Government of the People's Republic of Bangladesh
Bangladesh Water Development Board
Water Resource Planning Organisation

NORTHEAST REGIONAL WATER MANAGEMENT PROJECT (FAP 6)

DAMPARA WATER MANAGEMENT PROJECT

FEASIBILITY STUDY
ANNEX C: PEOPLE AND THE SOCIAL CONTEXT
FINAL REPORT

March 1997

SNC ♦ LAVALIN International
Northwest Hydraulic Consultants

in association with

Engineering and Planning Consultants Ltd.
Bangladesh Engineering and Technological Services

Canadian International Development Agency

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COVER PHOTO: A typical village in the deeply flooded area of the Northeast Region. The earthen village platform is created to keep the houses above water during the flood season which lasts for five to seven months of the year. The platform is threatened by erosion from wave action; bamboo fencing is used as bank protection but often proves ineffective. The single *hijal* tree in front of the village is all that remains of the past lowland forest. The houses on the platform are squeezed together leaving no space for courtyards, gardens or livestock. Water surrounding the platform is used as a source of drinking water and for waste disposal by the hanging latrines. Life in these crowded villages can become very stressful especially for the women, because of the isolation during the flood season. The only form of transport from the village is by small country boats seen in the picture. The Northeast Regional Water Management Plan aims to improve the quality of life for these people.

Government of the People's Republic of Bangladesh
Bangladesh Water Development Board
Water Resources Planning Organization

FLOOD ACTION PLAN

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ACRONYMS AND ABBREVIATIONS

ASA	Association for Social Advancement
BBS	Bangladesh Bureau of Statistics
BRAC	Bangladesh Rural Advancement Committee
BRDB	Bangladesh Rural Development Board
BWDB	Bangladesh Water Development Board
cft	cubic feet
DPHE	Department of Public Health Engineering
DTW	deep tube well
FWC	Family Welfare Centre
FWV	Family Welfare Visitor
HTW	hand tube well
IGA	income generating activity
kg	kilogram
LGRD&C	Local Government, Rural Development and Cooperative
LLP	low lift pump
MCH	mother and child health
NERP	Northeast Regional Project
NGO	non-government organization
PRA	participatory rural appraisal
RD-12	Rural Development-12
STW	shallow tube well
TW	tube well
UP	Union Parishad

GLOSSARY OF TERMS

ail	small dyke demarcating boundary of agricultural plots
aman	monsoon rice crop
aus	pre-monsoon rice or rice grown in *Kharif* I season.
b. aman	broadcast or deepwater aman rice grown in *Kharif* I and II seasons
barshar pani	monsoon water
barga	sharecropping
bari	cluster of houses usually having kinship lineage
beel	floodplain lake, which may hold water permanently or dry up during the winter
bhita	homestead
biri	indigenous cigarette
bisra	patch between homestead and crop land
bonya	flood
boro	winter rice or rice grown in *Rabi* season
bundh	earthen dam, closure
char	islets in the rivers
chira	flattened rice used as snack
chukti	contract
chula	woven
dai	birth-attendant
danta	amaranths
doba	ditch
eid	muslim religious festival
fitra	contribution made to the poor on the eve of the eid after month-long fasting
ghar	house
ghar jamai	groom living in the house of parents-in-law
gudara	ferry boat
haat	big market
haor	depression in the floodplain
hara	unit of land measurement, equivalent to 16 katha or 1.28 acre
jakat	contribution made to the poor according to islamic law
kamla	wage labourer
kantha	quilt made of old cloth
katha	unit of land measurement, equivalent to 0.08 acre
khal	channel
khancha	cage
kharif I	pre-monsoon season (March to June)
kharif II	monsoon season (July to October)
kutcha	thatched
large farm	farm household owning more than 3 ha of cultivated land
logni karbar	lending money at high rate of interest
macha	platform made of bamboo or timber
madrassa	school with emphasis on religious curriculum
majhee	boatman
maund	indigenous unit of weight, equivalent to 40 seers or 37.3 kg
mauza	lowest level geographic unit
mazar	mausoleum of a saint
medium farm	farm household owning 1 to 3 ha of cultivated land
moulana	muslim priest

