

Site-Level Field Appraisal for Protected Area Co-Management: Lawachara National Park



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Prepared for:
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1. INTRODUCTION

1.1 Project Background

In Bangladesh, natural forests are under constant pressure and have already been significantly degraded. In an estimate, forest cover in the country has fallen by more than 50% since 1970. This situation is threatening the value of these forests as habitat for biodiversity and for provision of vital environmental services. If this trend continues, it will soon result in a serious ecological catastrophe and a declining spiral of production and productivity irreversibly detrimental to the livelihood of people living in and around the forest, historically dependant on them. Therefore, there is an urgent need to reduce or reverse the detrimental impact on forest biodiversity and maintain resource sustainability through improved management and creating alternate livelihood opportunities for people dependent on forest resources.

The concern for biodiversity assets in the country has a long history and Bangladesh has a strong commitment to the cause of biodiversity conservation from the national, regional and global perspective as reflected in its endorsement and ratification of many national, regional and international conventions, treaties, protocols etc. related to biodiversity conservation.

The alarming situation in forest degradation in the country and the governments commitment to national and international community, spurred government effort to designate and establish a number of protected areas, (including National Park, Wildlife Sanctuary and Game Reserve,) with biodiversity significance under the provision of Wildlife Preservation Act, 1973. But there has been a little change in the degrading situation of these PAs with regard to biodiversity and its environmental services. Poor governance and lack of appropriate and pragmatic management regimes for these PAs has been linked to the failure in PA management in the country.

Responding to the urgent need to address the forest conservation and related economic opportunity creation, the US government and Government of Bangladesh elaborated and signed a Strategic Objective (SO 6) Grant Agreement to improve management of open water and tropical forest resources. This agreement sets target for improving forest management

In the context of the agreement, the Forest Department has worked with USAID to jointly develop a project, called Co-management of Tropical Forest Resources of Bangladesh to accelerate and consolidate protected area management and more active local participation in forest resource management. The Forest Department and USAID recognize the need for the continued effort to manage the forest resources of Bangladesh and has set long-term greater vision with renaming the project as Nishorgo Support Project.

The Nishorgo Support Project (NSP) is to demonstrate a replicable case for establishing a good governance system that will ensure sustainable management of protected areas of Bangladesh, while working in a number of selected pilot protected areas. Specifically, the project is designed to develop, promote and implement forest co-management model, to halt and/or reverse degrading trend in forest resources and its habitats, reduce unsustainable practices, bring about changes in policy environment in favor of co-management, strengthen stakeholders capacity in natural resource management, improve livelihood of local poor people in order to curb dependency on forest resources.

1.2 Information needs of NSP and logical basis for conducting PRA/RRA

For any project, development or research, information are needed for designing and planning project interventions, setting implementation strategies, evaluation and monitoring of project performance and impact. Information at the initial stages of the project thus helps the project in carrying out its activities effectively and efficiently.

It has been emphasized from the beginning that that NSP will avoid information overload, rather it will concentrate on collection of relevant information by using appropriate methodology. Therefore, it was necessary to carefully scrutinize the information needs and determine its relevance to the project objectives and activities.

The generation of information, in principle, is guided by project objectives and goals. The NSP is particularly concerned with the establishment of co-management mechanism of forest resources in one hand and developing a prescription for the technical management of its resources, on the other hand. Therefore, generation of information is thus centered on the characterization of local community (stakeholders) likely to be involved with the project and local resources that are to be managed.

- Co-management -----stakeholders and their activities, socio-economics, behavior, community power structure, their needs and expectations, conflict, challenges etc.
- Resource management ---- resources and its status, trend and causes for resource degradation, resource exploitation, threats to local resources and biodiversity

1.3 Purpose of the Report

The main purpose of the present report is to present a synthesis of all findings from RRA and PRA exercises conducted in Lawachara National Park during March 15-23rd 2009. The report also details the methodology and tools used and highlight the issues in forest management and biodiversity conservation and identify the challenges for the NSP. Finally the report makes suggestions on what the project and Forest Department need to do immediately. Finally, the report puts forward set of recommendations for the improved management of the LNP.

1.4 Outline of the Report

The site level appraisal report, at first, provides an executive summary which summarizes the entire ranges of the findings, methods used, issues and challenges until identified during PRA. The report starts with general introduction in **chapter 1** that includes the information on background of the project, information needs of NSP and logical basis for conducting PRA/RRA, the purpose of the report etc.

A brief description of the site is provided with a site map in **chapter 2**.

Chapter 3 sets out the methodology of the study that deals with the approach to implementation of the fieldwork of RRA and PRA, study team and study period, objectives and methodology of the study. The chapter also includes study period, setting RRA and PRA issues and questions, formation of RRA and PRA field teams, selection of RRA and PRA spots, choice of RRA and PRA methods and tools and the limitation of the field work. Outcomes of the RRA and PRA exercises are described in **chapter 4** which contain major findings and analyses. The findings are mainly presented as situational analysis of the forest resources, stakeholder analysis, resource and resource extraction, trend analysis, socio-economical situation of the surrounding area, seasonal trends in resource extraction, etc. In short, this chapter reflects the current status of the forest dynamics with social dynamics.

2. DESCRIPTION OF THE PROJECT SITE

The Lawachara National Park is a part of the West Bhanugach Reserved Forest and located in Kamalgonj Union of Kamalgonj Upazila in the district of Moulvibazar. The park is under the jurisdiction of Moulvibazar Wildlife Division under Sylhet Division and is divided into two forest blocks. Lawachara NP stands on the Habigonj-Moulvibazar Highway and is about 7 km east of Srimongal Upazila head quarter and lies in between 24^o30'-24^o32' N and 91^o37'-91^o47'E.

The park was established through a gazette notification in 1996 and further proposal was made for extension of the park. The current notified area covers an area of 1250 ha

There about 28 villages, of which two are located inside and the Forest and other village located outside of forest area. The villages comprise about 19360 (includes HHs) households (HHs). The forest area is undulating with slopes and hillocks, locally called *tilla*, average elevation ranging from 10-50 m and are scattered in the forest. The forest is semi-/and mixed evergreen, where tall trees are deciduous and the under storey evergreen. The forest originally supported an indigenous vegetation cover of mixed tropical evergreen forest.

The major coverage of natural primary forest is represented by 8.6 acres of land in the extension area and also by unconverted betel leaf plots of the forest villagers. The long rotation plantation (teak, jarul, chapalish, garjan etc.) covers an area of about 1110 ha and a short rotation plantation of about 187 ha. Bamboo and cane plantation covers an area of about 25 ha. About 110 ha covered by betel vines area and the rest are homestead lands. Fig.1. shows the map of the NP.

The Lawachara National Park is a semi/mixed evergreen forest. The associated long rotation timber trees include Jarul, Chapalish, Shegun, Lohakath, Kadam, Pitraj, Chandan, Kanthal, Supari, Litches, Agar, Dhuna, Garjan, Dewa, Awal, Gamar, Jam, Nageswar, Sundhi, Bohera, Tairol, Chloroform tree and a variety of other species. Trees like Acacia hybrid, Mangium, Malacanna, Eucalyptus, Pine, Akashmoni, Rubber, Jhau are common within the short rotational plantation areas. Besides, various species of bamboo (such as *Jai bansh*, *Muli bansh*), cane (i.e *Jali bet*, *Golla bet*), grass, various types of climbers and vines, herbs and shrubs are also profuse in the NP. Approximately, 167 plant species, 4 species of amphibians, 6 species of reptiles, 246 species of birds, 20 species of mammals are found in the park.

MAP OF LAWACHARA NATIONAL PARK



Fig. 1.

3. METHODOLOGY

As mentioned in the preceding section a two-step rapid appraisal strategy was taken. RRA was conducted as the first in the appraisal process, followed by PRA.

RRA was carried out as an initial activity in the field with a primary focus on generating information that would help to get a sense of the range of stakeholders, key issues and challenges that need to be addressed and provide information on the context (social, economic, ecological) in which the project will operate.

Built upon the outcome of the RRA, a subsequent PRA exercise collected in-depth information on the identified issues and was designed to ensure greater participation of local people in information collection.

- Who destroys and how the forest is destroyed
- What are the underlying driving forces for the forest degradation
- Cause and effects of the behavior of local people
- Opportunities for improvement in forest management

3.1 Developing the RRA and PRA: Issues and Methods

A interactive and consultative planning workshop was organized on 12th to 13th March 2009 at IPAC north east cluster office, Srimongal, to identify, prioritize and finalize the RRA issues and questions. The type and nature of issues, the enumerator team's accessibility and mobility in the area, the behavior of local people and their rapport with the field staff were all taken into consideration in the design of these methods and tools. The workshop was attended by site facilitator and representatives from IPAC, This workshop provided an opportunity to prepare a field protocol, decide and agree on approaches, methods and tools to be used and also to make and consolidate team understanding.

The detailed methodology for these activities was embodied in a manual and used in training workshops with the field teams to give instruction in using the research tools and to ensure that the methodology remained same across the team and across the sites. A one-day training workshop was organized for the RRA team members on 12th March 2009. A similar workshop was also held for PRA on 13th March 2009.. The purpose was to give the RRA and PRA field team instructions in using various tools. The workshop was held at the IPAC office, Srimangal, on RRA and PRA, respectively. .

The RRA was mainly based on unstructured and semi-structured household interviews, KI interviews, group and focus group discussions. A limited number of other RRA tools were also used like trend analysis, seasonal analysis, sketch mapping etc. The issues and activities covered in the RRA is shown in Table 1.

Table 1. Selected RRA Issues for Lawachara NP, Specific Activities and Tools Used

Sl.	RRA Issues	Specific activities	Tools Used	Participants
1	Stakeholder Assessment	Identification of settlements, resource users, local institutions and agencies and organization, community organizations etc and their roles and activities	HHs Interview, KI FGD GD	Local HHs Local school teacher, Community people, villagers, elites etc Local community people Local people
2	SH Demographic profile	Settlement wise no. of HHs/population HH occupation, education, forest use, land holding	Secondary Info HH Int., KI, GD, FGD Trend Analysis	Local union parishad HHs heads/members Community people, local public representatives
3	SH Economic Activities/ Livelihood Strategies and Human Capital Development	HH primary and secondary income sources of HH Richness/poverty Unemployment and its seasonal trend Credit and alternate income generating opportunities Skill and skill development opportunities Seasonal workload of male and female	HH Int. GD KI FGD Seasonal Calendar	HHs heads/members Old people Public representative Local elite Community people Forest villagers
4	Gender Issues	General impression on living standard, education and health status etc. Participation in decision making (household and PA management) Women mobility in the area Access to IGA and credit etc	HH Int. GD FGD KI,	HHs heads Women group Community people Local elites
5	Behavior of local people	Initial response of the local people and FD staff towards the project - Sources of conflict and conflict resolution	FGD HH int.	Local community HHs heads
6	Local Level Awareness	Awareness and perceptions about resource degradation and conservation - Willingness for resource conservation Awareness about the existence of nearby park/game reserve and reserved forest Knowledge about forest and wildlife preservation acts	HH int. GD FGD	HHs heads Local community
7	Resources /resource status	Trend in changes in major resource bases Endangered/extinct plant and animals Causes for the decline in different resources	Trend analysis, HH int, GD KI	Local people Local HHs heads Community people Local educated old,

8	Resource exploitation	Major forest resources collected, Reasons and extent of exploitation of different forest resources Dependency on the forest/forest products Seasonal trend in resource exploitation Future risks Medicinal plant uses and reason for not using these	HH int, FGD, GD KI, Trend analysis, seasonal calendar	Local HHs heads Public representatives Community people Local educated old, Local elite HHs interview and KI
9	Resource regeneration practices	Plantation status in the locality Problem with natural regeneration in the forest Plant nursery General land use pattern in the buffer zone Major agricultural crop Seasonal pattern in agriculture	Secondary Information, FGD, GD, KI, Seasonal calendar	Secondary data from FD FD staff Community people Local elite, teacher Community people
10	Legal aspects	Access to the forest by locals Forest villagers and land use agreement Conflict and negotiation with FD staff Land encroachment/recovery Law enforcement mechanisms in the PA Illegal tree felling and forest cases	FGD GD KI FGD KI	FD staff and forest villagers Local community and Local elites FD staff, community people
11	Power structure	Local influential and their role, local hierarchy Nature and sources of power and their domain of influence Conflict and conflict resolution	HH int, FGD, GD, KI	Local HHs heads Local community and local govt. Local community Local elites
12	Others	Access to areas and settlements NGO activities in the locality Challenges for conservation Local problems Mobility in the area	HH int, FGD, GD, KI	HHs heads Local community Local people Local elites

PRA issues and questions were developed by a 3-person team of experts on the basis of field experience and outcomes of the RRA exercise. During the PRA, tools like Venn diagramming, resource mapping, seasonal analysis, trend analysis, livelihood analysis etc., were used in addition to interviews, focus groups and more informal discussions. The issues and activities performed in the PRA are summarized in Table 2.

Table 2. PRA Issues, Specific Activities Performed and Tools Used In Lawachara NP

Sl.	Issues	Specific activities	Tools used	Participants
1	Forest make up dynamics	<p>-observation on forest physiography and topography and forest make up</p> <p>-land use cover, resource exploitation and regeneration areas, animal distribution</p> <p>-changes in forest cover, thickness, vegetaion, settlements, animals and availability of resources</p>	<p>Transect walk KI</p> <p>Resource mapping Secondary data, FGD,KI</p> <p>Trend analysis</p>	<p>PRA Team Local elite,</p> <p>village headman, forest villagers.</p> <p>Local people and forest villagers</p>
2	Local governance system and community structure and functions	<p>Decision makers--- influential people</p> <p>Local community organizations and institutions and their linkages</p> <p>Local conflict and conflict resolution</p> <p>Local problem, cause and possible solution</p>	<p>Venn diagram</p> <p>Ven diagram</p> <p>Venn diagram</p> <p>FGD/GD FGD & GD and Ranking</p>	<p>Community people Community</p>
3	Livelihood strategies	Income and expenditure sources, Livestock, Richness and poverty	Wealth ranking HH interview	Women group and local people
4	Gender issue	<p>Family decision making</p> <p>mobility</p> <p>workload</p> <p>Education and access to credit</p>	<p>Decision making Chart</p> <p>Mobility map</p> <p>Daily and seasonal work chart HHs Int. & FGD</p>	<p>Women group</p> <p>Women group</p> <p>Women group</p> <p>Women and local educated people</p>
5	Fuel wood collection	<p>Information on collector</p> <p>Purpose and driving force for collection</p> <p>Dependence on the extraction for their livelihood and its extent</p> <p>Uses and marketing channel of the resource</p> <p>Level of extraction and seasonality</p> <p>Conflict with FD or other people over the extraction</p> <p>Negotiation for carrying out the activity</p> <p>Alternate source for the collection of the resources</p>	FGD & GD, seasonal analysis	Fuel wood collector, community people, local hotel and tea stall owners

		Needs and expectation of the collector Impact on the forest and future risks for the collector		
6	<i>Illegal timber felling</i>	Information collector - key people behind the activity and network Purpose and driving force for collection uses and marketing channels and dependence What encourages them to take up the activity Anybody protect them, if they are in problem Protection by FD or by any other agencies (e.g. Police etc.) conflict and negotiation with FD or other people needs and expectation of the feller impact on the forest and future risks for the illegal feller Seasonalities and trend in timber extraction	FGD, GD and KI Seasonal calendar and trend analysis	Illegal timber feller, FD staff and community people, and local elite
7	Collection of trees as building materials	Information on collector purpose and reasons for collection uses of the resource and extent of extraction dependence on the extraction and marketing conflict and negotiation with FD or other people over the extraction alternate source for the collection of the resources needs and expectation of the collector impact on the forest and future risk for the collector	FGD, KI	Community people, CMC member & FD staff, forest villagers, local public representative and elite
8	Bamboo and cane collection	Information on collector purpose and reasons for collection uses of the resource and extent of extraction dependence on the extraction and marketing conflict and negotiation with FD or other people over the extraction alternate source for the resources needs and expectation of the collector impact on the forest and future risk for the seasonal changes and trend in abundance	FGD, GD Seasonal calendar and trend analysis	Bamboo and cane collector, community, people and FD staff Bamboo collector and local people
9	Information on Forest villagers	Distribution of forest villager's settlements	FGD	Forest villagers and FD staff

		Registered and actual number of forest villagers compliances to FD agreement Present economic activities Resources exploitation and dependence on forest resources land encroachment by the forest villagers or by other near by the lemon, pineapple garden owner	Secondary data	FDs villagers register
10	Betel leaf cultivation	distribution of betel vine yards within and approximation of its number historical perspective of flourishing the activity in the area information on cultivator ownership of land dependence on the activity	FGD	Betel leaf cultivator
11	Land encroachment	Historical perspective and trend information on encroaches and reason for encroachment and what drives to undertake the activity Legalization of process Conflicts and negotiation process Uses and transformation of encroached land Local mechanisms/system or traditional practice for land encroachment	Secondary data and trend analysis FGD and KI	Community patrolling group & CMC members FD staff, local elite And community people

Each PRA tool was used to collect information about more than one issue, as shown below:

Venn diagramming: local power structure, local community organizations, local institutions and agencies, local conflict and conflict resolution, family decision making, mobility of women & men,

Seasonal calendar: fuelwood, bamboo and timber collection, unemployment, workload, accessibility to forest, transportation problem, brickfield/sawmill operation, forest patrol, agricultural activities, collection of building materials, vegetable collection,

Trend analysis: forest cover, forest thickness, tall trees, herbs and shrubs, forest use, unemployment, local solvency, land encroachment, settlement/population solvency/income, livelihood expenditure, literacy, unemployment, use of forest for income, use of forest for HH needs, transportation and mobility, homestead plantation, food scarcity, credit and IGA, occupation, illegal tree felling, fuel wood collection, bamboo and cane collection, fruit bearing trees in the wild, livestock, turtles and tortoises, agricultural activities, medicinal plants.

