Enterprise, Trade and Finance Group
Central Avenue, Chatham Maritime, Kent ME4 4TB, UK
Tel: +44 (0)1634 880088; Email: j.davis@greenwich.ac.uk
WWW: http://www.nri.org

DFID Poverty Oriented Research Programme
R8369 (NRI: C1731)

A survey of rural livelihood and enterprise development opportunities in the Chars, Bangladesh

August 2005

Saidhur Rahman[1] and Junior Davis[2]
Mymensingh University, Dhaka, Bangladesh
Natural Resources Institute, University of Greenwich

Abstract
The first half of this paper provides a brief overview of the agro-economic and natural resource basis of the Chars. The second half of the paper then considers the rural livelihoods of the poor in the Chars areas, and the role of specific sub-sectors and emerging rural economic and enterprise development issues. This is based upon a small survey conducted by the authors and case studies of key informants

Acknowledgements

The authors' gratefully acknowledge the funding support of the UK Department for International Development (DFID) in funding this research. The authors' would particularly like to thank Felicity Proctor (NRI) for her comments on the paper. Any remaining errors and omissions are solely the authors' responsibility.

CONTENTS

Figures

Tables

1 Introduction

The delta of three rivers, the Brahmaputra, Ganges, and Meghna, has created the land of Bangladesh. The combined flow of these three rivers makes this the third greatest river system in the world (ISPAN, 1993). In the dynamics of erosion and accretion in the rivers of Bangladesh, the sandbars emerging as islands within the river channel, or as attached land to the riverbanks, often create new opportunities to establish settlements and pursue agricultural activities on them. Once vegetated, such lands are commonly called chars in Bangladesh. The first half of this paper provides a brief overview of the agro-economic and natural resource basis of the Chars. The second half of the paper then considers the rural livelihoods of the poor in the Chars areas, and the role of specific sub-sectors and emerging rural economic and enterprise development issues. This is based upon a small survey conducted by the authors and case studies of key informants.

2 Description of the Char lands in Bangladesh

2.1 Size of Char land:

In 1993 the estimated total area covered by chars in Bangladesh was 1,722 square kilometres. During the period of 1989 to 1993, char areas increased in all rivers, except in the upper Meghna. The net increase in char area during this period amounted to 36000 ha which is equivalent to about 25% of total char area during 1984.

The inventory of main river charlands estimated their total area at 8,444 km^2 or almost 6% of Bangladesh (FAP 16/19 1993 a). In 1992-93, this comprised 33% unprotected main land and 67% char land. However, only 63% (5345 km^2) was cultivated or vegetated in the dry seasons of 1992-93 based on analysis of satellites images, the remainder being water and sand.

2.2 Char Population:

The social and economic lives of char dwellers, some 4.3 million people according to the Inventory Survey, are in large part determined by the ever-changing nature of the lands upon which they live. This study also demonstrated that charlands were not all alike and the social structures of char people vary somewhat from people in the rest of Bangladesh. Char people therefore need to be understood within their own context (ISPAN, 1995).

In 1992-93 there were some 4.29 million people living in about 3300 mouzas covering 8,400 km^2 in the main river char lands implying about 4.89 million in 2000. Additionally there were probably about 1.5 million people living in coastal chars and there were an unknown number living in or dependent on chars along other rivers, The island chars of the Jamuna and Meghna had relatively high population that in the 1980s increased faster than the over all population rate (Thompson, 2000).

An estimated 5 to 10 million people live on the chars and associated flood-prone areas between 4% and 8% of the Bangladeshi population. The specific area visited by a team was in Kurigram district which has a char-dwelling population of approximately 4,00,000 people (Ashley, et. al., 2000).

2.3 Land Holding:

Lands on chars are used for purposes of settlement as well cultivation. The ISPAN study indicated that of the chars that are not eroded in the first four years of their emergence; over ninety percent are used for either cultivation or settlement by the end of these four years. After seven or eight years, both settlement and agricultural practices are commonly found in these chars.

Reliable data on landholding size is difficult to obtain in the active chars where claims to land may be maintained although it is submerged where occupied land may be technically *khas* land, and where areas used change frequently between water and land and from grassland to crops. Moreover, some studies report operated land while other report total land holding and studies differ in the cut-off points adopted for different land holding categories. The data from different sources indicate a generally much skewed distribution of land in the chars.

According to a Government of Bangladesh National survey conducted in 1996, twenty nine per cent people have no land, 24 per cent have land between 0.01-0.5 ac, 14 per cent have land 0.5-1 acres, 20 percent have land between 1-2.5 acres and 11 per cent have land between 2.5-7.5 acres and only 2 percent have land more than 7.5 acres. In the coastal chars a major difference is apparent between the project settled stable accreted chars of CDSP (CDSP, 1998) and the non-project chars of MES (MES, 1998a). In addition the MES locations were spilt evenly between three with 30% of households having over 1 ha and where under12% had less than 1 ha of land.

Control over and access to the natural assets of the chars, and especially land, is critical to the livelihoods of char people. This access is a function of government laws, policies and rules and of local practice, social norms and social power. Within the charlands the dominant arrangement is private ownership of land. Land tenure in unprotected mainland that has a long unbroken history of ownership and use is not different from other mainland areas, except to the extent that proximity to an eroding bank-line makes it difficult to sell land. Often in the Jamuna, for example, these areas are resettled without involving government authorities and are managed by the local *matbars* (local leader) and *amins* (surveyors) with occasional disputes between equals settled through *salish* (local tribunals), but some benefits in areas gained going to the *matbars* who control surveying, maps and past records (Thompson, 2000).

2.4 Topography and Soil:

Yet the island and attached chars appear to be less productive than adjacent mainland areas. The major reasons for this are the relatively less favourable soil conditions in some of the chars (EGIS, 2000). In some chars there are good prospects for sand mining, which should be properly exploited to benefit from the increasing demand for sand as a construction material.

2.5 Agriculture

Charlands can provide high value crops that can be harvested before the first flood peaks occur and social forestry has also been successful in some of the chars. Most of the households in the Jamalpur char areas surveyed by Abdur Rob et. al., (2005), were dependent

on agricultural activities and family income largely constituted by farm income. Local boro rice is mainly grown in lowland areas, adjacent to water bodies and major crops. In the medium and highland areas sugarcane, millet, wheat, sweet potato, ground nut, chilli, khesheri, legumes, and other crops are grown. During dry periods very little land is irrigated by small irrigation devices. Due to poor communication facilities and a lack of institutional support the expansion of irrigation facilities is very limited (Sattar et. al., 2002).

2.6 Fisheries

The perennial availability of water in the rivers provides year round opportunities for fishing to many of the char communities. It might be expected that the main rivers would be a major source of fish in Bangladesh. Fishing is an important but not dominant economic activity in the char lands. The Government of Bangladesh Department of Fisheries (DOF) estimated that the total catch from the Brahmaputra-Jamuna, Ganges and Padma rivers was about 10,000 ton in 12 months of 1993-1994, this compares with a total official catch for the country as a whole in that year of 1.09 million ton of which 13% came from all rivers and estuaries (DOF, 1999a). The area of rivers is clearly dependent on the definition and season for example FAP 16/19 (1993 a) estimated about 8,400 km^2 for the total areas of the main river charlands, while Ali (1997) estimated about 2,200 km^2 for the mid 1980s out of a them total area of fishing waters of 67,000 km^2.

Unlike most other livelihood assets, access to fish tends to improve in high flood years. Although during the peak flood strong river currents may prevent fishing, fish catches are positively correlated with flood levels (Ali, 1997). Moreover, during the monsoon season institutions governing access to these fisheries tend to be somewhat relaxed and access is more open. In the coastal chars river flooding is unimportant but cyclones have an opposite effect since substantial numbers of fishers may die and fishing boats may be destroyed, so the natural asset may be inaccessible.

Fish conservation rules were difficult to enforce for government, while the open access regime gives no incentive or use rights as a basis for limiting efforts or access (Thompson, 2000). The prospects for fish culture in ponds and cages or pen culture in rivers and canals were examined by Wahra et. al, (1998). The socioeconomic implications of fish culture as a livelihood source for communities living in char areas were also discussed (Wahra et. al, 1998).

2.7 Livestock

Many of the chars have extensive areas of grasslands. These are used for growing grass for the cattle reared by the people in the chars. A notable feature of substantial areas of accreted charland is the extent of grasses in the riverine chars known as *khaisa* or *oreatkin* grass. These grasses are used as grazing/cut and carry fodder, for fuel and one of the main house construction materials in the chars both as thatch and for house walls. A study by Middlesex University found that only 9 (26%) out of 35 mauzas in a cluster of island chars in the Jamuna north of Bhuapur lacked extensive area of khaisa (Sultana, et. al, 1996). The use of grasses is mainly controlled by the owner or claimant of land, but it is also common for some to be controlled by outsiders and for char people to manage an area of grassland as a group. Open access is very rare. In some areas char people act as caretakers of grassland for powerful people, and grasses are harvested for sale through traders for house construction or fodder.

Livestock are a key asset for the char people, they not only offer a means of adding value to the grasses that colonise recently accreted land before cultivation is possible, but they are also a mobile asset in the face of erosion. Nevertheless livestock are also vulnerable to floods, theft and normal disease hazards, and these problems are more significant in char areas than mainland because of the lack of services to counter these threats. Cattle and goats or the main types of livestock in the riverine chars, buffaloes were rare in the riverine char but being more tolerant of saline grazing are preferred in the new coastal chars. In peak floods moving cattle to higher land such as an embankment is a problem for char households, while storage of fodder and shortage of funds necessitates the sale of an important asset.

Livestock ownership may vary considerably between areas and may recover quite fast. It was found that just south of the Kurigram site that 42% of households owned cattle but average ownership was 3.1 numbers of cattle head per households with cattle, 9% share in cattle (CNRS, 1997). However the same study indicated that goats are relatively more important for poorer households, 25% own goats and 22% share in goats (Thompson, 2000).

2.8 Cropping Patterns

In the relatively lower reaches, where land is more fertile, cropping intensity in the char appears to be between 150 and 185, which is quite similar to the average figure of 165 for the whole of Bangladesh (BBS, 1997).

Agricultural potential in the chars depends on soil quality and flood regime (land level and timing of flooding). A quarter and over a half of land was sandy with consistently more sandy land in the Jamuna. In general it was found in the Brahmaputra-Jamuna that 70-80% of unprotected mainland was cultivated but more island and attached char mauzas had only 60% or less land cultivated FAP 16/19 (1993b).

