

Char Development and Settlement Project Phase IV Bangladesh

Short Listing of Char Areas for Feasibility Studies under CDSP IV

**Technical Report No. 4
(Final update)**

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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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List of Abbreviations/Glossary

Aman	: Monsoon/Wet season rice
ASA	: A national NGO
Bahini	: Armed gang (illegal)
Boro	: Winter season rice
BWDB	: Bangladesh Water Development Board
CBO	: Community Based Organization (local)
CDSP	: Char Development and Settlement Project
CEGIS	: Center for Environmental and Geographic Information Services
DAE	: Department of Agriculture Extension
DC	: Deputy Commissioner
DTL	: Deputy Team Leader of CDSP IV
Ghat	: River station for river way transportation
Ha	: Area in Hectare
IWM	: Institute of Water Modeling
Jotdar	: Powerful person having big agriculture farm
Khas land	: Government owned land
Km	: Kilometer
LCS	: Labour Contracting Society
LGED	: Local Government Engineering Department
Masjid	: Prayer place for the Muslims
MoL	: Ministry of Land
Mouza	: Smallest (Lowest) geographical unit (area) of land
MT	: Metric Ton (1000 kg weight)
NGO	: Non-Government Organization
O&M	: Operation and Maintenance
PAC	: Project Area Coordinator of CDSP IV
PCD	: Project Coordinating Director of CDSP IV
PD	: Project Director
PMC	: Project Management Committee of CDSP IV
PWD	: Public Works Datum
Rabi	: Crop season from November/ December to March
Samaj	: Local Social Community
Sq. km	: Square kilometer
TA	: Technical Assistance
TL	: Team Leader

UP : Union Parishad (Council)
Upazila : Sub-district
WMO : Water Management Organization
XEN : Executive Engineer

Executive summary

Under CDSP-IV project three feasibility studies will be conducted in areas for future char development programs. The main focus of this report is the short listing of the chars or clusters of chars for which these feasibility studies will be undertaken. The area considered is the middle, most dynamic part of the coastal zone of Bangladesh.

Preparation of a “long list” of chars within the study area has been done based on three criteria: stability of the char, occurrence of natural disasters, and size of the char area. The PCD, the TA team, CEGIS and IWM were involved in the formation of a preliminary list of 20 chars in the study area for discussion in the Project Management Committee Meeting (PMC) of CDSP-IV. The PMC reviewed the preliminary list of 20 chars and finally approved a long list of 12 chars, in seven clusters, for conducting reconnaissance surveys to enable a comparison, leading to the selection of a short list of chars/ clusters of chars.

For the short listing of chars, 12 criteria were applied: The three that were used to form the long list plus nine additional ones. Field surveys for gathering of primary data were undertaken in each of the identified 12 areas by focus group discussions (FGD). The discussions were conducted using questionnaires, based on the 12 selection criteria. Five field survey teams were formed, consisting of a mix of members of the TA-team and investigators from the study area itself, in order to have a good acceptance by the local communities.

Each field team has been trained on the questionnaires and on how to organize focus group discussions and collect data. On the first day of the survey, each team visited their assigned char(s) to have an idea about the area and to identify informants who have a good idea about their own area, who were then invited to participate in the focus group discussions. The categories of people included in the focus group discussion were from various backgrounds. The numbers of FGDs conducted in each char were based on the size of the char and the number and location of households settled there.

The first step of the analysis was giving a score to each of the twelve subjects. The scores were between 0 and 10. A draft detailed guideline for determining the scores was prepared by the TA team and finalized by discussion in a meeting with representatives of IWM and CEGIS, chaired by the PCD of CDSP-IV. The actual scoring on each of the main questions under all the twelve criteria has been done by a team of five members from the TA Team of CDSP-IV.

The percentage of relative weight was proposed in Mission Report 3 and was reviewed and finalized by the TA Team. All scores were multiplied by the percentage of relative weight. This gave the final outcome on each of the twelve criteria. The results of all the criteria were added to come to the final score for the area concerned. The outcomes of all the 12 areas of the long list were compared, in order to come to the short listing of three most promising areas. These are i) Cluster of Char Maksumul Hakim/ Char Alauddin/ Samitir Char in Noakhali District; ii) Dhal Char/ Kala Toli in Noakhali District; and iii) Teliur Char in Lakshmipur District, possibly combined with Char Zahiruddin. It is recommended to start a feasibility study for Char Maksumul Hakim/Char Alauddin/ Samitir Char as soon as possible, and certainly within 2012.

1. Introduction

Under CDSP IV project three feasibility studies will be conducted in areas where future char development programs might take place. The main focus of this report is the short listing of the chars or clusters of chars for which these feasibility studies will be undertaken. The report explains the demarcation of the study area (section 2) and the overall methodology (section 3). Then the text continues with reporting on the process as it unfolded since March 2012: the preparation of the long list (section 4) and the preparation of the short list (section 5). The report closes with recommendations (section 7) that were subject of a workshop (section 6) in the second half of September 2012. After taking into account the results of this workshop, the Project Coordination Director (PCD) of CDSP IV, the Project Management Committee (PMC) and the Technical Assistance team decided on the final short list. It is the intention to start the first feasibility study towards the end of 2012.

An earlier version of the present report was published in September 2012 to facilitate the workshop. In the present final update the proceedings of the workshop and the reports on the reconnaissance surveys of the six highest scoring chars have been included.

2. Study area

The area considered for the selection of the long list of chars is bordered in the east by the outfall of the Muhuri River and the Chittagong coast line and by the Tetulia River in the west. In the north, the area is bordered by the coastline of Feni, Noakhali and Laxmipur districts. See the map attached as Annex 1 for the study area. The area covers the middle, most dynamic part of the coastal zone of Bangladesh.

3. Overall methodology of selection of char areas

The methodology applied in the process of short listing of chars is described in detail in Mission Report no. 3 (March 2012) of CDSP IV. This Mission Report was adopted by PCD and PMC. The main elements are: Preparation of a “long list” of chars within the study area based on three criteria: stability of the char (the greater the stability of a char and the higher the land levels, the higher the priority the char will receive), occurrence of natural disasters (great importance is attached to reducing the vulnerability of people, hence the higher the probability of occurrence of natural disasters, the higher the chance to be in the short list) and size of the char area (in view of the cost-effectiveness of inputs, the bigger the size of the prospective area, the higher the priority to be selected). The preparation of the long list was a desk study, using existing information.

Preparation of a “short list” of three chars from the chars included in the long list: For the short listing in total 12 criteria have been applied. The three that were used to form the long list, plus nine

additional ones: *population and population density; *land ownership; *socio-economic situation; *performance of sources of livelihood; *water management situation; *existing infrastructure; *the law and order situation; *accessibility of the area; and *the level of institutional development. The preparation consisted of two phases: reconnaissance surveys in the field to collect data on all the aforementioned criteria, followed by processing of data and analysis. For the analysis, weights were given to each of the total 12 criteria. The relative weights that have been applied are: land levels and stability-14%, probability of occurrence of natural disasters-6%, size of the area-9%, population and its density-10%, land ownership-10%, socio-economic situation-11%, performance of main sources of livelihood-7%, existing water management situation-7%, existing internal infrastructure-7%, law and order situation-7%, accessibility of the area-7% and institutional development-5%.

4. Preparation of long list of chars

The PCD, the TA team, CEGIS and IWM have been involved in the formation of a preliminary list of total 20 chars among the identified 72 chars in the study area. CEGIS and IWM provided information available within their respective offices, while PCD and the members of the TA-team contributed with their local knowledge of parts of the area. The TA team of CDSP IV organized a meeting in the CDSP project office at Banani with the PCD and representatives of CEGIS and IWM. This meeting recommended the initial list of 20 chars to be discussed in the Project Management Committee Meeting. The PMC reviewed the initial list of 20 chars and approved a long list of 12 chars, in seven clusters, for conducting reconnaissance surveys to enable a comparison, leading to the selection of three areas for a short list of chars/ clusters of chars. The selected long list of 12 chars is shown in Table 1 below. A map can be found as Annex 1.

The long list of 12 Chars was prepared based on the available secondary information with CEGIS, IWM and the TA Team. In the secondary information, for three chars of the long list namely i) Dhal Char (Char Fassion), ii) Andar Char and iii) Soner Char no erosion was found. Hence, these chars were considered stable enough to be included in the long list. But during the reconnaissance survey through focus group discussion (FGDs), conducted in June 2012, erosion was observed in these three chars. That is why these chars received a zero score in the scoring process.

Table 1: Selected chars where reconnaissance survey has been conducted

Cluster/ SI No.	Name of Char	District	Upazila	Union	Area (ha) ¹	Population ²	Households ²
1	Dhal Char/ Char Dhal (Adjacent to Char Kukrimukri)	Bhola	Char Fashion	Dhal Char	4000	12,360	2300
	Char Kukri Murki	Bhola	Char Fassion	Char Manika/ Char Kukri Mukri	2536	12,420	2150
2	Char Zahiruddin (South side of Char Gazaria)	Bhola	Tazumuddin & Borhanuddin	Sonapur, Molongchara and Hasan Nagar?	3840	38,505	7220
	Teliur Char	Laxmipur	Rangoti	Char Abdullah	4200	19,218	3199
3	Sabuj Char	Chittagong	Sandwip	Kala Pani	2000	15120	2520
4	Dhal Char	Noakhali	Hatiya & Manpura	Harni/Suk Char	3238	26,254	4714
	Mowluvir Char	Noakhali	Hatiya	Sak Char	1619	Nil	Nil
5	Char Maksumul Hakim (including Char Alauddin and Samitir Char)	Noakhali	Subarna Char	Mohammedpur	6000	12,560	2910
6	Char Hade	Patuakhali	Dasmina	Kolmi	2955	3000	490
7	Andar Char/Prassanna	Patuakhali	Galachipa/ Rangabali	Char Momtaz	733	3000	450
	Sonar Char	Patuakhali	Galachipa/ Rangabali	Char Momtaz	7270	Nil	Nil
	Khalifar Char	Patuakhali	Rangabali	Char Momtaz	2000	470	105

1: CEGIS, 2: Reconnaissance survey

All the chars selected under the long list for conducting a reconnaissance survey are located in the proposed demarcation of the study area and fall in the central dynamic part of the coastal zone of Bangladesh. District wise distribution of the chars is given in Table 2 below.

Table 2: District wise distribution of the chars under study

Name of District	Number of chars
Noakhali	3
Chittagong	1
Laxmipur	1
Bhola	3
Patuakhali	4
Total	12

5. Preparation of the short list

5.1 Reconnaissance surveys

The field surveys for gathering of primary data were undertaken in each of the identified 12 areas. The main method adopted in collection of information during the field surveys was the focus group discussion (FGD). The discussions were conducted using questionnaires, mainly based on the above mentioned 12 selection criteria. The questionnaires were translated into Bangla to have a clear understanding about the questions and to make it easy for data collection. Five field survey teams were formed, consisting of a mix of members of the TA team and investigators from the study area itself in order to have a good acceptance by the local communities. The composition of the teams can be found in Annex 2. The mobilization of these teams was as follows:

Table 3: Mobilization of the survey teams for data collection

Team	Chars assigned	Date of starting of field work	Date of completion of field work	Remarks
Team 1	Andar char, Sonar char, Khalifar char and char Hadi	24 May, 2012	19 June 2012	Cluster of chars
Team 2	Dhal char (char Fassion), Char Kukri Mukri and Char Jahiruddin	23 May 2012	26 June 2012	
Team 3	Teliar char	22 May 2012	31 May 2012	
	Dhal char and Moulavir char	11 June 2012	4 July 2012	
Team 4	Sabuj char	14 June 2012	26 June 2012	
Team 5	Char Maksumul Hakim	14 June 2012	01 July 2012	

Due to non-availability of sufficient investigators in time, not all five field teams could be engaged at the same time. The surveys were partly held in the rainy season, which obviously made travelling to and within the often remote areas more difficult.

Each field team has been trained on the questionnaires and on how to organize focus group discussions and how to collect data. On the first day of the survey, each team made a visit to the area to have an idea about the locality, people living in the char and the physical features, settlement patterns in the char etc. Then they identified informants having a good idea about their own area, who were then invited to participate in the focus group discussions. The categories of people included in the focus group discussions were from various backgrounds

such as the Union Parishad members, female Union Parishad members, agricultural farmers, fishermen, landless people, school teachers, business man, and the local elites.

The numbers of FGDs conducted in each char were based on the size of the char and the number and location of households settled there. Table 4 below gives an overview of all the FGD's that were held.

