

Status and impact of traditional forest fauna harvesting by the Mro tribe in the hill forests of Bangladesh: Policy implications for biodiversity conservation

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ABSTRACT

An exploratory study was conducted on the traditional harvesting of wildlife from forests among the *Mro* community of southeastern hilly portion of Bangladesh. The *Mro* harvest a wide range of animals (18 mammals and 11 birds) from the forest and use them as food, and for medicinal and aesthetic purposes. All the respondents opined that the surrounding forest with its faunal diversity is decreasing day by day at an alarming rate. It was revealed that compared to the availability of wildlife 5-10 years ago, 4 species including mammals and birds are not seen presently in the study area. At the same time, there is an interesting finding as well: there are small clans in the *Mro* community which are named after a specific wildlife which is viewed sacred to them and the meat of that animal is strictly prohibited to the respective clan. This could be an effective tool for the wildlife conservation in the study area. Moreover, they want to conserve wildlife and want to take part in conservation programmes. As an alternative source of protein they prefer pigs and hens. The findings can be used for developing new conservation policy in the hill forest area of Bangladesh emphasizing on the alternative source for faunal protein for the marginal tribal community.

INTRODUCTION

Bangladesh is rich both in floral and faunal diversity but now the country's biodiversity is subjected to destruction due to human interferences and habitat destruction. In this country the southeastern part i.e. the Chittagong Hill Tracts are highly forested areas with lower population rate. A number of tribal community lives in this region and the *Mro* is the most ancient tribal community living inside the hills of Thanchi, Bandarban. Generally, the *Mro* are called as "*Murong*". The name '*Murong*' was originated from the word '*Mro*' which means "human" and '*Murong*' means the 'human society'. The commonest primary occupation of *Mro* is *Jhum* (shifting cultivation) and they usually harvest wild animals for

fulfilling their every day protein demand. This practice results the decrease in wild fauna from the forests of Thanchi, Bandarban. Due to this slash and burn practices in the hill forest of this region the habitats for wild fauna are destroying. Forests have always played an important role in economy of the tribal people in Bangladesh. The main economic activities of the Mro tribes is shifting cultivation along with harvesting of forest products which causes a great negative impact on wild habitat as a result the wild fauna is decreasing. For decreasing of wild lives from the hill forest these areas is becoming more open to access. Now the most effective reason of biodiversity depletion of this region is the interventions by the Bengali peoples. The interference by the others peoples are increasing day by day in search of forest products as a major economic source which causes the changes in land use pattern. The forest land is converting to slash and burn agricultural practices land and they are using the natural forests as a major source of their economy. Due to this over access of forest land and changes in land use pattern leads to destruction of natural habitat of wild fauna in this region is increasing considerably. In this circumstances an alternative protein sources may be effective to reduce the wild animals hunting. Though several previous studies have been carried out on the ethno-botanical perceptions of the *Mro* tribe but there has not yet been a study on their status and impact of traditional forest fauna harvesting and their impact on forest biodiversity depletion. The present study was conducted to explore these specific aspects of their life style and policy implication for biodiversity conservation in Bandarban hill tracts, Bangladesh.