Ranking and scoring: local problem ranking, wealth ranking, and livelihood analysis

Transect walk: Soil, vegetation, land use, elevation, crops, wildlife, human activities etc

Forest resource mapping: forest land use cover, resource zones, resource exploitation zones, animal distribution, settlements.

3.2 Fieldwork Preparation

3.2.1. Selection of RRA and PRA Sites

On the basis of information by NSP group members various sample locations were selected for the purpose of information collection. These locations are hence called RRA and PRA spots. The selection of locations was based on a number of selection criteria. The selection process was completed during planning workshop. While the number of sites visited during the RRA was limited, the team focused on gaining an overview of issues covering the whole of the national park area. A list of the selected RRA and PRA spots for LNP is given in Tables 3 and 4.

Table 3. List of Selected RRA Spots & Schedule for Visits

Date	Name of spots (villages) visited		Remarks
	Villages	Location	
12/03/2009	Orientation and briefing session on RRA field exercise at IPAC Srimangal		Team arrived Srimangal on 12 th March, 2009.
13/03/2009	Magurchara Punji and Lawachara Punji	Villages inside of PA.	Both villagers are of Khasia community and appointment were made by local enumerator prior to visits
14/03/2009	Vashanigawn Tilagawn and Baligawn village	Villages adjacent to and outside of PA, to the eastern side of the PA	One team interviewed at Vashanigawn, Tilagawn and Baligawn
14/03/2009	Dolubari, Tipra para tribal village Radahanagar and Varaura	Villages adjacent to PA, to the south west , east of the PA	Dolubari, Tipra para tribal village Radahanagar and Varaura
14/03/2009	Bagmara, Rastila, Chataksora & Bongawn with NSP group member	Village outside of PA, to the south east of PA	At evening another, FGD with Bongawn & Badayobhata

Table 4. PRA Schedule, Spots and PRA Activities in Lawachara NP.

Date	Village/ Location	Performed activities	Remarks
15/03/09	Khaichara, Gil achara, Lamuya & Fullchara Garobosti	GD (2) HH interview (3)	GD with Tribal community, Tea garden worker & other villagers to know illegal timber felling, fuel wood collection, forest dynamics, and problem-ranking etc. and HH interview with female participants.
15/03/09	Fullbari & Bisamoni	FGD(1), KI(1), HH interview(4)	FGD with forest villagers, KI with Headman, HH inter view with female participants.
15/03/09	Chawtoli Jackchara & lamuya	FGD (1) KI (1) HH interview (4)	FGD with Male & female fuel wood collectors, & Tea garden worker, with a previous illegal timber feller & K I.
16/03/09	Langurpar	HH interview (9)	Discussion with local UP Member & NSP group member & others local stockholder about forest dig ration & fire wood Collector & illegal poaching.
16/03/09	Lawachara punji	FGD (9) HH (2)	FGD with female fuel wood collectors, GD with community group, HH interview with female participant
	Baligaon	GD (1), KI (1),	GD with female community patrolling group, KI with present up member,
17/03/09	Rashtila	FGD (7), K I (1)	FGD with illegal tree feller, fuel Wood collectors, K I interview with female participant
	Varachara	FGD (7)	FGD with NSP group members

3.2.2 Formation of RRA and PRA Field Teams

The RRA field teams were formed with representatives from RDRS and local enumerator, the teams make up for the RRA and PRA field exercises are provided in the table 5 and 6. During RRA two separate RRA field teams were formed, each team consisting of 3 members. And during PRA, three separate PRA field teams were formed, each team consisting of 2 members. The teams worked simultaneously in the field, but at different locations.

Table 5. RRA Team for Lawachara NP

Team 1		Team 2	
Name	Duties/Organization	Name	Duties/Organization
Mr. Abdul Bashid Chow.	Eco tour guide (LNP)	Mrs. Papiya Shultana Rozy	Eco tour guide (LNP)
Mr. Farly niang	Eco tour guide (LNP)	Mis. Runa niang	Local enumerator
Mr. Abdul Bari Chow	Local enumerator	Mrs. Shila potmi	CDS promoter
Mr. Minto nandi	FO IPAC Srimangal		

Table 6. PRA Team for Lawachara NP

Team 1		Team 2		Team 3	
Name	Duties/ Organization	Name	Duties/ Organization	Name	Duties/ Organization
Mr. Minto nandi	Team Leading and field exercise with all teams members	Md. Abdul Jalil	SF IPAC Srimangal	Mr. Abdul Bashid Chow.	Eco tour guide (LNP)
Md. Abdul Jalil	Trend analysis, Transect work, RDRS	Mr. Minto nandi	Conduct GD, FGD, KI with different SH, RDRS	Mrs. Papiya Shultana Rozy	Eco tour guide (LNP)

The RRA field exercise was conducted between 12th to 14th March 2009, and the PRA exercise between 15th to 22nd March 2009, The detailed time schedule for the field activities are provided in Tables 3 and 4 respectively.

3.3 Field Implementation Strategies

3.3.1. Organization of the RRA and PRA field work

The organization of field exercises involved a series of logical steps. The field teams always made efforts to adhere to those steps. The flow of activities is shown in the following flow chart.

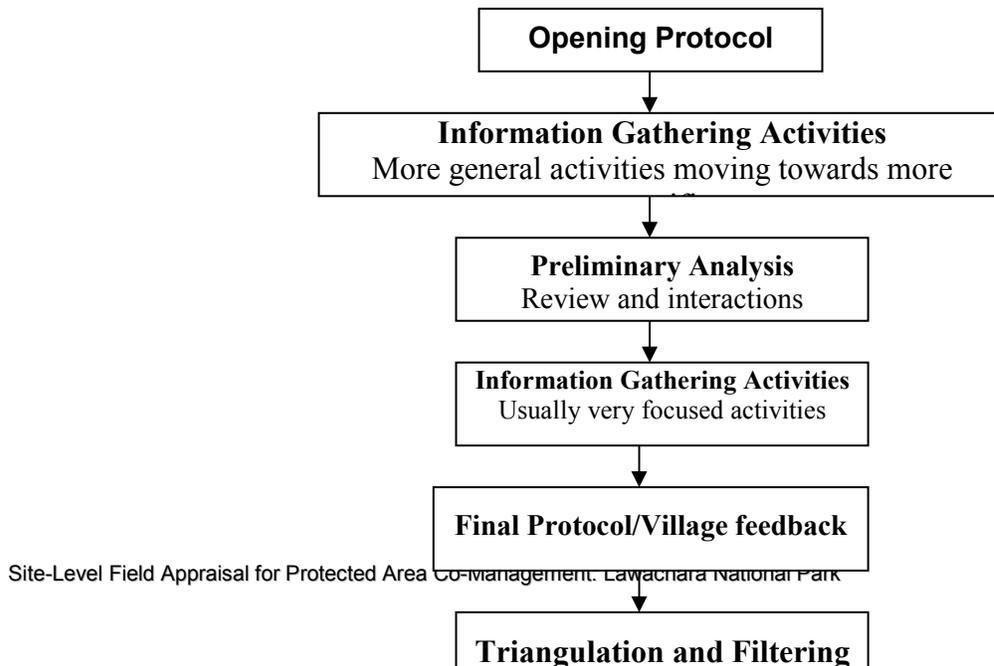


Fig. 1. Flow of RRA/PRA Field Activities (3-4 days)

During RRA exercise, a total of 45 HHs interviews, 15 group interviews, 10 key informant interviews, and 2 Focus group discussions (one with forest villagers of Khasia Punji and another with NSP group members lead by IPAC Srimangal) were conducted. The other RRA tools were applied during above mentioned interviews and discussions. Similarly, during PRA a total of HH 75 interviews, 8 Group interviews and 6 focus group discussions, 8 key informant interviews were conducted. This is summarized in Table-7.

Table 7. Summary of performed activities in Lawachara NP during PRA

Appraisal	Village/ Settlement covered	FGD	GD	KI	HH Interview	Transect	Resource and social mapping
PRA	15	6	2	10	75	1	1
RRA	45	8	4	8	20	-	

The other PRA tools were used either during the above exercise or in separate exercises dedicated for this purpose. Further details on the implementation of the fieldwork methods used are provided below.

3.3.2 Household (HH) interview

- Individual/HH interviews were conducted with randomly selected interviewees, typically visiting one household at each stop.
- Both male and female respondents were considered.
- Typical HH interview last for about 45 mi. – 1 hr
- The interviewees were not treated as respondents to a questionnaire, but active participants in an unstructured/semi-structured interview. A checklist of issues was used as a basis for questions, not necessarily addressing all questions in each interview and sometimes departing from basic questions to pursue interesting, unexpected or new information, relevant to the project and situation.

3.3.3 Key informant (KI) interview

Key informants, NSP group members & local people who have extensive knowledge on the local environment, situation and events. The purpose of this interview was to utilize them in collecting information from them relevant to the project needs.

- KI interview was by prior appointment. A local Eco-Tour guide helped in making appointment with the KI. The interview was taken by paying visit to Key informant HH
- A preliminary discussion with local UP members & NSP group members and interview of local people gave adequate clue for selecting KI. Preferably local school teachers, local elites or local public representatives would be selected as the KI.
- A typical KI interview lasted for about 1 hrs. The entire team took part in the interview taking session

- As with HH interview, a similar different question was used for the purpose of KI interview.

3.3.4 Group interview

- The purpose of the planned Group Interviews was to collect some information on the locality and local situation based on the consensus of the local people & NSP group members.
- Interviews were conducted at places, preferably at local tea stalls, road junctions and other local community places, where local people gathered spontaneously. No formal invitation to the local people were made for participating at the group interview.
- Ranking and other scoring exercises, whenever possible, were done in such group interviews.
- Typically a group interview lasted for about 1-1.5 hrs
- At least one group interview was held each day
- This was basically an unstructured interview and a checklist of issues was used as a basis for questions

3.3.5 Focus Group Discussion

Focus Group Discussions were carried out with different professional groups, resource user groups, local public representatives with a view to collect information on specific areas.

- During PRA, FGDs were principally conducted with different stakeholder & NSP group members mainly with nearest to the protected area other professional groups, like fuel wood collector, sawmill owner, etc.
- The FGDs were conducted by invitation of NSP different group members and a local Tour guide was used to invite the people.

3.3.6 Other PRA tools

Other PRA tools were either incorporated into the interview and discussion processes outlined above or carried out through separate exercises dedicated for this purpose. Venn diagramming, seasonal calendaring, trend analysis, ranking, scoring etc. were done usually in separate sessions dedicated to these activities. However, sometimes, these exercises were also performed during group, focus group and key informant interviews. The participants were either invited local people & NSP group members at places.

3.3.7. Direct Observation

The team while walking through the project area, talked to NSP group members local people, discussed many things and made observation on the resources, people's behavior and their activities, etc. These observations and informal discussions helped to triangulate collected information and generate new questions for interview or discussions.

3.3.8. Reflection and Analysis

After each day of fieldwork, the team sat together for about 1 ½ hours for team interaction and triangulation. The activities performed during the session included:

- Reviewed information gathered that day and made summary of the information, triangulated whenever necessary. The person designated for report writing took note of discussions
- Planned the next day's activities

3.3.9 Triangulation and filtering

A single in formation may be collected by using several tools or from several sources. The team cross-checked their results and accepted the most logical analysis. During these feedback sessions and subsequent data analysis, team members were required to use their own judgment to ensure the most reliable analysis of the situation was presented.

3.4 Limitations of the Fieldwork

The main limitation of the field work done by the Eco-Tour guide, CDS promoter & local enumerator fully they are not prepared for this work so working conditions is difficult, and in particular meant that the traditional PRA approach of participants working together to complete large scale matrices on the ground was impossible, Lawachara some hilly area & tea garden where transport is not available.

4. OUTCOMES

4.1 Status and Trend in the Forest and Forest Resources

The major timber trees are represented by Jarul, Chapalish, Shegun, Lohakath, Kadam, Pitraj, Chandan, Kanthal, Supari, Litches, Agar, Dhuna, Garjan, Dewa, Awal, Gamar, Jam, Nageswar, Sundhi, Bohera, Tairol, Among exotic short-rotational trees, Acacia hybrid, Mangium, Malacanna, Eucalyptus, Pine, Akashmoni, Rubber, Jhau are common in plantation areas. There are many types of bamboo such as *Jai bansh*, *Muli bansh* and various cane like *Jali bet*, *Golla bet*. Besides, there are many types climbers and vines, herbs and shrubs.

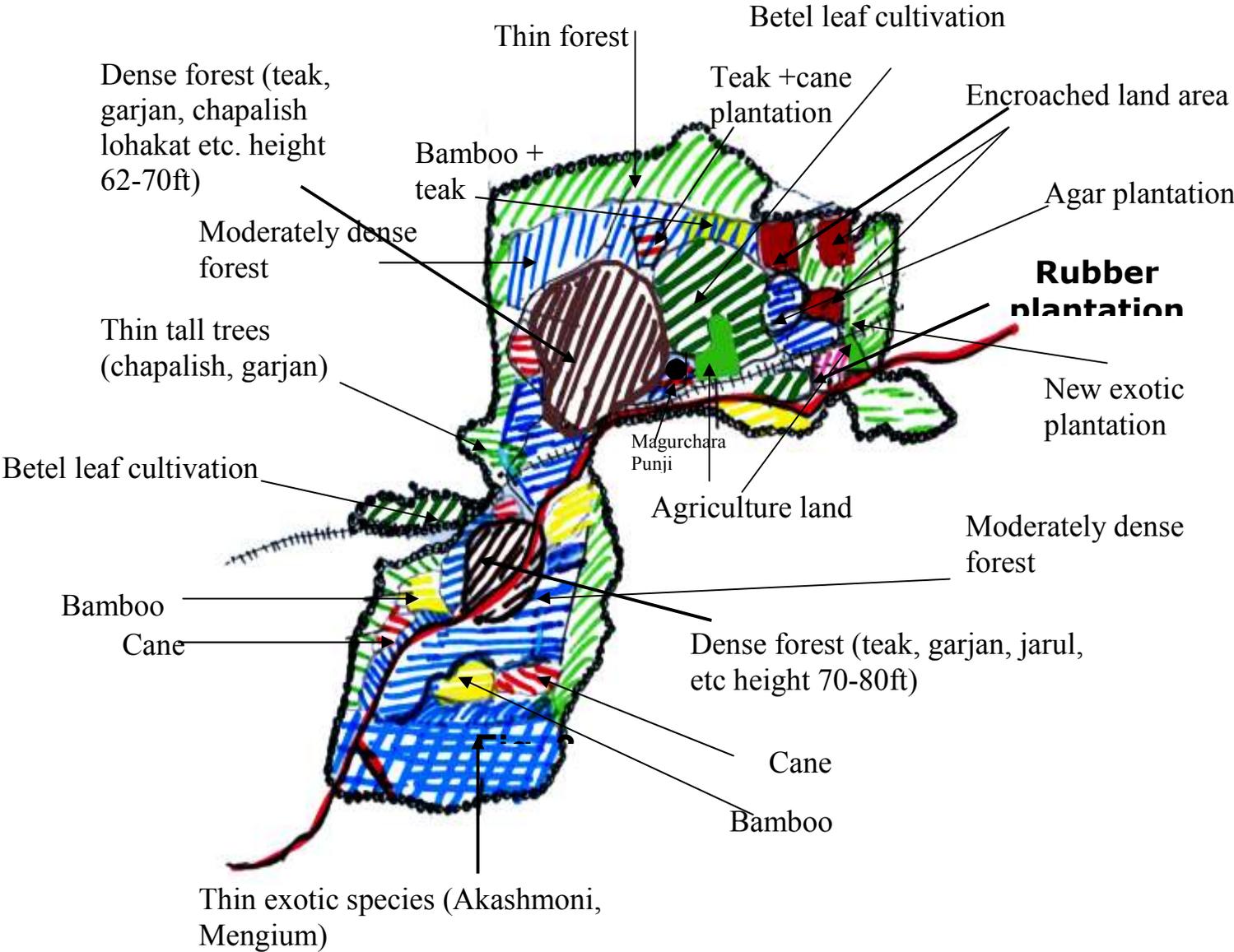
Fig. 3 shows the distribution of various plantations within the Lawachara NP. The old plantations have tall trees and regrowth of undergrowth, and some of them are comparatively thick. The tall and thick forests are located nearby the railway line and FD offices. The long rotational tall trees are dominated by chapalish, jarul, treak, gamar, garjan etc. The short-rotational and new plantations are located near the peripheral areas. The short-rotational timber plantations are mainly planted with exotic trees, like akashmoni, mangium, eucalyptus, pine, jhau. There are also plots of rubber and agar plantations. Bamboo and cane have been planted in many plots covering an extensive area. There are two agricultural plots belonging to forest villagers of Lawachara and Magurchara punji. There are also two areas for betel leaf cultivation with old indigenous trees. There are also three encroached areas located at the northeast corner of park and some areas have been converted to homesteads, and lemon, pineapple garden.