Table 4: Focus group discussions conducted in different chars

Name of char	Upazila	District	No. of FGDs
Char Maksumul including Char Alauddin and Samitir char	Subarna char	Noakhali	5
Dhal char	Hatiya & Manpura	Noakhali	5
Moulavir char	Hatiya	Noakhali	3
Telir char	Ramgoti	Laxmipur	3
Sabuj char	Sandwip	Chittagong	5
Telir char			
Char Zahiruddin	Tazimuddin/ Bhorhanuddin	Bhola	5
Char Dhal	Char Fassion	Bhola	4
Char Kukri Mukri	Char Fassion	Bhola	3
Andar char	Golachipa	Patuakhali	2
Soner char ¹	Golachpa	Patuakhali	1
Khalifar char	Golachipa	Patuakhali	2
Char Hadi	Dashmina	Patuakhali	4
		Total:	42

1: During reconnaissance visit Sonar char was found to be a reserved forest

5.2. Processing of data and scoring

After all the data for each area were collected, they were provided to the TA-team and computerized. The first step of the analysis was giving a score to each of the twelve subjects (around each of the criteria). The scores were between 0 and 10 (0 is not qualified for short listing and 10 is highly qualified). A draft detailed guideline for determining the scores has been prepared in a discussion with the M&E advisor of CDSP-IV and team leader of each survey team. The draft guidelines were discussed in a TA team meeting and subsequently in a meeting with representatives of IWM and CEGIS, chaired by the PCD of CDSP-IV. After that, the guidelines were finalized. The actual scoring on each of the main questions under all the twelve criteria has been done by a team of five members from the TA Team of CDSP-IV. The results can be found in Annex 3.

5.3. Analysis and comparison

As mentioned before, in order to make the analysis as objective and transparent as possible, a system of relative weights for each of the twelve criteria has been adopted. This is discussed at the end of section 3. All the scores, as given in Annex 1, were multiplied by the percentage of relative weight as mentioned in section 3. This gave the final outcome on each of the twelve criteria. The results of all the criteria were added to come to the final score for the area concerned. The next step was to compare the outcomes of all the twelve areas of the long list, in order to come to the selection of three most promising areas for the short list. The table with the comparison is given in Annex 4. The overall result in terms of ranking is provided in Table 5 below.

Table 5: Total score with ranking for the 12 selected chars

Cluster	Name of char	Score received	Ranking	Remarks
1	Char Maksumul Hakim (including Char Alauddin and Samitir Char)	780.81	I	Stable
2	Dhal Char including Kola Toli (Hatiya)	779.30	II	Stable
3	Teliur Char	755.22	III	Some erosion in the north-east part
	Char Zahiruddin (South side of Char Gazaria)	654.25	V	Stable
4	Char Kukri Mukri	621.25	VI	Stable
5	Sabuj Char	671.60	IV	Some erosion in the old part
6	Mowluvir Char	469	VIII	
7	Dhal Char/ Char Dhal (Adjacent to Char Kukri Mukri)	477.25	VII	
8	Char Hadi	443.25	IX	
9	Khalifar Char	369.45	XII	
	Andar Char/ Prassanna	379	X	
	Sonar Char	373	XI	

From the above table we can see that the first six chars have scores above 600 and the remaining four clusters (Sl. No. 6- 9) have scores less than 500. The reports of the reconnaissance surveys of the first six chars are presented in Annex 5, 1-6.

6. Workshop

A workshop for discussion on the proposed short listing of char areas for feasibility studies was organized on September 19, 2012 at the convention centre of SPECTRA, Gulshan-1, Dhaka. The participants attending the workshop were from BWDB, LGED, DAE, DPHE, MoL, FD, Embassy of the Kingdom of The Netherlands, ADB/BRM, CEGIS, IWM, SAARCAP/IRRI, BRAC, SSUS, SDI and DUS and from the CDSP IV TA Team. In total 38 participants attended the workshop. The proceedings of the workshop can be found in Annex 6 of this report.

7. Conclusions and recommendations

1. The process of selection of chars was described in detail in Mission Report no. 3 of CDSP IV and agreed upon by the Project Coordinating Director and the Project Management Committee. PMC also agreed with further elaboration of the process, such as, for instance, with the guidelines for scoring. IWM and CEGIS were involved in the preparation of the long list and in the methodology of scoring after data were collected. PMC decided on a long list of 12 char areas.
2. Actual implementation of data collection for all 12 char areas of the long list was done by survey teams consisting of members of the Technical Assistance team and people from the areas concerned. A part of the process of implementation was hampered by the start of the monsoon season and the shortage of surveyors. Nonetheless, satisfactory results were obtained by the field surveys.
3. The data collected were processed as follows: Scores between 0 and 10 were given to each of the criteria (12 in total) applied in the selection. Each of the criteria was given a particular weight. Scores and weights were multiplied to come to a final result for each of the applied criteria for each of the 12 char areas on the long list. For each area these results were added, to come to a final result for the area.
4. Comparison makes clear that, solely based on the applied criteria (with attached weights), three areas relatively close to the existing CDSP IV project area, are the most promising for the three feasibility studies: 1. the cluster of Char Maksimul Hakim/ Char Alauddin/ Samitir Char in Noakhali District; 2. Dhal Char/ Kola Toli in Noakhali District; 3. Teliur Char in Lakshmipur District, possibly combined with Char Zahiruddin).

5. It is recommended to start a feasibility study for Char Maksimul Hakim/ Char Alauddin/ Samitir Char as soon as possible, and certainly within 2012.

Annex 2: Composition of reconnaissance survey teams

Five teams have been mobilized in the field for collecting data through FGDs in the preselected 12 chars listed in the long list of seven clusters of chars. The composition of the teams with chars/ clusters of chars assigned for reconnaissance survey are shown in the table below:

Table 6: Composition of the reconnaissance survey teams

Team Member	Designation	Assigned chars	Remarks
Team – I			
a. Mr. Maksudur Rahman	Team Leader	Andar char, Soner char, Khalifar char and char Hadi	4 chars under Patuakhali district
b. Mr. Abu Musa	Investigator		
c. Mr. Mannan Hawladar	Investigator		
Team – II			
1. Mr. Alauddin	Team Leader	Char jahiruddin, Char Kukri Mukri and Dhal char (Char Fassion)	3 chars under Bhola district
2. Mr. S. M. Zakir Hossain	Investigator		
3. Mr. Rakibul Hassan	Investigator		
Team – III			
1. Mr. Jahirul Islam Chowdhury	Team Leader	Teliar char, Dahal char(Noakhali), Moulavir char	3 chars under Noakhali
2. Mr. Sanaullah	Investigator		
3. Mr. Jahid Haidar	Investigator		
Team – IV			
1. Mr. Liaquat Ali Khan	Team Leader	Sabuj char	1 char under Chittagong district
2. Khalid Hassan	Investigator		
3. Mr. Serajud Dwla	Investigator		
Team – V			
1. Mr. Liaquat Ali Khan	Team Leader	Char Maksumul Hakim	1 char under Noakhali district
2. Mr. Ibrahim Khalilullah	Investigator		
3. Mr. Shahabuddin	Investigator		

Annex 3: Scores based on criteria for twelve selected chars of the long list

Criteria	Char Moksumul Hakim	Char Jahirudin	Teliar Char	Sabuj Char	Dhal Char (Hatiya)	Moulavir Char	Char Hadi	Char Kukri Mukri	Dhal Char (Char Fassion)	Andar Char	Soner Char	Khalifa r Char
Land levels and stability	10	10	5	3	10	2	5	10	0 ¹	0 ¹	0 ¹	5
Probability of occurrence of natural disasters	2	4	4	4	4	4	4	3	3	3	5	3
Size of the area	10	8	10	10	8	4	6	6	8	4	10	4
Population and its density	10	10	10	10	10	0	4	10	10	2	0	0
Land availability	10	1	10	10	10	10	0	1	0	1	0	6
Socio-economic situation	8.2	7	8.5	7.2	8.8	0	4.6	7.2	7	5	0	5
Performance of main sources of livelihood	6.75	4	5.5	5.25	5	9	5	5.5	4	5	0	5
Existing water management situation	10	10	10	7	10	10	7	10	10	10	10	1
Existing internal infrastructure	9.4	6	7.8	8.4	7.2	10	7.6	4.6	4.4	9	10	8.6
Law and order situation	3.33	8	8.66	6.3	6.3	3	5.6	6.3	7.6	5	8	0
Accessibility of the area	3	2	2	2	1	1	1	2	1	1	1	1
Institutional development	4.25	4.25	8	6.75	8	10	4.25	4.25	4.25	6	10	4.25

Note: 1: The Chars were not found under erosion on the available data while preparing the long list of Chars, but during reconnaissance survey conducted in June 2012, erosion was observed in these three chars.

Annex 4: Comparison of the chars of the long list

Cluster No.	Name of char	Criteria for comparison												Ranking	
		Stability and land level (14%)	Probability for occurrence of natural disasters (6%)	Size of the char in ha (9%)	Population and density (10%)	Land ownership (10%)	Socio-economic situation (11%)	Performance of main sources of livelihood (7%)	Existing water management situation (7%)	Existing internal infrastructure (7%)	Law and order situation (7%)	Accessibility of the area (7%)	Institutional development (5%)		Total score
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Dhal Char/ Char Dhal (Adjacent of Char Kukrimukri)	0	18	72	100	0	77	28	70	30.8	53.2	7	21.25	477.25	VII
	Char Kukri Murki	140	18	54	100	10	79.2	38.5	70	32.2	44.1	14	21.25	621.25	VI
2	Char Zahiruddin	140	24	72	100	10	77	28	70	42	56	14	21.25	654.25	V
	Teliur Char	70	24	90	100	100	93.5	38.5	70	54.6	60.62	14	40	755.22	III
3	Sabuj Char	42	24	90	100	100	79.2	36.75	49	58.8	44.1	14	33.75	671.6	IV
4	Dhal Char including kalatali (Hatiya)	140	24	72	100	100	96.8	35	70	50.4	44.1	7	40	779.3	II
	Mowluvir Char	28	24	36	0	100	0	63	70	70	21	7	50	469	VIII
5	Char Moksumul Hakim (including Char Alauddin and Samitir Char)	140	12	90	100	100	90.2	47.25	70	65.8	23.31	21	21.25	780.81	I
6	Char Hade	70	24	54	40	0	50.6	35	49	53.2	39.2	7	21.25	443.25	IX
7	Andar Char/Prassanna	0	18	36	20	10	55	35	70	63	35	7	30	379	X
	Sonar Char	0	30	90	0	0	0	0	70	70	56	7	50	373	XI
	Khalifar Char	70	18	36	0	60	55	35	7	60.2	0	7	21.25	369.45	XII

Annex 5:

- i) Char Moksumul Hakim including char Alauddin & Samitir char
- ii) Dhal Char (Hatiya) including Kola Toli
- iii) Teliar Char
- iv) Sabuj Char
- v) Char Zahiruddin
- vi) Char Kukri Mukri including char Patila

Char Development and Settlement Project IV

Bangladesh

Annex 5.1

Report on Char Maksumul Hakim including Char Alauddin and Samitir
Char

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1. Introduction

To identify suitable char areas (or clusters of chars) for feasibility studies to be undertaken under CDSP IV, reconnaissance surveys were conducted in a long list of 12 selected chars under seven clusters. Char Moksumul Hakim is one of the chars under the long list of chars. It is located in Mohammedpur Union of Subarna Char Upazila of Noakhali district. The Char is adjacent to the Subarna Char main land and outside the embankment of the Polder 59/3B (please see map in Annex-1).

2. Brief history of the char

Char Moksumul Hakim emerged in the early 1990's in the lower Meghna river. The Forest Department started afforestation in 1992. In 2003, the first households started to migrate into the char, mainly from Hatiya-, Companiganj- and Sandwip Upazila. Gradually all planted trees were cut and the land was transferred from forest into agricultural land. The char is located outside the embankment of polder 59/3B. The study area is in the north bordered by Gangchil khal and Gangchil sluice. It follows the embankment of polder 59/3B to the south till Meghna sluice and Char Nangulia. In the east the area is bordered by the Meghna River. The overall area is estimated to be approximately 5,000 hectares. At present, there are no signs of erosion. The char is thought to be stable. The average land level is around 4 m (PWD). If the plan for a cross dam from Noakhali mainland to Urir Char is indeed implemented, the already occurring land accretion in the area adjacent to the study area will be accelerated.

During cyclone Sidre, occurred in 15th November 2007, many cattle died. The standing crops in the field were totally damaged. But there were no damages to crops and properties by the cyclone Aila that occurred in May 25, 2009. After the Aila cyclone there was no major natural calamity in the coastal zone of Bangladesh.

3. Data collection and focus group discussion

Field surveys for gathering primary data were conducted in the 12 selected chars under the long list of chars including char Moksumul Hakim. The main method applied for collection of information during the field survey was the focus group discussion (FGD). The numbers of focus group discussions to be conducted in Char Moksumul Hakim were decided on the size of the char and numbers of households that are settled in the char. Hence, five focus group discussions (FGDs) were conducted in the second half of June 2012.

