

Char Development and Settlement Project Phase IV Bangladesh

Baseline Survey 2011

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Implementing Government Agencies:

- **Bangladesh Water Development Board (BWDB)**
- **Ministry of Land (MoL)**
- **Local Government Engineering Department (LGED)**
- **Department of Public Health Engineering (DPHE)**
- **Department of Agriculture Extension (DAE)**
- **Forest Department (FD)**

and NGOs

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Chapter 1: Introduction and background

1.1 Introduction and background

Char Development and Settlement Project phase IV, CDSP-IV, started on 1 March 2011, with the mobilization of TA team. The focus of the activities of CDSP IV is on the development of five new chars: 1. Char Nangulia, 2. Noler Char, 3. Caring Char, 4. Char Ziauddin and 5. Urir Char. The total extent of these chars is around 30,000 ha, with an estimated population of 155,000 in 28,000 households.

The overall objective of the project is to reduce poverty and hunger for poor people living on newly accreted chars, which would be achieved via improved and more secure livelihoods. The purpose is therefore to improve and enhance the security of the livelihoods of the settlers in the project areas. This applies in particular for the 28,000 households in the CDSP IV project area. The objective and purpose will be achieved through the following six outputs:

- Effective management of water resources, protection against tidal and storm surges, improved drainage;
- Climate resilient internal infrastructure of communication, markets, cyclone shelters, provision for potable water and hygienic sanitation;
- Provision to the settlers of a legal title to land;
- Improved livelihoods and household resilience;
- Institutional development in order to create an enabling institutional environment;
- Knowledge management through undertaking and disseminating surveys and studies and by learning from contribution to ICZM efforts.

CDSP IV is establishing a comprehensive M&E system, which aims to:

- Generate information for monitoring the project and to measure the impact of the project against the log frame objectives.
- Generate information on project activities and outputs for project planning and management.

This will include IFAD RIMS (Results and Impact Management System) indicators that IFAD requires all projects to use in reporting to IFAD.

The first task of the M&E unit is conducting a baseline study of the project areas which will guide project interventions and against which the progress and impact of the project components at field level will be measured during future annual outcome surveys and mid-term impact and completion impact studies.

1.2. Brief Description of the Project Area

As stated above the focus of the activities of CDSP-IV will be on five chars, with a total area of about 30,000 ha and a population of around 155,000 in 28,000 households. Three chars are located next to each other and form a part of the mainland: Char Nangulia, Noler Char and Caring Char. Urir Char is still an island, while the fifth char, Char Ziauddin, is located on the mainland, surrounded by earlier developed CDSP areas. More details about these chars are given below.

Char Nangulia, Noler Char, Caring Char

- Char Nangulia, with an area of about 8,990 ha (22,000 acres) and an estimated population of 67,000 in 12,000 households;
- Noler Char of about 2,690 ha (6,650 acres) and a population of approximately 33,000 in 6,000 households;
- Caring Char of about 6,850 ha (16,920 acres), with around 33,000 people in roughly 6,000 households, these households are concentrated on the higher part of Caring Char of around 3,800 ha.

The total area amounts to 18,530 ha (45,770 acres) with a current population of about 133,000 in 24,000 households.

Nangulia and Noler Chars appeared around the 1970's. Present land levels for Char Nangulia are between 2.75 and 4.75 m PWD and for Noler Char between 2.25 and 3.75 m PWD. Caring Char appeared later and is less developed and inhabited (land levels between 2.00 and 4.00 m PWD). Nangulia and Noler Chars are next to each other, only separated by the Mamur Khal. To the south of these two chars is Caring Char, separated from them by the Caring and Mamur Khals. Char Nangulia is further bordered by polder 59/3B and Char Majid (in the north and west) and by a developing, yet to be

named, char. Noler Char is further bordered by the Hatiya river in the west (with on the other side Boyer Char), the Meghna River in the southwest and by Caring Khal in the south and southeast, at the other side of which is Caring Char. Caring Char is for a greater part still an emerging char in the Meghna River, by which it is bordered in the south and east sides.

All three chars are located within Noakhali District. The whole area is part of two Upazilas (Subarnachar and Hatiya) and of three Unions (Char Clerk of Subarnachar Upazila and Chanandi and Mohammadpur of Hatiya Upazila).

Urir Char

In the Meghna Estuary erosion and accretion along the boundaries of the chars or islands are very common morphological processes. Urir Char is a perfect example. Since its emergence in the early 1970s, Urir Char has shown a very dynamic character and developed through erosion, accretion and shifting of several kilometers. During the last 35 years the landmass of Urir char increased from 12 km² to 100 km². At the same time the char shifted about 8 kilometers towards the north.

The land levels in Urir Char vary from 3.67 m to 4.78 m PWD in the north to south direction and 3.85 m to 4.03 m PWD in the east to west direction. Average land level can be taken as 4.08 m PWD. The total land area of Urir Char including fallow and muddy land is about 13,824 ha (around 33,000 acres) of which about 36.8% has been brought under cultivation. About 48.7% of the area is fallow and muddy land. At present the fallow lands are partially used for grazing. Mangrove forestland has been developed and is occupying 7.8% of the total area. The estimated total population is 11,000, distributed over 2,000 households.

There are two parts of the area broadly known as Urir Char. One part falls under Urir Char Union of Sandwip Upazila of Chittagong District, comprising an area of approximately 21,694 acres (mouzas: Char Lakshmi, Piadogi, Shamserabad and Char Badu). Another part of 10,760 acres is located in Char Elahi Union of Companigonj Upazila under Noakhali District (Mouzas: Char Umed, Char Rahman, Char Balua and Char Gazi Mijan).

Char Ziauddin

Accretion of Char Ziauddin started in 1970 and people started living there in 2001. It is named after a district magistrate. This char is under the jurisdiction of Char Jublee Union of Subarnachar Upazila. The char is located west of Char Mora Dona near Boyer Char, in the southwest corner of Subarnachar

Upazila under Noakhali District. Boyer Char lies to the south, CBD-1 to the north and Baggardona River to the west. The area is on an average about 5 km in length and 3 km wide. Present land levels vary from 3.20 m to 3.71 m PWD.

Settlers of Char Ziauddin mainly came from Ramgati (50%), South Hatiya (25%) and the main land (25%). The estimated total population is 11,000 and the number of households 2,000. However, some new squatters (around 200 hhs) have moved in and are occupying the Matua and Elahi's fish project in this char. According to the survey and information from Department of Forest, the size of the areas is 1.943 hectares (4,799 acres). The settlers occupied 2,114 acres land without official title. Six big fishery projects occupy approximately 1,000 acres. Of these six, two biggest projects each occupy 300 acres.

Chapter 2: Objectives of the Baseline Study

The overall objective of the Baseline study is to establish the current socio-economic status and livelihood conditions of the target households within the CDSP IV project area. It is also expected to offer adequate benchmark on agricultural practices, communication status, and nutrition status in the project area. The central objective was to take a close look into the level of poverty, nutritional effect, environmental situation, and women's status that are the primary focus of CDSP IV.

The baseline study has been planned with the overall purpose to generate primary data that represent the situation of the beneficiaries before the project so that such data could be used at a later stage to compare the effect and impact of the project and in taking various measures to improve project performance.

Besides basic socio-economic characteristics of the people, the indicators under this baseline survey were chosen keeping in view the objectives of CDSP IV. The indicators are not limited to but include demographic characteristics, education, living standard (housing, food and nutrition, health and hygiene, healthcare, water, sanitation etc.), economic condition, (occupation, migration, land tenancy and land use, major crops, assets, income and expenditure, level of poverty, skill, employment, credit, communication, marketing facilities etc.). Indicators also include feedback on social institutions, women and gender issues and participation of the people – customs and traditions, leadership, local problems of development, status of women etc.

The specific objectives of the study are as follows:

- i. to examine the demographic situation of the selected households.
- ii. to assess the socio-economic status particularly emphasizing the crop, livestock and fisheries resources of the selected households.
- iii. to investigate the livelihood and vulnerability issues prevailing in the selected households.
- iv. to know the accessibility to key services for the selected households.
- v. to examine the social and economic empowerment of the women and human rights issues, and
- vi. to address the areas of interventions in relation to agriculture, forestry, livestock and fisheries for improving livelihoods.

Chapter 3: Approach and Methodology

The baseline survey has been conducted through a predesigned survey questionnaire from 1,400 sample households out of 28,000 households of the five chars under CDSP-IV area.

3.1 Preparation of Survey Questionnaire

In order to fulfill the survey objectives, a household survey questionnaire was carefully prepared to collect the required data. Before finalizing, the questionnaire was distributed among all sector specialists (Infrastructure, Gender, Livelihood, Forestry, Agriculture etc.) and other concerned of CDSP-IV. After accommodating the valuable feedback and necessary correction the draft questionnaire was tested and finalized (see Annex 1).

3.2 Sample Selection and Sampling Procedure

A two stage stratified random sampling was applied for selecting the samples for conducting the field survey. A total of 59 Shomaj (the smallest geographical unit of chars) were randomly selected from 172 Shomaj of the five different chars. After that 1400 household were selected randomly from these 59 Shomaj which are 5% of the total households of each Shomaj. The questionnaire survey of the total of 1400 households was conducted by direct face to face interview in the household premises during October 11 to December 07, 2011. (See Table 3.1 and Annex 2)

Table 3.1: Distribution of sample shomaj and households for baseline survey

Name of Char	Total Area (ha)	Total Population	Total Shomaj	Sample Shomaj	%	Total HH	Sample HH	%
Char Ziauddin	1,943	11,000	12	4	33	2,000	100	7.1
Char Nangulia	8,990	67,000	82	24	29	12,000	600	42.9
Noler Char	2,690	33,000	32	12	38	6,000	300	21.4
Caring Char	6,850	33,000	26	11	42	6,000	300	21.4
Urir Char	10,300	11,000	20	8	40	2,000	100	7.1
Total	30,773	155,000	172	59	34	28,000	1400	100

3.3 Method of Data Collection and its Reliability

For collecting field data 10 (5 Male and 5 Female) Field Investigators were recruited locally for two months through a short interview. During the selection preference was given to those who have past experience on data collection with CDSP previous phases or related data collection experience in char areas. The survey team explained to respondents the aim and objectives of the study before making the actual interview. The respondents were assured that the information given by them would not be used against their interest and that it would be useful to the households themselves in many respects. Interviewees were requested to give correct information as far as possible. The survey questionnaire was printed in bangla for easy understanding by both interviewer and respondents.

3.4 Quality Control

A two days training was held for the Field Investigators on data collection methodology and survey questionnaire. The questionnaire includes guidelines for critical questions and the technical issues in the questionnaire were explained to the data collection team during this two days training. The Monitoring and Evaluation Officers and the ME Adviser from CDSP-IV supervised the data collection team in the field on a regular basis and monitored data collection and provided technical backstopping. To ensure the quality of information the collected data was checked to ensure that information to each of the items had been correctly recorded. If there were any items overlooked and misunderstood or found contradictory, these were corrected through re-interviewing on the spot. The CDSP-IV M&E team gave feedback after reviewing the filled-in questionnaire on a sample basis, and shared experiences during off-duty and on-the-job meetings attended by all members of the survey team. As a follow-up the

Investigators checked each other's questionnaire and the M&EOs re-interviewed some of the sample households for checking the process followed by the Field Investigators.

3.5 Data Management and Analysis

The M&E Adviser developed the database for data entry using MS Access software. All the collected data were processed and analyzed in accordance with the objectives of the study. Data processing included field and office editing, coding and tabulation. Consistency checks and keystroke errors were also detected and corrected accordingly before data analysis. The analysis was done using descriptive statistics like percentage, frequency distribution, mean, and rank where appropriate. A comparison of proportions and means across the intervention groups was carried out using the appropriate statistical tests including t-test. SPSS PC⁺ software was used for t-test.

Chapter 4: Results and Discussions

4.1 Profile of Household Head

4.1.1 Age sex and education of household head

The households can be divided into male-headed (96%) households and female headed household (4%). Average age of male household head is 45 and female is 42. Household heads of Noler Char are relatively older than the other chars. Marital status of household heads is largely married (96%); a remarkable number of widows/widowers is observed in Urir char. The illiteracy rate (78% including “can sign only”) amongst household heads is generally very high in all chars. (Table 4.1)

Table 4.1: Background information of the household head

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Male household head	96 (96)	577 (96)	285 (95)	292(97)	90(90)	1340 (96)
Female household head	4 (4)	23 (4)	15 (5)	8 (3)	10 (10)	60 (4)
Average Age (Male)	44	45	47	44	45	45
Average Age (Female)	39	41	46	39	43	42
Marital Status						
Married	97 (97)	576 (96)	291 (97)	291(97)	87 (87)	1342 (96)
Unmarried	0	8 (1.4)	4 (1.3)	3 (1)	5 (5)	20 (1.4)

Divorced/Separated	2 (2)	6 (1)	2 (.7)	2 (.7)	1(1)	13 (1)
Widow/Widower	1 (1)	9 (1.6)	3 (1)	4 (1.3)	7 (7)	25 (1.6)
Education (in %)						
Illiterate	32	23	33	32	33	28
Can signed only	42	57	43	49	40	50
Can Read and write	6	5	8	6	3	5
Primary	13	10	10	9	16	10
Secondary	4	5	6	5	6	5
Higher Secondary	01	0	0	0	2	1
Bachelor and above	2	0	0	0	0	1

Figures in parenthesis represent the percentage

4.1.2 Occupational Profile of the household head

Agriculture (crop farming) appeared as the main occupation of the respondents, followed by day labour in all chars. The other main occupations of respondents are found to be petty trading, rickshaw/van pulling and old/retired persons. Very few household heads have fishing as their principle occupation. The other categories of occupation include begger, PL (prawn) catcher, tractor driver, village doctor, handicrafts etc (Table 4.2).

