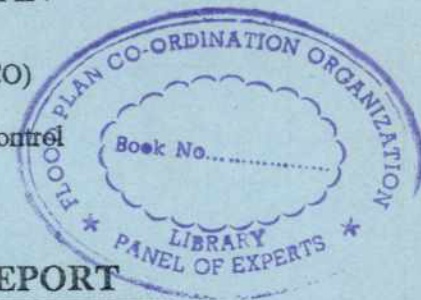


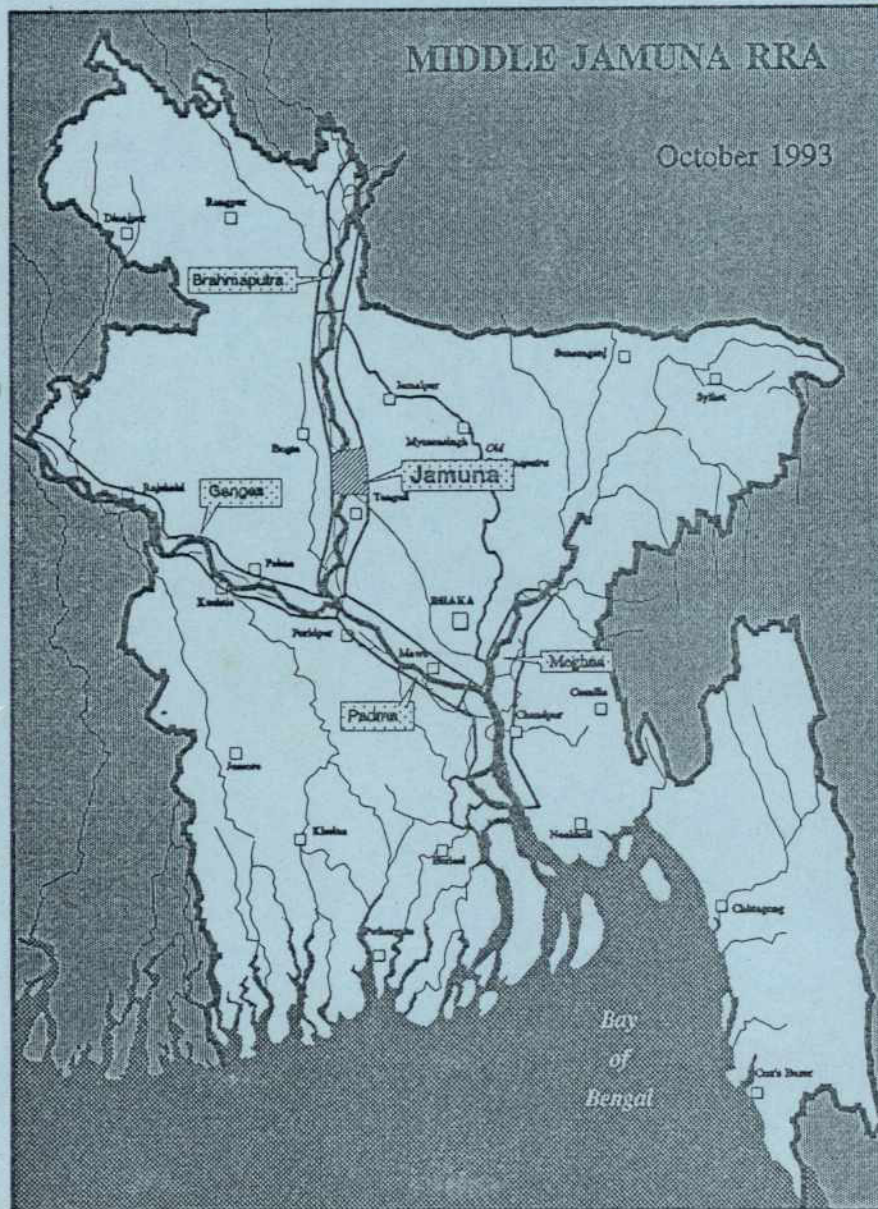
Call - 549  
FAP-16

## BANGLADESH FLOOD ACTION PLAN

Prepared for  
The Flood Plan Coordination Organization (FPCO)  
of the  
Ministry of Irrigation Water Development and Flood Control



### CHARLAND STUDY SUPPORTING REPORT



Environmental Study (FAP 16)  
Geographic Information System (FAP 19)

 **ISPAN**

IRRIGATION SUPPORT PROJECT FOR ASIA AND THE NEAR EAST  
Sponsored by the U.S. Agency for International Development

BANGLADESH FLOOD ACTION PLAN

**CHARLAND STUDY SUPPORTING REPORT:  
MIDDLE JAMUNA RRA**

**ENVIRONMENTAL STUDY (FAP 16)  
GEOGRAPHIC INFORMATION SYSTEM (FAP 19)**



Prepared for

The Flood Plan Coordination Organization (FPCO)  
of the  
Ministry of Irrigation Water Development and Flood Control

October 1993



**IRRIGATION SUPPORT PROJECT FOR ASIA AND THE NEAR EAST**  
Sponsored by the U.S. Agency for International Development



## TABLE OF CONTENTS

TABLE OF CONTENTS	iii
TABLES	iv
FIGURES	v
PREFACE	vii
ACKNOWLEDGEMENTS	viii
GLOSSARY	ix
EXECUTIVE SUMMARY	xiii
Chapter 1 INTRODUCTION	1-1
1.1 Background to the Study	1-1
1.1.1 History	1-1
1.1.2 The Charland Study	1-2
1.2 Methods	1-2
1.2.1 RRAs	1-2
1.2.2 Field Method	1-2
1.3 Introduction to the Study Region	1-4
1.4 Focus Mauzas	1-7
1.5 Profile of the Region	1-9
1.5.1 Physical Description	1-9
1.5.2 Patterns of Erosion and Accretion	1-9
1.5.3 Population and Infrastructure	1-9
NOTES	1-11
Chapter 2 SOCIOECONOMIC ORGANIZATION	2-1
2.1 Overview	2-1
2.2 Settlement Patterns and House Types	2-1
2.2.1 House Types	2-1
2.2.2 Homestead Resources	2-2
2.2.2.1 Vegetation	2-2
2.2.2.2 Cooking Fuels and Drinking Water	2-2
2.3 Occupations and Income Sources	2-3
2.4 Education	2-4
NOTES	2-5
Chapter 3 CHANGES IN LAND AND SETTLEMENT	3-1
3.1 The Impact of Erosion and Accretion on Mauza Populations	3-1
3.1.1 Uthuli Settlement	3-2
3.2 Land Rights	3-4
3.3 Social Organization and Crisis Response	3-6

NOTES	3-8
Chapter 4 FLOOD EXPERIENCE	4-1
Chapter 5 AGRICULTURE	5-1
NOTES	5-6
Chapter 6 LIVESTOCK	6-1
NOTES	6-2
Chapter 7 FISHING	7-1
NOTES	7-1
Chapter 8 MARKETS, TRADE, AND COMMUNICATIONS	8-1
8.1 Accessibility of Administrative Centers	8-4
8.2 Boat Ownership	8-5
NOTES	8-5
Chapter 9 DIET, HEALTH, AND SANITATION	9-1
9.1 Diet	9-1
9.2 Diseases and Health Care	9-1
NOTES	9-2
Chapter 10 LOCAL PERCEPTIONS OF CHAR LIFE	10-1
10.1 Ideas About Problems and Their Solutions	10-2
NOTES	10-3
Chapter 11 CONCLUSIONS	11-1
NOTES	11-3
REFERENCES	R-1

## TABLES

Table 1.1	Focus Mauzas	1-8
Table 1.2	Physical Description of the Study Region	1-9
Table 1.3	Distribution of Land Types in Study Region Mauzas	1-9
Table 1.4	Age of Char and Duration of Vegetation, Cultivation, and Settlement in the Study Region	1-10
Table 1.5	Population of RRA Study Region	1-10
Table 1.6	Infrastructure and Facilities of Inhabited Mauzas in the Study Region	1-11
Table 2.1	Distribution of House Types, by Mauza	2-2
Table 2.2	Main Occupations of Households in the Study Region	2-3
Table 3.1	Major Erosion Events, Population Displacement, and Losses	3-2
Table 3.2	Major Out-Migrations: Number of Households and Reasons for Destination Choice	3-3
Table 3.3	Major Accretion Events, In-Migration	3-5
Table 4.1	Flood Patterns	4-1
Table 4.2	Sheltering Strategies Used During Flooding and Monsoon	4-2
Table 4.3	Radio Warning Usefulness, 1988 Flood	4-2
Table 4.4	Household Flood Level and Damage in 1988	4-3
Table 4.5	Measures Taken to Mitigate Flood Damage During 1988 Flood	4-4
Table 5.1	Percentages of High, Medium, and Low Land and Seasonal Inundation Depth	5-1



Table 5.2	Land Use Percentages by Mauza	5-2
Table 5.3	Cropping Intensity, by Mauza	5-2
Table 5.4	Cropping Patterns of Study Mauzas	5-4
Table 5.5	Land Prices, Mortgage and Rental Rates	5-5
Table 6.1	Livestock Population	6-2
Table 8.1	Markets Used by Residents of Study Mauzas	8-2
Table 8.2	Average Market Prices of Selected Commodities	8-1
Table 8.3	Accessibility of Government Offices in Survey Area by Char Type	8-4
Table 8.4	Boat Ownership by Char Type	8-5

## FIGURES

Figure 1.1	Charland Study Location	1-3
Figure 1.2	Charland Classification	1-4
Figure 1.3	Study Area Base Map	1-5
Figure 1.4	Location of RRA Study Mauzas	1-6





## PREFACE

This report is one in a series of reports covering the immediate riverine lands of the major rivers of Bangladesh—the Jamuna, Ganges, Padma, and Meghna. Riverine charlands are defined in this study as areas frequently subject to erosion and accretion within and adjacent to the main rivers of Bangladesh and unprotected by embankments. This report presents the results of a rapid rural appraisal designed to provide social and economic information to support the inventory of population and resources in the charlands of the middle reach of the Jamuna River. The study was carried out by ISPAN under Flood Action Plan Supporting Studies FAP 16 (Environmental Study) and FAP 19 (Geographic Information System).

The full set of reports is shown in the table below.

Overview Reports	Inventory Reports	Supporting Reports
Summary Report		
Socioeconomic Overview		
	The Dynamic Physical and Human Environment of Riverine Charlands: Brahmaputra-Jamuna	Upper Jamuna (Brahmaputra) RRA <i>Middle Jamuna RRA</i>
	The Dynamic Physical and Human Environment of Riverine Charlands: Meghna	Upper Meghna RRA Meghna Confluence RRA
	The Dynamic Physical and Human Environment of Riverine Charlands: Padma	Padma RRA
	The Dynamic Physical and Human Environment of Riverine Charlands: Ganges	Ganges RRA
	Charland Flood Proofing	

## ACKNOWLEDGEMENTS

The production of this report, the result of a team effort involving many of the staff of FAP 16, was overseen by Dr. Keith Pitman, Chief of Party, ISPAN.

The study was jointly coordinated by Dr. Mustafa Alam and Dr. Suzanne Hanchett. It involved very intensive fieldwork under rather difficult circumstances, and those who performed this work are gratefully acknowledged. The contents of the report are based primarily on information obtained from people living in the charlands, all of whom were extremely helpful in patiently providing the necessary information. Interviews were also held with government officials and NGO field workers. The cooperation of all these participants is also gratefully acknowledged.

We are grateful to the Flood Plan Coordination Organization and to its Panel of Experts for providing overall direction to this study.



## GLOSSARY

acre	-	Acre = 0.4047 ha
aman	-	Late monsoon season paddy planted before or during the monsoon and harvested November-December
amin	-	Land surveyor
arat	-	Wholesale shop
aratdar	-	Wholesale trader with warehouse
aus	-	Early monsoon paddy planted in March-April and harvested in June-July
B. aman	-	Broadcast aman paddy, usually grown in deeper water
bangsha	-	Lineage-mates
BARC	-	Bangladesh Agricultural Research Council
bari	-	A homestead, usually consisting of more than one structure arranged around a central common area
BBS	-	Bangladesh Bureau of Statistics
BDR	-	Bangladesh Rifles
beel	-	An area of open water away from a river
bhatiya	-	People from downstream
BIDS	-	Bangladesh Institute of Development Studies
bigha	-	A local unit of area most commonly equalling 0.33 acre or 0.14 ha
bir	-	Stable
boro	-	Dry season paddy transplanted in December-January and harvested in April-May
BRAC	-	Bangladesh Rural Advancement Committee
BTM	-	Bangladesh Transverse Mercator (map projection)
BUET	-	Bangladesh University of Engineering and Technology
bustee	-	Slum
BWDB	-	Bangladesh Water Development Board
catkin grass	-	<i>Saccharum</i> spp. grasses that are prevalent in the charlands
chaura	-	Original settlers in the Ganges char areas
china	-	<i>Panicum miliaceum</i> , a variety of millet
chowki	-	Bed/platform
cumecs	-	Cubic meters per second
dacoit	-	Bandit
dal	-	Any of a variety of pulses (lentils); a high-protein food staple usually eaten with rice
decimal	-	Unit of area equal to 0.01 acre
denga	-	Land near a river
desh	-	State
deshi	-	Original settlers in Ganges char area
DEM	-	Digital elevation model
dhaincha	-	<i>Sesbania aculeata</i> , a nitrogen-fixing plant used as live fencing, fuel, and building material
diara	-	The low bank of a river
district	-	A large administration unit under the authority of a Deputy Commissioner, now known as a zila
doba	-	Submerged
EIA	-	Environmental Impact Assessment
FAP	-	Flood Action Plan

FCD/I	-	Flood Control and Drainage or Flood Control, Drainage, and Irrigation
<i>fitkiri</i>	-	Alum
FPCO	-	Flood Plan Co-ordination Organization
FWC	-	Family Welfare Centre
GIS	-	Geographic Information System
GPS	-	Global Positioning System
<i>goala</i>	-	Person trading in dairy products
<i>gur</i>	-	Locally produced molasses
<i>gushti</i>	-	Lineage-mates
<i>haor</i>	-	Deeply flooded basin of NE Bangladesh
<i>hat</i>	-	Periodic market
hectare (ha)	-	Hectare = 2.4711 acres
<i>hogla</i>	-	A bulrush ( <i>Typhus angustata</i> ) used for making mats
HSC	-	Higher Secondary Certificate
HTW	-	Hand tubewell
HYV	-	High Yielding Variety
ISPAN	-	Irrigation Support Project for Asia and the Near East
<i>jangal</i>	-	Ground cover shrubs used for fuel and as herbs
<i>jhau</i>	-	Tamarisk bush used as fuel and an herb
<i>jotedar</i>	-	Landlord
JPPS	-	Jamalpur Priority Project Study
<i>kabiraj</i>	-	Traditional healer
<i>kaisha</i>	-	A variety of catkin grass ( <i>Saccharum spontaneum</i> ) giving three cuttings a year
<i>kani</i>	-	Local unit of measure equal to .13 ha (.33 acres)
<i>karati</i>	-	Saw operator
<i>kash</i>	-	<i>kaisha</i>
<i>kayem, kayemi</i>	-	Permanent, old, or established
<i>kaon</i>	-	Fox-tail millet
<i>khas</i>	-	Publicly owned
<i>kheya</i>	-	Local boat landing point
<i>khal</i>	-	A drainage channel or canal either natural or man-made
<i>kharif</i>	-	Summer/wet season
kilogram (kg)	-	Kilogram = 1.11 sheer
kilometer (km)	-	Kilometer = 0.625 miles
<i>kutchra</i>	-	Flimsy construction of a temporary nature, in the chars usually of grass, bamboo, straw, or similar materials
<i>lathiyal</i>	-	A stick-wielding private army employed to carry out the will of a locally powerful leader
<i>macha</i>	-	A raised platform
<i>mashkalai</i>	-	A type of pulse (lentil); see <i>dal</i>
<i>matbar</i>	-	Leader of the local community
maund	-	A unit of weight, 1 Maund = 40 sheer = 37.5 kilograms
mauza	-	A village revenue collection and cadastral mapped unit
MCSP	-	Multipurpose Cyclone Shelter Program
mile (mi)	-	Mile = 1.6 kilometers
MPO	-	Master Plan Organization (of Ministry of Irrigation Water Development and Flood Control), now called WARPO (see below)
MSS	-	Multi-Spectral Scanner (Landsat satellite sensor)





<i>musur</i>	-	A type of pulse (lentil); see <i>dal</i>
<i>nara</i>	-	Straw
NGO	-	Non-Government Organization
PACT	-	Private Agencies Collaborating Together
<i>paiker</i>	-	Wholesale trader
<i>para</i>	-	Neighborhood
PoE	-	Panel of Experts (of FPCO)
<i>pourashava</i>	-	a municipality, usually the urban center of a district
<i>pucca</i>	-	Sturdy construction of a permanent nature, usually of such materials as brick, concrete, or corrugated iron sheets
<i>rabi</i>	-	Winter/Dry Season
RDRS	-	Rangpur Dinajpur Rural Service (an NGO)
REIS	-	Riverbank Erosion Impact Study
return period	-	average interval in years between floods of a given magnitude
RRA	-	Rapid rural appraisal
<i>sadar</i>	-	The urban core (administrative headquarters town) of a thana or district
<i>salish</i>	-	local informal court
<i>samaj</i>	-	Society, community; a formal arrangement between members of a community whereby each member has certain rights and privileges
<i>sarik</i>	-	Lineage-mates
SCI	-	Service Civil International (an NGO)
<i>shabuk</i>	-	Ancient
sheer	-	A unit of weight = 1/40 maund = 0.94 kg
<i>shon</i>	-	A variety of grass ( <i>Imperata cylindrica</i> ) giving one cutting a year; also a generic term for thatching grass
SPARRSO	-	Space Research and Remote Sensing Organization
SPOT	-	System Pour Observation de la Terre
SRDI	-	Soil Resources Development Institute
SSC	-	Secondary School Certificate
<i>tahsil</i> office	-	Local land record and survey office
Taka (Tk.)	-	Bangladesh currency, US\$ 1 equalled approximately Tk. 40 in late 1992-early 1993
T. aman	-	Transplanted aman paddy
thana	-	A sub-division of a zila, or district
<i>til</i>	-	Sesame ( <i>Sesamum indicum</i> )
<i>tishi</i>	-	Linseed
TM	-	Thematic Mapper
ton	-	An imperial ton = 1,016 kg
union	-	Sub-division of a thana
upazila	-	Previous name for a thana (subdivision of a zila or district)
<i>ustha</i>	-	Bitter gourd ( <i>Momardica charantia</i> )
<i>uthuli</i>	-	An informal contract between a landholder and a temporary migrant, under which the migrant is allowed to shelter on the landowner's property in exchange for labor services
WARPO	-	Water Resources Planning Organization
<i>zamindar</i>	-	Landlord
zila	-	A large administration unit formerly known as a district

27





## EXECUTIVE SUMMARY

The chars and mainland adjacent to the main rivers are prone to the twin hazards of floods and erosion, which destroy crops, homesteads, and land, and bring death and suffering to their inhabitants. This rapid rural appraisal (RRA) investigated social and economic conditions in an area of island chars and nearby mainland (including mainland separated from adjoining areas by secondary channels) in the Middle Jamuna River.