Only cultivated land is considered here in the estimation of cropping intensities. Substantial areas in the charland are single cropped. Cropping intensity in the main river chars is comparable to the national average. Cropping intensity does not differ between island and attached chars for a given land level within a river reach. In the Meghna higher land grows on an average over 2.5 crops in a year while lower land is mainly single cropped. In the Ganges and Padma high medium level land was to be double cropped while lower land averaged almost 1.5 crops a year. However, in the sandier soils of the Ganges and Padma chars a single (“aus”) paddy crop is preferred. Irrigated crops are rare in the char except in some Meghna chars. In the Brahmaputra-Jumna the dominant crop associations were single cropping of Boro, a single millet crop and mixed aus and aman paddy.

3 Livelihood Patterns and Occupation

Each year a large percentage of the chars get flooded. People in many chars have to leave their homesteads due to floods, which entails a host of problems with regard to transportation, shelter, security and rehabilitation. The flooding is also a problem for those involved in livestock rearing since severe difficulties emerge with respect to shelter, transportation and marketing of the livestock. The island chars are found to be flooded more extensively than the attached chars. A total of 4.29 million people were reported to live in the main river charlands in 1992-93, out of these 1.85 million (43%) live on island and attached chars, and 42% live in the Brahmaputra-Jamuna charlands (Thompson, 2000).

Occupations of char people have been recorded in several surveys. In the char land inventory key informants estimated the percentages of households with different main types of occupations in each mouza (FAP 16/19, 1993). The report shows that throughout the chars, around 40-45% of households farm their own or sharecropped land with day labouring the next most important main household occupation, but the dependence on fishing increases as both a main and secondary occupation moving down to the Padma and the Meghna. Only in the Padma was there a substantial difference in occupation structure between island chars and the chars lands as a whole with fishing being more important in the islands. The survey found that the percentage of farmers, self-employed and beggars fell, some fishers were present in 1975 but none were surveyed in 1984, while students, business people and teachers increased (Currey, 1985). The data available from the coastal chars indicates very variable occupation patterns between locations, for example most people in some villages depend on fishing or labouring, others are mainly farmers.

For domestic water supply the only options for riverine char people are either river water or ground water using hand tubewells (HTWS), less than 2% use ponds. Most char households now report using hand tubewells in normal circumstance even on island chars. However in high floods one major problem for char people is obtaining safe drinking water: tubewell often go underwater, and travel from houses to HTWs is difficult. People who have evacuated from their homes also face difficulties in accessing HTWs if they have moved to public lands. In 1988 there was almost a complete reversal in water use with most char people dependent on river/flood water for drinking except in the mainland and attached chars of the Ganges. Even in the 1995, flood season in *Ulipur* about a half of all households drank river water, although larger landowners were able to continue using HTWs (CNRS, 1997).
Multi use of the engine of the pump unit will increase their non-farm income and employment, which leads better livelihood of the char peoples (Sattar et. al., 2002).

A wide variety of livelihood options traditionally existed in the char areas based on people's asset base, local resources, knowledge, technology, capacity of the people and institutional support. On the other hand a wide range of risks and associated vulnerability also exists. People do develop and practice a variety of livelihood and risk management strategies (Alam et. al., 2002).

Char households had diverse livelihood strategies but they mainly depended on agriculture, sharecroppers or wage labourers. Landholding distribution appeared skewed distribution. Cultivable areas per person were higher than average in the island and attached chars but crops were very prone to flood damage, lack of irrigation tended to limit winter cultivation: Grasses were an important resource in newly accreted chars in the Jamuna and Padma. People living on the chars controlled them but some landlords keep caretakers on the chars. Most grass is used as fodder on-site or cut for sale. There are also substantial amounts of grazing lands for cattle in *Bathan* (open charland used for raising cows for milk).

Fishing was an important primary and secondary occupation especially on island chars along the Padma and Meghna. Most of the riverine catch of Bangladesh comes from the lower Meghna and estuarine areas. They adopted their own indigenous knowledge on the Ganges and Brahmaputra.

3.1 Social Activities

Thomson (2000) found that the levels of formal education were low in the chars. They adopted their own indigenous knowledge livelihood strategies that were well adapted to the strongly seasonal and uncertain environment. Social structures were critical. They lived in *samaj*, which may be kin based. They had *matbars* (sumaj leaders) and landlords who managed the settlement. Infrastructure was comparatively poor in the island chars, for example fewer schools, and health care facilities and travel to such places was time consuming and expensive. Health worker visits appeared to be less frequent in the Jamuna. Flood shelters had been built through NGO programmes especially in the Brahmaputra-Jamuna. The Jamuna island and attached chars appeared to have fewer boats relative to population than the Padma and Meghna (Thompson, 2000).

In addition to the major physical risk associated with the river, char dwellers in particular were marginalised from the benefits of mainland Bangladeshi society through their poor communication networks. The livelihoods analysis based on findings in Kurigram district painted a bleak picture of the life of poor households in the chars and suggests that the combination of physical and social characteristics make the chars one of the poorest parts of Bangladesh, with the people being amongst the most vulnerable. Some of the major issues facing the poor in the chars were as follows: a) Inability to resist physical hazards; b) poor access to essential services; c) inadequate saving and credit options; d) poor access to income enhancing opportunities and services; e) greater vulnerability of women and children; f) the importance of local informal organizations and institutions; g) adequate cooperation, quality and coverage by NGOs (Ashley et. al., 2000).

All these vulnerabilities interact in a process that deprives the char people of a decent and secure life. To improve the opportunities for income generation must be seen as one of the central tasks if the general pattern of vulnerabilities was to be altered. The purpose of the CDP should be to turn this vulnerability and others into capabilities at the same time as strengthening the already existing positive factors (Sorensen et. al., 1994).

Part of the char livelihood strategy is a greater use of social networks in the face of vulnerability than may be evident in mainland areas. Elahi et al (1990) note that joint and extended families were quite common in the char (29% of households) (FAP 14, 1992). This was also true in other environments but in the chars it forms part of the better off households strategy for controlling more land (Elahi et al 1990; FAP 16 1995a). Where there are two or more married brothers in the household it may be associated with occupational diversification.

Relatives by marriage offer one potential lifeline, for example char women may use their family ties to find shelter as *uthuli* on their relatives land and home is eroded (FAP, 16 1995c). Lineage or *gushti* tends to determine the groups of households that associate with one another and where possible move together when erosion occurs or if floods force them to seek temporary shelter.

A number of studies and reports on the riverine chars highlight the role of *samaj* as an institution in the lives of char people. With the absence or low importance of more formal institutions and the vulnerability and mobility of people in response to erosion and accretion, these local societies appear to be more important than in mainland villages. There may be

from one to 40 (the record number found by FAP, 16/19 1995a) *samaj* within a settlement or mauza. Both Ashley et al. (2000) and FAP 16/19 (1995a) noted that there was most often one leader (matbar) and that they were religiously homogeneous and identified in Muslim society, through joining together for Friday prayers and sharing Kurbani meat at Eid-ul-Azha. They may reach their position by being able to maintain harmony within the *samaj* while being little different economically from other members.

Services provided through the *samaj* and its matbar(s) include settling of disputes among members, decision making on relocation during erosion and accretion events. Along with kinship it determines which households help one another when homesteads are eroded (Thompson, 2000).

Charlands have a reputation for being beyond the law and places where conflict and violence are endemic. For example, Zaman (1989) maintains that "violence is the name of the game in char life." These problems have been highlighted, especially in chars in the coastal region, Meghna, and lower Jamuna (Baqee 1998; Adnan 1976; Elahi et al. 1991). An additional factor may be that further downstream there tends to be a higher percentage of accreted land located where there was no previous land owned by individuals in the past and therefore there is less likelihood of a claim from a past owner (Thompson, 2000).

3.2 Gender Issues

The most important organizational unit of people is the household, and so most of the assets and vulnerabilities considered in this report affect men and women, children and elderly within a household. Nevertheless, assets are individually owned and women tend to have very few assets in their name. It is noted that additionally some women are involved in marketing, cutting and processing grasses and catching fish using traps in flooded charland (FAP 16, 1995a).

During and after floods women face a considerable burden in keeping the household functioning, for example maintaining or dismantling the house as appropriate, cooking, and finding drinking water. While women have limited personal assets they help in their household recovery strategy by finding outside work and selling or mortgaging assets including jewellery after floods. The other from of seasonal migration is when men leave to find work elsewhere, this leaves women in a particularly vulnerable situation since they may have no regular source of income at this time, which appears to be correlated with flood and post-flood situations when char people may be displaced to a shelter with relatives or on embankments and/or when there is a lack of work (Thompson, 2000).

The overall gender issue in the chars needs to be tackled if any real development is to be achieved, where dowry, polygamy, child marriages, illegal divorce and female oppression were still prevalent. Sorensen's (1994) paper also addressed the char transport connections and some micro-enterprise issues that could be explored further in the design phase (Sorensen et. al., 1994).

3.3 Technology Diffusion

ITDG (1999) collected and reviewed basic information on the Monsurabad char of Faridpur Sadar thana under Faridpur district. They surveyed 350 households, which comprise 2100

persons. Their literacy rate was 15%, only eight percent of household used sanitary latrine. There were only one market and 2 mosques and 3 NGOs in villages. They illustrated livelihood options of poor men, medium men, poor women and medium women. They also identified farming and non-farming options (crops cultivation) trends, causes and problems. ITDG supported to prepare vermi-compost, pit cultivation, maize production, vegetable production, selective plantation, grafting of fruit plants, IPM, poultry rearing with locally available feed, duck raising, native chicken rearing, goat rearing, pigeon rearing, koom (deep water body like big pond) fisheries. Cage aqua-culture, small scale irrigation, promotion of local extension agent, linkage with government and private service providers, organizing producers group, farmers school, CBO, local problem analysis and planning. Finally, ITDG made some recommendations for improving the current livelihood of the char people (Ali, et. al., 2004).

3.4 Public Services

Service provisions are generally poor in the chars, compared to the main land. It is understood that the provision of public services in chars is difficult and expensive.
There are few specific policies or instruments for these areas. Land laws related to the submergence and reappearance of land in theory help poor people by allocating land to them or by protecting their interest in land when it re-emerges. In practice the government plays a limited part in this process and one way or other those with power and influence can control and influence the process to the benefit of themselves and their followers. Terrestrial common resources are minimal (Thompson, 2000).