muri	puffed rice used as snack
nadi	river
nakshi	embroidery
nolua	people making bamboo products
non-farm	farm households owning less than 0.2 ha of cultivated land
orash	religious festival commemorating the birth or death of a saint
pankha	hand-made fan
para	cluster of several bari forming a neighbourhood
poa	unit of measuring weight, quarter of a seer
poshchim	west
purbo	east
rabi	the dry season
roj kamla	labourer engaged on a daily basis
salish	arbitration
samity	cooperative society
sanko	bamboo bridge
saree	women's wear
seer	indigenous unit of weight, equivalent to 0.933 kg
small farm	farm household owning 0.02 to 1 ha of cultivated land
t. aman	transplanted aman rice grown in *Kharif* II season or monsoon season
taka (Tk.)	unit of currency, 1 US $ = 40 taka (approx.)
tempoo	mechanized boat carrying merchandize
thana	geo-administrative unit under a district comprising several unions
union	geo-administrative unit under a thana comprising several villages
parishad	elected local government council at the union level
uthan	courtyard

CONVERSIONS

Weight:

4 poa	= 1 seer
40 seer	= 1 maund
1 seer	= 0.933 kg
1 maund	= 37.3 kg

Area:

16 katha	= 1 hara
1 katha	= 0.08 acre
1 hara	= 1.28 acre
1 hectare	= 2.47 acre

Calendar:

Month	Conversion	
	From the middle of	To the middle of
Baishakh	April	May
Jaishtha	May	June
Ashar	June	July
Sravan	July	August
Bhadra	August	September
Ashwin	September	October
Kartik	October	November
Agrahayan	November	December
Poush	December	January
Magh	January	February
Falgun	February	March
Choitra	March	April

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ABSTRACT

The rural society is based on a nexus of relationships. In a stratified society, each has a role to play, either animated or dormant. But one has definite strategies for survival, no matter how modest they are. It is also true that one tends to maximize one's economic and political power individually or in alliance with others. It has been observed that the rich and the influential persons form alliances to appropriate public resources, and the poor apply their own survival options to use community resources where there is little or no resistance from the rich. While the rich exploit local conditions and resources to maximize their benefits, the poor sometimes resort to seasonal migration to earn a living.

Community initiatives may be grouped into two categories. One category is mainly related to certain "actions" initiated by the people to regulate water for irrigation, for example the construction of closure in rivers and drainage channels. Another category of initiatives is observed in the form of "reaction" of one group of people to structures built by another group, for example cutting of dykes which obstructs drainage and cutting of closures which obstruct the flow of water.

Certain action which may benefit the farmers in one village may have adverse impact in a wider context. This phenomenon clearly indicates the dichotomy between the "local" and the "global" contexts.

Conflicts arising out of alternative uses of ground water are also evident in the lean period from February to April when the demand for ground water for irrigation reaches its peak. Concurrently, the demand for water for domestic purposes also increases as sources of water, like pond, river, etc., dry up during this period.

Another facet of the scenario is the interaction and cooperation of the people at a micro setting with respect to water use. This occurs for example in the construction of earthen dams in places where the people mobilize their own resources to build manageable structures at reasonable cost without entering into any major conflict with other groups. There are examples where the upstream-downstream conflict with respect to sharing of water for irrigation is resolved through consultation and the recognition of each others' need.

Some individuals control resources, like channel bed, water, etc., more than others. They are also in a position to exercise control over resources available for collective use. This happens to be one form of appropriation of public resources. Economic and political power are major determinants of such appropriation.

Several villages are vulnerable to floods. The people of flood-affected villages want a dyke along the right bank of the Kangsha to protect their crops and homesteads from spills of the Kangsha. Attempts have been made earlier by the people to build dykes along certain sections of the bank. Sometimes, dykes fail, because they are not strong enough or they are not maintained properly. Gaps created in the monsoon are not closed in time. The local population does not maintain flood protection dykes like they do for their irrigation structures which they maintain from their own resources. They look for an outside agency to build or to repair a dyke. This raises the crucial issue of sustainability of such initiatives implemented under the existing institutional framework.

C.1. INTRODUCTION

The objective of this appendix is to provide the social context for the Dampara Water Management Project. The understanding of the dynamics of the people living in the project area is essential, not only to the assessment of impacts, but to the successful implementation and long-term maintenance of the project itself.

