

Vulnerability and Coping Strategies of Char People of Bangladesh

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Abstract

In Bangladesh, a large number of people live in chars, bank- line areas of rivers and mid-river islands of the country. The present paper is based on a field research in four char villages – two each of Shariatpur and Jamalpur districts of Bangladesh. The data were collected using empathic methods of anthropological research. The objectives of the research were to identify and analyze the causes of char people's vulnerability and determine their coping strategies. The research followed Amartya Sen's entitlement approach to examine char people's vulnerability issue and found that vulnerability was explained by entitlement failures. To cope with the vulnerability the people, the study found, adopted both risk reducing and risk diffusing strategies. To strengthen the livelihood and coping strategies of char people, the study suggests, among other things, building organizations of the poor char people, distributing *khas* land among the poor char people, developing char agriculture, implementing comprehensive credit, health and education programs, ensuring safety of livestock and poultry population, ensuring sustainability of open access fisheries resources, and enlarged safety net programs.

Keywords: Chars, vulnerability, entitlement approach, coping strategies

1. INTRODUCTION

1.1 Vulnerability and Natural Hazards

There are two major approaches – the dominant approach and the political economy approach - to the study of vulnerability in relation to natural hazards and disasters (Maskrey, 1989). The authors belonging to the dominant approach take the view that disasters are characteristics of natural hazards. The scholars supporting the political economy approach, which is more recent, argue that disasters are characteristics not of hazards, but of socio-economic and political structures and processes (Wijkman & Timberlake, 1984; Canon, 1994; Winchester, 1992; UNDP, 1990). They maintain that disasters are predetermined by the existence of vulnerability and hazard events trigger them – the conditions for vulnerability are created by human systems. Some authors, notably Chambers (1989) and Chambers et al. (1989) argue that vulnerability is not poverty. Vulnerability is linked with net assets while poverty with low income.

The research agrees largely with the political economy approach and tries to explain vulnerability of char people in terms of reductions of their entitlements. It hypothesizes that vulnerability results from gradual reduction of entitlements.

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Reduction of entitlements, in turn, is caused mainly by institutional conditions and is occasionally added by natural factors. Disasters occur when entitlements fail totally as a result of the interaction of vulnerability with natural hazards. The research argues that char people do not accept the loss of their entitlements passively; on the contrary, they adopt various coping mechanisms to survive.

1.2 Research Context and Objectives

Bangladesh is crisscrossed by a large number of braided and meandering rivers and their tributaries. The prominent among these rivers include the Ganges-Padma, the Bhramaputra-Jamuna and the Meghna. When in the monsoon, these rivers remain very active they create new islands in their mid-channels and destroy the old ones. Further, periodic shifts in the channels of these rivers result in extensive bank line erosion and accretion – another form of the act of creation and destruction. Chars or char lands are broadly defined to include both mid-channel islands and bank-line areas. Char lands are part of the country's greater flood plains, and so, they are as much vulnerable to floods as to erosion (Elahi & Rogge, 1991; Currey, 1979).

A large number of people have been living in chars for ages amidst vulnerability. The research was undertaken mainly to identify the factors that explain the vulnerability of char people and the coping strategies to face the vulnerability.

1.3 The Study Areas

The study covers four char villages – two each from Shariatpur and Jamalpur districts. The Shariatpur villages are Munshikandi and Sreepur and those of Jamalpur are Pollakandi and Bhatiapara. The Shariatpur villages are chars of the river Padma and Jamalpur villages are the chars of the river Jamuna.

1.4 Methodological Approach

The study is based on about nine months of field work. The methodological procedure for data collection was based primarily on empathic methods of anthropological research which included open discussions, participant observations, case studies and recording of both life and village history. Some use of conventional survey techniques was also made to collect some quantitative data.

1.5 Outline of the Paper

The contents of the paper have been presented in 7 sections. Section 1 states the research approach, context, issues and data collection methods. Section 2 presents the analytical framework of the study in an abridged form. Section 3 of the paper identifies and states the exchange entitlement relations in the study villages and section 4 concerns with the analysis of the causes and consequences of the reduction and failure of exchange entitlements. Section 5 deals with the incidence of vulnerability. Section 6 states and analyzes various coping strategies

of the study char people. Section 7, which is the final section, summarizes the findings and presents the policy implications.

2. ANALYTICAL FRAMEWORK: THE ENTITLEMENT APPROACH

The study used exchange entitlement approach to analyze the char vulnerability. The approach was developed by Amartya Sen (1977, 1981, 1995) to explain famines. Sen defines exchange entitlement of a person as the set of all the alternative bundles of commodities that he can acquire in exchange of what he owns. His main thesis is that famine is caused not by food availability decline but by failure of exchange entitlement of famine victims. As identified by Sen (1981), the rather straight-forward entitlement relations in a free market economy are as follows:

- 1) Trade-based entitlement;
- 2) Production-based entitlement;
- 3) Own labor entitlement; and
- 4) Inheritance entitlement.

Some other less apparent and more complex entitlement relations identified by Sen include one's entitlement to a) the use of benefits of some property without being able to trade the property itself for anything else; b) the inheritance of the property of some distant relative through some rules of kinship in the society; c) the ownership of unclaimed objects on the basis of discovery; and d) the benefits of rationing or coupon systems provided by state as supplements to the market entitlements.