4. Description of the char as per criteria for selection

1. Stability and land level of the char area

Stability

The focus group discussions revealed that the char is under accretion at present. There is no erosion at any side of the char. Hence, the char is found to be stable.

Land level

A topographic survey (reconnaissance level) was conducted by CDSP IV in Char Moksumul Hakim in the month of July 2012. As per the survey, the minimum level was found 3.32m (PWD) and the maximum 5.62m (PWD). The average level was 4.14m (PWD). Out of 306 spot levels, elevations of 99% spots were found to be more than 3.50 m (PWD).

2. Occurrence of natural disasters and exposure to the sea

The selected chars on the long list are all located in the central, dynamic part of the Bangladesh coastline. Char Moksumul Hakim is one of them and is especially vulnerable to cyclonic surges and tidal waves. It becomes particularly serious when they occur during full moon and new moon periods when the river water level raises to higher levels.

During cyclone Sidre, the natural disaster occurred in 15th November 2007, about 80 buffalos, 830 cows and 2500 goats died. The standing paddy crops were completely damaged. Concerning human casualties it was reported that only one person died in Sidre. During Aila, the natural calamity that occurred on 25 May 2009, the wind was strong but there were no damages to crops and properties.

3. Size of the char

As per the reconnaissance survey conducted by CDSP IV in June 2012 the overall area of Moksumul Hakim was found to be approximately 5,000 ha or 50 square km.

4. Population and population density

The total population of the char as per the reconnaissance survey is about 12,560 under 2,910 households, having 4.3 persons per households on an average. The density of population is about 250 per square km. The people of the char came from Noakhali (52%), Hatiya (24%), Ramgoti (15%), Bhola (4%) and Companigong Upazila (5%). They migrated to the char with the expectation of getting land for their livelihood.

5. Land ownership and land settlement possibilities

A first investigation indicates that most of the land in Char Maksumul Hakim is khas land. In this char, a few fish projects have been established with sizable ponds. The legal status of these ponds should be further clarified. As mentioned above, at present about 2910 households are permanently living in the char. The great majority of these households will not have an official land title. Though at this time, no exact figures can be given, it is certain that there is a considerable scope for land settlement (distribution of land titles to landless households).

6. Socio-economic situation

The char is a food deficit area. The greatest shortage occurs in the Bengali month of Bhadra to Aswin (mid August to mid October) just before the harvest of paddy. Paddy is being harvested in the Bangla month of Agrahayan (mid November to mid December). The price of rice in this current year just after harvest of paddy was Tk. 22.00 per kg and the price during the food shortage period was Tk. 26.00 per kg. In the previous year the price of rice per kg during harvesting season and off-season were Tk. 27.00 and Tk. 32.00 respectively. The price of paddy (Unhusked) in the current year was Tk. 1200 per quintal (100 kg).

In the char area there is neither a primary school nor any Madrasa for the education of the children of the area. In the char, two types of houses were found: tin-roofed houses and straw-roofed houses. About 12% households live in tin-roofed houses and the remaining 88% households in straw-roofed houses.

7. Performance of main sources of livelihood

The main professions of the people living Char Moksumul Hakim are agricultural farming (36%), fishing (32%), trade (2%) and daily labor (30%). The major problem in agricultural farming is the high cost of agricultural inputs and the low price of agricultural produce. In the high land of Char Alauddin, which is part of Char Moksumul Hakim, two crops are grown. These are Aman paddy and rabi crops. Among the rabi crops are sweet potato, Chilli, Tishi and Khesari. On low-lying land one crop (paddy) is grown. In Moksumul Hakim the main crop is Aman paddy (local variety) while Chilli and Khesari are the rabi crops grown there. The average yield of local paddy ranges from 1.50 MT to 2.50 MT per ha. The major problem in fishing in open waters is the attacks by the pirates in the river. A problem for the trade community is the poor communication within the char area and also with other areas of the district.

8. Existing water management situation

The char is not protected by any flood protection embankment. River water submerges Char Moksumul Hakim and Samitir Char from mid June to mid November during high tide in the full moon and new moon periods. Char Alaudin is relatively high and river water submerges the char during the months of August and September in the full moon and new moon periods. There are few drainage khals that drain the rain water from the char. A list of the major khals is given in Table 1 below:

Table 1: List of major khals of Char Moksumul Hakim

Name of drainage khal	Approximate length (km)	Average Top width (m)
1. Karim khal	4.00	120
2. Nursery khal	4.00	60
3. Ahmed ullah khal	3.00	100
4. Rajar khal	3.00	60
5. Montaz khal	3.0	50
6. Dhanda miar khal	3.00	30
7. Gopal Khal	2.00	60
8. Old Ghat Khal	2.00	50
9. Mamur khal	1.50	30
Total:	25.50 km	

About 160 ha of land in southern Moksumul Hakim and 80 ha in Char Alauddin remain under water logging during August-September. As mentioned above, the char was heavily affected during cyclone Sidre, the natural calamity that occurred on November 15, 2007. All the crop lands were damaged by Sidre.

9. Existing internal infrastructure

There is very little infrastructure in the char. There are four roads in the char with a total length of 7.50 km. There are only 3 tube wells for drinking water of good quality for a population of more than 12,000. The depth of these tube wells ranges from 180 meter to 200 meter. There is no cyclone shelter in the char for emergency shelter for the char population during natural disasters. There is no educational institution in the char such as school or Madrasa to educate the children of the char. There are four small markets on the embankment of Polder 59/3B. There is no market within the char. About 25 households have solar panels. Grameen Phone, Rabi and Bangla Link have their mobile network for the operation of mobile phone in the char.

A list of internal infrastructure is provided in Table 2 below:

Table 2: Internal infrastructure in char Moksumul Hakim (including char Allauddin and Samitir char)

Sl. No.	Infrastructure/intervention	No.	Remark
1	Road (earthen)	4 (7.50 km)	
2	Drainage Khal	9 (25.50 km)	
3	Bazar (on embankment of Polder 59/3B)	4	No Bazar in the char
4	Deep tube well for drinking purpose	3	
5	Masjid	5	
6	Ghat (landing place)	1	
7	Sanitary latrine	10	

10. Law and order situation

There are jotdars in the char but at present they do not seem to be very active. There are neither violent prone groups present, nor are there internal conflicts among the people living in the char. There is no police camp in the char. The law and order of the char is being maintained from the police camp located at Char Jabber. The communication from Char Jabber to Char Moksumul Hakim is good. So far, no record is available about attacks by pirates in the char itself, but they do attack the trawlers and the boats in the river. The law and order situation of the char can be termed as good.

11. Accessibility of the char area

The char is located adjacent to the main land of Subarna Char. It is accessible by modern vehicle throughout the year and it takes about 1 hour to reach the char from Maijdee, district headquarters of Noakhali district. There is an all weather motor able road linked with Maijdee town. It is the only char among the 12 chars on the long list where there is no river to cross by ferry.

12. Institutional development

The institutional development in the char to be mentioned is that three NGOs are active there. These are i) BRAC, ii) Grameen Bank and iii) Sagorika. All of these NGOs are operating micro credit schemes among the members of their respective groups. There is no Union Parishad within the char. The Union Parishad established in Char Torab Ali in the year 2007 covers Char Moksumul Hakim. The UP is moderately active. The activities

being carried out are khal re-excavation, installation of tube wells, plantation of trees etc.

5. Analysis and scoring

In order to make the analysis as objective and transparent as possible, a system of relative weights for each of the 12 criteria applied has been adopted. The relative weights that have been applied are: land levels and stability-14%, probability of occurrence of natural disasters-6%, size of the area-9%, population and its density-10%, land ownership-10%, socio-economic situation-11%, performance of main sources of livelihood-7%, existing water management situation-7%, existing internal infrastructure-7%, law and order situation-7%, accessibility of the area-7% and institutional development-5%.

In the analysis each of the chars under study has received a score from 0 to 10 (0 is not qualified for short listing and 10 is highly qualified) under each of the 12 criteria applied for the selection. The score is then multiplied by the percentage of relative weight as mentioned above. This gives the final result for the criteria. The results of all the criteria for the area are added to come to the final score. The scores for Char Moksumul Hakim are given in Table 3 below:

Table 3: Scores received by Char Moksumul Hakim

Criteria	Score received	Percent of relative weight	Final score (Total score X relative weight)	Remarks
Land levels and stability	10	14	140	
Probability of occurrence of natural disasters	2	6	12	
Size of the area	10	9	90	
Population and its density	10	10	100	
Land ownership	10	10	100	
Socio-economic situation	8.2	11	90.20	
Performance of main sources of livelihood	6.75	7	47.25	
Existing water management situation	10	7	70	
Existing internal infrastructure	9.4	7	65.80	

Criteria	Score received	Percent of relative weight	Final score (Total score X relative weight)	Remarks
Law and order situation	3.33	7	23.31	
Accessibility of the area	3	7	21	
Institutional development	4.25	5	21.25	
		Total score	780.81	1st position

6. Conclusion and recommendation

In the comparative analysis Char Moksumul Hakim is found as the top scoring char among the 12 selected chars. It is recommended to include Moksumul Hakim in the short list of chars for feasibility studies under CDSP IV. The feasibility study can be started at short notice.

Char Development and Settlement Project-IV

Bangladesh

Annex 5.2

Report on Dhal Char including Kola Toli (Hatiya)

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Report on Dhal Char including Kola Toli

1. Introduction

To identify suitable char areas (clusters of chars) for feasibility studies to be undertaken under CDSP IV, reconnaissance surveys were conducted in Dhal Char, including Kola Toli area. The char is about 20 km to the north-west of Hatiya Island. Dhal Char, including Kola Toli, is one of the clusters of chars under the long list of 12 chars. The Dhal char part is located in Sukchar Union of Hatiya Upazila under Noakhali district and the Kola Toli part of the char is located in no.1 Monpura Union of Monpura Upazila of Bhola district. (Please see map in Annex-1).

2. Brief history of the char

Dhal Char came into existence roughly about 70 years back during the last part of the British period. Sporadic cultivation of crops started in the 60's of the last century. In 1960-61 some settlements were started and each of the landless families residing in the char received 2.50 acres of land each from Hatiya land office.

The story behind the name of Dhal Char is found in the history of conflict of the Lathial Bahini (armed musclemen with weapons). The fights among the conflicting groups were for the possession of the char. They used Dhal in the fights. Dhal means a traditional piece of equipment to protect one from an attack by the opposition group. Such attacks and counter attacks were regular incidences that occurred in the char at that time. From this the name Dhal char was derived. At present the people are living harmoniously and there is no conflict among the char population.

3. Data collection and focus group discussion

Field surveys for gathering primary data were conducted in Dhal char including Kola Toli. The main method applied for collection of information during the field survey was the focus group discussion (FGD). The numbers of focus group discussions to be conducted in area were decided on the size of the char and number of households settled in the char. Hence, five focus group discussions were conducted and primary data were collected in the second half of June 2012.

4. Description of the char as per criteria for selection

4.1 Land level and stability of the char area

Land level

A topographic survey (reconnaissance level) was conducted by CDSP IV in the Dhal Char part in September 2012. It took about a week to complete the survey. The minimum land level of the char was found to be 2.55 m (PWD) and the maximum level 4.32 (PWD). The average land level was 3.40 m (PWD). About 85% of the spot levels were found above 3.25 m (PWD) and 50% were above 3.50 m (PWD) out of the total spot levels of 223.

Stability

The focus group discussions revealed that the char was under erosion at the southern side for two years during the last ten years. At present no erosion was observed at any side of the char. Hence, the char is found to be stable.

4.2 Probability of occurrence of natural disasters and exposure to the sea

The selected chars on the long list are all located in the central dynamic part of Bangladesh coastline. Dhal Char is one of them and is especially vulnerable to cyclonic surges and tidal waves. It becomes particularly serious when they occur during full moon - and new moon period, when the river water is at a higher level.

4.3 Size of the char

As per the reconnaissance survey the overall area of Dhal Char including Kola Toli was found to be approximately 7,500 ha.

4.4 Population and population density

The total population of Dhal Char including Kola Toli area is 26,254 under 4,714 households, with an average household size of about 5.57 persons. The density of population is about 350 persons per sq km. They migrated to the char from Hatiya Upazila 8%, Monpura Upazila 65%, Char Fassion Upazila 15% and Tazumuddin Upazila 12%. All of them migrated to the char with an expectation of getting land for their survival. The density of population is relatively high in Kola Toli compared to Dhal char.

