DGIS/DANIDA GOB

MINISTRY OF WATER RESOURCES

BANGLADESH WATER DEVELOPMENT BOARD

MEGHNA ESTUARY STUDY

DRAFT MASTER PLAN

VOLUME 4 : RURAL DEVELOPMENT

September 1998

DHV CONSULTANTS BV

in association with

KAMPSAX INTERNATIONAL
DANISH HYDRAULIC INSTITUTE

DEVELOPMENT DESIGN CONSULTANTS
SURFACE WATER MODELLING CENTRE
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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

BBS	Bangladesh Bureau of Statistics
BKB	Bangladesh Krishi Bank
CDSP	Char Development and Settlement Project
EDR	economic dependency ratio
FPC	Family Planning Centre
FWC	Family Welfare Centre
HDI	Human Development Index
HDM	Human Deprivation Measure
NCB	nationalised commercial bank
THC	Thana Health Centre
TNO	Thana Nirbahi Officer
UHC	Union Health Centre
UNDP	United Nations Deveopment Programme

1. INTRODUCTION

This document is in two parts. The first part presents a socio-economic profile of the MES study area; the second comprises a series of considerations for rural development planning in the survey area.

Publications of the Bangladesh Bureau of Statistics (BBS) provided basic demographic data. This was supplemented by results from a formal questionnaire survey amongst a 15per cent sample of households resident in Development Project areas. Visits to respective administrative headquarters of each of the *thana* represented in the study area provided additional information and insight.

The questionnaire survey was administered on six *chars*, five of them islands, the other (Char Majid) part of mainland Bangladesh. Char Majid is presently the target of the Char Development and Settlement Project (CDSP) and is not strictly within the MES study area. It was, however, decided to implement the questionnaire there to act as a control, and to provide some indication as to possible repercussions of subsequent project interventions.

Some discussion is presented on a selection of survey findings. Comparisons have been drawn with both national level statistics and with the thana wide statistical records prepared for those thana within whose boundaries lies the Meghna Study Area.

A complete set of tables constructed on the basis of survey finding analysis is attached, below.

For purposes of clarity, results of the survey are presented and discussed under three headings: Demography, Socio-economics and Services. As usual in such analyses topics covered under respective headings are not discrete and reference is frequently made across sections where it is thought additional insight might be gained.

Some details presented in the account of project area demography are taken from 100per cent surveys (1981/1991 Census). Much of the socio-economic and agricultural descriptions, however, use as their basis the survey results taken from a sample considerably smaller both in terms of area covered and in percentage of total households interviewed.

These surveys identified agro-economic aspects and were designed also to elicit characteristics of social organisation. Findings have been supplemented through additional field visits to the *chars* using a less formal rural appraisal.

Information on local sub-populations' access to social infrastructure has been taken from respective *thana* offices. Eight such offices were visited to gather information on infrastructural and service provision.

The profile presented in this survey is one of *char* based communities subsisting on the products of several combinations of activities. For their food subsistence they rely on a mixture of agriculture and fishing, supplemented to some extent by livestock husbandry. When available, excesses to need are marketed, either locally or through informal channels. Off farm or migrant labour provides many households with access to cash income, though in Char Montaz and Kukri Mukri this opportunity is largely ignored. Essential commodities are generally bought locally though traders are frequently unable to subsist on incomes from trading alone.

The Rural Development Considerations are based upon an analysis of these survey results.

2. THE SOCIO-ECONOMIC SURVEY

2.1 Demography

2.1.1 Population

The total population of the MES study area in 1998 is estimated at 1,100,000 comprising 1.0 million people living on the off-shore (*char*) islands and 100,000 estimated to be resident on the 500 metre wide coastal strip within the study area.

Population density on habitable island land in MES area is 475/km^2. The national figure is 755/km^2 (BBS 1991). The figure for the islands is an extrapolation of figures from the BBS National Census (1991) and more recent local government records.

The mainland coastal strip included in the study area was sub-divided into three population density classes: high, medium and low. The interpretation of satellite imagery gave 163 km (high density), 212 km (medium density); 84 km (low density). Respective estimates of densities were: high - 758 persons/ km^2; medium - 272 persons/ km^2; low - 138 persons/ km^2 respectively. Thus, the coastal strip has an estimated population of 100,000 persons.

Figures derived by these methods have been given further support by interpreting satellite imagery based on the area of cropland and density of cultivation and extrapolating a provisional population density. These figures were subsequently checked on the ground and adjustments made to the proposed function. A good degree of accuracy was achieved using this technique and the resulting population figures can be used with confidence.

The distribution of population throughout the study area is summarised in Table 2.1.

Table 2.1: Meghna Estuary Study area population

Island	Thana	District	Population 1991	Annual Rate of Growth (%)	Population 1998
Bara Baishdia	Galachipa	Patuakhali	20,698	1.21	22,516
Rangabali	Galachipa	Patuakhali	26,843	1.21	29,200
Chhoto Baishdia	Galachipa	Patuakhali	17,186	1.21	18,695
Chalita Bunia	Galachipa	Patuakhali	4,409	1.21	4,796
Char Kazal	Galachipa	Patuakhali	32,286	1.21	35,122
Char Biswas	Galachipa	Patuakhali	9,645	1.21	10,492
Char Montaz	Galachipa	Patuakhali	9,335	1.21	10,155
Char Kukri Mukri	Char Fasson	Bhola	4,122	3.15	5,121
Char Patila	Char Fasson	Bhola	1,401	3.15	1,740
Char Satyen/Dhal	Char Fasson	Bhola	3,101	3.15	3,853
Manpura	Manpura	Bhola	51,361	4.31	69,010
Hatia	Hatia	Noakhali	295,501	2.32	346,962
Char Gazaria	Ramgati	Lakshmipur	1,309	2.43	1,548
Teliar Char	Ramgati	Lakshmipur	7		7
Sandwip	Sandwip	Chittagong	272,179	0.30	277,946
Muhuri Accretion	Sonagazi/Mirersari	Feni/Chittagong	7,716	1.16	8,365
Other chars	MES Area				100,000
Coastline	31 Thana		100,000	1.66	108,408
Total			859,090		1,055,934

2.1.2 Household size and dependency ratio

The 1991 census provides an average household size within the total study area of 5.6 people. This indicates a fall from the 5.74 found in the 1981 census. The 1991 figure matches the then national average of 5.6 per cent. The national sex ratio is 106 males to each 100 females.

Within the MES study area figures range from 100:99 (Char Montaz) to 119:100 (Kukri Mukri.) The comparable figures at Char Majid and Urir Char are 101:100 and 107:100, respectively. The ratio at Bara Baishdia is 110:100; at Nijhum Dwip 100:111.

An analysis of the age structure in the total study area shows that 44.7 per cent of the population are not yet 15 years of age. In 1995, the national figure was 42.7 per cent. These aggregated figures, however, disguise a considerable range of variation across the study area and an analysis of the sample survey results indicate that in the communities presently living in the six sample areas the percentage ranges between Bara Baishdia (39.7) and Char Majid (57 per cent).

The MES socio-economic survey conducted in 1996 involved the collection of information from 629 households comprising a total of 4,009 persons. Analysis of survey results showed that 1,117 people (27.9 per cent of the population) are economically active. The remaining 2,892 people (72.1 per cent of the population) are, therefore, classified as dependants.

An Economic Dependency Ratio (EDR) was calculated for each of the surveyed areas. The EDR relates the number of economically active (income earning) household members to the number of people (x100) dependent upon that income. Compared to the national average the EDR throughout the study area was found to be high, varying from 218.15 to 333.3 persons. For comparative purposes, the national EDR is 90. This is, perhaps, the clearest indication of the shortage of income earning opportunities that characterises these coastal and marine chars.

Table 2.2. Population characteristics of the study area

Population Characteristics	Location					
	Nijhum Dwip	Urir Char	Bara Baishdia	Char Majid	Char Montaz	Kukri-Mukri
Total Households Surveyed	160	97	270	102	110	50
Total Population	1,158	583	1,648	620	684	306
Female headed households	4	2	9	12	3	4
Economically active population	302	137	518	160	217	92
Average household size	7.24	6.01	6.10	6.08	6.22	6.12
Economic dependency ratio	283	326	218	287	215	232

$$\text{Economic Dependency Ratio} = 100 \times \frac{\text{total population - economically active population}}{\text{economically active population}}$$

2.1.3 Population growth and Fertility

Between the national censuses of 1981 and 1991 the population of the study area grew by an overall average annual rate of 1.66 per cent, compared with the comparable national rate of 2.15 per cent. The average figure for the study area, however, disguises considerable variations at both sub-district (*thana*) and village (*mauza*) levels. For example, Urir Char has a current annual population growth rate of only 0.18 per cent, Sandwip, similarly, has a recorded growth rate of just 0.3 per cent.

The periodic migration of people from the eroding coastline of north-east Hatia to Nijhum Dwip has resulted in a current annual average population growth rate in the latter area of 2.5 per cent, a figure higher than for that of the nation as a whole. A similar in-migration of people to the island of Manpura increased the population there at an annual rate of 4.3 per cent during the inter-censal years 1981 - 1991.

In instances where the population grows at either a very low or at a very high rate the cause is almost certainly migration. In the case of Urir Char and Sandwip migration is probably a

function of both low agricultural yields and the attraction of employment in the nearby industrial areas around Chittagong. On Manpura the reason is almost certainly the construction of extensive lengths of protective embankment.

This degree of variation in population growth rates may indicate a willingness amongst study area families to travel in search of perceived economic opportunities.

2.1.4 Age and gender structure

Figure 2.1 illustrates both age structure and gender profile of the six areas covered in the MES socio-economic sample survey. Only Bara Baishdia and Nijhum Dwip present profiles that could be referred to as 'normal.'

Though not normal the age profiles of the remaining four areas do present features in common. The lack of wide base to these pyramids is exceptional and no immediate explanation can be provided. It is possible that individually these 'abnormal' profiles are a consequence of some sampling or statistical error. The fact that four out of the six profiles reflect common features would suggest, however, that this is not the case.

The fact, also, that Bara Baishdia and Nijhum Dwip provide a more normal profile would tend to belie any assertion that these profiles were other than representative of respective populations. Near verticality of these profile's sides would, in developed societies, indicate a fertility level equal to little more than population renewal rate, low rates of infant mortality and high life expectancy. The result would be a low or negligible annual population growth rate. What these population profiles indicate in the MES area is, however, almost certainly very different.

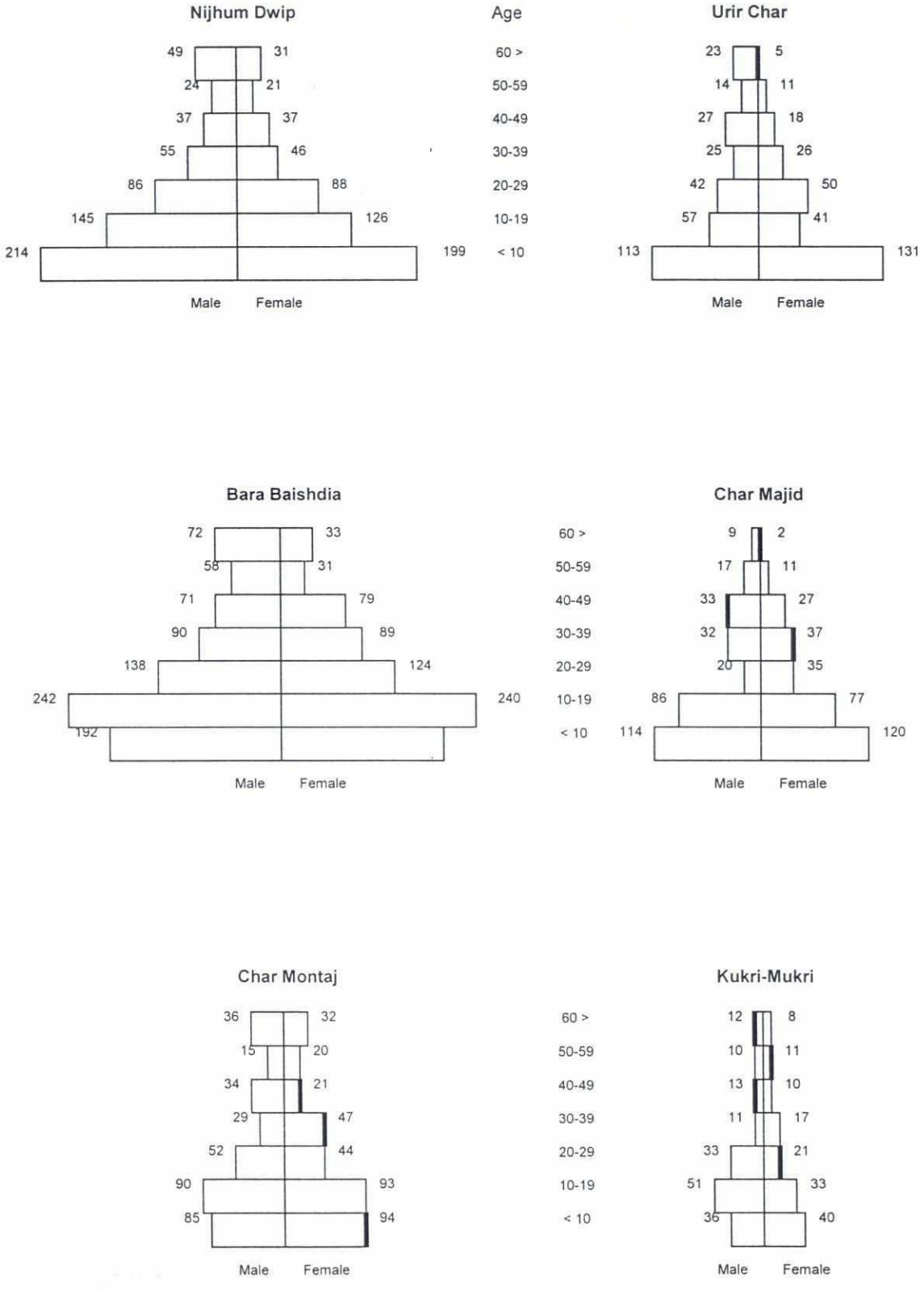
The number of school age children per household is low, ranging between 2.34 (Char Majid) to only 1.44 (Kukri Mukri). One reason for these uncharacteristic figures is the high levels of infant mortality in these more remote areas[1]. In the absence of local statistical records, estimates provided by local women of around 25 per cent are assumed representative. Low population figures in the 0 - 5 age range probably indicate that infants die at a very young age. If they didn't, a percentage of them, at least, would be represented in the profiles and so increase the numbers in this lowest age class.

The reduction in the age group < 10 seen in Bara Baishdia and Char Montaz might well represent the effects of the government's family planning campaign. It is a welcome sign, notably absent in both Urir Char and Nijhum Dwip.

[1] In addition to the children of 'school age' there are, of course, infants and babies under the age of five years. These figures are also low, however. with households in Bara Bashdia, Char Majid, Char Montaz and Kukri Mukri showing only a 60 - 80 per cent probability of having a child in this age range.

Figure 2.1: Age and gender structure of surveyed areas

Figure 1. Age and gender structure of surveyed areas



In addition to these high levels of infant mortality it must be assumed that increasing awareness, and availability of, contraceptive advice and supplies is becoming an increasingly significant factor[2].

All age and gender profiles clearly indicate that males become an increasingly large proportion of population in the highest age grades. Again in the absence of official account the local description of high levels of maternal mortality are presented as explanation. The probability of maternal mortality becomes higher corresponding to the increasing age of the pregnant women.

Note is also made of the relatively high percentage of the respective populations that are over the age of 45 years. The range is between Char Majid where the proportion is a 'normal' 11 per cent to Kukri Mukri at 17 per cent and Char Montaz with the higher figure of 19 per cent. Clearly, life expectancy at birth must only be a fraction of what it is at, say, the age of five.