According to Sen, the exchange entitlements of a person would depend on two sets of factors viz., a) resources to be exchanged and the conditions of exchange - resources include land, labor power, formal or informal social security provision etc.; and b) conditions of exchange include availability of employment, wage rate, prices of inputs and outputs, prices of food and other commodities, level of social security benefits etc. If a person experiences deterioration in one set or in both sets of factors, his exchange entitlements will deteriorate and may be lost.

As Mitra (1982), Srinivasan (1983) and Ravallion (1990) point out Sen's entitlement theory does not go much deep into the causes of the changes in the conditions of exchange. Be that as it may be, using the broad framework of the entitlement theory, the paper examined how conditions in the human systems reduce the exchange entitlements of the study char population and make them vulnerable.

3. ENTITLEMENT RELATIONS IN THE STUDY CHAR VILLAGES

The labor, credit, tenancy and some other markets of the char economies suffer from imperfections of varying degrees. The entitlement relations that can be observed in the imperfect char market economies may be enumerated and elaborated as follows.

3.1 Trade Based Entitlement

In the study areas, different socio-economic groups of people have different trade entitlements depending on the extent of their ownership to productive and non-productive material assets. Those who own productive resources enter into trade entitlement relations in two ways – exchanging the goods produced with the help of the productive resources and selling the productive assets. Some of those who have labor endowment also have trade entitlement relations in that they exchange the fruits of their labor in the market for cash which they use for buying necessities of life. Fishermen are the best examples of this class.

3.1.1 Land

Land is the most important among the productive material assets in the study locations. Our survey, however, indicates that the access to land ownership is highly skewed in favor of large land owners and many households do not own any land. In Shariatpur study villages, 7% of the total of 578 households own 55% of the total land area of 1251 acres while 56% of the households do not own any land. In Jamalpur villages situation appears little better – 12% of the total of 239 households own 60% of the total land area of 657 acres while 25% households do not own any land. Two points are obvious from these figures: 1) many households cannot have any land-dependent entitlement relations; and 2) the land dependent trade entitlements are inequitable. Further, land-dependent trade entitlements are unstable because land is vulnerable to river erosion.

Access to land is gained in three ways – inheritance, purchase and illegal possession. Access to land through inheritance and purchase is relatively trouble free. The practice of illegal possession of *khas* or government land exists more in Shariatpur villages because of the existence of sizeable amount of *khas* land there. The practice is followed exclusively by the well-off and the powerful people. In the study locations, the land grabbing practice of the powerful is not, however, associated with any major conflict involving the institution of *lathiyals* (hired clubmen). The use of *lathiyals* for the possession of government land in many charlands have been reported by many authors (see for example, Zaman, 1985; Zaman & Wiest, 1985, Chowdhury & Zaman, 1984; Adnan, 1976; Wahed, et al., 1983; Musa & Badal, 1980).

Land in both of the study locations is subject to periodic erosions followed by accretion after some years - sometime after more than a decade. Some land may not emerge from the river bed for decades. Those who lose their land keep close eye on the movement of the river and the process of accretion. As the land reemerges, they with the help of local private sector *Amins* (people with technical skills to demarcate land examining land records) and under the supervision of *samaj* leaders, identify and take possession of their land. The government officials play no role in this process. No major conflict regarding the re-possession of land has been reported to us. However, the local influential people in both the areas are alleged to illegally occupy some land of the poor farmers.

3.1.2 Other Productive Assets

The other productive assets which people are entitled to exchange include draft animals and agricultural tools. In both the research areas, especially in Shariatpur area, the scope for exchanging these assets is, however, limited because many farm households do not own them. In Shariatpur area farmers have recently started using power tillers for land preparation. Many farmers as well as poor landless households, especially those of Dewanganj, however, own cows and goats. In Jamalpur some also own sheep. As we shall discuss in a later section, many poor households have livestock on share-rearing basis.

3.1.3 Non-Productive Assets

The non-productive assets which people are entitled to trade include houses; furniture – cot, chair, table; utensils; wrist watch; radio; and gold ornaments. In both the research areas, especially in Jamalpur area, the poor, who constitute the majority, live in huts of low quality which have little market value. Most poor households do not also have wooden furniture which can be traded; and they do not generally own wrist watches or radios and gold ornaments. Their utensils are very few in number and of low quality having little resale value. Only the better-offs have good quality houses and furniture.

In Shariatpur villages fishing boats are very important assets which can be traded. In Jamalpur villages only a small number of households own boats which are used mainly for ferrying passengers and carrying goods.

In char villages people do not generally plant trees because: a) most people do not have any land; and b) char villages are vulnerable to floods and erosions.

3.2 Production Based Entitlement

In both the areas, land-owning households as well as a significant portion of the landless households are engaged in crop production and so they enjoy production-based entitlements. It has been found that of the 578 households in Shariatpur, 325 (56%) are engaged in production of which 125 or 22% are landless. In Jamalpur area of the 239 households 140 (59%) are engaged in crop production. Of these 140 families 21 (15%) are landless. Tenants cultivate land under both share and lease tenancies and some farmers of Jamalpur also cultivate mortgaged land. Roughly, in both the research areas, about 45% of the total cultivated land is under tenant cultivation.