METHODOLOGY

Study Area

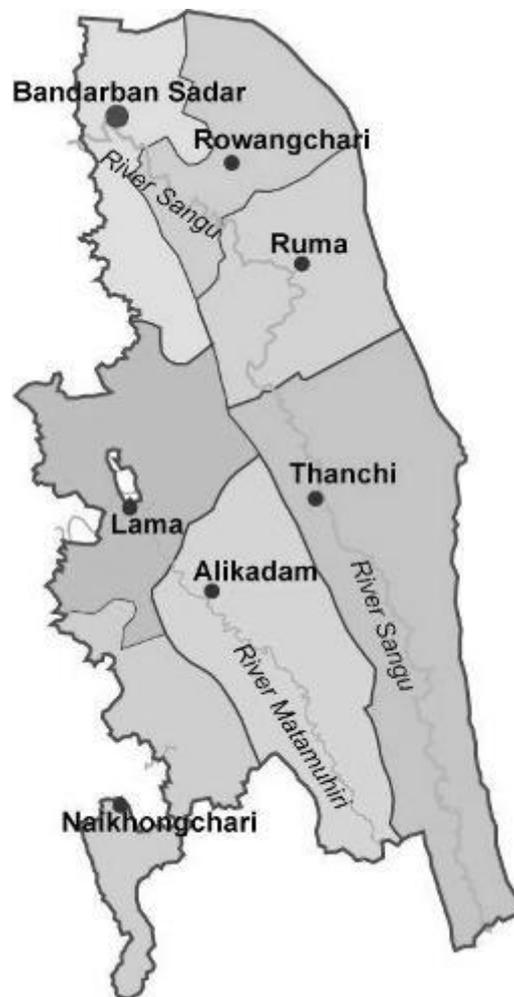


Figure 1: Map of the Study Area (Wikipedia, 2006)

The area of Thanchi Upazilla is 1021 km², including 680 km² of forest. It lies between 21°15' - 21°57' north and 92°20' - 92°41' east (BBS 2002). Thanchi, some 80 km southeast of Bandarban, is one of the remotest upazillas of Bangladesh (Haque 2000). The upazilla consists of 82 villages with 2885 households, of which 2661 are tribal households with an average household size of 5.6 persons, slightly higher in rural areas (5.7). The population comprises about 10,000 men and 8000 women. About 17.4% of the population (7 years and over) is literate (Rahman 2004), although there is a wide gap between men (27.1%) and women (4.6%).

Method

The study was conducted at the Thanchi upazilla (Sub-district) of Bandarban district (Figure 1) from August to October 2011. In Bandarban district, the population of *Mro* people is 22,178 (BBS 2004). Within the seven upazillas of Bandarban district, the *Mro* are concentrated in the hilly areas of Thanchi, Alikadam, Lama, Ruma and Naikhyangchari upazillas (Drong 2001; Rahman 2004). Due to the high concentration of *Mro* people Thanchi was selected purposively. A list of the *Mro* villages was collected from the local administration. Six villages were selected randomly from the list. Using a reconnaissance survey and talks with the local leaders the list of households from each of the villages was ascertained. Then from the list of the households, maintaining a 25% sampling frequency, a total of 80 household were selected randomly (see Table 1 for details).

Table 1. Showing the details of household selection.

<i>Name of the village/hamlet</i>	<i>Total Family</i>	<i>No of Family Surveyed</i>
Wakk	40	10
Chakku	38	10
Khauyang	45	12
Talktang	50	15
Sung Yang	35	10
Bordhing	40	10

Then from the selected households, the household heads were interviewed for their hunting preferences and for ethno-zoological survey using a semi-structured questionnaire (see Annex-1 for detailed questionnaire). A local expert (an aged person) who knows most of the wild lives of the area and a field assistant (who was in fact a school teacher) were recruited as field assistants from the local community who also acted as the language interpreters during the subsequent interviews (because the *Mro* speaks in their own dialect).

A transect survey with random walks through the forests following the standard procedure (Nishorgo, 2007) was be conducted to observe and assess the status of the wild animals, and impacts of the unsustainable harvesting on their availability.

Six focus group discussions were arranged in the six surveyed villages to develop an action plan with the active participation of the community members for planning awareness programs, developing framework for alternative protein sources for the community, setting guidelines for conservation of biodiversity in the hill forests.

RESULTS AND DISCUSSION

Demography of the Respondents

Table 2. Family size, earning member, and income of the respondents

<i>Parameter</i>	<i>Average ± Standard Deviation</i>
Respondent's age	40 ± 7.5
Family size	7.5 ± 2
Earning member	3 ± 1
Monthly income	11500 ± 4500

Most the respondents of this study Krama (58%), the true Mro, (Fig. 2) and were middle aged people. They are mostly poor with larger family size (Table 2).

Religions of the *Mro* People

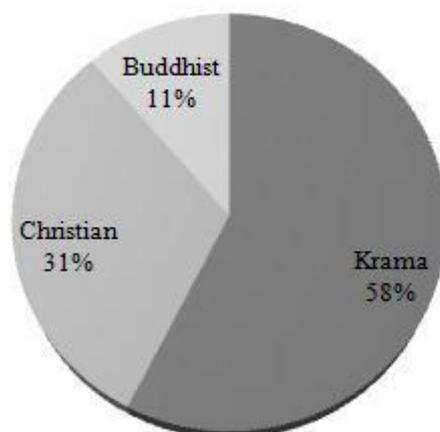


Figure 2. Showing the religions of the *Mro* people

Jhum (shifting cultivation) is the main primary and secondary occupation for 100% of the respondents. None of the respondents had service as their secondary occupation. Others occupation includes horticulture, chairman, counselor, handicrafts etc (Fig. 3).