The study also found that the root causes of poverty in Kurigram district related to the physical environment of the chars, the lack of income earning and accumulation opportunities, the low status of women and the vulnerability of children. These were closely linked to weak local level service provision by government and NGOs which were themselves linked to the national level rules of the game by which expenditures and programmes were planned and which were influenced by donor support (Ashley et. al., 2000).

The DFID chars rural livelihood programme is looking mainly at local governance issues. It found that UPs distributed (as a government resource distributor) Vulnerable Group Development (VGD) cards and the Food-For-Work (FFW) and Food-For-Education schemes, but these were often misallocated. The relationship between local government (LG) and central government (CG) was still one of patron-client. It secured political popularity at the grassroots level. To further reduce dependency on CG, LG resources and income must be raised and a sense of autonomy over the control and generation of resources must be achieved (Sorensen et. al., 1994).

School pupil enrolment and attendance levels are on average lower in the charlands than in the country as a whole due to lower school numbers, poverty and problems of mobility in both monsoon and dry seasons. The CNRS (1997) Ulipur (Kurigram) found only two schools in its study area. The study also found only 12% of landless households had one or more men with some formal education and in only 5% of these households did any women have education. Where as 69% of medium-large farms households had at least one educated man and 4% of those households had at least one educated woman (Thompson, 2000).

Casual information on ill health is of limited use unless it can be compared with similar national data. Thompson (2000) highlights the limited coverage of health services and the problem of transportation in floods and associated health problems. Critical indicators are death rates, health and the nutrition of children. The charland inventory (FAP 16/19, 1993 a) asked key informants the numbers of deaths in each mouza related to hazards (Thompson, 2000).

Health facilities within the island char areas are generally scarce, compared with quite a good coverage in the unprotected mainland. This is logical to the extent that thana and union health centres are buildings that cannot be moved and so the investment is risky in island chars that frequently erode and accrete. The infrastructure in the unprotected mainland also has a high risk or eroding in the near future, but is likely to have been built when the river was further away. The charland inventory also asked about visits to mauzas by health workers, and in general there appeared to be a good coverage of all mauzas to the extent that sometime in a period of 6-8 months some 50-80% of mauzas had been visited at least once (FAP 16/19, 1993b&e).

Where schools exist in the charlands, they do not differ greatly from the national provision, although there are notably fewer primary schools on island chars and the Brahmaputra-Jamuna appears to the better provisioned than the other rivers. However, infrastructure in itself is not the answer to meeting educational needs, this depends on the regular presence of teachers providing a service of acceptable quality and on the level of enrolment of children.

3.5 Floods and Erosion

The chars are extremely vulnerable to both erosion and flood hazards. Recent analysis of time series satellite images indicated that over 99% of the area within the riverbanks of the Jamuna River had been char at one time or another during the 27 years period of 1973 to 2000 (EGIS, 2000). The same analysis showed that about 75% of the chars persisted between 1 and 9 years, while only about 10% lasted for 18 years or more (EGIS, 2000).

The effects of riverbank erosion and widening of the river channel on the people living in chars have been significant. An ISPAN (YEAR) study reported that during 1981-1993 a total of 7,28,439 people were displaced by riverbank erosion. The annual member of displaced persons works out to be 63722. More than half the displacement was along the Jamuna.

Food insecurity was high throughout the riverine chars and was higher than in the coastal chars. Most people living on island chars must move home at least once every 6 - 7 years when the braided river channels changed that configuration. Additionally up to 20% of all riverine charland people were displaced by bank erosion during an approximately 11-year period to 1993 (64000 per year). During this period about 10% or about 660,000 were estimated to have permanently left the char land, many destined for the slums of urban areas. In the exceptional 1988 floods virtually all char land, crops and houses were flooded with a third of houses destroyed (Thompson, 2000).

The chars are the most flood prone environments in Bangladesh and this has shaped the nature of available natural and physical assets. In extreme events by definitions the entire riverine charlands are inundated. In a peak flood virtually all land in the charlands is underwater, but depressions of flooding were longer downstream in 1988 in the Padma and

Meghna. However, in common with cropland, most houses in the charlands were flooded in 1988 and over a third was reported destroyed.

Flood impacts include damage to most household physical assets in the chars with average financial losses to homesteads of around Tk. 6,000 in the Jamuna (FAP 16/19 1994), the main components were damage to houses, loss of livestock and loss of trees. More than physical damages, floods affect the lives of char people in similar ways to people in other highly flood prone environments (Thompson, 2000).

The key social aspects of settlement in the chars concern the dynamics of occupation of accreted lands and relocation when homes and lands are eroded. Sometimes landlords (*jotdars*) gain control of a large accreted char and then recruit tenants (sharecroppers) to cultivate it and may advertise to recruit people. Baqee (1998) has reviewed in detail the situation where settlement of Padma chars is controlled by one or more than one power pole and the resulting conflicts when leaders compete for a char.

When both homestead and land are eroded/ submerged year round within the island and attached chars, the affected char people may move as a village (retaining the same village name) or *samaj* (society) to a new location. One social arrangement that may or may not be linked with this type of community relocation is to make a homestead on someone else's land (*uthuli*) without paying rent (Thompson, 2000).

A high proportion of housing in the chars is thatched, especially in island chars. Char houses are mainly small and built from locally available grasses, these must be replaced regularly but are adapted to floods and erosion since they can be dismantled and moved. However, floods in the range of 0.5-1m above plinth level tend to result in the total loss of *kutcha* house walls. Loss of walls may permit floods to flow through a house but such houses do not offer safe refuge in a very high flood.

Shelter, as a basic capital asset is a critical issue for char people during floods. As flood levels rise more people are forced to leave their homes. It was found that in-house flood depths of about 0.75-1 m a half or more of char households evacuated home (FAP 16/19, 1994). Most people move to relatives' house or to embankments these places may be in the same mauza or much further away.

Much of the main river charlands are bounded by flood protection embankments or by roads. In general there are few roads in the char areas since they would be washed away during floods, although unprotected mainland has local earth roads and sometimes surfaced roads. In a few island chars Union Parishads have used food-for-work to make local earth roads, this has been a benefit in terms of a place to shelter during floods rather than as a means of communication (Thompson, 2000).

3.6 Infrastructure

Alam's (2002) report for the DFID chars livelihood programme presented the baseline information for the chars livelihood project. The baseline study included information about union and upazila, mapping activities, secondary stakeholders profile on major projects in the district and also located address of NGOs working in Jamalpur, Sirajgonj, Bogra and Kurigram and Gaibandha.

The most important mode of transport in the chars is by boat-in the monsoon. Most areas are accessible by boat, while the dry season produces a changed landscape of new chars each year that may need to be crossed on foot. Moreover boats are essential in floods or in some cases of erosion when households must move whatever they can salvage to higher ground. Engine boats, powered by the same diesel engines as are used for irrigation, have brought important changes in char life in the last two decades. There are relatively high numbers of engine boats in the island chars, and these are used both as regular ferry services, for example on market days, and hired for moving bulk items, for example cattle and grasses. They can also be hired to move homestead materials, but a common complaint is that the cost of hire goes up in flood times when people have no alternative if they are to save their house materials and livestock.

Markets serve as important trading places for char people to sell their produce (crops and livestock) and buy necessities that they cannot produce, as transport hubs, and as meeting places. Considering the charlands as a whole about one in five inhabited mauzas has a market (hat)-in addition to market days that may be weekly or more frequent, there are often a few permanent stores. Such markets are concentrated on unprotected mainland where they form a link between the island chars and mainland, but are consequently prone to erosion. Although relatively few major markets were reported in FAP 16/19, (1993e), those in urban areas adjacent to the chars were excluded from that study.

The markets on unprotected mainland tend to be more important for char people, while some secondary markets have developed in the island chars and reduce the transport problems of char people when bulky goods need to be moved. Travel to and from market is easier in the monsoon when boats can navigate almost door to market, whereas in the dry season long walks across exposed sandbanks are often necessary. There is little other infrastructure or services in most chars. Electricity is virtually unknown on island chars and has only reached the mainland fringe of the charlands, although 30% of inhabited mauzas along the Ganges have electricity these are all mainland areas. The pattern is similar in the Padma and Meghna where only 14% of inhabited mauzas have electricity (FAP 16/19, 1993c&d).

For most char people local money-lending arrangements are the main source of credit. For example, CNRS (1997) reported that in Ulipur (Kurigram) in addition to sales of assets by a substantial number of flood affected households in 1988 and 1995, 87% of money obtained to meet their immediate crisis needs came from moneylenders, with only 4-6% from institutional sources (banks) and even less from NGOs. Banks are absent from the chars themselves and are distant and intimidating for most char dwellers, but NGOs have been increasing their activities in chars in recent years.

With the lack of financial institutions, char people have limited opportunities to save money. Virtually the only opportunities are with NGOs, but this is tied to group activities that may be disrupted when chars are flooded or eroded and groups are forced to split up. The alternatives are to hold cash or livestock but there is always a risk of theft in the chars. In any case most households do not achieve a regular surplus over immediate survival needs (Thompson, 2000).

3.7 Forest

In the riverine chars there are few trees compared with mainland areas. New settlers usually plant banana trees when they make their homesteads and if the land appears stable then plant

other saplings. Unprotected main land also has homestead trees like any other rural areas. The other exception is in the Ganges chars in Rajshahi District where the Forest Department had by 1995 planted trees on some 520 ha of chars and has also experimented with agro-forestry through "shelter belts". The Ganges char is one of the main potential areas for afforestation (DOF, 1996). In this region since they are relatively stable and had the potential to benefit people being settled there on *khas* land through social forestry. However, the implications for planting more char areas with trees on monsoon and high flood are not known.

4 Emerging Issues and Challenges

4.1 Rural Labour markets

Char is a very remote area. There are very limited and seasonal work opportunities due to floods. Therefore, a question arises as to how many of the char people are actually unemployed? Is there any scope to encourage out-migration? Are people going to the nearest upazila or town for work in the lean period or year round ? Are there any differences in wages for men and women and between seasons? Are skilled and educated labourers going abroad for work? How do they send remittances? How are they using remittances- house building, buying new land, purchasing agricultural inputs or paying for better education for their children? What are the possible scopes to create more employment opportunities in the char?

People living in distant char land endure very insecure livelihoods because river erosion causes great vulnerability in terms of loss of cultivated land, homestead and assets, and disrupts roads and communication and marketing of agricultural products. But in attached char, they are more or less stable. The main problems are the lack of adequate support from the local government regarding roads and telecommunications, electricity, health facilities, employment opportunities, and the availability of educational institutions etc. (Davis and Rylance, 2005).