Table 4.2: Principle Occupation of Household Head (%)

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Agriculture	28	46	38	24	34	37
Day Labour	36	26	27	48	18	31
House keeping	04	02	03	02	09	3
Fisherman	04	01	03	05	02	3
Job	06	03	03	02	07	3
Petty trading	09	09	10	06	12	9
Rickshaw/Van/Boat puller	08	04	03	04	01	4
Old age	02	03	07	04	09	6
Others	03	05	07	05	08	5

4.2 Demographic profile

4.2.1 Family Size and Composition

Average family size is higher in Urir char (6.57) and lower in Caring char (5.39). The dominant age of family members is below 10 years for both male (28%) and female (29%). In all chars more children

and young adults in the below 20 year's bracket, reflect the lack of adult members in the household (Table 4.3).

Table 4.3: Family Size and Age Distribution of Household Members

		Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Average family size		6.33	6.04	5.89	5.39	6.57	5.93
Average male members		3.1	3.1	3.2	2.8	3.6	3.1
Average female members		3.2	2.9	2.7	2.6	2.9	2.8
Age distribution of family members (%)							
Below 10 years	M	30	28	26	29	27	28
	F	33	29	29	30	28	29
10 to 20 years	M	24	25	25	24	30	25
	F	29	30	25	26	31	28
20-40 years	M	25	24	26	25	24	25
	F	25	25	27	28	22	26
40- 60 years	M	14	16	14	16	14	15
	F	11	14	14	13	16	14
Above 60 years	M	07	07	09	06	05	07
	F	02	02	06	03	03	03

4.2.2 Education of the Family Members

The level of illiteracy of family members reflects the pattern of the household heads. The proportion of illiteracy of family members or those who can sign only is generally over 55%. Higher secondary and above is almost absent in all chars. More than one third of the family members in Urir Char have primary education which is higher than most of the other chars (Table 4.4).

Table 4.4: Education Level of Household Members (%)

		Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Illiterate		29	22	27	32	28	26
Can signed only		26	36	33	32	23	33
Can Read and write		04	05	07	05	07	05
Primary		32	31	28	26	37	30
Secondary		07	06	05	04	04	05
Higher Secondary		01	01	0	01	01	01

Graduation and above	00	00	00	00	00	00
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4.2.3 Occupation of the Family Members

Table 4.5 shows that more than 80% of the female members of the household are engaged in housekeeping and the rest of the female members are either student or unemployed. There are no significant varieties of occupation of the household male members in all five chars. Most are engaged in agriculture and day labour, which reflects the pattern of the household heads. The third and fourth highest occupational categories are Petty trading (9%) and Job (6%) respectively. Student and unemployed are similar for both male and female members.

Table 4.5: Occupational profile of the members of the households

	Char Ziauddin (N=100)		Char Nangulia (N=600)		Noler Char (N=300)		Caring Char (N=300)		Urir Char (N=100)		All (N=1400)	
	M	F	M	F	M	F	M	F	M	F	M	F
Agriculture	27	0	35	10	28	0	18	0	40	0	30	0
Day Labour	35	01	30	01	34	01	44	01	16	01	34	01
House keeping	02	84	01	82	02	82	02	90	02	82	02	84
Fisherman	04	0	02	0	06	0	04	0	02	0	03	0
Job	05	01	07	01	04	01	04	0	10	01	06	01
Petty trading	08	01	10	0	08	0	08	0	09	0	09	0
Rickshaw/Van/Boat puller	09	0	03	0	02	0	02	0	01	0	03	0
Student/Unemployed	11	11	12	14	15	15	12	08	20	16	13	13

4.3 Access to Land and Housing Condition

4.3.1 Land Holding and Category of Land

Out of 1400 households 17 (2 from Char Ziauddin and 15 from Char Nangulia) households mentioned that they have received land from government with documents. Other 1383 household somehow occupied on average 171 decimal of *khas* land in these 5 chars. More than 90% households occupied land by themselves and other households has taken possession of *khash* land giving money to others. Average land size is the highest (379 deci) in Urir Char and lowest (114 deci) in Char Ziauddin. Average homestead area is 22 decimal and cultivable land is 134 decimal. More than 87% of the

households have a pond or ditch with average area of 21 decimal. Bigger size of pond was found in Urir Char and smaller in Char Ziauddin and Caring Char (Table 4.6).

Table 4.6: Average land occupied and type of land

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Nos. of HH received land under settlement program	02	15	0	0	0	17
Average land (deci)	225	147	0	0	0	372
Source of occupied land						
Occupied by themselves	90	89	93	93	94	91
Lease/share taken	0	0	0	0	0	0
Taken from others	08	08	07	07	06	08
Average land Occupied (deci)	114	160	137	165	379	171
Land by category						
Homestead (deci)	20	25	20	13	35	22
HH with pond	92	584	274	242	36	1228
Average pond area (deci)	12	23	16	12	60	21
Average cultivable land (deci)	90	123	107	144	308	134

4.3.2 Type of House

The majority type of structure of the main house consists of a mud floor (99%), a straw made roof (82%) and straw or bamboo (84%) made wall. Average size of the main house is 253 sq.ft. Only in Urir Char a remarkable number of tin made walls (50%) and roofs (38%) have been observed. Forty percent of HH have no separate kitchen and 82% HH have no separate animal shed. It reflects that the majority of the HH have their kitchen and animal shade attached with their main house (Table 4.7).

Table 4.7. Housing Pattern

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Average size of main house (Sq.Ft.)	268	247	256	185	297	253
Type of floor (%)						
Mud	96	99	98	100	99	99

	Bricks	0	01	02	0	01	01
	Pacca	04	0	0	0	0	0
Type of Wall (%)							
	Leaf	09	01	07	05	0	04
	Straw	23	33	29	55	04	34
	Mud	0	01	01	0	0	0
	Bamboo	55	55	50	36	59	50
	Tin	13	10	12	06	36	13
Type of Roof (%)							
	Leaf	12	01	01	17	0	02
	Straw	68	83	79	95	62	82
	Tin	20	16	20	3	38	16
	Pacca	0	0	0	0	0	0
HH with Kachari/ Baithakkhana (%)		0	01	0	01	0	01
HH with separate kitchen (%)		55	63	66	41	81	60
HH with separate animal shed (%)		15	20	18	10	34	18

4.4 Water and Sanitation and Health

4.4.1 Source of Water for Drinking and Bathing

Deep tube well is the major source of drinking water of the respondents in all areas. Most of these deep tube wells (63%) were installed by the different organization for the community. Only 10% of the deep tube wells are jointly or individually owned by households. Although 99% of the household use tube well water for drinking purpose it is a problem for the households to collect the water due to the distance. In the dry season they collect the drinking water on an average from 345 meters and in the rainy season 418 meters far from their homestead. The major source of water for bathing and washing is Pond/ditch (76%). But during the dry seasons most of the pond/ditches dry out due to its depth and low water retention capacity of the soil (Table 4.8).

Table 4.8. Source of water

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Source of Drinking Water (%)						
Shallow Tube well	17	01	04	01	02	03
Deep Tube well	79	98	94	98	92	96
Dug well	0	0	0	0	0	0
Rain Water	0	0	0	0	0	0

Pond Sand Filter	0	0	0	0	0	0
Untreated pond water	04	01	02	01	06	02
River/Canal water	0	0	0	0	0	0
Ownership of tube well (%)						
Owned by HH	04	06	04	03	15	05
Jointly owned	03	07	03	03	0	05
Neighbor	34	32	36	08	12	27
Govt./Community	58	56	57	86	73	63
Distance of water sources (meter)						
Dry Season	487	398	286	331	221	345
Rainy Season	542	475	331	431	312	418
Source of water for bathing and washing (%)						
Tube well	26	18	20	06	58	19
Dug well	05	02	0	03	0	02
Pond/ditch	65	78	78	89	31	76
River/canal	04	02	02	03	10	03

4.4.2 Use of Latrine

The survey results show that only 6% of the household use hygienic latrine, 89% of the household use open and unhygienic latrine and the remaining 5% household has no latrine. Of those who use the hygienic or ring slab latrine 61% purchased it from the market, 31% received it from different government and non-government organizations as donation and the remaining 8% household purchased it from NGOs. In Caring Char 89% of the latrines was donated by the different government and non-government organization and in other chars most of the household purchased it from the market (Table 4.9).

Table 4.9. Use of Latrine (%)

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Type of latrine used by HH						
No latrine	07	03	08	04	0	05
Hanging/open	65	79	77	76	62	76
Ring slab (unhygienic)	21	13	10	14	24	14
Hygienic	07	05	04	07	13	06
Source of ring slab or hygienic latrine						
Purchased from market	68	85	72	9	65	61
Purchased from NGO/other organization	18	7	18	1	0	8

Donated by GO/NGO/other organization	14	8	10	89	35	31
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4.4.3 Health and Family Planning

The study investigated three areas of health practices of the char dwellers. One is washing hands before taking food and after returning from latrine, the immunization of the children and use of mosquito net. The most common practice observed in all chars is washing hands with plain water (96%) before taking food. In case of washing hands after returning from latrine, only 2% households wash hand with soap, 4% use ash/mud and majority (94%) wash hand with plain water (Table 4.10).

Table 4.10. Washing hands before taking food and after return from latrine (%)

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Washing hand before taking food						
Wash by plain water	85	98	96	99	93	96
Wash by Soap	15	02	04	01	07	04
Washing hand after return from latrine						
Wash by plain water	85	94	93	98	88	94
Wash by ash/mud	14	03	05	01	02	4
Wash by Soap	01	03	02	01	10	2

Regarding immunization of the children the respondents were asked whether they immunize their children with at least 5 common vaccines (Polio, Ham, Diptheria, Tuberculosis and Tetanus) (Table 4.8). Fifty two percent of household immunize their children and major immunization has been taken (89%) under government mass immunization program. Those who didn't immunize their children, 66% of them mentioned that the support are not available locally, 17% due to lake of awareness and another 17% couldn't attend the vaccine camp due to bad road communication. Most of the char dwellers (92%) use mosquito net. Regarding use of family planning methods 66% of the couples don't use any family planning methods. Temporary methods are applied by 32% of households and only 2% of the couples applied permanent method of family planning. From data it is observe that one major reason regarding poor health and family planning services is the lack of NGO/ Government health worker within the char areas (Table 4.11).

Table 4.11. Children immunization and family planning practices (%)

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Immunization of the children						
Yes	52	49	41	63	62	52
No	84	51	59	37	38	48
Source of vaccine						
Upazila/Union Health Center	06	02	03	06	02	3
Local Doctor	0	13	06	0	0	6
NGO	06	0	04	01	0	2
Govt. Program	87	85	87	93	98	89
If No, why?						
Lack of awareness	33	08	31	06	10	17
Support not available locally	53	78	52	70	86	66
Couldn't attend the camp/center due to bad road communication	13	14	17	24	04	17
Use of Mosquito Net						
Yes	92	93	88	97	78	92
No	08	06	12	03	21	8
Regular visit of Govt./NGO health worker in the community						
Yes	09	05	09	02	06	6
No	91	95	91	98	94	94
Use of Family Planning Method						
No	70	63	72	60	80	66
Temporary method	28	35	25	39	20	32
Permanent method	02	02	03	01	0	2
If No, why?						
Lack of awareness	62	56	61	43	80	58
Service not available locally	15	27	16	42	15	25
Materials are costly	23	17	23	15	05	17

4.5 Household Assets

A long list of family assets was examined including furniture, electrical and electronic goods, gold, agricultural and fishing instruments, transport, trees and poultry and livestock (Table 4.12). Out of these long list of assets ownership of ceiling/table fan, radio/cassette player, television, bullock cart and pump machine are almost entirely absent among the sample households. At least onewooden cot is used by

90% of the households. Chickens are owned by 90% of the households followed by duck (81%) and cow (61%). A remarkable number of households has gold (54%) and mobile phone (46%). The average present value (6,687) of gold reflects that the amount of gold owned by the household is very low. Average present value of household assets is Tk 35,162. The lowest average value of assets is found in Caring Char, while on the other hand the average present value of assets in Char Ziauddin, Char Nangulia and Noler Char are more or less similar. It is noticeable that the average present value of assets is about 4 times higher in Urir Char, this is only because in Urir Char 14 households own more number of buffalos and the average per household value is taka 293,714. This is due to the availability of wide open rough grazing field in Urir Char.