The major crops that are grown in Shariatpur include rice, chilly and jute and those in Jamalpur include paddy, millet, sorghum, jute, pea-nut and sugar cane. Besides field crops, households in both the research areas grow a wide variety of vegetables in their homesteads which can be sold for a good price.

In no research area households engage themselves in fish production. In both the areas, some households produce milk at a very small scale. All households, however, have chickens and some have ducks.

Share-rearing of livestock is also a kind of production activity which is carried out by a significant portion of households of both of the study locations.

In Jamalpur 34% of the households share rear livestock, the corresponding figure for Shariatpur is 20%.

3.3 Own Labor Entitlement

In both Jamalpur and Shariatpur own- labour power entitlement is more important than all other entitlements taken together. In Shariatpur and Jamalpur 51% and 55% of household heads respectively are engaged in own-labor entitlement relations as primary means of livelihood. Another considerable numbers of household heads have own-labor entitlements to supplement family income from other entitlements. The proportion of female-headed households to total households in our study areas is lower than the national average which is 15% (Rahman, 1992). Besides household heads, women and children also have own-labor entitlements. Our survey indicates that in Shariatpur 17% of work age children are engaged in entitlement relations — sell their labor. The corresponding figure for Jamalpur is 18%. A considerable portion of the women members of the poor households also have labor entitlements.

In Shariatpur, the male laboring household heads work mainly as fishermen (catching fishes in off-shore islands).and agricultural laborers while in Jamalpur they work as agricultural labourers and earth-cutting workers. Some members of the Shariatpur households also are working abroad. The female heads of households in Shariatpur harvest crops, mainly chilly, and share-rear livestock and those in Jamalpur harvest pea-nut and chilly, share-rear livestock and make *kantha*. The children of poor male and female headed households of Shariatpur glean paddy and chilly and graze the family share-reared livestock and those of Jamalpur glean paddy, chilly, pea-nut and sweet potato and graze livestock. The poor women in both the areas, especially those in Jamalpur also collect cow dung and prepare cow dung cakes for family consumption as fuel and also for sale. In both the areas children of poor families collect twigs, leaves and cow dung for firewood.

3.4 Inheritance Entitlement

The inheritance entitlements in our study villages include land and all other material assets mentioned earlier. Majority of the households in Shariatpur study villages did not inherit any productive asset including land from their parents. They inherited some non-productive assets which include a hut, and in a few cases, a few low-quality furniture having no considerable value. In Jamalpur area in contrast, majority of the households inherited some land.

3.5 Moral Economy Based Entitlement

In addition to these market economy-based legal entitlements, the people of both the areas claim some other entitlements of which moral-economy based ones are important. In both the study locations, the social organizations are based on vertical patron-client relationships.

3.6 Common Property Entitlement

Access to common property resources is another important non-market entitlement of poor people in the study locations. For example, in Shariatpur area, fishing in open access river water constitutes a major source of livelihood. In Jamalpur, access to river water is open but only a few people can earn their livelihood from fishing because fishes are not available in sufficient quantity.

The other common property resources which people have access to include left-overs of grains/crops after harvest of crops like paddy, sweet potato and peanut and various categories of fuel-stuff which include twigs, leaves, roots of sugarcane plants, and cowdung which are collected by the women and children of poor households. Beck (1994) correctly observes that these resources are not given much importance by professionals although they contribute significantly to livelihood of poor households.

The other non-market (transfer) entitlements include state and some NGOs provided relief goods and *khas* (government owned) lands. After every big flood the government supplies some food grains and sometimes, some clothes to some affected families. Besides the government, some NGOs, notably the SCF (UK), carry out their relief activities in both of the study areas after every flood or draught.

It needs to be mentioned here that in both of the study locations the same members of a household generally have different entitlements relations. One very important fact that emerges from the discussions in this section is that majority of the people do not have own asset-based entitlements. They depend on their labor entitlement for their livelihood. As a result, their vulnerability to various crises is very high.

4. REDUCTION AND FAILURE OF ENTITLEMENTS

4.1 Endowment Reduction/Loss

4.1.1 Land

In both of the study locations land is still considered the most important endowment by rich and poor people alike although it is subject to erosion. The economic rationale, put in the entitlement approach context, is land's ability to provide multiple entitlements. Firstly, it provides trade entitlement in two ways – land can be sold directly and its produce can also be traded. Secondly, land gives production entitlements to its owners – they can own whatever they produce in their land. Thirdly, the food entitlement of land owners is more secure. Fourthly, land can be mortgaged to tide over crises. In the study locations, the loss of land is a gradual process and takes place in three ways – erosion, straight sale and mortgaged arrangement. The loss has a seasonal character and some types of loss affect the poor much more than the well-off.

Erosion devours land every year during the monsoon. Of the total land owned by Shariatpur study households 46% reported losing land due to erosion. The corresponding figure for Jamalpur is 64%. However, loss of land through erosion

is never considered permanent by those who lose land. They live with the hope of getting back their land sooner or later.