Lawachara National Park



Land Use Cover Map

(not to scale)



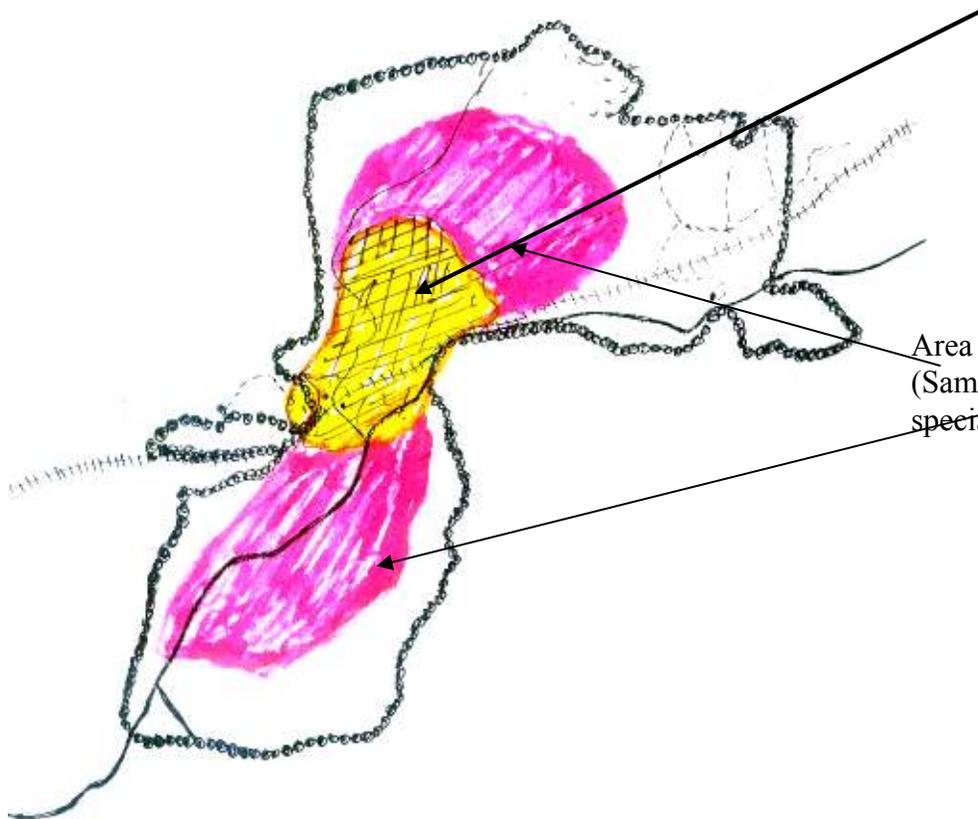
Lawachara National Park

Spatial Distribution of Major Wildlife

(not to scale)



Area of higher densities of wildlife (Gibbon, Monkey, honuman, Small deer, Fox, Catbirali, Junglefowl, Dhanesh, Dove, Python, Laudoga etc.)



Area of lower densities wildlife (Same species as above specially monkey)

Fig. 4

Fig. 4 shows the areas where the major wildlife are concentrated. Animals like gibbon, honuman, mobkeys, small deer, fox, squirrel, python etc. are concentrated in the thick long-rotational planted areas. They are also sparsely distributed in the thin old plantation areas. The new plantations of exotic trees are very poor in its wildlife. The monkeys are also found in the peripheral areas of the park.

Table 8. Status and Trend in Changes of Forest Resources in Lawachara NP

Issue	Pre-1971	15 years ago	Present	Cause of changes	Future Risk
Forest Cover	00000	0000	00000	Clear felling in the past, land encroachment	Medium
Forest Thickness	00000	000	0000	Legal felling in the past, illegal tree felling, burning and weeding practice for planation, fuelwood collection etc.	Medium
Tall trees	00000	000	000	Legal feeling in the past, selective illegal felling	Medium
Herbs and Shrubs	00000	000	000	burning and wedding, new plantations, plantation practices, fuelwood collection,	Medium
Wildlife	00000	000	000	At the time of NSP working period growing of habitat, food, and hunting stop by the outsider but at present lot of visitors are coming and disturb fill to the wiled animals	High
Hunting	00000	000	0	Prohibition, and unavailability of game animals and birds	Occasional
Illegal Tree Felling	0	000	000	Local poverty and unemployment, excessive forest cases, greed of some other stakeholders	Medium
Fuel wood collection	00	000	000	Local poverty, HH needs and little alternate source for fuel wood, increased population	Medium
Land Encroachment	0	0	-	Increased population, migration from other areas	less
Bamboo	00	0000	-	No permit given by the forest department	-
Cane	000	0000	-	Plantation by FD	-
Fruit bearing trees in the wild	00000	000	0	Felling, natural death, fuelwood collection, absence of fruit trees in new plantations	less
Livestock	0000	000	-	Less grazing area,	-
Turtles and tortoises	-	-	-	-	-
Agricultural	000	0000	0000	Cultivation of various	Less

activities				agricultural species, new variety cultivation	
Betel Leaf cultivation	00000	0000	000	Various diseases, less fertility and water scarcity.	Medium
Sun grass	00000	000	0	Over exploitation, land reclaimed for plantation, plantation practice, over exploitation	less
Medicinal plants	00000	000	00	New lee planted different	less
Vegetable	00000	000	00	-do-	Medium
Fodder	00000	000	0	-do-	Medium
Honey	00000	00	0	Decrease in fruit trees, and monoculture with exotic plant species	High

4.2 Settlements in and around Lawachara NP and its level of stakes with the NP

A total of 26 villages having varied degree of stakes with the forest has been identified. Fig. 5 shows the location of the identified villages in and around the park. In Lawachara NP, only 2 villages (inhabited by Khasia community) are located inside, 4 are just at the outskirts of the forest and others within one to three km away. Table 9 provides information on the village HH number, its location and level of stakes with forest. Including 6 villages for which data was unavailable, the total number of households in villages surrounding the park is approximately 1500. Of the identified villages, 12 (Magurchara punji, Lawachara punji, Bagmara, Baligaon, Dolubari, Bishamoni, Arshidron, Dilvernagar, Birainpur slum, Lamua, Kalapur and kakiabazar) have major stakes, as more people from these villages extract various resources from the forest, 4 (Verachara, Saraibari, Noagaon and Tilagaon) have medium to major level of stakes, 6 (Rashtila, Chatakchara, Radhanagar, Garobosti, Mazerchara and Sirajnagar) have medium stake, 3 (Langurpar, Ballarapr and Bongaon) have minor stakes and the rest have very negligible stakes with the forest.

Fig .5 shows the human pressure on the forest that are exerted from different settlements. People from Birainpur, Bagmara, Dolubari, Lawachara and Magurchara punji mostly involved with fuelwood collection, while people from Bagmara, Radhanagar, Dilvernagar, Ashirdron, Bishamoni, Rashtila, Baligaon, Verachara, Chatakchara, Lamua, Kakiabazar, Sirajnagar are mainly involved with illegal tree felling. Of the villages, HHs of the inside villages (Magurchara and Lawachara punji) and Dolubari mostly depend on the forest for their every day HH needs.

There are four tea estates bordering the NP namely Fulbari, Khaichara, Jakchara, Gilachara, tea estates. Besides, there are some more tea estates near to NP, namely Bharaura tea garden and Noorjahan tea estate etc. Almost all the bordering tea estates have substantial number of unemployed inhabitants who enter into the NP and thus have stake with the NP. Of them, unemployed rate among the inhabitants of Fulbari, Khaichara, Jakchara tea estates are high and they are mainly involved with fuel wood collection and illegal extraction of timber. Sometimes, the illegal feller uses Bharaura, Jakchara and Gilachara tea estates as routes for transporting illegally felled trees to Srimangal.

Table 9. Information on Villages Having Stakes with Lawachara NP

Sl. No.	Name of village	HH Nos.	Community type	Location	Level of stake
	Magurchara punji	41	Khasia tribe	Inside	Major
	Lawachara punji	23	Khasia tribe	Inside	Major
	Bagmara	400	Migrant and local-Bangali	Adjacent to NP	Major
	Baligaon	450	Local	Near to NP, beside HEED	Major
	Rashtila	210	Local and migrant	Northeast corner of NP	Major
	Chatakchara	95	Local and migrant	Northeast corner of NP	Medium
	Verachara	165	Local	Northeast corner of NP	major
	Saraibari	205	Local	North of Verachara	Medium
	Langurpar	92	Local	Southeast to NP	Medium to major
	Ballarpar	61	Local	Southeast corner of NP	Minor
	Noagaon	150	Local	Southeast to NP	Medium
	Tilagaon	80	Local	Near to Nosgaon	Medium
	Mazerchara	-	-	South side of NP	Medium
	Dolubari/ Doluchara	84 (72+12)	Tipra and bangali	Adjacent	Medium
	Bishamoni	-	-	South west to the NP	Major
	Ashirdron (Begun bari)	125	-	South west to the NP	Major
	Dilvernagar	-	-	South west to the NP	Major
	Radhanagar	325	Local	Southwest of NP	Medium
	Bhasanigaon	225	Local	Southwest corner of NP	Negligible
	Bongaon	55	Local –muslim and Hindu	Northeast corner of NP	Minor
	Birainpur slum	300	Migrant-homeless	West to NP (near Srimongal)	At the time of emergence period most of the people went to different place but always enter in the LNP for firewood collection they

					are major stack
	Lamua	349	Local	North-west corner of NP	Major
	Kalapur	460	Local	do	Major
	Kakia bazar	-	Local	do	Major
	Sirajnagar	313	Local	do	Medium
	Garobasti	150	Garobasti	do	Medium

Lawachara National Park

Human Settlements and Pressures on forest from neighboring villages
(not to scale)

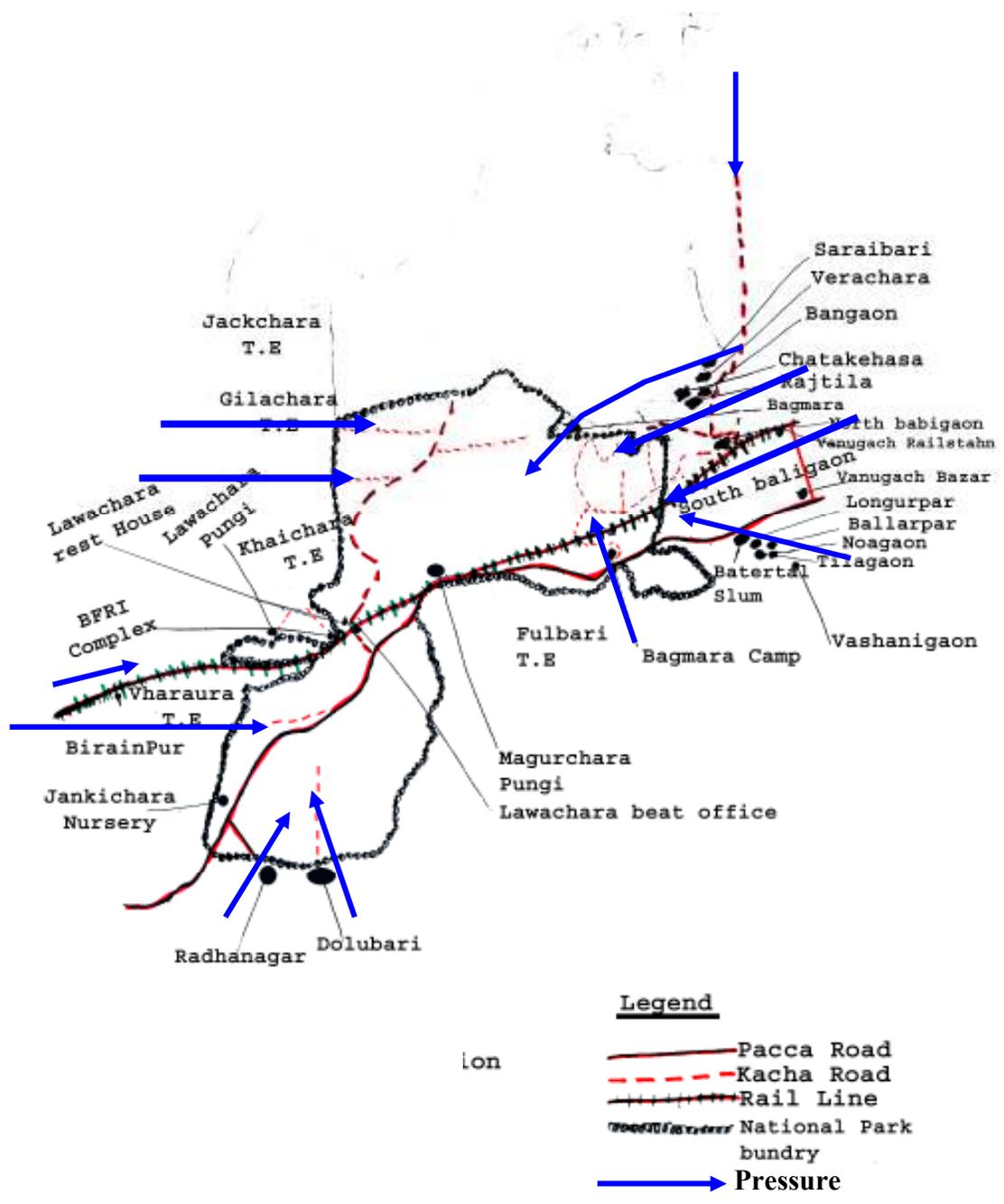


Fig. 5

4.3 Stakeholder Assessment

At least 3 categories of stakeholder could be recognized in Lawachara NP, viz.

- *Primary stakeholder*- involved with direct extraction of resources from the forest or their activities directly affect the forest
- *Secondary stakeholders* – indirectly linked with the forest, involved with trading or exert influences on the forest
- *Institutional stakeholder*- involved with developmental activities and administration of the adjoining areas

4.3.1 Primary stakeholders

Table 10 provides information on the stakeholder type & category, stakeholder description, their activities, dependency, relative level of stakes with the forest and their influence. A total of 19 stakeholder groups (excluded institutional SH) have been identified in the NP area, of them 15 are primary stakeholders and are involved directly in resource extraction and forest conversion activities, and the rest are secondary stakeholders. Of them, 3 SH groups (Fuelwood collector, Illegal timber feller, Betel leaf cultivator) have major stakes with the forest as they have major use of forest, while 6 have medium stakes (Bamboo collector, House building mat. collector, Land encroacher, Timber trader, Sawmill owners, Furniture shop owners) and the rest have minor stakes with the forest.

Most of the primary stakeholders are poor people from the inside forest villages and as well as from adjacent villages of the forest. Women and children are mainly involved with fuelwood and vegetable collection. Sometimes tea garden old and unemployed adults also collect fuelwood. Illegal felling of timber trees are carried out by adult people and usually they are poor. Usually, the rich and middle class people are not involved with direct extraction of forest resources. However, they buy many forest resources, including fuelwood and bamboo, and other products from the primary stakeholders.

Fig.6 shows the relative level of stakes of different villages with Lawachara NP based on resource extraction. Table 18 shows the village wise distributions of fuelwood collectors, illegal tree fellers associated with Lawachara NP, respectively. Almost all HHs of the inside villages (Forest villages) are involved with resource extraction, mainly for meeting their HH needs. Other than these two villages, most resource extractor come from Bagmara, Baligaon, and some other adjoining villages.