Table 4.12. Household Assets (HH in percent and Value in Taka)

Assets	Char Ziauddin (N=100)		Char Nangulia (N=600)		Noler Char (N=300)		Caring Char (N=300)		Urir Char (N=100)		All (N=1400)	
	H	Value	H	Value	H	Value	H	Value	H	Value	H	Value
Wooden cot	93	1214	92	1635	97	1317	76	887	97	1829	90	1411
Almira	08	1350	05	2930	04	1700	01	3000	14	3071	05	2540
Chair/Table	21	409	30	1156	28	1092	18	574	58	1401	28	1061
Shinduk (Wooden box)/Trunk (Tin)	37	1537	35	2126	45	1975	30	1956	26	1723	36	1990
Alna	02	550	02	1166	02	1080	01	2000	07	1057	22	1113
Ceiling/Table Fan	0	0	.49	833	0	0	0	0	0	0	.21	833
Radio/Cassette	02	1150	01	268	01	393	0	0	0	0	01	421
B&W TV	01	4000	.49	3000	01	4100	0	0	04	5000	.71	4120
Color TV	0	0	0	0	0	0	0	0	0	0	0	0
Mobile Phone	43	2293	50	2057	46	2105	33	1537	61	1860	46	1984
Sewing machine	03	4500	01	4562	02	5300	01	1400	04	2250	02	4013
Ornaments	55	10247	39	7201	42	9119	90	3886	76	8486	54	6687
Bicycle	22	1972	09	3318	03	2100	01	7334	06	2700	07	2962
Rickshaw/Van	05	6700	01	5400	01	4000	01	6667	0	0	01	5900
Bullock cart	0	0	0	0	0	0	0	0	0	0	0	0
Boat	0	0	01	9000	01	13333	0	0	0	0	.49	9500
Mechanized boat	01	70000	01	10250	03	96125	.33	80000	0	0	01	94928
Power tiller/ Husking	05	27000	03	30076	02	40428	04	8125	08	33812	03	26155

Machine												
Pump Machine	0	0	0	0	0	0	0	0	0	0	0	0
Fishing net	22	5504	36	3459	34	4762	55	2271	48	2870	40	3377
Trees	24	3912	26	6692	24	3051	05	1546	68	32911	24	10765
Cow	52	21634	66	21026	66	21654	46	19863	78	46426	61	23328
Buffalo	04	43125	.33	14000	01	30010	.33	60000	14	293714	02	21620
						0						4
Goat	28	2017	34	2714	30	2377	47	3799	44	9870	36	3533
Sheep	0	0	02	28109	0	0	.33	800	05	12760	01	21988
Chicken	88	725	90	885	90	879	90	876	89	1344	90	903
Duck	81	1141	80	1245	78	1197	84	1108	85	2200	81	1269
All	-	28,79	-	29,224	-	33,512	-	20,33	-	123,41	-	35162
		2						0		5		

4.6 Household Income and Expenditure

4.6.1 Income and their sources

The following table shows the average annual income of the households from different sources. The average annual income of the sampled Households in Urir Char is estimated the highest at Taka 104,400 and the four other chars Char Ziauddin, Char Nangulia, Noler Char, Caring Char are 65,743, 69,152, 69,281, 71475 respectively. Overall mean income is Taka 71,951. Of the total income, major share or 46% is contributed by wages and salaries, second highest contribution is from field crops (22%) and third highest contribution is from petty trading (10%). The share of poultry and livestock jointly is 7% but livestock contribution in Urir Char is higher than all other chars, which is due to more buffalo holdings in Urir Char (Table 4.13).

Table 4.13. Annual household income from different sources

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Wage/Salary	34,162	32,571	33,939	38,411	20,652	33,378
Field Crops	14,842	12,935	12,439	18,789	32,500	15,617
Petty Trading	3,660	8,057	7,367	4,417	8,950	6,879
Homestead Gardening	2,188	3,340	2,634	1,167	9,978	3,115
Rickshaw/Van Pulling	5,140	2,760	4,250	1,073	810	2,749
Pond Aquaculture	2,167	3,177	1,119	1,443	9,108	2,713
Livestock Rearing	879	1,993	2,213	1,439	13,531	2,666
Fishing/PL Catching	1,150	1,631	2,620	2,573	2,780	2,093
Poultry Rearing	1,380	1,768	1,373	2,161	3,831	1,887
Remittance	-	537	1,000	-	2,200	601

Handicrafts	175	385	327	-	60	252
Total	65,743	69,152	69,281	71,475	104,400	71,951

Table 4.14 shows the household distribution by different income groups. The average annual income of 59% of the households is less than the average income (71,951) estimated in table 4.13. It is noticeable that the average annual income of 49% of the households is more than 90,000 in Urir Char. It reflects that the households of Urir Char are better off than the four other chars.

Table 4.14. Household distribution by income group (%)

Income group	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Income <36,000	12	10	15	8	12	11
36,000 to 50,000	17	21	21	14	08	18
50,000 to 70,000	30	33	25	34	20	30
70,000 to 90,000	18	14	16	27	10	17
Above 90,000	22	22	23	17	49	23

4.6.2 Household Expenditure

Average annual household expenditure estimate is 66.313 taka (\$884). Major expenditure head of the households is food cost. Average food cost per household is taka 52,585 (\$701) which is 79% of the total annual household expenditure. Second highest expenditure head is clothing with 6% of total annual expenditure and the third and fourth one are medical and marriage ceremonies (4%). Highest annual expenditure estimate is 73, 547 taka in Urir Char and the lowest Tk 61, 856 in Caring Char (Table 4.15).

Table 4.15 Annual Household Expenditure (Average Taka)

Sources	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Food cost	47962 (76)	52073 (78)	54682 (80)	52238 (84)	55030 (75)	52585 (79)
Clothing	4460 (7)	3827 (6)	4808 (7)	3222 (5)	3732 (5)	3946 (6)
Medical	4086 (6)	2851 (4)	2929 (4)	2013 (3)	2290 (3)	2736 (4)
Children education	912 (1)	926 (1)	503 (1)	645 (1)	962 (1)	777 (1)
Transport	737 (1)	869 (1)	831 (1)	1239 (2)	995 (1)	940 (1)
Marriage ceremony	2320 (4)	2490 (4)	2523 (4)	878 (1)	7230 (10)	2478 (4)
Dowry/Gift	273	1448 (2)	363 (1)	717 (1)	1790 (2)	999 (2)
Religious festival	742 (1)	656 (1)	842 (1)	649 (1)	938 (1)	720 (1)
Social ceremonies	236	150	130	163	405 (1)	173 (0)
Court case	866 (1)	1035 (2)	687 (1)	-	-	653 (1)

Fire wood	713 (1)	406 (1)	260	92	85	306 (0)
All	63,307	66,713	68,558	61,856	73,457	66,313

4.6.3 Household savings

From table 4.16 it is observed that 42% of respondents have some sort of savings. Most of the savings are kept in the NGO (83%) which is normally the group savings as per NGO rules. Other than NGOs 8% money kept at home, 7% at Bank and 2% have taken land leased/ mortgage.

Table 4.16. Household savings status

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
% of HH have savings	46	41	53	31	44	42
Kept money at home (%)	9	6	7	15	0	8
In Bank (%)	7	7	1	8	22	7
Land lease/ mortgage in (%)	4	2	1	1	0	2
In NGO (%)	80	85	90	76	78	83

4.7 Involvement with NGO and other Organizations and Microcredit Status

4.7.1 Involvement with NGO and Other Organizations

It is found that 43% of the households (at least one member) are associated with local Non-government Organizations. Other than NGOs the respondents are not involved with other community based organizations and institutions. Regarding the service received from NGO, out of those who are involved with NGOs 94% have received micro credit. Other than micro credit very negligible services are received by the respondents, only 16% and 9% in Caring Char and Urir Char respectively received training from NGO.

Table 4.17. NGO involvement and services received (%)

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Involvement with NGO	56	45	56	23	35	43
Advice on Agricultural	2	1	2	0	3	1

and other farm activities						
Received Training	2	0	0	16	9	2
Received Agri. Input	0	0	0	2	0	0
Treatment and vaccination of cattle and poultry bird	0	0	1	0	0	0
Service on health and FP	0	0	0	0	0	0
Legal aid	0	0	0	0	0	0
Assistance received on IGA	0	0	4	0	0	1
Employment Opportunity	0	1	1	0	0	1
Micro Credit	96	97	93	82	88	94

4.7.2 NGO- and other loans

Table 4.18 shows the status of NGO micro credit and other loans taken by the households. It is found that major source of loan for the household is NGO (53%) and second source is local money lender (21%). Fifteen percent households have taken loan from neighbours and relatives. Only 2% of the respondents have taken loan from Bank. Average loan size is more or less the same for local money lender, neighbors and relatives.

Table 4.18 Household's NGO microcredit and other loans

	Char Ziauddin (n=71)	Char Nangulia (n=416)	Noler Char (N=219)	Caring Char (N=201)	Urir Char (N=85)	All (N=992)
Bank Loan (% of HH)	0	3	1	0	5	2
Average amount Tk.	0	22,333	18,000	12,000	11,000	18,900
NGO microcredit (% of HH)	79	59	72	16	40	53
Average amount Tk.	16,760	17,554	16,824	8,109	18,117	16,708
Loan from Relatives (% of HH)	4	3	6	15	13	7
Average amount Tk.	29,000	37,083	28,076	16,166	31,272	25,014
Loan from neighbors (% of HH)	4	10	23	40	27	8
Average amount Tk.	13,666	30,073	15,785	19,042	52,695	25,434
Loan from local money lender (% of HH)	13	26	8	29	15	21
Average amount Tk.	37,777	32,612	17,944	14,706	18,000	25,558

4.8 Migration Status of Households

4.8.1 Duration of the present residence and reason for migration

Average period of residing in these chars is nine years. Average period of residing in Urir char is highest (21 years) and lowest in Caring Char (6 years), in the other three chars it is around 8-9 years. Majority of the households (74%) migrated from other upazilas (Hatiya, Ramgoti, Subarna Char) and 12% from other districts (Chittagong and Bhola). In Char Nangulia, Noler Char and Caring Char the majority of the households migrated from Hatiya Upazila, in Char Ziauddin the majority of the household migrated from Bhola district and Ramgoti upazila and In Urir Char the majority of the households migrated from Sandwip upazila of Chittagong district. The main reason for migration is river erosion (67%) and another one is that the landless households of adjacent upazilas hope to get khas land in newly accreted chars (Table 4.19).

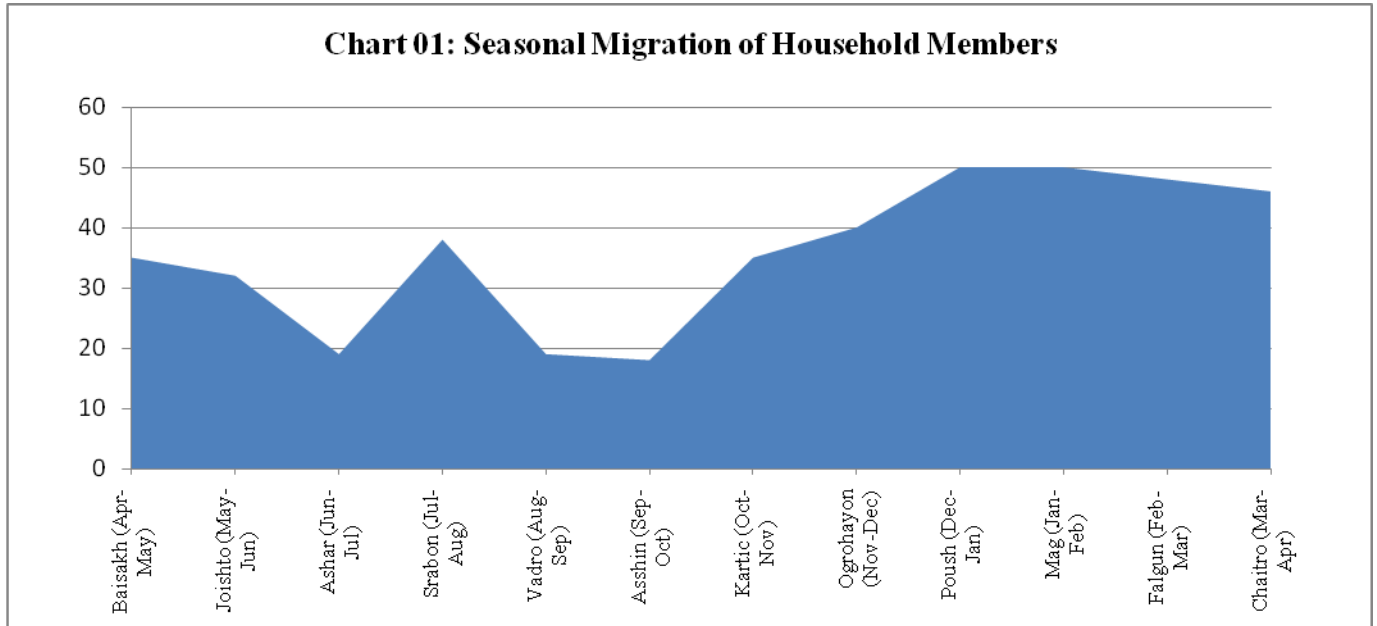
Table 4.19 Duration of residence and reason for migration

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Average years of living this char	08	09	09	06	21	09
Migrated from (%)						
Other Village	10	04	0	0	0	2
Other Union	20	23	02	0	0	12
Other Upazila	61	66	88	79	75	74
Other Zila	08	07	10	21	25	12
Reasons for migration (%)						
River Erosion	38	57	86	73	91	67
Got married here	02	01	0	0	0	1
To get khas land	60	42	14	27	9	32

4.8.2 Seasonal Migration

A question was asked if any member of the respondents' family go outside the village for work. The next question asked was on the period of going outside the village. On analysis of the answers, it is found that member(s) of 66% of the household families go outside the village, almost at the same rate from four chars except from Urir char only 27%. Overall in the study area, the percentage of movement varies over the months from lowest 18% in the month of *Asshin* (September-October) to the highest of 50% in the month of *Poush* (December-January) and *Mag* (January-February) (Chart- 01). The scenario of

migration has no major differences among the chars. The reason is that the all these migrated members work in brick field as labour and the production period of brick field is between *Kartik to Baishakh* (November- April).



4.9 Field Crop Cultivation

4.9.1 Cropping Intensity

The average cropping intensity of the entire study area is estimated at 105%, the highest cropping intensity is observed in Char Ziauddin (148%) and the lowest in Char Nangulia (101%). There is no mentionable difference of present cropping intensities in Char Nangulia, Caring Char and Urir Char.