C.1.1 Data and Methodology

Data were collected from June 1994 to August 1995. A team of field researchers, aided by senior social scientists, were involved in data collection, documentation and analysis. A household survey was conducted to collect limited data on some demographic and socioeconomic parameters. The bulk of the data was obtained using a PRA method and through a network of key informants.

A household sample survey was undertaken from June 1994 to November 1994. The sampling methodology was as follows:

(a) A census was carried out involving 2,904 households in 15 villages. Data on population, land holding and occupation was obtained for each household.

(b) Later, a sample survey was conducted in 11 of the 15 villages covered by the census. These 11 villages belong to seven unions. The other 4 villages belong to three unions with less than 10% of their area in the project. They were not included.

(c) Two unions are more flood-prone than the others. Four villages were selected from one, two from the second.

(d) All households were grouped in four strata based on agriculture land holding. The strata are:

(1)	Landless	No agriculture land
(2)	Small farmer	Landholding up to 1 ha
(3)	Medium farmer	Landholding > 1 ha to 3 ha
(4)	Large farmer	Landholding > 3 ha

(e) The sample survey had two components. In the first stage, a general questionnaire was administered to ten percent of households from each stratum of the selected villages. In total 244 households were covered. In the second stage, a special questionnaire was given to women respondents in one-third of the households covered by the earlier survey *and* all women-headed households. The successive sampling method was used to select these households from the census list. The second survey covered 164 households.

A Dyke Alignment Survey was undertaken in May-June 1995 where all households having homestead along and outside the proposed alignment of the Kangsha river embankment were covered. Data on landholding were obtained through this survey.

Selected data on human settlements (village), drainage channels, women's activities, wages, river transport, community organisation by the NGOs, etc. were obtained using check lists. Formal and informal interviews were held with members and officials of local government, members of NGO-sponsored groups and NGO staff. Individual case studies were conducted to gain insights about life and livelihood patterns in the project area. Pseudonyms have been used as is the practice in socio-anthropological research.

C.2. AREA PROFILE

C.2.1 Population

According to the 1991 census, there were 112,125 people living in 148 villages in the project area (See Figure 1). Among them, 55,324 (49.3%) are female and 56,801 (50.7%) are male. The population in 1995 was 119,034.

During the last period between census (1981 to 1991, see Table C-1) the population growth rate was 1.54 percent. This is lower than the national growth rate and may be due to net out-migration to urban centres.

Purbadhala *thana* headquarter is the only officially acknowledged urban centre in the project area. According to the 1991 census, the *thana* headquarter has a population of 15,996. Jaria, situated on the bank of the Kangsha river, is a large growth centre and a landing station for merchandise. It has the potential to become an urban centre in the near future.

Table C-1: Population of Dampara

Census year	Population	Growth rate (%)
1872	24,438	
1881	31,739	2.65
1891	36,062	1.29
1901	40,705	1.22
1911	47,021	1.45
1921	50,255	0.67
1931	53,293	0.59
1941	62,574	1.62
1951	60,033	-0.41
1961	72,841	1.95
1974	78,528	0.58
1981	96,251	2.95
1991	112,125	1.54
1872-1991		1.28

Source: Population Census, 1991

C.2.2 Settlement patterns

Human settlements in greater Dampara are distributed in villages belonging to 114 *mouza*. There are 122 villages in Purbadhala *thana* and 26 in Phulpur *thana*. The Bangladesh village is a social as well as a geographical unit and is easily identifiable from a distance by its raised platform. Between villages, there are large tracts of crop land, river, *khal* or *beel*.

The settlement/social units may be broken down into the following: village, *para*, *bari*, and *ghar*. The micro social unit is the *ghar* or nuclear family. Several *ghar* having kinship lineage form a *bari*. Members of a *bari* usually share some resources among themselves (see Figure 2). Among these are a common *uthan* (courtyard for threshing and drying of rice and other household purposes), a pond (for bathing, washing of clothes and utensils and sometimes for fish culture), a graveyard and *bisra* (land between crop field and homestead platform for home garden and seed bed). A cluster of *bari* makes a *para*, or neighbourhood, and a village may comprise one or several *para*.

