CHARACTERISTICS OF HOUSEHOLDS AS DRIVERS FOR FOREST TRANSITION:

Case study in Baghdevi CFUG, Chitwan District, Nepal and LMDH Galang Taruna, Ciamis District, Indonesia

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INTRODUCTION

- Deforestation constitutes the main problem in developing countries (Allen & Barnes, 1985; Laurence, 2007)

- Deforestation rate in Indonesia:
  + 1.1 million hectares/year (MoFRI, 2008)
  + 1.87 million hectares/year (FAO, 2007)

- Two conflicting opinions:
  + Deforestations are due to activities of small farmers / peasants who possess only small tracts of land (FAO 1990; World Bank 1990; Barbier et al., 1993).
  + Big companies are the cause of deforestation (World Bank, 1994).
INTRODUCTION: NEPAL

- Total area: 147,181 km²
- Located between India and China
- Total population: 23.15 million
- Annual growth rate: 2.24%
- 86% of the total population lives in the rural areas

Community Forestry started since 1970s
More than 19,000 community based forest user groups are managing about 25% of the total national forest area

Forest based on land ownership:
- National forest
- Private forest

Based on management objectives and rights:
- Government-managed Forest (GMF),
- Community Forest (CF),
- Leasehold Forest (LF),
- Religious Forest (RF),
- Protected Forest (PF) and
- forest under the Protected Areas systems (PA)

Source: MFSC, 2009
INTRODUCTION: JAVA

- Total area of Indonesia: 191,944,000 ha
- Total terrestrial of Java: 12,749,900 ha
- Total forest area of Indonesia: 126,829,561.28 ha
- Total terrestrial forest area of Java: 3,024,958 ha

Source: Damayanti, 2008

Farmers in Java, who possess only relatively small tract of land, or farm laborers, would attempt to enlarge or search more cultivated land, to obtain greater yield (Prasetyo, et al., 2009) and conversion of forest and agricultural land to settlement (Prasetyo, Damayanti, & Masuda, 2009).

- 23.7% of Java is forestland
- Production & protection forest areas in Java are managed by Perhutani with Forest Resource Management Together with the Community (PHBM) program, to reduce deforestation and increase farmer’s welfare around the forests in Java

If population growth cannot be controlled, in year 2050 population density in Java will reach 2,070 individuals/km² (Prasetyo, Damayanti, & Masuda, 2009)

- Total area of Java is only 7% of the total area of Indonesia → occupied by 70% of Indonesian population (1,026 individuals/km²) (BPS, 2008)
- High density population
INTRODUCTION: FOREST TRANSITION

- Forest transition is the change from shrinking to expanding forests (Mather, 1992 & Grainger, 1995 in Mather & Needle, 1998).

- Nepal:
  + The rate of forest area **decrease** was **1.7% per year** between 1978/79 and 1994,
  + the rate of forest and shrub depletion was **0.5% per year**
  + the recent studies from 20 Terai districts revealed that the rate of forest cover change was at an annual rate of **0.06%** during 1990/91 to 2000/2001.
  + Macro level studies and visual interpretations revealed that Nepal’s forest coverage and condition is significantly improving due to the Community Forestry (CF) intervention (Ministry of Forests and Soil Conservation, 2009).
INDRODUCTION: FOREST TRANSITION (2)

- **Indonesia**
  - Studies in Kuningan District and Ciamis District in Java revealed that on district based analysis, reforestation have been happening with:
    - reforestation rates of **0.67%** in Kuningan District between 2002-2009 (Prasetyo, Damayanti, & Masuda, 2009) and
  - Indonesia (Sumatera, Indonesian Borneo, and West Papua) is classified into deforested countries together with Malaysia and Myanmar as results of infrastructure expansion, investment in agriculture, and establishment of cash crop plantations (FAO, 2011)
  - District based/small scale studies such as in Kuningan and Ciamis revealed the reversal
This study aims at identifying the characteristics of households that engage in Community Forestry (CF) of Nepal and Forest Resource Management Together with the Community (PHBM) that becomes driving factors for the success of reforestation.
<table>
<thead>
<tr>
<th>Detail</th>
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<th>Ciamis Case</th>
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<td>2010</td>
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<td>LMDH Galang Taruna</td>
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<td>Number of household members</td>
<td>1,045</td>
<td>166</td>
</tr>
<tr>
<td>Number of respondents (households/HH)</td>
<td>CFUG member: 22</td>
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</tr>
<tr>
<td>Sampling intensity</td>
<td>2.11%</td>
<td>13.86%</td>
</tr>
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</table>
LOCATION OF STUDY: CHITWAN

Before 2003
After 2003
LOCATION OF STUDY: CHITWAN

After 2003
LOCATION OF STUDY: CIAMIS

2001

2010
LOCATION OF STUDY: CIAMIS
## METHODS

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Results of these analysis were used to identify the villages for interview.
RESULTS

Community Forestry Setting
PHBM Setting
Baghdevi CFUG, Chitwan-Nepal
LMDH Galang Taruna, Ciamis-Indonesia
Households characteristics
## COMMUNITY FORESTRY SETTING