Table 4.20 also shows that rice cultivation in Boro/ Robi season is almost absent in all chars. May be it is due to the high salinity during the dry season and lack of irrigation facilities in the new chars. Vegetable cultivation in the rice field is also very poor (only 3% of households), none of the sample households in Urir Char and Caring Char cultivate vegetable in the rice field. It is also clear from the data that these char lands are being used only for one crop which is *Amon* (Table 8.20).

Table 4.20 Cropping Intensity and Average Area by Crops

Char	Char	Noler	Caring	Urir	All
Ziauddin	Nangulia	Char	Char	Char	(N=1400)
(N=100)	(N=600)	(N=300)	(N=300)	(N=100)	

Average cultivable land (Deci)	92	136	102	182	385	154
Average cultivated land (Deci)	137	137	121	186	402	163
Cropping intensity (%)	148	101	118	102	104	105
Average cultivated land by crop						
Aush (HH in %)	27	02	08	05	02	06
Average area (Deci)	69	104	65	177	255	98
Amon (HH in %)	86	86	85	90	89	87
Average area (Deci)	103	144	122	191	391	165
Boro/Robi (HH in %)	0	01	01	0	02	01
Average area (Deci)	0	91	43	238	100	98
Other cash crop (HH in %)	44	23	35	08	30	24
Average area (Deci)	66	42	31	57	156	53
Vegetable (HH in %)	10	02	06	0	0	03
Average area (Deci)	20	04	07	0	0	01

4.9.2 Average production, consumption and sale

The average production per hectare (yield) of rice is given in Table 4.21 and for pulse and other crops in taka. The production rate (yield) of other crops like pulse, oil seed, ground nut and water melon etc are difficult to measure because of the different productivity and the farmers can't clearly estimate the total production in units. So the production and income of other crops is presented in the following table in taka. Average rice production per hectare is 1.9 MT, highest yield estimated 2.4 MT in Char Ziauddin and lowest 1.7 MT in Char Nangulia, which is less than the national average. This is only because more than 99% of the study area cultivate the local variety of rice namely Rajashail. Also for other crops local varieties are used. More than 65% of rice and 55% of pulses and others crops is used for household consumption. It is also noticeable that sales of production are not the household surplus, they sell it to meet up the production cost, because in the food security section respondents mention that average 7 month in a year households can meet up the household needs from their own production.

Table 4.21 Production and income from field crops

	Char Ziauddin	Char Nangulia	Noler Char	Caring Char	Urir Char	All
Rice						
Production (MT/ha)	2.4	1.7	1.8	1.9	1.8	1.9
Average Production (kg/HH)	1,167	1,051	909	1,581	2,937	1,261
Consumption (kg/HH)	783	828	762	935	1,439	877
Average Income (Taka/HH)	20,052	14,088	12,698	22,737	41,743	17,744
Pulses and other crops						
Average Income(taka)	1,621	1,978	2,745	3,987	8,742	2,128

Consumption (Taka)	771	763	1,158	2,723	1,862	1,126
Total Income (Taka)	2,392	2,741	3,903	6,710	10,604	3,254

4.9.3 Use of fertilizer and pesticides

Application of organic fertilizer is not very common among the households in all chars. Only 20% of the households use cow dung and 5% use compost. Cow dung is mostly applied in Char Ziauddin, Char Nangulia and Noler Char. Although more than 60% of the households rear cow, due to lack of fire wood in the char areas people mostly use the cow dung as fire wood. The most common chemical fertilizer is urea, 85% of the households use urea and 35% of the households use TSP. Likewise, use of pesticides is common among the households. Average 69% households use pesticides.

Table 4.22 Use of organic and inorganic fertilizer and pesticides

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Urea	74	85	85	91	87	85
Guti Urea	11	6	13	3	0	8
TSP	54	41	45	21	0	35
MP	2	0	0	0	0	0
Zink	1	1	2	0	0	1
Cow dung	26	25	30	6	2	20
Compost	7	3	11	2	0	5
Pesticide	54	64	72	90	49	69
Pest Control	5	2	4	0	1	2
IPM	2	0	0	0	0	0

4.10 Homestead Gardening

4.10.1 Vegetable cultivation in homestead

From the study it is clear that vegetables are grown mainly in homestead areas. The main vegetable cultivated by the households in their homestead among non-leafy vegetables are Bean, Long bean, Bottle gourd, Sponge gourd etc. and among the leafy vegetables Red amaranth (*Lal Shak*) is mostly grow in the homestead. Due to lack of irrigation facilities most common winter vegetables like Carrot, Cauliflower and Cabbage are mostly absent in all chars. Local Bean (82%) is the most common vegetable grown in homestead in all the chars.

Table 4.23 Type of vegetable cultivated in homestead (% of HH)

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Bean	72	88	78	76	85	82
Long Bean	30	40	22	40	42	35
<i>Jali Kumra</i> (Ridge gourd)	19	21	22	31	23	23
Bottle Gourd	40	64	45	67	79	60
Sweet Gourd	14	23	18	26	29	22
<i>Korola</i> (Bitter gourd)	2	6	6	9	11	7
<i>Jinga</i> (Ribbed gourd)	30	38	33	50	43	39
Dhundul (Sponse gourd)	48	60	47	56	59	55
Okra	2	10	2	9	11	8
Cucumber	4	8	4	12	41	10
Radish	6	8	8	8	18	9
Spinach	4	4	4	2	1	3
<i>Lal Shak</i> (Red amaranth)	16	21	21	25	39	23
<i>Pui shak</i>	19	22	22	20	14	19

4.10.2 Production and income of homestead gardening

Besides vegetables, some fruits are grown in the homesteads in the surveyed areas. There are three common fruits grown in the study area, these are banana, guava and papaya. Average 33% of the households grows banana, 11% grows papaya and 7% grows guava on the homestead. Consumption of vegetables and fruits grown in homesteads is common. It is observed that on average 40-50% of the total homestead productions are consumed by the household. Average estimated income from homestead gardening is considerable. Income from vegetables is on average 3742 taka/hh/year and from banana guava and papaya 2534, 825 and 970 taka/hh/year respectively. It is noticeable that homestead gardening is mainly done by the female members of the households.

Table 4.24 Production and income from homestead gardening

	Char Ziauddin	Char Nangulia	Noler Char	Caring Char	Urir Char	All
Vegetable (Nos of HH)	86	541	234	227	87	1175
Consumption (Taka)	1083	1863	1113	805	2347	1488
Sold (Taka)	1176	2162	1315	1202	7142	2254
Total Income (Taka)	2259	4025	2428	2007	9489	3742
Banana (Nos of HH)	43	210	134	28	50	465
Consumption (Taka)	1138	758	994	585	1014	878
Sold (Taka)	1370	1475	1558	815	2920	1656

Total Income (Taka)	2508	2233	2552	1400	3934	2534
Guava (Nos of HH)	7	53	20	3	18	101
Consumption (Taka)	248	428	202	400	500	346
Sold (Taka)	500	427	197	500	1323	479
Total Income (Taka)	748	855	399	900	1823	825
Papaya (Nos of HH)	11	86	60	4	23	148
Consumption (Taka)	468	512	421	275	411	486
Sold (Taka)	337	293	264	600	1535	484
Total Income (Taka)	805	805	685	875	1946	970

4.11 Poultry, livestock and aquaculture practices

4.11.1 Poultry rearing status

In a rural Bangladeshi household chicken and duck rearing is very common and they are reared open. The number of livestock depends on the area of the household, supportive environment, security, availability of persons attending etc. Especially duck rearing requires ponds or water bodies around. In many areas chicken and duck are being reared commercially. In some areas swan/ goose is also seen in plenty along with ducks. Pigeon rearing is also becoming popular as it is consumed as well as bought and sold in the market. All these combined are called domestic birds or simply 'Bird'. Traditional bird rearing gives supplementary income and is an important source of protein in the form of egg and meat to the households without much of additional investment.

Table 4.25 shows that on an average 89% of the households in the study area rear poultry. The way of rearing poultry bird is 99% semi scavenging (scavenging plus use of supplementary feed). The average number of birds for each household is 6 chicken and 7 duck. Average egg production per year is 156 from both duck and chicken and total meat production is 36 kg per year. Consumption of eggs (30%) is more than the consumption of meat (17%). Average yearly per household income from eggs is estimated 817 taka and from meat 4,949 taka. The female members of the households reportedly do the activities as regards rearing the poultry birds. In a few cases the male members do the task and the women assist.

Table 4.25 Poultry rearing status, production and income

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Rearing status						
HH rear poultry (%)	80	92	82	93	93	89
Fully scavenging (%)	03	0	02	0	0	01
Scavenging plus supplementary feed (%)	97	100	98	100	93	99

Fully supplementary feed (%)	0	0	0	0	0	0
Average Nos. of Chicken	04	06	05	06	09	06
Average Nos. of Duck	07	07	06	06	09	07
Annual production of eggs	275	139	127	208	209	156
HH consumption of eggs	84	39	43	56	64	47
Income from eggs	1210	660	760	1108	1372	817
Annual production of meat (Kg)	47	32	26	42	75	36
HH consumption of meat (Kg)	07	05	03	07	10	06
Income from meat (Tk)	9009	4307	4961	5010	7881	4949

4.11.2 Livestock rearing status

In an agrarian Bangladesh society livestock are an essential part of any household. They are needed to plough the land, they provide milk and meat and cow dung is the best known fertilizer and may also be used as fuel for cooking, it reproduces fast and sells at a very high price. Cattle hide is one of the major economic and export commodities of the country. However, mechanization of agriculture and transport and advent of chemical fertilizers suddenly replaced the cattle as some of the essential services and many farm households planned their agriculture production without cattle.

Table 4.26 shows that 1053 (75%) sample households are rearing livestock (Cow, Buffalo, Goat and Sheep) in the study area. In the study area 41% of sample households have at least one milking cow, 41% have a bull and 17% have goat. Sheep and buffalo are absent in most of the chars. Only in Urir Char there is a remarkable number of households (12%) with buffalos, with an average number of 7 animals. On average each livestock holding household produces 114 litre of milk per year and the annual income from milk is taka 2,850. The highest average milk production is in Urir Char, 4060 litre/year, which is due to the large number of milking cows and buffalos holding by the households in Urir Char.

Table 4.26 Livestock rearing status, production and income

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Nos. of HH rearing livestock	65	468	222	213	85	1053
HH with milking cow (%)	33	42	45	31	67	41
Average no. of cows	01	01	01	01	02	01
Avg. milk production (Lt))	99	91	118	104	203	114

Avg. milk consumption (Lt)	48	46	70	70	110	64
Avg. income from Milk (Tk)	2970	2730	2950	2600	4060	2850
HH with bull (%)	28	47	39	28	67	41
Average nos. of bull	02	02	02	02	03	02
HH with goat (%)	10	13	13	28	29	17
Average nos. of goat	02	02	02	03	03	02
HH with buffalo (%)	01	0	01	0	12	01
Average nos. of buffalo	03	01	07	0	07	06
HH with sheep (%)	0	0	0	0	03	.20
Average nos. of sheep	0	0	0	0	04	04

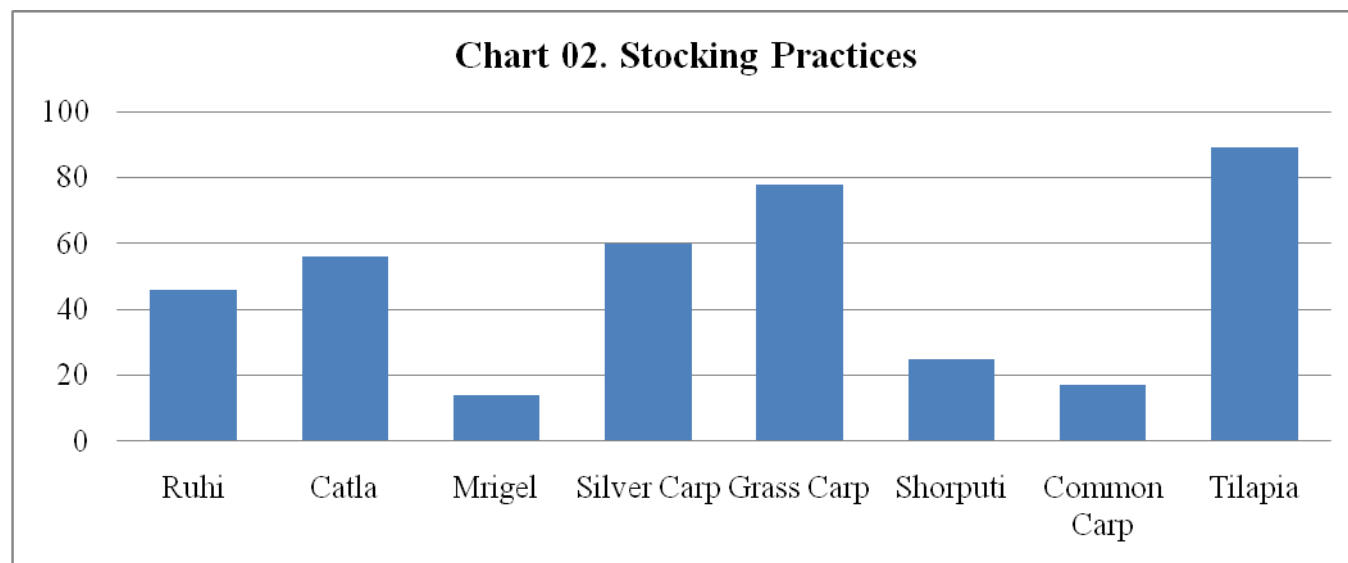
4.11.3 Aquaculture practices

1288 (92%) households have at least one pond/ ditch in the study area. Out of these 663 (51%) culture their pond/ditch. The common practice of fish culture is the traditional way (75%): only stocking and harvesting no feeding or fertilizing. The main two reasons not to culture fish are the flooded of the pond during high tide and in the monsoon (75%) and the water retention period being very low. There is only 2-3 months sufficient water retained for fish culture (23%).

