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Indigenous Food Habit of the *Hajong* Tribe Community in Bangladesh: Implication for Sustainable Extraction and Biodiversity Conservation in North-East Bangladesh

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ABSTRACT : The *Hajong* are the ancient tribal forest community among the ethnic minorities of the North-East region of Bangladesh. The study was carried out with respect to three income groups highlighting their indigenous knowledge. A total of forty-five households (fifteen from each income groups) were assessed using different participatory appraisals through semi -structured questionnaires. A special type of indigenous knowledge on food habit was explored in the *Hajong* community, which correspond to the severe dependence on forest resources. They collect their food resources from homestead forest (45%) followed by forest (40%), market and others. They have indigenous hunting procedure to trap the animal in the forest. Twenty three tree species were tremendously planted in their homestead forests which are the very important source of food. Male are highly responsible to collect the food materials from forest as well as other sources.

Keywords : Special and favorite food, Food habit, Fruit consumption, *Hajong*, Bangladesh

INTRODUCTION

Foods, fodders, medicine and other forest products have made a traditional economy of the tribal communities of the world (Miah and Chowdhury, 2003). Tribal people are the ecosystem people who live in harmony with the nature and maintain a close link between man and environment (Sajem and Gosai, 2006). The livelihoods of tribal and forest dwellers are mainly dependent on the forests which have built up their socioeconomic and cultural life (Shroff, 1997). The socio-economic and cultural life of the tribals and forest dwellers is closely associated with forest to a great extent (Shroff, 1997; Tiwari 1986). The forest has been playing a vital role in the economy of the tribals in Bangladesh. The religious, cultural and economic activities of them depend on forests (Khisa, 1998). The *Hajong* are the ancient tribal forest community among the ethnic minorities of the North-East region of Bangladesh who represent different types of socio-political organization compared to the other ethnic group. The *Hajong* as an organized kin group live in hamlets, a small settlement comprising five to twenty household which is considered to be the primary socio-economic unit of *Hajong* life and the name of which is known by its founding sibs (Nasrin and Khalifa, 2004). The *Hajong* are basically a farming community. Once they were accustomed to *Jhum* farming, but now they follow plough farming (Ahmed, 2003). They also have developed indigenous knowledge system of their own in practicing the special type of utilization pattern of forest produces (Alam and Khisa, 2000; Rashid and Rashid, 2002; Ahmed, 2003; Anon, 2003; Nasrin and Khalifa, 2004). But most of the wealth of indigenous knowledge of the tribal people in North-East region is being threatened by the settlements of the non-tribal people in the region. The lifestyle and ethno-forestry perception along with the indigenous knowledge governing the daily activities of the ethnic communities

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need to be explored highly, in order to conserve them as well as to assess the possibilities to conserve the forest resources by utilizing such traditional indigenous concepts. It was hypothesized that the *Hajong* community encompassed a particular type of food habit including indigenous knowledge. So far it was found through literature review, the information about various works carried out on different tribes of Bangladesh come into existence. Banik (1998), Khisa (1998), Sattar (1998), Siddiqi (1998), Alam and Khisa (2000), Alam (2002), Mohiuddin et al., (2002), Miah and Chowdhury (2003), Halim et al., (2007), Mukul et al., (2007), Partha and Hossain (2007), Uddin et al., (2007) were carried out several studies on various tribes regarding the exploration of ethno-botany and indigenous knowledge. But the *Hajong* were ignored earlier despite they were the original forest dwellers in North-East region of Bangladesh. The *Hajong* have special and particular relationship and dependency on forest for their food. However, no study was carried out previously on food habit regarding forest dependence. So this study was undertaken to ascertain those in North-East region, Bangladesh.

Materials and methods

Study area

The study was conducted at Nayabil *Union* (a rural administrative unit consist of a number of villages) of Nalitabari *upazila* (Sub-district; administrative entity) of Sherpur district, Bangladesh over a period of Six months from June 2008 to October 2008 (Figure 1). It is located between 25°19' and 25°13' north latitudes and between

Fig. 1. Map of the Study Area.