Primary and Secondary Occupations of the Mro

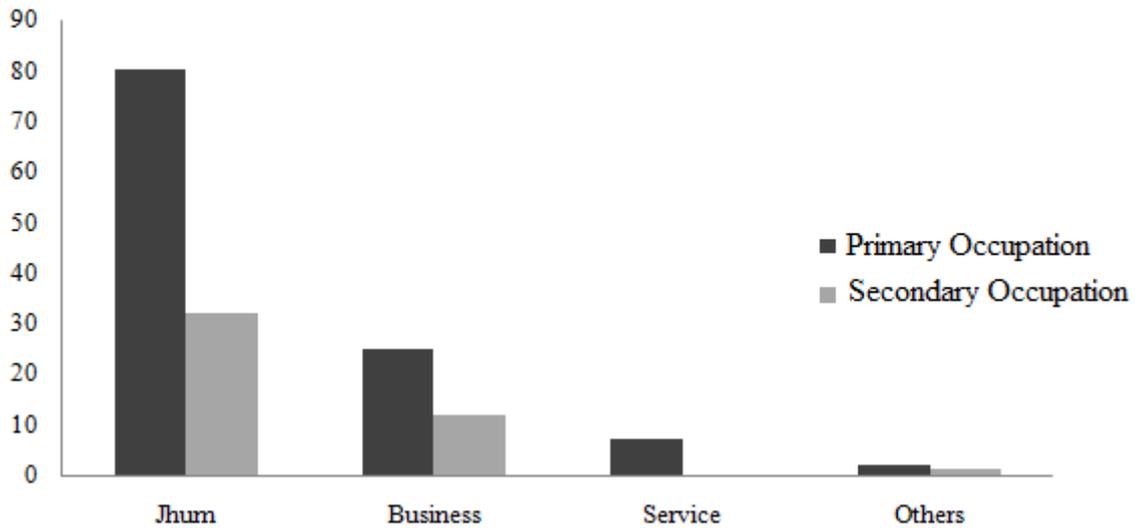


Figure 3. Showing the occupations of the *Mro* people

Food habit of the *Mro* People

Rice from the *Jhum* is the main food item and pork is the most favourite food item of the *Mro* people (Table 3). This food habit has a great implication on their attitude towards forests and wild fauna.

Table 3. Main and favourite foods of the *Mro* tribe

<i>Main Food Item</i>	<i>Respondent (%)</i>	<i>Favourite Food Item</i>	<i>Respondent (%)</i>
Rice	100	Pork	100
		Beef	30
		Fish	25
		Small birds	10

Domestic Animal Resources of *Mro*

The main domestic animals kept were pigs, chickens, koel, cows and dogs with an average number of 7.2, 14.5, 16.5, 1.5, and 1.2 respectively. *Mro* people rear animals not only for food but also as pet. Pigs, chicken, koels, and cows are reared only for meat. Some of them, such as cows, are exclusively kept for animals of sacrifice. This finding coincides with the findings of Brauns and Loffler (1990) and Dio (2004). The number of animal kept indicates the richness of the *Mro* people. The respondents reported that some people domesticate goyal (*Bos froatalis*), but in our study we found no respondents domesticating goyal. Chowdhury et

al. (2007) also reported goyal as a partially domesticated animal by the *Mro* that comes occasionally to the villages in order to lick salt thrown out by households. In every *Mro* house surveyed we have found at least one dog. Farmers reported that dogs remove the human excreta, can ward off evil spirits, and also go to the field with the farmers. Though goats are common on farms throughout Bangladesh, no goats were found in the study area. The respondents reported that goat peel off the bark of the home garden trees, that's why they are not interested to rear goats. The sources of fodder for the domestic animals were both the forest and *Jhum*. Rice and rice husks are the main fodder sources for chickens and pigs. The cows run loose during the daytime and graze in the surrounding forests.