Table 4.27 Pond aquaculture practices

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
HH with pond/ditch (%)	92	97	91	81	96	99
HH culture pond/ditch (%)	47	62	42	25	84	51
Type of culture (%)						
Traditional	81	80	82	53	54	75
Semi-intensive	16	19	18	47	43	24
Intensive	02	01	0	0	03	01
If not cultured why? (%)						
Flooded during high tide	55	67	86	82	62	75
Lack of fingerling and other inputs	06	0	0	0	13	01
Risk of theft	08	01	01	0	06	01
Low water retention	31	32	13	18	19	23

The large majority of the households is found to stock Tilapia and Indian major carps, specially Rui and Catla. Silver carp (60%) and Grass carp (78%) are also stocked high in the study area. Major source of fingerling is Local vender (89%).



The average production rate is very low in the study area, (1.74 kg/ deci), which is far below the national average. The highest average production estimate is in Char Ziauddin, 2.8 kg/ deci and the lowest in Noler Char, only 1 kg/ deci. More than 67% of total production from pond/ ditch is used as household consumption. Per household income from the pond is taka 4.515. In Urir Char the per household income is around double than in the other chars, due to the average bigger size of pond/ ditch there.

Table 4.28 Fish production and income

	Char Ziauddin (n=43)	Char Nangulia (n=362)	Noler Char (n=115)	Caring Char (n=62)	Urir Char (n=81)	All (n=663)
Average Production (kg/HH)	37	43	25	30	89	43
Production (kg/deci)	2.8	1.8	01	1.9	02	1.74
Average Consumption (kg/HH)	28	29	20	25	52	29
Average income from pond (Tk/HH)	4070	4730	2750	3000	8900	4515

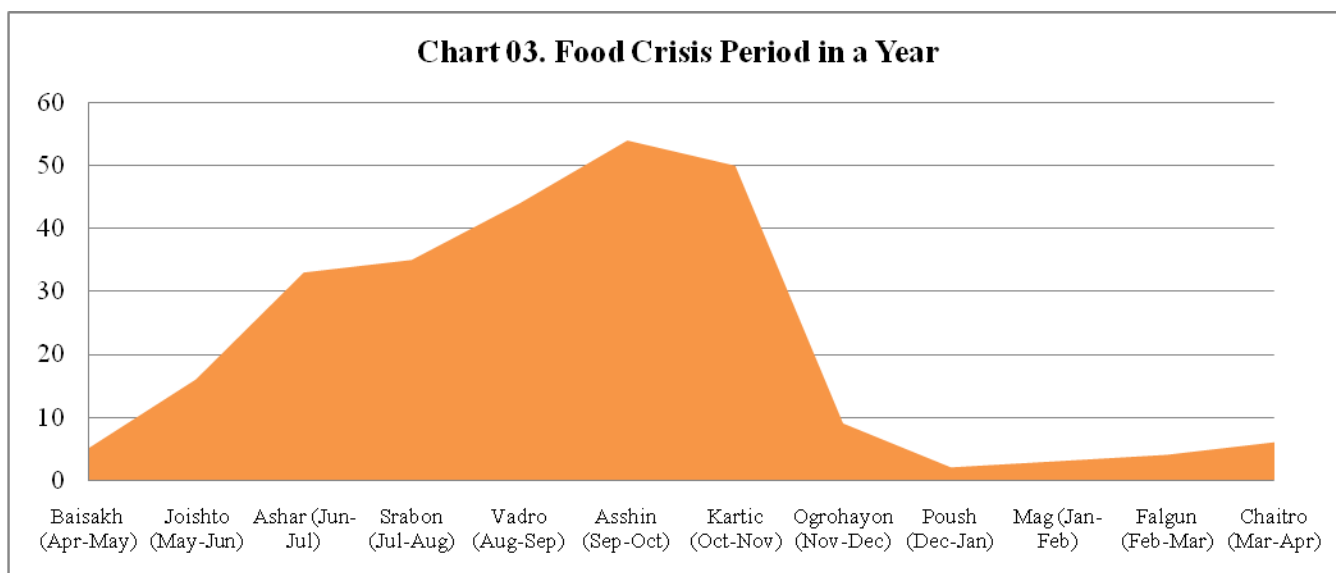
4.12 Food Security

The respondents were asked how many months of a year they can meet their basic food needs from own production. Table 4.29 shows that on average the households can meet their basic food needs from their own production during 7 months. The respondents were also asked whether they normally face any situation during a year when the household members have to eat less than the usual quantity of food or inferior quality of food due to financial or other reasons. If they face the situation they were asked to

specify the month(s) when it occurs as per *Bangla* calendar. Eighty two percent of the respondents replied that they face such a situation in different months of the year. Chart 03 shows the acute crisis period by month in a year.

Table 4.29 Food Security

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Average months in a year HH meet the basic food needs from own production	06	07	06	07	09	07
HH faced acute crisis (%)	76	86	73	91	59	82



4.12 Accessibility

The mobility of the household members was assessed through asking the respondents whether any member of their household needs to go to 11 specific places like primary school/ madrasha/ college, bazaar, NGO office, hospital, union or upazila office etc. And if they did go, they were asked about the distances, mode(s) of transportation and time taken for the trip during rainy as well as dry season for each of the visited places.

Naturally the highest proportion of respondents mentioned bazaar/haat (96%) as the place visited by the household members, followed by primary school/ madrasha (51%), and NGO office (34%). It is very interesting to observe that mobility to other places like UP/Upazila health center, UP/Upazila/District

office is very negligible (below 1%). Data has been analyzed on distance, time taken to reach in different seasons only for hat/bazar and primary school/ madrasha. Table 4.30 shows that the average distance to primary school or madrasha is 1 kilometer and nearest hat/bazaar is 2.7 kilometer from the residence of respondents. No roads to go to the school and hat/bazaar are mentioned by 26% and 33% of the respondents respectively. Normally they use the dyke of the crop fields to go to above mentioned places. The remaining 74% and 67% respectively mentioned the *kancha* (earthen) road to go to the school and bazaar. To go to these two places, school and hat/bazaar, in the rainy season it takes 38 minute and 62 minute respectively and in the dry season 30 and 40 minutes respectively.

Table 4.30 Accessibility to primary school/ madrasha and hat/ bazar

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Primary School and Hat/Bazar						
Average distance (km)	02	02	01	01	01	01
No road	14	19	30	51	35	26
<i>Kancha</i> road	86	81	70	49	65	74
Average time taken to reach in rainy season	49	410	32	32	28	38
Average time taken to reach in dry season	39	22	28	25	21	30
Hat/Bazar (Rural market)						
Average distance (km)	05	03	02	03	01	16
No road	35	25	24	57	36	33
<i>Kancha</i> road	65	75	76	43	64	67
Average time taken to reach in rainy season	81	59	50	86	29	62
Average time taken to reach in dry season	58	48	38	69	23	49

4.13 Gender and Equity

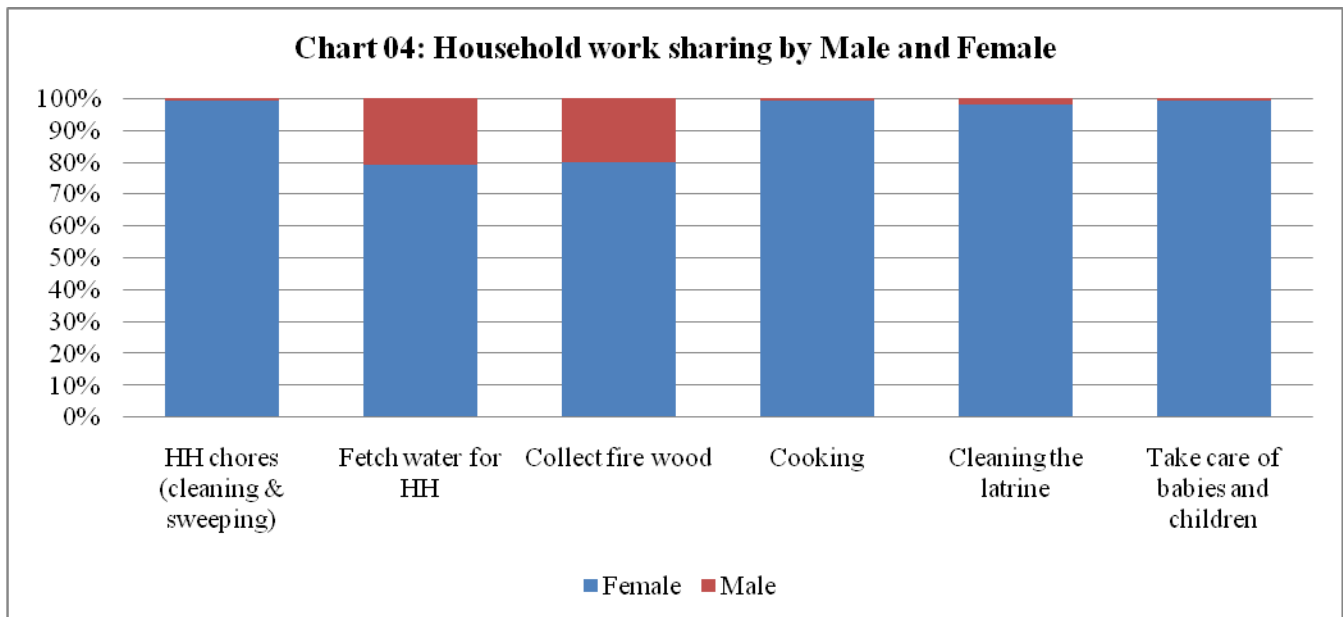
In the study, data are disaggregated by gender wherever necessary and participation of women in different production and related activities (crop cultivation, homestead gardening, fish culture, livestock & poultry) is discussed separately in each chapter. This “Gender and Equity” chapter elaborates mainly gender roles with reference to three broader aspects, namely:

- Participation of family members by gender in household work (other than production activities)
- Participation of family members by gender in decision making process (of selective issues)

- Mobility and exposure of women.

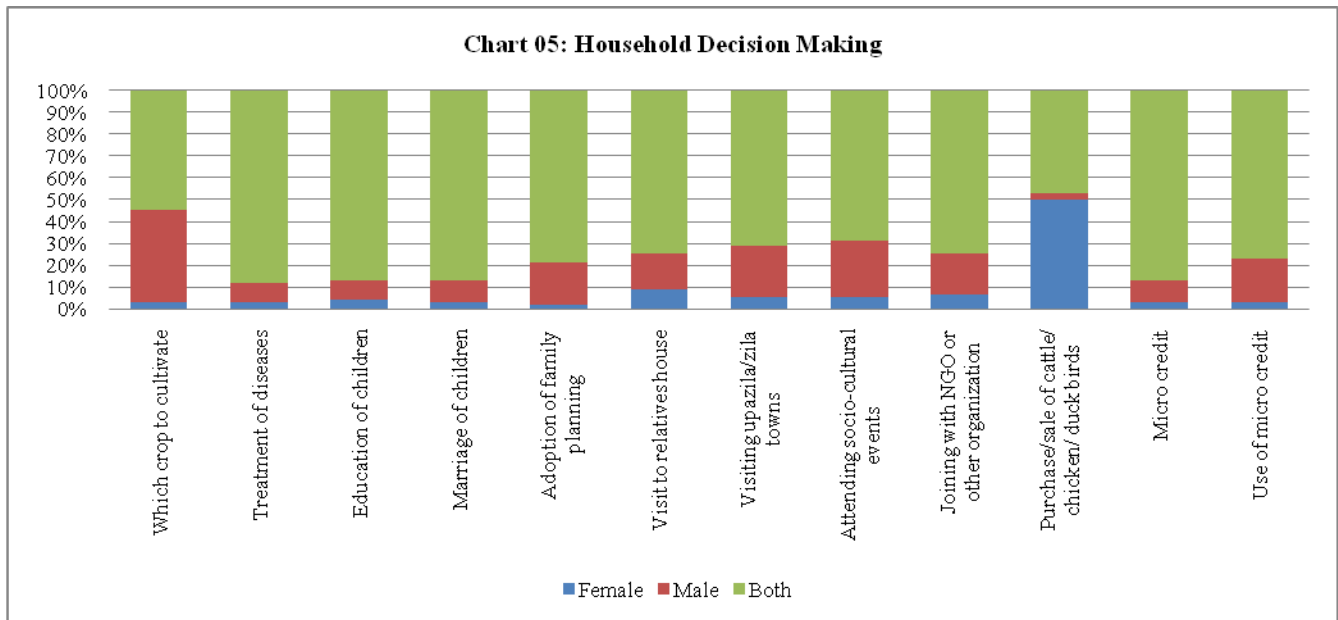
4.13.1 Household Work Sharing Between Female and Male

As most of the activities listed in the questionnaire are reproductive in nature, understandably women are more involved compared to their spouses with some variations between the chars (Chart 04). The activities included are: cleaning household surroundings, cooking, collecting water, collecting fuel for kitchen, cleaning toilet, take care of the children. Result shows that besides collecting drinking water (79%) and collecting fuel for kitchen (80%), adult female members shoulder the full responsibility of cleaning household surroundings (99%), cooking (99%), cleaning toilet (98%) and take care of the children (99%).