The straight sale of land is generally practiced by the poor households. They sell land for various reasons which include meeting consumption needs, meeting medical expenses and paying dowry. In Jamalpur study villages, approximately 7 acres of land were sold in 1996. In Shariatpur, in one part of a village having 65 households, 7 acres of land was sold in 1996. Poor people in Jamalpur mortgage out their land to meet expenses of marriage and medical treatment and food consumption needs of the family. The amount of mortgaged land is estimated at 27 acres in two villages of Jamalpur. The corresponding figure for two Shariatpur villages is 2 acres. It has been reported that most people who mortgage out land cannot take back their land because of their poverty and eventually sell their land. Many families of both the study locations have become landless and many more are in the process of becoming landless as a result of loss of land due to erosion, distress sale and mortgage sale.

4.1.2 Other Material Productive Assets

The other productive assets which the poor people have been losing include draft animals and agricultural implements like plough, yoke, hoe etc; fattening animal (bullocks, goat and sheep); milk cows; and boats. Distress sale and premature death resulting from diseases are two main reasons for the loss of livestock. People dispose of their livestock to meet medical expenses; bear dowry payment; maintain family during regular lean periods; defray family expenses after big floods and erosion; replace/repair flood damaged houses; and shift houses after erosion of homestead lands. Premature deaths of livestock occur because facilities for treatment of livestock are meager and too expensive to be afforded by the poor. Sometimes big floods also cause premature deaths to livestock, especially poultry birds, as high current of flood water carries away them. Agricultural implements are sold off after losing all land and draft animals. Boats are also sold to meet contingency needs.

4.1.3 Non-Productive Family Assets

The loss of non-productive assets is explained by distress sale and flood damage. When in very distressed condition, poor people sell CI sheet house roofs and fences. They also sell some furniture which includes wooden cot (bed) and chairs and tables.

4.1.4 Open Access Resources

Among the open access common property resources, fishes of the river Padma and the Brahmaputra/Jamuna and their tributaries are very important. Fish resources of Brahmaputra/Jamuna and its tributaries around Jamalpur have depleted substantially. As a result, the number of professional fishermen have decreased. Over-catching; substantial reduction of the Jamuna/Brahmaputra water in the dry season; drying up of most of Jamuna/Brahmaputra tributaries in the dry months of the year; use of pesticides; and catching of young fishes and

fingerlings are reported to be the major causes of decline of the open access fishery resources.

In Shariatpur area fish resources have also decreased but at a much lesser extent than that in Jamalpur. The causes of drastic decline in fish resources in Jamalpur are also present in Shariatpur.

The other open access resources are also becoming scarce. Fuel staff that the poor people collect are decreasing in supply on the one hand and their demand is increasing on the other. Similarly, as poor land owners themselves now want to collect left-over of crops after harvest, the access of the poorest to these resources is decreasing.

4.1.5 Social Resources

The claim of the poor to the moral economy-based social resources do not have any legal basis but the poor have acquired some customary rights to have them. These entitlements of the poor, however, are decreasing as a result of the weakening of the patron-client bondage in both Jamalpur and Shariatpur and deterioration in the economic conditions of the patrons of Jamalpur. The patron-client bondage is weakening because of slow but steady penetrations of market relations in the char economy on the one hand and the gradual integration of the char local economy with the national economy on the other hand.

4.2 Conditions Reducing Entitlements

4.2.1 Conditions of Productions

4.2.1.1 Quality of Technology

Quality of technology is one of the important conditions for augmenting and protecting production entitlements and trade entitlements associated with production entitlement. In both study locations, the technology used in crop production is, by and large, underdeveloped relative to that used in mainland agriculture. The HYV technology package, consisting of irrigation, chemical fertilizers, high yielding seeds and pesticides, covers hardly 10% of total study char agricultural land. More than 90% of the land is without irrigation and instead of using HYV seeds farmers generally use local variety low yielding seeds. As they have been used for years, the productivity of these already low yielding seeds has declined substantially. Only chemical fertilizers are applied by quite a large number of people mainly for growing winter crops which include rice. As farmers use backward technology, the productivity is low which results in reduced production and trade entitlements.

4.2.1.2 Input-Output Price Ratio

The other major condition affecting production entitlement is the decline of output prices against the rise of input prices. This is a major problem of Bangladesh agriculture in general and has been discussed widely (CPD, 1995; Abdullah & Shahabuddin, 1993; Mahmud et al., 1993).

The char people cannot get good price for their livestock also if they sell them during and immediately after floods. The price of livestock during this time

is lower by more than 25%. Some farmers cannot but sell their animals at this lower price.

4.2.1.3 Floods, Erosions and Draughts

Big and untimely floods, erosions and draughts damage crops occasionally and reduce entitlements.

4.2.2 Tenancy Conditions

The conditions of tenancy are unfavorable for poor tenants and contribute to the reduction of their production, trade and labor entitlements. In both Jamalpur and Shariatpur share tenancy dominates the tenancy market. About 83% of the total land under tenancy in Jamalpur is share-cropped, the corresponding figure for Shariatpur is 66%. Share tenancy is anti-tenants. Land owners share only an insignificant portion of production cost but take 50% of the produce. In Shariatpur, land owners bear half of fertilizer cost which is only 5% to 6% of the total cost and in Jamalpur they bear seed cost or half of fertilizer cost which is only 4% to 12% of total cost. In this arrangement, the tenants entitlements to the produce becomes very low – sometimes his family labour contribution remains partially or totally unpaid depending on other conditions of productions. Further, share tenancy contract is for very short period and uncertain.