The study found that the economy of the charlands examined was almost wholly dependent on agriculture, with fishing and livestock rearing playing a very limited role in the area. Despite the highly unstable nature of the Jamuna chars, a high proportion of the charland (65 percent) was found to be vegetated or cultivated. The vast majority of settlements, however, are of a temporary sort, with most people living in hastily constructed houses of straw.

The instability of these chars is also reflected in their lack of infrastructure and public facilities such as schools and medical centers, which were almost entirely absent in island chars and only slightly better in attached chars.

Erosion, accretion, and flooding are major factors in the lives of the middle Jamuna charland dwellers. Such events are the main reason for the temporary nature of the charland settlements. People were found to have moved anywhere from five to 33 times in their lives as a result of destructive river action. Migration is not the only effect of such events, however. Flooding can destroy houses and family assets. Erosion affects land prices, depressing the value of land in the chars, which is subject to widespread sand carpeting and low fertility. Accretion can be both a source of solace and distress when competing claims erupt in violence. In such an unstable climate, many people are forced to sell family assets to survive, and repeated experiences of flooding or erosion can send a family's economic standing into a perpetual downward spiral.

In addition to adjusting their lives to changing circumstances and the whims of the river, the charland dwellers of the middle Jamuna have a comparatively strong social structure centered in the *samaj*, or society. The *samaj* is not only a source of help in times of trouble, it is probable that conflicts within or between *samajes* play a role in population displacement. If char society is somehow amicable, then, this is partly because those who remain within it are those who agree to the terms and conditions of the local elite. Ownership of land is not a clear determinant, but attachment to some patron who does own land may be. The people remaining in the chars, therefore, are those who have survived socially as well as physically.

People who move around from one char to another when erosion hits generally stay within a group that protects and supports them. This group may be a *samaj* or some part of one; or it may be a group of patrilineally related families. The importance of being "interdependent" with other families was mentioned several times in this RRA team's interviews. The interdependence is of the sort that demands great loyalty and much hard work of all members, even extending to risk of life, as groups move among chars, dismantling and reconstructing settlements, negotiating land tenure arrangements, working for pay, and sometimes fighting with other groups. But the reward for this commitment is a great one—a near guarantee of survival, as much as this difficult way of life will allow.

The central Jamuna area around Kazipur is an area that has seen violent conflict over emergent lands, much of this conflict having been documented in the writings of M.Q. Zaman, a former member of the REIS team. Zaman's thesis is that strong patrons and *samaj* organizations are able to dominate char areas because the weakness of formal government structures leaves a power gap. The strengths of local society allow for disputes to be handled within the chars themselves, with minimal recourse to appeals to government officials. People

26  
discussing this process with the RRA team, however, did not say it was especially amicable; in fact, several, including some of the patrons themselves, described a situation in which the power of the patrons over land was so complete that there was little point in disputing their decisions, although some would have wished to do so. A field-level ministry official of the Land Office himself pointed out that a government surveyor would not be allowed into some chars to measure newly accreted (thus government-owned) lands; and in fact the responsible government agency was entirely unable to enforce national laws affecting disposition of charlands.

The most problematic aspect of the current situation in the active Jamuna chars is the nearly total inability of the government—in Bhuapur as elsewhere—to enforce laws that grant newly accreted charlands to landless people. Whatever efforts the government makes are easily thwarted. For example, one large landowner of Bhuapur area told a team member that, "We are united" in undermining auctions of lands. If there is a government auction of some lands on which a local patron has an interest, no one will bid on them. If they do, he explained, "They will be beaten". This is not large-scale violence, but there is a well understood potential or actual physical force supporting the maneuvers of people in power. And apparently this force is countered by no police or other governmental opposition.



## Chapter 1

### INTRODUCTION

#### 1.1 Background to the Study

##### 1.1.1 History

The original design of the Flood Action Plan (World Bank, 1989) included among its components a socioeconomic study of the active floodplains of the Brahmaputra-Jamuna, Ganges, Padma, and Meghna rivers. The active floodplain was defined at that time as areas within the main river channels and nearby areas of mainland, both of which are frequently subject to erosion and accretion and cannot be protected from floods. The aims of the active floodplain study were to:

- assess present agricultural practices, settlement patterns, and disaster responses;
- estimate the number of affected households living on chars (mid-channel islands created by accretion) and within a short distance of the riverbanks;
- estimate the number of households living on existing embankments; and
- prepare guidelines to be used in feasibility studies to ensure that in project planning full account is taken of the active floodplain populations.

As the detailed terms of reference (TOR) of FAP 14, the Flood Response Study, were being drawn up by the government of Bangladesh and finalized with donor agencies, it became apparent that the intended study would not immediately be possible. A more general study first needed to establish—for the full range of flood environments inside and outside the chars—the context in which flood response occurred. In addition, the active flood-

plain study required the use of remote sensing data and satellite image interpretation, but the facilities and trained staff to achieve this within the FAP would not be ready until at least late 1991.

During 1991, the first full year of FAP studies, it became clear that regional studies were unable to devote sufficient resources to the specialized work of socioeconomic study of the active floodplain. Most used the main rivers as their study area boundaries. Of the regional FAP studies only FAP 3.1, the Jamalpur Priority Project, attempted detailed socioeconomic studies in the chars, investigating those along the reach of the Jamuna adjacent to the project in 1992 (see Section 1.1.4). In addition, FAP 14, the Flood Response Study, carried out socioeconomic surveys in 10 active floodplain villages.

Finally, in 1992 on advice from the Flood Plan Coordination Organization (FPCO) ISPAN agreed to undertake an inventory of resources and people in the main river charlands. This study, then, fulfills the need—foreseen in the Government of Bangladesh/World Bank Flood Action Plan of 1989—for a socioeconomic study of the people and resources of the active floodplain. Although it does not consider in detail the populations living long-term on embankments along the main rivers, analysis of erosion and accretion patterns has been added.

The inhabitants of the charlands are among the most hazard-prone people of Bangladesh, exposed as they are to floods and erosion. Structural flood protection measures are unlikely to benefit these people, and embankments may even raise flood



levels within the charlands, increasing the risks to which they are exposed. Reliable information about these areas and the people who live in them has always been scarce. The difficulty of gaining access to chars and their constantly changing environment has made studying them a complicated undertaking. As a result, prior to this study, what little information was available did not cover in any detail all the main river charlands.

### 1.1.2 The Charland Study

The Charland Study is a special study under the Bangladesh Flood Action Plan (FAP). It was jointly carried out by FAP 16, the Environmental Study, and FAP 19, the Geographic Information System (GIS), both of which are undertaken by the Irrigation Support Project for Asia and the Near East (ISPAN) and funded by USAID.

This study has two objectives. The first is to develop databases and a geographic information system (GIS) that can be used as planning tools both for direct interventions in the charlands and for other interventions (such as embankments) that may affect the char areas. The second objective is to use the data collected, along with additional socioeconomic studies, to make general policy recommendations for the charlands and to test and develop means of rationally assessing the potential benefits of flood proofing measures in these areas.

The objectives have been addressed with five tasks.

- Making an inventory of resources, people, and infrastructures in the Brahmaputra-Jamuna, Meghna, Padma, and Ganges charlands and collecting additional information on hazards (led by FAP 16).
- Using digital satellite images to analyze physical changes and land use in these areas, and integrating this analysis with inventory data using a GIS (FAP 19).
- Conducting supplementary socioeconomic studies using rapid rural appraisal (RRA) methods in six river reaches (building on the Flood Response Study, FAP 14).

- Conducting detailed studies of flood losses and flood proofing potential in two areas along the Jamuna River (building on the Flood Proofing Study, FAP 23).
- Integrating the results of the above tasks into a comprehensive report.

This is a report of the findings for one of the six rapid rural appraisal (RRA) study areas—the northern part of the lower reach of the Jamuna River (Figure 1.1 shows the charland study areas).

## 1.2 Methods

### 1.2.1 RRAs

RRA methods are essentially non-quantitative, and involve direct observation and collecting qualitative information from a range of key informants or small groups in representative villages in the study area. The method is systematic in the sense that standard checklists form the basis of the information gathering (see Charland Methodology Report), and in the way in which information is cross-checked and verified from a range of informants and sources. Locational biases are avoided by visiting both remote and more accessible areas, and socioeconomic biases are avoided by including coverage of groups such as women and the landless whose opinions might otherwise not be heard. In this way reliable information can be built up by an experienced team of specialists covering a range of disciplines based on an iterative process of questioning and expert judgement.

Additionally, RRAs in the Charland Study have the advantage of access to some quantified data from the inventory and GIS for all the mauzas (revenue villages) within the study reach, and this is integrated where appropriate into the RRA report.

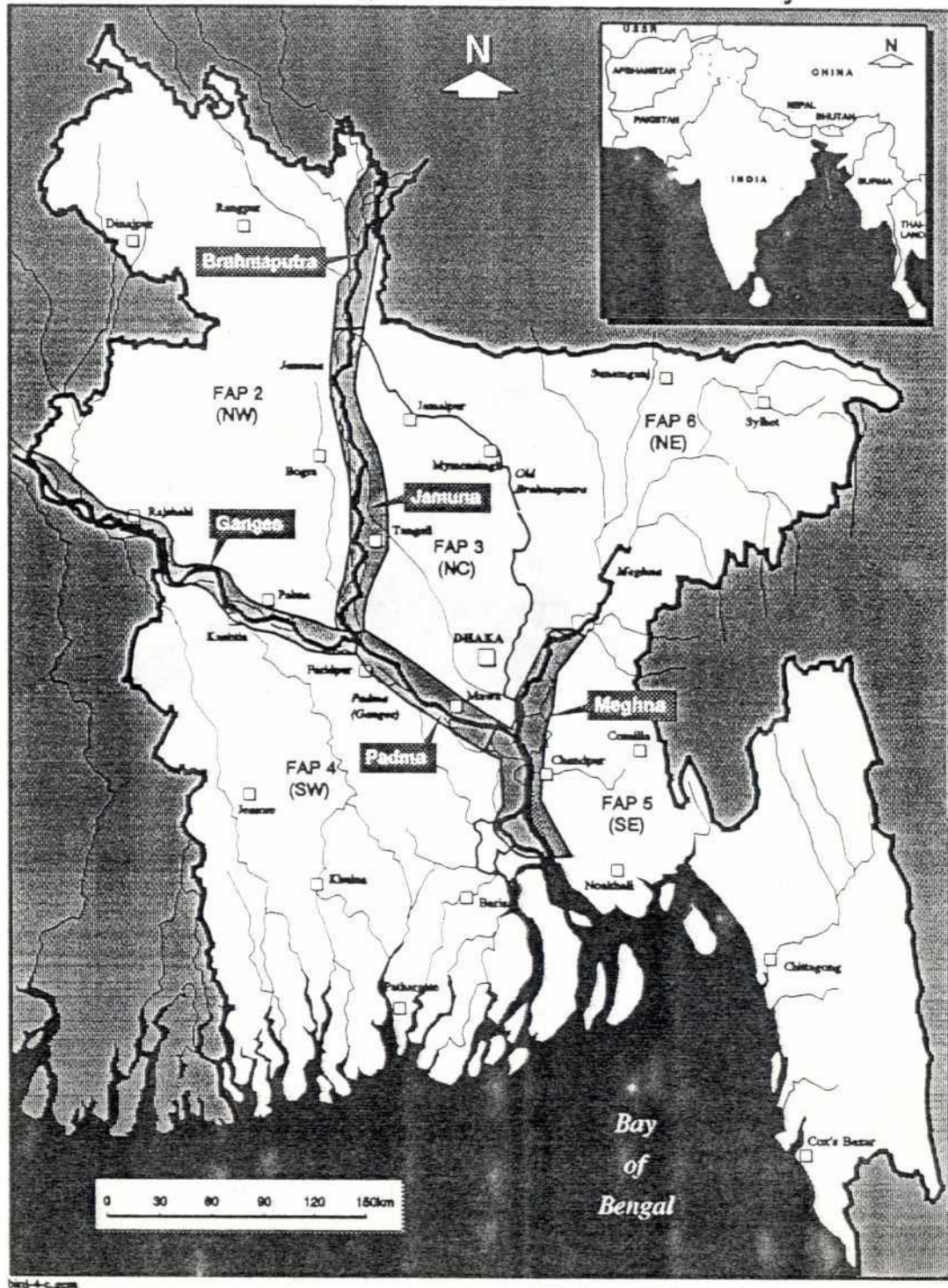
### 1.2.2 Field Method

The RRA team included specialists in: geography, economics, social anthropology, agriculture, and engineering. Fieldwork took place from May 26



Figure 1.1

# Charland Study Location





through May 29, 1993 and was based in Bhuapur town. The primary sources of information were key informants; for example, knowledgeable farmers, members and ex-members of union parishads, schoolteachers, fishermen, traders, landless, and women living in charland villages. Access was by boat, so it was not possible to walk transects through the area.

appropriate. In this way important differences between villages could be investigated and more general information could be cross-checked between different groups of informants within a mauza.

### 1.3 Introduction to the Study Region

The method was to select a group of focus mauzas spread throughout the area and covering a range of environments (based on the SPOT image of the area) within the study area: island char, attached char, old stable island (similar to mainland), and

The study region and location of the RRA study mauzas are shown in Figures 1.3 and 1.4, respectively. The central Jamuna riverine settlements are on relatively active chars and changeable riverbank areas. The river reach covered was 312.4 km<sup>2</sup> in

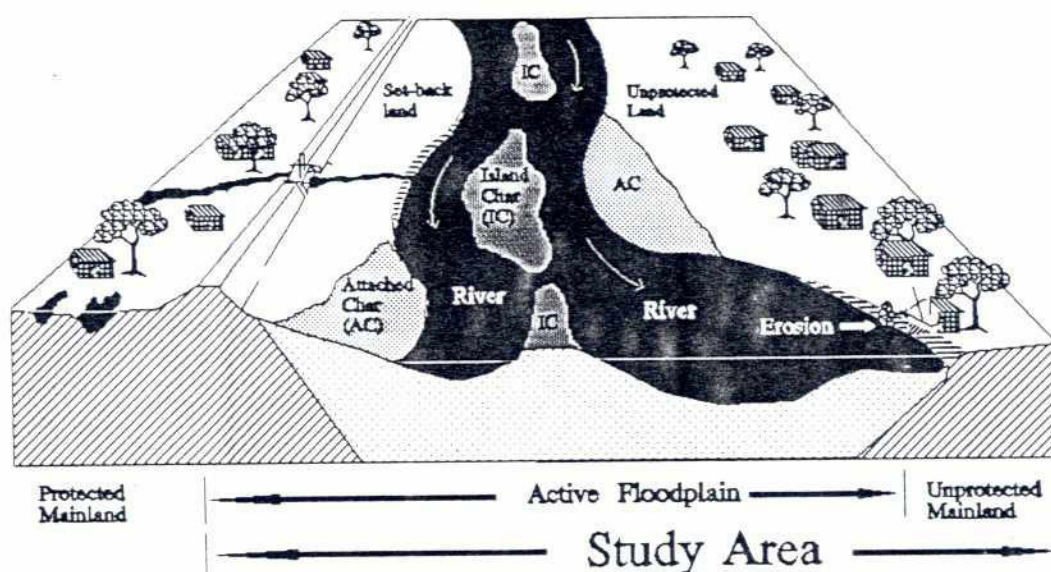


Figure 1.2 Charland Classification.