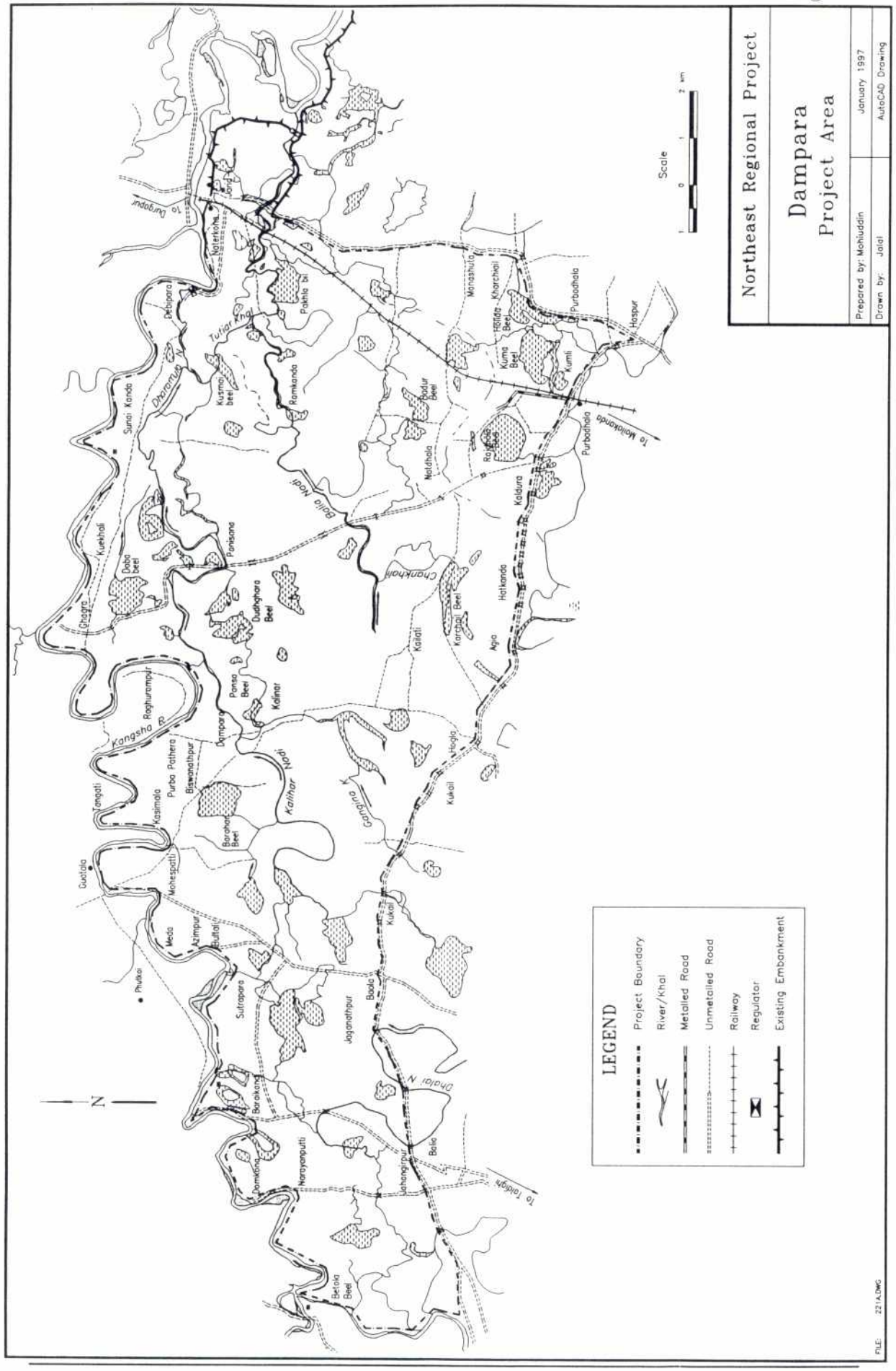
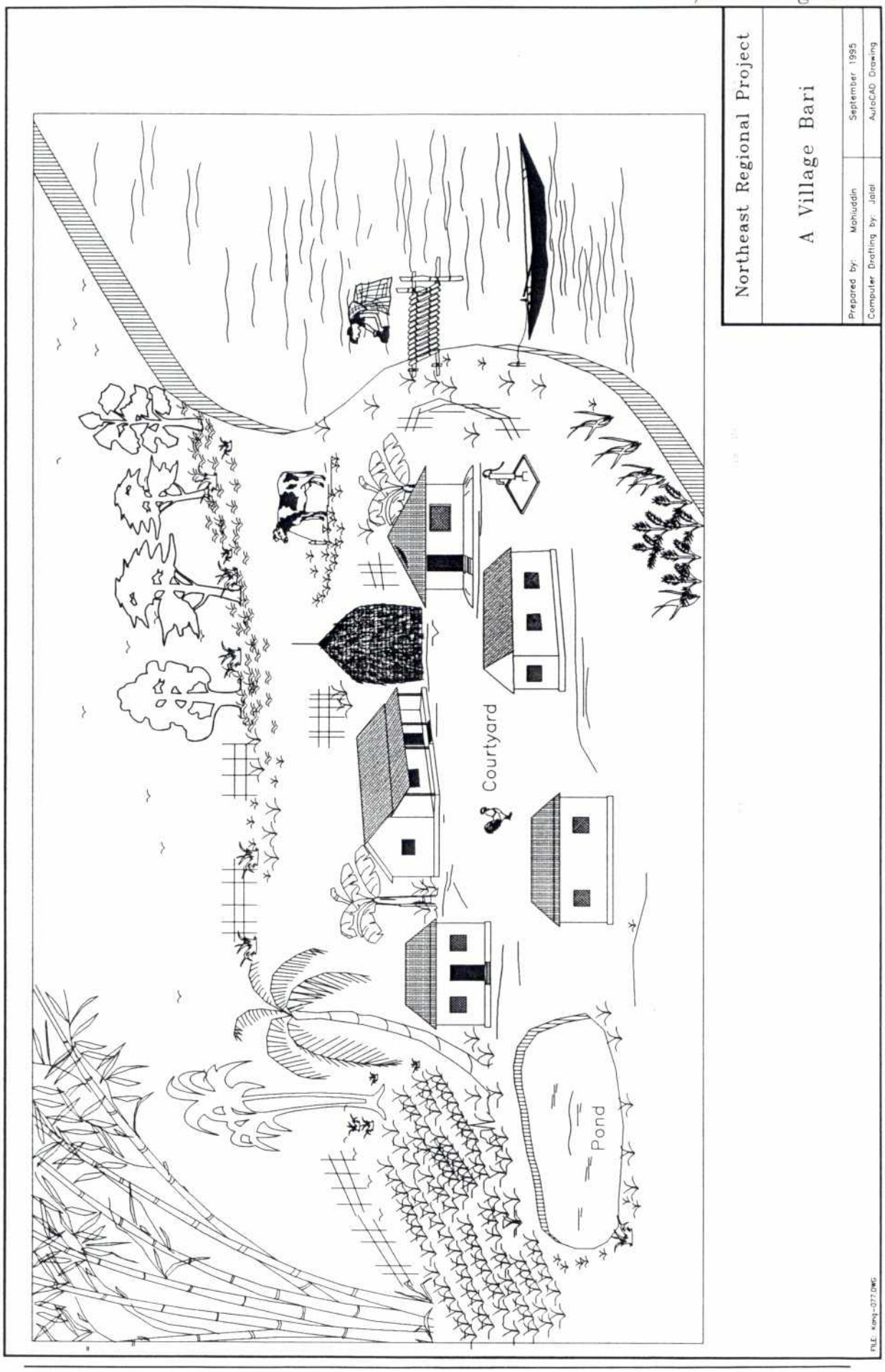