Cash lease is the other important form of tenancy which is generally found in Shariatpur. Locally known as *Khajna*, under this system the tenant takes in land for farming on yearly contract paying the agreed amount of case in advance. Under this system, the land owner does not bear any risk of crop loss. At the existing land rent, poor tenants' entitlement from farming is very low, sometimes it does not, like share tenancy, cover even the contribution of family labor. When crop is lost totally due to flood, erosion or draught, the entire loss is on the poor tenant as the land owner does not share any cost and thus the tenant's entitlement is drastically curtailed.

A variant of cash lease is kind lease tenancy found in Jamalpur. Under this system a tenant takes in land from a land owner for dry season irrigated rice only on the condition that the tenant will bear all costs of production and pay the land owner a fixed amount of paddy. In this system also land owner does not bear any risk of crop loss – the tenant has to give him his fixed share of paddy – even if the crop fails, he has to pay him cash equivalent of the contracted quantity of paddy.

The major threat to crop is floods/flood-cum erosion followed by draught, a regular phenomenon in chars. When floods and draughts affect the tenants, they lose their production and trade entitlements and ultimately food entitlement.

4.2.3 Share-Rearing (of Cattle) Conditions

A good number of poor people share-rear livestock to supplement their income from other activities. But like the tenancy conditions, the terms of share-rearing, which do not vary much in two research locations, are not favorable for share rearing. If the cost of rearing is calculated the share-rearing for the poor in

most cases of rearing results in a significant reduction of entitlements – after paying the share of the owners the poor are left with very little surplus. If the share given by the poor to owners of cattle is converted into interest, the rate comes to 100% per year. The rate of interest can be as high as 200% per year (Arnold, 1996)!

4.2.4 Credit Relations

In both Shariatpur and Jamalpur, the majority of the households, who include middle, poor and very poor households have credit relations. They borrow to meet production costs; to finance petty trades; to buy boats and nets and rickshaws; to pay for the expenses of their daughters' marriage; to defray medical expenses; to support food consumption needs etc. The credit is available in both cash and kind. The credit market, however, suffers from various weaknesses. In Shariatpur, the market is overwhelmingly dominated by a few informal suppliers who are also members of the local power structure and patronage system. They have created a kind of oligopoly. In Jamalpur also the credit market is controlled by the members of the rural power structure and patronage. It may be mentioned that the unstable nature of char villages caused by erosion discouraged MFIs like BRAC and others to operate their credit programs in char villages.

The oligopolistic nature of the credit market has raised the price of credit – the rate of interest – exorbitantly high. It is highly usurious varying from 56% to 300% per annum as against 12% to 18% rate of interest charged by government and private banks in the formal sector. Obviously, this usurious rate of interest contributes to a significant extent to the reduction of all categories of entitlements of borrowers.

4.2.5 Rent Seeking in Sugar Cane Cultivation

In Jamalpur, a large number of small farmers and tenants cultivate sugar cane but their entitlement from the cane production is substantially reduced by the sugar mill officials through the manipulation of the *Purji* system, and delay in the payment of the price of sugar cane. *Purji* is a permit to the growers to sell sugar cane to the Zeal Bangla Sugar Mill- a public sector enterprise.

According to the set rule, the mill authority, through their field staff is expected to supply, free of any charge, each and every grower one *purji* for each bullock-cart load (weighing about 1500 kg) of sugar cane. The grower has to produce this *purji* to mill authority for the acceptance of his sugar cane for purchase. Generally, the field staff in collaboration with the local touts, who are obviously very powerful, do not give the poor farmers their share of the *purjis*, create an artificial scarcity and then sell them to the poor farmers at taka 400 to 500/*purji*. The poor farmers cannot but buy *purjis* paying this exorbitant rent because they are forbidden by law to make *gur* (molasses) from sugar cane. This is one form of exploitation. The other form concerns with the payment of price of sugar cane by the mill authority. The mill authority does not pay price of sugar cane right at the time of purchase. They give credit voucher and take weeks and sometimes months to make actual payment. The poor farmers, however, need

money right away. To meet farmers' need, a class of middlemen have emerged around the sugar Mill. They buy credit vouchers from the farmers at 6% to 10% lower face value and receive full payment against the credit voucher from the mill authority.

4.2.6 Conditions of Employment

4.2.6.1 Employment Opportunities

The two major aspects of employment conditions which are relevant for our analysis are availability of employment and wage rate. The availability employment opportunities are inadequate in relation to growing supply of labor force. As a result, large numbers of people including female members of the poor households remain unemployed and underemployed. Further there is the usual seasonal lean in employment which is accentuated by floods and erosions. Concern can also be raised about the sustainability and growth of employment opportunities, bulk of which are outside the local char economy.

In the study locations, there is little scope for increasing employment opportunities through the increase in cropping intensity because people generally do not keep their land fallow in any season. And given the exceedingly high cost of financial capital in the informal market; the fall in output price against increase in input prices; unfavorable tenancy conditions; and the vulnerability of chars to floods and erosion, there is not much incentive for people to invest in high cost and labor intensive irrigated crop agriculture.