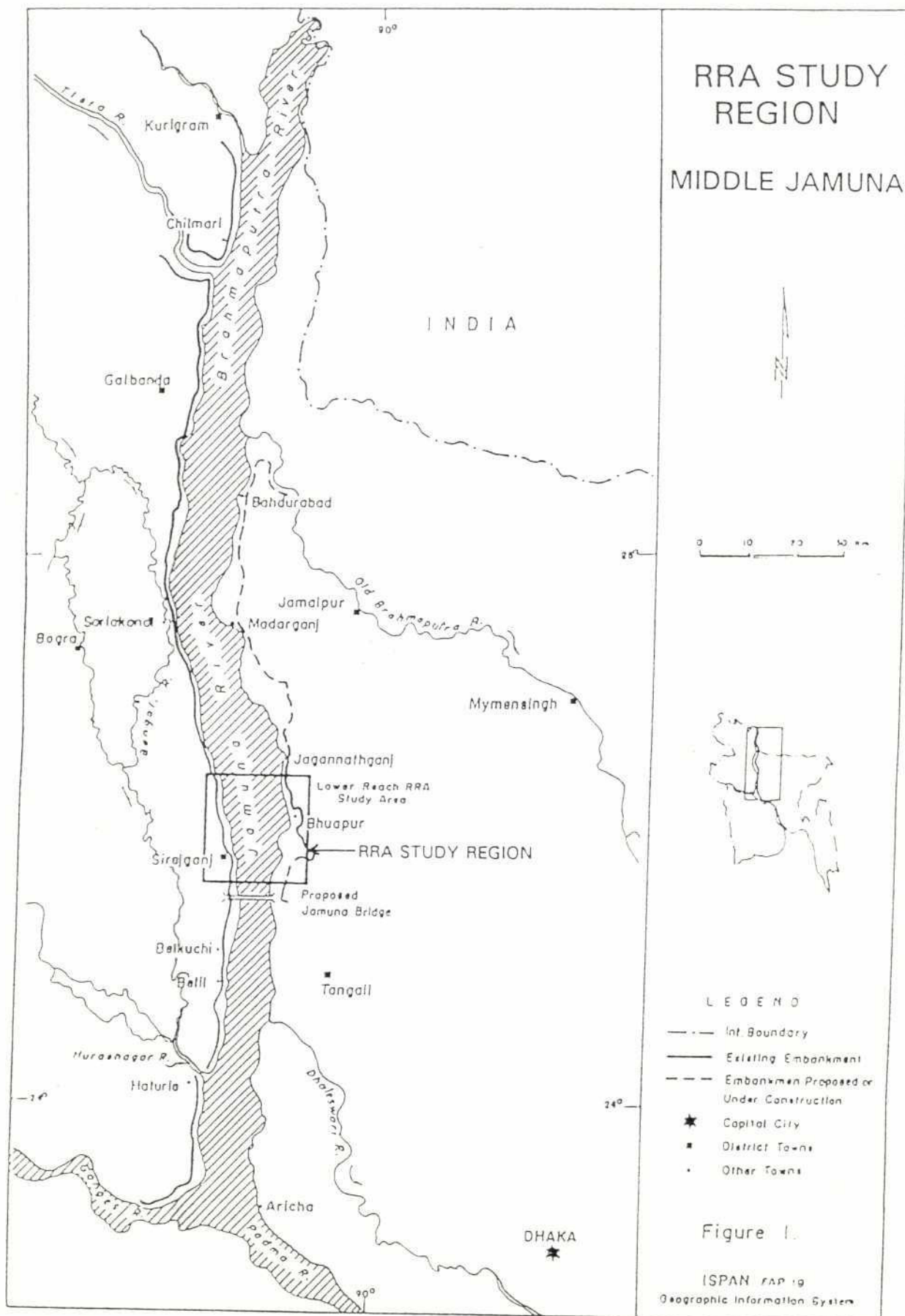
mainland. These char types are illustrated in Figure 1.2.

Most of the mauzas visited contain a number of villages (*grams*) or neighborhoods (*paras*). Once in the mauza, the RRA team split up. Each individual team member then collected information on his or her subject area. The information gathered, while for the entire mauza when possible, concentrated on the experiences of the inhabitants of a particular village. Hence the discussions and tables refer to villages/neighborhoods or mauzas as

size and had a total population of 177,418 (see Table 1.5 on page 1-10).

Reports from two localities—Khas Borar Boyra and Gabsara—gave the RRA team some insight into how the Bhuapur area chars first came to be settled, or at least how the present group of settlers came to the region.<sup>1</sup> Both places were said to have been settled by grandparents of the current adult generation (i.e., sometime within the past 60 years or so), who moved into the chars from the mainland, and initially involved taking leases from





# LOCATION OF RRA STUDY MAUZAS MIDDLE JAMUNA

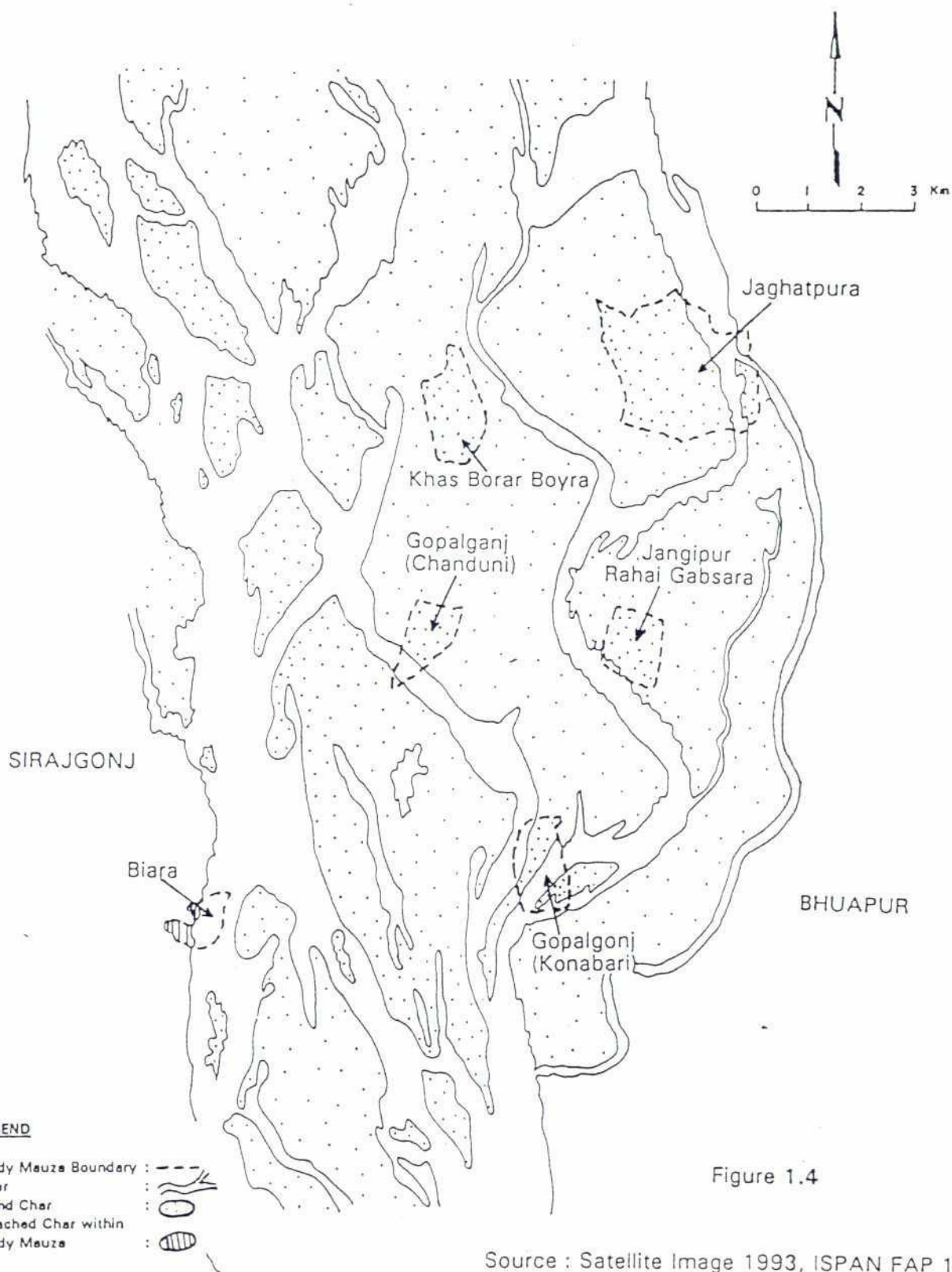


Figure 1.4

Source : Satellite Image 1993, ISPAN FAP 16



*zamindars* on the *pattan* system of cash rent/lease.<sup>2</sup> (Khas Borar Boyra was settled by migrants from the west and Gabsara by settlers from the east.) Peoples' reasons for moving varied: separation of joint families, river erosion, and seeking economic opportunity. According to one descendant of the original Gabsara settlers, they came from a place (Bilchapra) on the mainland intending to migrate to Assam, where they hoped to find more predictable cultivation opportunities than they had in their frequently flooded lands. The story goes that they noticed these vacant, apparently fertile lands on their way and decided to lease them from the *zamindar*, and never did go to Assam. Gabsara is a very large mauza, and most of its land is still owned by the descendants of these original settlers, according to the person who provided this information. Most landowners in Khas Borar Boyra, like those in Gabsara, are descendants of the original group of settlers, but not all of the migrants stayed; some eventually returned to cultivate lands in their home villages near Sirajganj, and others were forced to sell their lands in times of hardship or left for other reasons.

The urban centers of Bhuapur and Sirajganj, adjacent to the left and right banks, respectively, are easily accessible to the charlands and are sources of employment and marketing or business opportunity for the char population. In this area some people with capital to invest try to purchase land in several local chars as a means of protection against total land loss and displacement; but many do not have such capital resources. Competition for available land is intense, and there is much anxious discussion about its erosion and accretion. Those who are displaced try to settle as near as they can to their submerged lands in hopes of claiming them when they come back.

There are some NGO programs in the area, mainly provided by Service Civil International (SCI), whose headquarters are at Bhuapur. Char Gabsara is a focus of activity such as afforestation, basic literacy, and group formation. Because it is difficult for them to maintain responsibility to

attend regular meetings or make regular, weekly loan payments, char people said they are not eligible to participate in Grameen Bank group credit programs.

Several embankments exist or are planned in this area to protect the mainland from overbank spill. There is much concern in the chars about these structures, which will increase flood levels in charlands and adjacent unprotected mainland areas. This matter has been discussed at length for the area immediately to the north of this region in the FAP 3.1 report; and those findings apply equally well to this area. Another topic of local discussion is the proposed Jamuna Bridge, which will span this area. There is concern that the changes in river currents will affect erosion and accretion patterns, possibly reducing the already minimal stability of lands where char people dwell.

#### 1.4 Focus Mauzas

The RRA team visited six settlements of Bhuapur and Sirajganj thanas in the central reach of the lower reach Jamuna River.<sup>3</sup> As shown in Table 1.1, two were relatively stable island chars; one was a newly accreted island char; one was an attached char; and one was a stable island char part of which was newly accreted.

The settlements were chosen for study either because they represented examples of certain types of land formation or because they were part of a previous investigation by the FAP 14 Flood Response Study. For example, Khas Borar Boyra is an example of a long-settled and comparatively stable char, the char having been occupied continuously for 55 to 60 years, although the mauza was evacuated once within that period for several years, when it was temporarily submerged. Biara was chosen as an example of an eroding riverbank settlement. Jaghatpura is a case of settlement on a newly accreting part of an attached char. Rehail Gabsara is a mauza that has within it a Flood Response Study village, Jangipur; and Konabari and Char Chandani are places where the occupants



Table 1.1 Focus Mauzas

Mauza	Land Type	Erosion Status	Estimated Households	Facilities
Rahai Gabsara [Jangipur village]	Island Char	Stabilized	109	1 Mosque (Primary school on same char, neighboring mauza)
Biara	Unprotected Mainland	Eroding	125-150	1 Mosque (Primary school in nearby mauza)
Jaghatpura	Island Char	Accreting portion of larger char; had been submerged for 25 years.	16	None
Khas Borar Boyra	Island Char	Stabilized	120	Primary school Mosque
Konabari [Gopalganj settlement]*	Attached Char	Stabilized	55	Mosque (Primary school across a channel in nearby mauza)
Gopalganj	Island Char	Eroded; almost gone	5†	
Char Chandani [Gopalganj settlement; southeast side]*	Island Char	Fluctuating erosion and accretion pattern, east/west; east now accreted	92	1 Mosque 1 Primary school 1 <i>Madrashah</i> religious school

Source: Charland RRA

\*Gopalganj settlement only was covered by RRA.

†Nearly all had moved to Char Chandani or Konabari by May 1993.

**Table 1.2 Physical Description of the Study Region**

Land Category	Island Char	Attached Char	Unprotected Mainland	Total
Area (ha)	19,635	4,985	6,620	31,240
Water (%)	27	17	9	21
Sand (%)	19	10	1	14
Vegetated (%)	54	73	90	65

Source: Charland Inventory

of another Flood Response Study village, Gopalganj, have gone to settle in recent years, as their own char has virtually disappeared.

## 1.5 Profile of the Region

### 1.5.1 Physical Description

Tables 1.2 and 1.3 show that in the RRA study region 21 percent of the total area consists of water, 14 percent of sandy land, and 65 percent of vegetated land. Two-thirds of the region's mauzas are on islands, 16 percent are on attached chars, and 21 percent are on the unprotected mainland.

## 1.5.2 Patterns of Erosion and Accretion

Erosion and accretion phenomena, of course, greatly influence the lives of people who live in chars. Few of the land masses in this area have remained stable over the past 20 years. Information from the FAP 16 inventory, presented in Table 1.4, confirms that more than half of the settlements have been in existence for less than 20 years.<sup>4</sup> Settlements of this area

have been more affected by land changes than have those of the northern Brahmaputra-Jamuna study region, but less so than those in the reaches farther south, such as the confluence of the Meghna and Jamuna.

### 1.5.3 Population and Infrastructure

As Table 1.5 shows, population density on island and attached char mauzas, estimated at 427 and 586 per km<sup>2</sup>, is much lower than on the unprotected mainland, where it is about 973/km<sup>2</sup>. One obvious reason for this difference is that the island and attached chars include sand and water portions which are not habitable. Population density related

**Table 1.3 Distribution of Land Types in Study Region Mauzas\***

Thana	Submerged	Island Char	Attached Char	Unprotected Mainland	Total
Bhuapur					
Mauzas	0	33	17	22	72
Area (ha)		11,319	3,349	3,854	18,522
Sirajganj					
Mauzas	5	43	12	13	73
Area (ha)	360	8,317	1,636	2,767	12,720
Total					
Mauzas	5	76	29	35	145
Area (ha)	360	19,636	4,985	6,621	31,242
Percent of Area	1	63	16	21	100

Source: Charland Inventory

\*If a mauza has more than one land type, it is classified according to its predominant type.

**Table 1.4 Age of Char and Duration of Vegetation, Cultivation, and Settlement in the Study Region**

Attribute	Island Chars (Total Mauzas: 53)						Attached Chars (Total Mauzas: 27)					
	Mauzas Reporting	1-3 Yrs.	4-10 Yrs.	11-20 Yrs.	21-30 Yrs.	> 30 Yrs.	Mauzas Reporting	1-3 Yrs.	4-10 Yrs.	11-20 Yrs.	21-30 Yrs.	> 30 Yrs.
Char Formation	50	2	11	13	18	6	11	3	2	2	3	1
Natural Vegetation	50	2	12	15	16	5	11	3	2	2	3	1
Crop Cultivation	50	5	8	16	15	6	10	2	3	2	2	1
Human Settlement	50	4	10	14	16	6	10	2	3	2	2	1

Source: Charland Inventory

**Table 1.5 Population of RRA Study Region**

	Island Char	Attached Char	Unprotected Mainland	Total
Gross Area (km <sup>2</sup> )	196	50	66	312
1993 Est. Households <sup>1</sup>	13,526	4,755	11,019	29,300
1981 Population <sup>*</sup>	66,722	32,751	50,450	149,923
1993 Est. Population <sup>†</sup>	83,810	29,224	64,384	177,418
1981 Population/km <sup>2</sup>	340	657	762	450
1993 Est. Population/km <sup>2</sup>	427	586	973	568
Est. Change in Population, 1981-93 (%)	+26	-11	+28	+18

<sup>\*</sup>Source: Bangladesh Bureau of Statistics, 1981 Census

<sup>†</sup>Source: Charland Inventory



Table 1.6 Infrastructure and Facilities of Inhabited Mauzas in the Study Region

Facility	Number of Inhabited Mauzas Reporting	Percent with Facility	Percent of Mauzas with Facilities, by Type		
			Island Chars	Attached Chars	Unprotected Mainland
Health Care	79	29	13	18	71
Primary School	84	60	62	42	64
High School	84	12	10	8	18
Weekly Market ( <i>har</i> )	80	25	23	0	43
Launch Ghat	82	7	0	17	18
NGO Active*	84	46	38	50	64

Source: Charland Inventory

\*SCI was found to cover 38 percent of island mauzas and 50 percent of attached char mauzas.

only to vegetated and cultivated land is 790 for island chars, 803 for attached chars, and 1,081 for unprotected mainland. Other probable reasons are the lesser capacity of unstable land to support human settlements and the existence of fewer employment options in char settlements.

With easy access to two urban areas, the chars of this region are able to utilize health services and

markets of the mainland more easily than char dwellers of other areas. Even so, a moderate number have these facilities within their own mauzas, as Table 1.6 shows. Primary schools, however, are only available in 62 percent of the charland mauzas; and this very much limits educational prospects for char children, who are unlikely to travel any distance at all, especially if any boat travel is required, to attend school.