Northeast Regional Project
Dampara
Project Area
Prepared by: Mohiuddin
January 1997
Drawn by: Jalal
AutoCAD Drawing
Scale
2 km
1
0
1
LEGEND
Project Boundary
River/Khal
Metalled Road
Unmetalled Road
Railway
Regulator
Existing Embankment
To Burgopur
To Mollakandi
To Tadigar
Notherkona
Pakhla bil
Monashula
Khorchaili
Purbadhala
Haspur
Kumi Beel
Kumi
Turiar Khal
Kusmoi beel
Ramkanda
Dharartup
Sunai Kanda
Pebipara
Kurekhali
Ghagra
Daba Beel
Pansana
Boilo Nadi
Chanchan
Boidur Beel
Naldhala
Rajaram Beel
Kaldura
Dudhghara Beel
Ponsa Beel
Kalinar
Dampara
Kangsha R.
Raghunampur
Kailati
Karchali Beel
Agia
Hatkanda
Hegla
Kukoli
Gangina
Kathar Nadi
Biswanathpur
Purba Pathera
Tangati
Kasimala
Barahat Beel
Guotala
Mohespatti
Meda
Azimpur
Phulbai
Sutrapara
Jagannathpur
Baola
Kukoi
Dhalai N.
Baraikona
Domkona
Narayanputti
Jahangirpur
Balia
Belola Beel