4.12.2 Participation of Family Members in Decision-making Process

The study findings show the relative lower position of women in the surveyed area, specifically in decision-making in agriculture, adoption of family planning, attending socio-cultural events and use of micro credit (Chart 05 and Table 4.31).



It appears from Table 4.31 that most of the decisions are undertaken jointly (by husband and wife), ranging from 47% in purchase and sales of poultry and livestock to 88% in treatment. Other cases where participatory decisions are largely taken include: education of children (87%), Marriage of boys and girls (87%), adoption of family planning (79%), receive microcredit (87%) and use of micro credit. Decisions towards purchasing and selling poultry birds are dominated by the female members. There is no significant difference in participation of household members in decision process across the chars.

Table 4.31 Household Decision Making (%)

	Char Ziauddin (N=100)			Char Nangulia (N=600)			Noler Char (N=300)			Caring Char (N=300)			Urir Char (N=100)			All (N=1400)		
	F	M	B	F	M	B	F	M	B	F	M	B	F	M	B	F	M	B
Which crop to cultivate	02	51	47	02	31	67	04	53	43	04	44	52	04	44	52	03	42	55
Treatment of diseases	02	08	90	02	12	86	04	15	81	0	03	97	01	06	93	03	09	88
Education of children	04	08	88	02	11	87	07	13	80	04	0	96	06	02	92	04	09	87
Marriage of boys/girls	02	11	87	03	12	85	03	15	82	02	0	98	05	0	95	03	10	87
Adoption of family planning	01	18	81	02	14	84	03	21	76	04	22	74	0	42	58	02	19	79
Visit to	17	17	66	08	13	79	16	19	65	04	19	77	06	20	74	09	16	75

relatives house																			
Visiting upazila/zila towns	04	36	60	05	17	78	07	25	68	04	27	69	07	28	65	05	24	71	
Attending socio-cultural events	0	48	52	03	18	79	07	26	67	03	30	67	07	29	64	05	26	69	
Joining with NGO or other organization	05	14	81	02	14	84	04	15	81	02	04	94	09	0	91	04	12	48	
Purchase/sale of cattle/ chicken/ duck	58	03	39	46	02	52	50	04	46	51	02	47	54	03	43	50	03	47	
Micro credit	06	11	83	02	10	88	04	08	88	03	03	94	88	04	08	03	10	87	
Use of micro credit	03	16	81	02	20	78	02	20	78	03	16	81	78	04	18	03	20	77	

4.13.3 Mobility and Exposure of women

Table 4.32 shows the extent of visit of women to various important places like District and Upazila level offices, hospital and health centers, NGO/CBO offices, Union Parishad and local markets. Women of 60% of the households have access to local hat/bazaar (mainly for purchasing daily necessities). Women of around 30% households visit NGO /CBO offices.

Table 4.32 Women Mobility to Different Places (%)

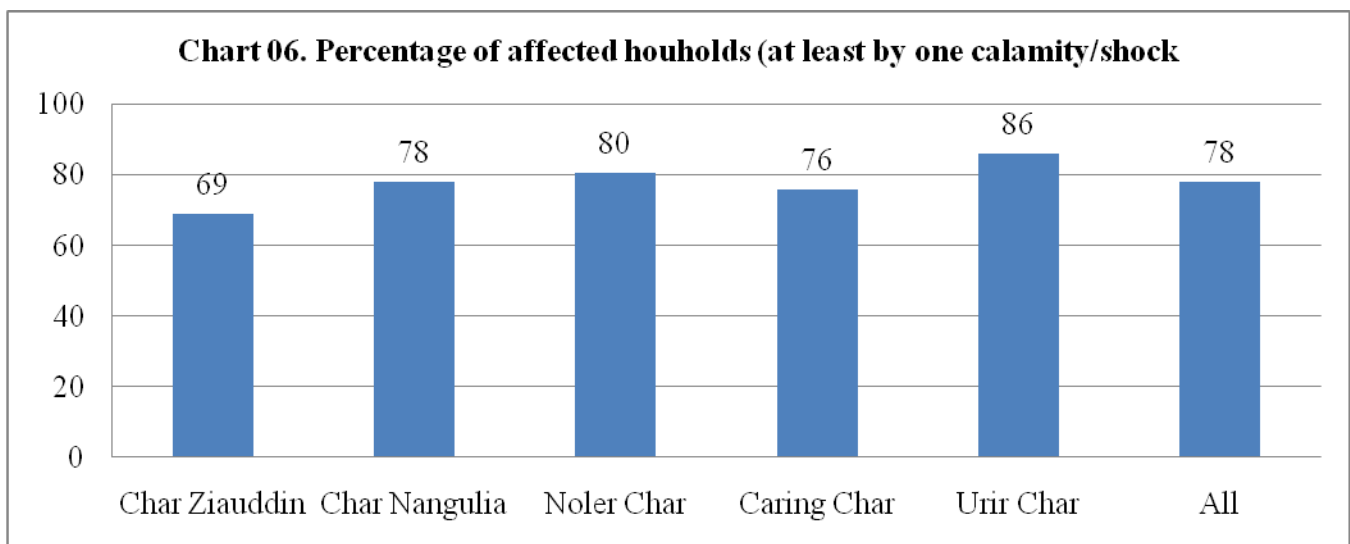
	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
Local Market /Hat	48	64	58	70	19	60
Health center/ clinic	19	17	12	17	03	15
Hospital	10	07	06	04	01	06
NGO Office/ CBO office	38	36	41	08	16	30
National day	02	0	01	01	0	01
Union Parishad	01	0	01	0	0	01
Upazila Livestock/Agriculture/Fishery/Social welfare offices	0	0	0	0	0	0
Upazila social welfare office	0	0	0	0	0	0
District level Offices	0	0	0	0	0	0

4.14 Shocks and Crisis Coping Strategy

Every year Bangladesh experiences one or more disasters and calamities, some are natural and some caused by human beings. Bangladesh witnesses disasters mainly because of its geo-physical characteristics. Flood, cyclone, river erosion and draught are main natural calamities that visit almost on annual basis, and cause damages to infrastructure, assets and losses of lives, both human and animals. Most of the surveyed chars are by and large disaster prone. In addition, people in the rural areas across the country face different kinds of shocks and losses, such as death and/or serious disease of family member, harassment of women, violence, theft of belongings, cattle and or assets, burning of house/asset etc. The survey investigated the kind of such disaster, losses and shocks the sample households faced (if any), their degree/ severity and the way they coped with them.

4.15.1 Accidents, Losses and Problems faced

Each household was asked with sufficient probing whether the household or its members faced any kind of accident, loss or problem (to call ‘disaster’) during past five years and if they faced they were identified using a 13 point list with provision to add. For each reported disaster, the intensity of the same and coping method was gathered through appropriate questions.



It has been found that at least 78% households reportedly faced any of the disasters listed in Table4.33 during past five year. The proportion of affected household is highest in Urir Char (86%) and lowest in Char Ziauddin (69%) (Chart-06).

From table 4.33 it is observed that five major disasters were faced in all chars a) loss of crop due to flood/drought (47%) b) displacement due to flood/cyclone/tornado (42%) c) serious disease of any family members (20%) d) loss/ death/ theft of livestock/poultry (15%) and d) dacoity/ theft/ mastanies in house/ business (15%).

Table 4.33 Type of Shocks or Crisis Faced by the HH Last five Years (%)

	Char Ziauddin (n=69)	Char Nangulia (n=468)	Noler Char (n=240)	Caring Char (n=228)	Urir Char (n=86)	All (N=1091)
Death/invalidity of earning member	1	5	5	1	6	4
Serious disease of any member	33	22	22	11	17	20
Displacement due to Flood/cyclone/ tornado	33	35	39	67	36	42
River erosion	13	7	13	5	1	8
Loss of crop due to flood/drought	29	37	41	68	76	47
Loss/ death/theft of livestock/poultry	6	17	7	19	20	15
Dacoity/ Theft/ Mastanies in house/business	6	9	7	36	26	15
Loss of business/investment	1	1	1	0	0	1
Divorce/separation	1	2	1	1	1	1
Dowry	0	3	3	3	0	3
Socio-political harassment, including bribe and tolls	0	1	2	0	0	1
Women harassment (Violence)	0	1	0	1	0	0
House destroyed by fire or other reason	1	2	0	2	0	2

4.15.2 Coping strategies of disasters

Coping strategy differs a lot with the kind of disaster. Overall about 40% of the households reporting any disaster told that they did nothing. Actually if there is some financial loss, one takes some measures

to overcome the situation. But if it is death of earning member, divorce or river erosion, may be they have very little to act upon.

However, added all the actions the survey results show that highest 67% households coped with such crises by taking cash loan, 28% with the help from relatives, 15% by selling animals/poultry birds. About 10% households did nothing to cope with such accidents or unforeseen happenings (Table 4.34).

Table 4.34 Shocks and Crisis Coping Strategy (%)

	Char Ziauddin (N=100)	Char Nangulia (N=600)	Noler Char (N=300)	Caring Char (N=300)	Urir Char (N=100)	All (N=1400)
By selling land,	6	2	4	2	6	3
By selling domestic animals/birds,	7	20	12	9	17	15
By selling trees	0	1	3	0	0	1
With own savings	16	15	13	14	16	14
By mortgaging land	13	8	16	15	15	12
By mortgaging other assets	3	3	2	1	0	2
With help from relatives	22	25	20	34	39	28
By taking cash credit	53	53	55	65	73	67
By taking materials in credit	3	4	4	0	0	3
Aid/relief	0	1	2	7	0	2
Complain with police, <i>Salish</i> with the UP, By mobilization of community groups/CBO/ NGOs,	1	0	0	0	0	0
Did nothing	7	7	7	22	8	10

Chapter 5: Conclusions

The discussions and findings above lead us to arrive at a number of conclusions that lead to recommendations for consideration by the project. They are summarized below by section.

5.1 Socio-economic Status

- The education level of household heads and members is significantly low in the char areas compared to the mainland.
- Agriculture and day labor are the main occupation and main source of income.
- Average size of main house (253 sq.ft) is significantly small for around 6 family members and in most of the cases the main house includes kitchen and animal shed.
- Houses are made mostly from mud (floor), bamboo (wall) and straw (roof).
- Poultry and livestock are the most valuable assets for the households.
- Food cost (around 80%) is the main head of household expenditure.

5.2 Health and Sanitation

- Though the tube well water is the main sources of drinking water, it is significantly insufficient in number. Households have to collect water far from their household and spend time accordingly.
- More than 80% of the households use open and unhygienic latrine.
- More or less no practices to wash the hands with soap before taking food and after return from latrine.
- No NGO or Government health worker available in the chars.
- More than 65% of eligible couples do not use family planning methods.

5.3 Field Crops and Homestead Gardening

- Amon is the main crop of the chars; very few households cultivate Aush and other cash crops.
- Application of organic fertilizer is not common, commercial fertilizer and pesticide widely used for crop cultivation.
- Local varieties of most of the crops are cultivated by the farmers, resulting in low crop yields.
- High value vegetables suitable for home gardening are not practiced by the farmers (mostly pit crops are grown for home consumption).
- Necessary technology and support might be provided to women for development of improved kitchen gardens.

- Fruit crops may be introduced/promoted in the surveyed/project areas.
- Among others, marketing assistance may be provided.

5.4 Livestock, Poultry and Aquaculture

- There is scope for increasing goat and sheep rearing in all the chars as those can be handled by any member of the family.
- Poultry rearing could be an important source for additional income and protein for the households. And as poultry is specially reared by the female members of the household, it also leads to female empowerment.
- Compared to the mainland the prices of eggs and milk are very low.
- To ensure fair price, marketing assistance, including communication network development is needed for both livestock and poultry development.
- Women members of households should be specially targeted for development of livestock and poultry.
- Most of the households have a pond/ditch, those are mainly used for domestic purposes (bathing and washing).
- Improved culture practices not used.
- Inconsistent production and income indicates knowledge gap.
- Low price, bad communication and distance of market are the problems in pond aquaculture.

5.5 Food security

- On an average 5 months in a year the households have some sort of food crisis.
- The food crisis periods are mainly during *Joishto to Kartic* (May to November).
- Alternative IGA can help the household to meet up the crisis period.
- Inadequate food security coupled with inappropriate nutritional knowledge and behavior are likely to result in high rates of malnutrition particularly among the nutritionally vulnerable.

5.6 Accessibility

- Accessibility is the major problem for the char dwellers.
- Very few earthen roads are there made by the char dwellers. Most of the area has no roads, so the people have to use the dikes of crop fields for moving to different places.
- A remarkable amount of time the households have to spend to go to local market and other institutions.

5.7 Gender

- Women mostly perform household/reproductive activities as traditional role. Income generating activities are needed for creating opportunity for women to participate in productive role.
- Women are mostly involved in homestead gardening and poultry rearing. They need training to take it as productive activity to supplement family income and furthering women's productive role.
- Household decision making is still dominated by the male members.
- Only to local market and NGO office women have some mobility. Increased mobility to other places like health center, Union Parishod and local service center is essential for their empowerment.

5.7 Disasters and Shocks

- The people of project/surveyed area are highly affected by shocks, calamities and disasters, both natural and man-made, more severe in Urir Char than other chars.
- Increasing income from different household enterprise and available micro credit can help the households to cope with shocks and disasters.