## NOTES

1. The river chars have been in approximately the same positions they are now over the past century, although the river has meandered, a general widening and braiding has occurred, and the river centerline has moved gradually westward at a rate of approximately 50 meters per year since the early 19th century. (FAP 16, *The Dynamic Physical and Socioeconomic Environment of Riverine Charlands*. Dhaka: ISPAN, p.2-13.)

2. Not all island chars were included in zamindari estates, because they were not all above water at the time of the Permanent Settlement. Those that emerged after the Permanent Settlement were in the status of "resumed estates," considered government property (*khas*), not property of any zamindars. These were leased out by the government to people who sublet them to others. It is possible that those who held government leases were called zamindars, even though they were not. The name of the mauza, Khas Borar Boyra, suggests that it was in this category. (Khan 1978:248)

3. Unions included in this river reach are: (a) in Bhuapur Thana: Arjuna, Gabsara, Gobindashi, Nikrail, and Phulda; and (b) in Sirajganj Thana: Chhangachha, Kalia Haripur, Kaoakola, Khoksabari, Mechhra, Kaliharipur, and parts of Sirajganj Pourashava.

4. This finding is somewhat ambiguous, as the question was asked, "When was the first human settlement on this mauza?" Answers therefore may refer to early time periods since which a char may have disappeared and reappeared one or more times.



## Chapter 2

### SOCIOECONOMIC ORGANIZATION

#### 2.1 Overview

Community social organization, similarly to that of other char areas, is a modified version of patterns of mainland settlements. In the chars kinship and neighborhood groupings seem to be more flexibly structured because of the frequent need to shift homesteads. Local social organization centers on cohesive community groups, or *samajes*, discussed further below.

Although agriculture is the most important source of employment and income on the chars of this region, most, if not all, households are much involved with the cash economy, depending on often meager wage incomes to purchase food and other basic supplies, and sensitive to commodity price changes. Significant numbers of men migrate out of this char region to serve as a seasonal labor force in harvesting the Bangladesh winter (boro) rice crop. Small-scale livestock rearing and cattle trading are important sources of income. There are commercial fishermen, but fisheries resources were said to be declining. Institutional credit seems to be virtually unavailable, although there is much interest in it.

#### 2.2 Settlement Patterns and House Types

Settlements resemble those of the upper Jamuna chars in their general appearance and layout. Homesteads are grouped either in clusters or in lines amidst open agricultural or sandy lands. Paths through cultivated fields, if there are any, connect one neighborhood (*para*) to another within a village.

##### 2.2.1 House Types

The distribution of house types is shown in Table 2.1. Charland homesteads are similar to those on the mainland. Two or more small huts are arranged around courtyards—each hut serving a special purpose such as cooking, sleeping, or storage; each homestead is protected by a fence of some sort, meant to afford some privacy to women inside the homestead. Cattle sheds are nearby. One important difference between char and mainland homesteads is that they vary greatly in construction quality depending not only on the socioeconomic position of their owners but also on how long people plan to stay in the place where they are living. Changes in land formations require the shifting of whole villages on a regular basis.

The clearest indicators of a temporary settlement are low (or no) mud plinths and hastily built, uneven fences and house walls. Other signs are the absence of trees<sup>1</sup> and homestead gardens. The more stable a char settlement is, the more it looks like a mainland settlement, with high, packed-earth plinths, neatly built fences, and as many trees as possible planted around the homesteads.

The high percentage of houses with straw roofs in most mauzas reflects the general poverty of the population. Of the six mauzas visited, only three had house constructed entirely of corrugated iron (CI) sheets, a clear indicator of rural prosperity; but even then the highest percentage of such houses, in Jangipur, was only 33 percent.

Investment in house construction varied from mauza to mauza, as Table 2.1 shows. They tended

Table 2.1 Distribution of House Types, by Mauza

Mauza/village	Total Structures	All Straw (%)	C.I.* Roof & Bamboo Walls (%)	C.I. All Sides (%)	Char Type
Rahai Gabsara/Jangipur	321	30	37	33	Stable Island
Biara	500	40	45	15	Eroding Unprotected Mainland
Jaghatpura	35	86	14	0	Newly accreted island char
Khas Borar Boyra	400	68	20	12	Stable island char
Konabari/Gopalganj	220	75	25	0	Attached char
Char Chandani/Gopalganj	290	76	24	0	Island char; periodic erosion & accretion

Source: Charland RRA

\*Corrugated iron

to be on the high side in Jangipur, a relatively stable and prosperous community compared to the others. The cost of a moderately good house, with CI roof and bamboo walls, was lower in Jaghatpura than in the other mauzas because its settlement was recently formed and is not fully established: residents said they had not invested much in constructing new houses because they were not sure the land would survive the next rainy season. If it did, they would improve their houses further.

The average size of houses varies by type. Straw or catkin houses, the simplest type, average about 17.5 m<sup>2</sup> in area and are approximately 1.4 m high. Bamboo-walled houses with CI roofs are approximately 16 m<sup>2</sup> in area and 1.7 m high. The bamboo pillars and walls are replaced every one or two years. Fully CI houses average about 23.5 m<sup>2</sup> in area and 2 m high. This type of house lasts for a long time, especially if the pillars are not made of bamboo or wood. If they are, then the pillars have to be replaced every two to three years.

## 2.2.2 Homestead Resources

### 2.2.2.1 Vegetation

As mentioned, vegetation patterns provide one indicator of the age of a char settlement and its perceived stability. Sandy lands of newly accreted

chars are covered with one- to seven-foot tall catkin grass (*Saccharum spontaneum*) or planted with *dhaincha* (*Polygonum fagopyrum*), a nitrogen fixative, and new settlements have only tattered banana trees and a few small *jiga* (*Lannea coromandelica*), some serving as living house posts. Longer-settled places have larger trees and more diversity of species, possibly including some mangoes and an occasional papaya or jackfruit tree. In three of the focus mauzas banana and *jiga* were the only trees found.

The banana tree, found in all but the very newest char settlements, is put to many uses. Its trunk is used to make rafts and also to elevate areas where cattle can stand during floods.

Timber trees, such as acacia (*babla*), rain tree (*koroi*), and mahogany are found in three villages; and fruit trees are found in two. Gopalganj people said that they had tried to plant some timber trees in their original settlement, but the trees were lost when the char eroded, so they now have lost interest in planting timber trees.

### 2.2.2.2 Cooking Fuels and Drinking Water

Fuels. Locally important dry season fuels are: dried cow dung, dried leaves, twigs, weeds, and



any kind of dried plants (*jaba*) left over from agricultural operations. In the monsoon season people use stored cow dung, jute sticks, and dried *dhaincha* plants. Fuels such as cow dung and wood are sold in local markets; and during the monsoon season some people find it necessary to buy these items. In general, however, respondents said fuel supplies were adequate to their needs.

There were differences in fuel use among the sites visited. In the setback mauza of Biara, *dhaincha* was more used than in the more stable settlements at Konabari/Gopalganj and Khas Borar Boyra. This same plant plus dried catkin grass was especially important in the settlement in the newly accreted section of Jaghatpura. Fuels are stored on platforms (locally called *ugar*) or over roof rafters (*chang*) inside houses.

Drinking Water. There were tubewells in most of the places visited,<sup>2</sup> and most reported preference for drinking tubewell water. Access to tubewell water, however, was not universal even in places that had it. In one settlement there was a report that affluent people with tubewells require that others wishing to take water from them must perform labor in exchange for the privilege: "If

we do not do this, they will come and break our pots". In Char Chandani there were four tubewells, two of which were broken.

Water Purification. During flood many people have found it necessary to drink polluted river water. In one place that had received water purification tablets from SCI people said they did not use them because they made the water taste bad. They asked for alum (*fukiri*) instead, if anyone wants to help with water purification in the future.

## 2.3 Occupations and Income Sources

Table 2.2 gives an occupational profile of the total area in which the RRA was done. According to these findings, more than 95 percent of all island char households are dependent on agriculture for their livelihood, either as cultivators or as day laborers. In the unprotected mainland 71 percent of households are supported by day labor, and in island chars it is nearly as high, 68 percent. In attached chars, the inventory data indicate the largest percentage of households farm, and the smallest depend on day labor. Fishing is a primary occupation in a low percentage of households in

**Table 2.2 Main Occupations of Households in the Study Region**

Occupation	Island Char (%)	Attached Char (%)	Unprotected Mainland (%)	Total (%)
Day Labor	65.7	56.5	65.2	62.9
Farming	30.5	39.8	27.4	33.0
Fishing	1.7	1.2	3.0	1.6
Business	1.2	1.8	2.1	1.5
Paid Housework	0.6	0.5	2.3	0.7
Unpaid Housework	0.1	0.05	0	0.1
Other	0	0	0	0
None/No Information	0.1	0.2	0	0.1
Estimated No. Households	9,077	4,384	1,215	14,676

Source: Charland Inventory



this region, but one-third of the households in unprotected mainland mauzas were found to depend on fishing as a secondary occupation. Chapter 7 presents RRA findings on fishing.

Agriculture, or some combination of marginal farming and day labor, provides the livelihood for the majority the households of all mauzas except one (Jaghatpura). Income from fishing, although not a primary occupation for many households, is locally important, although several people said that fish catches were not as large as in former times. In the most recently accreted char visited, Jaghatpura, fishing and livestock rearing were the main occupations pursued because the land was not yet ready for cultivation. People said this was a temporary situation. In the Gopalganj settlement at Char Chandani fishing was said to be the main occupation for marginal farmers, producing a reliable source of income during the eight months of the year when they cannot get work as agricultural laborers.<sup>3</sup> According to RRA interviews, there are some 15 or 20 households in Jangipur village (of Rehai Gabsara mauza) that catch enough fish to sell them daily at either the Gobindashi or Sirajganj markets.

Wages for male day laborers ranged from Tk. 20 to Tk. 35 per day without meals. The yearly with-meal pay rate was quoted in Gopalganj/Konabari: Tk. 5,000-6,000 for "big work," and Tk. 1,500-2,000 for "small work."

Various other trades and income-generating activities were pursued by people of the mauzas visited by the RRA team. Cattle trading, that is, buying cattle at one market, fattening them, and selling them at another market is an important local source of income. Some mauzas had a few carpenters. Cutting and selling firewood produced supplementary income for residents of Khas Borar Boyra in the months of October and November (*Kartik*). Konabari mauza has a number of beggars, both male and female.

Large numbers of men in some mauzas migrate seasonally to other areas to work as agricultural laborers. Places to which they migrate are Raj-

shahi, Bogra, Sylhet, Thakurgaon (in Dinajpur District), and other places in Tangail District. One group of workers interviewed were paid in grain, as was the boatman who transported them to their temporary work location. In the Gopalganj settlement at Char Chandani one migrant worker who had just returned explained that to ensure that they would have seasonal work in Sylhet they lend money to some Sylhet farmers against their crops, and in so doing secure an agreement to employ the Gopalganj men in harvesting the crops. The man giving this information said that the laborers contribute money a year in advance into a common fund used to give the loan. He said that migrant workers in the *haor* areas who harvested the boro crop in 1993 were paid 10 maunds of paddy for each 110 harvested, less than the usual 12 or 15 maunds because of a poor crop. After paying the contractor and the boatman, each man this year earned six maunds of paddy in Sylhet.<sup>4</sup>

The most complete information on women's income was obtained in the Gopalganj settlement at Konabari. Some very poor women in Konabari sell cow dung fuel in the weekly market for Tk. 10 per sack (monsoon season price, Tk. 20). Others own cows and sell milk; some sell eggs or make jute basket hangers or quilts for sale. Some roll country cigarettes (*bidis*), paid at a rate of Tk. 1.50 per thousand.

## 2.4 Education

In five of the six sites visited there was a primary school either in the mauza (two cases) or in a nearby location (three cases) to which children commuted. In Jaghatpura, no children attended school. One site, the Gopalganj settlement at Char Chandani, has both a primary and a religious school (*madrashah*). It is important to understand that even a short trip over water may cause people to keep their children out of school altogether for part of the year, and possibly altogether. When river currents are strong and there are threats of violent storms, people are understandably reluctant to expose their children to danger in order to send them to school.

22

Access to primary education, already physically difficult in the char environment, is much affected by gender and class. In all cases where children are attending primary school there are about twice as many boys attending as girls; and prevalent attitudes toward girls' getting more than five years of education were negative. There seemed to be minimal interest generally in female education in any of the mauzas visited; and strong arguments were raised against girls' traveling very far or staying away so as to attend school, or even going much beyond Classes 3 or 5 in nearby schools.<sup>5</sup>

In the two Gopalganj settlements people expressed interest in providing girls with some Arabic reading skills, and ability to read the Holy Qu'ran was said to be a consideration in marriage arrangement. Except for Khas Borar Boyra, where six girls were said to have passed the SSC exam, there was, however, no mention of girls in high school. Children of the many day laborers and marginal farmers seem far less likely to attend either primary or high school than children of the more affluent. Adults were mostly illiterate.

## NOTES

1. Although villages threatened by erosion frequently cut all mature trees to avoid losing them to the river.
2. Jaghatpura and Biara: no information.
3. The four months when they get work are: *Falgun-Chaitra* (February-April) and *Ashar-Sraban* (June-August). One commercial fisherman interviewed in Khas Borar Boyra, said that his catch has gone down since 1991 to the extent that he no longer catches fish daily. He thought that too many people in this area were using current nets and destroying fry. Despite his complaint about the small catch, he said he preferred fishing to agriculture because it produced more cash income.
4. The boat had returned the day of the RRA, and the team observed some of the paddy sacks being sorted by workers at the shore.
5. Possible sexual misconduct seemed to be the main fear. People said they did not want their girls being in the minority in classes beyond 3 or 5, where most of the students are boys. It is common for girls to be married between the ages of 12 and 15 in this region.







## Chapter 3

### CHANGES IN LAND AND SETTLEMENT

#### 3.1 The Impact of Erosion and Accretion on Mauza Populations

Charlands in the active central reach of the Jamuna River erode and accrete at a fast rate. The processes of erosion and accretion are believed by some people to be accelerated by flood. Population shifts resulting from erosion and accretion in the six mauzas visited are described in Tables 3.1, 3.2, and 3.3.

The impact of these changes on people living in chars can hardly be exaggerated. People interviewed during this RRA were found to have shifted settlements from five to as many as 33 times in their lifetimes. Not only have erosion and accretion events caused population shifts; they also have the effect of depressing land prices because of the widespread vulnerability to sand carpeting of agricultural lands and frequent floods or violent storms.

For those who move around within the chars it is possible to discern some patterns in their migration routes. In some cases people go back and forth between places where they own land, either between different parts of the same mauza or among a set of two or more mauzas where they may own land or have helpful personal contacts. An important factor in moving is the presence of relatives in other places, and migration destinations also are likely to be places with which people arrange marriages. Non-farm employment opportunity in nearby urban centers is another factor influencing selection of a migration destination. Some people expressed a preference for char locations near to either Sirajganj or Bhuapur towns.

There is frequent mention of the wisdom of helping others from whom you yourself may need help someday, and many personal reports support this point of view. One such example is the case of Gopalganj and the neighboring mauza of Konabari. Another is Khas Borar Boyra and the neighboring settlement of Gobindapur, where people sought refuge for several years while their lands were submerged. Yet another example, in a setback area, is that of Biara, which has a potential back-and-forth arrangement with a neighboring settlement that is now accreting after some years of having been underwater. The people of the other settlement came over to settle in Biara and now live on the embankment with the Biara people. If their land comes back, it seems likely that they might be willing to let Biara people use some of it. This is technically a mainland situation, but it has taken on the physical and social appearance of a char since 1988.

Two interviews revealed people's criteria for choosing migration destinations. One group explained their decisions in a way that summed up comments made by many others:

- 1) Those without lands stay with neighbors who are helpful in crisis.
- 2) Those who own lands prefer to go to places where their lands are.
- 3) People prefer to go to places that have cultivable lands.
- 4) People settle in with relatives, especially the wife's relatives, e.g., her brother or her parents.
- 5) "Where our property-sharing lineages (*sarik*) go, we go there."



Table 3.1 Major Erosion Events, Population Displacement, and Losses

Mauza/village	Erosion Years	Households Displaced	Agric. Land Eroded	Schools Displaced	Roads/Embankments Damaged
Rahai Gabsara/Jangipur	1972-75	120	100%	1	Road
	1988	20	15%	N.A.	Path ( <i>halot</i> )
	1991	7	7%	N.A.	None
Biara	1973-76	250	35%	1	Embankment
	1987-88	275	35%	1	Embankment
	1990-92	250	15%	1	Embankment
Jaghatpura (part)	1974-75	Not occupied	100%	N.A.	N.A.
	1983		75%		
Khas Borar Boyra	1970-73	100	75%	1	Path ( <i>halot</i> )
Konabari(part)/Gopalganj	1971	200	200 ac.	1	0.5 mile road
	1975	100	200 ac.	1	None
	1988	250	250 ac.	1	1 mile road
	1990	100	100 ac.	1	0.25 road
	1991	25	50 ac.	N.A.	N.A.
Char Chandani	1971-72	165	0%	1	N.A.
	1974-78	165	60%	1	N.A.

Source: Charland RRA

N.A. = Not applicable; none existed, therefore none could be eroded.

One affluent man, who has ample resources but chooses to remain in the island chars, said his and others' criteria for settling somewhere are as follows. This list may represent the views of the more affluent char dweller:

- 1) Good communication with the mainland: an especially important consideration for very poor people dependent on paid employment, which is more available in a town such as Bhuapur than in the chars.
- 2) Access to helpful personal contacts.
- 3) Land ownership in the destination.
- 4) Availability of land for homesteads and/or cultivation.
- 5) High return on investments in agriculture, fisheries, and animals, because land and labor costs are relatively low in island chars.