4.5 Land ownership and land settlement possibilities

The char has two Mouzas, namely i) Dhal Char and ii) Kola Toli. Under Dhal Char Mouza some land has been given to the landless people in the year 1960-61. Exact area of land

allotted to them is not known. Then in the year 1997-98, about 2,800 acres (1134 ha) of land has been given to landless households with an area of one acre each. As mentioned above, at present 4,714 households are living permanently on the char and many of them will not have an official land title.

4.6 Socio-economic situation

The char is a food deficit area. The greatest shortage occurs in the Bengali month of Baishak to katrik (mid April to mid October). The main crop grown in Dhal char is rice. It is being harvested in the Bengali month of Agrahayan (mid November to mid December). Price of rice after the harvest of paddy normally remains lower than in any other period of a year. The price of rice after the harvest in the current year is Tk.25.00 to Tk.26.00 per kg, while in the previous year after harvest it was Tk.30.00 to Tk.32.00. In the off-season the price of rice was about Tk.34.00 per kg. The price of paddy remains low just after it is harvested; during the survey it was found to be Tk.1200.00 per quintal (100kg).

In the Dhal char part there is neither primary school nor any Madrasa to educate the children. But in Kola Toli area there are 2 primary schools and one secondary level school for education. In Dhal char two types of houses are found. These are tin-roofed houses and straw-roofed houses. About 90% households live in the straw-roofed houses while the remaining 10% households live in tin-roofed houses.

4.7 Performance of main sources of livelihood

Main profession of the people living in the char is agricultural farming. The production is fully depending on rain water. There is no option for the use of ground water due to the probable intrusion of saline sea water in the aquifer. Both soil and water salinity is an important constraint to the cultivation of Rabi and Aus crops. Tidal surges cause serious hazards to T. Aman crops in the month of October and November, when most of the char is inundated. At that time it affects the standing rice at the flowering stage.

As a single base cropping pattern, T. Aman rice crop is the main crop in the monsoon period. Rajashail is a local variety that is used in the char; the yield is found to be 1.50 MT to 2.50 MT per ha depending on the type of land and use of agricultural inputs. Most of the area remains barren in the dry season due to salinity intrusion. In a small part of the land rabi crops such as Chilli, Khesari and sweet potato are cultivated in insignificant quantities; the yield is low.

In the char, the wage rate in the peak season is Tk.170 from morning to evening without meal, with two meals it is Tk.130 to Tk.140 from 7 am to 5pm. In the lean season a full day labour rate with meal is Tk.80, as there is less labour demand in the area, without meal it is Tk.100. There is labour migration from Monpura and Hatiya in the Bangla month of Ashar and Srabon during paddy transplantation and in the Bangla month of Kartik and Agrayan during the harvesting period. At other times people go to Chittagong and Noakhali and Feni in search of employment.

4.8 Existing water management situation

The natural drainage khals are the channels for draining the rain water from the land. Since there are no water management structures in Dhal Char (including Kola Toli) as yet, the tidal water from the river can freely enter the khals and submerge the land. A list of the major khals is given in Table 1 below:

Table 1: Major Khals in Dhal Char including Kola Toli

Sl. No.	Name of Khal	Length (km)
1	Khajur Khali Khal	5.00
2	Campor Khal	6.00
3	Longer Khal	7.00
4	Nuru Majheer Khal	6.00
5	Miajir Khal	6.00
6	Nursery Khal	6.00
7	Killer Khla	6.00
8	Raster Khal	3.00
9	Dhonir Khal	6.00
10	Madol Batainna Khal	3.00
11	Kalu Majhir Khal	4.00
12	Jahangirer khal	4.00
13	Ahmed Ullah Khal	3.00
14	Kanchan Majhir khal	3.00
15	Chairman Khal	3.50
16	Jafor Member Khal	3.00
17	Kabir Khal	3.00
Total		77.50

4.9 Existing internal infrastructure

In Dhal char there is some infrastructure. There are six earthen roads used for internal communication for the people living in the char. The roads are shown in Table 2 below:

Table 2: A list of roads in Dhal char including Kola Toli

Sl. No	Name of road	Length (km)	Type of road
1	Chairman road	5.00	Earthen
2	Ajhar road	2.00	Earthen
3	Abasom road	3.00	Earthen
4	Khaleque chairman road	3.00	Earthen
5	Wajiullah road	1.00	Earthen
6	Masjid road	1.00	Earthen
	Total	15.00	

There are six markets and 2 primary schools and one high school in the char. There is no cyclone shelter at Dhal Char. There exist six markets in the char. These are shown in table 3 below:

Table 3: A list of markets in Dhal char including Kola Toli

Sl. No	Name of Market	Year of establishment
1	Kamal chairman market	2012
2	Monir Hawladar market	2009
3	A. M. Howladar market	2012
4	Madrassa market	2008
5	Kabir Hawladar market	2009
6	Alauddin Hawladar market	2004

A list of existing infrastructure is given in Table 4 below:

Table 4: Infrastructure of Dhal char including Kola Toli

Sl. No.	Name of infrastructure	No/km	Remarks
1.	Road	6 No/15 km	
2.	Cyclone Shelter	Nil	
3.	Bazar (Market)	6	
4.	Major drainage Khal	17No/77.50 km	
5.	School	3	One High school
6.	Madrassa	Nil	
7.	Ghat (Landing place)	4	
8.	Killa (raised land, shelter place for cattle)	1	

Sl. No.	Name of infrastructure	No/km	Remarks
9.	Solar panels	147	
10.	Total deep Tube Well for drinking purpose	27	9 (not usable)

There are in total 27 DTWs in the char for drinking water supply, out of which 9 DTWs are not usable. This means that for 4,714 households 18 functioning tube wells are available. The depth of these DTWs ranges from 100 m to 350 m. The use of sanitary latrines is scanty. Roughly about 120 sanitary latrines are in use. There is one cluster village in Dhal char.

4.10 Law and order situation

There are no Jotdars that influence the migration of people. There is no internal conflict among the char population. There exists no police camp in the Dhal char. The law and order situation is being maintained from Afajia police camp. There is no Coast Guard office in the char. Pirates are roaming in the coastal rivers and attack trawlers in the river. There is also a violent prone group around the char. The overall law and order situation of the char therefore cannot be considered as good.

4.11 Accessibility of the char area

Dhal Char is located towards the west of Hatiya. There is a regular trawler service from Hatiya to Dhal char. The trawler service is available once in a day and it takes about 1 hour to 1.50 hour to reach Dhal Char from Hatiya.

4.12 Institutional development

There is hardly any institutional development in the area. No NGO is active in the char and there is no CBO established there. The Union Parishad is a bit active and has constructed earthen roads. Chairman road (5.00 km), Abashon road (3.00 km) and Azizullah road (1.00 km) have been implemented through the Union Parishad.

5. Analysis and scoring

In order to make the analysis as objective and transparent as possible, a system of relative weights for each of the 12 criteria applied has been adopted. The relative weights that have been applied are : land levels and stability-14%, probability of occurrence of natural disasters-6%, size of the area-9%, population and its density-10%, land ownership-10%, socio-economic situation-11%, performance of main sources of livelihood-7%, existing water management situation-7%, existing internal infrastructure-

7%, law and order situation-7%, accessibility of the area-7% and institutional development-5%.

In the analysis each of the chars under study has received a score from 0 to 10 (0 is not qualified for short listing and 10 is highly qualified) under each of the 12 criteria applied for the selection. The score is then multiplied by the percentage of relative weight as mentioned above. This gives the final result for the criteria. The results of all the criteria for the area are added to come to the final score. The scores for Dhal Char are given in Table 5 below:

Table 5: Scores received by Dhal Char

Criteria	Score received	Percent of relative weight	Final score (Score X relative weight)	Remarks
Land levels and stability	10	14	140	
Probability of occurrence of natural disasters	4	6	24	
Size of the area	8	9	72	
Population and its density	10	10	100	
Land ownership	10	10	100	
Socio-economic situation	8.8	11	96.8	
Performance of main sources of livelihood	5	7	35	
Existing water management situation	10	7	70	
Existing internal infrastructure	7.2	7	50.4	
Law and order situation	6.3	7	44.1	
Accessibility of the area	1	7	7	
Institutional development	8	5	40	
		Total:	779.30	2nd position

6. Conclusion and recommendation

In the comparative analysis, Dhal char including Kola Toli is the second top scoring char among the 12 selected chars. It is recommended to include Dhal char including Kola Toli in the short list of chars for feasibility studies under CDSP IV.

Char Development and Settlement Project IV

Bangladesh

Annex 5.3

Report on Teliar Char

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1. Introduction

To identify suitable char areas (clusters of chars) for feasibility studies to be undertaken under CDSP IV, reconnaissance surveys were conducted for a long list of 12 selected chars under seven clusters. Teliar Char is one of the chars under the long list of chars. The char is located in Char Abdullah Union of Ramgoti Upazila under Laxmipur district. It is an island in the lower Meghna River about 20 km to the south of Ramgoti Upazila headquarter. Teliar Char is bounded in the north by the Meghna River, by Moulavir Char in the south, by Ghasiar Char in the east and by Char Zahiruddin in the west. (Please see map in the Annex-1).

2. Brief history of the char

Teliar Char has emerged as a sedimentary island in the lower Meghna River in the early 70's of the last century. According to very senior people of the char there was an abundance of "Tela Chiring" fish in the char area. They believe that could be the reason why the char has been called Teliar Char. The Forest Department came to the char in 1978-80 and established their office there. At present they have no office in the char; in late 80's of the last century the Forest Department has left Teliar char.

3. Data collection and focus group discussion

Field surveys for gathering primary data were conducted in the 12 selected chars under the long list of chars including Teliar Char. The main method applied for collection of information during the field survey was the focus group discussion (FGD). The number of focus group discussions to be conducted in Teliar char was decided on basis of the size of the char and the number of households that are settled in the char. In Teliar Char three focus group discussions and data collection were conducted in the second half of May 2012.

4. Description of the char as per criteria for selection

4.1 Land level and stability of the char area

Land levels

A topographic survey (reconnaissance level) was conducted by CDSP IV in Teliar char in the month of September 2012. As per the survey the minimum level was found to be 3.40m (PWD) and the maximum 4.56m (PWD). The average level was 4.12m (PWD). Out

of the total of 459 spot levels, 98% of the spot elevations are above 3.50 m (PWD) and 91% above 3.75m (PWD).

Stability

There was some erosion at the southern side of the char in the past. At present there is no erosion at that point but minor erosion was observed to the north-east side of the char.

4.2 Probability of occurrence of natural disasters and exposure to the sea

The selected chars on the long list are all located in the central dynamic part of the Bangladesh coastline. Teliar Char is one of them and is especially vulnerable to cyclonic surges and tidal waves. It becomes serious when they occur during full moon - and new moon period, when the river reaches higher levels. The char is an island in the estuary of the Meghna River. There is no flood protection embankment around the periphery of the char to protect flood water from entering into the char during cyclonic tidal surge. As a result the inhabitants of the char are remaining under constant threats of cyclonic surges.

4.3 Size of the char

As per the reconnaissance survey conducted by CDSP IV in May 2012, the overall area of Teliar char was found to be approximately 6,000 ha.

4.4 Population and population density

The total population at present is about 19,000 in 3,200 households, giving an average household size of about six persons. The density of population is about 317 per square km. About 90% of the char population migrated from Ramgoti Upazila of Laxmipur district and the remaining 10% came from Bhola district. All of them came to the char with the expectation of getting land to maintain their livelihood.

4.5 Land ownership and land settlement possibilities

The reconnaissance survey indicates that most of the land in Teliar Char is khas land. At present about 3,200 households are permanently living in the char. As far as is known, no or hardly any official settlement has occurred so far. Roughly about 4,000 ha (75% of the total area, taking into account land needed for public infrastructure) of land is available for land settlement among the landless households. Almost all the households are landless, with the exception of about 15 households.

4.6 Socio-economic situation

The main crop grown in the char is aman rice and the harvesting time is the Bengali month of Agrahayan (mid November to mid December). Normally the price of rice is lowest just after the harvest of the paddy. The char is a food deficit area and the greatest shortage occurs in the months of Ashar to mid Agrahayan (mid June to November). The price of rice per kg in the current year just after the harvest of paddy was Tk21.00 to Tk22.00, while the price of rice in the food shortage month was Tk30.00 per kg. In the previous year the price of rice per kg in the harvesting period was Tk21.0 to Tk23.00 and during the off-season it was Tk32.00. The average price of paddy in the current year was Tk.1500 per quintal (100kg).

One primary school has been established in the char so far to educate the children. There are eight Madrasas in operation in Teliar Char. In these Madrasas about 34 teachers and about 1,600 students are present. At present the people are living in two types of houses. About 20% households live in tin-roofed houses and the remaining 80 % people live in straw roofed houses.