Methodology:

To examine the existing labour market in the attached char area, survey and extensive case study was conducted. Thirty samples were selected randomly from wage labour households to conduct interviews. Char Nandina of Sharishabari upazila under Jamalpur district was chosen purposively for the study. Char Nandina is 6 km away from Sharishabari upazila headquarters and 35 km from Jamalpur district town. A structured questionnaire was used to collect data. The raw data were entered into Excel and SPSS for analyses and interpretation.

Results and discussions:
Average age of the respondents was 39.53 years and most of them (57%) were illiterate, 23% had primary education, 17% had secondary education and only 3% had higher education. Sixty percent of the respondents reported that agriculture was their main occupation, 37% were labourers and only 3% were students. They were also involved in subsidiary occupation. Sixty percent had no subsidiary occupation, 4% of them had agriculture, 20% petty business, 6% had horse cart and wage labour as their occupation, 10% had rickshaw pulling. The average family size of the respondents was 5.5. Most of the family members of the respondent were illiterate (37%), 28% were able to sign only and 35% had primary and above education. Table 1 Socioeconomic profile, employment situation, problems and scope of providing facilities in the study area.

Table 1 Socio-economic profile: survey baseline data, 2005

Sl. No.	Items		Respective measuring unit
1.	Age of the respondents		40 years
2.	Literacy level of the respondents: Illiterate: Primary education Secondary education Higher education		 57% 23% 17% 3%
3.	Literacy level of the respondents' family members: Illiterate: Sign only Primary education		 37% 28% 35%
4.	Main occupation: Agriculture Wage labour Students subsidiary occupation: No subsidiary occupation Agriculture Petty business Horse cart and wage Labour Rickshaw pulling		 60% 37% 3% 60% 4% 20% 6% 10%
5.	Average family size		5.5
6.	Work involvement: Busy months for wage labour Slack months for wage labour		 January, March, May, June, September and October July, August February, April, November and December.
7.	Labour migration: Out-migration In-migration	<u>To/From</u> Jamalpur, Mymensingh, Comilla, Dhaka and Sylhet Rangpur, Dinajpur, Kurigram and from parts of Jamalpur	Activity and Payment Selling labour and pulling rickshaw/van. They get 50% higher wage than in their local areas. Selling labour during boro and rabi harvest. They get 50% higher wage than in their local areas.
8.	Beneficiaries from migration		Illiterate labourer took that opportunity but not the literate and relatively less poor.
9.	Sufferers of unemployment		A relatively educated and very poor worker because first group hesitates to do such types of work and second group does not know the information.
10.	Main problems of the study area		Electricity and road connection
11.	People's desire		Electricity, road connection, credit facilities from formal institutions, new establishment of local factories

Source: Field survey, 2005

Thirty six percent of the respondents were male and 27% were female wage labourers among the working members of those households. The labourers had busy time in boro and rabi

seasons. These seasons covered the period from January to June (January for planting, March for weeding boro paddy and May-June for harvesting boro paddy). The months of September and October experience scarcity of for land preparation, broadcasting and weeding chili and mustard. On the other hand July-August were the slackest months. They had no works in February, April, November and December. In slack period people had no works to do. People went out Jamalpur, Mymensingh, Dhaka and Sylhet for selling labour and pulling rickshaw/van. In boro season, labourers went to Comilla and Dhaka for harvesting boro paddy because they got very high wage i.e. Tk. 120 to 150/day with three meals (Table 1 and chart 1). In that period the local wage rates were Tk. 80 to Tk. 100 with three meals per day. In rabi season, the average wage was Tk. 70 to Tk. 90 with meals per day. Labour contract without meal is rare in the study area. The major cropping patterns of the study area were shown in Table 2. Wage labourers were involved in work relating to the cropping patterns. The demand of labour was also related to the cropping patterns of that area.

Table 2 Major cropping patterns in the study area

Sl. No.	*Patterns*	*Rank*
1.	T. Aman – Boro – Fallow	i
2.	Sesame – Boro - Fallow	ii
3.	Jute – Fallow - Chilli	iii
4.	Boro – Jute - Fallow	iv
5.	Mustard – Boro - Fallow	v
6.	Boro – Fallow - Chilli	vi
7.	Maize – Jute Fallow	vii
8.	Chilli – Sesame/Oat - Fallow	viii

Source: Field survey, 2005

Figure 1 Busy and slack periods of the wage labourers

Sl. no.	*Work involvement*	*Period*											
		J	F	M	A	M	J	J	A	S	O	N	D
1.	Busy months for wage labour												
2.	Slack months for wage labour												

Source: Field survey, 2005.

The respondents also reported that there was some labour in-migration and out-migration in the study area. In September to November some labourers came from Rangpur, Dinajpur, Kurigram and from other parts of Jamalpur district because during that period their local wages were too low (Tk. 35-40 per day) but they got Tk. 70-80 with meals per day in the study area. Some labourers also went to other districts like Sylhet, Comilla and Dhaka for selling their labour because at that period the wage rate was 20-50% higher than in the local area. The problem was that only the illiterate labourer took that opportunity but not the literate and relatively less poor but unemployed labourers. In that time they return home personally money and some times they sent money through some one who carried money from many labourers at a time. Sending money was not at all a big problem because they knew each other. Actually, they did not have any prior contractual arrangements to come to this or that place but in case of emergency need they are called over mobile phone to come and work.

Table 3 Average household Income of a wage labourer in the study area

Sl. no.	*Income sources*	*Working days (No.)*	*Cashh wage with three meals (Tk/man-day)*	*Amount (Tk)*
1	Labour selling during: Busy period (50%) Less busy period (30%)	 135 60	 100 80	18300 (81) 13500 4800
2	Crops	-	-	2000
3	Livestock	-	-	1200
4	Poultry	-	-	450
5	Vegetables	-	-	550
6	Sub-total	-	-	4200 (19)
7	Total	-	-	22500 (100)

Note: Figures within the parentheses indicate percentage of total income.
Source: Field survey, 2005

The average income of the wage labourer household was Tk. 22500 per annum. Eighty percent of income came from labour selling and 19% came from crops, livestock, poultry and vegetables selling (Table 3).

The respondents reported that they needed electricity (87%) and road connection (100%) with upazila and district levels. They felt the need for factories (68%) so that local people could engage themselves in works during slack period. They also suffered from lack of capital because there were no formal credit institutions functioning in the study area. That is why, they were bound to go to informal credit institutions for loan with very high interest rate in crop growing period.

Employment Case Study of Char Area

Mr. Md. Hobibur Rahman S/o Late Akbar Ali Sarker had 2 brothers Late Samsul Hoque and Md. Aftaf Hossain. Hobibur Rahman is 67 years old and he has a BA degree. He was elected Union Parishad Chairman for 3 times, first two consecutive periods during 1976 to 1986 and was elected chairman for the third time during 1996 to 2001. The name of the Union is No. 1 Satpowa Union Parishad. In 1976, there were 46 thousand voters and it was the biggest union of Jamalpour district. He reports that most of the people of this union are landless. They had nothing to do during the rainy season. This is an attached char but roads and communication systems have not been good. During his chairmanship he tried to establish roads and bridges in his areas, but he was not able to finish all of them. Still, it is not completed due to feuds between the local political parties.

He tried his best to establish school in his union so that char people have the scope to educate their children and he personally requested the village guardians to send their children to school. But many of them did not listen to him. In some cases people took it otherwise and they acted against him. Now people who followed his advice are getting the facilities of education. He thinks unemployment situation is a big problem in that area. Because in the rainy season lower class people had nothing to do, while they went out to Jamalpur, Mymensingh, Bogra and Dhaka. Labour went to Dhaka, Comilla and Sylhet to harvest paddy as they got higher wage than in this area. But the educated young labour forces are still unemployed. There is no good road connection, no electricity or small-scale industry in this area. He thinks since they live in char area and it is far from the district town, the government is reluctant to develop the communication systems. Government should start development programme from root level i.e. village level, people think. Then total development would be possible. Otherwise, poverty will not be removed from the society and it will be permanently poor livelihoods. People must have work opportunities so that local economic activities will run fast so as to boost up the urban economy as well as national economy. He also thinks that political commitment is needed for the development of the area.

4.2 Value Chain of Products

The farmers of the char are producing traditional crops and non-traditional products like poultry, milk and handicrafts. In case of poultry production, questions are whether they are getting quality day-old chicks and from where? Is there any scope to get feed from the nearest market? Is there any market network to sell their poultry products in nearby towns? Farmers are producing milk in the char because they have vast natural grazing land (*bathan)*. Can they sell their milk in the market and get reasonable prices? Are they getting storage and chilling facilities? Is the local government taking necessary steps to solve milk producers' problems? Why don't the farmers raise their homestead compounds to retain their animals in peak flood periods? The chars women took training on handicrafts through ITDG (REF?). Are they getting opportunities to sell their products in district markets or towns or even in international markets? Should they spend more time for making handicraft items instead of giving time to their agricultural/household activities? Should they make investment on this type of activities which has still uncertain future markets?

People in the chars are very vulnerable to unemployment, as they do not have particular work because it depends on environment and surroundings. In char, there is a *bathan* where grasses grow abundantly. People took an opportunity to feed cows and buffaloes in the *bathan*. Some of people in the char think that cows and buffaloes rearing can be an occupation since they have very little land to cultivate crops and have no capital access to do small business/trading. In the rainy season they transfer their livestock to their own house due to severe flood and rainfall. Hindu people who are living in a particular village take this occupation for main source of income. They sell milk to Milk Vita and local market as well. Question arises as to why they have specially taken it as main activity? How they make it profitable? How they sell milk and milk products to milk vita and others? How they collect feed, grass, *bathan* etc.? Getting answers to the above questions an initiative was taken to understand the economics of the market.

Methodology:
To understand the economics of rearing cows and buffaloes and milk production a visit was made as reconnaissance to Ghospara of Mothergonj upazila under Jamalpur district. A questionnaire was prepared to get information about respondent identity, family information, cows and buffaloes inventory, feeding sources and expenses, available veterinary services, insemination application, labour use patterns, milk production and marketing and problems regarding these activities. A draft questionnaire was prepared and pre-tested accordingly. After pre-testing a draft questionnaire, it was finalized for collecting data. Thirty samples were taken randomly from two Ghosparas of Mothergonj upazila. Collected data were then scrutinized and entered into SPSS for making necessary analyses.

Results and discussions:
The average age of the respondents was 31 years. Most of them (50%) had primary education, 16% had secondary education, only 4% had higher education and 30% were illiterate. Average family size was 5.5. About 65% were involved in cow and buffalo rearing, 10% were involved in agriculture and 25% had other jobs such as teaching, trading middlemen, milk vita manager and petty business.