In describing the resettlement process, this individual emphasized that char people help each other in times of need whether or not they are related.

Terms of settlement in a new place vary depending on the circumstances. In two interviews it was reported that displaced people can and do settle on any vacant land they find to be available. After settling, it was said, they contact the owners of this land. Some people (or groups) pay rent. Some others may not pay rent initially, but are expected to do so at some future time. The financial terms of settlement may be difficult. For example, in the Gopalganj settlement at Char Chandani, where land quality is very poor, mortgage and purchase prices of land were identical, making this a less-than-ideal place to settle; so people were searching for some better place and regarding this settlement as strictly temporary.

### 3.1.1 Uthuli Settlement

As in other char areas, there also seem to be several settlers (*uthuli*) in every village who are not expected to pay rent for lands on which they have built their homesteads, because they have no way of doing so. Also as in other areas, such

settlers accepting these conditions appear to have an obligation to perform labor for their hosts in exchange for their temporary settlement rights. There was mention of two such families, displaced by erosion, who had come from Susua to settle in Khas Borar Boyra, and 15 to 20 permanently landless families settled in Gopalganj/Konabari as *uthuli*.<sup>1</sup>

It is often necessary for a family to sell or borrow against family assets to survive economically the experience of erosion displacement. In this respect char people are at a particular disadvantage compared to mainland residents, because institutional credit is even harder to get—virtually impossible—in chars. Families carefully weigh the risks of selling or pawning their assets, because their economic security depends on them. One Jaghatpura family gave the following list of things to be sacrificed, in this order: first, jewelry; second, livestock; third, the corrugated iron roof; and finally, stored surplus food grains, if there are any. Similar information came from a Khas Borar

Boyra man, who was asked whether his wife willingly parted with her ornaments under these circumstances. His reply was that she did so, rather than sacrifice the family cattle.

There are moneylenders who provide loans in emergencies, but they charge 10 to 20 percent interest per month. There is a felt need for institutional credit that would not require such high interest. The unavailability of institutional credit was discussed in Jaghatpura, a settlement with close ties to a setback area from which people have just come to settle here. They said that the Grameen Bank programs, which they think are very good, are not available to char people, because char people cannot attend meetings regularly and sometimes do not make loan payments on time.

It is important to note that all of the people interviewed for this study were still living in chars or near their original settlements. Other studies of erosion-displaced embankment squatters have

**Table 3.2 Major Out-Migrations: Number of Households and Reasons for Destination Choice**

Mauza/village	Migration Year	No. Within Mauza	No. Out of Mauza	Destinations	Reasons for Destination Choice
Rahai Gabsara/Jangipur	1972	70	50	Rampur, Basaila, & Rangpur	Near friends, relatives
	1988	17	3	Unknown	Less flood prone
	1991	6	1	Unknown	Hoping for accretion
Biara	1973-76	25	225	Haripur & Kailakanda	Ancestral village, near relatives, or own land
	1987-88	250	25	Embankment & Sirajganj	No alternative
	1990-91	50	200	Railroad yard	Only shelter available
	1992-93	30	—	Embankment	Only available settlement space near agricultural lands

(continued)





Table 3.2 Major Out-Migrations (cont.)

Mauza/village	Migration Year	No. Within Mauza	No. Out of Mauza	Destinations	Reasons for Destination Choice
Khas Borar Boyra	1934-35	0	80	Nesra, Sirajganj	Bought land near place of origin/relatives
	1963-65	100	0	East side, same mauza	Safety from erosion
Konabari (part)/Gopalganj	1971	0	200	Bhalkutia, Chanduni, & Baintain	Proximity to neighbors, relatives
	1975	75	25	Bhalkutia	Neighboring mauza; near relatives
	1984-86	0	150	Baintain	No information
	1988	150	100	Dobaiya, Chanduni, Baintain	Safer place; newly accreted land
	1990	100	0		Homestead land eroded
	1991	25	0		Hoping for accretion
Gopalganj/Char Chandani	1971-73	100	45	Sirajganj, Rehai, Chanduni, & Bil-chapra	Job opportunities; near relatives
	1987	60	70	Rehai, Chanduni	Near relatives, neighbors
	1988	0	30	Dinajpur, Rajshahi	Employment opportunities

Source: Charland RRA

NOTE: Jaghatpura, first settled in August 1992, is excluded.

shown that some who are displaced by erosion do not manage to find new places within char society. This will be discussed further in the Conclusion.

### 3.2 Land Rights

Laws and Government Institutions. The charlands of the Jamuna are more or less clearly described in the Cadastral Survey Map, the most important

reference item used in deciding rights to accreted lands. Laws or regulations concerning land ownership and taxation have changed over time. People interviewed knew there had been changes, but they were not all aware of the most recent ones. Within recent history rights to land in the chars were determined by (1) the *zamindari* system and (2) reforms instituted immediately after the dissolution of the British empire in 1947. During the British period, *zamindars* used to take lease of publicly



owned lands, including some chars in the area covered by this survey, which they sublet to "tenants" for an initial payment of Tk. 20 per *bigha* and an annual tax of Tk. 1 per *bigha* per year. In the early 1950s the Pakistan government abolished the zamindari system and gave ownership to "tenant" leaseholders through the State Acquisition and Tenancy Act of 1950. The State Acquisition and Tenancy Act of 1950 (Section 86) assigned rights of repossession to owners of submerged land once it reappeared, if those owners paid tax on it and if the loss was less than 20 years previously. Another section (87) of the same law assigned rights to newly emerged land to the owner of adjacent land under most circumstances.

Soon after Bangladesh Independence, laws were changed dramatically. According to Presidential Order No. 135 of 1972, all newly emergent lands previously lost to erosion ("diluvion") become property of the government rather than being returned to the original owners. The intent of this law, which remains in effect, was to recover large landholdings from *zamindari*-style *jotdars* and redistribute their lands among the landless and small peasants in need of resettlement opportunities. This law was amended in 1975 by President's Order and Ordinance LXI (Section 87), which qualified the government's right to newly emerged land, assigning rights to owners who could prove they had ownership previous to 1972.<sup>2</sup>

Table 3.3 Major Accretion Events, In-Migration

Mauza/Village	Accretion Year	Households In-Migrated	Previous Settlement	Reason for Choice
Rahai Gabsara/Jangipur	1988 (post-flood)	150	Neighboring villages/chars	Returned to own land
Biara	N.A.	N.A.	N.A.	N.A.
Jaghatpura	1991	16	Mainland	Accretion of own land
Khas Borar Boyra	1930-32	100	Sachailya at Sirajganj	Khas land accreted
	1989	35	Gabsara & Punglipara	Employment opportunity as agric. laborer
Konabari/Gopalganj	1969	150	Chanduni Gopalganj	Near Bhuapur town and relatives
	1990-91	60	Bhalkutia	Returned to own land
	1992-93	20	Bhalkutia	Returned to own land
Char Chandani/Gopalganj	1971-73 (western part)	200	Sirajganj, Rehai Chanduni, Bilchapra	Returned to own accreted land
	1988-89 (post-flood)	115	Rehai Chanduni, Bilchapra, Gobindasi	Returned to own land
	1992	40	Gopalganj	Low land rent and land price
	1993	40	Gopalganj	

Source: Charland RRA

To ensure compliance with laws allocating government charland property (*khas* lands) to the landless, the government has issued an order to the Thana Land Surveyor to identify such property each year, but the one person with this responsibility in Bhuapur is infirm, has out-dated instruments, and is generally unable to manage the gigantic task; so the thana officials ignore the order. Moreover, one official said, if the Surveyor attempts to identify government lands in the chars, members of the local elite who now control the lands will not allow him to enter the area. The same official said he prefers to ignore the rule that converts submerged land to government ownership because enforcement would create social problems, intense conflicts between original owners and new owners. (Such conflicts are well known from coastal char areas, where attempts have been made to enforce the law.)

Claiming Newly Accreted Land. In all but one of the mauzas visited respondents reported that when land is accreted, ownership is determined by the combined efforts of the Surveyor, or Amin, an employee of the Land Records and Settlement Department, and a local patron (*matbar*). General comments on this arrangement were either that (a) people found it satisfactory, or that (b) they felt it was unwise to argue with their patron's decisions.

Although accretion results in the presence of much land that should be government-owned, most people said they are ignorant of where such land is. (A few said that even if they do know, they keep this knowledge to themselves.) In one site visited, a local patron, one of seven in the char, said that measurement is entirely in the hands of the patrons, and that the Surveyor's services are no longer utilized. According to this individual, all seven of the patrons own survey instruments and Cadastral Survey maps and are skilled in land boundary identification. Only these seven men know where and in what quantity government-owned lands are. Local people (including one of the patrons himself and at least two other men) said that all government-owned lands are distributed among these patrons, one of whom said that he owns 150 *bighas* of land.

Disputes over demarcation of land boundaries are common, and are handled by local councils, or *salish* proceedings, which have these as their main topics of concern. A few respondents said, however, that they do not always protest when their lands are improperly demarcated. If one of their patrons benefits from an error, they tend to keep quiet in deference to him. One person said, "We mainly fight with our equals about this".

Payment of Taxes. In order to circumvent the new law that converts all submerged land to government-owned property, some people decline to report its submersion and continue to pay taxes on it as if it were above water.

In some other cases people pay taxes on submerged lands on the assumption that doing so will protect their interests, and not just to avoid confiscation. There may be some local confusion about exactly what the laws are. In Khas Borar Boyra interviews there was some discussion about requesting 20-year remission of taxes on submerged lands, a practice that applied under previous laws but may not apply now under any circumstances.

Several people, mainly people with sizeable land-holdings, expressed the opinion that it is unfair to tax charland at the same rates as mainland property. In consideration of its vulnerability to sand carpeting and erosion, and its presumed lower productivity, some respondents argued that their land taxes should be reduced.

### 3.3 Social Organization and Crisis Response

As in other rural areas, family and social ties are of the utmost importance in organizing charland community life, both in normal times and in crises. Beyond the property-sharing lineage (*sarik*, *gushti*, *bangsha*) and relations by marriage, the neighborhood (*para*) and the formally constituted *samaj* group are the most important non-kin social units of the char communities, as in mainland ones, becoming active in most cases when people coped with flood or erosion. As elsewhere, councils of patrons convene in the process called *salish*



to settle disputes, many of which have to do with demarcating boundaries of land holdings.

Kinship and Migration. In shifting from one settlement to another, family (lineage) groups often seem to move together, or at least to have done so in the past. For example, one lineage (*gushti*) of Khas Borar Boyra moved to its present settlement as a group about 60 years ago, leasing land from a *zamindar*. They explained that they always migrate as a group, because they need each other's help in moving houses; and they share labor and draft animals in cultivating their lands. These are mostly marginal farmers, and they benefit greatly from pooling their resources in this way. In Konabari one person described a resettlement situation in which lineage-mates (*sarik*<sup>3</sup>) went as a group to a new place and made an agreement to pay an annual rent of Tk. 900 to a landowner. This payment entitled them to use of the land without any further obligation to work for the landowner: "They can work then at whatever they want." This kind of statement reveals a close economic interdependence within the lineage as a group. Ties of marriage also are important in identifying places to settle (see Indra and Buchigniani 1992).

The *samaj*. When deciding where to go when erosion claimed their settlement, some people said their *samaj* went together, or tried to stay together, or at least some part of it did; but in making this decision *samaj* unity is only one factor considered. In some cases it was said not to be of any importance. In the newly accreted settlement of Jaghatpura now occupied by 16 households, people said that 15 of these families had moved together, changing places six times in the past 15 years. They were not all relatives, they said, but they are all a part of the same *samaj*, which is based in the "mainland" section of the mauza. They had been neighbors occupying the same *para* in a setback area more than 30 years ago. They explained that they stay together because they are interdependent, providing each other with assistance in many ways—in fishing, in dismantling and moving houses, and when they need protection from hostile outsiders. When asked which was more

important in deciding where to resettle, kinship or *samaj* ties, one respondent said people expect to stay with their relatives (i.e., in places where they do not have property rights) for short periods of time when displaced by erosion, but that they prefer eventually to settle near their *samaj*, because depending on relatives for long periods of time can lead to too many misunderstandings.

The *samaj* group appears to be the most important local social institution, indeed, effectively the total "community" or "society" in any given place. It is only possible to belong to one *samaj* at a time. Membership is by application to the patron (*matbar*) of the group; and after moving far away from its original place, a family may wish to join a *samaj* in the new place; but to do so, they must seek permission from the patron of their current *samaj* to be released from that obligation before they can join a new *samaj*. Comments about memberships were frequently made during interviews: for example (in Konabari), "some the people of the now-eroded Gopalganj are here, and some are in Char Chandani, but we are still in one *samaj*, and we will gather for the Eid holiday".

Membership in a *samaj* brings with it many obligations, including defense of other members in times of quarrels. Mutual support activities, such as contributing to funds to help poorer members pay daughters' dowries, are important. One man (in Konabari) explained that when he moved here from Kalihati Thana eight years ago he went to the patron of a local *samaj* and asked for his name to be added to the list of members. He was required to pay Tk. 2 to the imam. He explained that it is customary to enroll in a new *samaj* at the time of the Eid holiday, and that by paying this money one is entitled to a share of the sacrificial meat distributed at that time. It is essential to participate in this activity. People who do not cannot stay in the *samaj*.<sup>4</sup>

In Biara one man explained that if someone is expelled from the *samaj* he will not get any kind of cooperation from others; nor will he be supported in fights. Other interviewees confirmed these statements. Reasons for being expelled include not



paying required amounts of food or money when the group is contributing to a common fund, that is, not paying without good reason. Re-admission to a *samaj* after expulsion involves some humiliating rituals (beating with shoes, e.g.) that express penance and submission to the rules of the group. Good standing in one's *samaj*, he said, is an important consideration in marriage arrangement. Mutual assistance is offered in a spirit of "brotherhood."

The *samaj* was described in various ways by different people. Another person in Konabari described it as a group that: 1) prays together on Fridays in the same mosque; 2) prays together at Eid; 3) has its own patron (*matbar*); and shares sacrificial meat distributed at Eid. Common religious observances are not a universal method of describing the group, however. In Biara one person said that his *samaj*, which has 150 households, is an old one which dates back to the British period, when it included Hindus, Christians, and Buddhists in 36 different occupationally defined groups (castes such as blacksmiths, potters, oil pressers, fishermen, barbers, and washermen), along with Muslims. Now that all the others are gone, it consists of five Muslim lineages (*bangsha*) only, under the patronage of one man.

The group now runs a religious school and has established a mosque.

Informal Local and Regional Councils. As in other places local disputes are handled by the process called *salish*, in which groups of local patrons (*matbars*) gather to issue judgement. Such councils derive their authority from local traditions and do not have any formal legal sanction. The subjects of council hearings are: land demarcation disputes, marital problems, and other kinds of local conflicts.

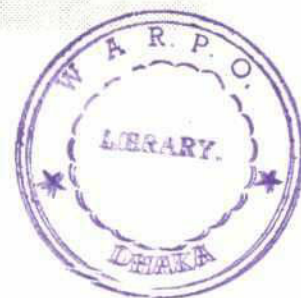
In two mauzas visited, one on the eastern side of the area (Gopalganj/Konabari), and one on the western side, respondents mentioned that very complicated cases may be handled by regional-level councils made up of patrons from multiple localities. In Biara, on the west bank, people mentioned such a regional council of 22 local patrons. This council, called *Baisha Salish*, was unknown in the eastern area Gopalganj at Konabari. But Gopalganj people said they too make use of patrons "from far away places" in judging some very complicated and important cases. They added that it is not only patrons, but also wise and respected men who participate in such councils.<sup>5</sup>

## NOTES

1. The person describing them said these people were not victims of river erosion. "They were always landless." They live by working for others.
2. This summary of land laws depends on the FAP 3.1 report, volume 2, annex B; and on Elahi and Rogge (1990), who argue that "the 1975 amendment must be modified or revoked." (p. 60)
3. Closely related men, such as brothers or "cousin-brothers," in the same patrilineage, together with their wives, children, parents, and so on.
4. Another term for *samaj*, possibly referring to an Eid holiday meat-sharing sub-group, is *malot*.
5. In Khas Borar Boyra similar mention was made of some especially wise person to whom local patrons deferred, even though he is not as rich or dominant as they are.

## Chapter 4

### FLOOD EXPERIENCE



The RRA respondents considered ordinary, annual floods beneficial because of the silt deposits they provided. A farmer in Khas Borar Boyra said that he had problems this year because there was no flood last year, and the fertility of his lands was not good enough. In Khas Borar Boyra there is a canal—a former river channel now mostly filled with sand—passing through the mauza and dividing it into two parts. Each year when the river water level rises the people close the canal to postpone entry of flood waters into the fields and allow their crops to ripen for harvest. Table 4.1 shows the annual flood pattern by mauza.

People in four of the six mauzas visited are accustomed to moving out of their homes during part of the monsoon season each year. Table 4.2, on the following page, describes the sheltering strategies they and their animals tend to use.

The source of flooding in all mauzas was said to be an increased volume of water from upstream.

All sites visited except Jangipur experience regular flooding that disrupts life and were seriously affected by the severe floods of 1984, 1988, and 1991, especially 1988. In preparing for flood, two factors seem to affect activities. One is the economic position of the household, more affluent families being more able to undertake expensive preparatory measures (such as raising house plinths) than poorer families are. The second factor is the overall level of confidence people have in the stability of their char. If they expect it to be washed away soon, they are reluctant to invest their resources in strengthening their homesteads.