Animals harvested from forests by the *Mro*

The *Mro* harvest a wide range of animals from the forest and take as food and the rest (bone, skull, skin, and hoof) are used for aesthetic purposes. From the table 4, we can summarize that they harvest all the mammals listed except *F. chaus*, *F. viverrina*, *F. silvestris*, *C. aureus*, *M. mulatta*, and *R. bicolor*; all the rodents except *S. murinus*, *H. auropunctatus*; all reptiles except *H. frenatus*; all listed amphibian, mollusks, birds, and insects. *Sus scrofa*, *Muntiacus muntjak* and *Cervus unicolor* are in their top preference rank, and birds/insects (except *Gallus gallus*) are in their lowest preference rank. Without meat, these hunted animals are used for other purposes. They decorate their room interior with the horn and skin. The skulls of the hunted animals are hung in front of the house as a symbol of prestige and for aesthetic purpose. They use the colorful feather of the birds to decorate their room as well as their hair buns. Sometimes, they take the meat of wild boar to get rid of rheumatism. They use the shell of *Anodonta anatine* and natural pearl to make ornaments. The horns of the *Bos froatalis*, *Muntiacus muntjak*, *Cervus unicolor* and *Sus scrofa* are cut into small pieces and used as ornaments.

Table 4. Showing Wild Fauna Found by Ethno-Zoological and Transect Surveys

<i>Sl. No.</i>	<i>Local Name</i>	<i>Scientific Name</i>	<i>Sl. No.</i>	<i>Local Name</i>	<i>Scientific Name</i>
Mammals			Birds		
1	Bonno Shukor	<i>Sus scrofa</i>	25	Shalik	<i>Acridotheres tristis</i>
2	Bon goru	<i>Bos froatalis</i>	26	Moyna	<i>Gracula religiosa</i>
3	Maya Harin	<i>Muntiacus muntjak</i>	27	Bok	<i>Grus grus</i>
4	Sambar Harin	<i>Cervus unicolor</i>	28	Bulbuli	<i>Pycnonotus jocosus</i>
5	Bon Beral	<i>Felis chaus</i>	29	Tia	<i>Psittacula krameri</i>
6	Meso Bagh	<i>Felis viverrina</i>	30	Ghughu	<i>Spilopelia chinensis</i>
7	Bagh Dash	<i>Felis silvestris</i>	31	Machranga	<i>Alcedo atthis</i>
8	Sheal	<i>Canis aureus</i>	32	Tuntuni	<i>Orthotomus sutorius</i>
9	Bandor	<i>Macaca mulatta</i>	33	Babui	<i>Passer motanus</i>
10	Kath Birali	<i>Ratufa bicolor</i>	34	Kakatua	<i>Cacatua galerita</i>
Rodents			35	Dhonesh	<i>Buceros bicornis</i>
11	Indur	<i>Vandeleuris oleracea</i>	36	Bon Morog	<i>Gallus gallus</i>
12	Chucha	<i>Suncus murinus</i>	37	Chorui	<i>Passer domesticus</i>
13	Shojaru	<i>Hystrix indica</i>	38	Chil	<i>Spilornis cheela</i>
14	Beeji	<i>Herpestes auropunctatus</i>	39	Eagle	<i>Aquila hastata</i>
Reptiles			40	Fingey raja	<i>Dicrurus macrocercus</i>
15	Tokko Saap	<i>Hemidactylus frenatus</i>	41	Doyel	<i>Copsychus saularis</i>
16	Gui Saap	<i>Varanus bengalensis</i>			
17	Kossop	<i>Melanochelys tricarinata</i>			
18	Ojogor	<i>Python reticulatus</i>			
19	Gokhra	<i>Naja naja</i>			
Amphibian					
20	Shona Bang	<i>Rana tigrina</i>			
21	Gecho Bang	<i>Rana bimaculatus</i>			
Molluscs					
22	Shamuk	<i>Balanus spp</i>			
23	Jhinuk	<i>Anodonta anatina</i>			
24	Kankra	<i>Scylla serrata</i>			
			42	Zhizhi poka	Insects <i>Tarbinskiellus portentosus</i>

Species under the threat of extinction

Table 5. List of species which were found 5-10 years ago

Type	Scientific Name	Found 5-10 years ago		Found Recently	
		Frequently	Rarely	Frequently	Rarely
Mammals	<i>Bos froatalis</i>	√			√
	<i>Cuon alpinus</i>		√	Not found	
	<i>Elephas maximus</i>	√			√
	<i>Panthera pardus</i>		√	Not found	
	<i>Ursus thibetanus</i>	√			√
Birds	<i>Spilopelia chinensis</i>	√			√
	<i>Cacatua galerita</i>	√			√
	<i>Passer motanus</i>	√			√