Annex 1: Survey Questionnaire
Char Development and Settlement Project (CDSP) IV
Baseline Survey Questionnaire

ID							
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Section A: Household Composition:

- Name of Respondents:..... Relation with HHH:.....
- Address: Para/Moholla/Somaj:..... Vill:.....
Union:..... Upazila:..... Dist:.....
- Household members details:

S1	Name of members	Sex (M/F)	Age	Marital status (use code)	Relation with HHH	Education (use code)	Occupation	
							Primary	Secondary
01	Name:..... F/H:.....				HHH			
02								
03								
04								
05								
06								
07								
08								
09								
10								

Marital Status Code: Married-1, Unmarried-2, Divorced-3, Widow/Widower-4, Separated -5.

Relationship Code: Wife-1, Husband-2, Son/Daughter-3, Father/Mother-4, Brother/Sister-5, Grandson/Granddaughter-6

Education Code: Illiterate-1, Can sign only-2, Can read and write -3, Primary CC-4, Primary -5, Secondary CC-6, SSC-7, HSC CC-8, HSC-9, Graduate and above-10,

Occupation Code: Student-1, Unemployed-2, Agriculture/ Crop farming -3, Day Labor-4, Housekeeping-5, Fishing-6, Salaried Job-7, Fish drier-8, Small trade-9, Rickshaw/Van puller-10, Boat man-11, Retired person/ old man-12, Beggar-13, Disable-14, PL Catching-15, Others (Specify)-16

Section B: Socio-economic Status

1. Land holding

Did you get the land from Government under settlement program?	Yes/No	If Yes amountDeci.
If no, how do you occupy the land?	Occupy by myself-1, Lease/Share taken-2, Given by landowner to live-3, Others..... 4		
If no how much land you are occupyingDeci.		
Land by type (in deci):			

Homestead		Pond/ditch		Agri. Land		Fallow land	
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2. Housing Condition, Health, Water and Sanitation

2.1 Housing condition

Type of House	Size (Length X Width) Feet	Type of Floor	Type of Wall	Type of Roof
Main House				
Kachari/Baithakkhana				
Kitchen				
Animal Shed				

Floor Type Code: Mud-1, Bricks-2, Pacca-3, **Wall Type Code:** Leaf-1, Straw-2, Mud-3, Bamboo-4, Tin-5, Brick wall-6 **Roof Type Code:** Leaf-1, Straw-2, Tin-3, Pacca-4, Others-5

2.2 Drinking Water and Sanitation

Sources of drinking water:	Shallow Tube Well -1, Deep Hand Tube Well-2, Dug Well-3, Rain Water-4, Protected Pond Water (PSF)-5, Untreated Pond Water-6, Untreated River/Canal Water-7, Others (specify).....8.	
Ownership:	Own by HH-1, Jointly Owned-2, Neighbour-3, Govt./Natural Sources-4	
How far do you go for collecting Water:	Dry Season..... Meter	Rainy season.....Meter
Source of water for bathing and washing:	Shallow Tube Well -1, Deep Hand Tube Well-2, Dug Well-3, Pond Water-4, River/Canal Water-5, Others (specify).....8.	
Type of latrine used by HH:	No Latrine-1, Hanging/Open-2, Ring-slab (unhygienic)-3, Ring-slab (water sealed)-5, Sanitary Latrine -6.	
If the type of latrine is Ring-slab (unhygienic)/Ring-slab (water sealed)/Sanitary Latrine, where did you collect?	Buy myself from market-1, Buy through NGO/other organization-2, Donated by NGO/other organization-3	

2.3 Health and Family planning

Do you and your family members wash hand by soap before taking meal and after using latrine? Yes/No	
Do all the children of your family properly immunize? (all six) Yes/No	
If yes, how you managed it?	Upazila Health Center-1, Union Health Center-2, Local Doctor-3,

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	From NGO/Voluntary organization-4, Through government special program-5
If no, Why?	Lack of awerness-1, Support not available Localy-2, Due to bad road communication couldn't attend in the camp/center-3
Do you use mosquito net? Yes/No	If no, why?: Not needed-1, Lack of awerness-2, Lack of money-3
Is there any Health Worker (Govt/NGO) visited regularly in your area? Yes/No	
Do you use any family planning method? Yes/No, If yes, which method: Permanent-1, Temporary-2	
If no, Why: Lack of awerness-1, Service not available locally-2, Materials are costly-3	

3. Household Assets

Sl	Type of Assets	Put Tick	Quantity	Present Value (Taka)
1	Cot/ Khaat			
2	Almira			
3	Chair/Table			
4	Shinduk (Wooden box)/Trunk (Tin)			
5	Alna			
6	Ceiling/Table Fan			
7	Radio/Cassette Player			
8	B&W TV			
9	Color TV			
10	Mobile Phone			
11	Sewing machine			
12	Ornaments			
13	Bicycle			
14	Rickshaw/Van			
15	Bullock cart			
16	Boat			
17	Mechanized boat			
18	Power tiller/Husking Machine			
19	Pump Machine			
20	Fishing net(.....)			
21	Trees			
22	Cow			
23	Buffalo			

24	Goat			
25	Sheep			
26	Chicken			
27	Duck			
28	Others (Specify).....			

4. HH annual income from different sources

Sources of Income	Taka (Last one year)		Sources of Income	Taka (Last one year)	
	Taka	%		Taka	%
		M			F
Wages/Salary			Aquaculture		
Trading			Fishing		
Rickshwa/Van/Boat			Remittance		
Agriculture			Handicrafts		
Poultry			Selling Fruits/Trees		
Livestock			Others		

5. HH Annual Expenses

Head of Expenses	Taka (Last one year)	Head of Expenses	Taka (Last one year)
Food Cost		Dowry	
Clothing		Religious Festival	
Medical		Social Ceremonies	
Children Education		Court case	
Transport		Fire wood/Fuel	
Marriage of son/daughter		Others	

6. Savings Status

- 6.1 Whether your HH have any savings: Yes/No
- 6.2 If Yes, where do you keep the money: Cash at home-1, Bank-2, Land lease/Mortgage In-3, NGO-4.

7. Involvement with NGO or other Organization:

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- 7.1 Are you or any of HH members involved with any NGO or Local level organization?
Yes/No
- 7.2 If yes, put tick:
 - 1. NGO (Specify the name of NGO).....
 - 2. Water management Group (WMG)
 - 3. Water Management Association (WMA)
 - 4. Water Management Federation (WMF)
 - 5. Local Area Development Committee (LADC)
 - 6. Tube well User Group (TUG)
 - 7. Farmers Forum (FF)
 - 8. Social Forestry Group (SFG)
 - 9. Labor Contracting Society (LCS)
 - 10. Community Based Organization (CBO) of RFLDC
- 7.3 What kind of support do you get from these organizations?
Advice on agriculture and other farm activities-1, Any kind of training-2, Input Support-2, Vaccination for Poultry and Livestock-3, Health and Family Planning-4, Legal Support-5, Other IGA support-6, Employment-7, Micro Credit-8, Others.....-9
- 7.3 Do you or any of your HH members take loan from NGO or Other Sources? Yes/NO
- 7.4 If yes please mentioned the details;

Sources	Amount (Tk)	Purpose (use code)	Actual Use (Use code)	Interest rate	Outstanding Tk
Bank					
NGO					
Relatives					
Neighbors					
Local Money Lender					
Others.....					

Purpose Code: Agriculture-1, Aquaculture-2, Poultry/Livestock-3, House Construction/Repairing-4, Treatment-5, Household Consumption-6, Festival/Social Ceremonies-7. Marriage of son/daughter-8, Court case/toll/bribe -9

Section C. Migration Issues

01	For how long you are living in this house?	Years
02	Place of previous residence (please mention the name)	Different house..... Different village..... Different union..... Different upazila..... Different district..... Others (specify)	1 2 3 4 5
03	Reasons for migration	River Erosion Marriage Better Employment Other.....	1 2 3 4
04	Whether any member of your HH temporarily goes outside for work during any part of the year?	Yes, go Don't go	1 2
05	If yes, tick the months when goes outside	01-Boishak, , 2- Joishto, 03- Ashar, 04- Srabon, 05- Bhadro, 06- Ashin, , 7- Kartik, 08- Agrahaion, 09- Poush, 10- Magh, 11- Falgun, 12- Choitro	
06	During these period who look after the HH and Farm Activities	01. Husband, 02. Wife, 03. Son, 04. Daughter 05. Others.....	

Section D. Culture Status, Production and Income from Different On Farm Activities:

1. Crops

1.1 Field Crops

Crops	Area Cultivated (Deci) last one year	Variety/Species		Crops	Area Cultivated (Deci) last one year	Variety/Species	
		Local	HYV			Local	HYV
Aus				Bean			
Amon				Long Bean			
Robi/Boro				<i>Jali Kumra</i> (Ridge gourd)			
<i>Keshari</i>				Bottle Gourd			
<i>Mug</i>				Sweet Gourd			
<i>Felon</i>				<i>Korola</i> (Bitter gourd)			
<i>Moshuri</i>				<i>Jinga</i> (Ribbed gourd)			

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<i>Mash Kolai</i>				Dhundul (Sponse gourd)			
Soybean				Okra			
Mastered				Cucumber			
Ground nut				Radish			
Water melon				Carrot			
Musk melon				Cauliflower			
Chilli				Cabbage			
Onion				Spinach			
Garlic				<i>Lal Shak (Red amaranth)</i>			
Coriander				<i>Danta (Stem amaranth)</i>			
				<i>Pui shak</i>			

1.2 Income from Field Crops (Last one year)

Crop	Production Cost (Taka)	Consumption		Sales	
		kg	Taka	Kg	Taka
Paddy					
Pulse					
oil seeds					
Mellon					
Vegetable					

1.3 Homestead gardening

Type	Consumption		Sales	
	Kg	Taka	Kg	Taka
Leafy & other vegetable				
Banana				
Guava				
Papaya				
Lemon				
Coconut				
Others fruits.....				

1.4 Use of fertilizers and pesticides

Type	Yes-1, No-0	Type	Yes-1, No-0
Urea		Cow dung	
Guti Urea		Compost	

TSP		Pest Control	
MP		Pesticide	
Zink		IPM	

2. Poultry Birds

Birds	Egg Production & Income (last one year)			Meat Production & Income (Last one year)		
	Sales (nos.)	Consume (Nos.)	Income from sales (Tk)	Sales (kg)	Consume (kg)	Income from sales (Tk)
Chicken						
Duck						
Pigeon						

3. Livestock

Animals	Nos. of milking animals	Nos. of Other animals	Production & Income last one year				Present value of existing animals (Tk)
			Milk sales (kg)	Income from Milk sales (Tk)	Milk Consume (kg)	Income from animal selling (Tk)	
Cow							
Goat							
Buffalos							
Sheep							

4. Pond Aquaculture

4.1 Culture Status

Do you culture fish in your pond/ditch?	Yes/No
If yes, Type of Culture:	1. Traditional Method (Only stocking and Harvesting no feeding fertilizing, Species combination and density not followed properly) 2. Semi Intensive (Species combination and density followed properly but irregular feeding fertilizing) 3. Intensive (Species combination and density followed properly and regular feeding fertilizing)
If No, Why?	1- Pond/ditch flooded during high tide, 2- Lack of fingerling and other input, 3- Risk of theft 4- Lack of sufficient water round the year. 5- Others.....

4.2 Production and Income

Nos. of pond	Water area (deci)	Cost (Tk)	Fish Sales (kg)	Fish Consume (kg)	Income from Sales (Tk)
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Section E: Food Security, Quality and Self Sufficiency

1. How many months you are able to meet the basic food (Rice/Pulse) needs from your own production:.....
2. Does it happen that in certain months of the year your family members have to take less amount or low quality of food than usual? Yes/No

1. Month		Severity (Put Tick)		
		Acute crisis	Some crisis	No crisis
1	Boishakh			
2	Joishtho			
3	Asar			
4	Srabon			
5	Bhadro			
6	Ashin			
7	Kartik			
8	Agrahaion			
9	Poush			
10	Magh			
11	Falgun			
12	Choitro			

3. Please mention the food items cooked and eaten by the HH members during normal period and the period of (acute) shortage?