Figure 2



Northeast Regional Project

A Village Bari

Prepared by: Mohiuddin | September 1995

Computer Drafting by: Jalal | AutoCAD Drawing

FILE: kang-077.DWG

Since the homestead is shared among the *bari*, population increase results in over-crowding and expansion of the homestead platform. Homestead, thus village expansion, occurs through the raising of surrounding lands. This can be problematic in low-lying areas due to terrain and the costs of raising the platform. Villages in low-lying areas, therefore are smaller. When lateral expansion of the *bhita* is not possible, people tend to migrate to areas where land is cheaper. Though private ownership of land is widely recognised, there are social constraints that dictate where one can live. Migrants usually settle in area where kinship linkages exist. Moving to the *bari* of the wife's parents is a common practice for men.

Table C-2: Land Ownership Patterns

Land ownership stratum	Households (%)	Cultivable land owned (%)
Landless	34.4	0
Small	43.9	22.2
Medium	17.2	45.4
Large	4.5	32.4
Total	100.0	100.0

Source: NERP Household Survey

C.2.3 Land Ownership

The people of Dampara are traditionally subsistence farmers. Land is their source of life and livelihood. It is also a source of power and influence. In times of natural calamity, that is, floods or droughts, people are compelled to sell land at depressed prices. Land is also sold to pay off debts. Those who are more economically secure, and can afford to make loans, often buy up the distress-sale land. In this way the control of land, hence power and influence, has increasingly come into the hands of only a few families. Those without land must then live on wage labour.

According to the NERP sample survey, 34 percent of households do not own any cultivable land. The large landholders (owning more than 3 ha) comprise 4.5 percent of households and own one-third of the total cultivable land (see Table C-2). More than 70 percent of the farms are less than 1 ha.

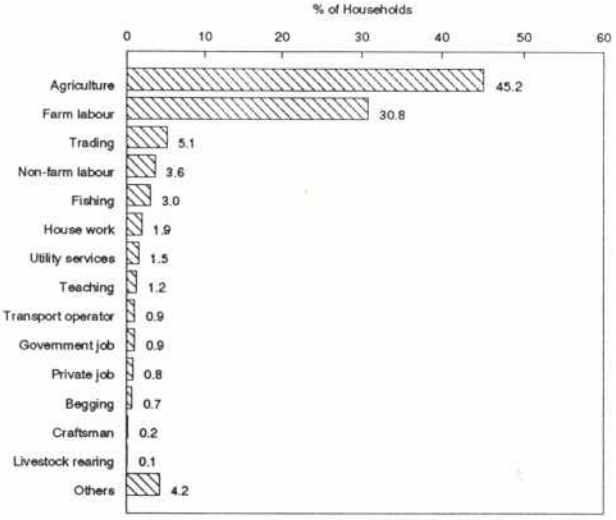
C.2.4 Occupation

The majority of the population is directly or indirectly dependent on agriculture and works either as farmers or farm labourers. A NERP census of household showed that agriculture is the predominant source of livelihood for 45.2 percent of the households. Another 38.2 percent are employed as wage labourers on others' farms (see Figure 3). Other occupations are of minor importance. Notable among these are trading (5.1% of households), non-farm day labour (3.6%) and fishing (3.0%). Agricultural labour is an important occupation for poorer households. It is the main occupation for many small farmers and for the majority of landless households. Fishing, trading and working in other non-farm activities on a daily basis are also important sources of livelihood for poorer households.

Though of minor importance in the regional context, in some villages there are concentrations of households which have other occupations. There are about 75 traditional fisher families in Barha and 45 in Hatdhala. In Barha, there are also 14 carpenter-headed households. There are

12 blacksmith families in Agia and 3 more in Ghagra. Charpara has the largest concentration of boatman in the area. There is a concentration of potter households, numbering 23, in Sutarpara. In Noluapara, a neighbourhood of Naterkona village, there are 40-50 *nolua* families who make products from bamboo and cane. The *nolua* are at the bottom of the social hierarchy.