4.7 Performance of main sources of livelihood

The main professions of the people living in Teliar Char are agricultural farming 40%, fishing 38%, small trade 10% and the remaining 12% is selling labour. The main problems in agricultural farming are non-availability of good seeds and occasional submergence of rabi crop by saline water in the full moon - and new moon period in the Banagla month of Chaitra (mid March to mid April). The problem for the fishing community is the attack by pirates on trawlers in the river. There is no year round employment opportunity for the labour community in the char. They are used to go to Noakhali, Chittagong and Feni in the Bangla Month of Chaitra - Boishak (mid March-mid May) for employment.

The problem for the business community is the poor communication in the char, as well as the lack of storing facilities. The major crop grown in the char is the local T. Aman with an average yield of 700 kg to 900 kg per acre (1.7 MT to 2.2 MT per hectare). In the winter season, chili, soybean, groundnut and Khesari are the major crops grown in the char. Aus is also grown in the char in a very limited area.

4.8 Existing water management situation

There is no embankment around the periphery to protect the char against floods from the Meghna. Drainage takes place through a network of natural channels. During high

tide at full moon and new moon, the river water enters into the khal systems and submerges the low areas and then starts receding after the peak of the tide. In some years the intrusion of saline water affects the rabi crop. Since there is no embankment or water management sluice in the char, the tidal water can enter into the char freely into the khals. There are many khals in the drainage network of the char. A list of the drainage khals are given in Table 1 below:

Table 1: List of main drainage khals of Teliar Char

Sl. No.	Name of Khal	Length (km)	Average top width (m)
1	Chatlar Khal	6.00	60
2	Kamal Bazaar khal	7.00	12
3	Dogachha Khal	4.00	12
4	Malir Khal	4.50	30
5	Bhangtir Khal	3.00	15
6	Kaichhar khar	2.50	7.60
7	Bhoiyer Khal	2.00	7.60
8	Hafeej Ullar khal	2.00	50
9	Chairman Bazaar Khal (West)	3.00	90
10	Adam konir Khal	2.50	40
11	Chairman Bazaar khal-1	1.50	40
12	Janatar Khal	2.50	40
	Total:	40.50 km	

4.9 Existing internal infrastructure

The infrastructure in Teliar Char is very limited. There are five earthen roads with a total length of about 24 km for communication in the char. About 20 deep tube wells are in operation for supply of drinking water to the char population. Roughly about 35% of the total households have access to safe drinking water. Depth of these tube wells ranges from 100 meter to 200 meter. There is no cyclone shelter in the char. There is no government building as well in the char. There are five Bazars/markets in the char. These are i) Chairman Bazar, ii) Ajad Bazaar, iii) Kamal Bazar, iv) Janata Bazar and v) Natun Bazar.

As mentioned before, one primary school has been established in the char. Some modern technologies have however been introduced. About 38 solar panels are in

operation. These are installed in shops and private houses. As far as the mobile network is concerned, the services of Grameen phone and Rabi are available in the char. A brief summary of the existing infrastructure available in Teliar char is given in Table 2 below:

Table 2: List of existing infrastructure of Teliar Char

Sl. No.	Name of infrastructure/interventions	No/km
1	Road (earthen)	24 km
2	Bridge/culvert	2
3	School	1
4	Madrasa	8
5	Masjid	19
6	Major drainage Khal	40.50 km
7	Ghat (Landing place)	5
8	Killa (Raised ground, shelter for cattle at the time of emergency)	1
9	Bazar (Market)	5
10	Deep tube well for drinking purpose (usable)	20
11	Shallow tube well	25

4.10 Law and order situation

The reconnaissance survey conducted in Teliar Char found no Jotdars that influence in the migration of people from other places. There seems to be no internal conflict among the char population. There is no violent prone group in the char, but there are pirates roaming around the coastal rivers that attack the fishing boats and other trawlers in the river. But the pirates do not attack the char area itself. There is no police camp or police Fari in the char. The law and order situation is being maintained from the police camp established in Char Abdullah, which is on the Ramgoti main land. A Coast Guard office is also not yet established in the char. Excluding the incidences happening in the river around the char, the law and order situation of the char area can be considered as good.

4.11 Accessibility of the char area

The main mode of communication to the char from other areas is the engine boat/trawler. There is an up/down trawler service available from Gabtali of Ramgoti Upazila to Teliar Char at Kamal Bazar via Bibirhat. The service depends on the tide. About one hour is needed to cross the river by trawler from Ramgoti to Teliar Char. The location of Gabtali ghat is about 5 km south of Char Alexander and Bibirhat is about 4 km downstream of Gabtali ghat.

Another service is available from Alexander to Kamal Bazaar of Teliar Char. There are more passengers in the rainy season, because that is the peak season for fishing, plantation of paddy and harvesting.

4.12 Existing institutional development

Teliar Char is a relatively recently populated char. The development activities for the char population have virtually not yet started. There are neither local level community based organizations nor any NGOs is active in the char. The UP office of the char is located on the main land of Ramgoti Upazila. Very few activities have been undertaken in the char by the Union Parishad.

5. Analysis and scoring

In order to make the analysis as objective and transparent as possible, a system of relative weights for each of the twelve criteria has been adopted. The relative weights that have been applied are: land levels and stability-14%, probability of occurrence of natural disasters-6%, size of the area-9%, population and its density-10%, land ownership-10%, socio-economic situation-11%, performance of main sources of livelihood-7%, existing water management situation-7%, existing internal infrastructure-7%, law and order situation-7%, accessibility of the area-7% and institutional development-5%.

In the analysis each of the chars under study has received a score from 0 to 10 (0 is not qualified for short listing and 10 is highly qualified) for each of the 12 criteria applied for the selection. The score is then multiplied by the percentage of relative weight as mentioned above. This gives the final result for the criteria. The results of all the criteria for the area are added to come to the final score. The scores for Teliar Char are given in Table 3 below:

Table 3: Scores received by Teliar Char

Criteria	Score received	Percent of relative weight	Final score (Score X relative weight)	Remarks
Land levels and stability	5	14	70	
Probability of occurrence of natural disasters	4	6	24	

Size of the area	10	9	90	
Population and its density	10	10	100	
Land ownership	10	10	100	
Socio-economic situation	8.5	11	93.50	
Performance of main sources of livelihood	5.5	7	38.5	
Existing water management situation	10	7	70	
Existing internal infrastructure	7.8	7	54.60	
Law and order situation	8.66	7	60.62	
Accessibility of the area	2	7	14	
Institutional development	8	5	40	
		Total score	755.22	3rd position

6. Conclusion and recommendation

In the comparative analysis of the 12 chars on the long list, Teliar Char is found as one of the top scoring chars. It is recommended to include Teliar Char in the short list of chars for feasibility studies under CDSP IV, possibly combined with Char Zahiruddin.

Char Development and Settlement Project IV

Bangladesh

Annex 5.4

Report on Sabuj Char

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1. Introduction

To identify suitable char areas (clusters of chars) for feasibility studies to be undertaken under CDSP IV, reconnaissance surveys were conducted in 12 selected chars under seven clusters, included in the long list. Sabuj Char is one of the chars of the long list of chars. The char is attached with the northern side of Sandwip Upazila of Chittagong (please see the map in Annex-1).

2. Brief history of the char

Approximately from the year 1976, the northern part of Sandwip Island was under severe erosion. But the river morphology has changed gradually and in the year 1983 there developed two very small sandy submerged islands side by side in the north of Sandwip island. Gradually by siltation both the small islands became a single char. During that period there was a natural khal separating the new accreted char with the Sandwip island. In the year 1991, local people constructed a cross-dam to make a linkage between Sandwip and the newly accreted chars. In the year 1992-93 people have started to live in the new char. From the year 1987 onwards, many plants and trees started to grow on the char. The people named the new char as Sabuj (green) char.

3. Data collection and focus group discussion

Field surveys for gathering primary data were conducted in the 12 selected chars under the long list of chars, including Sabuj Char. The main method applied for collection of information during the field survey was the focus group discussion (FGD). The number of focus group discussions to be conducted in Sabuj char was decided on the basis of the size of the char and the number of households settled in the char. In Sabuj Char five focus group discussions were conducted in the second half of June 2012 and primary information collected.

4. Description of the char as per criteria for selection

4.1 Land level and stability of the char area

The entire char can be divided into two distinct parts: i) the new char, and ii) the old part. Because of ongoing erosion of the old part, the char should be considered as not very stable.

4.2 Occurrence of natural disasters and exposure to the sea

The selected chars on the long list are all located in the central, dynamic part of the Bangladesh coastline. Sabuj Char is one of them and is especially vulnerable to cyclonic surges and tidal waves. Their impact becomes particularly serious when they occur during full moon - and new moon period, when the river water level rises to a higher level. There is no flood protection embankment around the periphery of the char to prevent flood water from entering into the char during tidal surges. As a result the inhabitants of the char are remaining under constant threat of flooding.

4.3 Size of the char

As per the reconnaissance survey, the total gross area of the char was found to be about 178 square kilometer. Around the periphery of the char, new land is being accreted. The development works could be implemented in about roughly one third of the total area.

4.4 Population and population density

The total population of the char as per reconnaissance survey is about 15,120 in 2,520 households. This means an average household size of 6.00. They migrated to the char from Sandwip (about 55%), Hatiya (35 %) and Char Lakshmi of Noakhali (10%). The average density of population is about 85 per sq. km. if the gross area (including forest and newly accreted land) is taken into account. If only the one third of the area where development interventions could take place is considered, the density rises to about 250.

4.5 Land ownership and land settlement possibilities

There are nine Mouzas in Sabuj Char. These are shown in Table 1 below. Information on the area of each Mouza is not available.

Table 1: Mouzas of Sabuj char

Sl. No.	Name of Mouza	Upazila	Jl. No
1	Dirghapar	Sandwip	26
2	Char Dirghapar	Sandwip	60
3	Thak Dirghapar	Sandwip	55
4	Thak Santoshpur	Sandwip	57
5	Char Santoshpur	Sandwip	27
6	Santoshpur	Sandwip	28
7	Amanullah (part)	Sandwip	30
8	Kalapani (part)	Sandwip	31
9	Katghar	Sandwip	28

All most all the land is available for distribution among the landless people settled in Char Sabuj. Only 20 households have been given 0.30 acres of land each.

4.6 Socio-economic situation

The major crop is Aman paddy. The harvesting time is the Bengali month of Agrahayan (mid November to mid December). The char is a food deficit area. The greatest shortage occurs in the period from May to October. The average price of rice in the current season just after the harvest of paddy was Tk. 22.00 and during the food shortage period it was Tk. 28.00 per kg. The price of rice in the previous year was Tk. 30.00 and Tk. 35.00 after harvest of paddy and during the food shortage period respectively. The price of paddy after the harvest normally goes down. In the current year the price of paddy was Tk. 2000.00 per quintal (100 kg).

There are two primary schools for education for the children located in Dirghapar Union. There is a Madrasa in the char for religious education for the children. About 65% households live in straw roofed house and 25 % in tin-roofed houses; the remaining 10 % has another type of house (such as semi-pucca). Sanitary latrines are hardly used.

4.7 Performance of main sources of livelihood

The main professions of the char population are agricultural farming (50%), fishing (30%) and cattle rearing (20%). The main problems in agricultural farming are the lack of fertilizer and the fact that crops are affected by the intrusion of saline water. Crop grown in Sabuj char is the local variety of T. Aman. These are Rajashail, Kazal Shail and IRRI paddy. The average yields ranges from 3.00 MT to 3.50 MT per ha. In winter all the land remains barren due to salinity in the soil. The cropping intensity is estimated to be 100%. In cattle rearing, the main problem is the shortage of sweet water for the cattle during the dry season.

The daily wage rate is Tk. 200 during the paddy transplanting and harvesting periods. In the remaining period of the year, the daily wage rate ranges from Tk. 150 to Tk. 200, depending on the demand for labour. During the transplanting period (July-August) the labour from Noakhali and Sandwip come to the char for employment. In the months of March-April, the demand for labour is very low. In this month the labour from Sabuj Char try to find employment in various Upazilas of Chittagong district.