### Detail information on Nepal’s Community Forestry

<table>
<thead>
<tr>
<th>Initiated</th>
<th>1976</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management system</td>
<td>handing over a portion of forest to local community to be managed, so they are benefitting forest products for their daily consumption</td>
</tr>
<tr>
<td>Form of institution</td>
<td>Community Forest User’s Group (CFUG)</td>
</tr>
<tr>
<td>Benefit of CFUG members</td>
<td>utilizing forest products in their CF and they can fix their own price for forest products and membership fee</td>
</tr>
</tbody>
</table>

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**Source:** Field survey, 2010
PHBM SETTING

- LMDH = Forest Village Community Institution
- HPD = Village-managed Forest
- MoU between the village and the head of district forest management unit (KKPH)
- LoA between LMDH and head of division forest management unit (KBKPH)

Source: Field survey, 2009
BENEFIT OF PHBM

- Intercropping with Tumpangsari/taungya system
- Crop harvest & firewood from pruning
- Sharing at final harvest: Perhutani: LMDH = 75:25
- Collaborative patrol
There has been a decrease in forest cover of Chitwan District, including in Baghdevi CF.

Deforestation took place on the same time with application for CF and continued even after CF was handed over.

Baghdevi CFUG was established & applied for CF in 1997, approved in 2001 with forest areas handed over was 482.39 Ha.

The turning point of forest transition was in 2003 (Data analysis, n.d., unpublished).

### Members of Baghdevi CFUG

<table>
<thead>
<tr>
<th>Year</th>
<th>2001</th>
<th>2006</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of households</td>
<td>826</td>
<td>920</td>
<td>1045</td>
</tr>
</tbody>
</table>

Source: Field survey, 2010
Established in 2002 and since then managed 800 Ha forestland

Reforestation took place in Ciamis District between 2001 – 2010 with rate of 11.98% per year (Prasetyo and Damayanti, 2010)

The turning point of forest transition was in 1997 (Data analysis, n.d., unpublished).

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of households</th>
<th>Members of LMDH</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>205</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>166</td>
<td></td>
</tr>
</tbody>
</table>

Source: Field survey, 2009
## HOUSEHOLDS CHARACTERISTICS

<table>
<thead>
<tr>
<th>No</th>
<th>Details</th>
<th>Baghdevi CFUG (N=22)</th>
<th>LMDH Galang Taruna (N=23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Age</td>
<td>21-60 y.o. (95.5%)</td>
<td>21-60 y.o. (86.96%)</td>
</tr>
<tr>
<td>2</td>
<td>Occupation</td>
<td>Farmer (63.6%)</td>
<td>Farmer (82.61%)</td>
</tr>
<tr>
<td></td>
<td>Other occupation</td>
<td>Govt. Employee, business, driver, labor, labor to outside Nepal, social worker</td>
<td>Village govt. Employee, business</td>
</tr>
<tr>
<td>3</td>
<td>Members of family (including respondent)</td>
<td>2-4 persons</td>
<td>2-7 persons</td>
</tr>
<tr>
<td>4</td>
<td>Private-owned land (% of N Farmer)</td>
<td>Paddy field 78.56%</td>
<td>52.63%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dry agric.land</td>
<td>84.21%</td>
</tr>
<tr>
<td>5</td>
<td>Other managed-land (% of N Farmer)</td>
<td>Paddy field 14.29%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Forestland</td>
<td>35%</td>
</tr>
<tr>
<td>6</td>
<td>Farmers’ land size (Ha)</td>
<td>Paddy field 1-30 katha</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dry agric.land</td>
<td>0.14 - 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other land (forestland)</td>
<td>0.14 - 0.42</td>
</tr>
</tbody>
</table>

Note: 1 katha = 0.33 Ha or 1 Ha = 30 katha  
Source: Field surveys, 2010
DISCUSSION

- Basic difference between CF and PHBM:
  - In CF, forest is handed over to the local community, to be managed, utilized, and conserved \( \Rightarrow \) CFUG “owns” the forest
  - In PHBM, local community can use the forest in term of using the land for agricultural crops up to 3 years after planting the main trees (tumpangsari), and protect the main trees to obtain incentive in the form of benefit sharing up to 25% at the end of planting cycle but forest is managed by Perhutani

- This explained why members of Baghdevi CFUG is increasing, while members of LMDH Galang Taruna is decreasing, that forest in Baghdevi area is important and has more meaning for the members.
  - Forest products, especially firewood and timber from nearby forest can only be available for those who becomes members of CFUG.
  - Meanwhile in PHBM, allowed period for planting agricultural crops is only up to three years after planting the main trees and the member of LMDH must maintain and protect the main trees until the end of the planting cycle, for about 30 years without other meaningful incentives.
CONCLUSION

- High percentage of respondents who are farmers with private-owned land and managed lands seems become the driving factors behind reforestation.
- Farmers who owned/managed-lands tend to work on their lands. They fulfil their daily needs from working the land.
- Both CFUG and LMDH seems have same idea that forest becomes their saving for the future and their children, so they conserve and protect the forest.
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- The Grant-in-Aid for Scientific Research (No. 21405005) from the Japanese Society for the Promotion of Science,

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REFERENCES

REFERENCES (2)