Normal period		Acute period	
Type of food cooked or eaten?	Number of days eaten per weakly? (days) [Don't know=9]	Type of food cooked or eaten?	Number of days eaten per weakly? (days) [Don't know=9]
1. Rice		1. Rice	
2. Wheat /Ata		2. Wheat /Ata	
3. Green leafy vegetables		3. Green leafy vegetables	
4. Yellow and orange vegetables		4. Yellow and orange vegetables	
5. Other vegetables		5. Other vegetables	
6. Pulse		6. Pulse	
7. Fresh fish		7. Fresh fish	
8. Eggs		8. Eggs	
9. Meat		9. Meat	

10. Milk / Milk products		10. Milk / Milk products	
11. <i>Cheena/ Kwan</i>		11. <i>Cheena/ Kwan</i>	
12. Collected/ wild vegetables (<i>sapla/saluki/Kachu</i>)		12. Collected/wild vegetables (<i>sapla/saluki/Kachu</i>)	
13. Dry fish		13. Dry fish	
14. Banana		14. Banana	
15. Sour fruits and vegetables		15. Sour fruits and vegetables	
16. Other fresh fruits and vegetables		16. Other fresh fruits and vegetables	

Section F: Accessibility to key services

<i>[Please ask the question in the 1st column for each institution. if applicable, then ask next column]</i>							
Institutions	Distance from your household (Km)	Type of Road	Rainy season		Winter/dry season		
			Usual mode of transport (*code)	Usual time taken to reach..... (minutes)	Usual mode of transport (*code)	Usual time taken to reach(minutes)	
1 Primary school							
2 Junior/High school							
3 College							
4 Madrasa							
5 Growth centre/market							
6 Near Hospital/ Clinic							
7 NGO Office							
8 CBO Office							
9 Union Parishad							
10 Upazila Sadar							
11 District Sadar							

Road Code: No Road-1, Kancha-2, Brick-3, Pacca-4
***Mode of Transport Code:** 1-On foot, 2- Bicycle, 3- By boat, 4- Rickshaw/van, 5- By engine boat, 6- By Taxi/ tempo, 7- By launch, 8- By motor cycle, 9- By bus

Section G: Gender roles and participation in Community Activities**1. Gender role in household domestic works**

Activities		Who do it? %	
		Male	Female
1	Who do the household chores (cleaning and sweeping)		
2	Who usually fetch water for household?		
3	Who collects fuel (fire wood) for the household?		
3	Who usually clean court yard/ homestead vegetable garden?		
4	Who cleans your latrine?		
5	Other domestic works		

2. Participation of women in decision-making process at family level

Sl #	Issues	Who decides? (Code)
1	Which crop to cultivate	
2	Treatment of diseases	
3	Education of children	
4	Marriage of children	
5	Adoption of family planning	
6	Visit to relatives house	
7	Visiting upazila/zila towns	
8	Attending socio-cultural events	
9	Joining with NGO or other organization	
10	Purchase/sale of cattle/ chicken/ duck birds	
11	Micro credit	
12	Use of micro credit	
13	Purchase/mortgage (in/out) of agricultural land	
14	Purchase/sold of ornaments	
15	Household expenses	
<u>Code:</u> 1-Husband, 2- Wife, 3-Both, 9- Not applicable		

3. Whether women of your household visit the following places

Places		1- Yes, 2- No	If yes, Seldom-1, Occasionally-2, Frequently-3
1.	Local Market /Hat		
2.	Health center/ clinic		
3.	Hospital		
4.	NGO Office/ CBO office		
5.	National day		
6.	Union Parishad		
7.	Upazila Livestock/Agriculture/Fishery/Social welfare offices		
8.	Upazila social welfare office		
9.	District level Offices		

Section H: Shocks and coping strategy

1. Did your household experience any kind of shocks or crisis during the last one year?
Yes/No
2. If yes, please mention the type of shocks faced by your household or household members and how it was coped with.

List of shocks		Indicate shocks specifying magnitude (*Code)	How it was coped with (**Code)
1	Death/invalidity of earning member		
2	Serious disease of any member		
3	Displacement due to Flood/cyclone/ tornado		
4	River erosion		
5	Loss of crop due to flood/drought		
6	Loss/ death/theft of livestock/poultry		
7	Dacoity/ Theft/ Mastanies in house/business		
8	Loss of business/investment		
9	Divorce/separation		
10	Dowry		
11	Socio-political harassment, including bribe and tolls		
12	Women harassment (Violence)		
13	House destroyed by fire or other reason		
14	Others (specify)		

***Code:** 1-Severe, 2- moderate, 3-Low

****Code:** 01- By selling land, 02- By selling domestic animals/birds, 03- By selling trees
04- With own savings, 05- By mortgaging land, 06- By mortgaging other properties
07- With help from relatives, 08- By taking cash credit, 09- By taking materials in credit
10- Aid/relief, 11- Complain with police, *Salish* with the UP, By mobilization of community
groups/CBO/ NGOs, 12- Did nothing, 13. Others (specify).....

Annex 2: List of Shomaj

Sample Distribution by Shomaj

Baseline Survey Sample Distribution of Char Ziauddin					
Name of Char	Shomaj Code	Name of Village	Nos of HH	Sample Village/Shomaj	Nos. of Sample
Char Ziauddin	001001	Manna/Shahabuddin Shomaj	230	S	25
	001002	Abdur Rab Shomaj	100		
	001003	Khaliler/Lalkalur Shomaj	265		
	001004	Shafi Neta Shomaj	220	S	25
	001005	Folder Shomaj	180		
	001006	Mohammadia Bazar	220		
	001007	Mostafa Shomaj	120	S	15
	001008	Hoshenmiar Shomaj	108		
	001009	Edris Majir Shomaj	160		
	001010	Char Ziauddin Bazar Shomaj	325	S	35
	001011	Chowdhury Majir Shomaj	185		
	001012	Siraj Bepari/Rahmatpur Shomaj	130		
Total Sample for Char Ziauddin			2243	4	100

Baseline Survey Sample Distribution of Char Nangulia					
Name of Char	Shomaj Code	Name of Village	Nos of HH	Sample Village/Shomaj	Nos. of Sample
Char Nangulia	002001	Rasulpur/Kabir Ahmed Shomaj	200	S	25
	002002	Dakshin Mohammadpur/Karim Shomaj	175		
	002003	Haji gram	300	S	30
	002004	Bhuiyan Gram	250		

Baseline Survey 2011

	002005	Purbo Bansh Khali	100		
	002006	Uttar Mohammadpur	100		
	002007	Char Nangolia 4 No Ward	250	S	25
	002008	24 Dag (Purba Char Majid)	200		
	002009	Nabogram (Purba Char majid)	200		
	002010	Paschim Belal Bazar Masjid Shomaj	150	S	20
	002011	Haji Para (Chmber Plot)	160		
	002012	Noya Para	200		
	002013	Nabir Pukur Masjid Shomaj	100		
	002014	Rani Gram	250	S	25
	002015	Uttar Pashchim Chowdhury Gram	100		
	002016	Molla Gram	250	S	30
	002017	Adorsho Gram	400		
	002018	Pashchim Miaji Gram	120		
	002019	Rasel Gram	150		
	002020	Nasirpur/Kaladaur Bazar	300	S	30
	002021	Dakshin Chowdhury Gram	200		
	002022	Dakshin Purbo Chowdhury Gram	200	S	20
	002023	Purbo Miaji Gram	120		
	002024	40 Dag	60		
	002025	Mohammadpur	150	S	15
	002026	Pashchim Faridpur (Masjid market)	190		
	002027	Purbo Char Bashar	300		
	002028	Pashchim Char Bashar	400	S	50
	002029	Dakshin Hemayetpur Mosjid Shomaj	200		
	002030	Rasulpur	180		
	002031	Purba Faridpur	200	S	25
		Sub Total	6155	11	295
	002032	Dakshin Kerani Bazar	200		
	002033	30 dag	60		
	002034	Tara Market	150	S	20
	002035	40 Dag	80		
	002036	Jashimuddin 50 dag	75		
	002037	Alauddin Shomaj	100		
	002038	Fakir Market	100	S	10
	002039	Beker Bazar	150		
	002040	Babri Mosjid Shomaj	100	S	10

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	002041	Abdul Haque Masjid Shomaj	100		
	002042	Musa Mia Masjid Shomaj	100		
	002043	Kabir Chaowdhury Shomaj	100	S	10
	002044	Purbo Belal Bazar	150		
	002045	Rahmatpur 200 Dag	200		
	002046	Bissho Pur	150	S	15
	002047	Islampur	150		
	002048	Tuba Kathi	200	S	25
	002049	Salim bazar	100		
	002050	Sayed Pur	150		
	002051	Sariyat Pur (Rickshwa Para)	150	S	15
	002052	40 Dag	100		
	002053	Purbo Rob Bazar	100		
	002054	Uttar Komolar Market	100		
	002055	Siraj Koloni Masjid Shomaj	100	S	15
	002056	Haji Iddris Bazar	200		
	002057	Rasul Pur (Zaker Shomaj)	150		
	002058	Pashchim Dakshin Akram bazar	100		
	002059	Al-Amin Shomaj (Solaman Bazar Shomaj)	225	S	30
	002060	Kabir Shomaj	150		
		Sub Total	3790	9	150
	002061	Chan Khola	200	S	25
	002062	Char Jamil	200		
	002063	Sayed Pur	200		
	002064	Nur Mohammad Shomaj	130	S	20
	002065	Karamotpur Shomaj	120		
	002066	Alimpur Shomaj	80		
	002067	Dakshin Char Noman Masjid Shomaj	150	S	20
	002068	Bitul Mamur Masjid Shomaj	150		
	002069	Barak Shomaj	100		
	002070	Mojam Market	150	S	20
	002071	Hemayet Bazar	150		
	002072	Obyedia Masjid Shomaj	150		
	002073	50 Acar Masjid Shomaj	200	S	25
	002074	Pashchim Char Akram	150		
	002075	Uttar Purbo Char Noman	150		
	002076	Samsuddin Deputi Masjid Shomaj	150	S	15

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	002077	Char Noman	200		
	002078	Pashchim Char Kanko	200		
	002079	Uttar Char Mojam	100		
	002080	Char Lakshmi Mojam Shomaj	200	S	20
	002081	Char Akram masjid Shomaj	200		
	002082	Ismail Bazar/ Akram Chowdhury Bazar Shomaj	200	S	25
		Sub Total	3530	8	170
Total Sample for Char Nangulia			13475	28	615

Baseline Survey Sample distribution of Noler Char					
Name of Char	Shomaj Code	Name of Village	Nos of HH	Sample Village/Shomaj	Nos. of Sample
Nolar Char	003001	Islampur	180	S	25
	003002	Mannan Nagor	270		
	003003	Mowlovi Gram	300		
	003004	Molla Gram	170	S	25
	003005	Poshchim Adorsho Gram Chanandi	160		
	003006	Purbo Adorsho Gram	200		
	003007	Al Amin Shomaj	250	S	30
	003008	Dokshin Al Amin Shomaj	150		
	003009	Uttar Azim Nagor	180		
	003010	Rosulpur Daroga Bazar	180	S	25
	003011	Aladin (Ziar Bazar)	165		
	003012	Poshchim Adorsho Gram	200		
	003013	Poshchim Adorsho Gram Ghat	100	S	15
	003014	Purbo Adorsho Gram	150		
	003015	Uttar Shantipur	200		
	003016	Dakshin Azim Nagar	300	S	40
	003017	Purbo Azim Nagor (Madrasha Bazar)	350		

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	003018	Purbo Azim Nagor Leski	120		
	003019	Uttar Musapur	250	S	30
	003020	Dakshin Musapur	300		
	003021	Modhya Musapur	350		
	003022	Purbo Mazlishpur (Bangla bazar)	200	S	25
	003023	Modhya Mazlishpur	250		
	003024	Uttar Mazlishpur	230		
	003025	Dakshin Mazlishpur (Killar Bazar)	210	S	25
	003026	Dakshin Purbo Musapur	185		
	003027	Modhya Shantipur	150		
	003028	Dakshin Shantipur	150	S	20
	003029	Rahmatpur	350		
	003030	Dakshin Azimnagar (Mohammadpur)	250		
	003031	Tazimpur	150	S	20
	003032	Shabnaji Mashjid Shomaji (Project part)	250	S	20
Total Sample of Noler Char			6900	12	300

Baseline Survey Sample Distribution of Caring Char					
Name of Char	Shomaji Code	Name of Village	Nos of HH	Sample Village/Shomaji	Nos. of Sample
Caring Char	004001	Krishnonagar Shomaji	250	S	25
	004002	Bathan Khali	200		
	004003	Chowdhury Gram	200		
	004004	Adarsho gram Leski	250	S	25
	004005	Motipur	270		
	004006	Dhanshiree	150		
	004007	Mohammadpur	230	S	20
	004008	CDSP Gram	100		
	004009	Islampur	175		
	004010	Rasulpur	250	S	25

Baseline Survey 2011

	004011	Mula Gram	150		
	004012	Molla Gram	200		
	004013	Mowlobi Gram	250	S	25
	004014	Adarsho Gram	275		
	004015	Hajipur Gram	260		
	004016	Shahebani Bazar Shomaj	270	S	30
	004017	Kuddus Howlader Shomaj	400		
	004018	Hasina Nagar	250		
	004019	Joypur Shomaj	700	S	70
	004020	Mojib Nagar	170		
	004021	Poshchim Mojib Nagar	100	S	10
	004022	Dakshin Mojib Nagar	80		
	004023	Uttar Mojib Nagar	120	S	10
	004024	Ali Ahmed Shomaj	350		
	004025	Nijampur Shomaj	600	S	60
	004026	Jaggonatpur Mondir	120		
Total Sample of Caring Char			6370	10	300

Baseline Survey Sample Distribution of Urir Char

Name of Char	Shomaj Code	Name of Village/Shomaj	Nos of HH	Sample Village/S homaj	Nos. of Sample
Urir Char	005001	Coloni bazar Moshjid Shomaj	150	s	20
	005002	Moulana Iddris Shaheb Mosjid Shomaj	100		
	005003	Pakistan Mosjid Shomaj	85		
	005004	5 No. Digi Mosjid shomaj	56		
	005005	4 no. ward Forest Office D. Mosjid Shomaj	60	s	7
	005006	Salamat Koner Mosjid Shomaj	45		
	005007	Mostafiz Shaheber Mosjid Shomaj	140	s	10
	005008	Shahid Mostan Achrayan Shomaj	150		
	005009	Police Fari Mosjid Shomaj	52		
	005010	Moulana Iddris Shaheber Mosjid Shomaj (North)	20	s	10
	005011	Ayoub Alir Mosjid Shomaj	60		
	005012	Din Mohammad Kamler Mosjid Shomaj	125	s	12
	005013	Janata Bazar Mosjid Shomaj	300	s	17

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	005014	Banglabazar Mosjid shomaj	240	s	12
	005015	Miarbazar Mosjid shomaj	200	s	12
	005016	hafez Nazim uddin Mosjid Shomaj	60		
	005017	Darber Madrasha/Mosjid Shomaj	50		
	005018	Anjumazir Namarbazar Mosjid Shomaj	220		
	005019	Rajib bazar Mosjid Shomaj	100		
	005020	Salim Batynnar Shomaj	20		
Total			2233		100