32%
- Corrugated Sheet: 68%

**Door**
- Wood Only: 55%
- Wood & Log: 45%

**Wall**
- Bamboo: 59%
- Corrugated Sheet: 5%
- Straw & Log: 32%
Result: Sources of Wood and Log

Wood source for house construction (N=128)

- Mangrove: 57.81%
- RT: 7.03% (Roadside Trees only)

MRT: Mangrove & Roadside Tree together;

Log source for house construction

- Mangrove: 53.13%

MRT: 19.53% (Mangrove & Roadside Tree together);

RT: 27.34% (Roadside Trees only)

Indicate indiscriminate use of mangrove trees for construction and repair
Result: Consumption of Mangrove as biomass fuel (firewood, twigs, leaves)

Cooking frequency and firewood requirement (N = 128)

- 03 Times Cooking: 92%
- 04 Times Cooking: 8%

Weekly biomass fuel consumption/household (Kg)

- Borodail: 73.71
- Zorekhali: 75.79
- Batayan: 82.72
- Ananda: 76.66

Average household size: 5.9

Weekly average consumption by a household: 77.22 kg or 11 kg/day

Indicate large consumption of mangroves as biomass fuel
Result: Preferred part of a tree for firewood

Indicates that branch and leaves of mangrove trees are mostly used for fuel. Use of whole tree shows tendency of cutting whole tree.
Result: Mangrove consumption for cattle rearing

Composition of a Cattle sheds in the study area

Average Cattle Number per family: 7.5

Indicates around 58% cattle sheds are composed of woods and logs being collected from the planted mangroves (n: 128).
Result: Perception of the respondents on mangrove decline and reasons

Indicates that encroachment of forestland by clearing mangroves for agriculture is the principal reason for mangrove decline in accreted lands.
Result: Perception on forest encroachment and official action

Encroachment by clearing forest seen by the respondents

<table>
<thead>
<tr>
<th>Village</th>
<th>Yes (28)</th>
<th>No (7)</th>
<th>Yes (38)</th>
<th>No (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borodail</td>
<td>5</td>
<td>6</td>
<td>23</td>
<td>32</td>
</tr>
<tr>
<td>Zorekhali</td>
<td>4</td>
<td>9</td>
<td>20</td>
<td>32</td>
</tr>
<tr>
<td>Batayan</td>
<td>10</td>
<td>18</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Ananda</td>
<td>7</td>
<td>15</td>
<td>7</td>
<td>20</td>
</tr>
</tbody>
</table>

Perception on Forest Official’s action over encroachment

Number of Respondents (N=128)

Indicates lack of monitoring of the forest officials
Resettlement trend in accreted lands

[Developed on the basis of the data obtained from the Hatiya Sub-district Land Office, Noakhali district, Date: 02 September, 2014]

Note:
Applied Victims: The erosion victims who have applied to the govt. for resettlement
Resettle victims: The erosion victims who have already been resettled with land entitlement by the govt.
Resettlement in the “Reserved Forest”

Declared as Reserved Forest in 1977 and handed over to forest department for 20 years for mangrove plantation

Martial law administration (1982-1990)


Breach of the section 29 and 30 of the Forest Act of 1927 (amended in 2000)

Nijhum Island was declared as National Park & protected area in 2001
Overlap in institutional management

The Survey Act, 1875 (amended in 1982)
The Khas land (State-owned land) Settlement and Management Rule, 1997
State Acquisition and Tenancy Act, 1950 (amended in 2006)
The Forest Act, 1927 (Amended in 2000)
Reserved Forest & Protected Areas

Ministry of Land
Responsible for management of the accreted land

Ministry of Environment & Forest
Department of Forest is held responsible only for afforestation in accreted land

Institutional Mandates & Jurisdiction

Imposed dual administration over forest land

Lack of inter-agency coordination and monitoring
The High Court’s stand against the government’s resettlement program in the reserved forest on accreted lands

No further land allotment (resettlement) or any construction in the Nijhum Island

The Daily Star

HC halts allotment of Nijhum Dwip land

Star Online Report

The High Court today imposed an injunction on making further allotment of land or any construction of structure in Nijhum Dwip, a reserved forest area, in Noakhali. In response to a writ petition, the court asked the authorities concerned of the government to submit a report regarding the list of possessors and the position of the entire land of Nijhum Dwip to it in every four months. The HC issued a rule upon the authorities to explain in four weeks as to why their failure to protect, conserve and develop the reserved forest should not be declared illegal. The HC bench of Justice Mirza Hussain Haider and Justice Md Ataur Rahman Khan came up with the order and rule after hearing the writ petition filed by Supreme Court lawyer Abu Bakar and local journalist Rafiq Uddin Enayet. They submitted the petition last month seeking directives from the HC on the government to take necessary steps for protecting and conserving Nijhum Dwip.

[source: The Daily Star (2014, 23 October)]

The High Court’s stand indicates the existence of overlap in legal and institutional jurisdiction of the forest and land administration agencies of the government.
Primary discussion

Overlap in legal mandates and government’s priority program resulted in the resettlement of erosion victims in the reserved mangrove forest. Scope of resettlement by the government and natural land gain insisted erosion victims to migrate into the accreted lands. The resettled respondents were found to have direct use of mangrove trees for housing, biomass fuel and cattle rearing in indiscriminate manner which gradually led to destruction of mangroves.

Future works

- Policy framework analysis
- Statistical interpretation of tabulated data and result
- Discussion and Compare with other relevant works
- Conclusion
- Writing
Thank you very much
Reference:


