

Deforestation and the Garo Women of Modhupur Garh, Bangladesh

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Abstract

Garos have been considered as the earliest inhabitants of Modhupur *Garh* forest. In the matrilineal society of Garos, women play the role of major provider of their family sustenance through exploiting biological resources of the forest. But the degradation of natural *sal* forest, which has become severe after the liberation war of Bangladesh, has made their task difficult. They are trying hard to cope with the degrading status of *sal* forest. Various changes have already taken place in their traditional societal structure and economy. The present study tries to focus on the negative and positive outcomes of deforestation in the life of the indigenous women.

Key words

deforestation, matrilineal, indigenous, gender division, traditional, coping strategy.

Introduction

Modhupur *Garh*, a part of Pleistocene terrace area of central Bangladesh, is situated over the uplands of Mymensingh and Tangail districts of central Bangladesh (Latif, 1983). The region is famous for the dry deciduous *sal* (*shorea robusta*) forest and forest dwelling ethnic communities, especially the Garos. It is believed that Garos, who love to claim themselves as Mandies meaning human beings, have been living in the forest for hundreds of years. The forest, acting as natural boundary, kept them apart from the plain landers for a long time. This isolation and high dependency on forest resources for livelihood has resulted in the formation of their distinct societal structure and cultural practices. Garos, by tradition, are matrilineal. Garo males are very lazy by nature and the females, like most other primitive societies, bear the major livelihood

responsibilities through forest resource exploitation. Thus a long lasting intrinsic relationship has been built with the two fs; forest and female of Modhupur *Garb*.

Historic Modhupur *sal* forest was famous for its unique wild life, dense tree coverage and rich biodiversity. Degradation of the forest, started since the colonial period, became severe for the first time in 1956 after the formal ban on *jum* cultivation (a form of shifting cultivation). *Jum*, the core of Garo culture and economy, was strictly prohibited by the state in the name of resource conservation and the Garos, in the absence of alternative means of livelihood, began to convert their formal *jum* plots to permanent crop fields. Today “most of the forest land has been denuded, degraded and encroached upon or taken over for commercial or industrial plantation of rubber or fuel wood with exotic species” (Gain, 2002, p. 8). Along with the decrease of areal extent, the rich biological diversity of the forest has been diminishing over the decades. Decrease has been found in their total number and many species have already disappeared from the forest. Moreover, reservation has been imposed on the free movement of people through declaring the forest as a reserved forest in early 1955 and in the year 1962 part of the forest was declared as national park. In this situation, the long lasting nature-woman relationship is breaking down. Severe impact of deforestation is well marked in their life. Against this backdrop, the present study attempts to investigate the changes in indigenous women’s lives brought about by forest resource scarcity considering the year of banning *jum* cultivation as the outset of major alteration.

Objectives

The major objectives of this study are;

- a. To discuss the specific gender role and position in the forest bound Garo community of Modhupur *Garb*
- b. To overview the degrading status of natural Modhupur *sal* forest
- c. To reveal the changes which have occurred in the life of the Garo women after massive scale destruction of the forest.

Methodology

This study is based on the findings of author's unpublished Master of Philosophy degree research which was conducted in 2003-2004. Both primary and secondary data have been incorporated in this study. Secondary level data have been collected through over-viewing prior researches of different universities, books, journals, periodicals, various documents of BBS (Bangladesh Bureau of Statistics), Dept. of Forest and Environment, local forest offices and NGOs like BRCIK (Bangladesh Resource Center for Indigenous Knowledge) and SEHD (Society for Environment and Human Development).

In a view to collect primary data, a reconnaissance survey was conducted in Modhupur area at the preliminary stage and it found that the indigenous people, especially the females, are very reluctant to participate in a long questionnaire survey because of their heavy daily work load as well as ignorance. So, in the second phase, a semi-structured questionnaire survey was conducted with over 50 indigenous Garo and 30 Bengali female respondents who had been selected randomly. The first part of the questionnaire consists of questions regarding the socio-economic status of the respondents and the second part covers questions related to the significance of forest in their day to day life.

In order to enrich the database, data have also been incorporated through formal and informal interviews and field observation through staying with a Garo family of Gachabari village of Modhupur. The local forest department officials, church authorities, local leaders and NGO workers were also interviewed. Moreover, several visits into the forest area before and after the field survey have substantiated to construct the data base of the study.

Selection of the Study Area

The remaining *sal* forest of Modhupur *Garb* covers the districts of Tangail and Mymensingh. However, the study is confined only to the largest part of Modhupur *Garb* forest placed under Modhupur *Upazila* of Tangail District. It should be mentioned here that the last remains of natural forest is mainly found in the Arankhola Union *Parishad* of Modhupur *Upazila*. For this reason, the area has been selected as the study area and the field survey has been conducted over a total of ten Garo villages of Arankhola Union. Moreover, to gain in depth knowledge

of the area and the community, out of the ten Garo villages, three named Chunia, Gaira and Gachabari have been selected for intensive study.

Gender Position in Matrilineal Garo society

Societal Structure

Garos are Tibeto-Burman in race and from the very olden days they follow matrilineal societal structure which does not mean that women rule over the society. In most of the public spheres where decision making is a vital issue males are seen to play the lead role. Within the household also patriarchy predominates where males are the prime decision makers, although women can express their opinions.

The distinct matrilineal structure does not refer to women's liberty or power, it refers to the practice that "each person belongs to the kinship group of the mother, not to that of the father" (Bal, 1999). Children take the surname of their mother and the actual ownership and inheritance of Garo societies is vested in a wife's lineage. Traditional Garo law of inheritance does not allow the sons to inherit family property; daughters get the right from their mothers. One daughter, usually the youngest, is selected as the main heiress in the condition that she and her husband would stay with and look after the parents in their old age. So far it is known that Garos, before banning *jum* cultivation, were allowed to live on and cultivate into the forest by the *Zaminders* (land lords) in return of rent and labor payment. They were permitted to cultivate the forest land through generations but they had no right to sell it (Khaleque, 1992). Garos also follow distinct marriage pattern which allows the groom to come and stay with the bride's parental family after the ceremony is over.

Although the distinct societal customs of the Garos can not ensure women's autonomy, but the practice of matrilineality has placed them in the core position of society and economy. The concept of veil or *purdah* is totally absent in Garo society, women are free to move anywhere. For this reason, the concept of "womanly work" shows varied form in their society.

Gender Role in Sustaining the Day-to-Day Life

From time immemorial Garo females, instead of males, have been considered as the provider of household sustenance. Until before 1950's, they collected fuel, food and fodder directly from the jungle for household consumption and cultivated the rest through slash and burn agriculture known as *jum* cultivation. The following table lists the major forest bound activities of the Garos;

Table 1. Female/Male Dominated Forest Bound Activities (Before 1956)

Sl. No	Activity	Domain (F/M)
1	<i>Jum</i> Cultivation	F
2	Seed Preservation	F
3	<i>Baid</i> Collection	F
4	Gathering Wild Edibles	F
5	Fuel Collection	F
6	Fodder Collection	F
7	Medicinal Plant Collection	F
8	Weaving Clothes	F
9	Manufacturing Detergent	F
10	Manufacturing Soda for Food Preparation	F
11	Making <i>Dhup</i>	F
12	Hunting	M
13	Timber Extraction	M
14	Honey Collection	M
15	Tending Cattle in the Forest	M
16	Manufacturing Cultural Instruments	M
17	Manufacturing Household Utility Items	M
18	Manufacturing Hunting and Trapping Materials	M

Source: Dey, 2004

Table 1 reveals the distinct contribution of Garo men and women as gatherers, producers and manufacturers until before 1956. Women participated in the collection of wild mushroom (known as *dambong*),

varieties of potato, arum, vegetables, fruits (berries, nut, *amlaki*, *kul* etc.), fuel, medicinal plants and fodder directly from the jungle. They collected aquatic items like shell, crab, tortoise and caught fishes from inner water bodies of the forest and the low lands (known as *baidis*) and contributed predominantly in *jum* cultivation.

In *jum* cultivation, as women performed most of the tasks, the production sector could be regarded as female dominated where they predominated over five stages of production, shared equally two stages with males and the males dominated only over three stages of the subsistence production sector (Table 2).

Table 2. Gender Responsibilities in *Jum* Cultivation

Tasks	Major Responsibility		
	Female	Male	Both
Cutting and Lopping		M	
Clearing Undergrowth	F		
Burning			B
Making Stick for Digging		M	
Sowing Seeds	F		
Harvesting			B
Weeding	F		
Threshing and Winnowing		M	
Husking and Drying	F		
Storage	F		

Source: Dey, 2004

Jumias produced 50-60 varieties of dry rice, chilies, white sesame, banana, melon, watermelon, different types of potatoes, arum, cucumber, pumpkin, egg plant, *kalai dal* (one type of pulse), varieties of beans, ladies finger and many more items in their *jum* plots for household consumption. Moreover, they produced cotton for weaving clothes, cane for making household utensils and so many other items. Females worked hard in the fields from dawn to dusk. When the crops are cut down they got huge time to pass through amusements and doing only the household works.

At the household level, women were responsible for performing all types of household chores. Like the women of today they cooked, looked

after the elderly and the sick, reared pigs, made *chu* (rice beer), dried fishes and processed rice. They manufactured detergent using the roots, leaves and bulk of trees and weaved cloth using cotton produced in their *jum* field. The traditional food preparation system of the Garos requires soda (known as *kbhari*) instead of oil. Elderly women prepared this item at home using the leaves of banyan and banana tree and sesame. They used different leaves and herbs from the jungle to add extra essence to their curry. Natural *sasad* (*dbup*), used while praying to their God and Goddess, was also made at home by the women.

Case Study 1

Kirani Devi Barman (70) at Gachabari can recall the days when she was a *jumia*. She got up from bed very early in the morning. Finishing the morning works like washing dishes, up keeping the house and the yard and she started cooking. Feeding the children and other members of the family she started for the *jum* field in the jungle wrapping the minor child on her back. She with the help of her husband cultivated paddy, Garo cotton, bean, pulse, *shimul* potato and many other items there for household consumption, but neversold the items in the market. She was very strong. At the end of the day, when the evening came, she returned home with a burden of fuel wood, extracted berries and vegetables. Sometimes she carried about one maund fuel from the forest. When necessary, she carried the load of other Mandi females. She also collected fish, shell from the *baidis*. Returning home as she claimed, the males were engaged in gossiping or in drinking, but she without any break engaged herself in dinner preparation. After taking the night meal the males went to the bed, but she was busy with rice husking or in preparing *chira*. And finally at the dead of the night she went to the bed.

Source: Dey, 2004

On the other hand, the males were famous as hunters; they extracted timber and bamboo from the forest for constructing homes, cultural instruments and manufacturing simple household utility items (such as

asak or *chekkebi* for fishing, *mugur* and *janta* for rice husking).

About a century ago Garos were animists. Some plants and animals of the forests are especially interlinked to their religious practice, for example, a particular bamboo was used by the males for making the idol of the Goddess named *Susimi*, *Rakkashi* or *Sajlong*.

Mandi males used different cultural instruments which they made by extracting raw material from nature such as *Dama* (made of Timber of Jaganichakkar tree), *Kbram* (manufactured from Shimul or Jaganichakkar timber), *Sanai* (made of Bamboo), *Aduri* (made of Buffalo horn), *Natbuk* (manufactured from Jaganichakkar timber) and so forth. Garo males manufactured *Millum spbe* (shield made of cane), Arrow (Made of bamboo), Bow (made of bamboo), Poison (made of tree latex) for hunting and to fight against enemies.

Thus forest stood at the center of their culture and economy and the influence of market over their life and livelihood was negligible. Real famine never touched them and they were very happy with their simple forest bound life. But the scenario life began to change rapidly with the massive destruction of natural forest.

Deforestation in Modhupur Garh

According to the Asiatic Society of Bangladesh (2004) *sal* forests existed as a continuous belt from Comilla district of Bangladesh to Darjeeling of India. At present, most of the forest area is under occupation and the present remaining stands of *sal* are of poor stocking and quality, consisting of degraded coppices and plantations. However, the larger natural forest belt is, at present, notified in Modhupur *Garh* which was a dense and dark tree even in 1970. Different documents prove that severe deforestation began in the area after the Forest Department had taken control over the management of the forest in 1950s. Among others, principal causes of forest destruction include new settlements of Bengali people, illegal wood cutting and felling, conversion of forest lands into permanent agricultural land, various development activities by the Church authority and the Government and commercial tree plantation in the name of forestry development projects funded by Asia Development Bank (ADB) and World Bank.

The massive scale destruction of the forest can be revealed through

investigating the reduction of areal extent of the forest and also by biodiversity loss.

Decrease in Forest Coverage

According to the map prepared by Survey of India, 1928 natural *sal* forest extended over the whole uplifted land area of Modhupur region and it covered about 80,0000 acres. It was continuous forest coverage without major interventions. Only the existence of some settlements and cart tracks were found in the forest. Only after 49 years, through analyzing satellite images, it is found that the forest coverage has shrunk to only about 25,700 acres in 1977 (Dey, 2004, 2007). What is very alarming is that the rate of natural forest destruction has presently become more rapid as the satellite image, 1991 shows that the natural forest coverage of Modhupur *Garb* has come down to only about 11,300 acres (about 14,400 acres have been lost in 14 years!). Finally the natural forest coverage has reduced to only about 8,400 acres in 2000.

The decrease in forest coverage of Modhupur *Garb* was about 36% between the year 1975 to 1983 (Khaleque, 1992). It is calculated by the researcher that between the year 1977 and 1991, the deforestation at Modhupur region became 56% (about 4% per year) and if this rate continues, it becomes obvious that the remaining *sal* forest will disappear totally very soon.

Depletion of Bio-diversity

The severe rate of deforestation is directly responsible for the depletion of biological resources of the forest. Besides *sal* and *sal* coppices (locally known as *gazari*), the forest was abundant with numerous other valuable trees like *kool* (*Zizyphus mauritiana*), *jam* (*Eugenia jambolana*), *betel-nut* (*Areca catechu*), *akanda* (*Calotropis gigantea*), *swarnalata* (*cascuta reflex*), *tamal* (*Diosphyros sp*), *chirata* (*Swertia chirata*), *bot*, *pakur*, *jiga*, *basak*, *laggabati*, *sitafol*, *kunch* (*Abrus precatorius*), *gittum*, *shimul* (*Bombax ceiba*), *dhutoora* (*Datura alba*) etc (BARCIK, 2000; Gain, 2002; Khaleque, 1992; Latif, 1983). At present, the total number of most of the local plant species of the forest has been decreased. Some of the trees like *jayanti*, *ghutkanchi*, real *sal* and so forth. have already become rare species and others may be mentioned as endangered species.

However, in the absence of proper inventory and a comprehensive list (even the Ministry of Environment & Forest is unable to provide proper information in this regard), it is difficult to measure the loss of biological resources of Modhupur *Garb*. Only the names of some extinct species could be extracted through interviewing the local people. But they have given the names, especially flora species, in their own *A. chik* (hill people) language and they are unable to mention the names in Bengali. So it becomes very difficult for the researcher to identify their Bengali or English similes. However, the following table shows the names of such seven types of fruit trees which have already disappeared from the forest.

Table 3. Some Extinct Fruit Trees of Modhupur Forest

Sl. No	Name (in <i>A. chik</i> Language)
01	Thirkalaoag
02	Bakaoai
03	Aroak
04	Thingsekimakbel
05	Bolafal
06	Amaksifret
07	Damong

Source: Dey, 2004

The aged Garos of Modhupur, still remember the memories of hunting wild animals from the jungle. They can recall that the forest, even 50 years ago, was abundant with barking deer, black rabbit, squirrel, porcupine, black capped langur, wild fowl, jackals, wild boar, buffalo, black cow, elephant, nearly 200 species of birds and numerous species of snakes. But at present, only some monkeys, wild fowl and jackals are found in the forest.

Impact of Forest Resource Depletion on the Garo Women of Modhupur Garh

It is stated in World Rainforest Movement (WRM) bulletin that people who live far away from forests usually perceive deforestation as an

exclusively environmental problem (India, 2001). However, for the forest dwelling people forest loss is more social than environmental tragedy. Deforestation has created two-fold problems for the Garos; their livelihood security has directly been hindered for the scarcity of the forest resources and on the other hand as they have been blamed by the state as the major destroyer of the forest, their miseries become more acute. With natural resource depletion, many of their traditional forest based activities have already been extinct (Table 4);

Table 4. Female/Male Dominated Forest Bound Activities (Present Status)

Sl. no	Activity	Status
1	<i>Jum</i> Cultivation	Totally extinct
2	Seed Preservation	Existing
3	Baid Collection	Existing
4	Gathering Wild Edibles	Existing
5	Fuel Collection	Existing
6	Fodder Collection	About to disappear
7	Medicinal Plant Collection	Facing extinction
8	Weaving Clothes	Extinct
9	Manufacturing Detergent	Extinct
10	Manufacturing Soda for Food Preparation	Extinct
11	Making <i>Dbup</i>	About to disappear
12	Hunting	Almost disappeared
13	Timber Extraction	About to disappear
14	Honey Collection	About to disappear
15	Tending Cattle in the Forest	About to disappear
16	Manufacturing Cultural Instruments	Extinct
17	Manufacturing Household Utility Items	Existing
18	Manufacturing Hunting and Trapping Materials	About to extinct

Source: Dey, 2004

They have lost their cultural inheritance, religious belief, simplistic way of life. Garo women, due to their tradition bound survival work responsibilities, have become the worst sufferers. However, the deteriorating situation has brought about some positive changes in their lives also. In the

following section the changes, which have already taken place in the lives of Garo women mainly after 1950's, are discussed.

Declining Food Security and Garo Women

From time immemorial, forest has been providing numerous food stuffs for the forest dwelling Garo people of Modhupur *Garb*. But according to the local Garos of Modhupur, a their food security has been diminishing at significant rate since the ban on *jum* cultivation. With abolished *jum* cultivation, many of their traditional crop varieties have been facing the fear of extinction. One such item is cassava locally known as *shimul* potato (*manibot esculenta*), formally grown in *jum* fields. Scientific researches over many parts of the world show that these potatoes are rich in carbohydrate, fat, minerals and protein in small quantity. Moreover, it contains calcium, fiber, vitamin A and vitamin C (Extinct, 2004). However, the Garos have succeeded to grow this item in their homestead gardens at smaller scale but numerous items including dry rice varieties have totally been extinct as they have not succeeded in growing them without slash and burn method. Still there is no scientific study regarding their *jum* crops and their nutrition value.

At present, the forest is not so plentiful with hunting animals, game birds, fruits and vegetables and the *Adivasi* people can not roam around the forest freely for the restriction of the Forest Department, so most of the items have to be bought from local markets. As most of the *Adivasis*, still are not engaged in income generating activities, they do not have enough money to buy food items. Thus, they simply deduct those items from their diet or take less. Traditionally the favorite item of their daily diet is meat (Burling, 1997). But due to diminishing forest resource, the poor Garos have already changed their dietary habit. They have turned towards taking vegetables instead of meat. Fruits are totally absent from their diet. Even these days many Mandi families, for the crisis of cultivable land, are not able to grow enough rice for year round consumption.

From very olden days Garos are used to eating two times in a day; in the morning and in the evening. Boiled dry rice, wild yam and *shimul* potato were their usual breakfast items until the days of *jum* cultivation and the evening meal was consisted of dry rice, wild vegetable curry, smashed dry fish or meat collected through hunting. Now-a-days they

collect wild yam from the jungle only in winter. Dry rice varieties have been replaced by wet rice and wild vegetables by cultivated varieties. Scarcity of protein is felt in their diet as the inner water bodies of the forest have disappeared with the extinction of natural forest patches.

Garó women suffer most for declining food security as they usually, like the other Bangladeshi women, first feed the children, male members and the guests. Finally these women like all other members of the family, do not take a balanced diet and as they eat last, they get the least. As a result, in these days, despite their prior recognition as strong women of Modhupur, anemic women with thinner physic are very common in Modhupur.

Fuel Collection and Garó Women

From time immemorial fuel collection is mainly a task of Garó women with children's help. But today's females have to cross longer distances than before as the forest goes far away from where they live. They know the method of collecting necessary fuel wood without uprooting or damaging the growth of trees. Generally they collect the twigs, fallen dry branches. They use dead wood as it is easier to cut, lighter to carry and it burns better than green wood.

Jumia women collected fuel from the nearby jungle which was about a quarter or half a kilometer apart from their homesteads. Table 4 shows that even before 15 to 20 years back, most of the surveyed women (85%) crossed 0.5 to 1 kilometer distance for fuel collection, about 11% covered two kilometers distance and the rest 4% collected fuel crossing the distance of 4 to 5 kilometers.

Table 5. Prior Distance Covered by the Surveyed Women in Fuelwood Collection

Distance (km)	Frequency	Percentage
0.5	16	34
1.0	24	51
2.0	5	11
4.0	1	2
5.0	1	2
Total	47	100

Source: Dey, 2004

But now, due to massive deforestation, the jungle is moving away each year from Garo settlements and the females of today have to cross greater distances for fuel wood collection (Figure 1). Some are trying to adjust to the situation through planting fuel wood species in homestead gardens.

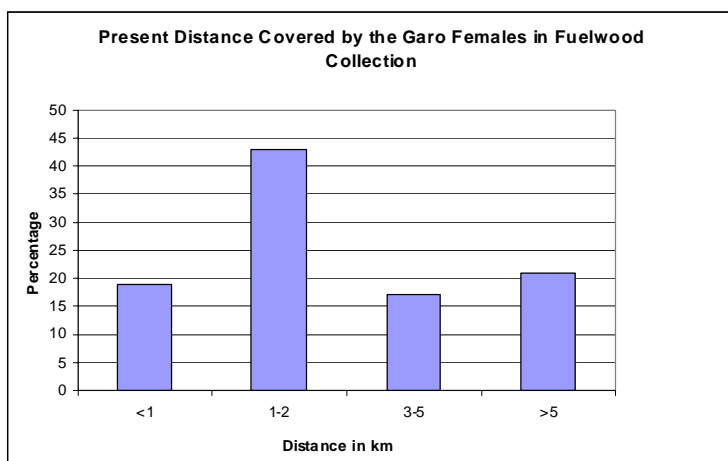


Figure 1

No doubt, fuel collection demands extra time with increased distance. The women have to carry heavy load on their head or back which, according to Dankelman and Davidson (1988, p. 69), damage the spine and cause problems with childbearing and it is obvious that the longer they have to walk, the more they have to suffer.

Through a questionnaire survey of over 47 respondents, it is found that an adult Mandi female, on an average, carries about 30 kilograms fuel wood on average at a time. The surveyed fuel wood collectors have confessed that they have been suffering from different physical ailments. The identified problems have been shown in the following figure;

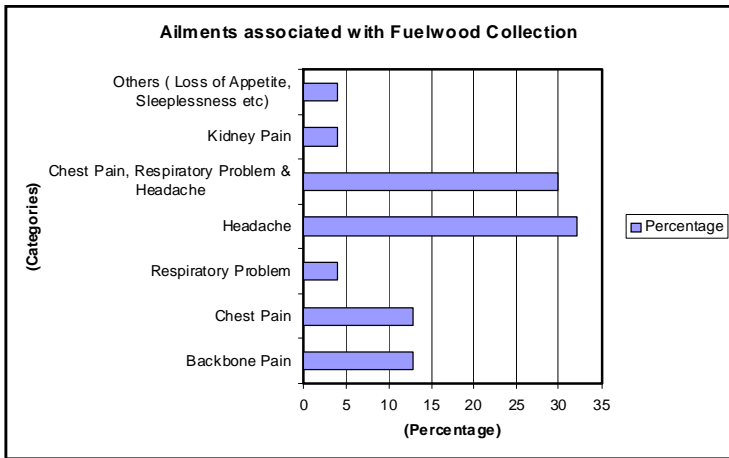


Figure 2

As the women of Modhupur *Garb* are now compelled to cover more distance for fuel collection, it may be concluded that they are at risk of facing these problems more acutely in future.

Harassment by the Local Forest Department

The burning issue deforestation has created manifold problems for the women whose livelihoods are still intertwined with the forest. Despite the ban on free movement into the forest, women from the very marginal group, have to depend on the forest for wild potato, medicinal plants, fodder and vegetables. Till today, for the lack of alternative energy sources, women in groups in spring go to the jungle for fuel wood collection. Entering into the forest, they fall prey to harassment by the forest guards who consider them as illegal intruders into the jungle area. They tease them, demand money from them, send them to jail for forest robbery and according to some women a few case of raping indigenous women by the forest guards have also occurred.

But they suffer mostly from filing false cases against their male family members for illegal logging. According to the Daily Star, 30 July 2003, about 3,700 cases have been filed by the Forest Department (FD) against Garo and Koch people of Modhupur *Garb* and in most cases the real plunderers are the Bengalis who get assistance from the FD officials (Roy, 2003). When the male member of the family has been sent to jail the

family burden has been bestowed upon the female. Thus the number of female headed households has been increasing in Modhupur *Garb* and poverty, a relatively new term to the community, have become more intensified over the decades.

Case Study 2

Kajali Hadima

Age: 29

Children : 2

Occupation : Day laboring

The young woman of Telki village is the head of the household as her husband has been in Tangail jail for 10 years. The FD filed a total 47 cases against her husband for illegal logging. Kajali has complained that many of the cases have been filed when he has already been sent to the jail. She lost her landed property for running the cases and her struggle against poverty began. At present, she is working hard from dawn to dusk as day laborer in plantations and as housemaid. However, she can not meet the family demand properly.

Source: Dey, 2004

Changing Land Ownership Pattern

The intensification of poverty scenario in Garo community is manifested in the changing land ownership pattern. It is mentioned earlier that one unique feature of Garo society is that women own the family property which adds special value to their status. According to Garo tradition the *nokna* (the youngest daughter) of the family gets the property ownership from her mother. But through the field survey of this study it is revealed that amongst the surveyed respondents, about 46% have ownership of landed property. However, the field survey also reveals that in about 44% Garo households the ownership has been shared by both females and males and the landed property of about 10% households have already been transformed to the hand of males (Figure 3).

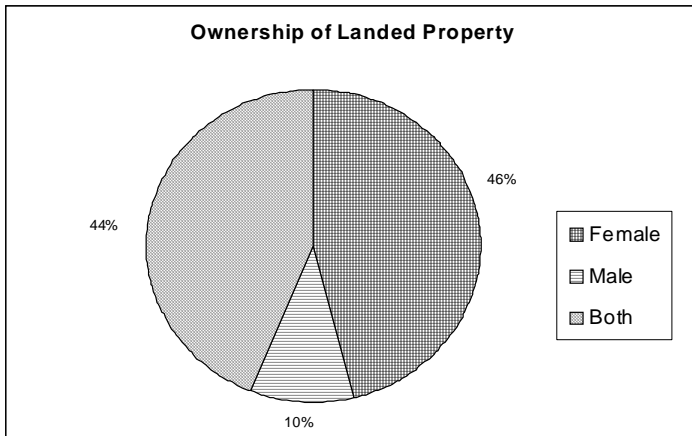


Figure 3

The explanation for transferring the ownership pattern under men's full control is again correlated with massive destruction of forest and loss of livelihoods of forest dwelling people.

According to the Garos of Modhupur, although women are the real owners, they take very little stand against the selling decision of landed property. Here the males take the lead role. And these days, for growing demand of money, the tendency of selling the inherited land to outsiders (who usually use the land for banana plantation) has got an accelerating rate among the Garo community of Modhupur *Garb*. The headman of the family sells the plot for a handsome amount of money. The wife loses her property. On the other hand, for growing influence of Bengali culture and modern education, some parents are giving share of property to their sons also ignoring the traditional practice and thus both are getting the property ownership.

Forestry Development Projects: another attack to Ancestral Land Right

Most recently, for the rubber development project in Modhupur *Garb*, which started in 1986 in Modhupur with financial support from the Government of Bangladesh (GoB) and ADB, many Garo families have lost their registered and prescribed land (Gain, 2002). The industrial plantation grasped their croplands, pastures and homesteads. Due to the strong

protest of local people, finally ADB suspended its fund for the second phase of the project. But within the interim period the ecology of about 80,000 acres land area totally changed and people, more precisely *Adivasi* women have lost their land forever.

After the rubber plantation project, ADB funded the Thana Afforestation and Nursery Development Project (TANDP) appeared as a new threat to the forest and the people. For woodlot plantation, besides destroying natural *sal* forest, the FD has taken over the croplands and even homesteads of many *Adivasi* families. Many of the *Adivasis* ancestral land has been identified as encroached land by the FD as the *Adivasis* do not have proper documents of land acquisition. In fact the innocent *Adivasis* were not aware of the necessity of legal document of land holding before. They considered the forestland Modhupur *Garh* as their own ancestral land. As a result of which the FD has identified them as encroachers on the basis of a Gazette Notification of 1984 by which the FD acquired over 40,000 acres of forest land. The forest dwelling community at present have been passing their days with constant fear of eviction and finally such evictions directly hit the Garo women who being members of matrilineal society, enjoy the ownership of landed property. These developments have been loosening their status in the long run.

Transformation in Agricultural Practice

Decreasing forest resource has finally turned the traditional subsistence economy of the Garos towards commercial economy. Ester Boserup in her influential book *Women's Role in Economic Development* (1970) showed that the introduction of new agricultural method had a negative effect on women in the developing world by changing patterns in the gender division of labor and displacing them from their traditional areas of work. This consensus fits well in the life of Garo women of Modhupur *Garh* as their traditional roles and responsibilities in agricultural production have already been transformed which in the long run loosens their control over economy.

Present Gender Division of Labour in Agricultural Production

It is mentioned earlier that women predominated over the traditional economy through their active participation in *jum* cultivation (Table 2).

But at present, three divisions in the agricultural production sector have been identified in Modhupur. Garo males predominate over the commercial production, women share responsibilities along with males in the production of rice for household consumption and they play lead roles in producing vegetables in their kitchen gardens.

Table 6. Present Gender Division of Labor in Agricultural Production

Sector	Domain	Work	Knowledge
Paddy Cultivation	F	F+M	F+M
Kitchen Garden	F	F	F
Cash Crop	M	M	M

Source: Dey, 2004

The above table reveals that *Garo* women' previous position in agricultural production has already been shifted although they still predominate over subsistence agriculture. They are now largely engaged in paddy fields and almost all the *Garo* women work in kitchen gardening sector, which demand less agricultural knowledge. In rice production, Mandi males perform the responsibilities like soil preparation, pest control, fertilizing and so forth with their newly acquired scientific knowledge. Modern technological innovations have freed them from manual labor which was needed in the days of *jum* cultivation. As such, they use of tractors for soil preparation has freed the males from the previous hard labor required for this task.

On the other hand, Mandi women are confined to the tedious, manual and time consuming works in wet rice cultivation like sowing and nurturing seedlings, weeding, drying crops and so forth.. Technological innovations have freed them from the heavy rice husking labor which is done by machine now, but the women in most cases, carry on the responsibility of bringing the rice to the rice mills by themselves.

Besides rice, for diminishing forest resource, they are now producing varieties of vegetables and fruits in their home gardens throughout the whole year which they collected directly from the forest before. In addition to these sectors, have also been working constantly for producing various commercial crops such as pineapple, ginger, arum, banana and so forth. in order to support their families and the types of works which they perform in agricultural fields demand long hours.

Agrochemicals and Associated Health Risk

Modhupur Garos are now using various agrochemicals in the commercial plantations. In numerous news paper reports, grievous concern has been expressed on applying hormones for ripening banana and pineapple quickly.

Women farm workers in the pineapple and banana plantation in Mindanao, Philippine, and the rice and corn workers also, were the first to notice that prolonged exposure to certain pesticides can actually cause spontaneous abortions and still births. At the very least, they cause chronic dizziness and malaise, blurred vision, peeling off of nails and skin and swelling of the legs (Shiva, 1994, p. 119). According to an Oxfam study, there are at least 750,000 cases of accidental pesticide poisoning every year and about 13,800 deaths worldwide, 10,000 of them in the third world. There are also chronic and long term health effects such as cancers, birth defects and induced sterility for which no reliable data exist.

Mandi women, for their reproductive health especially, are exposed to the problems mentioned above. The types of works which they do in the commercial production demand them to spend longer hours in the plantations than their male counterparts. Thus they become more exposed to the agro-chemicals. Through field investigation, it is identified that the women plantation workers usually suffer from headache, vomiting, sleeplessness, numbness or fever and reproductive health related complexities are also evident among them. It is assumed that the number of Mandi women working in the plantations will increase in the near future. Then more women could face serious health hazards.

Gender Wage Gap

In traditional Garo community women are not considered as a tiny portion of society. In many regards they are more active than the male members. But these days for striking poverty, a large number of Garo women and males have been working in different plantations as wage laborers. Very often the owner of these plantations is Bengalis. Through investigation, it is revealed that the female day laborers of Modhupur *Garh* have been paid TK. 50 per day while the males have been getting TK. 60 per day for the same work. Thus indigenous females are getting less than their male counterparts which is slowly inducing gender discrimination to the *Adivasi* society.

Apparently most of the changes after deforestation have brought about

negative impacts for women, still few positives have also been added to their lives which are leading them towards ensuring stronger position in modern world.

Expanded Women's World

Spread of Education

Realizing the fact that forest is no more than a tragedy for the local people of Modhupur, Garo people have become eager to attach themselves to alternative ways of life through formal education. The educational status of Garo community especially up to secondary level is quite satisfactory in Bangladesh context due to the efforts of Christian missionaries and the females are more eager to get formal education than the males. However, for the lack of adequate data it is not possible here to quote the exact ratio.

Diversified Work Sector

The severe forest resource depletion in Modhupur *Garb* over the present decades has led the indigenous community to change their traditional life style. They have realized that forest will no more be able to provide them with all necessities of life. They have switched towards alternative income sources rather than agricultural production or collecting wild edibles. As a result, at present, the Garo women of Modhupur *Garb* are found to be engaged with different types of formal and informal income generating activities. Their world has been expanding day by day. Table 7 reveals that the Garo women's work sphere is larger than their Bengali sisters and thus it proves that they are economically more active than the Bengalis.

Table 7. Different Types of Economic Activities Performed by Mandi Women of Modhupur *Garh* in Comparison with Bengali Women

Mandi Female	Bengali Female
Livestock raising	
Tailoring	
Sewing bags	Do
Sales girl	
Grocery shop keeping	
Selling vegetables in the market	
Selling fuel	
Day laboring in agro-plantation	
Working in nurseries	
Weaving clothes in the missionary center	Do
Teaching	
Nursing	

Source: Dey, 2004

Migration towards Cities

As there are not sufficient job opportunities in Modhupur *Garh*, the Garos have been migrating towards cities leaving the forest area. Bal (1999) has mentioned that from the 1960s onward, and especially since the 1980s, many Garos have started to migrate towards Dhaka and Chittagong in quest of jobs. He has also mentioned that for obtaining higher education many have left their villages and a few have migrated towards cities and towns for the attraction of urban life. These days, significant numbers of women are migrating towards Dhaka to work in beauty parlors and these parlor girls are running their families living in villages.

Through field survey it is found that a total of 40 Garo females and 33 Garo males from the surveyed 50 households have migrated towards different towns of Bangladesh (Dey, 2004). Certainly this figure is quite high in the context of rural Bangladesh. Interestingly, more Garo females have migrated than their male counterparts which contrast with the overall migration scenario of Bangladesh.

Conclusion

Modhupur *Garh* forest was a pleasant forest area of central Bangladesh until before 1950s. It was famous for dense tree coverage with high timber

value, rich bio-diversity, rare wild life and for the forest dwelling indigenous Garos. Deforestation, a common phenomenon, for all forests of Bangladesh, started in the *sal* forest since the British Colonial period. But after 1950's when the FD took the control of forest resource management, the rate accelerated. Today most of the forestlands have been degraded and the rich biodiversity of the forest has become a part of the past. Obviously the forest dwelling Garos, whose lives and livelihoods were fully tied with nature, have become the worst sufferers from such destruction. They have lost their animist religion, agricultural practice, social customs and control over natural resources and the females have become the hardest hit for their tradition bound role to act as the sole providers of family sustenance. Present day's Mandi women of Modhupur *Garb* have to perform all types of survival tasks as well as they have to work for income generation. The subsistence economic pattern of the Garo community has shifted towards commercial economy which declines food security, creates gender discrimination and health hazards in the long run. However, women in particular, have never benefited from different forestry development projects. These development activities enhance their miseries. They are losing their control over land, fall prey to numerous physical assaults, false cases have been filed against the females and males and finally the females have been thrown to the vicious cycle of poverty. They are losing their higher status in matrilineal society and being landless, they are becoming more dependent on forest resource exploitation for survival. Although there are some positive outcomes, but these facts finally substantiate the hypothesis that Garo women of Modhupur *Garb* are seriously affected by the degrading forest environment, which has become severe in recent years.

References

- Asiatic Society of Bangladesh. (2004). *Banglapedia*. Retrieved June 15, 2004, from <http://banglapedia.org>
- Bal, E. (Ed.). (1999). *Manderangni Jagring: Images of the Garos in Bangladesh*. Dhaka: The University Press Limited.
- BARCIK. (2000). *Biodiversity in Modhubur* (an unpublished report in Bangla). Dhaka: Bangladesh Resource Center for Indigenous Knowledge (BARCIK).
- Boserup, E. (1970). *Woman's Role in Economic Development*. London: Earthscan Publications Ltd.
- Burling, R. (1997). *The Strong Women of Modhubur*. Dhaka: The University Press Limited.
- Dankelman, I. & Davidson, J. (1988). *Women and Environment in the Third World: Alliance for the Future*. London: Earth scan Publication Ltd.
- Dey, S. (2004). *Degrading Forest Environment and Local Garo Females in Modhubur Garh, Bangladesh*. Unpublished M. Phil dissertation, Department of Geography and Environment, University of Dhaka, Dhaka.
- _____. (2007). The Commercialisation of the Indigenous Economy and It's Impact on the Environment of Modhubur Garh, Bangladesh. *International Journal of Green Economics*, 1(3/4), 465-477.
- Extinct jum crop varieties of Garo community (in Bangla). (2004, June 13). *The Daily Jugantar*, p. 3.
- Gain, P. (2002). *The Last Forests of Bangladesh* (2nd Ed.). Dhaka: Society for Environment and Human Development (SEHD).
- IIRR. (2001). *Shifting Cultivation: Towards Sustainability and Resource Conservation in Asia*. Shillong: International Institute of Rural Reconstruction (IIRR).
- India: Women more affected than men from deforestation. (2001, July). *WRM Bulletin*, 48, 10-11.
- Khaleque, T. M. K. (1992). *People, Forests and Tenure: The process of Land and Tree Tenure Change among the Garo of Madhubur Garh Forest, Bangladesh*. Unpublished doctoral dissertation, Department of Forestry, Michigan State University.
- Latif, M. A. (Ed.). (1983). *Bangladesh District Gazetteers: Tangail*. Dhaka: Establishment Division, Government of Bangladesh.
- Roy, P. (2003, July 30). Garo, Koch communities in Modhubur reel under cases: Victims include underage boys. *The Daily Star*, p. 1, 15.
- Shiva, V. (Ed.). (1994). *Close to Home: Women Reconnect Ecology, Health and Development*. UK: Earthscan Publications Limited.

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