In describing their experience of 1988, people said that they sought information from the radio but without much success. (In one place, Jaghatpura, people said the radio was useful.) Although there is a widespread belief that high floods will come every fourth year or so, everyone the team talked to said they were taken by surprise in 1988. Table

Table 4.1 Flood Patterns

Mauza/village	Time of Flooding	Duration of Flood (months)
Rahai Gabsara/Jangipur	Mid- <i>Jaisthya</i> to mid- <i>Bhadra</i> (June to Sept.)	3.5
Biara	Mid- <i>Jaisthya</i> to late <i>Bhadra</i> (June to Sept.)	3.5
Jaghatpura	Early <i>Ashar</i> to mid- <i>Ashwin</i> (June to Oct.)	3.5
Khas Borar Boyra	Early <i>Ashar</i> to late <i>Bhadra</i> (June to Sept.)	3.0
Konabari/Gopalganj	Early <i>Ashar</i> to late <i>Ashwin</i> (June to Oct.)	4.0
Char Chandani	Early <i>Ashar</i> to end <i>Bhadra</i> (June to Sept.)	3.0

Source: Charland RRA



**Table 4.2 Sheltering Strategies Used During Flooding and Monsoon**

Mauza/village	Sheltering Strategy	
	Household Members	Livestock
Rahai Gabsara/Jangipur	Build <i>macha</i>	Elevate cattle shed floors
Biara	BWDB embankment (now washed away)	BWDB embankment
Jaghatpura	BWDB embankment	Raise grounds of homestead
Khas Borar Boyra	Build <i>macha</i>	Not needed
Konabari/Gopalganj	Build <i>macha</i>	Move to road
Char Chandani	Mainland market	Move to mainland shelters

Source: Charland RRA

4.3 presents information on local expectations of severe floods and ways people try to anticipate and prepare for them.

Problems in coping with severe floods were mainly care of livestock and family health. Safety of livestock was an important incentive for shifting to embankments, roads, or other high ground during flood. Privacy for meeting calls of nature was said to be a major problem for women in flood, as were cooking, provision of fuel, and restricted movement when living on household platforms. Diseases such as diarrhoea (or cholera) and fever were said to have claimed lives of children and old people during recent severe floods. In one place there was a report that as many as 40 percent of all cattle had died from excessive intestinal gas in 1988 because catkin was not available for fodder and people fed them banana leaves (and even banana trees) instead. It was necessary to buy fodder in some mauzas, although fodder is available in ample supply during most of the year in this char area. In Jaghatpura 85 percent of all goats were

**Table 4.3 Radio Warning Usefulness, 1988 Flood**

Mauza/village	Usefulness of Radio Information	Most Appropriate Methods for Flood Warning
Rehai Gabsara/Jangipur	Not useful	Radio; should forecast time, duration, and depth of water by area
Biara	Not useful	Radio; should forecast time, duration, and depth of water by area
Jaghatpura	Useful	Radio; should forecast earlier; drum beating or microphone announcements are more effective
Khas Borar Boyra	Not useful, gave news only of other areas	Radio should forecast based on thana/union or other localities; drum beating or microphone announcements are more effective
Konabari (Gopalganj)	Not useful	Drum beating and microphone announcements are more effective
Char Chandani (Gopalganj)	Not useful, gave news only after flood	Radio news may be more useful if disseminated earlier

Source: Charland RRA



Table 4.4 Household Flood Level and Damage in 1988\*

Mauza	Flooded above floor (%)	At or above roof level (%)	Completely Destroyed (%)	Partly Damaged (%)	Evacuees (%)	Location and Distance of Shelter	Duration of Stay (days)	Reason for Stay	Human Deaths (no.)	Livestock Loss (%)
Jangipur	90	0	3	60	50	Neighbors' houses	15	House inundation	None	
Biara	100	40	5	95	60	BWDB Embankment (40%) Sirajganj (20%) (1.0 km)	21	Saving themselves and livestock	None	
Jaghatpura	90	50	25	75	85	BWDB Embankment Nalina Bhuapur (2-3 km)	15-21	Saving themselves and livestock	None	85% goats; 25% cows, oxen
Khas Borar Boyra	60	0	25	75	40	Neighbors' houses in same mauza	21-30	Safeguarding livestock	25	40%
Konabari (Gopalganj)	100	0	25	50	20	Neighbors' houses in same mauza	15-21	Saving themselves	None	85% goats; 5% cows
Char Chandani (Gopalganj)	100	30	25	75	95	Ataisani (2 km) Matilcata (4 km) Sirajganj (3 km)	13	Safeguarding livestock	None	75% goats; 50% cows

Source: Charland RRA

\*One hundred percent of all mauzas reported flooding.

Table 4.5 Measures Taken to Mitigate Flood Damage During 1988 Flood

Mauza	Storing Food	Fodder	Drinking Water	Repairing Houses	Protective Measures
Konabari (Gopalganj)	Almost all used <i>macha</i> to store grain	Pieces of banana trees; getting fodder for goats and sheep was very difficult.	75 % drank river water, sometimes treated with <i>fitkiri</i> (alum).	90 % repaired houses with earnings from mainland agricultural work.	80 % built <i>machas</i> to stay in houses. 20 % took shelter in neighbors' houses. Livestock stayed on mounds made of plants.
Char Chandani (Gopalganj)	<i>Macha</i> was used to store grain for first few days. When water was too high, people carried food to shelter.	Catkin; purchased dry straw at high price.	Government and influential people provided tubewell at shelter where 90 % stayed.	30 % sold livestock; 70 % of household heads worked as day laborers in Bhuapur, Rajshahi, Bogra, and Dhaka.	90 % sheltered on mainland 2 to 3 km from village. Some moved onto <i>machas</i> .

Source: Charland RRA

said to have died in 1988 from intestinal gas caused by eating new plant growth that came up within the first two weeks after the flood.

Institutional sources of food relief in 1988 were union parishads and SCI, but these covered only a few sites, not all.

Some people said it had been necessary to sell valuable assets, including livestock, to survive or recover from floods. (Losses are described in Table 4.4.) Another "recovery" method mentioned was for men to migrate out to northern Bangladesh as agricultural laborers, which some said they do each year after the monsoon season anyway.

In Biara, severe erosion that washed away most of the village occurred during the 1988 flood. In this place and in others, flood and erosion problems are seen as interconnected. One landowner with

properties scattered around the chars expects some of his land to be eroded after each flood, so a tour of his properties is part of his post-flood routine each year.

When asked what kinds of help they needed most in preparing for or coping with flood, people complained that they did not have adequate flood forecasting information. One person suggested that officials make use of drum-beating in regional markets, a communication technique he said "Everyone would understand". He thought this would be better than radio announcements. Another request was for credit to purchase animals to replace those lost in 1988 and to generally stimulate economic activity. (Institutional credit is almost nonexistent in this char area.) Table 4.5 presents detailed information on the experience of each focus mauza in severe floods and various coping strategies adopted.



## Chapter 5

## AGRICULTURE

One of the criteria for selecting the study mauzas being their geographical differences, the focus mauzas varied considerably in their distribution of land types and cultivation patterns. Percentages of high land (with up to 1.2 m of inundation during monsoon), for example, varied from 20 percent in Jaghatpura to 80 percent in Jangipur/Gabsara, as shown in Table 5.1.

Percentages of mauza area available for cultivation ranged from 1 to 55 percent, as shown in Table 5.2. In two mauzas 70 percent of lands were underwater. Despite frequent references to the poor productivity of land in the chars, farmers of all sites visited practiced some multiple cropping. As Table 5.3 shows, 30 to 60 percent of cultivated lands were double cropped; and 15 to 60 percent, triple cropped. As in mainland areas, women cultivate fruits and vegetables in homestead gar-

dens to the extent that conditions permit. Products of homestead gardens are both consumed and sold.

A saying about soil fertility, quoted in Khas Borar Boyra, was, "Somewhere best, somewhere less". Land values varied according to the suitability of land for cultivation, as shown in Table 5.4, and in the unprotected mainland mauza of Biara, which was about to disappear, land was said to have no value during the time of the fieldwork. Two mauzas visited had large quantities of newly emerged lands and were cultivated only minimally. In one settlement, Jaghatpura, the land was said to be not yet ready for cultivation, so people were temporarily supporting themselves by fishing, rearing livestock, and selling catkin grass, as mentioned above. The other one, Char Chandani, had a higher than usual percentage of absentee landowners, who seem to have given their lands to

**Table 5.1 Percentages of High, Medium, and Low Land and Seasonal Inundation Depth**

Mauza/village	Low Land		Medium Land		High Land	
	%	Depth (m)	%	Depth (m)	%	Depth (m)
Rahai Gabsara/Jangipur	10	2.1-2.4	10	1.2-1.5	80	0.3-1.2
Biara	50	4.5	25	1.8-2	25	0.3-0.9
Jaghatpura	50	4.5	30	1.8-2	20	0.3-0.6
Khas Borar Boyra	40	2.4-3	25	1.2-1.8	35	0.3-0.9
Konabari/Gopalganj	25	2.4-3	50	1.2-1.8	25	0.3-0.6
Char Chandani	25	2.4-3	40	0.6-1.2	35	0.0-0.3

Source: Charland RRA

Table 5.2 Land Use Percentages by Mauza

Mauza/village	Underwater year-round	Cultivated	Homestead	Non-Cultivated	Char Type
Rahai Gabsara/Jangipur	20	40	15	15 (Sand & catkin)	Island, stable
Biara	70	20	0	10 (Sand & em- bankment)	Unprotected mainland, eroding
Jaghatpura	70	1	1	28 (Sand)	Island, portion of newly accret- ed char
Khas Borar Boyra	0	55	35	10 (Sand)	Island, stable
Konabari/Gopalganj	40	30	5	25 (Sand & catkin)	Attached
Char Chandani	25	5	5	55	Newly accreted part of older island char

Source: Charland RRA

sharecroppers and gone off to do more profitable work elsewhere. (Like Char Chandani, in every char large quantities of fertilizer were being applied to crops each year to coax a harvest out of poor quality, newly emerged soil.)

In Khas Borar Boyra, one farmer said that normal flood is desirable because it provides silt deposits that enhance soil fertility. Severe flood such as that of 1988, on the other hand, he said was harmful and left sand deposits. Early floods sometimes have inundated low lands and damaged mature aus crops.

There was some limited experimentation with shallow tubewell irrigation and cultivation of HYV crops in 5 acres of Khas Borar Boyra (a stable char), where one farmer was reportedly planting *irri* on a half *bigha* of land; and people throughout the region were very interested in his experiment.<sup>1</sup>

Another innovative practice in the area was the cultivation of cash crops, especially groundnuts, on sandy land. That sandy land was productive at all was a pleasant surprise to farmers of this region, who seem to have heard of experiments in recent years initiated by the NGO, SCI. Other crops newly cultivated in the rabi season with SCI's encouragement are: various types of spices, garlic, onion, and some oilseeds.

Table 5.3 Cropping Intensity, by Mauza

Mauza/village	Single Cropped	Double Cropped	Triple Cropped
Rahai Gabsara/Jangipur	10	60	30
Biara	60	40	0
Jaghatpura	55	30	15
Khas Borar Boyra	5	35	60
Konabari/Gopalganj	10	30	60
Char Chandani	20	60	20

Source: Charland RRA



**Table 5.4 Cropping Patterns of Study Mauzas**

Mauza/village	SEASON									
	Rabi					Kharif-1				
	Crop	%*	Yield (Md/ha)	Price (1993, Tk./Md.)	Crop	%*	Yield (Md/ha)	Price (1993, Tk./Md.)	Crop	%*
Relhai Gabsara/Jangipur	Wheat	60	37-44	200	B. Aus (L)	50	37-44	200	B. Aman (L)	50
	Millet	10	44-52	170	Jute	40	61-74	150	T. Aman (L)	30
	Kalai dal	5	37-44	300	T. Aman (seedlings)	10	---	---	Fallow	10
(90 percent cultivable in rabi season)	Sw. potato	5	494-617	50						
	Groundnut	5	74-89	350						
	Oilseed	5	12-20	500						
	Mustard,	10	---	---						
	Onion,									
	Garlic,									
	other									
	spices									
Catkin: Year-round production					5%	Tk. 2,400-3,700/ha				
Biara	Paika	60	9-14	160	Dhaincha	50	---	---	None	
	Wheat	20	12-24	200	B. Aus(L)	25	7-12	200		
(20 percent cultivable in rabi season)	Sw. potato	15	110-123	40	Millet	15	7-12	150		
	Millet	5	7-12	120	Sesame	10	12-20	500		
Jaghatpura†	Khesari dal	50	7-12	250	B. Aus (L)	30	*	*	B. Aman mixed with Aus planted in 35% of cultivable land.	
	Sw. potato	25	543-555	45	Millet	50	*	*		
(40 percent cultivable in rabi season)	Wheat	5	24-37	200	Dhaincha	15	*	*		
	Mustard	5	5-7	500	Jute,	5	*	*		
	Other	15	---	---	Other					
*First cultivation, still growing.										

(continued)

Table 5.4 Cropping Patterns of Study Mauzas

Mauza/village	SEASON									
	Rabi					Kharif-1				
	Crop	%*	Yield (Md./ha)	Price (1993, Tk./Md.)	Crop	%*	Yield (Md./ha)	Price (1993, Tk./Md.)	Crop	%*
Khas Borar Boyra	Wheat	25	61-74	200	B. Aus (L)	50	24-29	200	B. Aman	100
	Mustard	25	24-37	500	Millet	25	61-74	125		
	Sw. potato	20	247-308	40	Sesame	20	61-79	600		
	Chilies (dry)	10	37-44	1000	Jute	5	61-79	150		
	Groundnut	5	74-86	350						
	Onion/	10	247-296	350						
	Garlic									
Konabari/ Gopalganj	Other	5	---	---						
	HYV Boro: Planted, 5 ac.; yield, 50 md./ac.									
	Wheat	60	61-74	165	B. Aus (L)	90	24-29	200	B. Aman (L)	90
	Kalai dal	20	14-20	300	Millet	5	14-20	125		
	Sw. potato	10	370-494	200	Sesame/	5	24-29	500		
	Onion/	10	247-296	375	Jute		37-44	150		
	Garlic									
Char Chandani	Groundnut	---	49-61	300						
	Sw. potato	80	370-494	45	B. Aus (L)	50	12-44	200	B. Aman (L)	50
	Wheat	15	49-74	200	Sesame	10	7-20	550-600		
	Kalai dal	5	7-12	300	Jute	10	49-74	150-175		
					Millet	15	37-61	125		
					Dhaincha	15		Tk. 7400-12300/ha		

Source: Charland RRA

\*Percentages refer to total area cultivated, not absolute percentages of cultivated lands.

†Information on newly settled portion and whole mauza, combined.



Table 5.5 Land Prices, Mortgage and Rental Rates

Mauza/village	Price*		Price Non-agric. Land (per acre)	Mortgage Rate (per acre)	Rental Rate, Annual		Notes
	Best Agric. Land (per acre)	Land (during 1989)			Agric./Homestead Land (per acre)	Land (per acre)	
Biarra	Tk. 123,000-148,000 (during 1989)	Tk. 49,000-61,500 (during 1989)	N/A	N/A	N/A	N/A	Land has no current value because of partial loss of mauza in 1991 and high erosion risk in remaining portion.
Khas Borar Boyra	Tk. 49,000-74,000	Tk. 7,000-12,000	Tk. 24,500-49,000	Tk. 2,000-3,700	Tk. 2,000-3,700	Tk. 2,000-3,700	Very stable land, in high demand.
Rahai Gabsara/Jangipur	Tk. 44,000-49,000	Tk. 7,000-12,000	Tk. 19,500-29,500	Tk. 2,000-3,700	Tk. 2,000-3,700	Tk. 2,000-3,700	High prices are due to low erosion risk & good land quality.
Konabari/Gopalganj	Tk. 19,500-29,500	Tk. 3,700-7,000	Tk. 9,500-19,500	Tk. 1,500-2,000	Tk. 1,500-2,000	Tk. 1,500-2,000	Land quality not good due to presence of sand.
Char Chandani/Gopalganj	Tk. 7,000-14,500	Tk. 3,700-4,500	Tk. 7,000-12,000	Tk. 2,000-3,700	Tk. 2,000-3,700	Tk. 2,000-3,700	Costs significantly higher in older, stable sections of mauza than in newly accreted, sandy areas.
Jaghatpura	Tk. 7,000-9,500	Tk. 3,700-7,000	Tk. 2,000-3,700	Tk. 1,500-2,000	Tk. 1,500-2,000	Tk. 1,500-2,000	Land is not ready for cultivation yet.

Source: Charland RRA

\*1993 Taka prices

8

The cash economy affects production decisions. In Khas Borar Boyra, for example, cash crops such as spices were found to be more popular. In the Gopalganj settlement at Konabari several houses were reportedly eating *khesari* (*Lathyrus sativus*; see Chapter 9, note 3) rather than the better quality *masur* or *kalai dal* because the latter two were fetching high prices in the market. Farmers grew *masur* and *kalai*, selling them for Tk. 30 per kg., and using the money to buy fish for Tk. 15 per kg. This was the only mauza visited where people did not eat lentils every day.