The detail information on the important primary stakeholders are given in Section 4.4.4

Table 10. Information on the Stakeholders of Lawachara National Park (Based On Resource Extraction and Direct Activities in the Forest)

Sl. No	SH name	SH type	SH description	SH activities	Dependency	Level of stake	Remarks
1	Fuelwood collector	Primary	Local poor people Forest villagers Tea garden labor (mainly women and children)	Collect dead trees, small trees, non-timber trees, young trees of timber trees. Cut, chop, bundle and carry away	Meet HH needs Livelihood of many families entirely depend on it Some sell for added income	Major	Mainly from Bagmara, About 100-150 people enter into the forest for collecting fuelwood
2	Illegal timber feller	Primary	Adult male from adjacent villages Many of them unemployed and mostly poor	Illegal felling of valued timber trees selectively	Many HHs entirely dependent on this activity Many depend partly on it for their livelihood	Major	Starting in the NSP activities through a motivation work most of the illegal filler stop the activities and they are working outside of the area and some of them are working their own land but some of young people newly joined with illegal filling
3	Bamboo collector	Primary	Forest villagers Local poor people	Cut both naturally occurring bamboo and planted bamboo	Meet HH needs Use for mat and basket making Some HH sell for added income	medium	About 10-15 people everyday enter into the forest
4	House building mat.	Primary	Forest villagers-main	Collect small trees both valued and less valued	Meet HH needs	medium	All forest villagers and most people

Sl. No	SH name	SH type	SH description	SH activities	Dependency	Level of stake	Remarks
	collector		Local poor and tea garden unemployed people from adjacent settlements	timber, vines and other plant materials	Some sell at local market for added income		from adjacent villagers and tea garden area
5	Vegetable collector	Primary	Forest villagers Some poor people from adjacent villages to PA	Collect dheki shak,, kalar thor, kachu, kachur lati, , palng shak, dumur, manthana (bamboo shoot) etc.	Forest villagers partly dependent	Minor	Fuelwood collector sometimes coollect vegetable Tribal people collect bamboo shoot
6	Honey collector	Primary	General people	When comb encountered collect honey	Not dependent	negligible	Now honey is not available
7	Land encroacher	Direct /primary	Mostly the migrant people of Bagmara and dolubari village	Encroached land, converted to homestead, agriculture land etc. About 78 HHs on the land, agric. activities	Become established	Medium	Presently no encroachment is taking place now Once recovered and again taken back
8	Betel leaf cultivator	Direct / Primary	Forest villagers	Grow betel leaf on FD allocated land, clear undergrowth, prune trees	Major, sometimes only income source	Major	Two areas near Magrchara and Lawachara punji
9	Fodder collector	Primary	Mostly cowboys and poor people	Collect grasses of different grass species for feeding livestock	Not dependent	Negligible	Some people graze livestock and disturb forest regeneration
10	Visitors	Direct	People form different parts of the country, including scientists	Walking across the forest, litter throwing, causing disturbances to wildlife	Not dependent	Mejor	Unplanned tourism

Sl. No	SH name	SH type	SH description	SH activities	Dependency	Level of stake	Remarks
11	Bark collector	Primary	Some local people	Extract bark from certain trees for use ... and sell it	Not dependent	Negligible	
12	Hunter/trapper	Primary	Some local people Forest villagers	Kill, trap jungle fowl,	Not dependent	Negligible	
13	Fruit collector	Primary	Local poor people, mostly forest villagers	Collect vegetables like kachu, bamboo shoot,	Not dependent. Forest villagers are partly dependent	Minor	Fuelwood collectors collect vegetable while they collect fuelwood
14	Timber trader	Secondary	Influential people from locality and from outside of the area, usually rich	Buy timber from illegal feller and mix with legal timber and make arrangement for its transportation	Not dependent, results from greediness	Medium	Helps illegal feller
15	Sawmill owner	Secondary	Influential, but outside of the Lawachara area	Usually saw timber of local people or from clear felling auctineer	Not dependent	Medium	Help the illegal feller
16	Brickfield owner	Secondary	Influential people from outside swttlements	Use some fuel wood for initiating fire. They get it from local collector	Not dependent	Negligible	
17	Furniture shop owner	Secondary	Business men from the locality and outside of the locality	Use illegal timber with legal timber. Encourages illegal timber feller to carry out the activity.	Not dependent	Negligible	

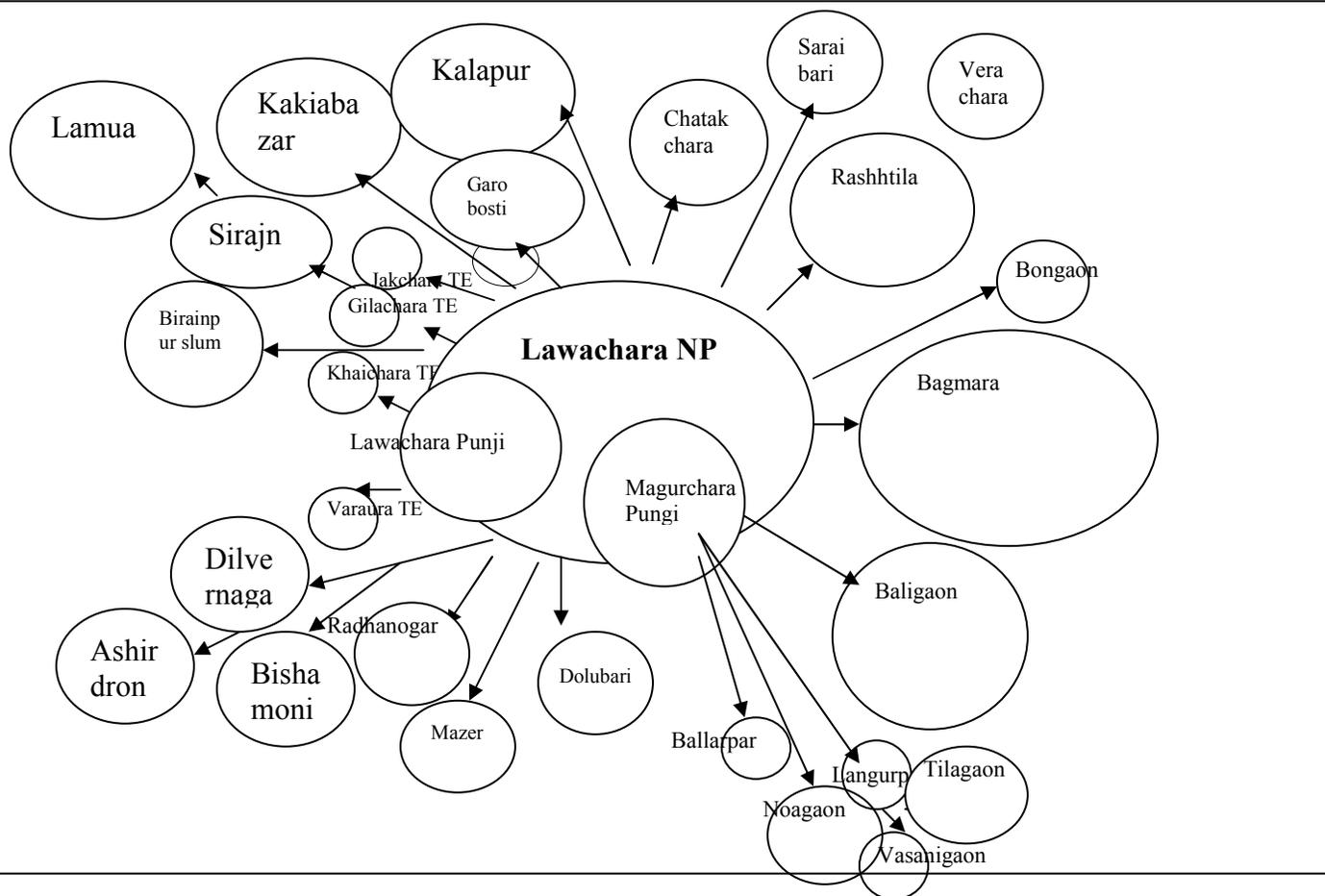


Fig. 6. Relative level of stakes of different villages with Lawachara NP based on resource extraction

4.3.2. Secondary Stakeholders

A total of 4 secondary SH groups have been identified. They are not directly involved with forest resource extraction from the NP but are linked either with its process, trading and utilization. A brief description those stakeholders and their activities are given below:

4.3.2.1 Timber traders (Mohalders)

There are about 10-12 persons in Srimangal and 15-20 persons at Bhanugach Bazar who are involved with timber trading. They usually have legal license for timber trading, to bid in the FD auctions in different forest areas. However, majority of them have linkages with illegal timber feller/syndicates. As alleged, they usually buy the illegal timber at a very cheap rate (500-700 taka/ cft) and mix those with legal timber that are bought at a higher rate (2000-2500 taka/cft) through auctions and transport those other places, such as Moulavibazar, Sylhet, Sunamganj, Akhaura, Brahmanbaria, Dhaka Comilla etc. They have strong linkage with police, sawmill owners and sometimes with FD and furniture shop owners (Fig. 7).

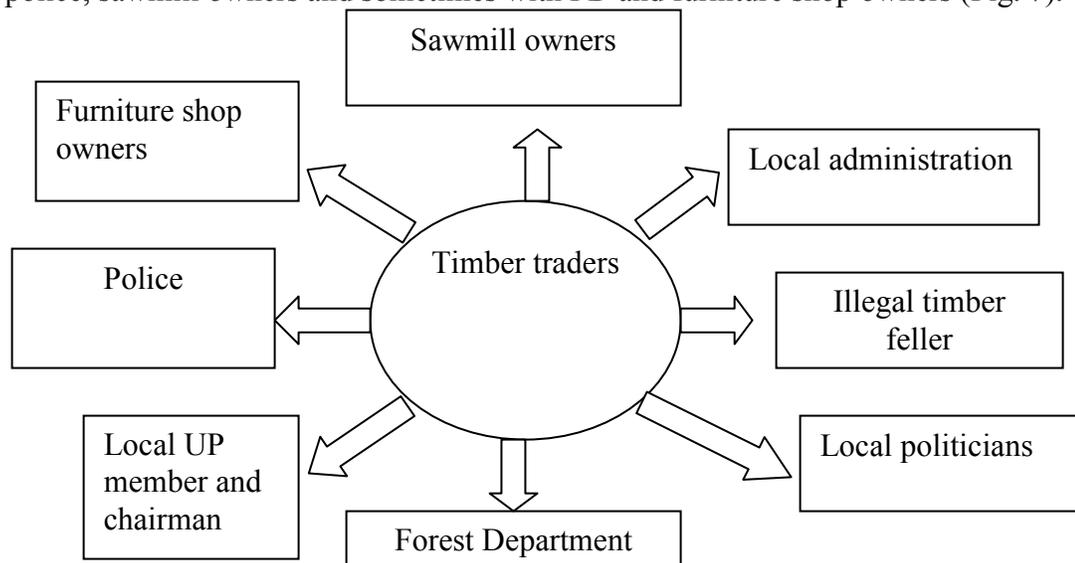


Fig.7. Linkages of different stakeholders with timber traders

4.3.2.2 Sawmill owners

There are 9 sawmills in Kamalganj area, mostly in Bhanugach Bazar and about 12 sawmills in Srimangal which are bit away from the Lawachara NP. These mills are owned by some influential people of the locality and usually receive both legally and illegally felled timbers for sawing into the logs or planks. The sawmill owners buy illegal timbers at a cheaper rate, eg., 700 taka per cft, whereas the actual market price would be of more than 3000 taka per cft. It appears that sawmill owners encourage illegal felling of trees form nearby forests, including Lawachara NP. Sometimes they may have internal linkages with timber traders, FD and illegal fellers (fig.8). It is also reported that they sometimes help the illegal fellers by giving money in advance. It is alleged that the owners have some sorts of mechanism for preparing legal paper in favor of illegal timber and sometimes they put fake marks on the illegal timber.

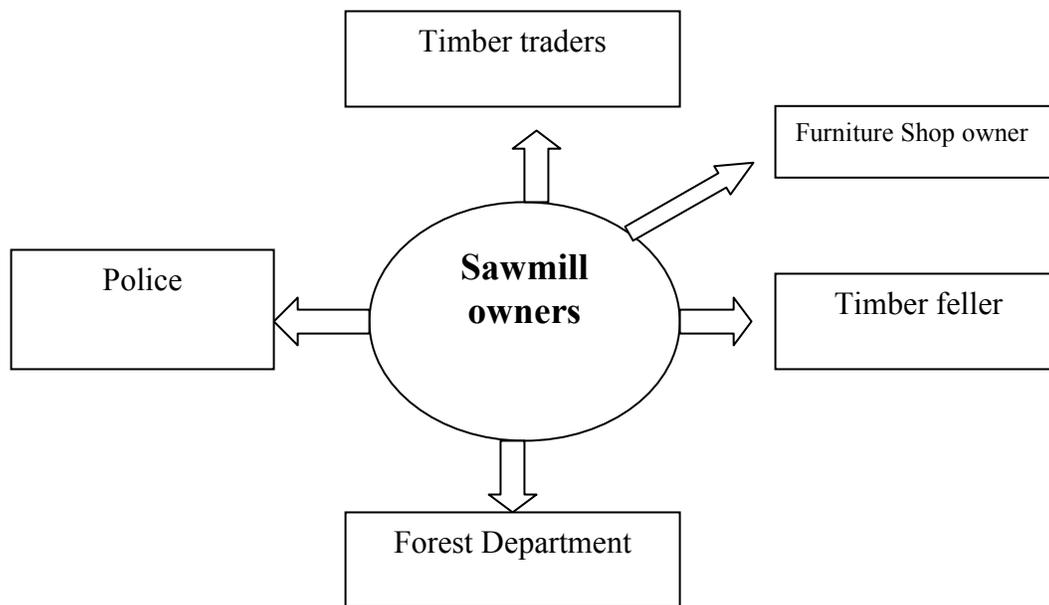


Fig. 8. Linkages of different stakeholders with sawmill owners

Inspection of sawmills by FD is very limited and probably that has little impact as the owners are powerful. However, in a recent effort FD with support from law enforcement authority seized the machineries of two sawmills, in the ground of their alleged involvement with illegal timber business. The FD is not aware of the fact that how many sawmills have valid license and whether they comply with the forest laws.

4.3.2.3 Furniture Shop Owners

There are about 30 furniture shops in and around Bhanugach Bazaar and about 20-25 in Srimangal town. Furniture shop owners have good links with the sawmills and sometimes with illegal feller as well. According to local people, the shops, in addition to legal timber, also use smuggled timber from the forest. They usually collect sawn timber from the sawmills, sometimes shops buy round timber directly from the illegal fellers or timber traders and get it sawn in sawmills. Majority of the traders are from outside of the project area.

4.3.2.4 Fuelwood trader

There are about 5-7 fuelwood traders in Srimangal town and about 7-8 in Kamalganj Bazar. Besides, Bhanugach bazar and Kailkabazar, which are very near to NP, are now a days known for its trades in fuelwood. The traders procure fuelwood from the individual collectors, stack them, some sell to local consumers, while the others transport it by trucks, train etc. to Moulvibazar, Habiganj, Sylhet, Shamsheernagar, Kulaura, Mirjapur and other local markets. The marketing opportunities have increased during the recent times at the local level. The fuelwood is traded at the rate of Tk. 80-100 taka for buying and at Tk. 90-100 taka/maund for selling (1 maund = approx 37.5 kgs).

4.3.2.5 Forest Department & CMC

The FD/ CMC has the overall responsibility for management, conservation and development of the NP through planting, patrolling and guarding the forest resources. At present FD, CMC and CPG who manage the NP at the local level. Overall, the Forest Department and CMC plays a positive role in the protection of the NP,

4.3.3 NGOs and Banks

As per the agreement of RDRS Bangladesh specially operate in the locality mainly NSP group operating the credit program and others NGO like BRAC, ASA,, CARITAS, HEED-Bangladesh, Grameen Bank, Besides, Krishi Bank and BRDB also operate in the area. But RDRS Bangladesh always at attention and avoiding any overlapping .Major activities of the NGOs are concentrated on health, education and alternate income generation. Some of them have credit programs exclusively for the women. Two banks and several NGOs provide micro-credit to local people (Table 11) for improving livelihood of the local people.

Table 11. List of Ngos / Banks in the Lawachara Area and Their Activities

Name of NGO/ Banks	Location	Activities
RDRS Bangladesh	Kamalganj	Micro credit programmes, education, health, awareness, poultry and livestock, nursery grosser shops, others small trade, and always avoid any timber sailors and furnisher shops owners
BRAC	Srimangal, Kamalganj	Micro credit programmes, education, health, awareness, poultry and livestock development
ASA	Srimangal, Kamalganj	Microcredit for agriculture, small business, poultry and livestock
BRDB	Srimangal, Kamalganj	Credit programmes, training on agriculture and other IGA
Krishi Bank	Srimangal, Kamalganj	Loan for agriculture
CARITAS	Srimangal, Kamalganj	Education, Technical training for income generation, health awareness, micro-credit for agriculture
HEED Bangladesh	Kamalganj	Health, education, nursery development and tree plantation
Care	Srimangal, Kamalganj	Health awareness specially on AIDS
Posobid	Srimangal, Kamalganj	Mirco credit programmes

The micro credits are mainly given for agriculture, small business and undertaking other IGA. These IGA programs concentrate mostly on small business, poultry, livestock, betel leaf cultivation etc. NGO's credits are mainly focused on women.

There is a lack of willingness among the group members of the group to return the credit in time. There is also a lack of coordination and motivation by the NGOs working in the locality. More IGA initiatives are essential for upgrading the livelihood of the local people. Better. Skill development activities of the NGOs are limited in the area. Local people, particularly the indigenous people (Tipra), have got some skills, like bamboo basket and mat making, weaving, specially magurchara & Khasia punji got the training on cane & bamboo materials making training from NSP. Tipra community got, pig as an alternative income generating activity. Fig. 9 shows relative influences of NGOs in the area.