The potential for growth of employment in inland and off-shore fisheries sector is limited. Local people reported that fishes in the local rivers and their tributaries are declining and it is apprehended that in not too distant future, the rivers will be bereft of their fish resources. The available open access fisheries and grazing facilities are being intensively used for fishing and livestock rearing. So, the scope for increasing further employment opportunities in fisheries and livestock sectors is very limited. As MFIs are not operating, the scope for self-employment using microfinance has been found to be non-existent.

The opportunities for employment in rural and urban sectors outside char economies depend on the growth performance of these sectors. The performance of these sectors in the recent years has not been encouraging (CDP, 1995). Further, political unrest leading to general strikes has affected employment of the study char people.

The problem of seasonal leans in employment and the resulting loss of labor entitlement is a regular phenomenon in both Shariatpur and Jamalpur – the problem is more acute in Dewanganj. The pinch of Mara Kartik is felt by people of the study locations. To cope with the problem, some from Jamalpur migrate to different places for work and some of Shariatpur go for off-shore fishing. Some people also borrow at an exorbitantly high rate of interest or mortgage out their land. Some laborers in Jamalpur also sell advance labor.

4.2.6.2 Wage

According to local people, nominal or money wage has increased over the years but as a result of the increase in the prices of rice and other essential commodities the rise in money wage has not benefited them much. According to Rahman (1995) in Bangladesh as a whole, daily wage in Kartik is 30% lower than that in normal period. Obviously, the scarcity of employment opportunities and the fall in real wages reduce labor entitlement of the poor seriously.

Fall in wage rate in the study locations, it needs to be emphasized, is positively related with the size and duration of floods – the bigger the flood and the longer is their duration the larger is the fall in wage rate. In the very big floods like those of 1974 and 1988, there is no employment, no wage – a situation of total failure of labor entitlement leading to disaster. People of the study villages recall the memories of 1974 and 1988 floods, especially those of 1974, the year of famine, with horror. Sen (1981) and many others (e.g., Alamgir, 1980; Ravallion, 1990, and Muklada, 1981) have documented and analyzed the 1974 post – flood entitlement failures.

4.2.6.3 Chanda and Dalali

The payment of *chanda* (illegal tolls) and *dalali* (commissions) also reduces labor entitlements. The rickshaw pullers of Jamalpur have to pay tolls to *mastans* (*goons*) when they stay in Dhaka slums to pull rickshaws in Dhaka; the earth-cutting workers of Jamalpur have to pay *dalali* to sardars to get work; and the fishermen of Shariatpur allegedly have to pay tolls to government officials of Fisheries Department and law enforcing agencies to fish in the open access rivers.

The discussions above indicate two things: a) that a number of conditions are actively interacting to reduce the entitlements of the majority of the study char people; and b) that the majority of these conditions are created by human systems rather than by natural factors. The reduction of entitlements has made people vulnerable to the impacts of floods and erosions and other crises and risks.

5. INCIDENCE OF VULNERABILITY

Vulnerability has regional, class, sex and age dimensions. Among the people of the two study regions, the people of Shariatpur are less vulnerable to floods and erosion than those of Jamalpur because they have better exchange entitlements. Shariatpur people have more endowments and conditions of exchange are also better in Shariatpur than those in Jamalpur. Shariatpur land is more fertile; it has an open access fisheries sector for employment and work; it is closer to Dhaka, so its inhabitants can seek employment in Dhaka and other nearby towns easily with small cost; wage rate is higher there; there is no rent seeking interest equivalent of the rent seeking interest in sugar cane cultivation in Jamalpur.

All classes of people of the two study locations are not equally vulnerable. The poor people, whose entitlements are reduced most, are worst sufferers. Because of highly reduced entitlements, they cannot prepare themselves adequately to face natural hazards. On the other hand, the well-off are much

better prepared because either their entitlement loss is minimum or they gain from the entitlement loss of the poor or both.

The female members of households of the study locations do not generally have direct entitlements. They have to depend on the entitlements of the male members of their households. This lack of direct entitlements; the observance **purdah** which imposes restrictions on their free movement and free mixing; and the system of division of labor which give them the responsibilities of all household works including those of cooking and taking care of children and livestock, put women in a disadvantageous position vis-a-vis male population to face floods, erosions and hazards. They have to eat less; they have accommodation problem; they have no safe place to respond to their natural calls; they have no protected bathing place; their cooking places are lost during floods; and they have no security of their honor. The disadvantaged position of women has been reported by other researchers (Rasheda, 1996).

Among the population of different age groups children suffer most during floods and erosions. The small children who do not know how to swim are under constant threat of being drowned in the flood water. When the family food entitlement fails totally, as it happened in 1974, children die first. Some parents, it was reported, deserted their children because they could not feed them. Even in the normal flood time, which coincides partially with the seasonal lean period, children have to be under-fed because of the reduction in the family food entitlements. Erosion of homes and crop-lands disrupts the set family life and reduces entitlement of the family which affects children's health and education. In both of our study locations, we have come across a large number of children who had to discontinue their education because their family entitlement was reduced and school facilities were damaged by erosion. We have observed that during the flooded – months, attendance in the schools was less by more than 50% because children could not go to school due to the disruption in the communication systems.