2.1.5 Seasonal Migration

There is great variation in the incidence of household members travelling from their homestead area in search of paid employment. There is comparable variation in the percentage of these itinerant workers staying away permanently from their homes and those seeking only seasonal employment.

Table 2.3: Seasonal out-migration in the sample areas

Household Structure	Location					
	Nijhum Dwip	Urir Char	Bara Baishdia	Char Majid	Char Montaz	Kukri Mukri
Average household size	7.24	6.01	6.10	6.08	6.22	6.12
Households with seasonal out-migration	41	4	14	35	5	1
Percent	25.6	4.1	5.2	34.3	4.6	2.0

Table 2.4: Income transfer from migrant labour (1995-96)

Location	Average annual income from seasonal labour (Tk/HH)	Average annual income from full time labour (Tk/HH)	% HH receiving remittances from seasonal migrant labour	% HH receiving remittances from full time migrant labour
Nijhum Dwip	4,314	21,840	28.1	3.1
Urir Char	6,571	21,712	24.7	16.4
Bara Baishdia	13,673	42,228	5.5	18.1
Char Majid	3,540	5,743	49	14.7
Char Montaz	11,000	18,000	1.8	0.9
Kukri-Mukri	15,000	12,000	2	2

Positive correlations between these figures and those for other characteristics of either individual and/or community life are not hard to find. For example there is an apparent correlation between the relative literacy levels and the levels of remuneration. For example, seasonal migrant workers from Bara Baishdia, with the highest literacy level of all the surveyed areas, report a average total annual money transfer to homestead of Tk 13,673. The reported figure for full time (permanent) migrant work is Tk 42,228. The corresponding figures for the area with the lowest literacy level (Char Montaz) are Tk 3,542 and Tk 5,734, respectively (see Table 2.4).

[2] The socio-economic sample survey disclosed that contraceptive advice and supplies are becoming more accessible throughout most of the study area. For example, 60 per cent of households in Nijhum Dwip reported receiving family planning advice

There appears to be a clear inverse relation between wage levels and the inclination to leave home in search of paid employment. In Bara Baishdia, with the highest reported available wage levels, only 5 per cent of households have a member seeking seasonal employment away from home. In Char Majid, however, where remuneration levels are the lowest, half the families interviewed reported having at least one member regularly seeking paid employment away from home.

2.1.6 Population Projections

Projections of figures from the 1991 BBS census, supplemented by contemporary local records and adjusted estimates based on satellite imagery interpretation indicate that the present population of the off-shore chars presently stands at around 1 million people. Comparison between records taken from the 1981 and 1991 censuses indicates that throughout the intervening years the study area population had a mean annual growth rate of just 1.6 per cent. During the same intercensal period 1981 - 1991 the national mean annual population growth rate was 2.17 per cent.

Projections of population on the off-shore chars in the future, assuming a continuance of the same mean annual growth rate, gives a figure of 1.16 million in 2015, 1.48 million in 2030 and 2.06 million by 2050.

Findings suggest that, if present trends continue, Manpura and, to a lesser extent Nijhum Dwip, will become areas with a considerably higher population density than that of MES as a whole. These areas will probably be followed closely by South Hatia as centres of population settlement.

2.2 Socio-economics

2.2.1 Principal occupation

Household economies throughout the study area are largely subsistence economies. They are characteristically based on a combination of agriculture and fishing. So important are these two occupations to the study area economy that only on Kukri Mukri did more than 30 per cent of household heads report that their principal occupation was other than these two.

Table 2.5 indicates the percentage of household labour time involved in agricultural activities.

The actual land cultivated by respective households is characteristically a combination of own land, share cropped land and several local variations of what are referred to in the survey analysis as leased or mortgaged land. Households resident on surveyed *chars* cultivate only a fraction of their respective holdings. Only on Char Majid and Urir Char was this found to be in excess of 50 per cent. The majority of land area owned by households but not cultivated by them is operated on a share-cropping basis, with the owner's share of the harvested crop generally being 66 per cent.

Table 2.5: Household employment activities on farm (1995-96)

Location	Days Employed per household per year					
	Less than 50		50 - 100		More than 100	
	No.	%	No.	%	No.	%
Nijhum Dwip	4	4.2	32	33.3	60	62.5
Urir Char	2	2.9	19	27.5	47	47.0
Bara Baishdia	5	5.0	8	8.0	85	85.0
Char Majid	8	12.7	26	41.3	30	47.6
Char Montaz	5	9.4	9	17.0	39	73.6
Kukri-Mukri	1	4.4	13	56.5	9	39.1

The survey showed that, in general, far more land was share-cropped in by farmers than was share-cropped out. This largely reflects the existence of individuals who lay claim to large areas of land and have it cultivated on a share-cropping arrangement by households resident on respective *chars*. Frequently, these land holding 'elites' provide a source of credit for their share-croppers. Repayment of credits, plus interest, can easily become a factor in negotiating, or re-negotiating, the sharing of cropped harvest.

The relative importance of agriculture and fishing to households in the study area differs from *char* to *char*. Only on Nijhum Dwip was it reported that more household heads regarded fishing as their principal occupation as opposed to agriculture. By contrast, on both Char Majid and Char Urir, to the North and North East of the study area, over 80 per cent of household heads reported that agriculture was their main occupation. Fishing was reported as the main occupation by only 1 per cent in the former and 3 per cent in the latter.

A more balanced picture was found on the three remaining *chars* though with around twice as many heads of household regarding agriculture as their principle occupation as did those claiming to be predominantly fisherman.

Other occupations reported as of prime importance to heads of household were in service provision or in business.

2.2.2 Income levels

Across the study area household income levels are low. Analysis of the results from the socio-economic survey enabled construction of Table 2.6. This table provides information on both average annual household incomes (excluding subsistence production) for respective study areas and their sectoral composition.

The survey discovered that households on Char Majid have the lowest average annual income. A household comprising six persons has an average annual income of less than Tk 18,000, or Tk 1,500 per month; under Tk 400 per week.

Households on Bara Baishdia were found to have the highest incomes; slightly less than Tk 30,000 per year, though again for a six person household. Figures for monthly and weekly incomes were calculated as Tk 2,500 and Tk 600, respectively. This is 50 per cent more than Char Majid but is still pitifully small.

Incomes from the fisheries sector provide the largest contribution to household incomes in three out of the six surveyed communities.

Across the study area heads of household generally report that agriculture is their principal occupation and, in a majority of cases, it certainly appears to make a large contribution to household subsistence. The amount of unhusked rice retained for self-consumption per household in 1997 varied between 629 kg on Char Montaz to 1,451 kg on Urir Char.

Table 2.6: Average annual household incomes

Unit: Taka

Location	Agriculture	Fishery	Migrant Labour	Other	Total
Nijhum Dwip	6,546	12,634	1,893	3,397	24,470
Urir Char	9,229	3,096	5,257	3,000	20,582
Bara Baishdia	7,503	9,670	8,488	4,088	29,749
Char Majid	11,357	2,400	2,579	1,474	17,810
Char Montaz	8,442	10,155	1,080	7,389	27,066
Kukri-Mukri	7,758	7,445	363	6,938	22,504

Note: 1) Income excluding susbsistence income.
2) Other includes business, homestead gardening, services, etc.
3) Agriculture includes crop and livestock sales and agricultural labour.

Table 2.7: Relative importance of cash income earning activities

	Nijhum Dwip	Urir Char	Char Majid	Bara Baishdia	Char Montaz	Kukri Mukri
I	Open water fishing	Livestock	Seasonal labour	Open water fishing	Open water fishing	Agriculture
II	Agriculture	Full-time labour	Open water fishing	Full-time labour	Other	Other
III	Livestock	Agriculture	Agriculture	Agriculture	Agriculture	Open water fishing

The contribution that agriculture makes to respective household's cash incomes shows a similar variation. This contribution includes income from the sale of crop harvests, livestock sales and payment for agricultural labour.

The conditions under which agriculture is practised on the coastal *chars* are certainly not conducive to heavy yields. There is little doubt, however, that with improved extension services and appropriate inputs yields could be increased.

Unfortunately, throughout the coastal char area farmers are rarely, if ever, visited by extension personnel. The same picture is painted as regards fisheries extension. The exception to this generally bleak view is on Char Majid, though this is, in truth, outside the MES area and presently benefiting from the presence of the Char Development and Settlement Project. Table 2.7 presents a summary of the situation as reported during the socio-economic survey.

Table 2.8 is a record of householders experience with government extension services during the year 1997. The fact that Char Majid is the exception must be put down to activities facilitated under the Char Development and Settlement Project. It is, as yet, unable to gauge whether these services will continue after the termination of the project.

There is only occasional correspondence between what people regard as their principal occupation and what is, in fact, their main sources of cash income. On Urir Char and Char Majid, for example, whilst 80 per cent and 84 per cent of residents, respectively, regarded agriculture as their principal occupation, just 36 per cent and 63 per cent households reported agriculture as their main source of cash income. Throughout the study area agriculture is regarded primarily as a source of food for self-consumption, not as a source of cash income.

Table 2.8: Extension services activity in the MES area, 1997

Location	Agricultural extension services available								Fishery extension service available							
	Weekly		Monthly		Half-yearly		No visit		Weekly		Monthly		Half-yearly		No visit	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Nijhum Dwip	0	0	0	0	0	0	160	100	1	0.6	0	0	0	0	159	99.3
Urir Char	0	0	0	0	0	0	97	100	0	0	0	0	0	0	97	100
Bara Baishdia	0	0	0	0	0	0	270	100	0	0	0	0	0	0	270	100
Char Majid	0	0	15	14.7	27	26.4	60	58.8	0	0	15	14.7	25	24.5	62	60.7
Char Montaz	0	0	0	0	0	0	110	100	0	0	0	0	0	0	110	100
Kukri-Mukri	0	0	0	0	0	0	50	100	0	0	0	0	0	0	50	100

2.2.3 Land Distribution and Settlement

Table 2.9 presents results of the socio-economic survey in the six *chars* selected as representative of the study area. There is some correspondence between surveyed areas though with no general picture emerging. In Char Montaz, Kukri Mukri and Bara Baishdia each land owning category is well represented with a rather even distribution of households throughout the range.

Char Majid is exceptional in that only 2 per cent of households were found to be in the category Functionally Landless. This is thought to be a result of several settlement schemes which, over recent years, have resulted in the allocation of land with associated land ownership certificates.

A further consequence of these schemes is that over 70 per cent of households are now classified as Small Farmers, holding up to one hectare of land. The Char Development and Settlement Project is presently engaged in a programme that includes the issuing of certificates to an additional group of presently landless households.

Nijhum Dwip, similarly, has over 60 per cent of households in the same category, resulting from a settlement programme involving the relocation of households displaced by land erosion along the north coast of Hatia. Each of the initial 800 households were issued with land titles for their respective plots.

As noted above, Char Majid has only 2 per cent of it's households designated Functionally Landless. The other five areas surveyed have a greater proportions of their households so designated. On Bara Baishdia 10 per cent of households have no land. In the remaining areas figures range from 22 per cent (Kukri Mukri) to 33 per cent (Nijhum Dwip).

Table 2.9: Household land ownership

Location	Landholding									
	Functionally landless 0.0 - 0.02 ha		Marginal farmer 0.02 - 0.2 ha		Small farmer 0.2 - 1.0 ha		Medium farmer 1.01- 3.03 ha		Large farmer > 3.03 ha	
	No.	%	No.	%	No.	%	No.	%	No.	%
Nijhum Dwip	53	33.1	3	1.9	100	62.5	3	1.9	1	0.6
Urir Char	28	28.9	4	4.1	53	54.6	11	11.3	1	1.0
Bara Baishdia	28	10.4	53	19.6	108	40.0	55	20.4	26	9.6
Char Majid	2	2.0	20	19.6	73	71.6	6	5.9	1	1.0
Char Montaz	33	30.0	23	20.9	20	18.2	22	20.0	12	10.9
Kukri Mukri	11	22.0	12	24.0	12	24.0	10	20.0	5	10.0

It is known that the people on Nijhum Dwip are replacees from north Hatia. They are either households benefiting from the official settlement scheme or households that have subsequently relocated themselves there with neither official support or approval.

On the three western-most chars surveyed around 10 per cent of households reported land ownership in excess of three hectares.

The survey attempted to discover the principal reasons for people settling on these *chars*. These varied widely and are shown in Table 10. The most common reason given was that households had been, or had become, landless in their previous place of residence. Another reason given was that the household's previous house and holding had been washed away by erosion of the river bank. The result, landlessness, was the same as before.

The two survey areas differing from this general trend were Bara Baishdia and Kukri Mukri where 76 per cent and 60 per cent, respectively, reported that they had inherited the land they presently owned. A significant number of people on Char Montaz (26 per cent) and Kukri Mukri (14 per cent) provide 'other' reasons for settling there. This involved, for example, the movement of newly married couples and other households moving to where they perceived there may be better prospects. Many of these households appear again in the survey results as functionally landless.

2.2.4 Gain and loss of household land

It does not come as a surprise to discover that households throughout the survey zone are involved in a complex process during which they lose and acquire land.

During the survey, householders were asked to report on occasions and circumstances resulting in either land acquisition or loss during the previous ten year period, in other words, between 1987-1997.

Table 2.10: Reasons for settlement in the survey areas

Reasons	Nijhum Dwip		Urir Char		Bara Baishdia		Char Majid		Char Montaz		Kukri Mukri	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Landless	51	31.9	16	16.5	34	12.6	55	53.9	47	42.7	11	22.0
River erosion	92	57.5	80	82.5	6	2.2	39	38.2	13	11.8	2	4.0
Inheritance	2	1.3	0	0	205	75.9	2	2.0	21	19.1	30	60.0
Others	15	9.4	1	1.0	25	9.3	6	5.9	29	26.4	7	14.0

Of the 789 households interviewed, 360 (46 per cent) reported loss of land; 242 (31 per cent) reported land acquisition.

Erosion had been responsible for the loss of land in only three of the areas. It had affected 185 households in Bara Baishdia, 63 in Urir Char; 21 in Char Majid. Other losses reported were due to redistribution of land amongst family members and direct sale or mortgage.

Principal gains had been made through the acquisition of state (*khas*) land. Significant in this regard are Nijhum Dwip, where 74 households (88 per cent of those households owning more than one hectare) had acquired such land; and Char Majid: 74 households and 70 per cent, respectively. All categories of land owners in Urir Char and Bara Baishdia made significant gains through land purchase.

Looked at overall, in the broad picture, it is noted that the number of households owning more than one hectare and who lost land (192) is not too dissimilar from the number of households gaining land (174). The same cannot be said, however, of households owning less than one hectare of land. In this category, households losing land (167) is almost twice the figure of those gaining land (68).

2.3 Social Infrastructure

2.3.1 The Social and Administrative Setting

The area under consideration comprises the lower Meghna estuary downstream of Chandpur, including set back lands, attached char lands and islands off the coast of Bangladesh, with the exception of the island of Bhola. The area also includes a 500 meter wide strip at either side of the estuary, from an arbitrary river bank or coast line extending from Kuakata in Kalapara Thana in the West to the northern side of the Karnafuli river in the East. The total area is approximately 11,000 sq. km.

The safety of lives and properties of people living in the coastal areas and islands is of paramount concern to Government. There presently exist no planning criteria for the development of the estuarine areas within the given boundary. The Meghna Estuary Study is a special investigation in recognition of the extraordinary features of this area.

The Government of Bangladesh (GOB) objectives for the coastal and estuarine areas reflect two major concerns. Firstly, the need to provide communities living within these areas with the highest possible level of physical security against the cyclones and associated storm surges that periodically hit the area. Secondly, GOB is committed to the alleviation of poverty amongst the poorer sectors or society, a disproportionate percentage of which live on the coastal chars and lands adjacent to coastal and estuarine embankments.

The MES study area touches nine administrative districts. Every district in Bangladesh is headed by a District Commissioner (DC), a civil servant who is the direct representative of the central administration. District administration is the responsibility of the DC, and three Additional Deputy Commissions (ADC) in charge of revenue, general affairs and development.