Sharecropping, land rental (*mayadi*), and mortgage (*kot*) arrangements were described as found elsewhere, and Table 5.5 gives the reported mortgage and rental rates for each mauza visited. One land-owning farmer of Khas Borar Boyra said that he had supported his family for several years by sharecropping in an adjacent mauza, Gobindapur, when his lands were taken temporarily by erosion. One interesting point mentioned was that it is easier for people with cattle to get access to sharecropped land. This is an additional incentive to invest in cattle, which is good business in chars.

---

## NOTES

1. The team was recommended to this place by the boatman who was taking us around during the week of RRA site visits. We had asked where irrigation was being used. This boatman was a resident of Jangipur, another village also visited.



## Chapter 6

### LIVESTOCK

Considerable livestock farming is done by char people, who raise cows and female goats for their money-making potential as breeders and milk producers. Buffalo are not seen because they are too expensive to care for, and there is no perceived need for their great strength. Lambs, ducks, and chickens also are found. Livestock is for some the only means of support during periods of scarcity.

Since sale prices of animals are higher in chars than elsewhere, people trade in them to help repay loans from moneylenders, and to cover "social expenses" too.

Problems of caring for livestock are: 1) Insufficient high land shelter for them during monsoon; 2) Shortages of food for them; 3) Lack of veterinary care or facilities; and 4) Inadequate grasslands in some places. SCI is working in Jangipur on cultivating straw grass (*kash*), but there still is not enough. The problems could be solved by: a) Cultivating more grasses in fallow lands and b) Arranging for mobile veterinary care facilities to visit the chars.

In flood, animals are kept standing on platforms, and not allowed to lie down because they would get wet. They get tired, stop eating, and are vulnerable to disease. Moving them to higher ground is difficult because of "unavailability of boats and insecurity [possible theft]". Water-borne diseases kill them. The quality of available veterinary care and medicines is not good enough.

In all places visited by the RRA, except for Biara, where most of the population lives on embank-

ments because their land is mostly gone, cattle rearing was said to be an easy and profitable undertaking. Fodder, particularly catkin grass, is plentiful in all seasons. People of most places were actively involved in cattle trading if their financial position allowed it; and several respondents expressed a strong wish to obtain credit so that they could invest in cattle, though herds are not large by national standards. Cattle are traded either through middlemen or at regional markets.

Several of the places visited, including the very stable Khas Borar Boyra, said they had suffered the loss of many animals in the 1988 flood, and that they still were experiencing local shortages of livestock because of this (see Chapter 4). In the eroding riverbank mauza of Biara fodder was very hard to get during the 1988 flood, and many people had to sell their livestock to recover from the effects of the flood.

In the small portion of newly accreted Jaghatpura which the RRA team visited, all 16 households raise cattle, 15 doing so on a share basis. Only one house actually owns any. They take animals from mainland people, relatives and former neighbors who live on setback land, and other landowners. Rearing is profitable: the value of a cow in one instance was reported to have increased from Tk.3,500 to Tk.7,000 in only one year. Cattle are sold before Eid in this place and others visited. An average of 2.1 cattle were being reared by each household. This can be considered a commercial cattle fattening business, one in which respondents from other chars also were engaged to varying degrees. (In this settlement cattle business and fishing are the main sources of livelihood while

people wait for their land to be ready to cultivate, as mentioned elsewhere.)

Theft, fodder storage, and cattle disease were said to be the main problems of managing livestock in the Gopalganj settlement at Konabari.

In Jaghatpura, and possibly in other areas as well, women had primary responsibility for care of large livestock; and men said they consulted with women in making decisions to buy and sell. As elsewhere in rural areas, women also manage poultry resources and sell products, mainly through middlemen.

Livestock rearing would be an excellent investment in chars if arrangements could be made to solve the flood-time problems of caring for them. There is a high unemployment rate in the chars for part of the year (lands are only double-cropped), and 96 percent of people are illiterate, and many could benefit economically from livestock rearing as a secondary, or even primary occupation. Support for livestock business would need:

- 1) Credit to buy cattle, ducks, chickens, or other animals.
- 2) Construction of animal shelters in high lands for use during floods.
- 3) Boats to transport animals and fodder during floods.
- 4) Storage facilities for animal foods in shelters.
- 5) Arrangements for purchasing animal foods in shelters with either cash or on credit.
- 6) Veterinary services in shelters.
- 7) Credit to prevent the need to sell livestock because of poverty.

**Table 6.1 Livestock Population**

Mauza	Est. Cattle*	
	Per Household	Erosion Status
Rahai Gabsara	0.97	Stable Island
Biara	No information	
Jaghatpura	1.28	Newly Accreted
Khas Borar Boyra	2.83	Stable
Gopalganj	0.73	Setback
Char Chandani	0.96	Newly Accreted

Source: Charland Inventory

\*Cows, bullocks, and buffalo

- 8) Public education programs to make people more aware about animal diseases and their stages and treatment.<sup>1</sup>

Table 6.1 presents FAP 16 inventory survey data on the livestock populations of mauzas covered by the RRA team. (Mauzas do not coincide in every case with areas visited, which usually were only certain villages within mauza boundaries.) Household livestock ownership is small-scale, ranging from 0.73 to 2.83 head per house, despite the strong interest in cattle rearing in char areas. This compares with a national average of 1.33 head of cattle per house (based on 1983-84 Livestock Survey and household estimates).

## NOTES

1. This report on livestock combines information gathered in the FAP 14 Flood Response Study (Bhuapur Upazila) and the FAP 16 Charlands Study RRA.





## Chapter 7

### FISHING

For the majority of char people in this area fishing is a secondary or alternative, temporary source of income rather than a primary occupation. One of the reasons for this is the lesser fish population in the silt-laden Jamuna River, where nutrients do not get sufficient light and so do not flourish as they do in other water bodies.<sup>1</sup>

There is, nonetheless, one significant fisheries resource in this area. It is a 27-km long stretch of the river between Bhuapur and Bahaduraghat, where a number of species breed during the rainy season. According to local sources, government harvest estimates (1990-91) of 25-30 maunds of fry per year in Bhuapur Thana represent only half of the actual catch. Harvesting and trading fish fry is a lucrative business in which thousands of people participate during part of the year. Rights to harvest the fry are subject to license, but according to local sources non-licensed fishermen are

not penalized for doing this work. In 1990, according to local people, there were about 95 license holders.

In 1991 the price for fry, sold to professional traders (*aratdars*) or to people wanting to stock fish ponds, ranged from Tk. 100 per kg. to as high as Tk. 4,000, depending on the level of demand. The nets (*savar*) used to catch the fry in shallow areas are expensive, costing Tk. 7,000-10,000 in 1991.

The large number of unlicensed and inexperienced people involved in this business was said to cause much damage to the fry, wasting part of the fisheries resource and possibly reducing the natural fish population. Many are keen on this work, nonetheless, as the cash income helps them to repay loans and meet other urgent financial needs.<sup>2</sup>

---

### NOTES

1. Personal communication, FAP 17 staff member.

2. The source of this information was a Flood Response Study interview with three men—a Konabari high school teacher, a labor leader from Gobindashi, and another person, of Gopalganj mauza.

**Table 8.1 Markets Used by Residents of Study Mauzas**

Mauza/village	Markets	Purposes	Distance (km)	Dry Season Transport	Wet Season Transport	Travel Cost
Rahai Gabsara/Jangipur	Kutboira	Buy/sell daily commodities; buy fertilizer	5	Walk, and cross one river by boat	Engine boat	Tk.1, boat; Tk.3, engine boat
	Gobindashi Bazar	Buy food grains, bamboo, fertilizer, other items, including wedding supplies; sell produce.	8	Walk	Engine boat	Tk.4
	Sheulkhole Bazar	Not used often. Mainly an alternative outlet for cattle sales.	11	Walk; bus	Engine boat & bus	Tk.2, bus; Tk.4, boat
	Sirajganj Bazar	Buy/sell daily commodities.	4	Rickshaw	Rickshaw	Tk.4
Biara	Kailar Hat	Buy/sell cattle & daily commodities.	5	Walk	Walk	---
	Sheulkhole Bazar	Sell vegetables and other produce.	10	Engine boat	Engine boat	Tk.4
	Nolin Bazar	Buy/sell daily commodities.	5	Walk, and cross one river by boat.	Engine boat	Tk.1, boat; Tk.2, engine boat
Jaghaipura	Kutboira Bazar	Buy/sell daily commodities & sell produce.	5	Walk, crossing one river	Engine boat	Tk.1, boat; Tk.2, engine boat
	Char Susua Bazar	Buy/sell daily commodities.	3	Walk, and cross one river by boat.	Private boat	Tk.1, boat

(continued)



## MARKETS, TRADE, AND COMMUNICATIONS

### Chapter 8

payment either in cash or in kind, they advance credit, and they accept goods on pawn.<sup>1</sup> Although these traders buy things from them, people tend to sell valuable assets (such as stored crops) in local markets rather to them.

Silt deposits in the eastern side of the river reduce access to the Gobindashi Ferry Terminal, closing it for as many as five months in some years. When it is closed the terminal shifts [upstream] to Nal-chia. The resulting disruption in commerce is of concern to local businessmen, who suggested that

Table 8.1 (following page) shows that there are 10 markets, large and small, used by inhabitants of the mauzas visited. People travel from 2 to 24 kilometers to trade at these centers, some of which serve multiple purposes, e.g., having health care facilities as well as businesses, or in one case (in the mainland), a bank. The easy availability of engine boats makes travel to markets in most seasons relatively easy. Some markets, especially Siraganj, are popular because commodity prices are reasonable and farmers can sell their produce for good amounts. Villagers said that they tend to use the nearest markets for buying

daily commodities, but they use certain markets for special purposes such as buying or selling cattle or bamboo.

In addition to trading at markets, people make use of mobile businesses (called *foriah*) and small shops set up in some chars. Mobile businesses, many from the mainland, are especially active during the rainy season, when they may float directly to a house to buy and sell commodities. Local people claim that the prices charged by these businessmen are about 10 percent higher than in the regular markets, and the prices the businessmen pay for goods purchased are much lower, but despite these disadvantages, they appreciate the convenience of the service provided. Other advantages are that the businesses accept

Table 8.2 Average Market Prices of Selected Commodities

Commodity	Normal Price (Tk)		Monsoon Price (Tk)
Rice	8		10
Flour	6.5		8
Chili (red)	60		75
Pulses ( <i>masur</i> )	20		23
Edible Oil (mustard)	38		40
Potato	6.5		9
Salt	7		8
Lungi (av. quality)	75		80
Sari (av. quality)	150		155
Bamboo (1 lg. piece)	100		120
C.L. Sheet (22m, av. quality)	2,300		2,300
Catkin (about 250 kg)	19.5		32.5
Cow (av. quality)	5,500		4,500
Goat (av. quality)	900		700

Source: Charland RRA

Table 8.1 Markets Used by Residents of Study Mauzas

Mauza/village	Markets	Purposes	Distance (km)	Dry Season Transport	Wet Season Transport	Travel Cost
Khas Borar Boyra	Gobindapur Bazar	All marketing needs, including cattle sales and purchases.	2	Walk	Small (6-7 passenger) boat	Tk. 2, boat
	Ghoita Bazar	Buy/sell daily commodities.	2	Walk	Small boat	Tk. 1, boat
	Goinnatpur Bazar	Mainly used for emergency purchases of bamboo or paddy for home consumption.	10	Engine boat	Engine boat	Tk. 5
Konabari/ Gopalganj	Sirajganj Bazar	Sell jewelry; buy wedding supplies; and other purpose.	10	Engine boat	Engine boat	Tk. 5
	Gobindashi Bazar	All marketing needs, including cattle sales and purchases.	2	Walk	Small passenger boat	Tk. 2, boat
	Sirajganj Bazar	Buy paddy, rice, and molasses in quantity.	24	Engine boat (Alternately, walk 10 km and cross one river by boat)	Engine boat	Tk. 10 (Alt., Tk. 2 for boat)
Char Chandani/ Gopalganj	Gobindashi Bazar	All marketing needs, including purchase of wedding supplies.	10	Walk, crossing two rivers by boat.	Engine boat	Tk. 4, boat; Tk. 5, engine boat
		All marketing needs.	8	Walk, crossing one river by boat.	Engine boat	Tk. 1, small boat; Tk. 6, engine boat

Source: Charland RRA





river dredging would help; or, that a ferry terminal be built 1.5 km. northwest of Gobindashi in Joypur Village (Gabsara Union).<sup>2</sup> People of this region make much use of the urban centers of Bhupur and Sirajganj. Travel is mainly by boat, or on foot, or some combination of the two, with Sirajganj more accessible by boat year-round because of the siltation in the east.

Table 8.2 compares normal and monsoon season prices of some commodities. As the table indicates, market prices of many basic commodities increase during flood time. Prices of bamboo and CI sheets generally increase just before the rainy season, when villagers try to strengthen their homesteads to save them from rain, storm, etc. Prices of clothes are highest just after the harvest of main crops, not during the monsoon, although there is a slight rise then. Cattle prices actually drop during the monsoon season because people are eager to sell at that time to avoid problems of caring for cattle in floods. Cattle and other valuables sold at this time usually bring only a very nominal price.

## 8.1 Accessibility of Administrative Centers

Table 8.3 shows distances between study mauzas and union and thana offices, and travel methods to reach those centers. There are no union parishad offices in these chars; so, to get to their union headquarters char people have to either walk long distances during the dry season or use boats during the wet season. They prefer to travel in boats. Although the distances between the settlement and the union headquarters is the same in three island char mauzas, Jangipur, Jaghatpura, and Biara, the trip from Biara is much faster than from the other two because it does not require any boat travel.

The travel problems in getting to thana headquarters are the same as those in getting to union council offices, except, of course, that there are fewer thana offices and they are more distant. The only focus mauza that had easy access to its thana headquarters (Sirajganj) was Biara, from which the trip could be made by road. As with travel to union offices, char people have to consider costs in both time and money.

Table 8.3 Accessibility of Government Offices in Survey Area by Char Type

Char Type and Number	Average Distance from Village (with range) in km	Dry season (one-way)			Wet season (one-way)		
		Av. Time (hr.)	Av. Cost (Tk.)	Mode of Transport	Av. Time (hr.)	Av. Cost (Tk.)	Mode of Transport
a) Union Parishad Office							
Mainland (2)	3.6 (2.4-4.8)	0.75	0	On foot	0.75	0.8	On foot, boat
Island Char (4)	7.3 (4.8-9.7)	2.03	1.5	On foot, boat	1.25	3.3	Engine boat
b) Thana Headquarters							
Mainland (2)	6.0 (4.0-8.0)	1.00	3.8	On foot, bus, rickshaw	0.88	4.0	On foot, bus, boat, rickshaw
Island Char (4)	13.3 (8.0-17.7)	2.38	5.5	Boat, bus	1.63	6.8	Engine boat, bus

Source: Charland RRA

Table 8.4 Boat Ownership by Char Type

Char Type	Small Boats					Engine Boats			
	No. of Households	No. of HH with Boats	% of HH with Boats	Total Boats	Boats/HH	No. of HH with Boats	% of HH with Boats	Total Boats	Boats/HH
Island Char	342	128	37	128	0.37	14	4	14	0.04
Attached Char & Unprotected Mainland	193	16	8	16	0.08	6	3	6	0.03

Source: Charland RRA

## 8.2 Boat Ownership

Table 8.4 presents data on boat ownership by char type. A high percentage of island char households (37%) were found to own small non-mechanized boats. These boats are extremely useful for household transportation needs and fishing activities. In many island chars people are hesitant to own personal boats because it can be difficult for them to find inlets where they can keep their boats during the dry season. In Char Chandani, the presence of an inlet was found to have encouraged residents to own small boats, 89 percent of the

households there had boats. In the attached chars and unprotected mainland, a much smaller percentage of households own any kind of boat, mainly because the people living in these areas have access to road transportation.

The Jamuna River currents are so strong at some times of the year that travel in non-mechanized boats can be quite hazardous. Engine boats, however, are too costly for most households. Those households that did have engine boats used them for transporting goods or ferrying people rather than for personal transportation.

## NOTES

1. The sources of this report are two 1991 Flood Response Study interviews with men and women.
2. The source of this information and these suggestions was a 1991 Flood Response Study interview with a group of businessmen at the Gobindashi Ferry Terminal. This group claimed that the river was generally less navigable than it used to be.



## Chapter 9

### DIET, HEALTH, AND SANITATION

#### 9.1 Diet

In Khas Borar Boyra the RRA team was told that in the dry season 40 percent of all households eat three meals a day and 60 percent eat only two. During floods only 20 percent were said to be able to manage three meals; 70 percent ate two; and 10 percent ate one.<sup>1</sup> An ideal diet was said to consist of wheat-flour bread (*rutli*), milk, and egg in the morning; freshly cooked rice with a vegetable and fish or meat in the middle of the day; and the same foods as midday at the evening meal, plus some milk. Those who explained this said, however, that only two households in the entire village could afford such a balanced diet.

The preferred staple food in chars visited was rice, with three substitutes utilized by poor people: a paste made of wheat flour, water and salt (*atar jao*); a boiled mixture of pounded millet and rice (*kaoner bhat*); and sweet potato cut up in small pieces and cooked together with rice (*alur bhat*). People said that the wheat paste and sweet potato substitutes are not healthy foods, one man adding the comment that they make one dizzy and weak and unable to work properly. Some people<sup>2</sup> said that eating too much sweet potato (a basic food during the pre-monsoon months of *Chaitra* (March-April) and *Jaisthya* (May-June) causes worms in children's stomachs. The consensus about the millet-rice mixture, on the other hand, was that it was nourishment good for health. During the monsoon season or at times of flood, rice prices rise, and it is necessary for poor people to depend on either cheaper types of rice or the less desirable substitute foods.