Each household had in an average 0.55 bull, 2.95 indigenous cows, 1.70 cross breed cow, 0.60 indigenous heifer, 0.05 cross breed heifer, 2.32 calf and 4.35 buffalo. Unit price of bull, indigenous cow, cross breed cow, indigenous heifer, cross breed heifer, calf and buffalo were Tk. 11000, 12864, 26412, 8333, 15000, 4300 and 17035 respectively.

Table 4. Socioeconomic profile, occupation and livestock resources of the study area

Sl. No.	*Items*	*Respective measuring unit*
1.	Age of the respondents	31 years
2.	Literacy level of the respondents: Illiterate: Primary education Secondary education Higher education	 30% 50% 16% 4%
3.	Main occupation: Cow rearing Agriculture Other job (Teacher, Middleman, Manager, Petty business)	 65% 10% 25%
4.	Average family size	5.5
5.	Livestock resources (Number) per farm: Bull Indigenous cow Cross breed cow Indigenous heifer Cross breed heifer Calf Buffalo	 0.55 2.95 1.70 0.60 0.05 2.32 4.35
6.	Price of livestock (Taka): Bull Indigenous cow Cross breed cow Indigenous heifer Cross breed heifer Calf Buffalo	 11000.00 12864.00 26412.00 8333.00 15000.00 4300.00 17035.00

Source: Field survey, 2005.

Cost of Straw and grass per farm, were Tk. 116.70 and Tk. 43.75 respectively. It needed 3.36 kg of rice bran, 6.93 kg of husk, 2.35 kg of oil cake and 1.10 kg of salt per farm and costs were Tk. 33.59, Tk. 90.09, Tk. 32.50 and Tk. 9.85, respectively for the above mentioned feeds. They have bought feeds from nearest Balijhuri bazar of Mothergonj. The average cost per day was Tk. 326.48 per farm. They have faced serious problems of cow and buffalo diseases such as parasitic infestation, pneumonia, haemorrhagic septicemia (tarka), black quarter, coughing, etc. They took treatment from veterinary hospital of Mothergonj upazila and from milk vita's veterinary doctors. Average treatment cost was found to be Tk. 3566 per farm per annum. Generally, they used own or neighbours' bull for insemination, therefore, incurring no cost of insemination. Cross breed cows were brought to Balijhuri veterinary hospital for artificial insemination and was charged Tk. 50 per cow (Table 4).

Table 5 Costs, returns and lactation period of rearing livestock per farm per day of the study area.

Sl. No.	*Item*		*Quantity (kg)*	*Amount (Tk.)*
1.	Variable cost (material): Straw Green grass Rice bran Husk Oil cake Salt		 - - 3.36 6.93 2.35 1.10	 116.70 43.75 33.39 90.09 32.50 9.85
2.	Average Material cost		-	326.48
3.	Other variable cost: Treatment Artificial insemination		 - -	 9.77 0.64
4.	Lactation period: Indigenous cow Cross breed cow Buffalo		 - -	 10.93 months 7.55 ” 7.70 ”
5.	Milk production	No. of milking cow	Amount in liter/farm/day	Gross return/farm/day (Tk.)
	Milking Indigenous cow Milking cross breed cow Buffalo Average milk production 	2.00 1.05 2.10 -	6.09 7.15 6.98 20.22	134.47 157.87 154.12 446.46
6.	Average net return over variable cost	-	-	119.98

Source: Field survey, 2005.

The lactation period of indigenous cows was relatively longer than that of cross breed cow. Average lactation period for indigenous cow and cross breed cow was 10 months and 6 months, respectively. The average lactation period was 7.55 months for considering together both types of cow. Average lactation period of buffalo was 7.7 months. Average number of milking indigenous cow, cross-breed cow and buffalo was 2.00, 1.05 and 2.10 per farm, respectively. They gave 6.09, 7.15 and 6.98 liters of milk per day respectively. The average milk production was 20.22 liters per farm and 3.93 liters per day per cow. The average price of milk was Tk. 22.08 per liter and the average gross return and net return over variable cost per day were Tk. 446.46 and Tk. 119.98 per farm (Table 2).

Households sold milk to the “milk vita” association’s manager on their own responsibility. They were forced to sell their milk to milk vita agent as they were members of the association. They received money for selling milk after 7 to 10 days interval. No storage facility was available in the study area. Although BRAC established a chilling centre, it could not continue because of milk shortage and interference from some local leaders. The local petty traders purchased milk from local households and produced sweetmeat, curds, ghee etc. In the study area estimated average milk production was 1378.50 litres per day (Table 5).

The persons, who were in the sweet meat making profession, have faced some problems. They reported high price of feed as their main problem and ranked it first. Other problems were lack of storage facilities, shortage of feed, space shortage, unavailable veterinary services, lack of grazing land, high treatment cost, lack of training facilities, etc (Table 6).

Table 6 Identification and ranking of problems related to milk production and marketing in the study area.

Sl. No.	*Problems*	*Rank*
i.	High price of feed	1
ii.	Lack of storage facilities of milk in the local area	2
iii.	Unavailability of feed	3
iv.	Shortage of homestead area for keep milking animal	4
v.	Lack of veterinary services	5
vi.	Lack of grazing field/*bathan*	5
vii.	High treatment cost	6
viii.	Lack of training facilities	6
ix.	Animal diseases	6
x.	Lack of security in *bathan*	7
xi.	Unavailability of credit facilities	7

Source: Field survey, 2005

Summary:

The people who were living this attached char took up cow rearing as their main occupation. They took up this profession as they had enough fallow grazing land in char (*bathan*) but day by day it decreased in terms of area. They are still in this profession because they inherited it from their forefathers. Now they are facing serious problems of high price of feed, medicine, lack of storage facilities of milk, marketing of milk, etc. They seek government support for low cost feed and animal treatment, establishment of chilling centre, training and credit facilities, etc.

A Case of Milk Vita Association

There are about 60 farms in the study area and estimated milk production was about 1000 to 1500 litres/per day. Per farm milk production was 10 to 40 litres.

Two Milk Vita associations were working in the area: i. Balijhuri Primary Milk Production Association and ii. Balijhuri Southpara Primary Milk Production Association. Membership of the association was under the condition that each member had to sell his milk through the association. There are several facilities offered by the association. They are as follows:

- Doctor's check up
- Medicine facilities
- Interest free credit facilities
- Regular feed supply
- Benefit of annual bonus system. Every member gets Tk 1.10/per litre for supplying milk to the association.
- Association will pay Tk 1.25/liter for transportation cost.
- Association provides milk cane to carry milk from rural areas to chilling centres
- ½ litre of unit is used for measuring milk.
- Milk supply is recorded on daily basis.
- Payment made two times within a week
- Same price is offered round the year depending on fat percentage of milk and it varies from Tk 12.29 to Tk 25.87 per litre. Average price prevailed Tk 20-22 per litre. Association gives daily receipt for milk and they made payment every fifth day.

4.3 Rural Financial markets

The scarcity of running capital was reported to be a big problem in the char. They borrowed capital from moneylenders, banks and NGOs. Banks and NGOs are not offering enough credit facilities due to poor communication systems. For this reason money lender and local samitees are coming to lend credit to the farmers or businessmen. Question arises, are they sufficient to meet credit need? Are the interest rates higher than usual? How strong or weak are the institutional lending systems?

Living in Char areas are very much unstable because river erosion makes lives vulnerable regarding cultivated land, staying homes, resource mobilization, transport and communication, marketing of agricultural products, etc. People of char areas could make themselves solvent producing crops when new char emerged. If river erosion continue towards their char, they would face serious shortage of capital to survive or even to cultivate crops; they need capital to buy seed, fertilizer, power tiller, etc. There are non-institutional and institutional sources of credit found in char areas. Non-institutional sources are prominent but it charges higher rate of interest. On the contrary, institutional source is insufficient in char areas. Keeping in mind the existing circumstances, the study was undertaken to examine the char financial markets and to find out the ways so that char people can benefit from the char based policy of the government for reducing poverty.

Methodology:
To examine the existing financial market in char area, survey and case study methods were used. Fifty samples were taken randomly from an isolated char for data collection. Char Nadagari of Mothergonj upazila under Jamalpur district was chosen purposively for this study. Char Nadagari is 5 km away from Mothergonj upazila sadar and 30 km away from Jamalpur district town. A structured questionnaire was used to collect data. The raw data were entered into SPSS for analyses and interpretation.

Results and discussions:
Average age of the respondent was 41 years and most of them (66%) were illiterate, 10% had primary education and only 24% had secondary education. Fifty percent of the respondent reported that agriculture was their main occupation and only 10% of them were involved in petty business, rickshaw pulling, day labouring etc. They were also involved in subsidiary occupation. Ten percent of them had *vangari* business, 14% were involved in horse cart operating and some of them were involved in cow rearing, van driving, religious preaching, etc. Respondent's average family size was 5.34. Most of the respondent's family members were illiterate (52%), 23% were able to sign only and 25% had primary education (Table 1).
The respondents took loan from bank or from local money lender. Thirty percent of them borrowed money from bank and average amount was Tk. 6766.67 for which the rate of interest was 11.77 percent per annum. Seventy percent of the respondents borrowed money from money lender and the average amount was Tk.11980.00. Very surprisingly the rate of interest was 96 percent per annum which is almost 9 times higher than bank's interest rate. Ten percent of them borrowed money both from bank and money lender. Of the respondents who borrowed from money lender, fifty three percent borrowed in 2005, 23% in 2004, 13% in 2003 and 11% borrowed before 2000. On the contrary, of the respondents who borrowed money from bank, 30% borrowed in 2005 and the rest 70% borrowed before 2004. In some cases they took loan in 1992 and it remained unpaid. It was seen that rural people repaid loan taken from moneylender more quickly than bank loan because they were under forced and intensive supervision by moneylender. In the case of bank loan there was no close

supervision and rate of interest was lower as well that makes people slow for recovery of bank loan (Table 7).