The DC has responsibility for the following:

- acting as the agent and co-ordinator of the central government
- overseeing the construction roads, schools, bridges etc.
- supervising all the development functions within the district, for which the district has its own sources of finance and obtains grants from the government
- overall administration of the district
- collection and administration of revenue and the preservation of law and order in the district
- supervision of local self government activities
- land administration, with responsibility and authority to settle disputes concerning *khas* land allocation.

The administrative tier below the district is the thana. It is the lowest administrative level at which representative offices of the major government departments can be found. The thana is the primary unit of all socio-economic development activities in the rural areas of Bangladesh.

The thana administration is headed by the Thana Nirbahi Officer who has the following responsibilities:

- assisting disaster management at the local level (flood, cyclone etc.)
- collection of local taxes to pay for the village police

- representing government at this lowest level and reporting on significant issues to central government
- mediating in some disputes.

As a government official, a civil servant, the TNO has no independent financial capability to conduct development programmes or activities.

2.3.2 Health and nutrition

Health services are poor throughout the study area. No local service is available on a majority of the off-shore *chars*. Only two thanas situated in the study area have Thana Health Centres (THC/Hospitals), at Sandwip and Hatia, respectively. There are 12 of the less comprehensive Family Welfare Centres (FWC) and only four Union Health Centres (UHC).

Table 2.11 provides a summary of this availability. It includes a number of health centres which, although strictly outside the study area boundaries, are sufficiently close to the area to be reached and the journey home completed without the necessity of an overnight stay.

Field investigations discovered instances where a miscellaneous collection of drugs were available but in the absence of anyone with diagnostic or prescriptive skills. Several preparatory drugs were seen, packaged with names and application notes written in English. In many cases, access to even basic health services necessitated four or five hour journeys by boat which, in inclement weather, would certainly not help a sick or injured party.

Table 2.11: Health service provision in the study area, 1998

Localities	Thana Health Centre / Hospital	Union Health Subcentre	Family Welfare Centre / Family Planning Centre
Hatiya	1		4
Sandwip	2	3	4
Char Fasson	1		9
Manpura			1
Ramgati	1	2	8
Bakerganj	1	6	8
Hizla	1		2
Mahendiganj	1	4	10
Bhola	1		10
Companiganj	1		7
Galachipa	1	4	7
Haimchar	1		2
Total	12	19	72

Tubewells are the principal source of drinking water throughout the study area. In the local absence of functioning tubewells people have no option but to drink pond water. Prevalent diseases and other health concerns include: diarrhoea, influenza, skin diseases, under-nutrition and malnutrition, gastric ulcers and anæmia.

2.3.3 Education and literacy

There is a now a general awareness of the causal link between education (read: literacy and numeracy) and socio-economic development. Education certainly provides people with relatively increased access to information, but perhaps more importantly it facilitates development of an attitude of mind; an enhanced capacity for rational thinking. Education increases what is sometimes referred to as an individual or group's 'absorptive capacity'; an ability to review and evaluate resources and inputs in terms of potential opportunities they are perceived to present.

A corollary of this, of course, is that without education it is likely that children who will comprise the future's adult generations will lack the capability for development even though opportunities and resources may be provided. For this reason it is proposed that in any proposed development initiative prepared for the coastal chars education must be a major component.

It is widely claimed that the principal reason for low school attendance is the need for children to seize any available income earning opportunity. In fact this explanation was hinted at above. An alternative view, presently gaining broad acceptance, is that children are kept away from school because of the poor education services available to them. In discussions throughout the surveyed areas parents were clearly aware of the advantages gained through education. They were also clearly aware that in the absence of even minimal educational services provided at schools their child's attendance would be literally 'a waste of time.'

Table 2.12: Number of primary school age children

Unit: Number of households

Location	Number of Primary School Age Children per Household												Mean Number per HH
	0		1		2		3		4		= > 5		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Nijhum Dwip	21	13.1	33	20.6	37	23.1	38	23.8	25	15.6	6	3.8	2.21
Urir Char	20	20.6	20	20.6	32	33.0	17	17.5	7	7.2	1	1.0	1.73
Bara Baishdia	58	21.5	90	33.3	81	30.0	25	9.3	13	4.8	3	1.1	1.46
Char Majid	7	6.9	17	16.7	31	30.4	31	30.4	13	12.8	3	2.9	2.34
Char Montaz	22	20.0	33	30.0	31	28.2	18	16.4	5	4.6	1	0.9	1.58
Kukri-Mukri	12	24.0	15	30.0	14	28.0	7	14.0	2	4.0	0	0	1.44

Note: Percentage of households

Table 2.13: Literacy rates in the MES area

Literacy Status	Location											
	Nijhum Dwip		Urir Char		Bara Baishdia		Char Majid		Char Montaz		Kukri- Mukri	
	M	F	M	F	M	F	M	F	M	F	M	F
Illiterate	247	276	118	121	231	237	175	243	198	225	80	91
Percent	49.0	59.0	50	53.8	30.0	35.0	67.5	88.0	64	75.2	54.7	73.9
Total	505	467	236	225	769	702	259	276	309	299	146	123

Note: Population five years and over.

The availability of education services throughout the study area is generally below that of the national average. This is particularly the case as regards the availability of qualified teaching staff.

There is a national shortfall in teaching staff and it is natural that, being in demand and therefore able to choose where to teach, few if any choose the more isolated and potentially dangerous settings within the study area.

On the more remote *char* islands many schools are staffed by parents or other unqualified helpers. Or, more likely, they are not staffed at all. Such 'teachers' may receive an honorarium collected from amongst the parents of school aged children.

Another aspect affecting education and, therefore, literacy levels is the relative degrees of poverty amongst the study area settlements. Field investigations characteristically discovered that, especially in the more remote areas, there is considerable seasonal variation in school attendance, with many children frequently attending only in the absence of income earning opportunities. The greater the respective families' need for cash, the less likely it is that the children will forsake opportunities for cash income, even when the rates are very poor. Levels of school attendance and literacy reflect this.

Some survey findings need to be highlighted. Amongst households surveyed on Char Majid 88 per cent of women were found to be illiterate. Similar high rates of female illiteracy were also discovered on Char Montaz (75 per cent) and Kukri Mukri (74 per cent). Only on Bara Baishdia was the figure below 50 per cent. The situation as regards illiteracy amongst men is little better than for women, with only Bara Baishdia (30 per cent) and Nijhum Dwip (49 per cent) having illiteracy levels less than 50 per cent. These low figures have serious consequences for any subsequent development efforts or initiatives. The concern surrounds the absorptive capacity of the target populations, in other words, the capacity of people to see and to take advantage of development opportunities offered.

Table 2.14: Children attending primary school

Location	No. children aged 5-12 years	No. children attending primary school	Children attending primary school as percentage of total
Nijhum Dwip	353	257	72.8
Urir Char	168	116	69.0
Bara Baishdia	394	315	79.9
Char Majid	239	84	35.1
Char Montaz	174	32	18.4
Kukri-Mukri	72	23	31.9

Note: It must not be assumed that these figures necessarily indicate full time school attendance.

Further analysis of the socio-economic survey results indicate a correlation between levels of literacy and incomes. For example, on Char Majid, where literacy levels are lowest, income levels are also lowest. The highest income levels found in the survey area were on Bara Baishdia which also recorded the highest literacy levels. Whether it is economic circumstances that result in poor school attendance or the absence of acceptable levels of educational provision, the resulting illiteracy simply perpetuate high levels of poverty with associated poorer nutrition, poor health and high levels of infant mortality.

Survey results indicate that, within the study area as a whole, literacy rates are likely to rise in the foreseeable future though only slowly. This generally favourable picture does, however, disguise significant variations, reflecting wide ranges in educational opportunity presented to children living on respective *char* islands. The level of opportunity will reflect both availability of educational resources and teaching staff and the freedom of children from an obligation to contribute to household incomes.

A likely longer term outcome of these findings will be a growing disparity between levels of educational achievement amongst children from these remote *chars* and those more in the mainstream of national economic activity. The consequences of this happening could be grave, as these local communities will become comparatively less able to attract either interest or resources; less equipped to utilise any opportunities and available resources. The socio-economic survey shows that attendance at primary school on Char Montaz, for example is only 18 per cent whereas the comparable figure for the far more accessible and economically developed Bara Baishdia is almost 80 per cent.

2.3.4 Family Planning

Table 2.15 summarises the results of the socio-economic survey findings regarding access to Family Planning information, advice and supplies.

Availability of information might consist of little more than sight of a poster on a shop wall or reference to Family Planning on the radio. Availability of information does not necessarily guarantee access to informed prescription or availability of contraceptive supplies.

22

Comparing these figures with the population profiles and household characteristics presented above would indicate that, during recent years, infant and maternal mortality have probably been more significant influences on population growth rates than have been the provision of Family Planning advice and contraceptive supplies.

The population profile for Bara Baishdia, however, and to a lesser extent Char Montaz, might provide some evidence that the national Family Planning programme is beginning to have some effect in these coastal regions. An otherwise normal population age range pyramid shows that the number of people in the category less than 10 years is significantly lower than in the category 10 to 19 years. Seen against a background of improving health service provision, this surely indicates a corresponding fall in live births.

Table 2.15: Households with access to family planning information

Location	Number of Households	Percent of Households
Nijhum Dwip	95	59.4
Urir Char	62	63.9
Bara Baishdia	246	91.1
Char Majid	78	76.5
Char Montaz	22	20.0
Kukri-Mukri	8	16.0

2.3.5 NGO Services

For several years a number of large national and international NGOs have established branches all over Bangladesh. Some smaller and local NGOs are also active in the regions. There is, however, only very limited NGO effort or interest in the coastal char islands.

NGOs in particular provide credit for poorer and landless households, though it appears that, in some cases, small scale subsistence farmers have least access to credit. They are seen from an NGO point of view as too 'self sufficient' and considered by the banks as financially unattractive, principally due to lack of collateral against which to secure respective loans.

NGOs are generally interested in supporting income generating activities amongst communities. They are also involved in health and nutrition programmes, frequently encouraging women to tend and manage fruit and vegetable gardens around, or adjacent to, their houses. Almost every aspect of economic life in Bangladeshi society has supported in some way by Non-Governmental Organisations. Social forestry and aquaculture are just two examples. They also support small scale industrial (cottage) developments, small livestock and silk production.

NGO interventions in any area or sector generally involve the formation of groups, group savings and provision of credit. The capacity amongst poor households in Bangladesh to save is well documented elsewhere[3]. This capacity to save has, in the past, been used as the basis of self-help savings-and-loans groups that the poor have used in the absence of more formal banking provision.

Over more recent years this capacity has been utilised by NGOs as the basis of their financial service provision to these same communities. Millions of poor rural (and urban) households and communities have benefited from these NGO services but there are ways in which these benefits might be substantially improved. A potentially most beneficial modification to the present service provision would be the de-linking of credit availability from the obligation to save, and *vice versa*; allow people to save without the necessity of taking credit, and by so doing putting themselves into debt.

[3] See, for example, Stuart Rutherford (1998). *The savings of the poor: improving financial services in Bangladesh*. In, Journal of International Development Volume 10, No.1. 1998:1-15

Communities and households taking credit from money lenders frequently experience difficulties in repaying loans, principally because of very high interest rates. They thus lose their economic independence and become dependent on the money lender and hence passive in their attitude to development activities.

Though for reasons other than high interest rates these same households become dependent on respective NGOs. In devising a household credit or micro-credit programme as a component of development initiatives on the estuary *chars*, means must be found to make credit available with no other conditions other than a positive assessment of the customer's ability to repay.

2.3.6 Credit

There is widespread reported need for credit. Of households interviewed 74 per cent had sought credit during 1997. Only 61 per cent had been able to borrow money. Much of the need for credit is seasonal and associated with the cultivation of agricultural crops, fishing or animal husbandry. Money is also periodically required for the payment of medical expenses and other social obligations. The cost of credit (interest rates) varies considerably from area to area. With the exception of credits from the international NGO, Action Aid, based on Kukri Mukri, interest rates are considerably above national commercial rates.

A number of large NGOs have had branches all over Bangladesh for a number of years and many smaller and local NGOs are also active in the regions. NGOs in particular provide credit for poorer and landless households. In some cases, small scale subsistence farmers have least access to credit. They are seen from an NGO point of view as too 'wealthy', and considered by the banks as financially unattractive.

It appears that NGOs are the preferred source of credits because of their lower rates of interest. However, NGOs are operating on only three of the *chars* surveyed where they account for 53 per cent (Char Majid), 64 per cent Kukri Mukri and 78 per cent (Char Montaz) of total loans.

The principle source of credit throughout the study area are free-lance money lenders. They are present on all char lands. Amongst households surveyed they account for up to 82 per cent (Bara Baishdia)of total credit transactions. They generally charge interest rates at considerably above commercial rates. Some households reported that the advantage of borrowing from a money lender is that money is made instantly available. Loans are sometimes sought from NGOs or other institutional sources to repay loans taken earlier from money lenders.

Other sources of credit were reported, involving traders, friends and relatives. Interestingly, on Urir Char, 52 per cent of loans were reported as obtained through the Government's Bangladesh Krishi Bank.

Repayment is frequently a problem with household members and they become involved in arrangements involving unpaid labour and/or mortgaging of harvests.

Table 2.16 indicates the reported householder need for credit in 1997 and the percentage of those needing credit that were successful in gaining access to funds.

Table 2.16: Credit and indebtedness of households, 1997

Location	Households in Need of Loan			
	Received		Not Received	
	No. of HH	Percent	No. of HH	Percent
Nijhum Dwip	86	53.8	44	27.5
Urir Char	52	53.6	16	16.5
Bara Baishdia	158	58.5	41	15.2
Char Majid	32	31.4	60	58.8
Char Montaz	65	59.1	10	9.1
Kukri Mukri	25	50.0	0	0.0

Table 2.17 disaggregates totals presented in Table 2.16 with reference to the holding size of indebted households. It is clear that throughout the study area that a high proportion of households are in need of credit. Many small farmers holding less than one hectare of land are this situation. This category of settler farmer is, for example, the model for the 1980s settlement scheme which, during the rule of President Ershad, were established on Char Majid for freedom fighters. This is also a typical landholding size envisaged in the Master Plan and Development Plan for the Meghna Estuary area for the settlement of landless households; a similar sized land holding also became the norm for the EU funded Ardarsha Gram Programme.

Whilst a hectare of land may present an economically attractive agricultural unit on the more fertile soils characteristic of much of inland Bangladesh, it is certainly not such an attractive proposition on the coastal or off-shore chars. Especially if the land is without protection from salt water intrusion, there are no extension services and agro-chemicals are unavailable locally. Even if the latter were available there is presently only very limited access to (reasonably priced) credit to enable the small farmer to purchase it.

A contemporary characteristic on the coastal chars surveyed is of the poorest households unable to break their present dependence on money lenders. The problem centres around the supply of credit to poor households.

As already noted, there is a seasonal need for agricultural credit to enable farmers to purchase, for example, agrochemicals. In addition, for example, at the beginning of the fishing season, poor households have an urgent need of credit for the purchase of nets and other fishing gear. Whether farmers or fishermen, poorest households lack the collateral which would enable them approach institutional sources of credit, with their commercial interest rates.

Table 2.17: Households' need for seasonal loans

Holding (ha)	Nijhum Dwip		Urir Char		Bara Baishdia		Char Majid		Char Montaz		Kukri Mukri	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
0 - 0.02	18	11.3	14	14.4	7	2.6	0	0	7	2.6	0	0
0.02 - 0.20	0	0	2	2.1	32	11.9	7	6.7	32	11.9	7	6.9
0.2 - 1.0	27	16.9	35	36.1	84	31.1	57	55.9	84	31.1	57	55.9
1.0 - 3.0	1	0.6	10	10.3	49	18.2	6	5.9	49	18.2	6	5.09
> 3.0	0	0	1	1.0	20	7.4	1	1.0	20	7.4	1	1.0

They have little choice, therefore, than to seek credit from the informal sector. This generally means traders and money lenders. Both charge 'informal', and therefore, very high interest rates, the payment of which effectively compromises any opportunity these households may otherwise have for economic development. So, the technical issues facing development in the agricultural, forestry and fisheries sectors are matched by equally daunting socio-economic ones.