Other important foods consumed in this region are *khesari* (*Lathyrus sativus*),<sup>3</sup> which seems to be the main source of protein for the majority of households; several types of banana; and spinach or radish. Other pulses consumed by large numbers of households are *masur* (*Lens culinaris*) and *kalai* (*Vigna mungo*). These pulses are very costly, so if people grow them they are likely to sell them in the market rather than consume them. We were told that some families are able to sell a kilogram of either of these and use the money to buy two kilograms of fish in markets. Fish, though very desirable, is said to be hard to get in this area. Eggs, though liked, also are not widely consumed. If produced, most are said to be sold.

In floods it is necessary to eat whenever possible rather than keeping to a strict routine. During floods vegetables were said to be consumed only once a week.

#### 9.2 Diseases and Health Care

The main diseases, afflicting mainly children, in the Bhuapur char areas were said to be measles (locally called *bhapi*) and chicken pox, the latter said to start mainly in the months of *Baishakh* (April-May) or *Jaisthya* (May-June). Skin rashes appear to be a common problem in the dry season. Other common complaints were: arthritis, asthma, anemia, physical weakness, and edema (water in the body causing it to swell).

Diarrhoea, often confused with cholera, is a widespread problem during the monsoon season; it is



often accompanied by fever and cold symptoms. Another health problem in this season, and especially in floods, is painful sores in the feet (*gha*) caused by standing in water for long periods of time. This problem can cause such severe pain that it becomes difficult to walk.<sup>4</sup>

People of the sites visited utilize both modern and traditional/religious health services, but there were some important differences among the six places visited. In one site, Char Chandani/Gopalganj, children were said not to be immunized, because workers do not visit regularly;<sup>5</sup> but in two other sites, Konabari/Gopalganj and Khas Borar Boyra, a majority of people were said to be reluctant to have their children immunized. In Khas Borar Boyra, where women estimated that no more than 5 percent of children were immunized, most people seem to think that vaccinations themselves will cause illness and perhaps even death. Similar comments were heard in Konabari/Gopalganj.

As with immunizations, attitudes toward (and reported use of) family planning varied from site to site. In most of the places where the topic was discussed, people seem to use family planning services provided either by health workers who visit regularly or in medical facilities located in

markets (rural clinics) or urban centers. Sirajganj was said to offer the best facilities for major surgery or other serious medical treatment. In Char Chandani/Gopalganj, however, women reported that use of contraception, especially tubal ligation, has been locally defined as sinful, against the Holy Qu'ran; and family planning workers visit infrequently, maybe only once in six or nine months. Those who do use birth control pills or other contraception find it necessary to be very secretive about it, according to one woman who keeps a supply of pills in her house for local distribution.<sup>6</sup>

Traditional healing is provided by either *kabiraj* practitioners or religious patrons, imam. These services are either free or low-cost, compared to modern medical services.

Sanitation Arrangements. One of three mauzas in which sanitation arrangements were discussed had pit latrines. The other two had only *kutchha* latrines. In each place it was said that private sanitation facilities were used only by women, with men using bushes and fields to relieve themselves. This area does not seem to have been the object of any large-scale sanitation improvement programs to date.<sup>7</sup>

## NOTES

1. This topic was not discussed in the other chars visited.

2. Khas Borar Boyra

3. When *khesari* is a dominant part of the diet it is a health hazard, causing a nervous disorder called lathyrism.

4. These reports are from Khas Borar Boyra, but *gha* is widely said to be a problem in flood from Tangail and other mainland areas covered by the Flood Response Study.

5. The worker who formerly did immunizations was transferred and not replaced. This happened about one year ago.

6. She gets these pills in quantity from the family planning worker who visits infrequently.

7. It is possible that SCI might have such a program in Jangipur, but this was not one of the villages in which sanitation questions were discussed during this RRA.

## Chapter 10

### LOCAL PERCEPTIONS OF CHAR LIFE

Along with socioeconomic information the RRA team gathered cultural materials that reflect local views of char and mainland life. These included proverbs or sayings and songs. The content of these materials is more useful for some purposes than individual opinions, because cultural materials are more standardized and reflect a degree of community consensus and conceptualization about a topic, whereas individual feelings and ideas can be highly idiosyncratic. The resulting information provides a sense of the humor, pride, shame, and stereotypes shared by large groups or subgroups of interviewees. This information is fundamental to understanding the complex attitudes that underlie relationships between char people and others.

In this round of RRA site visits, the team heard several comments expressing positive and proud feelings about char people's way of life as well as its problematic side. One saying heard in Khas Borar Boyra expressed a sense of char people as a closely knit society despite their physical dispersal, "Char people talk about everything. Though they live in one char, they know all about seven other chars".<sup>1</sup> Unity, honesty, and economic opportunity were emphasized in several comments. One man of Jaghatpura said he enjoys the greater independence that char life offers. He, like others, said that land is more affordable in the chars, and cattle are easy to care for. A wealthy man of Konabari said he prefers to invest in land in the chars rather than in the mainland because the latter is too expensive and the return on the investment is too low. In chars, he said, one can buy and cultivate much land for less money. (Part of the reason for cultivation being less costly must be that they are not cultivating HYV crops that would require

expensive inputs such as fertilizer.) One old woman in Char Chandani said she loves char life and wouldn't want to live anywhere else; she cherishes happy memories of a carefree childhood running about in the sandy chars.

A positive, or at least jolly, picture of char life came out in the lyrics of a song heard in Khas Borar Boyra. The theme of the song was all the gifts a man would bring back with him when he returned from working outside, and how happy his parents, his wife, and his children would be upon his return.

The disadvantages of char life were also mentioned, as might be expected. One man, in Khas Borar Boyra, said the char people are worse off than mainlanders because sandy chars are less fertile than mainland fields. Another man, in Konabari, said that char life is more difficult because of the erosion problem, which forces people to move and sometimes to face starvation. Also heard in the northern Jamuna area, disparaging references to sandy char soil were repeated several times. One woman in Char Chandani said, "We eat two maunds of sand every year".

One statement by a Konabari farmer (a cultivator of his own small landholdings) emphasized the honesty of char people and their feelings of great separation from the mainland as a way of life:

*Char people are not tricky like those on the mainland. Mainland people spend all their time doing tricks on each other, and that's why they cannot sleep well, even*



12

*though they have fine quilts and mattresses. We are all right, except for flood and erosion times. We're chaura, and they're bira, and we'll always be different.*

The word used to refer to mainland people was *bira*, and their lands were, *bir* or *kaimi* (meaning "stable places").<sup>2</sup> The char-mainland distinction was sometimes referred to as *choira-boira*, *boira* apparently a variant of *bira* but possibly a play on the word *boiree*, meaning "enemy". Relations between char and mainland people differed from one socioeconomic class group to another. Wealthy people in chars are able to establish and maintain relations with the mainland, partly because they can afford to pay dowries required to marry some of their daughters to the mainland. Poorer people, however, saw the mainland as a place where they face discrimination and disdain. One man said that for his family and other poor people mainland marriage arrangement was impossible. He summed up the attitude of mainland people toward char people: "They despise us".

In the eroding settlement at Biara, the RRA team observed a group that had previously considered itself to be mainland transforming itself into a section of char society. Most of their land is submerged now, and they are camped on an embankment and in an abandoned jute godown in the Sirajganj railroad yard awaiting its re-appearance. They said that when their land does reappear, it will no longer be considered "stable", so they are "char people" now. This new status, as problematic as it is, was said to have at least one advantage in their view. Because they now were released from the obligation to maintain prestige of the type that mainland people value, they were now able to join the seasonally migrant labor force that travels to the northeast to harvest the winter (boro) rice crop, a cohort joined only by mainland people who are landless and shunned by others who would suffer too great a loss in prestige if they did such work. "Now that we are destitute", they said, "this opportunity is available to us".

## 10.1 Ideas About Problems and Their Solutions

Causes of Erosion. In a group interview in this area last year a member of the current RRA team was told that erosion may be caused by an imbalanced, or uneven flow of river channels around a char. The char in question, Char Chandani, is indeed affected by an east-to-west swinging of river channels around it, and it is eroded alternately on its eastern and western sides. The local perception of the problem as one of "imbalance" is noteworthy, because it may be the basis of a local solution proposed vigorously by several (other) groups of char people to the Flood Response Study team in 1991: the dredging of the river channel. There is a strong feeling that if the river channel were deeper, there would be less pressure on charlands, and thus less erosion. The balance idea may come into play here, in that dredging may be seen as a way of restoring an even flow of water, and thus reducing erosion. In discussing options for change such local understandings would have to be taken into account, and local questions arising from them, answered.

Two other local development ideas came up in discussions by this RRA team. One was proposed by two or three interview groups—giving credit for cattle rearing, which is seen as one of the most desirable and profitable businesses char people can do. One flood-related need expressed was safe, high ground where animals could be sheltered.

The other idea was for the government to initiate some kind of employment program, as the great majority of the people of this char area consider themselves to be either unemployed or underemployed. Although the point did not come up in the conversations in question, women's needs for employment parallel those of men.



---

## NOTES

1. *Chaira maanisher kairaa katha, Ek chaare thaika kay shaat charer katha*. This saying was quoted by a man who owns parcels of land on several chars, and who goes out to inspect his multiple properties after each year's flood.
2. Another term mentioned was *irriwala* meaning "cultivator of [HYV] irri crops", which may have been an idiosyncratic usage.

## Chapter 11

### CONCLUSIONS

The Bhuapur char region is gaining a reputation as an area where life is harmonious in comparison with some other chars, so in conclusion we shall briefly view this study from a comparative perspective.

As mentioned earlier, this study covered only people who had somehow managed to stay in or near their original char homes. Information on those who have left char society would be needed to provide a proper understanding of why some people do manage it and others do not. There is population pressure on the land, to be sure; but large numbers manage to remain, moving from place to place when erosion claims their fields and homestead lands, while others are somehow forced out. Causes of displacement out of char lands no doubt have some basis in displacement out of char society. It is probable that conflicts within or between *samajes* play a role in population displacement. If char society is somehow amicable, then, this is partly because those who remain within it are those who agree to the terms and conditions of the local elite. Ownership of land is not a clear determinant, but attachment to some patron who does own land may be. Agreement to accept the terms and conditions of *samaj* membership—either in the original society or in a new place—is another factor that seems to be important. According to some studies of displaced people squatting on embankments or in urban areas, acceptance in a new *samaj* is not guaranteed and may, in fact, be refused. Thus our findings that people apply and gain admission to new societies when migrating far from their original homes, while true for the group of successful resettlers contacted, are distorted in the sense that

they exclude reports from those who have had to leave. The people remaining in the chars are people who have survived socially as well as physically.

One apparent feature of the people who move around from one char to another when erosion hits is that they have a group to protect and support them. This group may be a *samaj* or some part of one; or it may be a group of patrilineally related families. The importance of being "interdependent" with other families was mentioned several times in this RRA team's interviews. The interdependence is of the sort that demands great loyalty and much hard work of all members, even extending to risk of life, as groups move among chars, dismantling and reconstructing settlements, negotiating land tenure arrangements, working for pay, and sometimes fighting with other groups. But the reward for this commitment is a great one—a near guarantee of survival, as much as this difficult way of life will allow.

Char regions of Bangladesh differ in terms of the amount and types of violent conflict reported in the media and by researchers. For example, the chars around Bhuapur are said by one source to be more peaceful than some others, especially the notoriously conflict-ridden Noakhali. One source argues that the Bhuapur case should be used as a model of harmony:

*...In most other char areas of Bangladesh, in particular the coastal regions, violence stemming from land grabbing of the newly exposed char islands by powerful*



92

landlords is commonplace, and many deaths occur annually from these confrontations. However, this same violence does not occur in the [Bhuapur Thana] villages of the SCI-BDP project area. All the more reason to preserve these areas and study the cultures represented there. (Anonymous n.d.:22-23)

Similar observations were made in the FAP 3.1 team's socioeconomic study of the Jamalpur Priority Project area just to the north of Bhuapur:

*From enquiries in the field it would appear that land disputes in the area are very rare indeed as when land re-emerges it is re-apportioned according to the old Mauza maps (not easy to do if there are no reference markers) in a way that is acceptable to all parties. Any disputes are amicably settled locally, avoiding recourse to higher authority which would be expensive, time consuming and open to manipulation. (Flood Action Plan 1992:72, draft report)*

The central Jamuna area around Kazipur is an area that has seen violent conflict over emergent lands, much of this conflict having been documented in the writings of M.Q. Zaman, a former member of the REIS team. Zaman's thesis is that strong patrons and *samaj* organizations are able to dominate char areas because the weakness of formal government structures leaves a power gap. He describes local char society in the Kazipur region as similar in some ways to the weakly governed areas of southern Italy dominated by the strongly organized, violent Mafia.

In Bhuapur the findings of the FAP 16 RRA team did not include any cases of quasi-military action of the type reported in coastal chars, where as many as 1,000 or 2,000 armed men might invade a disputed territory; so the level of violence can be

assumed to be at least somewhat less than in those places. Findings on land rights, however, do not at all support the sanguine views of Bhuapur charland allocation as especially amicable or harmonious. The *samaj* system is strong in this area, and local patrons seem to have firm control of the population living in most of the chars, the ones served by SCI being possible exceptions.<sup>1</sup> The strengths of local society allow for disputes to be handled within the chars themselves, with minimal recourse to appeals to government officials. People discussing this process with the RRA team, however, did not say it was especially amicable; in fact, several, including some of the patrons themselves, described a situation in which the power of the patrons over land was so complete that there was little point in disputing their decisions, although some would have wished to do so. A field-level ministry official of the Land Office himself pointed out that a government surveyor would not be allowed into some chars to measure newly accreted (thus government-owned) lands; and in fact the responsible government agency was entirely unable to enforce national laws affecting disposition of charlands.

The duration of char settlement may be another factor affecting different levels of violence from one Bangladesh char region to another. The coastal areas have seen much accretion of new, fertile land in recent years. It is easy to understand that there would be intense competition over this land, on which very profitable cash crops, such as coconut and betel nut, grow easily, and where cattle ranching also tends to be a successful enterprise. The chars of the Jamuna and Meghna were settled by groups who moved in gradually over the last century and stabilized their society to some extent. Some of the most violent battles already may have been fought, and some of the present patrons must be descendants of victorious strongmen.

The most problematic aspect of the current situation in the active Jamuna chars is the nearly total inability of the government—in Bhuapur as elsewhere—to enforce laws that grant newly accreted charlands to landless people. Whatever efforts the

government makes are easily thwarted. For example, one large landowner of Bhuapur area told a team member that, "We are united" in undermining auctions of lands. If there is a government auction of some lands on which a local patron has an interest, no one will bid on them. If they do, he

explained, "They will be beaten". This is not large-scale violence, but there is a well understood potential or actual physical force supporting the maneuvers of people in power. And apparently this force is countered by no police or other governmental opposition.

---

## NOTES

1. It was not possible under these conditions to assess the degree to which SCI does or does not ensure equitable distribution of resources within its project areas, but there are indications that it does. The FAP 2 project report stated that a "strong NGO presence in Bhuapur" was able to help landless settlers get title to lands. A similar situation was mentioned for Chilmari, which is within the RDRS project scope. (1992, v.II, p.2-23)





## REFERENCES

### Anonymous

- n.d. Inhabitants of the Jamuna River Char and Their Relationship to Current Flood Planning. Typed ms., 28 pp. [1992?]

### Bangladesh Flood Action Plan

- 1992a Char Study Report. FAP 3.1, Jamalpur Priority Project Study Caisse Centrale de Coopération Economique and Commission of the European Community. Dhaka: Draft, prepared by Sogreah/Halcrow/Lahmeyer in association with Engineering & Planning Consultants Ltd., AQUA Consultants and Associates Ltd., and Service Civil International, for Flood Plan Coordination Organization.
- 1992b Draft Final Report, Flood Response Study, FAP 14. Dhaka: Draft, prepared by Irrigation Support Network for Asian and the Near East (ISPAN)/USAID, for Flood Plan Coordination Organization.
- 1993 The Dynamic Physical and Socioeconomic Environment of Riverine Charlands. Dhaka: Draft, prepared by Irrigation Support Network for Asian and the Near East (ISPAN)/USAID, FAP 16 Environmental Study and FAP 19 Geographic Information System, for Flood Plan Coordination Organization. [Inventory survey findings]

### Elahi, K. Maudood, & John R. Rogge

- 1990 Riverbank Erosion, Flood and Population Displacement in Bangladesh; A Report on the Riverbank Erosion Impact Study. Savar, Dhaka: Jahangirnagar University. [Department of Geography], Riverbank Erosion Impact Study.

### Indra, Doreen, & Norman Buchigniani

- 1992 *Uthuli* Residence as a Response to Environmentally-Forced Migration in Kazipur. Lethbridge, Alberta, Canada: Lethbridge University, Department of Anthropology.

### Khan, Nurul Islam, general editor

- 1978 Bangladesh District Gazetteers; Pabna. Dacca: Bangladesh Government Press.

### Zaman, M.Q.

- 1987 Endemic Land Conflict and Violence in Char Villages of Bangladesh. River Erosion Impact Study Newsletter [Department of Geography, Jahangirnagar University], No. 3, pp. 8-11.
- 1989 The Social and Political Context of Adjustment to Riverbank Erosion Hazard and Population Resettlement in Bangladesh. *Human Organization* 48:3:196-205.