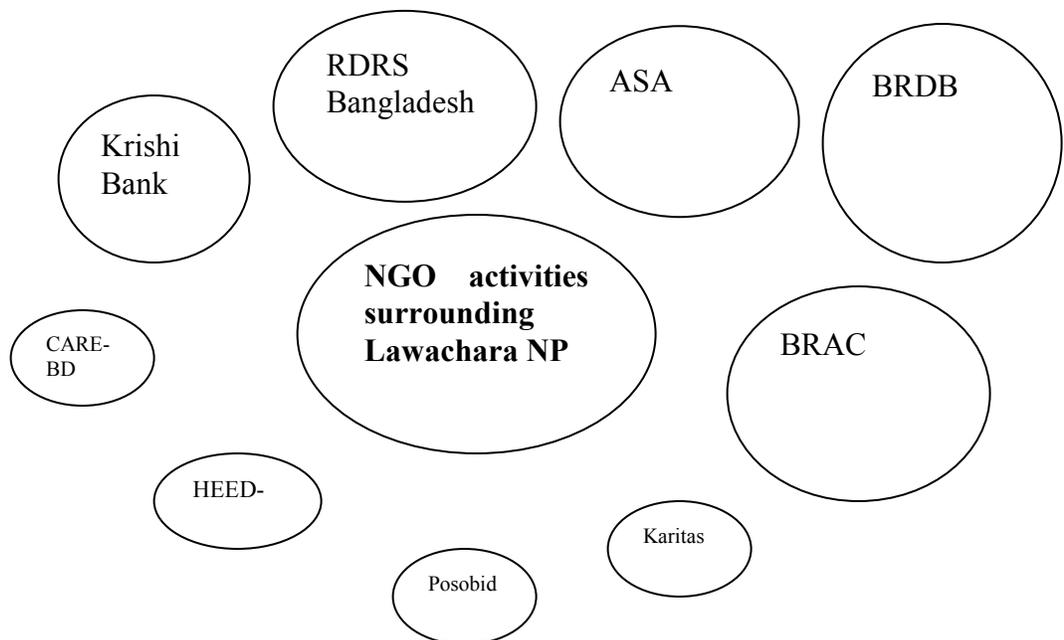


Fig. 9. Scale of activities of different NGOs in Lawachara and its surrounds

4.3.3.3 Police and BDR

Police and BDR also emerged as two important institutional stakeholders as they patrol in the area and on the highway to enforce the forest protection laws. However, sometimes, they develop a process of negotiation with the illegal tree fellers and other resource users. NSP and FD collaborate try to mutual understand with them. Since Lawachara NP is located near to Indian border, BDR are also involved in patrolling and guarding the forest and forest resources. In most cases, BDR plays positive role towards forest protection.

However, BDR is more active to conserve forest resources than police department. Sometimes, Occasionally, BDR help the FD administration in raiding the local markets and *bazars*. For example, on last February 2009, BDR with FD recovered the timber from Kalapur village.

4.3.4 Dependency of the Stakeholders on the Forest Resources

Traditionally, the local people are used to collect various resources from the Lawachara NP. However, they are mainly dependent on the fuelwood supplies from the forest for their HH needs, whether, they get it directly or indirectly. Many local HHs also get some bamboo and other house building materials from the forest. At present NSP working with the people and motivated the people about the trees for biodiversity conservation and awareness buildup with the people.

Table 2. Uses of Various Resource by Different Stakeholders in and Around Lawachara NP.

SI	Name of Resources	Users	Causes	Extent	Dependency on resources	Risk
01	Timber	Saw mill owner	Business Purpose	medium	15%	medium
		Furniture Shops	Business Purpose	medium	20%	
		Timber trader	Business Purpose	medium	05%	
		Local People	household use as furniture and building materials	medium	50%	
02	Fuel Wood	Local household	Domestic use, selling for livelihood	medium	50%	medium
		Local tea stall/restaurant owners	burning in tea stalls	medium	20%	
		Local Brickfields owners	burning in brickfields	less	2-3%	
		Outside household users	Domestic use	medium	03%	
		Outside tea stall/restaurant owners	burning in tea stalls	very less	01%	
		outside brickfield owners	burning in brickfields	nil	0%	
03	Bamboo	Local users	As poles, fencing, ceiling, basket, fuel and others	Medium	35%	Less risks
		outside users	As poles, handicrafts, fencing, and others	Very less	05%	

SI	Name of Resources	Users	Causes	Extent	Dependency on resources	Risk
04	Cane	Local users	Basket binder / others	Less	01%	Less risks
05	Medicinal Plants	Local People, a few Kabiraj	As medicine	Less	10%	Less risks
06	Honey	Local People	Food, medicine	Less	01%	Less risks
07	Bird	Khasia community	For meat (wild fowl, Ghughu)	Very less	0%	
8	Fruits	Local People	Food	Very Less	02%	Less
9	Vegetables	Local People	Food	Less	5%	Less
10	Grass	Local People	For Cattle feeding	Less	01%	Less

Table12 shows the dependence of different stakeholder groups on different resources for their HHs needs and supporting their livelihoods. Almost, all HHs of the two forest villages are dependent on the fuelwood and house building material, vegetables etc. supplies from

The forest for their HH needs. But, they do not collect these for commercial purposes. Many

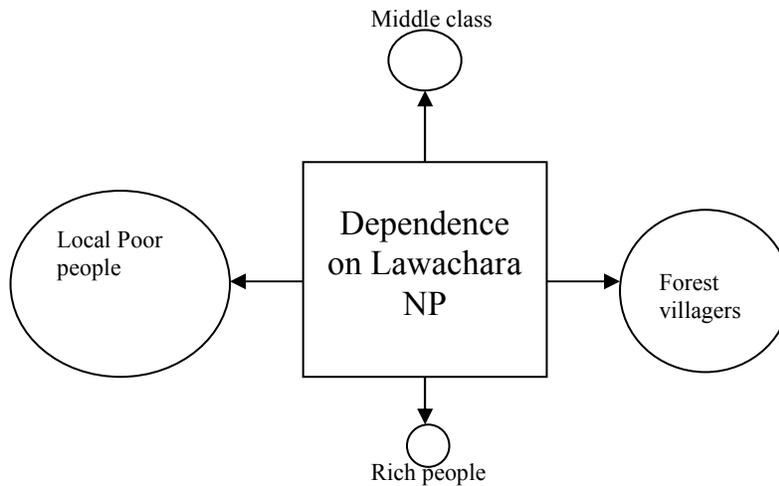


Fig. 10. Relative level of stakes (by resource extraction and dependence) of 4 major groups of people with Lawachara NP

poor people from the adjacent villages are completely dependent on selling of fuelwood and many of them sell it for added income. Table 18 shows that about 35% of fuelwood that are collected by people of Bagmara, Baligoan, Chatakchara and nearest tea garden people.

4.4 Causes for the Decline in Forest and Forest Resources

4.4.1 General Causes

The major causes for the decline in forest and its resources in order of magnitude are as follows: Illegal timber felling, fuelwood collection, bamboo and collection, house building materials land encroachment etc.

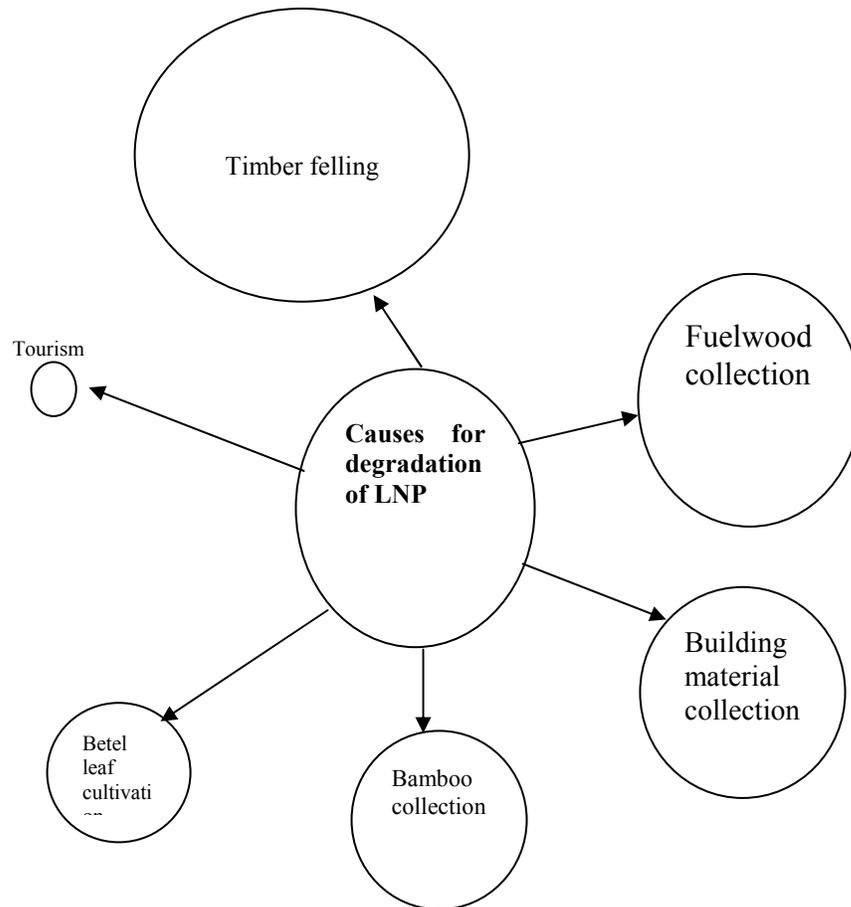


Fig. 11. Scale of major direct causes for the degradation to Lawarashtra NP

Table 13. Pair Wise Ranking for Identifying Main Causes For Forest Destruction

	Fuelwood collection	Timber felling	Bamboo collection	House build. mat	Hunting
Fuelwood collection	----	Timber felling	Fuelwood collec.	Fuelwood collec.	Fuelwood collec.
Timber felling	Timber felling	-----	Timber	Timber felling	Timber felling
Bamboo	Fuelwood	Timber	-----	House build.	Bamboo

collection	collec.	felling		mat. collec.	collec.
House build. mat. collec.	Fuelwood collec.	Timber felling	House build. mat. collec.	-----	House build. mat. collec.
Rank	02	03	01	01	00

In order to investigate the underlying factors responsible for undertaking these activities by the local people cause and effect ranking was done and the outcomes are shown in the Table 14. The exercise revealed that local poverty and unemployment are the main driving factors for the extraction of forest resources, followed by additional income needs and squeezed income opportunities. At present NSP activities are working different village surrounding the LNP area.

Table 14. Cause and Effect –Ranking (Understanding Underlying Facts for Forest Degradation)

Name of resource	Timber to sell	Fuelwood collection	Bamboo & cane sell	land encroachment	Hunting
Identified problems					
Poverty	++	++	+		
Unemployment	+++	+	+		
Additional income needed	+				
Lack of house building mat.	-----	-----	+		
Forest cases (in Lawachara)	+++				
Income opportunities squeezed	++	+	+		

FD's poor forest patrol, NSP/CPG/CMC easy negotiation with local FD staff, and local influential people to protect the LNP area.

Table 15. Cause and Effect (Investigating FD's Management Practice and Local Situation)

Practice/management practice	Timber to sell	Fuelwood collection	Bamboo and cane collection.	land encroachment	Hunting
Poor forest patrol	000	0	0		
Easy negotiation	0	00	0		
Poor strength of FD /increased local strength	00				
Transportation dev.					

Traditional practice	0	0			
Increased role of local influential people	0		-		

4.4.2 Exploitation of Forest Resources

A summary of information collected on resource exploitation from the NP are provided in Table 16. About 12 different types of resource are extracted from the forest. Of them, 2 resource types (fuelwood and timber) are extracted on a large scale, 3 on a moderate scale, 4 on a minor scale and rest 3 are in very negligible scale. Fig. 12 shows the major resource extraction zones of the NP.

The main purposes for resource extraction include meeting HH needs, selling for added income/and or to support and supplement livelihood.

Timber felling, fuelwood and bamboo collection, collection of house building materials, hunting etc. all are posing threats to the forest and its biodiversity.

Lawachara National Park

Resource Exploitation Zones

(not to scale)

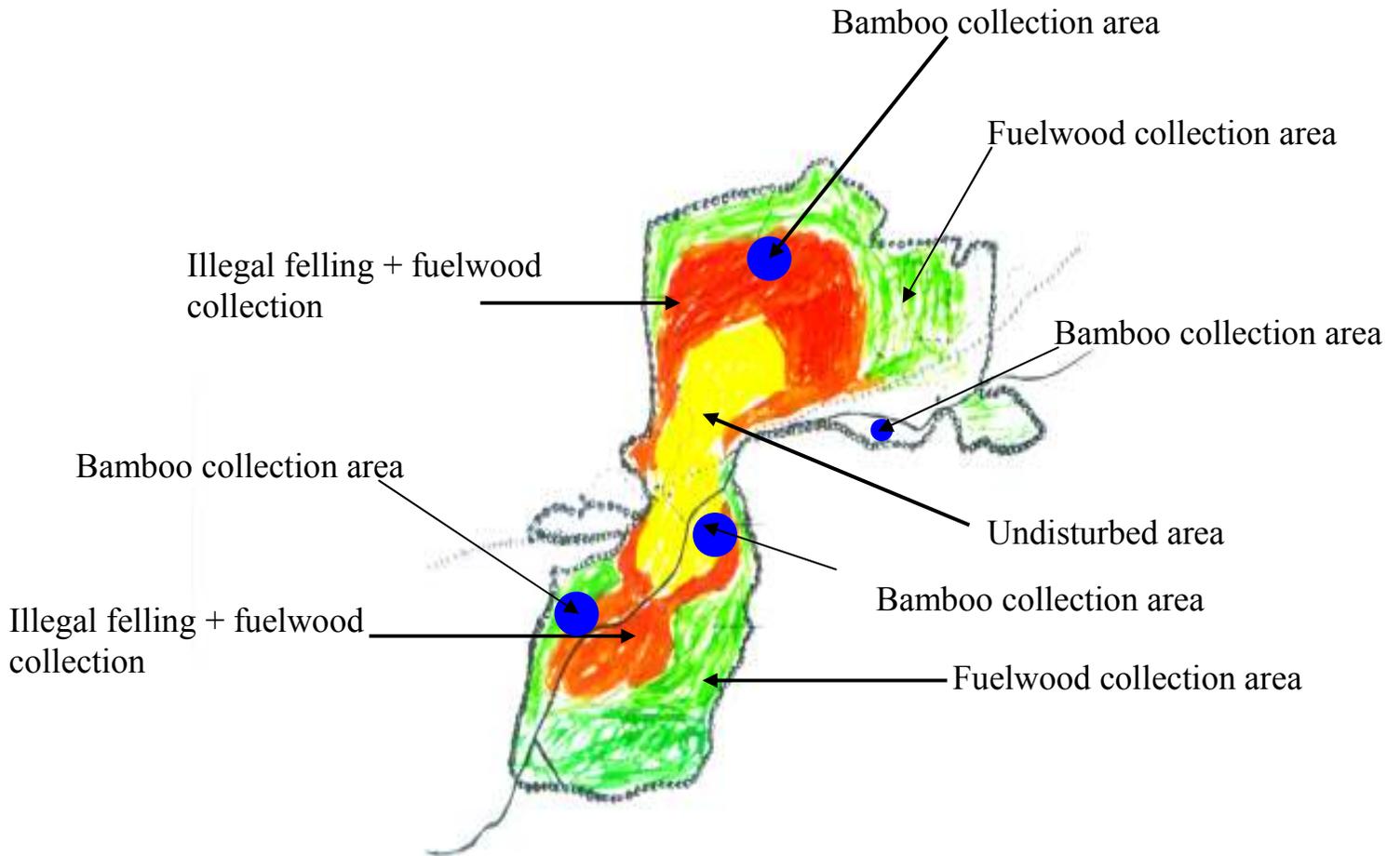


Fig. 12

Table 16. Information on Resource Extraction from Lawachara National Park

Sl. No	Name of resources	Resource collector	Purpose	Extent	Impact	Risk	Destination
1	Timber	Poor people from adjacent villages, unemployed people	For selling	Medium	Reduce selectively large tree and forest thicknesss, loss of habitat for gibbon and others	Medium	Local timber trader, sawmill, furniture shop, urban areas
2	Fuelwood	Local poor people, forest villagers, mainly women and children	For HH consumption Selling and HH comp , selling	Large	Loss of habitat, loss of forest biodiversity,	Medium	Locsal HHs, local markets, brickfield, transported to urban areas
3	Bamboo	Forest villagers, some local poor people from adjacent villages	Meet HH needs Selling for added income	Medium	Wild stock already heavily depleted, further extract aggravate the situation	Moderate	Local HHs Local and nearby areas
4	Wildlife	Forest villagers Local people	For consumption As hobby	Less	Stock heavily depleted	Less	Local HHs
5	Honey	Local people	Own consumption	Negligible	None	Negligible	-----
6	Fruits	Local people, children and women	Own consumption, few for sale in the locality	Minor	Hamper forest regeneration to a little extent	Little	
7	Vegetables	Local people, mainly forest villagers	Collect number of species of vegetable		No apparent impact	Negligible	
8	Sun grass	Local people	Collect as house building mat.	Presently little	Reduce forest biodiversity	Negligible	Removed in the process of plantations

9	Tree bark	Few local people		Negligible			
10	Medicinal plants	Few local people, forest villagers	Occasionally collect some selective species	Little	Negligible	Negligible	

4.4.3 Seasonal changes in resource extraction

The exploitation of resources vary depending on the seasons. Most timber are felled illegally during the rainy season as forest patrol is poor during that period. Fuel wood is mainly collected during dry season due to easy accessibility and mobility inside the forest during that time. Bamboo extraction mainly takes place in drier months that corresponds to local needs for house building. Medicinal plants, vegetables and some other forest resources are extracted to some extent mainly during rainy season. A little amount of honey is also extracted during summer (Baishakh-Jaistha).