6. COPING STRATEGIES

Crises, triggered by floods and erosions and engendered by reduction and failure of entitlements, in the routine cycle of char life pose complex and difficult challenge for the coping capacities of poor people. The people, however, are not passive actors in the drama of crisis and survival. They adopt every feasible strategy and take all possible measures to face the challenge. The coping strategies and measures adopted by them are not much different from those adopted by people elsewhere in the country as well as outside the country (Hossain et al., 1987; Corbett, 1988; Rasid & Paul, 1989; Winchester, 1992; Beck, 1994; Haque & Zaman, 1994; ISPAN, 1995a, 1995b; Arnold, 1996).

The coping strategies adopted by the study char people may be divided broadly into two categories – a) those that relate to risk reduction; and b) those that help diffuse risks. The risk reducing strategies are adopted at both social/community and household levels while the risk diffusing strategies are taken generally at household levels.

6.1 Risk Reducing Strategies

6.1.1 Adjusting Physical Settlement Pattern

The physical settlement pattern is adjusted to meet the different coping needs of community and households. The pattern is generally linear, dense and continuous. With the exception of a few houses belonging to relatively better off families, most compounds do not have fences around. A linear road, built at a much higher elevation level than the elevation level of the houses of a village, passes by the village. A footpath running through the middle of the village divides the village linearly and on both sides of the foot-path there are houses generally connected to one another. According to villagers this settlement pattern helps face flood and erosion hazards in the following ways: a) helps quick mobilization and rescue of people when floods come; b) in the event of robbery and theft during floods, people can gather together quickly and help each other; c) facilitates regular and frequent interaction between the members of different households fostering and strengthening *Bhaichar* (brotherhood) relationship which is a great social resource to face natural calamities; and d) helps face erosion in two ways: firstly, when flood water with heavy current, starts flowing towards the settlement, people join together and put up barrier quickly with grass, straw and banana plants along the outer line of the settlement to reduce the force of the current to save their settlement (in Shariatpur this is known as *Ora* and in Jamalpur as *Howja*); secondly, continuous and connected line of houses with elevated plinths works like an embankment stopping flood water licking into the settlement.

6.1.2 Raising House-Plinths

Raising house-plinths above flood level has been an age-old coping response which is practiced in the study locations by the rich; the poor, however, cannot afford to raise their plinths high enough to face floods. Cow sheds are raised using straw, water hyacinth and banana stalks. Village roads and the courtyards of schools and mosques are also generally raised above the level of big floods.

6.1.3 Keeping Boats and Banana Rafts

The rich keep boats and the poor make banana rafts to shift family members, livestock and material assets to safer places.

6.1.4 Contacting Mainland Kith and Kin for Shelter

Some people plan quite ahead and shift their family members and livestock to homes of mainland relatives.

6.1.5 Saving

Rich or poor, every household has reported making some savings to tide over crisis. They save food grains, goods and livestock and cash money. Women, especially those of the poor households, play a key role in this act of saving for the bad days. Women save rice in the form of **Mushti (handful of rice)**. Before cooking rice every time, a handful of rice is kept aside from the amount of rice to

be cooked. In fact, village women have their own economy which is generally separate from the household's main economy and is kept hidden from the male adult members. Researchers have reported the existence of the hidden economy of women elsewhere in the country (White, 1992).

6.1.6 Adjusting Cropping Pattern

Adjustment of cropping pattern to flood hazards constitutes an important risk reduction coping strategy in both the study locations. This basically involves the selection of crops and their varieties that suit best the local agro-ecological conditions. The char people also practice inter-cropping both in winter and wet seasons.

6.1.7 Diversifying Employment Sources

Historically and ecologically agriculture in both of the study char areas has been less labor intensive. because of the following reasons: a) as land is sandy and loamy-sandy, land preparation activities are at a very low level requiring minimum labor input; b) as almost all crops are broadcast farmers require virtually no labor service for transplantation; and c) labor requirement for weeding is low because there is less weed growth in sandy soils and during the monsoon, as paddy crops remain under water, there is no scope for weeding. This low labor intensive character of the char agriculture and very inadequate availability of work in local non-formal sector has encouraged char people to look for employment away from agriculture to other sectors and away from their own locality to other parts of the country including both rural and urban areas. Thus, a large number people of Shariatpur, as has been mentioned earlier, have adopted fishing occupation which historically and traditionally was the livelihood source of the members of the low-caste Hindu community. Some people of Shariatpur also work in urban non-formal sector. From Dewanganj, people migrate in large numbers to agriculturally more advance neighboring districts to work as agricultural laborers and to Dhaka and other cities to work as rickshaw pullers and earth-cutting workers. A large group of people of Jamalpur have specialized in earth-cutting work.

6.2 Risk Diffusing Strategies

The poor people of Shariatpur and Jamalpur take a number of risk diffusing strategies at the household level. They range from dis-saving to temporary distress migration when all options to survive in their own localities have been used. The strategies are listed roughly in the sequence of their adoption by the people:

- i) Use of kind and cash saving
- ii) Reduction of consumption
- iii) Sale of own and share-reared poultry birds
- iv) Sale of own and share-reared unproductive bullocks, cows, calves, goats/sheep
- v) Borrowing -both cash and commodity – paddy/rice

- vi) Sale of gold ornaments if any
- vii) Mortgaging out land
- viii) Use of patron and network support
- ix) Distress sale of draft animals
- x) Distress sale of land
- xi) Distress migration

Some studies in Bangladesh reported discrimination against women in the intra family distribution of food and other resources during crisis (Hena, 1992; Kabir, 1992; Hamid, 1995). The present study also has the same findings. Barbara Hariss's research (1995), however, does not find a general pattern of anti-female bias in intra household distribution of food in India, though there are some specific differences based on age, class and region.