Other sociological issues were highlighted in the Feasibility Study for the Sandwip Cross Dam (1987). This described circumstances involving intimidation and extortion, as well as threats (and acts) of physical violence as rival political elites vied with one another over access to land and political support. Field investigations completed under the Meghna Estuary Study indicate that such physically threatening activities are no longer characteristic of the coastal areas.

More recently, however, it has become common practice for larger landowners, or other influential people with an interest in this land, to claim *de facto* rights to land. In the absence of evidence to the contrary and possibly with the concurrence of local official figures, these influential people demand payment from local residents for the right to cultivate or graze these lands. Payments are made either in cash or by some form of share cropping agreement between the parties.

Cash payments are not high (poor farmers can, after all, manage to pay) but are generally for a minimum period of seven years. Share cropping conditions are unfavourable to farming families, the division of crop harvest being generally two thirds::one third in favour of the 'owner' of the land. Both these arrangements reflect a *de facto* acceptance by respective families of the other parties' prior rights to land. Householders are thus denied opportunities to settle on these unprotected lands for fear that this might subsequently jeopardise claims to land made by those *de facto* landlords to whom they are economically bound.

There is contemporary anecdotal evidence for this. The Char Development and Settlement Project (CDSP) is engaged in assisting landless households to acquire rights of ownership to areas of *khas* land. It would appear, however, that the level of support from locally influential people for this programme is not presently conducive to efficient programme implementation. The land certification process is surely not facilitated by the fact that granting official *de jure* rights to landless households necessitates the cancellation of existing unofficial *de facto* rights.

In Kukri Mukri Action Aid is operating, offering favourable credit services. It is reported that in some instances, involving small amounts for short periods, zero interest has been charged. They do, however, provide credits at a rate of 12 per cent per annum.

On Char Montaz an NGO called Remote Island Development Project (RIDP) is providing technical advice and credits for the purchase of inputs (amongst other things). The Project has been based on Char Montaz for several years and it's staff are now well trusted by the Char communities. They charge commercial rates and the rate of credit repayment is 100 per cent.

Their present credit exposure is around 50 lakh Taka. The importance of this credit source to the people on Char Montaz can be seen from Table 2.19, where it is recorded that almost 80 per cent of credit requirements are presently serviced by RIDP. Similarly, around 80 per cent of the loans were for agricultural or fisheries inputs. In other words, it was money invested.

The contemporary and indisputable need for credit services amongst existing households in the survey area will increase considerably with the implementation of envisaged development interventions. The present reliance on money lenders with their frequently exorbitant interest rates will clearly not suffice and some institutionalised commercial credit system will need to be introduced to meet the envisaged demand.

The Bangladesh Bank is the central bank of the country. It is responsible for both implementation and control over GOB's agricultural credit policy. This it does through formal channels, including Bangladesh Krishi Bank (BKB) and the nationalised commercial banks (NCBs) such as Sonali Bank, Janata Bank and Agrani Bank. BRDB is another channel of agricultural credit though it's importance is now dwindling.
The Bank has regulatory power over these credit institutions and establishes reserve requirements as well as interest rates.

The BKB provides more than 60 per cent of the total agricultural credit, compared with about 29 per cent from the NCBs and 1 per cent from the Bangladesh Samabaya Bank. The BKB

makes relatively more long and medium term loans than the NCBs which tend to place more emphasis on short term production credit. BKB is considered to be a special credit institution rather than a bank. It provides short, medium and long term credit for a range of activities, including agriculture, forestry, fishery and agro-industries.

Table 2.18: Credit and indebtedness of households, 1997

Unit: No. of households

Location	Purpose								Amount	Average Amount Paid	Average Amount Not Paid
	Agriculture		Debt / Trade		Social		Fishing				
	No.	%	No.	%	No.	%	No.	%			
Nijhum Dwip	46	53.5	5	5.8	12	14.0	30	34.9	6,847	10,376	7,001
Urir Char	34	65.4	3	5.8	13	25.0	5	9.6	4,620	4,577	2,210
Bara Baishdia	55	34.8	23	14.6	83	52.5	8	5.1	7,986	3,117	8,215
Char Majid	17	53.1	5	15.6	7	21.9	3	9.4	2,315	2,326	354
Char Montaz	25	38.5	17	26.2	4	6.2	31	47.7	5,456	1,799	3,951
Kukri-Mukri	6	24.0	14	56.0	1	4.0	6	24.0	3,520	607	2,973

Note: 1) Some loans have multiple purposes.
2) Agriculture includes livestock and purchase of farm equipment
3) Debt/Trade includes debt repayment and land purchases
4) Social includes education, social obligations, dowries and food

The rationale for using the NCBs for development programmes is based on their widespread branch network throughout the country. The NCBs are largely concerned with short-term lending and financial transactions. The extensive rural network enables them to mobilise deposits for short term lending to companies and individuals in urban areas. The average cost of own funds for the NCBs currently stands at five to six per cent.

Amongst the NCBs, Agrani Bank is found to be most willing to provide credit to the marginal and small farmers and the rural poor. Originally a private commercial bank, the Agrani Bank was nationalised by the GOB in 1972. Since then it has been participating in agricultural and rural credit programmes initiated by the Government and Bangladesh Bank.

Table 2.19: Sources of Credit

Form	Source	Nijhum Dwip		Urir Char		Bara Baishdia		Char Majid		Char Montaz		Kukri Mukri	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
A	Money lender	64	74.4	16	30.8	129	81.7	4	12.5	7	10.8	3	12.0
	Friends/relatives	11	12.8	3	5.8	5	3.2	7	21.9	2	3.1	0	0
	Traders	4	4.7	7	13.5	3	1.9	1	3.1	11	16.9	4	16.0
	Ohers	11	12.8	1	1.9	0	0	0	0	0	0	0	0
B	Commercial Bank	1	1.2	0	0	7	4.4	0	0	2	3.1	1	4.0
	BKB	1	1.2	27	51.9	27	17.1	0	0	3	4.6	3	12.0
	Grameen Bank	0	0	1	1.9	0	0	1	3.1	1	1.5	0	0
	Co-operative	1	1.2	0	0	0	0	2	6.3	0	0	0	0
	NGO	0	0	0	0	1	0.6	17	53.1	51	78.5	16	64.0
	Others	0	0	0	0	0	0	0	0	0	0	1	4.0

Note: 1) Some households have loans from several sources.
2) A = non-institutional sources; B = institutional sources

Despite the extensive network and the declarations of intention as reflected in the description above, the landless farmers, marginal farmers and small scale farmers have only benefited marginally from the activities of state owned banks. One major issue is that the small borrowers do not normally have any collateral, which is a requirement for normal bank lending. Even if this is overcome through a guarantee fund or other special arrangements, the NCBs have been reluctant to enter the small scale lending business, which with the present organisational

set-up probably involves such high transaction costs that it is considered as having only limited business interest.

3. RURAL DEVELOPMENT CONSIDERATIONS

3.1 General

The Master Plan incorporates proposals for engineering works. The intention will be to accelerate an otherwise natural process leading to the accretion of new land. It is envisaged that new land will provide opportunities for the settlement of hitherto landless families. It is further anticipated that the basis for these pioneer households economies will be some combination of agriculture, livestock husbandry, fishing and/or forestry, in accordance with local opportunities. Increased levels of productivity on their part might provide some level of economic justification for the engineering works. There is both technical and anecdotal evidence available, however, which encourages consultants to advise circumspection when considering these assumptions.

The Master Plan proposed in the Terms of Reference anticipates a planning process which, together with the Development Plan, will periodically generate[4] proposals for intervention. Six such proposals have already been produced, three to feasibility, three to pre-feasibility level. These proposals, and subsequent ones, are prepared as discrete projects for funding.

An important issue here is that this process has been set up to generate(*sic*) integrated projects, as opposed to engineering interventions *per se*. The process obliges planners to identify specific groups of people expected to benefit from and use services provided through project implementation, in addition, which services to provide and how these groups are to benefit. This will necessitate the participation of targeted groups of people at all stages of the project planning process.

Other volumes of the Master Plan, describe existing (primarily physical) circumstances characteristic of the Survey Area and identify opportunities for economic development and what would need to be done for these opportunities to be realised.

3.2 The socio-economic survey

The socio-economic survey points to circumstances faced by communities presently living on coastal chars and offshore islands. As such, survey results illuminate issues and features of contemporary life which, it is proposed, must be addressed before settlement is anticipated[5].

The purpose of the survey was to perform a social analysis enabling an assessment of several issues. The assessment of which particular groups should be targeted by project intervention was inconclusive, except to say that poverty is endemic to the whole study area. Only very few women headed households were identified in the questionnaire survey and minority groups were not encountered[6].

The survey did, however, suggest that the households experiencing the most pressing economic circumstances are small farmers, in other words: farming households owning less than one hectare of agricultural land. Further, it is confidently assumed that a percentage of households that presently own no land other than, perhaps, that which their house is constructed upon,

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[4] To 'generate' meaning 'to manufacture a discrete unit of production by formal means.'

[5] A more comprehensive presentation of technical issues can be found in Technical Notes Numbers 1,2 and 3, on Agriculture, Fisheries and Forestry, respectively. These Notes review the sector situation as it was found during the duration of the Meghna Estuary Study.

[6] There is, however, anecdotal evidence of former indigenous 'tribal' communities on the western-most *char* islands in the MES study area. It is recommended that in the more detailed surveys associated with specific future interventions in these areas the possibility of remnants of these communities should be investigated and recommendations made to reflect their specific interests.

previously were in the 'small farmer' category but, through economic necessity, have lost their land.

Other relevant volumes of this Master Plan together describe communities and their respective natural resource management strategies and resulting socio-economic circumstances. The authors identify the limited opportunities for economic development in their respective fields and describe, in some detail, the pre-conditions of their realisation.

In general, the area can only be characterised as presenting a paucity of development opportunities. The physical circumstances and natural resource base is extremely restrictive, offering only limited development potential even if the pre-requisites for their realisation were all in place.

In addition, the coastal chars and coastal regions are especially prone to damage and loss of life through cyclones. Investment and capital expenditure can only be considered if the targeted areas are first protected by embankments. The poor economic returns, however, can in no way justify that use of limited capital.

It has for long now been acknowledged that the full realisation of development interventions and initiatives will be achieved only with this high level of active involvement and participation by local communities. So whether the physical circumstances are economically attractive or not rural development in these areas will need to engage the resident communities at all stages of the development process: identification, preparation, implementation, monitoring and evaluation.

A principal feature of contemporary socio-economic studies, therefore, is an assessment of the beneficiary's capacity to take full advantage of opportunities and inputs offered through project implementation. For if these planned 'participants' in the development process lack the where withal to so participate it is unlikely that project objectives will be achieved.

Attempts have recently been made to measure the extent to which respective communities might be deprived of the means to fulfil the planner's development expectations for a community's economic development. (see 3.4 The Human Deprivation Measure)

3.3 Development potential of the study area

Agriculture

The volum on Agriculture provides technical comment regarding problems and management opportunities in managing saline environments. It records agricultural yields, particularly in respect to a discussion and analysis of soils. Issues raised relate to the frequency of salt water intrusion, non-sustainability, lack of both technical (inc. agro-chemical) and extension inputs and the absence of markets and/or marketing.

A principle constraint to agricultural development in these new *char* areas is the poor nature of accreted soils. These are generally fine calcareous alluvial silts, characteristically offering poor soil aeration and slow permeability. They are low in nutrients and contain only negligible amounts of organic matter. Any development strategy for these areas that envisages an eventual agricultural use must include aspects of management that address these constraints. Principle measures might include the use of natural livestock manure and green manuring.

The discussion focuses almost entirely on support for settler households inside embankments and on sites with effective drainage and water management. It is assumed that without protection there can be no justification what so ever for the investment of scarce time and/or resources in agricultural activities. For this reason, no attention is paid to improving cultivation of land outside embankments.

During the MES study consultants made several visits to both mainland and off-shore *chars*. It was observed that a major obstacle to agriculture production on these areas is high levels of soil

salinity. This generally prevents the cultivation of a second rice or vegetable crop within a twelve month period. This means that agriculture is practised as essentially a subsistence activity.

There are two distinctive causes of soil salinity: salt water (i.e. sea water) intrusion, and the raising of salt by capillary action in ground water. In the former, intrusion is limited to areas outside of, or otherwise insufficiently protected by, embankments. In addition to producing high levels of soil salinity inundation of these lands for perhaps two or three months each year effectively renders them unsuitable, or unfit, for permanent settlement. Such inundation can only be meaningfully curtailed by the construction of seaward embankments or sea dikes.

The other case, where soil salinity results from ground water, occurs in lands not protected from salt water intrusion. It is also frequently found in land already protected by the construction of embankments. Evaporation of monsoon rains draws up ground water through capillary action. These shallow ground waters are saline. Once more the water evaporates, though this time leaving a salt deposit on the ground surface.

In this way soil salinity levels rise rapidly and generally render impossible the cultivation of a winter crop. Surface salt deposits continue to accumulate until the following monsoon rains effectively wash them away.

High levels of soil salinity is a persistent problem. For example, farmers cultivating land immediately south of Noakhali are still largely unable to grow a winter vegetable crop on areas accreted 40 years ago and now 35 kilometres from the coastline. Some farmers try to compensate by grazing livestock on these fields but salinity levels, particularly in available surface drinking water, result in widespread diarrhoea and other associated problems amongst grazing animals.

There are considerable areas of land throughout the coastal regions and islands outside existing embankments. An obstacle to the utilisation of these areas often reflects a lack of clarity amongst local residents regarding the ownership of management rights/tenure to these lands. Most are, in fact, state owned, with legal responsibility officially resting with the Ministry of Land.

Few of these areas are occupied by households though most of the land is grazed by cattle and some cultivated by people living either on or behind adjacent embankments.

The primary objective in constructing cross dams is the production of additional land. It is envisaged that such land, as with naturally accreted land, will not be settled prior to the construction of protective embankments.

Many households throughout the study area, however, presently live without the protection of a seawards embankment. This is evidenced by the fact that of the six areas chosen for the sample surveys none are fully protected. Two of the areas, Char Majid and Char Montaz, have embankments but due to inappropriate specification or inadequate operation and maintenance, these do not provide adjacent communities with anticipated levels of protection.

Forestry

Existing GOB policy is to establish mangrove plantations on accreted areas upon their natural colonisation by *uri* grasses. In the envisaged MES scenario this land will remain under mangrove until the level of accretion is judged adequate, when an embankment will be built. Mangrove will not survive within the embankment so it will be cleared and the land converted for agricultural use.

On many islands across the Meghna Estuary plantations have been established on a progressive, annual basis[7]. Forestry Department records indicate that over 120,000 hectares of forest plantation were established in the estuary area between 1966/67 and 1995/96, of which an overwhelming majority consist of mangrove monoculture. Around half of these plantations have subsequently been eroded away.

A number of management options for these mangrove plantations are identified and discussed in relation to three proposed categories of forest: Production Forest, Protection Forest and Conservation Forest.

Contemporary government forest policy for mangrove plantations anticipates three periodic interventions. The final intervention, twenty years after planting involves a visit to the plantation by members of a specially constituted committee and a decision taken on whether the plantation area might be cut and converted into agricultural land. It is noteworthy in this regard that, to date, the Forestry Department has released no mangrove plantations for such conversion though some plantations are recorded as having had a thinning.

It is strongly emphasised that clear felling of mangrove plantations can only be justified, in fact is made necessary, by the prior construction of embankments.

Areas of mangrove plantation certainly have an incremental value but no management plans have been devised to optimise this. There is good commercial potential for management of production forests. In Bangladesh, there is huge demand for a range of timber and non-timber forest products.