4.4.4 Exploitation of Major Resources from LNP

4.4.4.1. Fuelwood collection

Fuelwood collection is a major and visible activity in Lawachara NP. It is a year round activity, but most extraction occurs during the dry months. Most of the villagers, especially from inside villages and villages that are very adjacent to the NP are 45% dependant on the forest for their fuelwood requirements to meet their household consumption. About 10% villagers are entirely dependant on this for their livelihood, a large number of families undertake it to supplement their HH income.

The collectors are dominantly women, children, but sometimes also the unemployed adult men. According to local people, in an average 50-60 people enter into the forest each day to collect fuelwood. However, sometimes, the number may exceed 100. They are predominantly from few villages Lawachara punji and Magurchara punji collect fuelwood from the forest for their HH consumption, but mainly from their betel vine area.

Table 18. Village Wise (Having) Distribution of Fuelwood Collectors in Lawachara NP

Sl no.	Name of villages	Total HH	Who collect fuelwood				Use	
			Male	Female	Children	Poor	Domestic use	Selling for livelihoods
2	Dolubari (Tiprpara)	72	16	20	-	100%	100%	-
3	Bagmara	300	50	100	120	70%	80%	20%
4	Rashtila	171	-	30	25	100%	75%	25%

5	Chatokchara	61		12	10	100%	60%	40%-
6	Baligaon	300	-	-	-	-	-	-
7	Lawachara punji	23	10	11	-	100%	100%	-
8	Magurchara Punji	40	20	20	-	90%	100%	-

Usually, a person collects a 20-40 kg fuelwood each day.

Besides the local HH use, local tea stalls/ restaurants use fuelwood for burning in their kitchen, some of the use fuelwood. Other local people buy fuelwood from the local market sold by collectors.

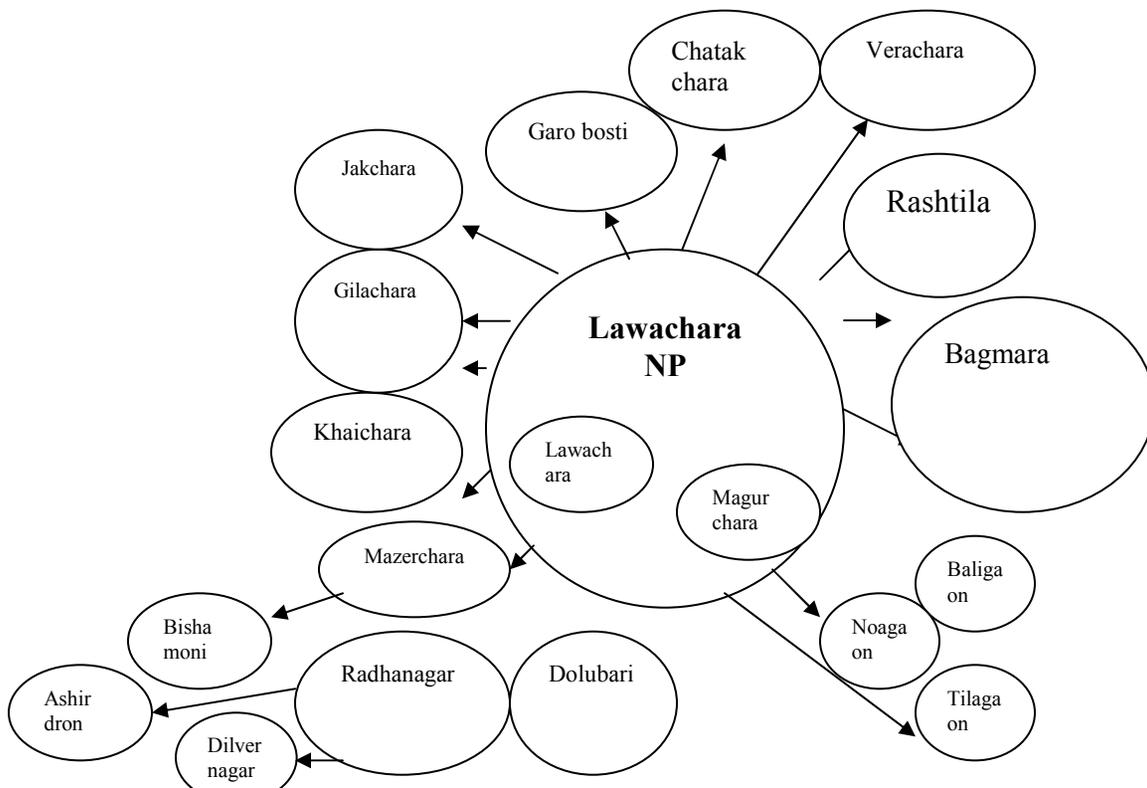
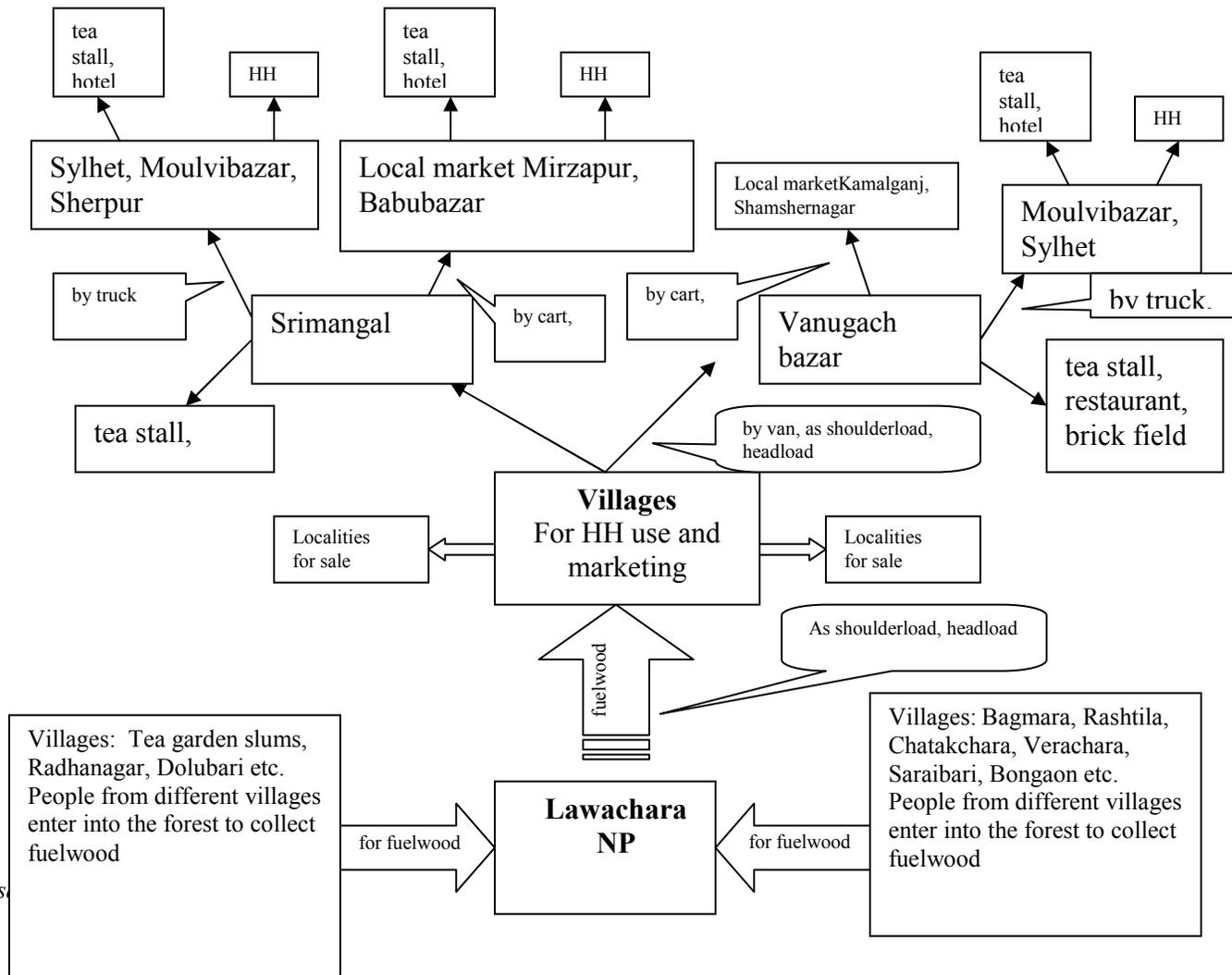


Fig.13. Relative level of fuelwood extraction by different villagers

The fuelwood collected for commercial purpose, mainly goes to Srimangal and Vanugach Bazar where it is sold to fuelwood traders or to the local consumers... Fuelwood is sold as 80-100 taka per mond (approx 37.5 kgs) in the market. It is then transported to Sylhet, Moulvibazar and Sherpur by train or truck. Some fuelwood is also carried to some of other local markets, such as Mirzapur, Baburbazar under Srimangal Upazila.



4.4.4.2 Timber extraction

Timber extraction is also major activity in Lawachara and often regarded as the major cause for the destruction of Lawachara forest. Although, timber felling is illegal in Lawachara NP, the activity is going on in a good scale basis. Many people from surrounding villages of Lawachara NP are directly involved with illegal extraction of timber from the forest. The villages involved are Bagmara, Rashtila, Baligaon, Radhanagar, Verachara, chatakchara, Langurpar etc (Table19). The most involved villages in timber extraction are Bagmara and Baligaon which are very adjacent to the NP. In all other villages, in an average, about 10 – 15 people (mainly male) are involved with illegal felling of trees and most of them are poor. The villagers who are involved with illegal felling of trees mainly carry out this activity for supporting their livelihoods. NSP activities with the help of CMC, FD & Upazila GOB above mansion villages stop the Illegal felling from LNP.

Table 19. Village–Wise Distribution Illegal Timber Fellers Associated With LNP

Sl no	Name of villages	Total HH	Who are involved						Use	
			Male	Female	Children	Poor	Mid. class/Rich	Local people	Dome stic use	Selling
1	Radhanagar	325				-		100%	-	100%
2	Bagmara	300				70%	30%	100%	-	100%
3	Rashtila	171				80%	-	100%	-	100%
4	Chatokchara	61				-	-	100%	-	100%
5	Baligaon	300				75%	25%-	100%	-	100%
6	Verachara	118				80%	-	100%	-	100%
7	Langurpar	92				80%	-	100%	-	100%
8	Ballarpar	61				-	-	100%	-	100%
9	Vasanigaon	-				-	-	100%	-	100%
10	Tilagaon	80				-	-	100%	-	100%
11	Noagaon	150				-	-	100%	-	100%
12	Bishamoni	-				-	-	100%	-	100%
13	Lamua	349				-	-	100%	-	100%
14	Kalapur	460				-	-	100%	-	100%
15	Kakiabazar	-				-	-	100%	-	100%
16	Sirajnagar	313				-	-	100%	-	100%
17	Dolubari Muslimpara	30				-	-	100%	-	100%

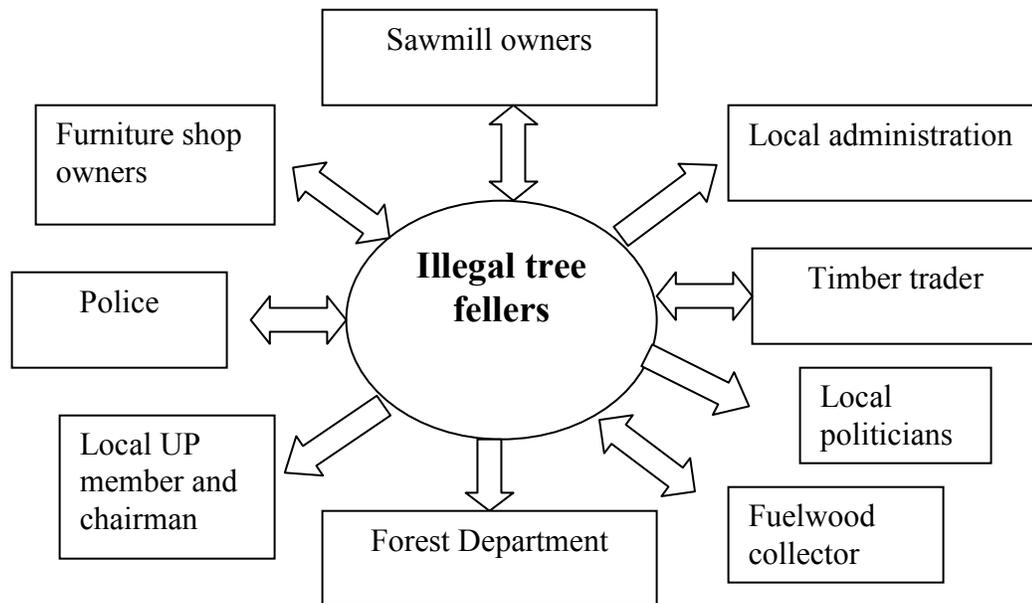


Fig. 15. Link of various stakeholders with illegal fellers

There are at least 8 –10 organized gangs (locally called syndicate) who are involved with illegal tree felling from the Lawachara NP. The members of each syndicate varies from 10-15. These syndicates are controlled by influential people (mainly timber traders and other political and elite persons).

They mainly fell the medium sized valued timber trees, like teak, chapalish, garjan. The activity is carried out at night and intensively during the rainy season when the access to the forest is very difficult and forest patrol is restricted. Usually, they select suitable trees during day time.

Illegal tree fellers cannot break their affiliation with illegal felling of trees once forest case is filed against them. They need to meet the expenses to fight the case and thus try to collect the same from timber selling.