90°04' and 90°19' east longitudes. The *upazila* occupies an area of 327.61 sq km including 1.68 sq km river area and 78 sq km forest area. The *upazila* is bounded on the north by India, on the east by Haluaghat of Mymensingh district, on the south by Nakla and Sherpur *upazila* and the west by Jhenaigati *upazila* (BBS, 2005). The *upazila* consists of 12 unions, 108 mauzas and 138 villages. The average population of each *union*, mauza and village are 32,333, 2,096, and 1,640 respectively. The area lies in the semi drier part of the Bangladesh. The maximum temperature is usually 30° C during the month of May and maximum temperature is about 10°C during the month of January. It has been observed that 34.58% of the main houses of the dwelling household are made of straw/ bamboo, 0.25% are made of cement and the remaining 65.17% are made of a combination of different types of materials (BBS, 2005). The total population of *Hajong* tribe in Bangladesh is 11,477. But the total populations of *Hajong* tribe in the study area are 436 in 77 households (Anon, 2003).

Methods

The *Hajong* are one of the ancient among the tribes of the North-East region of Bangladesh. They mainly live in three district of Bangladesh. These are Maymensingh, Sherpur and Netrokona (Ahmed, 2003). Sherpur has been selected for study by random sampling. Out of five upazilas of Sherpur district, the *Hajong* are concentrated in the hilly areas of Sribardi, Jhenagati and Nalitabari upazillas. A list of three upazilas of Sherpur district was arranged alphabetically and Nalitabari was selected randomly from the list. Nayabil *union* of Nalitabari *upazila* is inhabited mostly by the *Hajong*. So this *union* was selected purposively. A list of the *Hajong* hamlet and households (based on annual income) were collected from the office of 'World Vision', an NGO working locally for the improvement of the *Hajong* tribe. Three hamlets were finally selected at random from the list. A preliminary socio-economic survey was carried out to ascertain important socio-economic parameters of the study area to select respondents for detailed study. The hamlets were surveyed completely at that stage. A semi-structured questionnaire was used for the survey, worked out in advance and pre-tested for intelligibility. Household heads were the respondents of the study and they took help from other members of the family when viewed necessary. Based on the total annual income, the study peoples were categorized into three groups as follows: high-income group (having total annual income >Tk. 30,000), medium income group (having total annual income range of Tk. 20,000 ~ Tk. 30,000) and low income group (having total annual income of <Tk. 20,000). From each of the three hamlets, 15 households were selected by taking 5 from each farm category randomly. Thus, a total of 45 households were selected from the study area.

Results and discussion

Indigenous food habit of the *Hajong* tribe

Study found that rice is the main staple food of the *Hajong* tribe; getting three times in a day at morning, noon and night. In addition with rice; meat, fish, eggs, vegetables were regarded as side dish (Table 1). Salt and oils were found to be used as condiments in cooking the vegetables and curry to increase its taste and delicacy. Green chilies were very common as a condiment. Findings reveal that rice consumed by the *Hajong* mainly came from the farmer's own agricultural field irrespective of farm category. Most of the meat consumed by the high and the medium income farmers were obtained from the market followed by low-income groups major source of meat was forest. Each farm category gets fish (8%) from the own (Homestead) and the rest mainly from market. Most of the poor farmers (50%) followed by medium farmers (40%) collected fish through fishing in the water bodies in and within the forests. Farmer of all categories consumed eggs mostly obtained from their own poultry. They were more interested to allow hatching of chicken to increase the number in their clutch to facilitate income through further selling them. All the farmers bought spices, salt, and oils mostly from the neighboring market.

Table 1. Food habit of the *Hajong* tribe in the study area.

Items	Average consumption (Kg)/family		Sources (%)								
			Own (Homestead)			Market			Forest		
	Daily	Monthly	Income group			Income group			Income group		
			High	Medium	Low	High	Medium	Low	High	Medium	Low
Rice	3.66	110	83	92	83	17	08	17	00	00	00
Wheat	0.5	15	00	00	00	100	100	100	00	00	00
Vegetable	1	30	35	25	20	15	25	10	50	60	70
Meat	0.05	1.5	17	24	33	68	56	42	15	20	25
Fish	0.25	7.5	08	08	08	73	52	42	19	40	50
Spices	0.03	1	30	30	20	50	50	50	20	20	30
Salt	0.13	4	00	00	00	100	100	100	00	00	00
Oil	0.13	4	10	30	30	70	60	50	20	10	20
Eggs	1.87Nos	56 Nos	65	75	75	25	10	5	10	15	20

Special and favorite food

Rice, fish, fruit, vegetables, meat, pork, ducks and chicken are their favorite food. The study observed *Binny bat*, a special type of food item produced from *Aush* paddy which is wetened for preparation, very popular among the *Hajong*. It is also known as rotten rice. Different kinds of cakes are prepared by women. Wine is familiar in the *Hajong* society. These are prepared from rotten rice. Anon (2003) also reported about wine produced from rotten rice. The survey revealed that various parts of the plants were used as food by the *Hajong* (Table 2). Along with those foods, the *Hajong* were also reported to consume wild animals like pig by hunting. In one month they could catch four to five (average) pigs from the forest. Fruits provided a seasonal food supply to the *Hajong* tribe (Table 3) and especially children most frequently consumed wild fruits as snack food. Fruits are good source of vitamins and minerals. Most of the wild fruits were reported to usually be looted prematurely by children and the *Hajong* generally considers fruits as the children's food rather than food for adults. The sources of fruit were recorded during the study, most of which were collected from own homestead forest (72%) followed by forest (20%) and market (8%) (Figure 2).

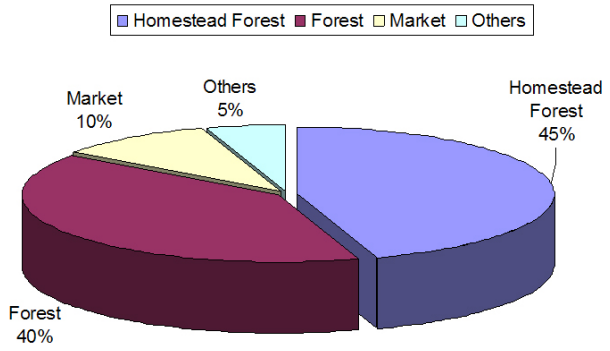

Figure 2. Source of food of *Hajong* tribe community in the study area.

Source of food

Study reveals that *Hajong* tribe community highly dependent on forest for their daily requirements of food. They depend on homestead forest (45%) followed by forest (40%), market and others (Figure 3).

The use of plant parts as food by the tribals in Chittagong Hill Tracts (CHTs) is also evident from the other studies. The young shoots of Bambusa spp. and *Daemonorops jenkinsianus* are used as vegetables by the tribes in CHTs, Bangladesh (Jalil and Chowdhury, 2000). Maikhuri et al., (2000) stated that the Bhotiya of India depends to a large extent on wild resources of plant and animal origin for

Table 2. Plants parts used as food by the *Hajong* tribe collected from forest.

Kinds	Common Name	Scientific Name	Mode of use
Root & Tubers	Yam	*Dioscorea spp*	Cooked as vegetables
	Taro	*Calocasia esculanta*	
Young shoots	Muli bans	*Melocanna baccifera*	After removing the sheaths, the inner tender portion is thoroughly washed, cut into pieces and then cooked as vegetable. Also sliced and dried to preserve Young shoots for use in time of food scarcity
	Rattan/Cane	*Daemonorops jenkinsianus*	The young stem is peeled off and the inner soft and tender portion is cooked as vegetable
Young leaves	Sajna	*Moringa oleifera*	Cooked as vegetables and used as pickles
	Tentul	*Tamarindus indica*	
Inner stem	Banana	*Musa spp*	The white core after peeling off the outside is cut into pieces, the hair like strings from the pieces are removed by finger to make them free from nuisance during eating as a vegetables
Flowers	Turmeric	*Curcuma longa*	Cooked as vegetables
	Gamar	*Gmelina arborea*	
Inflorescence	Banana	*Musa spp*	Cooked as vegetable
	Kanthal	*Artocarpus heterophyllus*	Used as pickle and snack
Fruits	Banana	*Musa spp*	Green fruits are cooked as vegetables
	Kanthal	*Artocarpus heterophyllus*	
Seeds	Kanthal	*Artocarpus heterophyllus*	Cooked as vegetables

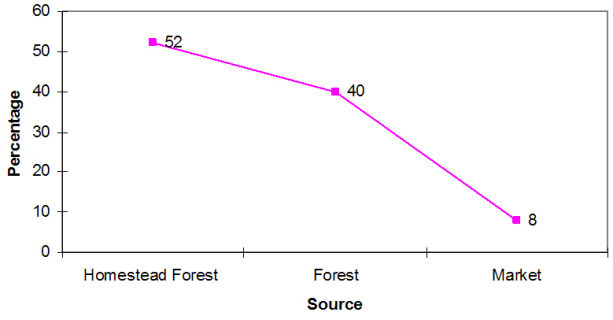

Figure 3. Source of fruit species of *Hajong* tribe community of Bangladesh.

their food security. Samal (1997) revealed that the *Kandha* tribe of Koraput, India, extracts tamarind seeds to eat. Mango stones and tamarind seeds are powdered and then made into gruel with other food items for consumption. Jana and Chauhan (2000) also agreed in this regard. They state that seeds of *Tamarindus indica* are edible after roasting and eaten by the *Nepalies* tribe of Sikkim, India. Chandra (2002) mentions that 80% of the forest dwellers in Orissa, Bihar, Madhya Pradesh and Jharkhand and Himachal Pradesh depend on forests for 25%-50% of their annual food requirement. Tribals in Chotanagpur plateau depend on forest food for four to five months (Surin and Bahadur, 1980). In West-central Bhutan, throughout the year there is always a forest plant in the diet (Namgyel and Ghimiray, 1998). Kumar and Goel (2000) consider the flowers and fruits of *Madhuca indica* as the most important minor forest products. In Madhya Pradesh, Bihar, Orissa and adjoining tracts of Peninsular, India, *M. indica* flowers also constitute an important article of food for the tribals (Chandra, 2002). The flowers are very good source for the preparation of '*Daru*', a country-liquor that is popularly used in all the tribal areas of Bihar, India (Kumar and Goel, 2000). Banik (1997) stated that the young shoots of several species of bamboo were important vegetable ingredients in the daily meals in China, Japan, Taiwan and Thailand. Approximately 150 species of wild plants consumed in India, Malaysia and Thailand, have been identified as source of emergency foods by the FAO (Anon, 1984). Around thirty different types of fruits were consumed by the *Hajong* (Nasrin and Khalifa, 2004).

Table 3. Fruit consumption of the *Hajong* tribe in the study area.

Bangla name	Scientific name	Parts used	Season	Sources (%)		
				Own (Homestead Forest)	Forest	Market
Am	*Mangifera indica*	Inner flesh	Summer	60	35	05
Amloki	*Emblica officanalis*	Outer parts	Winter	53	40	07
Amra	*Spondias pinnata*	Outer parts	Summer	55	38	07
Anarash	*Annas comosus*	Inner flesh	Rainy	28	39	33
Bel	*Aegle marmelos*	Inner flesh	Spring	44	30	26
Boroi	*Zizyphus mauritiana*	Outer parts	Winter	50	50	-
Chalta	*Dillenia indica*	Whole parts	Rainy	54	30	16
Dumor	*Ficus* spp	Whole parts	All	39	48	13
Jalpai	*Elaeocarpus robustus*	Outer parts	Winter	64	36	-
Jam	*Syzygium* spp	Outer parts	Summer	68	42	-
Kanthal	*Artocarpus heterophyllus*	Inner parts	Summer	40	60	-
Kola	*Musa spp*	Inner flesh	All	40	60	-
Lebu	*Citrus grande*	Juice	All	50	50	-
Litchu	*Litchi chinensis*	Inner flesh	Summer	38	38	24
Narikel	*Cocos nucifera*	Inner flesh, Juice	All	64	36	-
Papay	*Carica papaya*	Inner flesh	All	70	30	-
Payara	*Psidium guajava*	Whole parts	Rainy	65	35	-
Tentul	*Tamarindus indica*	Inner pulp, seed	Winter	61	39	-

Kanthal (*Artocarpus heterophyllus*) and Am (*Mangifera indica*) was the fruit tree species frequently observed in almost every house of the *Hajong* community.

Hunting procedure

The survey revealed that the *Hajong* did hunting for dual purposes; one was for the highly valued meats and another was for protecting their plantation. *Hajong* community mainly hunting pig from the forest as their big source of meat. The procedure of pig hunting was very simple and less time consuming. For hunting eight to ten people with net (used as trap) entered in to the forest area where pig used to live and hide themselves to find any pig. When they noticed any pig, they put the net in one side of the pig and rest of the people surround the pig from other three sides. Then hunter moves towards the pig, consequently the circle become smaller and the pig was caught in the net. This method was very useful because the pig could not jump over the net. In one day they could catch three or four pigs.

Homestead forest as an important source of food

Study found that *Hajong* community prefers species in their homestead forest which will be beneficial for use in long term. Twenty three tree species were tremendously planted in their homestead forest (Table 4). Before plantation they considered seed availability, rotation of the species and more importantly uses of the species. Am (*Mangifera indica*) and Kanthal (*Artocarpus heterophyllus*) were more dominant in the study area.

Gender role in food collection and preparation

Firewood collection from forest for daily cooking was the task of women. Harvesting water from the pond and carrying it to the home two times daily was also the job

Table 4. Tree species in homestead forest of the *Hajong* tribe in the study area.

Local Name	Scientific Name	Uses	Preference	Occurrence
Akashmoni	*Acacia auricoliformis*	Fuel wood	+++	C
Am	*Mangifera indica*	Fruit	+++	C
Amloki	*Emblica officinalis*	Fruit, Medicine	+	FC
Amra	*Spondias pinnata*	Fruit, Medicine	+	R
Arjun	*Terminalia arjuna*	Medicine, Fuel wood	+	C
Bamboo	*Bambusa* spp.	Fodder	++	C
Bel	*Aegle marmelos*	Fruit, Medicine	+	FC
Boroi	*Zizyphus mauritiana*	Fruit	++	R
Chalta	*Dillenia indica*	Fruit	+	C
Dumor	*Ficus* spp.	Fruit, Fodder	++	R
Jalpai	*Elaeocarpus robustus*	Fruit, Fuel wood	++	FC
Jam	*Syzygium* sp.	Fruit	+	FC
Kadam	*Anthocephalus chinensis*	Fodder	+++	C
Kanthal	*Artocarpus heterophyllus*	Fruit, Fodder	+++	C
Litchu	*Litchi chinensis*	Fruit	+	FC
Mahagoni	*Swietenia mahagoni*	Furniture	+++	C
Narikel	*Cocos nucifera*	Fruit	+	FC
Nim	*Azadirachta indica*	Medicine	+++	FC
Payara	*Psidium guajava*	Fruit	++	C
Rain tree	*Samanea saman*	Fuel wood	+++	C
Simul	*Bombax ceiba*	Fuel wood, Fodder	++	FC
Supari	*Areca catechu*	Fruit	++	C
Tentul	*Tamarindus indica*	Fruit, Medicine	+	R

Key: Preference: $^{+++}$ High, $^{++}$ Medium, $^{+}$ low.
C-common, FC-fairly common, R-rare

Table 5. Gender role of the *Hajong* tribe in the study area.

Activities		Gender Role (%)	
		Male	Female
Food preparation and water collection		70	30
Non timber forest product collection		80	20
Hunting		90	10
Fishing		85	15
Agriculture and horticulture	Field preparation	80	20
	Planting, paddy cutting	50	50
	Weeding and mulching	80	20
	Harvesting	85	15

of women while the young girls helped their mother. The poultry was also observed to be feed and taken care by the woman. Hunting was exclusively the job of men who also prepared the hunting devices and traps. Fishing and non timber forest product collection from the forest is the major job performed by men. Young boys support in that job. In the preparation of horticultural and agricultural land were only done by men and the women, even did

not go there during such operation whereas, the planting, sowing of seeds and paddy cutting were done participating both of the sexes. Weeding, mulching and harvesting were done by men only with the collaboration of young boys.

Conclusion

The dependence of *Hajong* tribe on forests was so much that they constituted one of the integral components of forest ecosystem, where they had developed a balance with nature which might be viewed as a biome, a balance between man (here the *Hajong* themselves) on one hand and flora and fauna on the other. The study shows a particular pattern of food habit of the *Hajong* community in Bangladesh. The indigenous knowledge on food habit especially on wildlives and wild plants by the *Hajong* may provide some important and valuable information on the nutritional and medicinal effects on the human body. They possessed an intimate relation with each and every component of forest like herbs, shrubs, trees, creepers, wild animals both harmless and ferocious ones, insects, even soil and water also. For a full understanding on the medicinal values of the food materials up taken by the *Hajong*, more anthropological and chemical researches are needed.

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