Due to extreme pressure on the forest and on the wildlife, the habitats for the wildlife are destructing drastically threatening the extinction of a number of species as shown in the table (5). From our study it is found that *C. alpines* and *P. pardus* are not found in Thanchi, Bandarban. Our personal observation is that there is a little amount of mentionable forest, except legally, in the Thanchi. In most of the cases, what we found as forest are nothing but the denuded hills with some herbs and shrubs.

Preference for the specific wild fauna by the *Mro*

The *Mro* usually prefer wild boars as their favourite hunt. Beside this, we found seven castes within the *Mro* community who has specific preference for ‘not to kill’ of some wild faunas. These are:

Kan bauk gosthi : Who don’t take Monitor Lizard and consider it as a sacred animal.

Naicha gosthi: Who don’t take Eagle and consider it as a sacred bird.

Morog gosthi : Who don’t take Jungle fowl and consider it as a sacred bird.

Susprim gosthi: Who don’t take Tiger and consider it as a sacred animal.

Valluk gosthi: Who don’t take Wild Bear and consider it as a very sacred animal. Although, it is special for a caste but most of the *Mro* people believe that their ancestors once fell in danger and they took the milk of wild bear at that time. It saved their life. That’s why, it is even forbidden to see a wild bear get killed.

Beside these six castes, the *Mro* who are Buddhists, observe a sacred occasion named 'Go hotta' (cow sacrificing). They usually make vows to get rid of some dangers and they sacrifice a cow to a deity on fulfillment of a prayer. They distribute the meat with its skin to the neighbours and relatives. Here skin is the sign of honour.

Perception of the *Mro* community and choice for alternative protein source

100% of the respondents surveyed think that the forest around them is decreasing at an alarming rate and the number of the wild fauna as well. According to them, the forests of Thanchi were once untouched and diverse. A number animal were found abundantly. Due to the intervention of the Bengalis from the different corner of the country the socio-political circumstances of this area is not stable. They strongly believe that intrusion of Bengalis and their uncontrolled rate of population growth are responsible for this situation. At present, they hardly find a hunt to meet their protein demand. Besides, they have limited capacity to buy protein. In this consequence, they have already started rearing some domestic animals like chicken, koel, pigs, and cows. They are very much eager to take part in alternative protein source development programme. As the alternative protein source, they prefer animals those have higher reproduction rate, like pigs and chickens. They believe that if this program is initiated in this area, the pressure on wildlife will be reduced a lot. Moreover, some of the respondents, in the FGD, requested to initiate birth control awareness programme and provide them the technologies.

CONCLUSION

This study successfully records most of the wild fauna found currently in the study area. It also records preferred wildlife both as a hunt or sacred animal. It has also identified eight animal species those are under the risk of extinction and has identified its possible reasons. After a number of focus group discussions (FGD), this study suggests that the *Mro* are interested in alternative protein source preferably in pigs and chicken. These findings can be used for developing participatory action plan emphasizing on the alternative source for faunal protein for the marginal tribal community, campaigning awareness for wildlife conservation, and creating scopes for nature education among the community. The Forest Department may use the findings as the tools of management of the forest resources through their local unit of administration. In the long run, it will give useful clues to the policy makers in the top level of the state for formulating efficient policies for wildlife conservation and community

livelihoods development in correspondence with the Articles 8-10 of the Convention on Biological Diversity (CBD) since Bangladesh signed and ratified the CBD in 1992 and 1994, respectively

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Photographs



A *Mro* woman heading towards the forest



The marginal *Mro* women near their village



A typical *Mro* house in the study area



The *Mro* are totally dependent on surrounding forest: the bamboo made household baskets and crops produced in *Jhum*



The *Mro* are totally dependent on surrounding forest: water collected from the natural spring is stored on containers made from wild gourds



The skull of wildlife used for *Mro* home decoration



The skull of wildlife used for *Mro* home decoration



The *Mro* men in front of hanging skull of wild animals at their home



Discussion in the workshop with the local community



A part of the survey team in a local *Mro* house