Table 7. Socioeconomic profile, occupations, sources of loan, causes of taking loan from different sources in the study area

Sl. No.	*Items*	*Respective measuring unit*
1.	No. of respondents	50
2.	Age of the respondents	41 years
3.	Literacy level of the respondents: Illiterate: Primary education Secondary education	 66% 10% 24%
4.	Literacy level of the family members: Illiterate: Signed only Primary education	 52% 23% 25%
5.	Main occupation: Agriculture Business Wage labourer Others (Carpenter, bamboo case maker) subsidiary occupation: No subsidiary occupation Petty business (Vangari) Horse cart Van driving	 50% 10% 34% 6% 60% 10% 5% 4%
6.	Average family size	5.34
7.	Sources of loan: i. Commercial banks - Average amount of loan and interest rate ii. Money lender - Average amount of loan and interest rate iii. Borrowing money in previous years: - Money lender - Banks	 30% Tk. 6766.67 and @ 11.77% per annum) 70% Tk. 11980 and @ 96% per annum Year Percent 53% 23% 13% Before 2000 11% 2005 30% Before 2004 70%
8.	Causes of taking loan	House repairing, petty business, bearing medical and marriage expense, purchasing boat and STW, loan repayment, etc.
9.	Banks near to the study area	Bangladesh Krishi Bank, Janata Bank and Sonali Bank.
10.	Distance from the upazila headquarters	5-6 km
11.	Requirements of getting loan from banks	Application for loan, recent photographs, land against loan, land documents, tax payment receipt, character and nationality certificate from local chairman, bribe, etc.
12.	Requirements of getting loan from money lender	Goodwill to pay loan, signature on a stamp (few cases), specific time frame to pay loan, monthly payment of interest, etc.

Source: Field survey, 2005

Most of the respondents took loan for crop production. Some of them took loan for house repairing and making new houses, previous loan payment, petty business, health care, marriage expenses, purchasing boat and shallow tubewell, food consumption etc. Bangladesh Krishi bank, Janata bank and Sonali bank were located at Mothergonj upazila sadar and it is 5 to 6 km far from the Nadagari char area. Rural people are used to travelling to Mothergonj on foot, or by boat, cart etc. (Table 7).

Char people were very much interested to get loan from bank because of lower interest rate and flexible options of depositing any amount of money to bank. In few cases they also had the opportunity to pay only the principal amount of loan when government declared not to charge interest for community's safety net. Main requirements for borrowing bank money were application for loan, recent photographs, land availability, land document, certification and endorsement from local government representative i.e., chairman and in most cases payment of a bribe to a bank official. (Table 7).

In the case of borrowing money from moneylender, borrowers had nothing to submit. They took money whenever they need but the only problem was higher interest rate. Terms and conditions of getting loan from money lenders were goodwill, signing on stamp (in few cases), temporal boundary, monthly regular payment (otherwise compound interest rate would be imposed) etc. In char, people lent money considering social status, trust, goodwill, reputation as a good farmer, resource availability etc. Generally, the persons who were involved in such business were rich and powerful in the society. So, they were confident that they could force the borrower to get money back; otherwise they could exercise their power to money back.

There were no NGOs working in this char because it is far away from upazila sadar. Communication system did not develop. Char people move their living place when erosion start and people take the situation as a normal phenomenon. The NGOs generally prefer to form group for handling loan due to easier recovery of money. But in char area, it was not possible to form group because of shifting living places as a result of river erosion.

Summary:

The char people desired enough bank loan facilities, road communication, electricity, security for coping flood period, working opportunity in rainy season, school, modern agricultural technologies, reasonable price of agricultural crops, etc. They did not expect much from the government because they could produce enough crops in their fertile land and they were quite capable to grow crops and living materials.

4.3.1 Specific Cases of Credit Markets

One may wonder how the char dwellers manage capital or credit in the char areas. There were two informal credit institutions of the Char Nandina. i. Nandina Jamtali Bazar Businessmen Association, and ii. Char Nandina North Para Women Development Association.

Nandina Jamtali Bazar Businessmen Association
It stared its first activities on 10.2.2000. Businessmen of the Bazar initiated to form an association to solve their capital and other related problems and also to develop the bazar for

doing the business smoothly. In the preliminary stages there were only 26 members and Md. Azijul Hoque and Md. Badrul Alam (Khoka) were the key persons who explored the ideas to the businessmen of the bazar. After that they sat together and built up a consensus that they would form an association for their betterment and welfare of the local people. They formed a committee to run this association. The executive committee was as follows:

President		Md. Serajul Islam
Vice President	:	Md. Chand Mia
General Secretary	:	Md. Badrul Alam
Treasurer	:	Md. Abdus Salam
Member	:	Md. Moinul Islam
’’	:	Md. Nazrul Islam
’’	:	Md. Lavlu Miah
’’	:	Abdul Mazid
’’	:	Md. Shajahan Ali

They collected membership fee of Tk. 50 in first admission time only and then Tk. 10 per week subscription fee. Member of the association had to submit their fee on the last day of the week. If any member failed, he had to pay additional Tk. 2 with normal weekly fee.

They distributed loan among the members of the association, non-members and also new businessmen but they preferred members of their association. A member could draw 80 percent of his deposit. If he was not a member of this association, he needed two guarantors who were also regular members of this association. The person could not be a guarantor for more than 80 percent of his own deposit to this association. Loan is distributed to non-member on a fixed profit basis, which was 5 percent interest rate per month. If the amount were more than Tk 20000, interest rate would be 1 percent less i.e. 4 percent. In case of regular member, loan was given so that the borrower offers 25 percent of his profit that he earned. The association believed that member would not hide any thing to the association and that the executive committee also kept an eye on it.

The association also took some welfare activities. It distributed Tk 5000-10,000 to new businessmen who did not have money to start any business. They did not only think of their member’s welfare but they took the initiative to reduce poverty of their neighbours by offering loan from the association.

They spent Tk 2000 for a tubewell at the market place to get arsenic free water for the local people. They offered Tk 500 to Tk 1500 to guardians who were unable to bear their daughter’s marriage expenses. They also extended their activities towards improvement of women entrepreneurship. They gave Tk 2000 to a woman for purchasing a goat so that she could reduce her poverty.

Six persons had withdrawn the membership from the association and their payments had been made along with deposited money and profits had been paid back. They prepared a constitution of their association. They kept all sorts of record i.e. receipt book, which includes deposit date, total amount of deposited money and annul profit. The executive committee did not take any remuneration from the association and they worked voluntarily to give the service to the welfare of the community. The executive committee is reformed every two years and every member takes part in that formation.

4.3.2 Future plans of the association:

- to employ a permanent staff so that he can collect subscription regularly and can keep record properly.
- to be a registrar member of the local authority.
- to reduce interest rate for allowing more benefit from the loan.
- to extend social welfare activities for the poorer section of that area.

4.3.3 A Case of Char Nandina Uttar Para Mohila Unnayan Samitee

ITDG first initiated the idea of women of char Nandina to form a samitee for their own development. They are able to organize themselves for their family welfare and to exchange their ideas among each other. They started with 30 women members from the same village. They sat together and discussed their problems and chalked out the ways in which they solved their own problems with the help of taking total community knowledge. They decided to form a woman development association and called it "Char Nandina Uttar Para Mohila Unnayan Samitee". There were 30 members of their samitee when they formed it initially on 2003. Mrs. Kahinoor Begum took first initiative to organize the samitee. She had no formal education and could put her signature only. She requested Miss. Monju Ara Khatun who passed SSC from the local school and she was continuing her study. Miss. Khatun was assigned to keep all sorts of records related to samitee. There were 30 members in their samitee and they decided to collect Tk. 5.00 per month from each member. They formulated fund because they understood that nothing could be done without money. Eight members withdrew their membership from the samitee and the samitee paid off all their dues. At present 22 members are running the samitee. They offered loan to the members of the samitee at 7 per cent rate of interest per month. Kahinoor, Rokeya, Monju and Anowara took the decision to distribute the loan. They tried to judge the woman whether she was able to repay the borrowed money. They gave loan of minimum Tk. 500.00 and maximum Tk. 3000.00 to cultivate boro paddy and chilli. Total capital of the samitee was near about Tk. 10000.00. They kept records on register book and cashbook. They did not yet give money receipt to the members but they put down it on the cashbook regularly. They formed a formal committee to run their samitee i.e. as follows:
President: Mrs. Kahinoor Begum
Secretary: Mrs. Rokeya begum
Treasurer: Miss. Monju Ara Khatun
Member: Mrs. Shanti Begum

In future, they want to open an account to the bank, to make a full-fledged committee, to keep final records, to get registration from local authority and to expand their fund. They did not yet face any problem from their husband or any other persons of the locality. They believe that in future they will not face major problem to develop their samitee because union parishad member and chairman are well informed about this samitee and they appreciated this women's initiative.

They felt honoured to be a member of the executive committee because the other members of the samitee honour them. The persons who took loan also honour them. Different NGOs want to talk to them as they are organized into a samitee.

They also performed some social welfare activities such as they gave interest free loan to women who were very poor in the village and they gave small donation to those who were

not able to manage the expenses of their daughters' marriage ceremony. They also helped the poor students who couldn't afford to manage their school fees. Finally, they showed their gratitude to the ITDG for their time-to-time advice and close supervision.

4.3.4 Al-Kandari Cooperative Association and Char Jamira, Sharishabari, Jamalpur

Al-Kandari Cooperative Association was established in 14 April 2004. Initially, there were only 47 members and at present the total number of members rose to 162. Abdul Baten first initiated idea of this association. He is 35 years old and passed H.S.C. in 1989 from the Mothergonj College. The main objective of the association was the welfare of the members of the association and the local people of this char. They formed an earlier association with 34 members in 1987, but the association failed to sustain because some members took loan but did not repay their debt.

President and Secretary of that association were unhappy about the failure of the previous samitee and committed to form a new association again. Accordingly in 2004, they called a meeting at 9 no. Char Jamira Govt. Primary School field to make an open discussion for re-organizing the association. After a long crossed discussion they agreed to form an association named Al-Kandari Cooperative Association. The objective of the association were:

- to save the poor people who borrow money from money lender at high interest rate;
- to make the credit available to the villagers;
- to save the poor villagers from NGO's cheating; and
- to offer money to the poor at bank interest rate without charging any bond/security against loan.

They started membership with depositing Tk 45 first which included Tk 20 for admission fee, Tk 5 for purchasing of forms and Tk 20 for monthly subscription. Treasurer of the association was responsible to collect monthly subscription at the first week of the month. Members of the association were committed to paying their subscription to the treasurer at his shop on local bazar. Loan was given only to the members of the association for 10 months only. The member, who took loan of Tk 1000, he/she must pay Tk 120 per month and if it is Tk 2000 the installment will be Tk 240 per month. It is calculated that interest rate reached at 24 percent per annum.