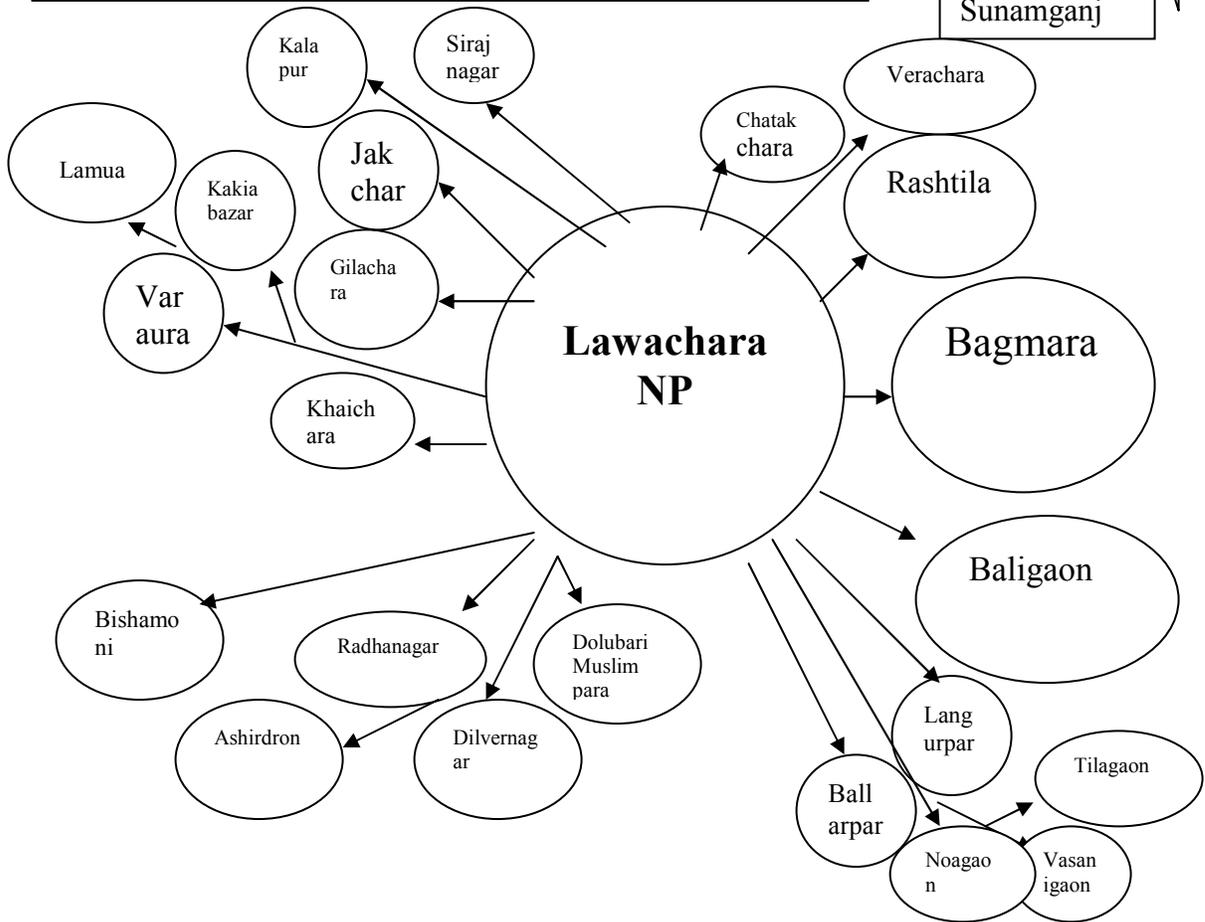
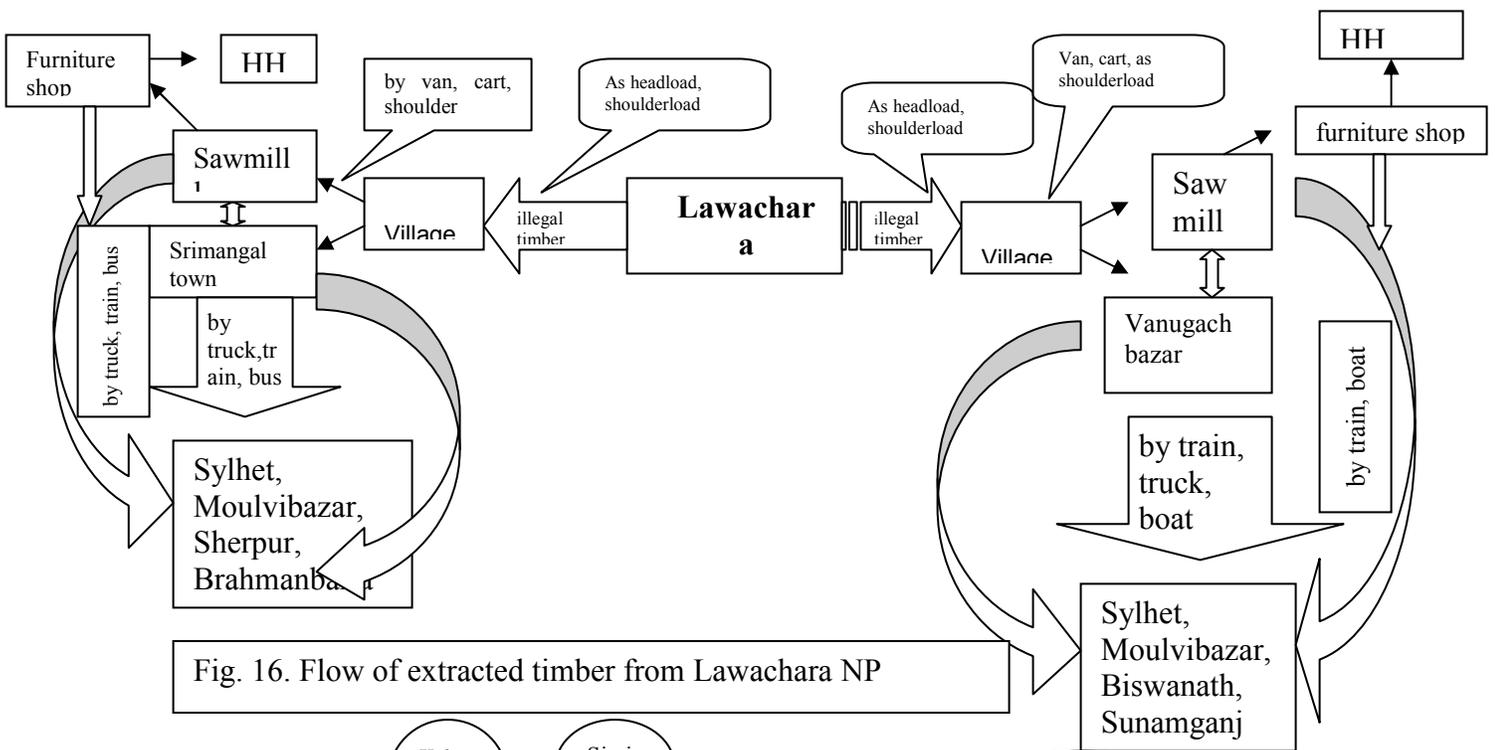


Fig. 17. Scale involvement of different villages with illegal tree felling
 Site-Level Field Appraisal: Lawachara NP

4.4.4.3 Bamboo Collection

Bamboo has many uses in the locality, e.g. as house building materials, as material for fencing, as roof ceiling, basket and mat making and also as fuel. Mainly two types of bamboo naturally occur in the park, tengra and mooly, and both are collected by the local people. Everyday about 10-15 individual local people enter into the forest for bamboo collection. Bamboo is carried as shoulder and head load.

Bamboos planted by FD are also illegally felled. These are either consumed locally or sold at the local markets, like Bhanugach Bazar and Srimongal. Bamboos are also available at local homesteads in the locality.

however, plantation of various bamboo species in the forest area has increased its stock.

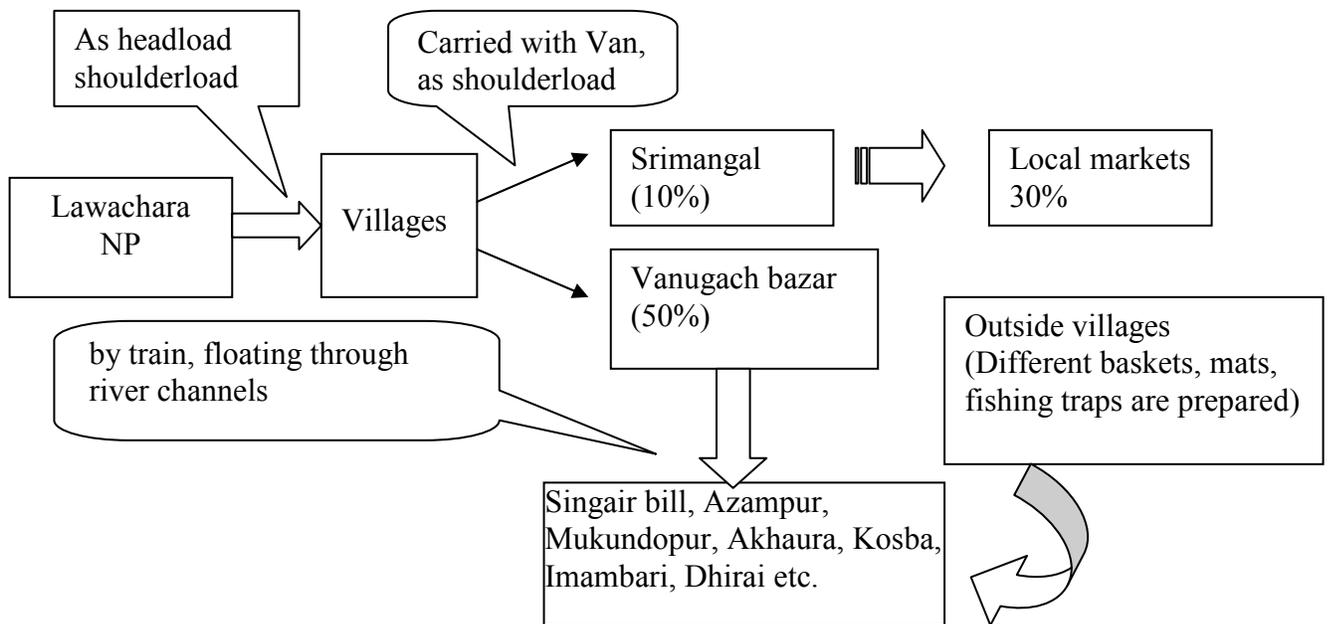


Fig. 18. Flow of Bamboo collection from Lawachara NP

4.5. Collection of other Resources

Local people also collect some other resources from the park. mainly for their HH consumption. The collectors are mainly from the forest villages and local poor people and children from the adjacent villages. Information on such resources are given below.

4.5.1 Vegetables

Forest villagers almost everyday collect some vegetables from the forest. Besides, the fuelwood collector collect some vegetables during the time of collection of fuelwood. The vegetables exploited are: bamboo shoots (manthana), bonkachu (bandhugi), ramkala, thankuni, aorai kalai, karam, gantha, muia, palong shak kachu, kachur lati, etc. from the NP mainly during rainy season.

4.5.2 Fruits:

Some people collect wild fruits from the forest. They are usually forest villagers and fuelwood collectors and local children. The main fruits collected are *Chapalish, Kau, Kanthal, cane fruits, Banana, dewa* etc. The fruit collectors mainly collect these fruits for their HH consumption. However, a few of collectors sell those to their neighbours and markets for their additional income.

4.5.3 Fish

Fishes, like *Puti, latia, Jagor, Aku (shrimp)* are collected from the inside streams of the NP, by the inside villagers as well as by some local poor people.

4.5.4 Wildlife

Hunting is now a days is very low in Lawachara NP at present NSP working, CMC, FD and other influential people aware of this matter, so the hunting of wildlife day by day is increasing at LNP area.

4.6 Other Causes for Forest Degradation

4.6.1 Land Encroachment

An area of more than 500 acres of land at the northeast corner at the time of first PRA and RRA of the forest has been encroached by Languarpar, Bagmara, Dalubari and Chatakchara villagers, mainly the migrants and lemon garden owners from different areas of the country. Some lands have been recovered and still about 300 acres of land are illegally enjoyed by the villagers. In Barmara, about 73 HHs are on the encroached land and occupying a substantial area. The encroachers were once evacuated and but they are again resettled by winning a court case. Besides, the forest villagers established an agricultural plot inside the park nearby their punji. The outside villagers have also converted about 5 ha of land into agricultural lands.

The encroachers are well established on the land and converted forest land into homesteads and for other purposes. The encroachers claim that they have legal rights and have all valid documents. Thus the recovery of this land remains as a far cry.

4.6.2 Betel leaf cultivation

Betel leaf cultivation is done by the Khasia tribe (Forest villagers) in their allocated areas for the purpose. This is their traditional activity and each and every HH of the tribe undertakes this activity and has become a part of economic, social and culture of their life.

They grow betel vines on trees, the original indigenous trees of the forest. The cultivation practice includes the lopping of the branches each year and weeding of the area. Thus the activity drive the wild animals away from the cultivation area. The betel farming covers an huge area, over more than hundred ha and thus has a huge impact on the forest.

On the other hand, cultivation of betel leaf is the only or major income source for the forest villagers. The forest villagers are usually very poor and have limited income opportunities.

4.6.3 FD's Plantation practice

The park has been converted a plantations in the past. The earlier plantations included long rotational plants. At present plantation is being done with short rotational trees, mainly with exotic trees, often monoculture. The plantation practice includes clearing of undergrowth by burning and subsequent weeding to facilitate plant growth. This practice contributes most to the degradation in local biodiversity.

4.7.1 Local governance:

Local Union Parishad is the lower level local government entity and look after local welfare and development. It has also emerged as the main center for conflict resolution. The UP members, who are elected from different areas of the Union, look after their respective areas. The local public representatives are consulted whenever there is a local issue.

Police administration at Upazila level is the local law enforcing agency and is involved with maintaining local law and order situation. The police at Kamalgonj Upazila are very active and powerful. They are the authority to make arrests of warranted person by forest cases. They claim that they help in forest protection.

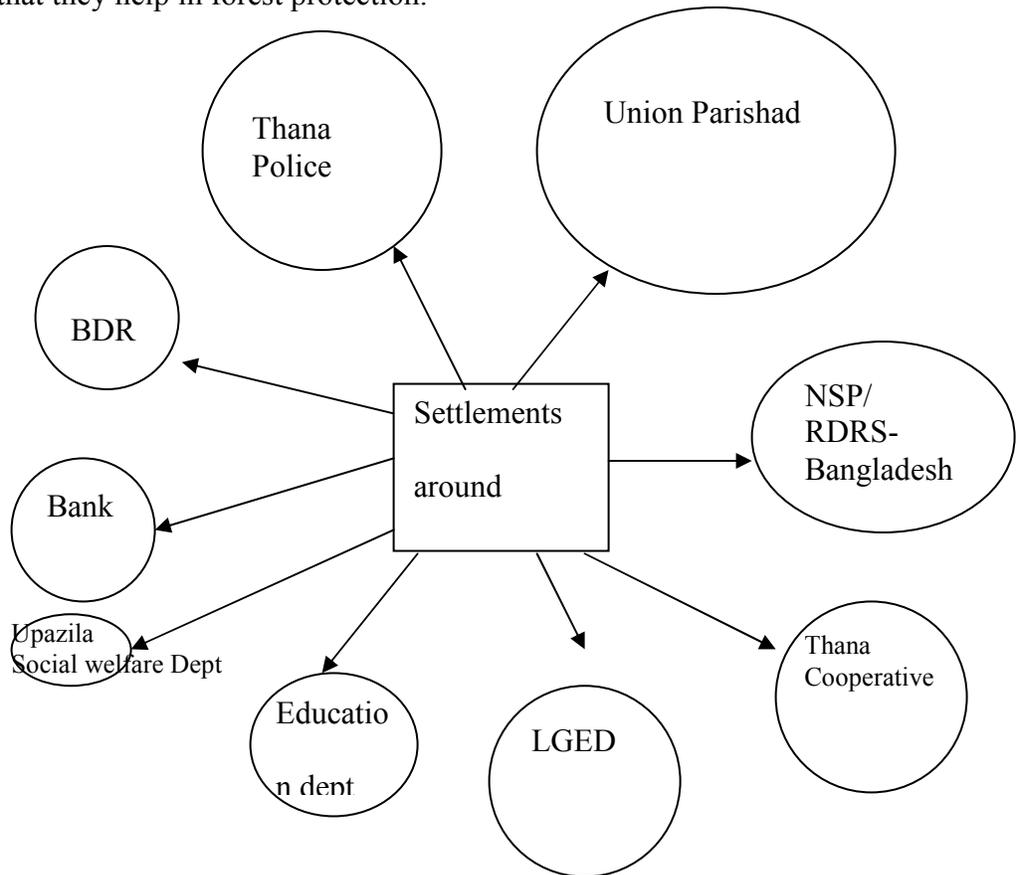


Fig. 20. Local government institutions and NGO

The tribal people have their traditional way of governance of their community. They are very organized community having respect to their community leaders. Forest villagers have governance system of their own. In lawachara in each forest villages, there is a community leader, called Montri, and recognized by the FD.

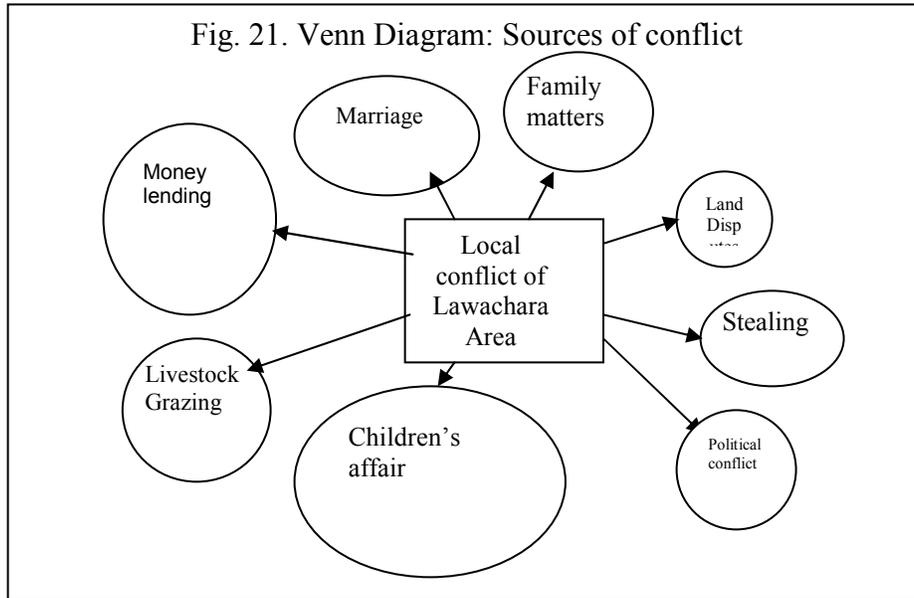
4.7.2 Local community organization

There are a few community based organizations such as social club, group, NSP group, youth club, Co-management Council, Co-management committee etc, .namely Khasia Welfare Society, Srimongol, Dakshin Sylhet Adivasi Forum, Srimongol, *Tripura Sanskritik Kendra*, Dolubari, *Rashtila Abakash Tarun Sangha*. These are active local organizations and deal with local problems and welfare and cultural activities.

4.7.3 Local conflict, conflict resolution, social adhesion and cohesion

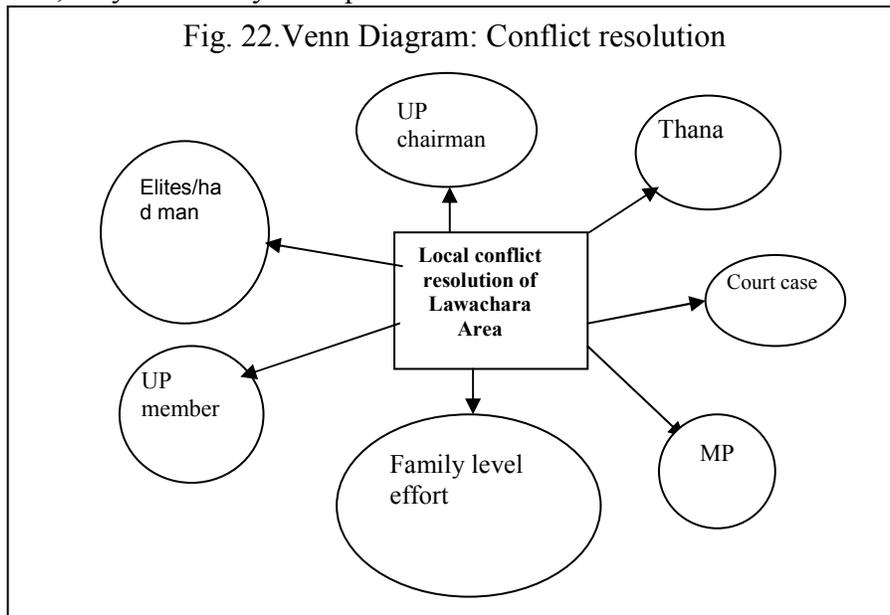
4.7.4.1 Sources of conflict

The main sources of conflict among local people are, children affairs, land disputes livestock grazing, family affairs, stealing, money lending, local politics, rivalry among different syndicates, affiliation and cooperation with FD, forest cases etc.