Bearing in mind the high costs of embankment construction and maintenance and only moderate potential yields to agriculture, the commercial management of mangrove plantations must be seriously considered as an option in preparing development plans for respective project zones.

Existing forest policy effectively denies people access to these coastal areas for a period of at least 20 years. There is evidence from a number of areas, however, that the demand for agricultural land is such that coastal forest plantations are being increasingly threatened or encroached by otherwise landless households[8].

In the future, it can be envisaged that a growing population pressure will be matched by increasing pressure on these forested areas. Similar unprincipled encroachments have for many years been a feature of newly emerging accreted lands (*chars*) on both coastal and inland, riverine, areas.

Fisheries

The survey showed that open water fisheries continues to provide local households throughout the study area with an important source of cash income. In fact, incomes from the fisheries sector provide the largest contribution to household incomes in three out of the six surveyed communities.

The report on Fisheries, however, notes that the area is grossly over-fished and predicts that catches will decline steeply within the near future, perhaps imminently, that is, within five years. Given the importance of these fisheries as a major source of cash incomes the consequences of such a decline will, of course, be very serious indeed. Some indication of just how serious this might be gauged by considering the economic situation of households on Char Majid where incomes from fisheries are negligible.

[7] For a more comprehensive account, see volume 7 on Forestry.
[8] On a field visit to coastal mongrove plantations in Feni district, in 1998, the MES Forestry Consultant estimated that encroachment had reduced the standing crop by some 25 per cent.

On Char Majid, the Char Development and Settlement Project is continuing to facilitate the settlement of landless households on coastal, mainland, *chars* and to provide some assistance towards their economic development. The MES socio-economic survey discovered that households living on these *chars* are the poorest households in the estuary area. The absence of significant incomes from fishing, compared to the other areas, is perhaps the single most important reason for this.

Recorded agricultural yields are very low, resulting in levels of consumption per household around 40 per cent lower than on the other *chars* in the survey. Returns to livestock husbandry similarly are very low. The picture as regards off-farm migrant labour is also depressing.

Due to poor returns to agriculture, livestock husbandry and fishing, 50 per cent of households surveyed regularly had at least one member away from home seeking seasonal paid employment.

An additional 15 per cent of households had at least one member away from home on a full-time permanent basis. The low level of educational achievement so characteristic of the Char Majid is undoubtedly a major factor in explaining the very low income levels of these, as opposed to other, itinerant workers.

Circumstances on the coastal *char* lands frequently allow for little more than survival of resident households. This is particularly true of newly accreted lands where social, physical and climatic features combine to render many areas almost unfit for habitation.

Following the projected decline in fisheries, with the loss of associated cash incomes to households, it is envisaged that household incomes will fall to the low levels presently characteristic of Char Majid.

As an alternative to this important contemporary source of household incomes there is some potential for developing aquaculture, principally shrimp fry rearing and the cultivation of Indian Carp. The objective of these will be to replace incomes lost through open fisheries decline.

At present, approximately 30 trawlers (a number are registered in Thailand) have been granted licences to fish within Bangladesh territorial waters. As a first step towards establishing a sustainable fisheries sector it is recommended that these licences be immediately revoked. The intention would then be to facilitate community level fishing activities as a component in an integrated multi-sectoral rural economy.

3.4 The Human Deprivation Measure (UNDP)

Some years ago the United Nations Development Programme (UNDP) developed the Human Development Index (HDI) to measure the progress of nations. Such a measurement enabled the ranking of these nations. Reflecting primarily a nation's Gross Domestic Product *per capita* the HDI did, however, also incorporate supplementary reference to progress in both education and health.

Whilst HDI is acknowledged as a useful indicator of a nation's development it is thought inappropriate as an indicator of the range of deprivations besides income. In preparing or proposing development initiatives for the MES area there is need of a measure of deprivations other than income if effective poverty reduction strategies are to be designed.

Poverty will not, however, be reduced through income transfers to the poor. It is shortage of opportunities and capabilities that are the cause of poverty, not shortage of income. In Bangladesh it is, perhaps, NGOs who have best responded to this insight, being strongly committed to supporting basic health provision and informal education and literacy programmes.

The Human Deprivation Measure (HDM) focuses on three indicators:

- health deprivation, including lack of access to health care, lack of access to safe drinking water, the number of malnourished children
- education deprivation, including adult literacy combined with the number of children out of school, thereby reflecting lack of education for both present and future generations
- income deprivation, reflecting a minimum income threshold, below which the basic necessities of life cannot be financed.

The following reference to respective results of socio-economic survey clearly indicates that across the surveyed area there is considerable levels of deprivation which surely must be addressed before potentials from physical interventions might be realised.

Health deprivation

The physical health of the population is not good with a majority of recorded illnesses a consequence of malnutrition and unclean drinking water. We have no way of assessing the degree to which occasions of illness remain unrecorded. Table 3.1 reflects the incidence of illness as recorded during survey interviews.

Table 3.1: Illnesses suffered by families, 1997

Location	Household Members Reporting Illness during 1997										Treatment Received		Health Centre Visit by HH	
	A		B		C		D		E		Yes		Yes	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Nijhum Dwip	343	64	92	17	14	3	4	1	80	15	512	96	50	31
Urir Char	76	46	41	25	16	10	0	0	32	19	163	99	22	23
Bara Baishdia	211	36	104	16	82	14	4	1	192	32	569	96	112	112
Char Majid	117	47	92	37	13	5	0	0	25	10	216	87	8	8
Char Montaz	85	44	34	18	37	19	0	0	37	19	162	84	25	23
Kukri-Mukri	34	47	15	21	12	16	0	0	12	16	50	68	9	18

Notes: 1) A = fever, cough, typhoid, malaria; B = diarrhoea, cholera, dysentery; C = ulcer, gastric problems; D = TB; E = others
2) Percentage of cases reported.

The relatively high percentage of times that treatment was sought, whether palliative or curative is not known, reflects the ready availability of traditional and untrained practitioners who, in the absence of trained medical practitioners, do at least give the sick the satisfaction of having done something about their affliction.

Another measure of human deprivation is the incidence of infant mortality. A group of mothers on Char Montaz calculated a 'rule of thumb' figure of 25 per cent. A significant shortfall in women in the older age categories almost certainly reflects a high incidence of maternal mortality.

Education deprivation

Regarding educational attainment, Table 2.14 provides some indication and percentages of school age children presently attending school in the six areas surveyed. In three of the areas the rates are moderately acceptable; in the remaining three they are very low.

It is frequently assumed that if children are kept away from school it is because respective households cannot afford to deny themselves the income earning capabilities of young children.

Speaking with household members on the targeted chars, however, it was reported on several occasions that children were rather kept away from school because of the absence of effective teachers. People are broadly aware of the fact that only through education might it be possible for their children to escape the hardships that they themselves have and still do survive.

Education provision is generally poor, not least because the remoteness of many sites means they are unattractive to trained teaching staff. It must not, therefore, be taken for granted that higher levels of school attendance will result, necessarily, in higher levels of literacy. Nevertheless, poor educational provision is exacerbated by the need for even small children to contribute in some way to household incomes.

Illiteracy, therefore, is one of the most serious deprivations. The present adult literacy levels are low. With unacceptably low levels of school attendance amongst at least half the population the future scenario does not appear to present much of an improvement.

A concerted effort of behalf of the Government, through the Department of Education, to substantially raise literacy levels amongst the marine chars will be a social prerequisite for economic development amongst rural communities.

Income deprivation

The third human deprivation, that is, income deprivation, is also characteristic of much of the survey areas (see Table 2.6).

With an average of over six members, households on Char Majid, the poorest in the study area, thus enjoy an average monthly income of Tk 1,500 per month; under Tk 400 per week.

Households on Bara Baishdia, also with an average of six members, have the highest incomes; Tk 2,500 per month or Tk 600 per week.

Incomes from the fisheries sector provide the largest contribution to household incomes in three out of the six surveyed communities.

Across the study area heads of household generally report that agriculture is their principal occupation and, in a majority of cases, it certainly appears to make a large contribution to household subsistence. The amount of unhusked rice retained for self-consumption per household in 1997 varied between 1,451 kg on Urir Char and 629 kg on Char Montaz. This would guarantee households self sufficiency in rice on the former *char* but would provide sufficient rice for only eight to nine months for households on Char Montaz.

These relatively favourable rice yields must be read against a more general historical background which shows that in around 40 per cent of years rice cultivation is not possible due to inundation with saline water.

The urgency of a households' need for cash is indicated by the fact that rice is sold by those same households on Char Montaz showing an annual rice deficit to consumption. Rice is sold for cash immediately following harvest to repay loans taken out to ensure production. At this time there is a local surfeit of grain and prices are at their lowest. Rice will later be purchased to make up this deficit resulting from the sale, but bought when prices are at their highest, that is, in the weeks prior to harvest.

4. CONCLUSION

The physical and climatic conditions that characterise the study area offer little by way of opportunities for economic development. Even with optimum engineering and extension inputs opportunities for improvements in land use strategies and incomes will remain poor; with only limited prospects for improvements in either standard of living or quality of life.

Social infrastructure provision, primarily health and education services, is very poor throughout the study area. Infant and maternal mortality is generally not recorded but the incidence of both is known to be high. Levels of literacy are low, even by national standards and children's school attendance levels are unsatisfactory. Cash incomes are low with wages frequently paid partly 'in kind' by the provision of meals.

There are also climatic reasons for the reluctance of households to settle on unprotected lands. These mostly reflect the exposed nature of these areas. During the annual monsoon period the land is largely inundated with sea water. Periodic flooding can last for up to three months. The inherent risk to life and property in these areas is further exacerbated during periods of cyclones and storms.

Despite these adverse circumstances some people do live permanently in areas unprotected by coastal embankments. Notable here are the approximately 8,000 households living on the *chars* targeted by the socio-economic survey. CDSP lands, too, are behind embankments though, due to a general shortfall in efficient sluice capability, these lands are not yet fully protected from salt water intrusion.

In addition, a Union Chairman on Char Montaz is presently involved in acquiring land ownership certificates for 100 households recently settled in a similar unprotected area. A local NGO (Remote Island Development Programme RIDP) on the same char is similarly engaged in seeking certificates for land outside the embankment on behalf of a further 250 households.

Understandably, a frequently heard request made by people living in unprotected areas is that an embankment be constructed to protect their houses and lands from flooding. Experience from several sites in the MES study area does, however, highlight possible adverse consequences of constructing embankments prematurely. For halting water intrusion effectively means an end to further sedimentation on land behind the embankment. It does not, however, mean an end to sedimentation outside the embankment.

A possible consequence of premature construction is that land outside the embankment continues to rise above the level of land inside. The result is that land inside the embankment becomes increasingly difficult to drain. Impeded drainage further reduces the effectiveness of water run-off to remove salt and hence reduce levels of soil salinity. This scenario is demonstrated on Char Montaz.

For families living outside the embankment, however, both houses and cultivated land are periodically flooded with sea water. Agricultural yields are at best low and even then only obtainable in an average of three out of five years. Household incomes are low. In the absence of alternative income opportunities adult men will sometimes be forced to take agricultural labour at a rate as low as Tk 25 per day. During the season they derive their principal income from fishing, supplemented by earnings from family members working away from home.

Many families survive on a day-to-day or hand-to-mouth basis. Health provision is poor to non-existent. Drugs and medicines are sometimes sold in kiosks by people with no knowledge of their use, to people similarly uniformed. Infant mortality is high, perhaps locally as many as 25 per cent of infants dying before their second birthday.

Communities resident on the coastal chars rely heavily on cash incomes from off-shore fishing activities. It is predicted, however, that present level of fish catch are unsustainable and are likely to fall dramatically in the very near future.

To reduce present levels of over-fishing there will be need to develop opportunities for households to replace their dependence on fishing as a principle source of cash income. Agriculture and off-farm employment probably offer the only real such opportunities.

Improving agricultural yields is only realistically possible on land protected by embankments and where water management and drainage facilities are operating effectively and are maintained at a high level of operational efficiency. Even where these conditions might be realised the potential for significant improvements in either grain or vegetable harvests are extremely limited. Improved livestock husbandry might also contribute to raising compensatory incomes. But this would require local householders being taught new skills and approaches, involving fodder production (itself difficult on the *char* areas) and stall feeding. Low educational levels amongst farmers and a paucity of effective extension and veterinarian services present further obstacles to realising what, in reality, might be only small returns.

Serious doubts must be raised concerning the contribution that engineering works might make to rural development within the study area. It might be argued that where such works provide enhanced levels of physical security to already resident populations, investments in social and physical infrastructure may be more easy to justify. Similarly, protection and stabilisation of lands otherwise threatened by erosion might allow for settlement of otherwise landless households.

Analysis of results from the socio-economic survey did highlight the fact that, in the absence of development interventions and associated opportunities, the number of people living on these off-shore *chars* is growing is growing at a rate significantly lower than national average for Bangladesh. Population records from Manpura and Nijhum Dwip, however, demonstrate clearly that people will move to areas where they feel development initiatives might offer opportunities for economic self betterment. There is every reason to suspect, therefore, that activities projected and undertaken under the aegis of the proposed Master Plan and Development Plan process will result in considerable numbers of people migrating to the targeted areas.

All other things being equal, providing certificates of land ownership might be thought to offer some degree of social security to otherwise itinerant labourers. This, in turn, may reduce levels of population migration. In practise, however, things frequently turn out to be very unequal. Some settlements on Char Majid are found to bear out this latter view.

In the Introduction it was explained that, whilst Char Majid is not strictly within the MES study area, it was decided to implement the questionnaire there to act as a control, but, perhaps more importantly, to provide some indication as to possible repercussions of subsequent project interventions.

During the 1980s a number of cluster settlements were established on Char Majid. Typically, these consisted of around 50 houses built on the levee of an artificial fish pond. Each household was allocated a house and house garden and 1 - 2 acres of agricultural land. The land is marine sediment, infertile and lacking in organic matter. A principle problem throughout this area is the high levels of soil salinity. Yields are low to very low and are generally insufficient to guarantee food, i.e. rice, security. To enhance household incomes members engage in share-cropping, from which they retain only 33 per cent of the crop yield. Though the returns to share-cropping are low, alternative returns to labour are not readily available.

In times of food shortage householders obtain credit to purchase the shortfall in food grains. In the absence of cash for repayment of capital, plus interest, householders have had little option other than to mortgage part of their future harvests or to agree to share-cropping at yet more discriminatory rates.

In all, this process contributes to a ratcheting-down of households into greater levels of poverty and deprivation. The somewhat romantic picture of households being settled in their own house, with their own smallholding, bears little or no relation to what is actually happening throughout the estuary char areas.

The physical and climatic conditions that characterise the study area offer little by way of opportunities for economic development. Even with optimum engineering and extension inputs

opportunities for improvements in land use strategies and incomes will remain poor; with only limited prospects for significant improvements in either standard of living or quality of life.

Social infrastructure provision, primarily health and education services, is very poor throughout the study area. Infant and maternal mortality is generally not recorded but the incidence of both is known to be high. Levels of literacy are low, even by national standards and children's school attendance levels are unsatisfactory. Cash incomes are low with wages frequently paid partly 'in kind' by the provision of meals.

Understandably, it cannot be anticipated that Government will be in a position to provide even basic education and health provision in these areas within the foreseeable future. The high costs and difficulties of providing adequate levels of service to these remote regions surely cannot be justified given the relatively low total numbers of residents and the low levels of overall population density.

The study area can thus be characterised by an absence of opportunities for economic development. Similarly, communities resident in the area are characteristically suffering the consequences and limitations associated with high levels of human deprivation. The combination of these two features does not offer encouragement to development planners.