An executive committee runs the association. The committee was as follows:

Sl. No.	Designation	Name	Education	Occupation
1.	President	Md. Jahirul Islam	BA	-
2.	Vice-President -1	Abdul Baten	S.S.C.	-
3.	Vice-President -2	Md. Nurul Islam	-	-
4.	Treasurer	Abdur Rahim Mintu	S.S.C.	-
5.	Secretary –1	Abdul Karim	Class IX	Teacher
6.	Secretary-2	Md. Johirul Islam	S.S.C.	Business
7.	Member-1	Samsun Nahar	H.S.C	UP member
8.	Member-2	Rumana	S.S.C.	Housewife
9.	Member-3	Bakul	Class IX	Housewife
10.	Member-4	Rawson Ara	Class IX	Housewife
11.	Member-5	Mosarraf	M.A	Teacher

They sanctioned loan among members of the association Tk 1000 to Tk 4000. Monthly loan repayment must be made during the first week of the next month otherwise she/he should be charged Tk 10 as additional payment. If one failed to pay monthly subscription on first week she/he must pay Tk. 5 in addition. President, Secretary and Treasurer of the association took decision to distribute loan. They judged the members' ability and his/her total deposited money to the association.

They are committed that they would not withdraw their money from the association before 5 years. If some one wanted to leave the association, she/he would get principal amount plus share of earned profit by that time.

Total capital of the association was Tk. 75,000.00 and this figure would be increasing day by day. They derived that they would run this association like a bank and their ultimate motive was to help the local people to change their current financial situation. Therefore they would like to offer loan for producing Boro paddy, investing on petty business, children education, goat rearing, cow rearing, starting shop, chilli and vegetable cultivation.

They expect that in future they will be able to keep the local people free from NGO's cheating and financial institutions' exploitation.

4.4 Land tenure arrangements

The overall land ownership pattern in the chars is distributed unequally. Land mass in the char are vulnerable to floods and erosion. The average farm size in the char is larger than national average. They are using different forms of lease and sharecropping with land. Question arises as to the quality and maintenance of land records, mouza maps, and conflict resolution over land rights, changing sharecropping arrangements by crops, etc.

In the dynamics of erosion and accretion in the rivers of Bangladesh, the sandbars emerging as islands within the river channel, or as attached land to the riverbanks, often create new opportunities to establish settlements and pursue agricultural activities on them. Once vegetated, such lands are commonly called chars or char areas in Bangladesh.

Methodology:
To examine the existing land tenure arrangement in char area, survey and exclusive case study were done. Fifty samples were selected randomly from an isolated char to conduct interview. Char Jamira of Sharishabari upazila under Jamalpur district was chosen purposively for the study. It is 8 km from Sharishabari upazila headquarters and 30 km from Jamalpur district town. A structured questionnaire was used to collect data. The raw data were entered into Excel for analyses and interpretation.

Results and Discussions
In land tenure study, 50 respondents were interviewed randomly from the char Jamira. The average age of the respondents was 45 years. Forty six percent of them had no education, 30 percent had only primary education, 14 percent had secondary and only 10 percent of them had higher education. Since they were not so educated 86 percent of them was involved in agriculture, 4 percent were businessmen, 4 percent were service holders and other 6 percent were carpenter, workshop owner etc. Sixty six percent of the respondents had no subsidiary occupation; some of them had agriculture (16 percent) and business (18 percent) as their subsidiary occupation.

Table 8 Socioeconomic profile, occupations, tenancy status, causes of selling and buying land in the study area.

Sl. No.	*Items*	*Respective measuring unit*
1.	No. of respondents	50
2.	Age of the respondents	45 years
3.	Literacy level of the respondents: Illiterate Primary education Secondary education Higher education	 56% 30% 14% 10%
4.	Main occupation: Agriculture Business Service Others (Carpenter and workshop owner) subsidiary occupation: No subsidiary occupation Agriculture Petty business	 86% 4% 4% 6% 66% 16% 18%
5.	Average family size	5.6
6.	Tenancy status: Land offered for renting out (part of their total land) Crop share Fixed renting Rented out to Neighbour Small farmer Medium farmer large farmer Land less farmer Relatives Mortgaged value of land Land price Respondent selling land Respondent buying land	 96% 56% (50:50 crop share: 44%) (1/3 crop share: 56%) 44% (Tk. 800 to 1500 per 33 decimals) 30% 17% 17% 17% 13% 6% Tk. 5000 to 12000 per 33 decimals Tk. 1050 to 1737 per decimal 8% 34%
7.	Causes of selling land	Repairing house, bearing medical, daughter marriage and education expenses, getting new job, loan repayment, expenses for going abroad for job, etc.
8.	Causes of investing on land	Permanent assets, increased cultivable land, risk free, profitable, increased output and income, no best alternative, etc.
9.	Average distance from the Jamuna river	3.175 km
10.	Average living duration of this char	23 years

Source: Field survey, 2005

Most of the respondents (96 percent) offered land for tenure. Fifty six percent offered land for tenure as crop share system and 44 percent offered land for fixed renting system. Among crop share system 44 percent offered land as 50:50 crop share and 56 percent offered as one-third (1/3) crop share. The fixed renting system was different in terms of monetary ceiling (Tk. 800

to 1500 per 33 decimals) depending on land topography, fertility and location. The respondents reported that they were living this char for about 23 years (Table 8).
The land holding status of the char Jamira were as follows:

Table 9. Land holding patterns of the study area

Sl. No.	*Land holding pattern*	*Area in acre*
a.	Homestead area including pond, orchard etc.	0.36
b.	Own cultivated land	3.37
c.	Crop share rented in land	0.23
d.	Crop share rented out land	0.39
e.	Mortgaged in land	0.50
f.	Mortgaged out land	0.62
g.	Fixed cash rented in land	0.27
h.	Fixed cash rented out land	0.71
i.	Others	0.02
j.	Farm size	3.03

Source: Field survey, 2005

The respondents rented out land to their neighbour (30 percent), small farmer (17 percent), medium farmer (17 percent), large farmer (17 percent), landless farmer (13 percent) and relatives (6 percent). The average distance of the farmers who rented in land was 1.75 to 3.50 km from the land owners' home who rented out land. They mortgaged out land to their neighbour, relatives, landless, small, medium and large farmer for a period, depending on when he/she returned initial money to the person who mortgaged in land. It was found that mortgaged value varied from Tk. 5000 to 12000 per 33 decimals depending on land fertility and location. Some of the respondents rented in land from their neighbour, medium and large farmers because this land was close to their house. They also mortgaged in land from others for the same reasons. In fixed renting system the tenant got the ownership of the land for one year/season against an amount of Tk. 800 to 1500 per 33 decimals and he/she was not supposed to return the money because the tenant will enjoy the crops produced from that land. How much money will one offer to tenants, again depends on land profile and location.

The char Jamira is 3.175 km from the river Jamuna. The land price varied from one place to another and the figure was Tk. 1055 to 1737 per decimal. In 2005, only 8 percent respondents sold their land and 34 percent bought land from others. They sold land for making/repairing house, bearing medical and educational expenses of children, getting new job, incurring daughter marriage cost, loan repayment and some of them sold land for meeting expenses to go abroad such as Saudi Arabia and other countries of Middle East. A large number of respondents (34%) bought land because they thought that land was permanent asset, increased cultivable land which ultimately increased output and its value will increase always in future. They also expressed their views that in the context of char area, there were hardly any alternative to investment in land. They put arguments in favour of investing in land that it is risk free, profitable, and permanent in location, high price of output, increased income and they had no better alternative (Table 9).

They keep records of land at tahshil office (land record office) situated in Kazipur and Sharishabari which are 20 and 10 km from char Jamira respectively. They also paid their land rent (*khajna*) to the above mentioned office. They reported that they could keep land records

regularly and smoothly and they faced very little problems regarding land records. In case of major problems, they went to district town Jamalpur land office.

When a new char emerged, questions arise as to how, they established their land right. The respondents reported that they faced problems several times to get their land ownership fixed, but these were not serious because the governments *amin* (authorized person to measure land) came and started measurement from the existing char land according to previous land record map. In some cases, local powerful people created problems to get others land right and it took long time to get an acceptable solution. They needed to go to land office of Jamalpur district town or they made solution at village *salish* (local problem solving group) which was easy for rich people of the village but difficult for the poor villagers.

A NGO SAMATA was working with char people's land right for a long time. According to their experiences there should have a separate land record law at riverine area, otherwise the poor people of the char will suffer dominance of the local powerful people and obviously the poor will lose their legal right. This study also reached the same opinion along with equal government facilities for char people like the mainland.

A Case of Land History of Char Jamira

Alhaz Md. Asiruddin S/O late Pacha Mandal has been living in this char since 1926. They were 4 brothers: 1. Late Moniruddin Mandal, 2. Asiruddin Mandal, 3. Akbar Mandal and 4. Abul Hossain Munshi. Late Pacha Mandal had two brothers; 1. Late Jonab Mandal and Late: Huna Mandal. Mr. Asiruddin is about 80 years old. His elder brother Late Moniruddin Mandal has 5 Daughters and 1 Son. Akbar Mandal has one son and 3 daughters. Abul Hossain Munshi has 4 sons and 2 daughters and Asir Uddin has 3 sons and 2 daughters. Most of the children of this family are educated. He transferred his house 8 times due to char erosion during the period 1943 to 1971. He reported that erosion of 1971 was the latest. In that time he transferred his house to his relative Mr. Mozammel Sarker's land and it was at char Roha of Sharishabari Upazila. He lived there 7 years and this char Jamira formed again in 1978. After that he came here with his family. He said that in char areas when char disappeared people must need to go to neighbours land and make temporary house and had to cultivate others land. When Asiruddin was in Roha he looked after Khalishakuri water body, actual proprietor was Nowser Ali Sarker. Since he had no land to cultivate, Nowser Ali gave the opportunity so that he could survive with the earning from that water body. He sold lot of fish from that water body and gave very few to Nowser. Most of the earning he spent on his son's education. After the Jamira char emerged, the government *Amin* located his land. The land was measured by *amin* according to the local map from the nearest unbroken/existing land. In 1978 he got 12 *pakhis* of land and after that he purchased 48 *pakhis* of land on that char. Now he has 60 *pakhis* of land (1 *pakhi* = 33 decimals).

4.5 Input Markets

In char area inputs, particularly quality inputs are highly scarce. Input includes seed, fertilizer, irrigation, and pesticides. Because of poor communication and dispersed nature of agriculture in the chars, there is a need for better understanding of input distribution, private sector roles, NGOs in seed production, etc. Especially, seed and feed storage during floods stand out to be a major problem in the chars.