Figure 3: Main Household Occupation



C.2.5 Village Portrait: Case Studies

The following are sketches of two villages. They are included to provide a general understanding of a rural settlement and its social dynamics. One is a river-side village and the other one is in the floodplain.

Letirkanda Village

Letirkanda is situated in Ghagra union of Purbadhala *thana*. The village is located on the bank of the Kangsha River and is vulnerable to flood. The village had 228 households and a population of 1,184 in early 1995.

Land Ownership: There are fifteen families who own most of the land in the village. Among them, three families own more than 20 acres each. The rest own an average of just over seven acres each.

Occupations: The people are predominantly farmers. About 200 male *kamla* (labourers) from 90 households work on others' farms. Some work as share-croppers, but that is of secondary importance.

In Letirkanda, 110 people work as *chukti kamla* (contracted labourer). About 150 to 200 labourers work as *roj kamla* (work on a daily basis) and there are about 70 female day-labourers.

There are 20 male traders in the village; 10 of them are engaged in rice trading. There are also 17 female traders. Twelve women make *muri* to sell to other villagers. Others buy paddy from the market, parboil, husk and then sell the rice in the market.

There is a primary school run by four male teachers. There is also a *madrassa* run by two male teachers. There are five male tailors, five female *dai* (birth attendants) and one female family planning extension worker. Five people have boats that are used as their principal source of income. Ten people, both men and women, are engaged in usury. There is one beggar.

Water and Sanitation: There are 16 tube wells (HTWs) for drinking water. Nine are privately owned and the rest were provided by the *Union Parishad* (see Table C-3). People living on the

edge of the river use river water for all domestic purposes except drinking. Women go to the river to wash clothes, dishes and to bath. They fetch drinking water from the nearest tube well.

There is no fixed latrine in the majority of homesteads. People generally go to the river bank, a grove behind the house or to the *ail* (narrow dyke dividing plots of crop land) to defecate or urinate. There are five paved and seven thatched pit latrines. There are no latrines on the riverside.

Festivity: All the people in this village are Muslim. There is a *mazar* in a *bari* which is known as Paglabari. People from all over the region come to visit the *mazar* for blessings. An *orash*, commemorating the saint, is held once a year. Animals are slaughtered and a public feast is arranged.

Conflict and Arbitration: There are several key people who are involved in the *salish* (arbitration) and who control the village power structure. These power-brokers are rich in a village context. Land-ownership, financial power, factional lineage (control over a big kinship group) and political power (Chair or Member of the *Union Parishad*) are important factors in the making of leaders.

Table C-3: Status of Hand Tube Wells in Letirkanda

Located in the dwelling of	Owner ship status	Condition
Sobhan Member	Private	Running
Suruj Haji	Private	Running
Moti Talukdar	Private	Running
A. Khaleque	Private	Running
Roushan Ali	Private	Running
Abdul Kadir	Private	Running
Mia Hossain	Private	Running
A. Hekim	Private	Out of order
Shahidullah Moulavi	Private	Out of order
Rafique Talukder	Public	Running
A. Wahab	Public	Running
Ansar Ali	Public	Running
Mohabbat Shah Pagal	Public	Running
Haji Suruj Ali	Public	Running
Mosleh Uddin	Public	Running
Primary School	Public	Out of order

Source: NERP field data

Migration: Excepting for marriage, in-migration does not occur in the village. Three families left the village and settled in Dhobaura and Purbadhala. Two other families left the village due to flood. One man left for Purbadhala as *ghar jamai* (a groom living in the house of his wife's family) to find work.

Labour migration is seasonal in nature. During *aman* season, about 70 people go to other districts, notably Chittagong, Comilla, Noakhali, Feni and Sylhet, for work. They earn three meals and Tk. 50-60 per day. Wages in the village and adjoining areas at that time was Tk. 20-25 per day plus food. There is no labour in-migration.

Last Major Flood: In 1992, the village was severely affected by flood. All homesteads were inundated for a day, and crops were destroyed after a month of inundation. During the flood, there was scarcity of fodder. Livestock and fowl died after the flood from various diseases.