When all means of support available in their locality are exhausted, people migrate to urban centers. Such migration takes place only at the time of acute crisis situation like that of 1974 famine.

6.3 Coping with Deaths and Desertions

When the bread earner of a poor family dies or when the bread earner deserts the family, the family falls into crisis. The severity of the crisis depends, among other things, on the size of the family and the strength of the support network of the family. In our study areas both deaths and desertions have been observed. The presence of female headed households in the study areas resulted from either deaths of husbands or desertions by husbands. If the widow or the deserted woman is relatively young and have either no children or only one or maximum of two young children, the widow or the deserted woman generally gets remarried. There are some instances of such marriages in the study villages. However, if the women are not young and they have many children, they have no chance of getting married and so they have to manage the family themselves. After the misfortune befalls on them, the women get some support from their parents. At this stage, the close neighbors and relatives also provide them support which helps them absorb immediate shocks. As the phase of parental support and neighbors' help is over, the women start their struggle for survival and upbringing of the children.

In the first phase of their struggle, the women begin with working in the relatively better-off neighbors houses as maids in exchange of food for self and of some grains of rice. The employer also gives her some home-grown spices like chilly, onion, garlic etc. The women also get some vegetables from the employer and other neighbors. Occasionally, some neighbors and relatives would offer one or two meals to young children out of sympathy. This first phase of living partly working as a maid and partly on charity of neighbors lasts only for some months because, on the one hand, the income from the working as a maid is much below the minimum required, and on the other hand, charity from neighbors and relatives also reduces gradually. The women then start their second phase undertaking the following income generation activities: a) combining maid work with some field work (involving in harvesting of winter crops; b) sewing *kantha*

for others in exchange of money; c) gleaning grains by themselves and by children; d) share-rearing chicken, ducks, goats/sheep and eventually cows/bullocks; and e) engaging children to paid work. This second phase is very crucial and lasts for a number of years until the children grow up as adults and start earning.

In their struggle, some women have succeeded and some have failed. Failing in their struggle, some women have taken to begging, a few have migrated to cities to work as maids and a few others are reported to have become prostitutes operating informally and secretly in their locality.

7. CONCLUSION AND POLICY IMPLICATIONS

In Bangladesh, a large number of people live in Chars, the bank- line areas of rivers and mid-river islands of the country. The present paper is based on a field research in four char villages – two each of Shariatpur and Jamalpur districts of Bangladesh. The objectives of the research were to identify and analyze the causes of char people's vulnerability and determine their coping strategies. The research data have been collected in about nine months of field work following mainly empathic method of anthropological research. The research followed Amartya Sen's entitlement approach to examine the char people's vulnerability issue.

The findings of the study suggest that although some characteristics of physical environment give some distinct identity to char population, the reduction and failure of their entitlements and the consequent vulnerabilities are explained more by institutional conditions than by environmental factors. Disasters occur when natural hazards and institutional conditions interact with vulnerability, and disasters contribute to the failure of entitlements.

Further, it appears that the char society and economy are getting gradually integrated with the regional and national economies. While the integration has opened up more opportunities for employment of char people outside the char economy and reduced dependency of the people on the local patrons for economic support, it has, at same time, made char economy vulnerable to the impacts of mismanagement and instability of the national and regional economies and decreased the local moral economy based supports in times of crisis. The coping strategies of char people, although cannot reverse or eliminate the conditions of their vulnerabilities, are remarkably efficient in keeping them alive and going, albeit at a subsistence level. The positive aspects of the strategies, therefore, are valuable resources which should be duly recognized and strengthened when taking any program for char land development.

In addition, given the highly unstable courses of the river system of Bangladesh, any structural solution involving building embankments or levees around different chars to save them from regular floods and erosions does not seem feasible both technically and financially. The local people strongly agree with this view. They emphasize on supporting them to strengthen their coping strategies. However, durable and strong embankments or levees along the bank

lines of the country's rivers can reduce the incidence and impacts of floods and erosions which will benefit char lands and their inhabitants.

To cope with the vulnerability the people, the study found, adopted both risk reducing and risk diffusing strategies. To strengthen livelihood and coping strategies of char people, the study suggests, among other things, a) building organizations of the poor char people; b) distributing *khas* land among the poor; c) developing char agriculture including introduction of HYV crop cultivation supported by irrigation, HYV seeds, fertilizers and pesticides; d) implementing a massive quick-growing tree plantation program and a kitchen gardening program; e) carrying out a comprehensive credit program; e) providing skill training; f) enhancing health and education programs, g) ensuring safety of livestock and poultry population; h) developing and strengthening communication system to facilitate easy access of char people to mainland economy and society; i) enriching open access grazing facilities; j) ensuring sustainability of open access fisheries resources; k) building community flood centers; l) supporting the poor people's risk reducing coping strategies: and m) ensuring access of char people to a strengthened and enlarged safety net program so that people do not take resort to risk diffusing strategies.

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