4.6 Education

Education facilities are very limited in char area. Schools are few and poorly equipped. Question arises, are char people getting available and standard education institutions? Are

there qualified teaching staffs in the schools? What happens with the attendance of students and teachers in the rainy season? What is the standard of girls' education? What levels of logistical supports are available in educational institutions?

5 References

Abdur, Rob, Mohammad, Ali, Shoeib Shazzad Khan and Junior R. Davis. (2005) Assessing the applicability of the REED Framework through natural resource project evaluation in the Chars, Bangladesh. Natural Resources Institute, UK (Download PDF 306Kb).

Adnan, S., (1976). Land, Power and Violence in Barisal Villages. University Village Study Group, working Paper no. 6., Dhaka.

Ahmed, G.H (2000). Information on River Basin Programme. OXFAM-GB.

Ahmed, K. (1996). A Concept Paper of Char Development Program.

Alam, K. (2002). Livelihoods Options preferred by people in the chars for DFID Chars Livelihoods Project Appendixes.

Alam, K. (2002). Livelihoods Options preferred by people in the chars for DFID Chars Livelihoods Project Main Report.

Ali, M., Islam F., Uddin, A. and Islam, A. (2004). How could we better understand and initiate participatory perspective plan for the char land people? ITDG, Dhaka.

Ali, M. Y., (1997). Fish, Water and People. The University Press Ltd, Dhaka.

Ashley, S., Kat K., Hossain, A. and Nandi, S. (2000). The Chars Livelihood Assistance Scoping Study Final Report DFID.

Association of Development Agencies in Bangladesh (2000). List of NGOs Working in Kurigram, Gaibandha, Bogra, Sirajganj and Jamalpur Districts.

Baqee, A., (1998). Peopling in the Land of Allah Jaane. Power Peopling and environment: The Case of Charlands of Bangladesh. The University Press Ltd., Dhaka.

BBS, (1997). Statistical Pocketbook of Bangladesh 1996. Bangladesh Bureau of Statistics, Dhaka.

BFID (2001). The River Chars: Disasters in a Fluid Environment

BRAC (2000). BRACs Poverty Eradication Strategy 2001-2005, Focusing on the Poorest.

CARE-Bangladesh (1999). Rural Maintenance Programme (RMP). CARE-Bangladesh.

CDSP, Socio-economic Polder Profile. Technical Report No. 13. Char Development and Settlement Project. Government of Bangladesh and Government of the Netherlands, Dhaka.

Char Livelihoods Programme Design Phase (2001). Terms of Reference Area Mapping Market Analysis and Research.

CNRS, (1997). Flood Proofing Pilot Project Ulipur, Kurigram, CARE-Bangladesh Baseline Survey Report. Center for Natural Resource Studies, Dhaka.

Counselor, R. W. (1990). Inhabitants of the Jamuna River Char and Their Relationship to Current Flood Planning.

Currey, B. (1985). Socioeconomic and Nutritional Re-Survey of Chilmari Upazila. Dhaka: Intensive Rural Works Programme- Bangladesh, Ministry of Local Government, Rural Development and Cooperatives.

Davis, J and Rylance, C. (2005). Addressing poverty through local economic and enterprise development: A review of conceptual approaches and practice. Natural Resources Institute, Working Paper 3 (Download PDF 399Kb).

DFID (-----). Char Livelihoods programme Design Phase, Preliminary Proposals and Issues.

DFID (-----). The State of Local Governance in the Chars of Northwest Bangladesh: A Closer Look at Char-based Ups Institutional and Non-Institutional Linkages.

DFID (2001). Issues to be considered in Developing Tor for Skills Development Scoping Study for the Chars Programme, DFID.

DFID/BRAC (-----). Challenging the Frontier of poverty Reduction Targeting the Ultra Poor Targeting Social Constraints. DFID.

DFID-Bangladesh (2002). Project Concept Note: Chars Livelihoods Programme Bangladesh (2002-2009).

DOF, (1996). Fishery Statistical Yearbook of Bangladesh 1995-1996, Department of Fisheries, Dhaka.

DOF, (1999a). Forestry Sector Study ADB TA 2339-BAN Final Report Volume 2. Department of Forests, Dhaka.

EGIS (2000). Riverine Chars in Bangladesh The University Press Limited.

Elahi, K.M. and Rogge, J.R. (ds.) (1990). Riverbank Erosion, Flood Population Displacement in Bangladesh, A Report on the Riverbank Erosion Impact Study, Dhaka.

Elahi, K.M., Ahmed, K.S and Mafizuddin, M., (1991). Riverbank Erosion, Flood and Population Displacement in Bangladesh, Jahangirnagar University Riverbank Erosion Impact Study, Dhaka.

FAP-3.1 (1992). Jamalpur Priority Project Study Jamuna Chars-Initial Findings. Flood Plan Coordination Organization.

FAP 14, (1992). Final Report-Flood Response Study. Dhaka: Flood plan Coordination Organization, Ministry Irrigation Water Development and Flood Control, Dhaka.

FAP 16, (1995a). Charland Socio-economic Survey Report, Flood Plan Coordination Organization, Ministry Irrigation Water Development and Flood Control, Dhaka.

FAP 16, (1995c). Middle Jamuna Charland Socio-economic RRA, Flood Plan Coordination Organization, Ministry Irrigation Water Development and Flood Control, Dhaka.

FAP 16/19, (1993a). Charland Study Overview: Summary Report, Flood Plain Coordination Organization, Ministry of Irrigation Water Development and Flood Control, Dhaka.

FAP 16/19, (1993b). The Dynamic Physical and Human Environment of Riverine Charlands: Brahmaputra-Jamuna. Flood Plain Coordination Organization, Ministry of Irrigation Water Development and Flood Control, Dhaka.

FAP 16/19, (1993c). The Dynamic Physical and Human Environment of Riverine Charlands: Ganges. Flood Plain Coordination Organization, Ministry of Irrigation Water Development and Flood Control, Dhaka.

FAP 16/19, (1993d). The Dynamic Physical and Human Environment of Riverine Charlands: Padma. Flood Plain Coordination Organization, Ministry of Irrigation Water Development and Flood Control, Dhaka.

FAP 16/19, (1993e). The Dynamic Physical and Human Environment of Riverine Charlands: Meghna. Flood Plain Coordination Organization, Ministry of Irrigation Water Development and Flood Control, Dhaka.

FAP 16/19, (1994). Charland Flood Proofing Study, Flood Plain Coordination Organization, Ministry of Irrigation Water Development and Flood Control, Dhaka.

FPCO (1993). Bangladesh Flood Action Plan Char land Study Overview: Summary Report. ISPAN.

Haan, A. D. and Dey, A. (DFID-B) (2001). Social Protection: Its role in a Char Livelihoods Programme. DFID, Bangladesh.

Haggart, K. (1994). Rivers of Life, Bangladesh Centre for Advanced Studies (BCAS).

Haque, S.M. T. (1998), Char Dwellers Life Practices and Vulnerability, Action Aid.

Helmmers, K and Musillo, B. (2000). Briefing Note: Current Activities Concerning the Char and River Soil Erosion in Bangladesh.

Islam, M. F. (2001). Inventory of Coastal & Estuarine Islands & Char land Program Development Office, Integrated Coastal Zone Management.

ISPAN (1993). The Dynamic Physical and Socioeconomic Environment of Riverine char lands Meghna , FAP 16

ISPAN (1994). Char land Flood Proofing Study, FAP 16

ISPAN (1995). Char land Socio-Economic Summary Report Bangladesh Flood Action Plan.

ISPAN (1995). Char land Summary Report Bangladesh Flood Action Plan.

ISPAN (1995). The Dynamic Physical and Human Environment of Riverine Charland Brahmaputra-Jamuna.

ITDG, (1999). Food, Livelihood and Freshwater Ecology: The Significance of Small Indigenous Fish Species, ITDG, Bangladesh.

JCDP (2000). Catkin Cultivation in the Char, JCDP.

Kar, K. and Hossain, F. (2001). Mobility of the People of Chars and River Banks of Bangladesh –A Study of Gaibandha District. DFID-Bangladesh.

LGED (2001). List of Union Under CLP Area. LGED.

McQueen, D. and Hulme, D. (1999). Food and Fishes, Trees and Cows: Roles of the DFID Renewable Natural Resources Programmes in poverty Eradication.

Mesbahuddin, T. and Nandi, S. (2001). The State of Local Governance in the Chars of Northwest Bangladesh. A Closer look at Char- based Ups institutional and Non-Institutional Linkages. DFID-Bangladesh.

MES, (1998a). Meghna Estuary Study Draft Master Plan Volume 8: Environmental Profile and Assessment. Meghna Estuary Study, Bangladesh Water Development Board, Ministry of Water Resources, Dhaka.

Musillo, B. (2002). Synthesis of the Chars Literature

Nandi, S. (2001). Char & Sustainable Livelihood Approach (SLA). DFID.

OXFAM-GB (2000). River Basin Programme of OXFAM-GB, Bangladesh. OXFAM-GB.

OXFAM-GB, Bangladesh (2001). Annual Progress Report on the River Basin Programme RBD 020.

Rashid, M.H. (1991). Irrigated Intensive Cropping System Demonstration in Char land. ASS.

RDRS (----). Welcome to RDRS Bangladesh Char Development Programme.

Sattar, M. A., Sarker, G. W. and Moniuzzaman, M., 2002. Irrigation Potentialities for Crops and Vegetable Production in Char Areas for Livelihood Improvement, DFID.

Sattar, M.G., Chowdhury, N.S. and Hossain, M.A. (1999). Food Aid Sustainable Livelihoods BRACs Innovations Against Hunger.

Sorensen, D. (1994). An Analysis of the Char Peoples Vulnerabilities and Capabilities, Part 2, RDRS.

Sultan, S. M. (2002). Living With Uncertainty Responses to Risk and Vulnerability on the Riverine Chars: A Rapid Assessment of Gaibandha District.

Sultana, P. and P. Thompson, (1996). Birds of the Jamuna River. Interim report to Oriental Bird Club, Dhaka.

Thompson, P. M. (2000). Bangladesh Charlands a review of assets and change, DFID.

Thornton, P. (2000). Char Livelihoods Projects: Management and Institutional Assessment.

Wahra, N.G.N. and Noble, F.U. (1998). Prospects for Fish Culture in Char Areas of Bangladesh, NAGA, ICLARM.

Zaman, M.Q., (1989). Patron-based, Non-kin Segmentary Model: The dynamics of Political Alliance in Riverine Bangladesh. Washington DC.