4.8 Existing water management situation

The char has no flood protection embankment and is exposed to saline water of the sea. Since there is no water management structure in Sabuj Char, the tidal water from the sea can freely enter the khals and submerge the low land of the char. A list of the major drainage khals is given in Table 2 below:

Table 2: Major drainage khals of Sabuj Char

Sl. No	Name of drainage khal	Length (km)	Average top width(m)
1	Dirghapar-hudra Khali Khal	10.00	5
2	Talukdar Khal	10.00	15
3	Bara Khal	7.00	13
4	Dirghapar-Katghor khal	5.00	2
5	Butar Khal	5.00	5
6	Chai khalir Khal	3.00	8
7	Shantir Hat Road Khal	1.00	9
8	Sontoshpur Khal	1.00	10
9	Juillar Khal	1.00	10
Total		43.00	

4.9 Existing internal infrastructure

There is some internal infrastructure in the char. For internal communication there are six earthen roads, having a total length of 30 km. For the purpose of drinking water, SDI, a local NGO, installed 12 deep tube wells. These DTWs provide about 50% of the population with safe drinking water. There are three markets in the char. These markets are established in the years 1998-2000. There are about 25 solar panels established in the markets, 170 in homesteads and 2 in Masjids. Concerning mobile networks, Grameen Phone, Rabi and Bangla link are in operation. A list of existing internal infrastructure/ interventions is provided in Table 3 below:

Table 3: List of internal infrastructure/ interventions of Sabuj char

Sl. No	Name of infrastructure	Number
1	Cyclone shelter	Nil
2	School	2
3	Madrassa	1
4	Masjid	5
5	Road (6 nos)	30 km

6	Drainage Khal	43 km
7	Ghat (Landing place)	3
8	Killa	1
9	Bazar	3
10	UP office	1
11	Deep tube wells for drinking purpose	12

4.10 Law and order situation

There is no Jotdars that influence the migration into the char. There are no violent prone groups in Sabuj Char, nor is there any internal conflict among the people living in the char. There is no police camp in the char. The law and order situation is being maintained from Sandwip. The communication between Sandwip and Sabuj Char is good. The overall law and order situation of the char area can be considered as good.

4.11 Accessibility of the char area

The char is located in the northern side of the Sandwip Island and is adjoining to the Sandwip main island. The char is accessible from Sandwip upazila headquarter by road. The char is also accessible from Lakhir ghat of Subarna char Upazila of Noakhali district by trawler/ engine boat. There is a regular trawler service from Lakhir Ghat to Sandwip via Urir char. A regular steamer and trawler/ speed boat service is under operation from Chittagong to Sandwip.

4.12 Institutional development

The settlement of migrated population has started recently and, as yet, very little institutional development has taken place in Sabuj Char. A NGO, Social Development Initiatives (SDI), has started their activities in Sabuj Char, with the establishment of their groups. They provide micro credit.

5. Analysis and scoring

In order to make the analysis as objective and transparent as possible, a system of relative weights for each of the twelve criteria has been adopted. The relative weights that have been applied are: land levels and stability-14%, probability of occurrence of natural disasters-6%, size of the area-9%, population and its density-10%, land ownership-10%, socio-economic situation-11%, performance of main sources of livelihood-7%, existing water management situation-7%, existing internal infrastructure-7%, law and order situation-7%, accessibility of the area-7% and institutional development-5%.

In the analysis, each of the chars under study has received a score from 0 to 10 (0 is not qualified for short listing and 10 is highly qualified) under each of the 12 criteria applied for the selection of a short list of chars/ cluster of chars. The score is then multiplied by the percentage of relative weight as mentioned above. This gives the final result for the criteria. The results of all the criteria for the area are added to come to the final score. The scores for Sabuj Char are given in Table 4 below:

Table 4: Scores received by Sabuj Char

Criteria	Score	Percent of relative weight	Final score (score X relative weight)	Remarks
Land levels and stability	3	14	42	
Probability of occurrence of natural disasters	4	6	24	
Size of the area	10	9	90	
Population and its density	10	10	100	
Land ownership	10	10	100	
Socio-economic situation	7.2	11	79.2	
Performance of main sources of livelihood	5.25	7	36.75	
Existing water management situation	7	7	49	
Existing internal infrastructure	8.4	7	58.8	
Law and order situation	6.3	7	44.1	
Accessibility of the area	2	7	14	
Institutional development	6.75	5	33.75	
		Total score	671.60	4th position

6. Conclusion and recommendation

In the comparative analysis, Char Sabuj is found as one of the top scoring chars among the 12 selected chars. However, considering the stability status (not yet very stable), It should be further debated whether the char should be taken up in the short list of three chars where feasibility studies will take place. Only to a limited extent interventions could take place (for instance land settlement, some internal infrastructure) on the stable parts of the char.

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Annex 5.5 Report on Char Zahiruddin

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1. Introduction

To identify suitable char areas (clusters of chars) for feasibility studies to be undertaken under CDSP IV, reconnaissance surveys were conducted in a long list of 12 selected chars under seven clusters. Char Zahiruddin is one of the chars under the long list of chars. It is located at 22.43^o latitude and 90.59^o longitude under Tazumuddin and Daulat Khan Upazilas of Bhola district (please see the map in the Annex 1).

2. Brief history of the Char

The char has emerged as a sedimentary char in the Meghna River roughly about 65 year back. There has been a conflict between Noakhali and Bhola districts on the boundary in the past. A magistrate from Tazumuddin of Bhola district worked to settle the dispute and the decision went in favour of Bhola. As a result, the people of char gave the name of the char after the name of the magistrate as Char Zahiruddin.

The Forest Department started activities in the char in the year 1974. An office was established in the year 1995. During the years 1996-1998 the char was under heavy erosion and lost about 2 km. But at present there is no erosion and the char is found stable. About 100 households from Tazumuddin Upazila of Bhola district migrated to the char in the year 1975 and started agricultural activities there for their livelihood.

3. Data collection and focus group discussion

Field surveys for gathering primary data were conducted in the 12 selected chars under the long list of chars including Char Zahiruddin. The main method applied for collection of information during the field survey was the focus group discussion (FGD). The number of focus group discussions in Char Zahiruddin was decided on basis of the size of the char and number of households settled in the char. In Char Zahiruddin five focus group discussions and collection of primary data were conducted in the last week of May 2012.

4. Description of the char as per criteria for selection

4.1 Stability and the land level of the char area

Stability

In the past the char was under erosion at the southern side, but at present there is no erosion. The focus group discussions conducted in Char Zahiruddin revealed that the

char is under accretion, having no erosion at any side of the char. The char is found to be stable.

Land level

A topographic survey (reconnaissance level) has been conducted by CDSP IV in Char Zahiruddin in the month of June 2012. It took about a week to complete the survey. The minimum land level of the char was found to be 3.50 m (PWD) and the maximum level 4.80 (PWD). The average land level was 4.15 m (PWD).

4.2 Probability of occurrence of natural disasters and exposure to the sea

The selected chars on the long list are all located in the central, dynamic part of the coastal zone of Bangladesh. Char Zahiruddin is one of them. The char is especially vulnerable to cyclonic surges and tidal waves. The situation can become particularly serious when they occur during full moon - and new moon period when the river water is at a higher level. In cyclone Sidre, the natural disaster that occurred in 2007, about 25 persons died. Hundreds of cattle (buffalos, cows and goats) died in Sidre as well.

4.3 Size of the char

The reconnaissance survey found that there are six Mouzas in the char. The survey revealed also that lands under five Mouzas were engulfed in the past by the river. As per the survey the overall area of char Zahiruddin was found to be 9,820 ha.

4.4 Population and population density

The total population of Char Zahiruddin is about 38,500 under 7,220 households. This gives an average household size of 5.3 persons. The density of population is about 392 per square km. About 70% of the char population migrated to the char from Tazumuddin, 10% from Daulat Khan, 10%, from Lalmohon and 10% from others area. All of them migrated to the char with the expectation of getting land for their livelihood.

4.5 Land ownership and land settlement possibilities

Total area under six Mouzas is about 24,259 acres (9,820 ha). A list of the existing Mouzas is given in Table 1 below. Khas land has been distributed to about 6,000 households with 1.00 acre to 1.50 acres each.

Table 1: Mouzas of Char Zahiruddin

Sl. No	Name of Mouza	Union	Upazila	Area (Acre) Source: Land settlement office)	Remarks
1	Char Zahiruddin (part I)	Malongchhara	Tazumuddin	1560.72	
2	Nishintapur	Malongchhara	Tazumuddin	238.00	
3	Char Zahiruddin-II	Sonapur	Tazumuddin	7500.60	
4	Sonapur	Sonapur	Tazumuddin	9569.72	
5	Char Nasrin	Sonapur	Tazumuddin	4550.25	
6	Hajeepur		Daulatkhan	840	Partly eroded in the past; at present no erosion
	Total			24,259	

4.6 Socio-economic situation

The char is a food deficit area. The greatest shortage occurs in the Bengali months of Ashar to Kartick (mid June to mid October). The average price of rice per kg just after harvesting of paddy in the month of Agrahayan (mid November to mid December) is about Tk.25.00. In the off-season/ period of food shortage it is about Tk. 28.00. In the previous year the average price of rice per kg after harvesting of paddy was about Tk. 35.00 and in the food shortage period the price was about Tk. 38.00.

There are a good number of educational institutions in the char. About 13 primary schools are in operation. There are two Madrasas for religious education. The types of houses people live in are tin-roofed and straw roofed. About 40% of households live in tin-roofed houses, while 50% households live in straw-roofed houses. The remaining 10 % have other types of houses, such as semi-pucca. The use of sanitary latrines is very low. This seems mainly due to the fact that the char goes under water during the high tide in full - and new moon period and as such people do not install sanitary latrine.

4.7 Performance of main sources of livelihood

The main professions of the char population are i) fishing 70%, ii) agricultural farming 25% and other professions about 5%. Aman paddy is the main crop in the char. A good number of rabi crops are being grown in the char. Intrusion of saline water in late March and early April in high tide during full moon and new moon is the main problem for rabi crops. The rabi crops grown are chili, groundnut, soybean and Khesari and sweet potato.

Also some sugarcane is grown. The main problem for the fishing community is the attacks by the pirates on the fishing trawlers in the river.

The wage rates vary according to types of work. The daily wage rate for agricultural labour with food is Tk250 to Tk300 per day. The wage rate per day for fishing labour is Tk350 to Tk400. In the char area the demand for labour in the Bangla month of Magh to Jaistha (mid January to mid June) is low. During this period the labours from the char are used to go to Noakhali, Chittagong and Dhaka for employment.

4.8 Existing water management situation

The char has no flood protection embankment. It is exposed to the river water. Since there is no water management structure in the char, the tidal water can enter into the natural drainage systems freely and submerges the area during rainy season, especially in full - and new moon periods. Rabi crops suffer from intrusion of saline water occasionally, mostly in late March. Due to enough drainage canals in the char there is normally no noticeable water logging in the char. A list of the major natural khals is shown in Table 2 below:

Table 2: Major Khals in char Zahiruddin

Sl. No.	Name of drainage Khal	Length (km)	Average top width (m)
1	Barishal Khal	3.50	25
2	Solaiman Majeer Khal	2.50	15
3	Kharir khal (Forest office No.2	2.00	10
4	Chitar doon	5.00	85
5	Khonkarer khal	2.50	25
6	Hojorer Khal	4.00	30
7	No-1 ward Khal	2.00	15
8	Hanif Beparir Khal	2.00	15
9	Batan khali khal	4.00	20
10	Masjider Khal	4.00	15
11	Shahjahan Miar khal	3.00	40
Total:		34.5 km	

4.9 Existing internal infrastructure

Some infrastructural development has already taken place in Char Zahiruddin. There are four all weather metallic roads with a total length of 17.50 km. Besides, there are also 16 earthen roads with a total length of about 46 km. For drinking purpose about 120

deep tube wells are installed of which 65 tube wells are usable. It is estimated that about 47% of the total households have access to safe drinking water. There is one cyclone shelter, one family welfare center and six markets. A summary of the infrastructure is shown in Table 3 below:

Table 3: Infrastructure/interventions of Char Zahirudin

Sl. No.	Name of infrastructure/intervention	Number	Remarks
1	Road (Pucca)	4(17.50 km)	
2	Earthen Road	16 (46 km)	
3	Cyclone shelter	1	
4	School	13	
5	Madrassa	2	
6	Masjid	46	
7	Bridge/Culvert	15	
8	Drainage Khal	11 (34.50 km)	
9	Ghat (Landing place)	10	
10	Killa	2	
11	Bazaar (Market)	6	
12	Family Welfare center	1	
13	UP Office (under construction)	1	
14	Range/ Bit office (Forest Department)	1	
15	NGOs working	5	
16	Usable deep tube well	65	There are also 55 unusable DTWs
17	Cluster Village	20	

4.10 Law and order situation

There are no Jotdars at present influencing the migration of people. In Char Zahiruddin there is no violent prone group and also there is no internal conflict among the char population. The noticeable issue is the bad law and order situation on the river. Pirates are roaming the rivers and frequently attack the fishermen and trawlers. They snatch away all belongings including the catch of fishes. There is neither a police Fari/camp nor a Coast Guard office in the char. During the reconnaissance survey, no report has been given about pirate attacks in Char Zahiruddin itself. Excluding the attacks by the pirates on the river, the law and order situation in Char Zahiruddin itself can be considered to be good.

4.11 Accessibility of the char area

Char Zahiruddin is accessible from Mirzakalu of Bhola district by trawler. It takes about three hours. Daily trawler service is available from Mirzakalu to Char Zahiruddin twice a day.

4.12 Institutional development

Compared with other chars, Char Zahiruddin has considerable institutional development. In the char five NGOs are active. These are i) Coast Trust, ii) Muslim Aid, iii) Rahim Afroz, iv) Grameen Shakti and v) Shrijoni-Bangladesh. Beside these active NGOs, there are two local community based organization (CBOs); they are i) Natun Bazaar Business Samitee, ii) Rickshaw Puller Samitee. No Union Parishad office has been established yet in the char. Very little activities are being implemented in the char by the Union Parishads.

5. Analysis and scoring

In order to make the analysis as objective and transparent as possible, a system of relative weights for each of the 12 criteria applied has been adopted. The relative weights that have been applied are: land levels and stability-14%, probability of occurrence of natural disasters-6%, size of the area-9%, population and its density-10%, land ownership-10%, socio-economic situation-11%, performance of main sources of livelihood-7%, existing water management situation-7%, existing internal infrastructure-7%, law and order situation-7%, accessibility of the area-7% and institutional development-5%.

In the analysis, each of the chars under study has received a score from 0 to 10 (0 is not qualified for short listing and 10 is highly qualified) under each of the 12 criteria applied for the selection. The score is then multiplied by the percentage of relative weight as mentioned above. This gives the final result for each of the criteria. The results of all the criteria for the area are added to come to the final score. The scores for Char Zahiruddin are given in Table 4 below:

Table 4: Score received by Char Zahiruddin

Criteria	Score received	Percent of relative weight	Final score (Col.2 XCol.3)	Remarks
Land levels and stability	10	14	140	
Probability of occurrence of natural disasters	4	6	24	
Size of the area	8	9	72	

Criteria	Score received	Percent of relative weight	Final score (Col.2 XCol.3)	Remarks
Population and its density	10	10	100	
Land ownership	1	10	10	
Socio-economic situation	7	11	77	
Performance of main sources of livelihood	4	7	28	
Existing water management situation	10	7	70	
Existing internal infrastructure	6	7	42	
Law and order situation	8	7	56	
Accessibility of the area	2	7	14	
Institutional development	4.25	5	21.25	
		Total:	654.25	5th position

6. Conclusion and recommendation

In the comparative analysis, Char Zahiruddin is found as one of the six top scoring chars among the 12 selected chars. It is recommended to include Char Zahiruddin as a cluster of chars in the short list of three, if it is combined with Teliar Char.

Char Development and Settlement Project IV

Bangladesh

Annex 5.6

Report on Char Kukri Mukri including char Patila

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1. Introduction

To identify suitable char areas (clusters of chars) for feasibility studies to be undertaken under CDSP IV, reconnaissance surveys were conducted in 12 selected chars that were included in a long list. Char Kukri Mukri (including Char Patila) is one of the chars under the long list of chars. It is located in Char Kukri Mukri Union of Char Fasson Upazila of Bhola district. The Char is about 45 km to the south of Char Fasson Upazila headquarter (please see map in the Annex-1).

2. Brief history of the char

According to the local people, Char Kukri Mukri is a more than hundred years old Island. During the focus group discussion some of the participants even claimed that it is an island of four hundred years old. It is rumored that Char Kukri Mukri is older than main Bhola island. In the history of Barisal, Char Kukri Mukri has been mentioned as an island where for a long time the Mug community was living.

3. Data collection and focus group discussion

Field surveys for gathering primary data were conducted in the 12 selected chars under the long list of char, including Char Kukri Mukri. The main method applied for collection of information during the field survey was the focus group discussion (FGD). The number of focus group discussions in Char Kukri Mukri was decided on the basis of the size of the char and the number of households settled there. In Char Kukri Mukri three focus group discussions were conducted by CDSP IV in the last week of May 2012 and primary data from the char were collected.

4. Description of the char as per criteria for selection

4.1 Land level and stability of the char area

The focus group discussions revealed that Char Kukri Mukri was under erosion at the north-east side of the char about four years ago. At present there is no erosion at any sides of the char. Hence, the char is now found to be stable.

4.2 Probability of occurrence of natural disasters and exposure to the sea

The selected chars on the long list are all located in the central, dynamic part of the coastal zone of Bangladesh. Char Kukri Mukri is one of them and is especially vulnerable

to cyclonic surges and tidal waves. The impact is particularly serious when they occur during full - and new moon period, when the river water level rises to a higher level.

During cyclones Sidre (2009) and Aila (2007), there were large scale damages to crops, livestock and properties in Char Kukri Mukri. Many people were wounded and it was reported that three people died in cyclone Sidre.

4.3 Size of the char

According to the focus group discussion conducted in Char Kukri Mukri the overall area of the char is estimated to be about 5700 ha (57 sq. km).

4.4 Population and population density

The total population of the char as per the reconnaissance survey is about 12,400 under 2,150 households. That gives an average household size of 5.78. The density of population is about 217 persons per sq. km. They migrated from Barisal (36%), Patuakhali (35%) and from Bhola (about 29%). All of them migrated to the char with the expectation of getting land for their livelihoods.

4.5 Land ownership and land settlement possibilities

The char has two Mouzas, with an area of about 5,900 acres (2,389ha) without forestation. The mouzas are i) Char Kukri Mukri with Jl. No. 122 having an area of about 2,900 acre (1,124ha) and ii) Char Patila with Jl. No. 134 having an area of about 3,000 acre (1,215 ha). As per the reconnaissance survey, most of the land has officially been settled, although accurate data were not available. As there is no sufficient khas land available for new settlement, it was suggested to implement other type of interventions, such as roads, cyclone shelters, coastal embankment, new DTWs etc. to improve the living standard of the people.

4.6 Socio-economic situation

The major crop of the char is Aman rice which is being harvested in the Bengali month of Agrahayan. Char Kukri Mukri is however a food deficit area. The greatest shortage occurs in the Bengali month of Chaitra to Kartick (mid March to mid November). The average price of rice in the current year after the harvest of paddy was Tk20.00 and in the food deficit months the price was Tk 21.00 per kg of rice. The price of rice per kg in the previous year after harvesting was Tk21.00 and in the off-season it was Tk23.00. The price of paddy just after the harvest was Tk 1000.00 per quintal (100 kg).

At present five primary schools are in operation in char Kukri Mukri. Two schools were established in 1980s, two in 1990s and one in the year 2000. The total number of teachers in these five schools is 20. The number of enrolled students is about 1050. There are four Madrasas in the char. Out of the four Madrasas, the Shahpur Dakhil Madrasa was established in the year 1910. About 40% of the households live in tin-roofed houses, 50% in straw roofed houses and the remaining 10 % live in other type of houses (semi-pucca etc).

4.7 Performance of main sources of livelihood

The main professions of the char population are agricultural farming (16%), fishing (76%), business (2%), service (1%) and others (about 5%). The main crop of the char is Aman paddy with an average yield of 856 kg per acre (2.11 MT per ha). In the dry season, a good number of crops are being grown, however on a limited scale, on relatively high land. These are chili, water melon, sweet potato, groundnut, sesame, mustard oil seed and khesari. These rabi crops have a low yield. They are regularly affected by saline water, especially in the later part of the winter season. The main problem for the fishing community is the attack by pirates on trawlers in the river. This is more or less common in the coastal area.

The average wage rate for the labour community is Tk. 200 to Tk. 250. The wage rate in the Bangla month of Ashar to Ashwin (July to September) is Tk300 to Tk350. The Bangla month of Boishak and Jaistha (mid April – mid May) is the lean period for labour, with little employment opportunities within the char. In this period, the labour community travels to Dhaka, Chittagong and Sylhet for employment.

4.8 Existing water management situation

The char is unprotected and is therefore exposed to flooding from the river. Since there is no embankment, nor any other water management infrastructure in the char, the tidal water from the river enters freely into the khal systems and submerges the low land area during high tides. A list of the drainage canals is provided in Table 1 below:

Table 1: List of drainage canals of char Kukri Mukri

Sl. No	Name of Khal	Length (km)	Average top width (m)
1	Patilar Dosh	7.00	15
2	Manurar Khal	6.00	15
3	Purba Bazar Shaitan Khalir khal	4.00	10
4	Purba Bazar Khal	3.00	12
5	Daiyer Khal	4.00	10

Sl. No	Name of Khal	Length (km)	Average top width (m)
6	Parir Khal	3.50	10
7	Bebajiar Khal	3.00	12
8	Amghachia Khal	2.00	8
9	Pech Khalir khal	1.00	5
10	Madhu Khali	1.00	5
	Total:	34.50 km	

4.9 Existing internal infrastructure

There is considerable infrastructure present in the char. For internal communication there are 12 earthen roads with a total length of 46 km. A list of major roads is given in Table 2 below:

Table 2: List of major roads in Char Kukri Mukri

Sl. No	Name of road	Length (km)	Type of road	Present condition of the road
1	Launch Ghat-Bura Gouranga road	10	Earthen	
2	Launch Ghat-dakatia Ghat road	6.00	Earthen	Good
3	Shahbaz Pur-Uttar Kuiuial road	5.00	Earthen	Good
4	Koral Para road	4.00	Earthen	Good
5	Sharif Para – Abdullah Pur road	3.00	Earthen	Good
6	Nabi Nagar main road	2.50	Earthen	Good
7	Hajeer road	2.00	Earthen	Poor
8	RasulPur main road	3.50	Earthen	good
9	Amin Pur- kakrail Masjid road	3.00	Earthen	Poor
10	Member Bari-Kakrail Masjid road	4.00	Earthen	Poor
11	Rasul Pur Pucca Masjid-Mollah Barir road	1.00	Earthen	Poor
12	Nari Nagar Chourasta-Rasul Pur road	2.00	Earthen	Poor
	Total:	46.00 km		

For safe drinking water, 71 deep tube wells have been installed in the char, out of which 51 are usable. About 53% of households have access to safe drinking water from these 51 good operating tube wells. The depth of these tube wells ranges from 700 feet (213 m) to 1000 feet (300m).

There are four Bazars in the char for selling and buying of commodities by the local people. Kukri Mukri Bazar is very old, established in 1900. A list of the Bazars is given in Table 3 below:

Table 3: List of Bazars in Kukri Mukri

Sl. No.	Name of Bazar	No. of Shops	Year of establishment
1	Kukri Mukri Bazaar	100	1900 (Very old)
2	West Market	10	1995
3	East Market	70	1990
4	Manura Bazaar	60	1999

There are four cyclone shelters established in the char. Two were constructed by Red Crescent and two by the government. All of the four cyclone shelters are usable. A list of the cyclone shelters is given below in Table 4.

Table 4: List of cyclone shelters

Sl. No.	Name of the cyclone shelter	Year of construction	Source of fund
1	Abdullah Pur	1992	Red crescent
2	Aminpur	1991	Red crescent
3	School Rasulpur	2010	GOB
4	School Aminpur	2007	GOB

About 400 solar panels have been installed in homesteads, schools, Masjids and shops. The Grameen phone network is operational in the char.

A summary of the infrastructure/ interventions of char Kukri Mukri is given in Table 5 below:

Table 5: Summary of the infrastructure/ interventions in Kukri Mukri

Sl. No	Name of infrastructure/intervention	No./Kilometer	Remark
1	Cyclone shelter	4	
2	School	5	
3	Madrassa	4	
4	Masjid	25	
5	Cluster village	4	
6	Road	12 (46 km)	
7	Culvert	3	
8	Natural drainage Khal	34.50 km	
9	Ghat (landing place)	3	
10	Killa	1	
11	Bazar (Market)	4	

Sl. No	Name of infrastructure/intervention	No./Kilometer	Remark
12	Community clinic	2	
13	UP office	1	
14	Post office	1	
15	Bit Office (FD)	1	
16	NGOs working in the char	3	
17	Total deep tube well for drinking purpose	71	20 unusable
18	Sanitary latrine	25	

4.10 Law and order situation

Concerning the law and order situation, there is neither a violent prone group in the char, nor is there any internal conflict among the char population. There are no jotdars or influential people having an influence on migration to the char. No police camp is established in the char. The police camp established in Aicha controls the law and order situation in the char. The overall law and order situation of the char at present seems to be good.

4.11 Accessibility of the char area

The char is located in a remote area. It takes about 4 hours by trawler from Char Fasson to Char Kukri Mukri. There is a daily engine driven boat service from Char Fasson to Char Kukri Mukri.

4.12 Institutional development

The focus group discussions reveal that there is some institutional development taking place in Char Kukri Mukri. Three NGOs: i) Coast Trust, ii) Muslim Aid and iii) Grameen Shakti are working in the char. The Coast Trust is working on micro-credit, Muslim Aid on health and Grameen Shakti on social services. The survey also found a community based organization under the name Business Community Samitee, established in the year 2010.

The Char Kukri Mukri Union Parishad office has been established in Char Kukri Mukri in the year 1992 under Char Fasson Upazila. The UP is moderately active in the char. The activities being performed by the UP are public service, information exchange with the population, provision of computer facilities, birth registration, publication of results of examinations etc.

5. Analysis and scoring

In order to make the analysis as objective and transparent as possible, a system of relative weights for each of the 12 criteria applied has been adopted. The relative weights that have been applied are: land levels and stability-14%, probability of occurrence of natural disasters-6%, size of the area-9%, population and its density-10%, land ownership-10%, socio-economic situation-11%, performance of main sources of livelihood-7%, existing water management situation-7%, existing internal infrastructure-7%, law and order situation-7%, accessibility of the area-7% and institutional development-5%.

In the analysis, each of the chars under study has received a score from 0 to 10 (0 is not qualified for short listing and 10 is highly qualified) under each of the 12 criteria applied for the selection. The score is then multiplied by the percentage of relative weight as mentioned above. This gives the final result for the criteria. The results of all the criteria for the area are added to come to the final score. The scores for Char Kukri Mukri are given in Table 6 below:

Table 6: Scores received by Char Kukri Mukri

Criteria	Score received	Percent of relative weight	Final score (Col.2X Col.3)	Remarks
Land levels and stability	10	14	140	
Probability of occurrence of natural disasters	3	6	18	
Size of the area	6	9	54	
Population and its density	10	10	100	
Land ownership	1	10	10	
Socio-economic situation	7.2	11	79.20	
Performance of main sources of livelihood	5.5	7	38.50	
Existing water management situation	10	7	70	
Existing internal infrastructure	4.6	7	32.2	
Law and order situation	6.3	7	44.1	
Accessibility of the area	2	7	14	
Institutional development	4.25	5	21.25	
		Total:	621.25	6th position

6. Conclusion and recommendation

In the comparative analysis, Char Kukri Mukri is found as one of the top six scoring chars among the 12 selected chars. It is a stable char having no erosion at present. It can be included in the short list of chars for feasibility studies under CDSP IV if it is decided that the project expands to the western part of the central delta and that a lower priority is attached to the possibilities for land settlement.

Annex 6

PROCEEDINGS OF 'WORKSHOP ON SHORT LISTING OF CHAR AREAS FOR FEASIBILITY STUDIES'

Dhaka, Spectra Convention Centre, 19th September 2012

I. Participants:

Chairman: Mr. Salim Bhuiyan, Chief Planning, BWDB

Chief Guest: Mr. K.A.M. Shahiduzzaman, Director General BWDB

Special Guests: Mr. Mollah Ruhul Alam, Additional Director General (Planning), BWDB; Mr. Martin Bos, First Secretary Water Sector, Embassy of the Kingdom of the Netherlands;

38 Participants from the side of implementing agencies, NGOs, knowledge based institutes, international organisations and related projects.

II. Programme:

- Recitation from the Holy Quran
- Welcome address Project Coordinating Director, CDSP IV
- Speech on objectives of the workshop, Institutional and Planning Adviser (short term), CDSP IV
- Introduction to CDSP IV, Team Leader, CDSP IV
- Tea break
- Presentation on "Short listing of char areas for feasibility studies", Study Coordinator (short term), CDSP IV
- Open discussion
- Address by Special Guest, First Secretary Water Sector, EKN
- Address by Special Guest, ADG (Planning), BWDB
- Address by the Chief Guest, Director General BWDB
- Closing address by Chair person.

III. Presentations:

After the official opening of the workshop by the Chairman, the Project Coordinating Director of BWDB, CDSP IV started his Welcome Address with a brief history of land reclamation in the central coastal zone. He continued with summarizing the subsequent CDSP projects and highlighted the fact that in CDSP IV, IFAD joined as a development partner. He stressed the importance of feasibility studies in the transition from one phase to the next. He explained that under CDSP IV three feasibility studies are planned and sketched the overall selection process.

The (short term) Planning and Institutional Adviser of the project elaborated further on the negative consequences of erosion on households and the opportunities that land accretion brings. He mentioned the feasibility studies done in previous phases and the fact that all have indeed been implemented in a subsequent phase. As objectives of the workshop he identified: 1. initiating the process at national level of considering the contents and shape of a future char development programme, 2. informing a wider audience of the work that has been done as a matter of accountability and transparency, 3. to solicit the opinion and views of all participants on both the process of selection of chars for feasibility studies and the outcome of that process.

The Team Leader of the Technical Assistance team, CDSP IV, gave a comprehensive presentation of the activities in the project, indicating the progress of each of them.

After the tea-break, the Coordinator of data collection and analysis (reconnaissance surveys and subsequently processing of collecting information), presented an overview of the process of selection of chars to be taken up in the long list and in the short list. He concluded with the results of the selection process, namely three chars: 1. the cluster of Char Moksumul Hakim/ Char Alauddin /Samitir Char in Noakhali district; 2. Dhal Char/ Kola Toli in Noakhali district; 3. Teliar Char in Lakshmipur district.

IV. Open discussion:

After the Chairman had declared that the floor was open for comments and questions, a lively discussion developed, with contributions from many participants. The contents of the observations from the audience and the response from the project team have below been summarized under seven headings: 1. Remarks on selected criteria and weights, 2. Remarks on the information provided in the tables, 3. Remarks on particular chars, 4. The number of chars to be considered, 5. Operation and maintenance (O&M), 6. Climate change and 7. Development of a regional plan.

For some subjects further comments from the project side are provided and clearly indicated below. These comments were not made during the workshop.

- 1. On selection criteria and weights

Remarks from the audience:

- Agricultural potential should have been included as a selection criteria
- The same applies to other livelihood opportunities
- The probability of future drainage congestion must be taken into consideration while selecting chars for feasibility studies
- Since the likelihood of natural disasters is taken as one of the three criteria for the long list and also is used for the short list, the attached weight of 6% seems too low
- In addition, “natural disaster” should have been defined more specific
- The selection should apply the criteria of landownership/ availability of khas land more flexible
- The percentage of poor people should have been included as a criteria
- The project is following a systematic and transparent approach, which is appreciated.

Response from project team during the workshop:

- One of the additional nine criteria for short listing was “performance of sources of livelihood”, which included agricultural production and other livelihood sources of employment. A realistic assessment of the potential of agricultural production and other livelihood opportunities can only be made in a feasibility study.
- Statements on the probability of future drainage congestion and solutions to this problem can not be expected from a short reconnaissance survey. That has to be done in a study at feasibility level.
- The fact that the likelihood of natural disasters was one of the three criteria does not automatically mean that it should receive a high percentage as weight. One of the reasons it was taken as criteria was that secondary information was readily available.

- The availability of khas land was given a relatively high priority because of the fact that distribution of khas land to landless households always has been a core feature of the project (although in CDSP I and II activities were undertaken to improve drainage in already existing polders, where all or nearly all land had already been settled). The issue whether the future of CDSP is a char development programme with relatively less emphasis on land settlement, is a fair point of discussion for the concerned authorities.
- On poverty levels: the socio-economic situation was taken as one of the criteria for the short list, including food shortages, housing and access to drinking water, health and education.

Further comments from the project side:

- Since the whole area is vulnerable for natural disasters, this criterion is not really a discriminating factor and could have been omitted.
- The comments on the transparency of the applied system of selection are appreciated. In hindsight the system itself (selection criteria, scoring, weights) could have been the subject of a small workshop before the reconnaissance surveys took place.

- 2. On the information provided in the tables

Remarks from the audience

- The population of Dhal Char (Hatiya/ Monpura) is more than indicated in the table.
- The actual size of Dhal Char/ Char Fasson and of Kukri Mukri is bigger than reflected in the table, with a view on the area that has been planted with forest in both chars.
- Chars which, according to the information provided, are without population, are actually inhabited to some extent.
- A map should be given showing for each char under consideration the population and size of the char, in order to have a quick overview.

Response from project team during the workshop:

- The population figures provided in the table were the result of Focus Group Discussions in Dhal Char and will be checked again during future visits.
- In the size of Dhal Char/ Char Fasson and Char Kukri Mukri as given in the table, the forested area was not included. This will be clarified in the final version of the Technical Report.
- There is indeed some population present in Moulavir Char and Soner Char, but only in the range of 200 to 250. Hence the score of zero in the table.
- The suggested map will be taken up in the final version of the Technical Report.

- **3. On particular selected chars**

Remarks from the audience:

- There is erosion at the north east side of Teliar Char.
- The government has planned an Economic Zone in Char Moksumul Hakim.
- There is a border issue on northern side of Char Moksumul (Companiganj Upazila).
- There is a case pending in a border dispute between Bhola and Hatiya (Dhal Char and Moulavir Char).

Comments from project side:

- Indeed, erosion was observed in Teliar Char; hence the score for Teliar Char on stability was 5.
- These valuable observations will be verified and taken into account in any further activities with regard to the selection process for feasibility studies.

- **4. On considering more chars than the three that are selected**

Remarks from the audience:

From several sides the suggestion was made to consider more chars than the top three chars of the short list. Chars that were mentioned to be (re)considered are:

- Char Kukri Mukri
- Dhamar Char (near Nijhum Dwip)
- Jahazer Char.

Response from project team during the workshop:

- DG BWDB informed the workshop that for the protection of Char Kukri Mukri a separate project is being considered.
- Dhamar Char is still regularly sub-merged and was therefore not taken up in the long list.
- Jahazer Char is still reserved forest area and regularly submerged, and was therefore excluded from the long list. It could however be considered as soon as the status of the char changes.

Further comments from project side:

- It is the view of the project team that in case the issue of being an Economic Zone is resolved, a feasibility study for Char Maksumul Hakim can be taken up. The team further recommends that for the other four chars in the top five of the long list a more elaborate survey is conducted during the next dry season (2012/ 2013). On the basis of the results of that survey, a decision can be taken for the remaining feasibility studies. The chars in question are: Dhal Char in Hatiya, Teliar Char (with special attention for its stability), Char Zahiruddin and Char Kukri Mukri (with special attention for the contents and progress of the separate protection scheme by BWDB).

- **5. On operation and maintenance (O&M)**

Remarks from the audience:

- The performance with regard to O&M in previous CDSP phases should be evaluated.
- A budget for emergency O&M should be included in a new project.

Comments from project side:

- CDSP has and still is monitoring the performance of Water Management Organisations in previous CDSP areas. The monitoring includes the O&M performance of all involved parties (BWDB, WMO, Local Government). Results can be found in CDSP reports.
- A budget line for emergency O&M in the new project will be considered.

- **6. Climate change**

Remarks from the audience:

- Take the impact of climate change into account while designing structures for the new project.

Comment from project side:

- This is indeed a very valid point and will certainly be incorporated in the Terms of Reference for the feasibility studies.

- **7. Development of a Master Plan or Regional Plan for the middle delta**

Remarks from the audience:

- The present approach is piecemeal; it would be better to prepare a Master Plan for the central part of the delta and plan interventions based on such a plan
- If a medium to long term regional development plan is developed, Development Partners can be approached to support the implementation of the plan in a programmatic manner.

Comment from project side:

- The idea of Regional Plans is promoted in the National Water Management Plan. The NWMP identifies the Meghna Estuary as one of the planning units. A regional plan for the central part of the coastal zone can be seen as an elaboration of the NWMP. The issue is valid and should be discussed by the competent authorities.

VI. Closing speeches

The First Secretary EKN appreciated the fact that CDSP had been successful since its inception in 1994, as well as the progress in CDSP IV. He assured the audience of the continued interest from the Netherlands in char development programmes. He continued with a presentation on Blue Gold and the Delta Plan. Blue Gold is a new programme located in Pathuakhali-, Khulna- and Satkhira districts. It intends to cover 150,000 households on 160,000 hectares of land. Innovative solutions to water related problems are a part of the activities. The Bangladesh Delta Plan 2100 will be developed in the 2013-2015 period. It is a long term vision, indicating delta priorities and challenges. The Netherlands will provide funding and expert assistance for the development of the plan.

Additional Director General (Planning), BWDB, expressed his appreciation for the work done and for the discussions during the workshop. He requested attention for the issue of a budget for emergency O&M in any new char development programme.

The Director General BWDB looked back at the history of CDSP. He expressed his gratitude towards the Netherlands government and IFAD for the support for CDSP IV. He highlighted the need of taking the

impact of climate change into account in the upcoming feasibility studies, especially with regard to design parameters of water management structures.

The Chairman requested the project to consider more chars than the three that were selected for the short list. He thanked all participants for being present and for their valuable contribution in the discussions during the workshop.