APPENDICES

Table 1: Population characteristics of the study area

Population Characteristics	Location					
	Nijhum Dwip	Urir Char	Bara Baishdia	Char Majid	Char Montaz	Kukri-Mukri
Total Households Surveyed	160	97	270	102	110	50
Total Population	1158	583	1648	620	684	306
Economically Active Population	302	137	518	160	217	92
Average Size of Households	7.2	6.0	6.1	6.1	6.2	6.1
Economic Dependency Ratio	283.4	325.6	218.2	287.5	215.2	232.6

$$\text{Economic Dependency Ratio} = \frac{\text{Total Population} - \text{Economically Active Population}}{\text{Economically Active Population}} \times 100$$

Table 2 : Sex distribution of the sample households

Age	Location											
	Nijhum Dwip		Urir Char		Bara Baishdia		Char Majid		Char Montaz		Kukri-Mukri	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<5	105 17.2 %	81 14.8 %	65 21.6 %	57 20.2 %	94 10.9 %	83 10.6 %	52 16.7 %	33 10.7 %	32 9.4 %	44 12.8 %	20 12.1 %	17 12.1 %
5-14	199 32.6 %	186 33.9 %	81 26.9 %	101 35.8 %	237 27.5 %	240 30.6 %	124 39.9 %	143 46.3 %	102 29.9 %	105 30.6 %	46 27.7 %	42 30.0 %
15-24	92 15.1 %	93 17.0 %	42 14.0 %	35 12.4 %	176 20.4 %	170 21.7 %	35 11.3 %	35 11.3 %	70 20.5 %	61 17.8 %	41 24.7 %	26 18.6 %
25-34	82 13.4 %	79 14.4 %	37 12.3 %	43 15.3 %	114 13.2 %	109 13.9 %	21 6.8 %	43 13.9 %	32 9.4 %	45 13.1 %	18 10.8 %	19 13.6 %
35-44	41 6.7 %	48 8.8 %	30 10.0 %	21 7.5 %	77 8.9 %	95 12.1 %	38 12.2 %	28 9.1 %	33 9.7 %	33 9.6 %	13 7.8 %	12 8.6 %
45-54	30 4.9 %	22 4.0 %	17 5.7 %	16 5.7 %	73 8.5 %	47 6.0 %	27 8.7 %	24 7.8 %	28 8.2 %	23 6.7 %	12 7.2 %	14 10.0 %
55>	61 10.0 %	39 7.1 %	29 9.6 %	9 3.2 %	92 10.7 %	41 5.2 %	14 4.5 %	3 1.0 %	44 12.9 %	32 9.3 %	16 9.6 %	10 7.1 %
Total	610 100.0 %	548 100.0 %	301 100.0 %	282 100.0 %	863.0 100.00 %	785 100.0 %	311 100.0 %	309 100.0 %	341 100.0 %	343 343.0 %	166 100.0 %	140 100.0 %
Sex Ratio	111.3		106.7		109.9		100.7		99.4		118.6	

Sex ratio = males per 100 females

Table 3 : Literacy rate of household members

Literacy Status	Location											
	Nijhum Dwip		Urir Char		Bara Baishdia		Char Majid		Char Montaz		Kukri- Mukri	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Illiterate	247 48.9 %	276 59.0 %	118 50.0 %	121 53.8 %	231 30.0 %	237 35.0 %	175 67.6 %	243 88.0 %	198 64.1 %	225 75.3 %	80 54.8 %	91 74.0 %
School Attendance	258 51.1 %	191 40.9 %	188 50.0 %	104 46.2 %	538 70.0 %	456 65.0 %	84 32.4 %	33 12.0 %	111 35.9 %	74 24.8 %	66 45.2 %	32 26.0 %
Total	505 100.0 %	467 100.0 %	236 100.0 %	225 100.0 %	769 100.0 %	693 100.0 %	259 100.0 %	276 100.0 %	309 100.0 %	299 100.0 %	146 100.0 %	123 100.0 %

Note: Population five years and over

Table 4 : Main occupation of household heads

Occupation	Location					
	Nijhum Dwip	Urir Char	Bara Baishdia	Char Majid	Char Montaz	Kukri-Mukri
Agriculture	38 23.8 %	61 62.9 %	119 44.1 %	62 60.8 %	41 37.3 %	21 42.0 %
Agricultural Labour	2 1.3 %	17 17.5 %	24 8.9 %	24 23.5 %	10 9.1 %	3 6.0 %
Business	12 7.5 %	7 7.2 %	38 14.1 %	5 4.9 %	9 8.2 %	5 10.0 %
Fishing	81 50.6 %	3 3.1 %	55 20.4 %	1 1.0 %	20 18.2 %	6 12.0 %
Boat Labour	3 1.9 %	0 0.0 %	4 1.5 %	0 0.0 %	21 19.1 %	3 6.0 %
Service	10 6.3 %	4 4.1 %	13 4.8 %	0 0.0 %	3 2.7 %	1 2.0 %
Others	14 8.8 %	5 5.2 %	17 6.3 %	10 9.8 %	6 5.5 %	11 22.0 %
Total	160 100.0 %	97 100.0 %	270 100.0 %	102 100.0 %	110 100.0 %	50 100.0 %

Table 5 : Main occupation of household members

Occupation	Location											
	Nijhum Dwip		Urir Char		Bara Baishdia		Char Majid		Char Montaz		Kukri-Mukri	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Agriculture	12 2.6 %	2 0.4 %	23 11.2 %	0 0.0 %	90 15.0 %	1 0.1 %	24 10.9 %	0 0.0 %	22 9.4 %	0 0.0 %	9 7.5 %	0 0.0 %
Agricultural Labour	7 1.5 %	0 0.0 %	4 1.9 %	0 0.0 %	45 7.5 %	2 0.3 %	28 12.7 %	3 1.0 %	11 4.7 %	2 0.6 %	2 1.7 %	0 0.0 %
Business	3 0.7 %	0 0.0 %	4 1.9 %	0 0.0 %	18 3.0 %	0 0.0 %	0 0.0 %	0 0.0 %	14 6.0 %	0 0.0 %	7 5.8 %	0 0.0 %
Fishing	84 18.5 %	2 0.4 %	2 1.0 %	0 0.0 %	57 9.5 %	0 0.0 %	2 0.9 %	0 0.0 %	16 6.8 %	1 0.3 %	10 8.3 %	0 0.0 %
Boatman	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	1 0.2 %	0 0.0 %	0 0.0 %	0 0.0 %	36 15.4 %	4 1.2 %	9 7.5 %	0 0.0 %
Service	10 2.2 %	5 0.9 %	5 2.4 %	0 0.0 %	18 3.0 %	5 0.6 %	0 0.0 %	0 0.0 %	5 2.1 %	0 0.0 %	5 4.2 %	0 0.0 %
Student	171 37.7 %	140 25.7 %	73.0 35.4 %	72 25.7 %	225 37.4 %	223 28.7 %	64 29.0 %	29 9.8 %	63 26.9 %	56 16.5 %	40 33.3 %	25 18.4 %
Housewife	0 0.0 %	206 37.9 %	0 0.0 %	103 36.8 %	0 0.0 %	353 45.5 %	0 0.0 %	97 32.7 %	0 0.0 %	152 44.7 %	0 0.0 %	63 46.3 %
Dependent	154 33.9 %	185 34.0 %	93 45.2 %	105.0 37.5 %	141 23.4 %	188 24.2 %	102 46.2 %	168 56.6 %	64 27.4 %	124 36.5 %	32 26.7 %	47 34.6 %
Others	13 2.9 %	4 0.7 %	2 1.0 %	0 0.0 %	7 1.2 %	4 0.5 %	1 0.5 %	0 0.0 %	3 1.3 %	1 0.3 %	6 5.0 %	1 0.7 %
Total	454 100.0 %	544 100.0 %	206 100.0 %	280 100.0 %	602 100.0 %	776 100.0 %	221 100.0 %	297 100.0 %	234 100.0 %	340 100.0 %	120 100.0 %	136 100.0 %

Table 6 : Secondary occupation of household heads

Occupation	Location					
	Nijhum Dwip	Urir Char	Bara Baishdia	Char Majid	Char Montaz	Kukri-Mukri
Agriculture	62 38.8 %	5 5.2 %	65 24.1 %	6 5.9 %	13 11.8 %	4 8.0 %
Agricultural Labour	11 6.9 %	3 3.1 %	11 4.1 %	28 27.5 %	14 12.7 %	1 2.0 %
Absentee Land Owner	2 1.3 %	0 0.0 %	1 0.4 %	0 0.0 %	0 0.0 %	0 0.0 %
Business	5 3.1 %	6 6.2 %	14 5.2 %	5 4.9 %	8 7.3 %	7 14.0 %
Fishing	16 10.0 %	12 12.4 %	48 17.8 %	23 22.6 %	8 7.3 %	1 2.0 %
Boatman	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	17 15.5 %	5 10.0 %
Service	1 0.6 %	2 2.1 %	1 0.4 %	0 0.0 %	0 0.0 %	0 0.0 %
Others	2 1.3 %	0 0.0 %	0 0.0 %	1 1.0 %	3 2.7 %	1 2.0 %
No Secondary Occupation	61 38.1 %	69 71.1 %	130 48.2 %	39 38.2 %	47 42.7 %	31 62.0 %
Total	160 100.0 %	97 100.0 %	270 100.0 %	102 100.0 %	110 100.0 %	50 100.0 %

Table 7 : Secondary occupation of household members

Occupation	Location											
	Nijhum Dwip		Urir Char		Bara Baishdia		Char Majid		Char Montaz		Kukri-Mukri	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Agriculture	51 11.2 %	0 0.0 %	0 0.0 %	0 0.0 %	17 2.8 %	0 0.0 %	0 0.0 %	0 0.0 %	5 2.1 %	2 0.6 %	0 0.0 %	0 0.0 %
Agricultural Labour	3 0.7 %	0 0.0 %	0 0.0 %	0 0.0 %	13 2.2 %	0 0.0 %	10 4.5 %	3 1.0 %	6 2.6 %	0 0.0 %	1 0.8 %	0 0.0 %
Absentee Land Owner	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %
Business	1 0.2 %	0 0.0 %	0 0.0 %	0 0.0 %	1 0.2 %	0.0 0.0 %	0 0.0 %	0 0.0 %	2 0.9 %	0 0.0 %	1 0.8 %	0 0.0 %
Fishing	2 0.4 %	2 0.4 %	1 0.5 %	0 0.0 %	41 6.8 %	1 0.1 %	8 3.6 %	0 0.0 %	2 0.9 %	0 0.0 %	4 3.3 %	2 1.5 %
Boatman	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	14 6.0 %	0 0.0 %	1 0.8 %	0 0.0 %
Service	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %
Others	1 0.2 %	2 0.4 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	1 0.4 %	0 0.0 %	2 1.7 %	0 0.0 %
No Secondary Occupation	396 87.2 %	540 99.3 %	204 99.0 %	280 100.0 %	530 88.0 %	775 99.9 %	203 91.9 %	294 99.0 %	204 87.2 %	338 99.4 %	111.0 92.5 %	134 98.5 %
Total	454 100.0 %	544 100.0 %	206 100.0 %	280 100.0 %	602 100.0 %	776 100.0 %	221 100.0 %	297 100.0 %	234 100.0 %	340 100.0 %	120 100.0 %	136 100.0 %

Table 8 : Settlement pattern of households in sample areas

Population Characteristics	Location					
	Nijhum Dwip	Urir Char	Bara Baishdia	Char Majid	Char Montaz	Kukri-Mukri
% in Cluster Settlement	116 72.5 %	9 9.3 %	195 72.2 %	31 30.4 %	5 4.6 %	18 36.0 %
% in Single Settlement	44 27.5 %	88 90.7 %	75 27.8 %	71 69.6 %	105 95.5 %	32 64.0 %
Total	160 100.0 %	97 100.0 %	270 100.0 %	102 100.0 %	110 100.0 %	50 100.0 %

Table 9 : Settlement pattern preferences of households

Preference for Settlement Pattern	Location					
	Nijhum Dwip	Urir Char	Bara Baishdia	Char Majid	Char Montaz	Kukri-Mukri
	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	41 25.6 %	8 8.3 %	97 35.9 %	31 30.4 %	15 13.6 %	8 16.00 %
Single	119 74.4 %	89 91.8 %	173 64.1 %	71 69.6 %	95 86.4 %	42 84.00 %
Total	160 100.0 %	97 100.0 %	270 100.0 %	102 100.0 %	110 100.0 %	50 100.00 %

Table 10 : Household structure in the sample areas

Household Structure	Location					
	Nijhum Dwip	Urir Char	Bara Baishdia	Char Majid	Char Montaz	Kukri-Mukri
Average household size	7.2	6.0	6.1	6.1	6.2	6.1
% Female headed households	4 2.5 %	2 2.1 %	9 3.3 %	12 11.8 %	3 2.7 %	4 8.0 %
% of Households with seasonal out-migrat	41 25.6 %	4 4.1 %	14 5.2 %	35 34.3 %	5 4.6 %	1 2.0 %

Table 11 : Land ownership of households

Land Holding (hectares)	Location					
	Nijhum Dwip	Urir Char	Bara Baishdia	Char Majid	Char Montaz	Kukri-Mukri
Functionally Land less 0.00 - 0.02	53 33.1 %	28 28.9 %	28 10.4 %	2 2.0 %	33 30.0 %	11 22.0 %
Marginal farmer 0.02 - 0.20	3 1.9 %	4 4.1 %	53 19.6 %	20 19.6 %	23 20.9 %	12 24.0 %
Small farmer 0.20 - 1.00	100 62.5 %	53 54.6 %	108 40.0 %	73 71.6 %	20 18.2 %	12 24.0 %
Medium farmer 1.01 - 3.03	3 1.9 %	11 11.3 %	55 20.4 %	6 5.9 %	22 20.0 %	10 20.0 %
Large farmer Above 3.03	1 0.6 %	1 1.0 %	26 9.6 %	1 1.0 %	12 10.9 %	5 10.0 %

Table 12 : Operational holdings of households

Reasons	Location					
	Nijhum Dwip	Urir Char	Bara Baishdia	Char Majid	Char Montaz	Kukri Mukri
	hectares	hectares	hectares	hectares	hectares	hectares
Own land farming	58.9 47.2 %	43.6 58.6 %	129.1 37.5 %	36.3 58.4 %	49.8 33.0 %	27.4 38.4 %
Lease in	7.0 5.6 %	0.0 0.0 %	43.3 12.6 %	0.0 0.0 %	33.4 22.2 %	5.8 8.2 %
Mortgage in	12.8 10.3 %	2.5 3.3 %	7.5 2.2 %	0.8 1.3 %	3.2 2.2 %	0.0 0.0 %
Share Crop in	46.0 36.9 %	23.4 38.1 %	164.3 47.7 %	25.1 40.4 %	64.4 42.7 %	38.2 53.5 %
Others	0.0 0.0 %	0.0 0.0 %	0.0 0.0 %	0.0 0.0 %	0.0 0.0 %	0.0 0.0 %
Total	124.7 100.0 %	74.5 100.0 %	344.2 100.0 %	62.1 100.0 %	150.8 100.0 %	71.4 100.0 %

Note : Land leased, mortgaged or share cropped in will not necessarily equal to the land share cropped, leased and mortgaged out (Table-13) due to household sampling.

Table 13 : Own land not cultivated

Reasons	Location					
	Nijhum Dwip	Urir Char	Bara Baishdia	Char Majid	Char Montaz	Kukri-Mukri
	hectares	hectares	hectares	hectares	hectares	hectares
Share crop out	16.7 66.2 %	9.3 70.3 %	107.4 84.3 %	8.5 84.4 %	8.0 54.7 %	4.7 78.5 %
Lease out	0.0 0.0 %	0.8 5.9 %	11.3 8.8 %	0.0 0.0 %	6.0 41.3 %	1.3 21.5 %
Mortgage out	7.0 27.6 %	1.5 11.6 %	8.8 6.9 %	1.6 15.6 %	0.6 4.0 %	0.0 0.0 %
Others	1.6 6.2 %	1.6 12.2 %	0.0 0.0 %	0.0 0.0 %	0.0 0.0 %	0.0 0.0 %
Total	25.2 100.0 %	13.2 100.0 %	127.4 100.0 %	10.1 100.0 %	14.6 100.0 %	6.0 100.0 %

Note : Land leased, mortgaged or share cropped out will not necessarily equal to that land share cropped, leased or mortgaged in (Table-12) due to household sampling.