4.7.4.2 Conflict resolution

Conflicts are resolved by arbitration by local elites & public representatives (MP, UP chairman, members), if the local efforts are not fruitful it may lead to filing cases with Thana-police, may eventually end up in courts.



4.7.4.3 Conflict with FD

There is a huge conflict between local FD and local people, particularly with tree feller from Bagmara and Baligaon. Sometimes, there are direct conflicts with tree feller during patrolling, sometimes this leads into exchanges of fires and even may end up with murder

4.7.4. Social cohesion and adhesion

There are many social activities that maintain social adhesion and cohesion among the villagers. Some of them are Eid ul Azha, Eid ul Fitre, marriage ceremony, religious functions, collective action through local community organizations, etc.

4.8 Local Socio-economic Settings and Dynamics

4.8.1 Demographic Profile

4.8.1.1 HHs number

Except 4 villages for which data were unavailable, the total number of households in villages surrounding the park is approximately 4000 and have stakes with the forest, of them 136 HHs are tribal (khasia and Tipra) and among this 64 HHs are represented by forest villagers.

4.8.1.2 Education

Among the tribal community, now a days 100% children go to primary school, however, only 8-10% go to High School and only 8% study in the colleges. Among the adult, about 80% are illiterate (above 30 years of old). Among the Bangalee, about 95% children go to primary school, about 60% goes to High School and about 8% go to colleges and above. Information collected during RRA exercise is presented.

4.8.2 Livelihood strategies analysis

4.8.2.1 Occupation

The major occupation of almost all khasia tribe are betel vine cultivation, followed by day labour. The occupation of Tipra are mainly cultivation of pineapple and lemon, followed by day labour and agriculture (jhum-outside the NP).

The major primary occupation of Bangalee people are agriculture (65-70%), principally paddy cultivation, followed by day labour (10-15%), fuelwood collection (5-10%), small business (3-5%), service (3%) and overseas employment (1%). The major secondary occupation are fuelwood and bamboo collection (30%), day labour (22.5%). Table 22 shows the changes in occupation of the local people over time.

4.8.2.2 Unemployment

Varies between the villages. In average 15% local people are unemployed. However, there is a strong seasonal trend in unemployment level. Unemployment is a concern/problem in the area.

4.8.2.3 Credit

Several NGOs and 2 banks provide micro-credit to local people. Bank loans are mainly given for agriculture. NGOs provide credit mainly for IGA. NGO's IGA programs concentrate on small business, fish culture, poultry, livestock rearing etc. NGO credits are mainly focused on women.

4.8.2.4 Income and expenditure profile

Data also collected on the income and expenditure profile of the community people of the area. Data show that the main source of income of the local people is day labour, followed by agriculture, fullwood collection, timber poaching, small business etc.

4.9 Social Dynamics (Trend in changes in socio-economics)

4.9.1 General Dynamics

Compared to 1970 situation, population and income of local people had increased with corresponding decline in solvency. Although, literacy rate has increased, unemployment rates have also increased. During the time, use of forest for both as HH needs and income generation have increased. Local food scarcity has reduced while opportunities for alternate income has increased to manifold.

4.11. Gender Issue

4.11.1 HH decision-making

Different family members in taking HH decisions. In Lawachara, husband takes the major HH decisions, followed by wife and sons.. Daughters are rarely consulted in decision making. Women of ethnic community have a major role in many HH decisions making.

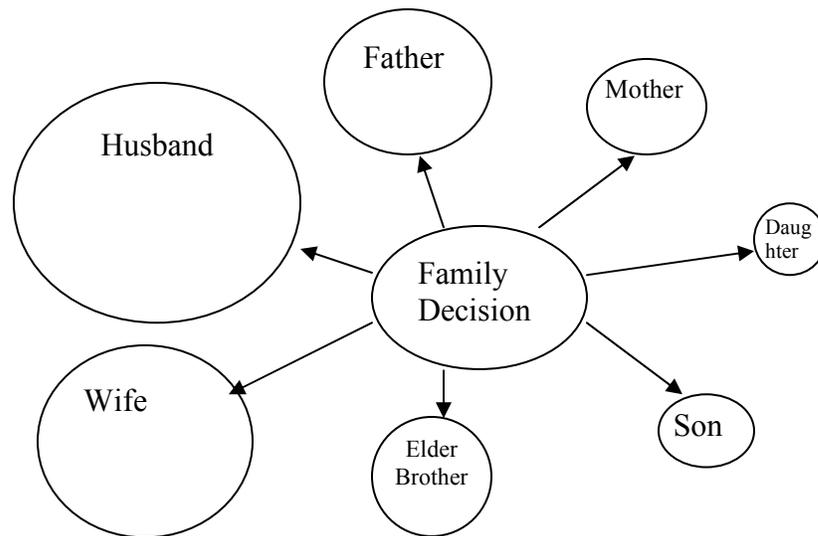


Fig. 25. Venn Diagram showing level of role of family members in decision-making

4.11.2 Outdoor mobility and access to credit and IGA

Overall, in Lawachara area, outdoor mobility of females is considered to be moderate. However, in some villages, the movement of females is restricted. Participation to social events by women are comparatively less than males. However, now a days RDRS Bangladesh & other NGOs credit and IGA is much more higher in case of women. On the other hand, access to bank loan is very limited for women.

Workload

In general, the men have more works during Jaistha to Bhadra and again during the winter months. The females have more work during the dry months and these periods correspond to the local agricultural activities. However, in the tribal community, the work load of both male and females are more during the wet season, the period corresponds to betel leaf growing season.

4.11.3 Daily work load

Fig. 26 and Fig. 27 show the daily work chart of male and female in a Khasia family in Lawachara punji, respectively. The females are typically involved with the household work and also help in the betel vine cultivation. The males mainly do the outdoor works related to income generation.

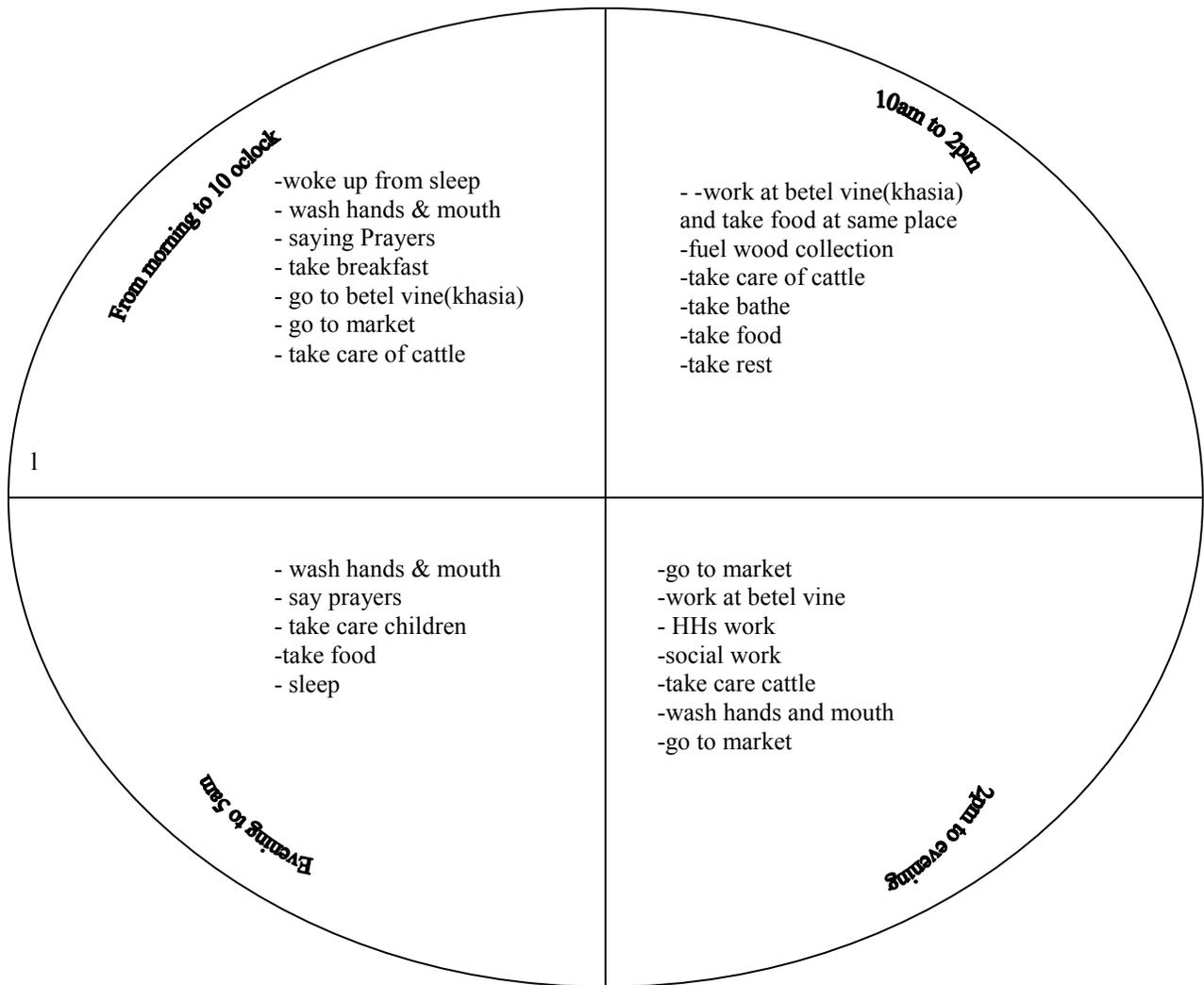


Fig. 26. Daily work chart of a men from Lawachara punjiarearea

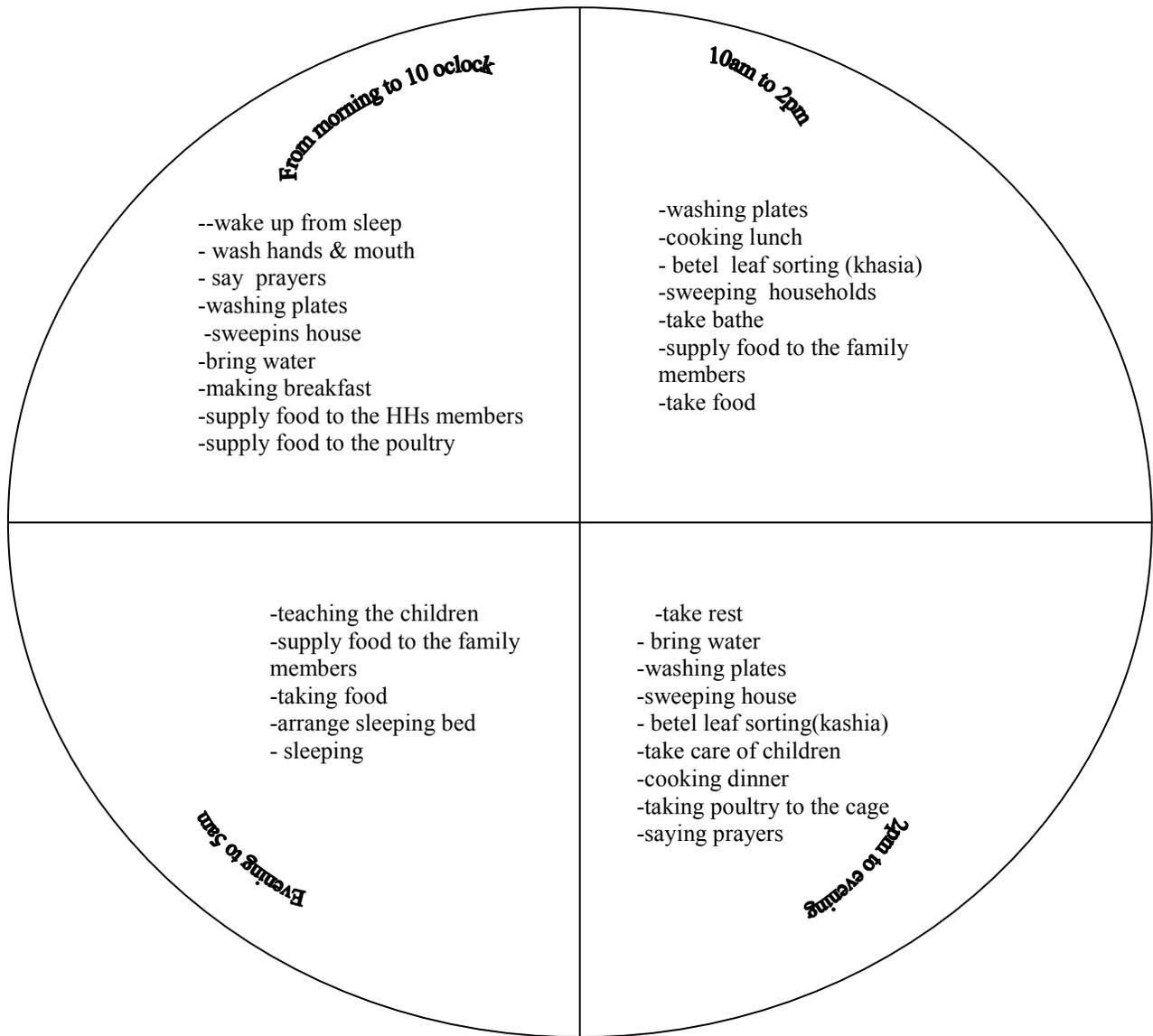


Fig. 27. Daily work chart of a woman of Lawachara punji

4.11.4. Education

The overall literacy rates of male and female are close. At present NSP working nearest the protected area last 4 year and organized the different male & female groups So the recent years, the number of school going girls are higher than the boys. However, in case of higher studies girls are far behind the boys. (Table 31). Overall, females are less educated than the male.

Table 31 .Comparison of Educational Status of Male and Female in Lawachara Area

Overall literacy (based on adult)		Educational level (based on students)				
		Primary	Secondary	Colleges	Above	Informal
Male	00	000	0	0		
Female	0	000	00	0		

4.12 Local Level Awareness and Aptitude Towards the Project

Local people know about some of the rules of forest Act, At present NSP working in this landscape area most of them know the significance of the NP. About 80% people are aware of the park and many people know about some restrictions in the park.

Perception about the resource degradation and its impact is good. The ethnic communities are well behaved and cooperative. Most of the local Bangalee are also good people. However, some of them behave rude. Reaction to NSP is mixed. Some of the people expressed their concern that NSP program is good and to develop their livelihood day by day by this time they are getting micro credit from RDRS Bangladesh i

4.13. FD’s forest management regimes: current status and situation

4.13.1 Present staffing pattern

There are less FD staff who are engaged with the management of the NP at the local level. They are facing many problem regarding protection of the NP.

4.13.2 FD’s/CMC Plantation Strategies andPractice (Buffer zone)

The FD/CMC plantation strategy for Lawachara NP (buffer zone) is still guided by the production forestry. Along with the traditional plantation practice with valuable long rotational timber trees, present plantations in NP include medium (a(i.e Jarul, Chapalish, Shegun, Lohakath, Kadam, Pitraj, Chandan, Kanthal, Supari, Litches, Agar, Dhuna, Garjan, Dewa, Awal, Gamar, Jam, Nageswar, Sundhi, Bohera, Tairol tree etc) as well as short rotation exotic trees (i.e Acacia hybrid, Mangium, Malacanna, Eucalyptus,

Akashmoni, Rubber) often with mono species. Since the declaration of NP, no significant change has occurred in plantation practices. Beside this bamboo and cane have been being planted in many blocks. Cane is planted as undergrowth.

5.1. Opportunities

- **Positive responsiveness of the local people:** The general people showed interest in the NSP project. This aptitude of local people could be utilized to ensure their participation in the project and thus will help in establishing co-management.
- **Ecotourism development:** A large number of people visit the park. Last 4 years day by day tourists coming in the park from the country & abroad so need more infrastructures developed this will attract more visitors and ecotourism could be planned accordingly.
- **Scope for alternate income generation activities:** There is a good scope for undertaking various AIG activities, such as nursery, homestead gardening, fish culture, pig rearing, weaving, basket making, handicraft making, lemon cultivation, poultry (local variety), cattle fattening, goat fattening and some horticulture like guava, wood apple, jojoba, olive, lichee, papaya etc. This will help to reduce dependence on forest uses.