Table 14 : Reasons for settlement in the sample areas

Reasons	Location					
	Nijhum Dwip	Urir Char	Bara Baishdia	Char Majid	Char Montaz	Kukri-Mukri
Landless	51 31.9 %	16 16.5 %	34 12.6 %	55 53.9 %	47 42.7 %	11 22.0 %
River erosion	92 57.5 %	80 82.5 %	6 2.2 %	39 38.2 %	13 11.8 %	2 4.0 %
Inheritance	2 1.3 %	0 0.0 %	205 75.9 %	2 2.0 %	21 19.1 %	30 60.0 %
Others	15 9.4 %	1 1.0 %	25 9.3 %	6 5.9 %	29 26.4 %	7 14.0 %

Table 15 : Land title status

Location	% Title Deed to Homestead			% Title Deed to Agricultural Land			% Applied for Khas land	% Household Settled without Legal Authority
	Husband	Wife	No owner-ship	Husband	Wife	No owner-ship		
Nijhum Dwip	98 61.3 %	94 58.8 %	57 35.6 %	105 65.6 %	96 60.0 %	55 34.4 %	153 95.6 %	38 23.8 %
Urir Char	68 70.1 %	16 16.5 %	29 29.9 %	63 65.0 %	18 18.6 %	34 35.1 %	63 65.0 %	27 27.8 %
Bara Baishdia	234 86.7 %	10 3.7 %	29 10.7 %	204 75.6 %	7 2.6 %	66 24.4 %	172 63.7 %	1 0.4 %
Char Majid	38 37.3 %	0 0.0 %	64 62.8 %	38 37.3 %	0 0.0 %	64 62.8 %	88 86.3 %	63 61.8 %
Char Montaz	67 60.9 %	4 3.6 %	39 35.5 %	51 46.4 %	9 8.2 %	48 52.7 %	57 51.8 %	35 31.8 %
Kukri-Mukri	34 68.0 %	3 6.0 %	13 26.0 %	27 54.0 %	3 6.0 %	23 46.0 %	14 28.0 %	9 18.0 %

Table 16A : Loss of land by households

Location	Land loss in last 10 years by reasons						
	Area (hectares)						
	Household with less than 1.0 ha			Household with 1.0 ha and over			
	A	B	C	A	B	C	Total
Nijhum Dwip	0 0.0 %	0 0.0 %	7 43.8 %	1 6.3 %	2 12.5 %	6 37.5 %	16 100.0 %
Urir Char	5 7.5 %	1 1.5 %	0 0.0 %	58 86.6 %	2 3.0 %	1 1.5 %	67 100.0 %
Bara Baishdia	98 44.0 %	1 0.5 %	16 7.2 %	87 39.0 %	5 2.2 %	16 7.2 %	223 100.0 %
Char Majid	0 0.0 %	3 11.5 %	21 80.8 %	1 3.9 %	0 0.0 %	1 3.9 %	26 100.0 %
Char Montaz	4 15.4 %	4 15.4 %	6 23.1 %	4 15.4 %	3 11.5 %	5 19.2 %	26 100.0 %
Kukri-Mukri	0 0.0 %	1 50.0 %	1 50.0 %	0 0.0 %	0 0.0 %	0 0.0 %	2 100.0 %

Table 16B : Gain of land by households

Location	Land gain in last 10 Years by reasons						Total
	Area (ha)						
	Household with less than 1.0 ha			Household with 1.0 ha and over			
	A	B	C	A	B	C	
Nijhum Dwip	1 1.2 %	4 4.8 %	2 2.4 %	74 88.1 %	0 0.0 %	3 3.6 %	84 100.0 %
Urir Char	0 0.0 %	5 22.7 %	0 0.0 %	4 18.2 %	11 50.0 %	2 9.1 %	22 100.0 %
Bara Baishdia	0 0.0 %	25 36.2 %	6 8.7 %	4 5.8 %	30 43.5 %	4 5.8 %	69 100.0 %
Char Majid	1 3.5 %	5 17.2 %	0 0.0 %	20 69.0 %	3 10.3 %	0 0.0 %	29 100.0 %
Char Montaz	0 0.0 %	8 28.6 %	5 17.9 %	1 3.6 %	5 17.9 %	9 32.1 %	28 100.0 %
Kukri-Mukri	0 0.0 %	3 30.0 %	3 30.0 %	1 10.0 %	1 10.0 %	2 20.0 %	10 100.0 %

LOSS (Reason) :

A: Erosion

B: Distribution among family members, gift, matrimonial, other methods of loss

C: Direct sale, mortgage out, sale to buy other asset.

GAIN (Reason) :

A: Khas land

B: Direct purchase, mortgage in, purchase against sale of other asset

C: Inheritance, matrimonial, gift, other methods of gain

Table 17 : Income and sources of income of households - agriculture

Location	Average Production (kg)						Average self consumption (kg)						Average Cash Income (Tk.)						Total Average Cash Income (Tk)
	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	
Nijhum Dwip	1731	0	11	232	19	1	1312	0	3	152	16	0	2436	0	71	119	150	3	2779
Urir Char	1851	3	72	214	42	40	1451	3	43	130	16	3	2179	0	249	260	1046	211	3945
Bara Baishdia	2115	0	0	0	0	0	1441	0	0	0	0	0	3581	0	10	0	0	20	3611
Char Majid	982	0	44	66	14	9	833	0	12	32	9	2	807	0	497	35	167	47	1553
Char Montaz	1437	76	4	0	7	20	629	15	2	39	4	9	3883	649	38	36	39	184	4831
Kukri-Mukri	1461	19	1	9	1	16	695	6	0	5	1	6	4603	118	6	1	0	186	4914

Category A : Paddy

Category B : Wheat

Note: In Char Montaz and Kukri-Mukri B = Pulse

Category C : Sunflower
Soyabean
Oil seeds
Groundnut
Pulse

Category D Potato
Sweet Potato
Vegetables

Category E : Onion
Garlic
Chilli

Category F : Fruits
Others

Table 18 : Income and sources of income of households - livestock

Location	Average number per owning household						Average Cash Income (Tk.)						Total Average Cash Income (Tk)
	A	B	C	D	E	F	A	B	C	D	E	F	
Nijhum Dwip	484	37	621	5067	1	32534	1356	137	218	134	0	350	2196
	3.0	0.2	3.9	31.7	0.0	203.3							
Urir Char	338	63	256	1630	20	13050	3095	72	160	253	0	277	3866
	3.5	0.6	2.6	16.8	0.2	134.5							
Bara Baishdia	640	238	691	7026	60	7847	928	564	149	72	0	128	1842
	2.4	0.9	2.6	26.0	0.2	29.1							
Char Majid	160	0	72	1409	0	0	671	0	156	393	0	0	1221
	1.6	0.0	0.7	13.8	0.0	0.0							
Char Montaz	369	123	104	2928	5635	5245	1009	587	54	379	228	37	2294
	3.4	1.1	0.9	26.6	51.2	47.6							
Kukri-Mukri	146	32	42	797	1910	302	912	820	92	255	90	6	2175
	2.9	0.6	0.8	15.9	38.2	6.0							

Category A : Bullock
Dry cow
Milk cow
Calves

Category B : Buffalo

Category C : Sheep
Goat

Category D : Poultry

Category E : Milk

Category F : Eggs

Table 19 : Value of fishing for self consumption and cash sale

Location	Average Per Household in Taka					
	Open Water			Culture Fishing		
	Value of Fish Caught	Self Consumption	Cash Sale	Value of Fish Culture	Self Consumption	Cash Sale
Nijhum Dwip	20,913	3,825	17,088	499	213	179
Urir Char	13,658	2,106	11,552	1,120	622	856
Bara Baishdia	15,549	1,653	13,896	2,542	663	280
Char Majid	1,921	379	1,542	466	542	1,380
Char Montaz		-	10,043			112
Kukri-Mukri		-	7,420			20

Foot Note : The table shows only a fragment catch account (25% of the total catch). The rest catch goes to money lender, trader, agent. (Dadan)

Table 20 : Own farm employment of households

Location	Days Employed		
	< 50	50 - 100	above 101
	% of Households	% of Households	% of Households
Nijhum Dwip	4 4.2 %	32 33.3 %	60 62.5 %
Urir Char	2 2.9 %	19 27.5 %	47 68.1 %
Bara Baishdia	5 5.0 %	8 8.0 %	85 85.0 %
Char Majid	8 12.7 %	26 41.3 %	30 47.6 %
Char Montaz	5 9.4 %	9 17.0 %	39 73.6 %
Kukri-Mukri	1 4.4 %	13 56.5 %	9 39.1 %

Table 21 : Income transfer from migrant labour working outside

Location	Average Seasonal Yearly Income (Tk)	Average Full Time Yearly Income (Tk)	% of Seasonal Migrant Income Family	% of Full time Migrant Income Family
Nijhum Dwip	4,314	21,840	28.1	3.1
Urir Char	6,571	21,712	24.7	16.5
Bara Baishdia	13,673	42,228	5.6	18.2
Char Majid	3,540	5,743	49.0	14.7
Char Montaz	11,000	18,000	1.8	0.9
Kukri-Mukri	15,000	12,000	2.0	2.0

Table 22 : Children attending primary school

Location	Total Primary School age (5-12 yrs.) Children	Total Children Attending Primary School	Percentage of attending Primary School
Nijhum Dwip	353	257	72.8
Urir Char	168	116	69.1
Bara Baishdia	394	315	80.0
Char Majid	239	84	35.2
Char Montaz	174	32	18.4
Kukri-Mukri	72	23	31.9

Table 23 : Number of primary school age children

Location	Number of primary school age children						Mean per household
	% of Households						School-age going children
	0	1	2	3	4	=> 5	
Nijhum Dwip	21 13.1 %	33 20.6 %	37 23.1 %	38 23.8 %	25 15.6 %	6 3.8 %	2.2
Urir Char	20 20.6 %	20 20.6 %	32 33.0 %	17 17.5 %	7 7.2 %	1 1.0 %	1.7
Bara Baishdia	58 21.5 %	90 33.3 %	81 30.0 %	25 9.3 %	13 4.8 %	3 1.1 %	1.5
Char Majid	7 6.9 %	17 16.7 %	31 30.4 %	31 30.4 %	13 12.8 %	3 2.9 %	2.3
Char Montaz	22 20.0 %	33 30.0 %	31 28.2 %	18 16.4 %	5 4.6 %	1 0.9 %	1.6
Kukri-Mukri	12 24.0 %	15 30.0 %	14 28.0 %	7 14.0 %	2 4.0 %	0 0.0 %	1.4

Table 24 : Diseases the family suffered last year

Location	% of Member suffered from diseases					Treatment received	Hospital or Health centre visit by household
	A	B	C	D	E	Yes	Yes
Nijhum Dwip	343 64.4 %	92 17.3 %	14 2.6 %	4 0.8 %	80 15.0 %	512 96.1 %	50 31.3 %
Urir Char	76 46.1 %	41 24.9 %	16 9.7 %	0 0.0 %	32 19.4 %	163 98.8 %	22 22.7 %
Bara Baishdia	211 35.6 %	104 17.5 %	82 13.8 %	4 0.7 %	192 32.4 %	569 96.0 %	112 - 41.5 %
Char Majid	117 47.4 %	92 37.3 %	13 5.3 %	0 0.0 %	25 10.1 %	216 87.5 %	8 7.8 %
Char Montaz	85 44.0 %	34 17.6 %	37 19.2 %	0 0.0 %	37 19.2 %	162 83.9 %	25 22.7 %
Kukri-Mukri	34 46.6 %	15 20.6 %	12 16.4 %	0 0.0 %	12 16.4 %	50 68.5 %	9 18.0 %

A.Fever,Cough,Typhoid,Malaria

B. Diarrhea, Cholera, Dysentery

C. Ulcer, Gastric

D. TB

E. Others

Table 25 : Service received from NGOs

Location	Service received from NGO	Type of Service			
	Yes	Material aid	Credit	Technical aid	Other
Nijhum Dwip	125 78.1 %	123 98.4 %	1 0.8 %	0 0.0 %	1 0.8 %
Urir Char	12 12.4 %	12 100.0 %	0 0.0 %	0 0.0 %	0 0.0 %
Bara Baishdia	4 1.5 %	0 0.0 %	1 25.0 %	2 50.0 %	1 25.0 %
Char Majid	61 59.8 %	29 47.5 %	24 39.3 %	4 6.6 %	4 6.6 %
Char Montaz	52 47.3 %	15 28.9 %	37 71.2 %	0 0.0 %	0 0.0 %
Kukri-Mukri	16 32.0 %	0 0.0 %	16 100.0 %	0 0.0 %	0 0.0 %

Table 26 : Family planning information received by households

Location	Received Family Planning Information
	Yes
Nijhum Dwip	95 59.4 %
Urir Char	62 63.9 %
Bara Baishdia	246 91.1 %
Char Majid	78 76.5 %
Char Montaz	22 20.0 %
Kukri-Mukri	8 16.0 %

Table 27 : Availability of fishery and agricultural extension services to households

Location	Service available			
	Agricultural Extension		Fishery Extension	
	Yes	No	Yes	No
Nijhum Dwip	0 0.0 %	160 100.0 %	1 0.6 %	159 99.4 %
Urir Char	0 0.0 %	97 100.0 %	0 0.0 %	97 100.0 %
Bara Baishdia	0 0.0 %	270 100.0 %	0 0.0 %	270 100.0 %
Char Majid	42 41.2 %	60 58.8 %	40 39.2 %	62 60.8 %
Char Montaz	0 0.0 %	110 100.0 %	0 0.0 %	110 100.0 %
Kukri-Mukri	0 0.0 %	50 100.0 %	0 0.0 %	50 100.0 %

Table 28 : Frequency of services available to households (agriculture and fisheries)

Location	Agricultural Extension Service Available				Fishery Extension Service Available			
	% of Households							
	Weekly	Monthly	Half-Yearly	No visit	Weekly	Monthly	Half-Yearly	No visit
Nijhum Dwip	0 0.0 %	0 0.0 %	0 0.0 %	160 100.0 %	1 0.6 %	0 0.0 %	0 0.0 %	159 99.4 %
Urir Char	0 0.0 %	0 0.0 %	0 0.0 %	97 100.0 %	0 0.0 %	0 0.0 %	0 0.0 %	97 100.0 %
Bara Baishdia	0 0.0 %	0 0.0 %	0.0 0.0 %	270 100.0 %	0 0.0 %	0 0.0 %	0 0.0 %	270 100.0 %
Char Majid	0 0.0 %	15 14.7 %	27 26.5 %	60 58.8 %	0 0.0 %	15 14.7 %	25 24.5 %	62 60.8 %
Char Montaz	0 0.0 %	0 0.0 %	0 0.0 %	110 100.0 %	0 0.0 %	0 0.0 %	0 0.0 %	110 100.0 %
Kukri-Mukri	0 0.0 %	0 0.0 %	0 0.0 %	50 100.0 %	0 0.0 %	0 0.0 %	0 0.0 %	50 100.0 %

Table 29 : Credit and Indebtedness of Households, Last year

Location	Need of Loan			
	Yes		No	Total
	Received	Not received		
Nijhum Dwip	86 53.8 %	44 27.5 %	30 18.8 %	160 100.0 %
Urir Char	52 53.6 %	16 16.5 %	29 29.9 %	97 100.0 %
Bara Baishdia	158 58.5 %	41 15.2 %	71 26.3 %	270 100.0 %
Char Majid	32 31.4 %	60 58.8 %	10 9.8 %	102 100.0 %
Char Montaz	65 59.1 %	10 9.1 %	35 31.8 %	110 100.0 %
Kuk-Mukri	25 50.0 %	0 0.0 %	25 50.0 %	50 100.0 %

Table 30 : Credit and Indebtedness of Households, Last year

Location	Purpose				Total Average Amount	Total Av. Amount Paid	Total Av. Amount Not Paid
	A	B	C	D			
Nijhum Dwip	46 53.5 %	5 5.8 %	12 14.0 %	30 34.9 %	6847	10376	7001
Urir Char	34 65.4 %	3 5.8 %	13 25.0 %	5 9.6 %	4620	4577	2210
Bara Baishdia	55 34.8 %	23 14.6 %	83 52.5 %	8 5.1 %	7986	3117	8215
Char Majid	17 53.1 %	5 15.6 %	7 21.9 %	3 9.4 %	2315	2326	354
Char Montaz	25 38.5 %	17 26.2 %	4 6.2 %	31 47.7 %	5456	1799	3951
Kukri-Mukri	6 24.00 %	14 56.00 %	1 4.00 %	6 24.00 %	5600	1214	2908

A. Agri Input, Agri Implements/Equipment, Anin

B. Debt repayment, Land purchase, Trad

C. Food, Education, Social obligation, Dowr

D. Fishing

Note : Some loans have multiple purposes

Table 31 : Sources of Credit

	Sources	Location					
		Nijhum Dwip	Urir Char	Bara Baishdia	Char Majid	Char Montaz	Kukri-Mukri
Non Institutiona	Money Lender	64 74.4 %	16 30.8 %	129 81.7 %	4 12.5 %	7 10.8 %	3 12.0 %
	Friends Relatives	11 12.8 %	3 5.8 %	5 3.2 %	7 21.9 %	2 3.1 %	0 0.0 %
	Traders	4 4.7 %	7 13.5 %	3 1.9 %	1 3.1 %	11 16.9 %	4 16.0 %
	Others	11 12.8 %	1 1.9 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %
Institutional	Commercial Bank	1 1.2 %	0 0.0 %	7 4.4 %	0 0.0 %	2 3.1 %	1 4.0 %
	BKB	1 1.2 %	27 51.9 %	27 17.1 %	0 0.0 %	3 4.6 %	3 12.0 %
	Grameen Bank	0 0.0 %	1 1.9 %	0 0.0 %	1 3.1 %	1 1.54 %	0 0.0 %
	Cooperative	1 1.2 %	0 0.0 %	0 0.0 %	2 6.3 %	0 0.0 %	0 0.0 %
	NGO	0 0.0 %	0 0.0 %	1 0.6 %	17 53.1 %	51 78.5 %	16 64.0 %
	Others	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	1 4.0 %

Note : Some households have taken loan from multiple sources

Table 32 : Loans received

Location	Amount in Taka				Total
	< 2000	2000 - 4000	4000 - 6000	> 6000	
Nijhum Dwip	26 30.2 %	27 31.4 %	14 16.3 %	19 22.1 %	86
Urir Char	14 26.9 %	13 25.0 %	17 32.7 %	8 15.4 %	52
Bara Baishdia	42 26.6 %	27 17.1 %	29 18.4 %	60 38.0 %	158
Char Majid	21 65.6 %	6 18.8 %	5 15.6 %	0 0.0 %	32
Char Montaz	6 9.2 %	37 56.9 %	10 15.4 %	12 18.5 %	65
Kukri-Mukri	14 56.0 %	5 20.0 %	2 8.0 %	4 16.0 %	25

Table 33 : Households current need for credit

Land Holding Class (hectares)	Location											
	Nijhum Dwip		Urir Char		Bara Baishdia		Char Majid		Char Montaz		Kukri-Mukri	
	Need		Need		Need		Need		Need		Need	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
0 - 0.02	47 29.4 %	6 3.8 %	25 25.8 %	3 3.1 %	21 7.8 %	7 2.6 %	1 1.0 %	1 1.0 %	16 14.6 %	17 15.5 %	3 6.0 %	8 16.0 %
0.02 - 0.20	3 1.9 %	0 0.0 %	4 4.1 %	0 0.0 %	45 16.7 %	8 3.0 %	15 14.7 %	5 4.9 %	8 7.3 %	15 13.6 %	3 6.00 %	9 18.0 %
0.2 - 1.0	83 51.9 %	17 10.6 %	37 38.1 %	16 16.5 %	90 33.3 %	18 6.7 %	43 42.2 %	30 29.4 %	12 10.9 %	8 7.3 %	3 6.0 %	9 18.0 %
1.0 - 3.0	2 1.3 %	1 0.6 %	10 10.3 %	1 1.0 %	40 14.8 %	15 5.6 %	3 2.9 %	3 2.9 %	15 13.6 %	7 6.4 %	4 8.0 %	6 12.0 %
> 3.0	0 0.0 %	1 0.6 %	1 1.0 %	0 0.0 %	19 7.0 %	7 2.6 %	1 1.0 %	0 0.0 %	10 9.1 %	2 1.8 %	5 10.0 %	0 0.0 %

Table 34 : Reasons for current need for credit

Landholding Class (hectares)	Location																							
	Nijhum Dwip				Uir Char				Bara Baishdia				Char Majid				Char Montaz				Kukri-Mukri			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
0 - 0.02	13 9.6 %	12 8.9 %	4 3.0 %	18 13.3 %	6 6.5 %	13 14.1 %	3 3.3 %	3 3.3 %	12 1.4 %	0 2.8 %	0 4.2 %	9 1.4 %	1 1.6 %	0 0.0 %	0 0.0 %	0 0.0 %	2 3.3 %	6 9.8 %	1 1.6 %	7 11.5 %	1 5.6 %	0 0.0 %	0 0.0 %	2 11.1 %
0.02 - 0.20	2 1.5 %	0 0.0 %	0 0.0 %	1 0.7 %	1 1.1 %	2 2.2 %	1 1.1 %	0 0.0 %	7 3.3 %	9 4.2 %	22 10.2 %	7 3.3 %	10 15.9 %	1 1.6 %	2 3.2 %	2 3.2 %	4 6.6 %	1 1.6 %	1 1.6 %	2 3.3 %	2 11.1 %	1 5.6 %	0 0.0 %	0 0.0 %
0.2 - 1.0	40 29.6 %	18 13.3 %	4 3.0 %	21 15.6 %	18 19.6 %	10 10.9 %	6 6.5 %	3 3.3 %	22 10.2 %	29 13.5 %	33 15.4 %	6 2.8 %	26 41.3 %	13 20.6 %	1 1.6 %	3 4.8 %	1 1.6 %	6 9.8 %	0 0.0 %	5 8.2 %	1 5.6 %	2 11.1 %	0 0.0 %	0 0.0 %
1.0 - 3.0	0 0.0 %	0 0.0 %	0 0.0 %	2 1.5 %	8 8.7 %	1 1.1 %	0 0.0 %	1 1.1 %	10 4.7 %	16 7.4 %	9 4.2 %	5 2.3 %	2 3.2 %	0 0.0 %	0 0.0 %	1 1.6 %	5 8.2 %	8 13.1 %	0 0.0 %	2 3.3 %	1 5.6 %	2 11.1 %	1 5.6 %	0 0.0 %
> 3.0	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	1 1.1 %	0 0.0 %	0 0.0 %	0 0.0 %	4 1.9 %	5 2.3 %	8 3.7 %	2 0.9 %	1 1.6 %	0 0.0 %	0 0.0 %	0 0.0 %	3 4.9 %	4 6.6 %	0 0.0 %	3 4.9 %	3 16.7 %	1 5.6 %	1 5.6 %	0 0.0 %

A. Agri Input, Agri Implements/Equipment, Animal

B. Debt repayment, Land purchase, Trade

C. Food, Education, Social obligation, Dowry

D. Fishing

Table 35 : Preferred current sources of household loans

Landholding Class (hectares)	Location																							
	Nijhum Dwip				Uir Char				Bara Baishdia				Char Majid				Char Montaz				Kukri-Mukri			
	Preferred Sources				Preferred Sources				Preferred Sources				Preferred Sources				Preferred Sources				Preferred Sources			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
0 - 0.02	14 10.4 %	0 0.0 %	4 3.0 %	29 21.5 %	7 7.6 %	1 1.1 %	1 1.1 %	16 17.4 %	12 5.6 %	0 0.0 %	0 0.0 %	9 4.2 %	0 0.0 %	1 1.6 %	0 0.0 %	0 0.0 %	1 1.6 %	2 3.3 %	4 6.6 %	9 14.8 %	0 0.0 %	1 5.6 %	0 0.0 %	2 11.1 %
0.02 - 0.20	1 0.7 %	1 0.7 %	0 0.0 %	1 0.7 %	2 2.2 %	0 0.0 %	0 0.0 %	2 2.2 %	26 12.1 %	1 0.5 %	5 2.3 %	13 6.1 %	3 4.8 %	9 14.3 %	0 0.0 %	3 4.8 %	1 1.6 %	4 6.6 %	0 0.0 %	3 4.9 %	1 5.6 %	1 5.6 %	1 5.6 %	0 0.0 %
0.2 - 1.0	32 23.7 %	8 5.9 %	8 5.9 %	35 25.9 %	21 22.8 %	2 2.2 %	2 2.2 %	12 13.0 %	52 24.2 %	0 0.0 %	8 3.7 %	30 14.0 %	15 23.8 %	12 19.1 %	0 0.0 %	16 25.4 %	0 0.0 %	1 1.6 %	2 3.3 %	9 14.8 %	0 0.0 %	1 5.6 %	0 0.0 %	2 11.1 %
1.0 - 3.0	0 0.0 %	0 0.0 %	0 0.0 %	2 1.5 %	7 7.6 %	1 1.1 %	0 0.0 %	2 2.2 %	18 8.4 %	1 0.5 %	3 1.4 %	18 8.4 %	1 1.6 %	1 1.6 %	0 0.0 %	1 1.6 %	0 0.0 %	5 8.2 %	6 9.8 %	4 6.6 %	1 5.6 %	1 5.6 %	0 0.0 %	2 11.1 %
> 3.0	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	1 1.1 %	0 0.0 %	0 0.0 %	0 0.0 %	10 4.7 %	0 0.0 %	2 0.9 %	7 3.3 %	1 1.6 %	0 0.0 %	0 0.0 %	0 0.0 %	2 3.3 %	1 1.6 %	1 1.6 %	6 9.8 %	3 16.7 %	1 5.6 %	0 0.0 %	1 5.6 %

A. Money lender, Traders

B. Friends, Relatives, oth

C. Commercial Bank, BKB, Grameen Bank

D. Co-operatives, NGO

Table 36 : Households' need for seasonal loans

Land Holding Class (hectares)	Location							
	Nijhum Dwip		Urir Char		Bara Baishdia		Char Majid	
	Seasonal Loan		Seasonal Loan		Seasonal Loan		Seasonal Loan	
	Yes	No	Yes	No	Yes	No	Yes	No
0 - 0.02	18 11.3 %	35 21.9 %	14 14.4 %	14 14.4 %	7 2.6 %	21 7.8 %	0 0.0 %	2 2.0 %
0.02 - 0.20	0 0.0 %	3 1.9 %	2 2.1 %	2 2.1 %	32 11.9	21 7.8 %	7 6.9 %	13 12.8 %
0.2 - 1.0	27 16.9 %	73 45.6 %	35 36.1 %	18 18.6 %	84 31.1 %	24 8.9 %	57 55.9 %	16 15.7 %
1.0 - 3.0	1 0.6 %	2 1.3 %	10 10.3 %	1 1.0 %	49 18.2 %	6 2.2 %	6 5.9 %	0 0.0 %
> 3.0	0 0.0 %	1 0.6 %	1 1.03 %	0 0.0 %	20 7.4 %	6 2.2 %	1 1.0 %	0 0.0 %

Table 37 : Household purpose of seasonal loan

Location	Purpose of Seasonal Loan							
	A		B		C		D	
	Available	Not available	Available	Not available	Available	Not available	Available	Not available
	Farming							
Nijhum Dwip	4 8.7 %	6 13.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	0.0 0.0 %	2 4.4 %
Urir Char	13 21.0 %	28 45.2 %	0 0.0 %	1 1.6 %	0 0.0	0 0.0 %	0 0.0 %	0 0.0 %
Bara Baishdia	3 1.6 %	90 46.6 %	0 0.0 %	4 2.1 %	0 0.0 %	4 2.1 %	1 0.5 %	7 3.6 %
Char Majid	46 64.8 %	6 8.5 %	0 0.0 %	0 0.0 %	0 0.0 %	0 0.0 %	2 2.8 %	0 0.0 %
	Non-Farming							
Nijhum Dwip	3 6.5 %	16 34.8 %	1 2.2 %	3 6.5 %	0 0.0 %	0 0.0 %	2 4.4 %	9 19.6 %
Urir Char	5 8.1 %	10 16.1 %	0 0.0 %	1 1.6 %	0 0.0	2 3.2 %	1 1.6 %	1 1.6 %
Bara Baishdia	0 0.0 %	43 22.3 %	2 1.0 %	13 6.7 %	0 0.0 %	6 3.1 %	0 0.0 %	20 10.4 %
Char Majid	9 12.7 %	0 0.0 %	4 5.6 %	0 0.0 %	0 0.0 %	0 0.0 %	4 5.6 %	0 0.0 %

A. Agricultural Input, Agricultural Implements/Equipment, Anir

B. Debt repayment, Land purchase, Trade

C. Food, Education, Social Obligations, Dowry

D. Fishing

Table 38 : Distribution of households by income from farm production

Yearly Income range (Tk.)	Nijhum Dwip	Urir Char	Bara Baishdia	Char Majid	Char Montaz	Kuri-Mukri
< 2000	92 57.5 %	37 38.1 %	160 59.3 %	54 52.9 %	38 34.6 %	12 24.0 %
2000 - 4000	16 10.0 %	10 10.3 %	8 3.0 %	18 17.7 %	11 10.0 %	3 6.0 %
4000 - 6000	6 3.8 %	10 10.3 %	6 2.2 %	9 8.8 %	11 10.0 %	3 6.0 %
> 6000	14 8.8 %	14 14.4 %	34 12.6 %	3 2.9 %	22 20.0 %	11 22.0 %
No agricultural income	32 20.0 %	26 26.8 %	62 23.0 %	18 17.7 %	28 25.5 %	21 42.0 %
Mean Income in Tk.	2225	2889	2782	1280	4831	4914

Note : Mean income is base on total samples

Table 39 : Distribution of households by income from livestock and poultry

Yearly Income range (Tk.)	Nijhum Dwip	Urir Char	Bara Baishdia	Char Majid	Char Montaz	Kuri-Mukri
< 2000	123 76.9 %	60 61.9 %	205 75.9 %	80 78.4 %	77 70.0 %	40 80.0 %
2000 - 4000	16 10.0 %	12 12.4 %	18 6.7 %	14 13.7 %	12 10.9 %	3 6.0 %
4000 - 6000	7 4.4 %	4 4.1 %	7 2.6 %	5 4.9 %	5 4.6 %	1 2.0 %
> 6000	11 6.9 %	17 17.5 %	22 8.2 %	3 2.94 %	13 11.8 %	5 10.0 %
No livestock and poultry income	3 1.9 %	4 4.1 %	18 6.7 %	0 0.0 %	3 2.7 %	1 2.0 %
Mean Income in Tk.	2196	3866	1842	1221	2361	2185

Note : Mean income is base on total samples

Table 40 : Distribution of households by income from open water fishing

Yearly Income range (Tk.)	Nijhum Dwip	Urir Char	Bara Baishdia	Char Majid
< 5000	18 11.3 %	11 11.3 %	75 27.8 %	86 84.3 %
5000 - 15000	66 41.3 %	10 10.3 %	65 24.1 %	12 11.8 %
15000 - 25000	20 12.5 %	1 1.0 %	23 8.5 %	0 0.0 %
> 25000	14 8.8 %	2 2.1 %	22 8.2 %	0 0.0 %
No fishing income	42 26.3 %	73 75.3 %	85 31.5 %	4 3.9 %
Mean Income in Tk.	12602	2858	9521	1481

Note : Mean income is base on total samples