Five families sold their land to people of Letirkanda and Gangerbera villages. Land that was valued at Tk. 4,000/*katha* prior to the flood was sold at Tk. 900-1000/*katha*. People also sold household goods, ornaments, livestock and borrowed money at high rates of interest to cope during the flood.

Purbo Moudam Village

Purbo Moudam is situated in Purbadhala Thana. It is a low-lying village and is affected by recurrent floods. About 259 families live in this village. There are 65 farm families and most of the rest live on wage labour.

Land Ownership: There are eight major land-owners in the village, owning from 12 to 40 acres each. Together they own most of the land in the village.

Occupations: People from ten families work as *kamla* on a yearly basis. Agricultural day labour is common. Among the tasks performed are preparation of *jala* (seed bed), transplantation, weeding and harvesting of rice. A *kamla* engaged on a daily basis usually performs a wide range of activities including preparation of hay stacks, making or mending of house, looking after cattle, earth work for raising of homestead platform and so on.

There are more than 30 women who work as *kamla*, either on a daily basis or as seasonal labour. Seasonal work is mainly available at of harvest time. At that time, the women cook food for male *kamla*, smear the *uthan* and thresh, parboil and dry paddy. In addition to three meals a day, the female *kamla* are paid one to one and a half *maund* of paddy at the end of the season.

There are seven school teachers in the village. Two are male and five female. There are four *dai*. One of them is Afza Begum. She is a popular *dai* and has been working since 1972. She has so far attended over 500 births. Every time she attends a delivery, she keeps track of it by tying a knot.

There are five permanent shop owners and about ten who run temporary tea shops on *haat* days. There are four bullock-cart drivers. About fifteen to twenty women peddle edible oil, soap, bangles, old clothes, etc.

Water and Sanitation: There are 23 hand tube wells in the village. Among these, three are privately owned. The rest have been provided by the government through the *Union Parishad*. One tube well is not functioning.

Migration: Long term out-migration is rare. About one-fourth of the labourers go to Chittagong, Sylhet, Comilla, Brahmanbaria and Noakhali for work during the *aman* season. Few people out-migrate during the *boro* season. Usually labourers go for a month in July and August. They prepare seed beds and transplant *jala*. They go again in November and December to harvest *aman* crops for a month. Wages are higher outside the village.

NGO Activity: There are three credit users' groups in the village, all for women. The Grameen Bank has intended forty women in its program. There is a BRDB *samity* which also has forty members. ASA also organised a women's group in the village.

Last Major Flood: The village was badly affected by a flood in 1993. The flood hit the village in early July and water remained until the middle of October. Homesteads were under water for

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10-12 days, agricultural land located at higher elevation remained submerged for more than a month and low land was under water for over three months. Day-to-day life was extremely difficult. After the recession of water, there was an outbreak of diarrhoea, fever and typhoid. Six families in the village had to sell everything to survive.

C.3. SURVIVAL OF THE POOR

C.3.1 Livelihood Source

Poor people live mostly on wage labour. Labour contracts follow certain patterns based on the duration of employment. Contracts may be daily, seasonal or yearly.

Wealthier farmers engage *kamla* on yearly basis. The *kamla* performs many tasks, but is mainly engaged in agriculture and livestock care. Wages are determined on the basis of age, nature of work and load of work and are fixed through discussion between the employer and the labourer. Yearly wages range from Tk 3,000 to 7,000. In addition to cash, the labourer usually receives room, board and some clothing.

The majority of labourers are engaged on a seasonal basis and work in exchange for commodities, usually rice. One labourer will receive four *seers* of paddy in payment for harvesting and threshing for one *maund*. Plantation is also done by seasonal labourers. The wage for this is Tk. 600 for planting rice seedling on one *hara* of land.

Both male and female labourers work on a seasonal basis. Many male labourers go outside the village, or even outside the district, to work for a season corresponding to a part or full crop cycle. The period of seasonal work usually ranges from one to four months. Those who work on a seasonal basis, take up day labour when they have completed the season. Daily wages range from Tk. 20 to 30 plus meals.

Women's seasonal work usually occurs during the harvest. About 24 women of Letirkanda village work in others' houses for about a month after the harvest. The wage for one month's work is Tk. 300 and meals. Sometimes a *saree* is also given. The female labourers process rice: parboiling, drying, husking and winnowing. They also cook food for male labourers engaged by the same employer.

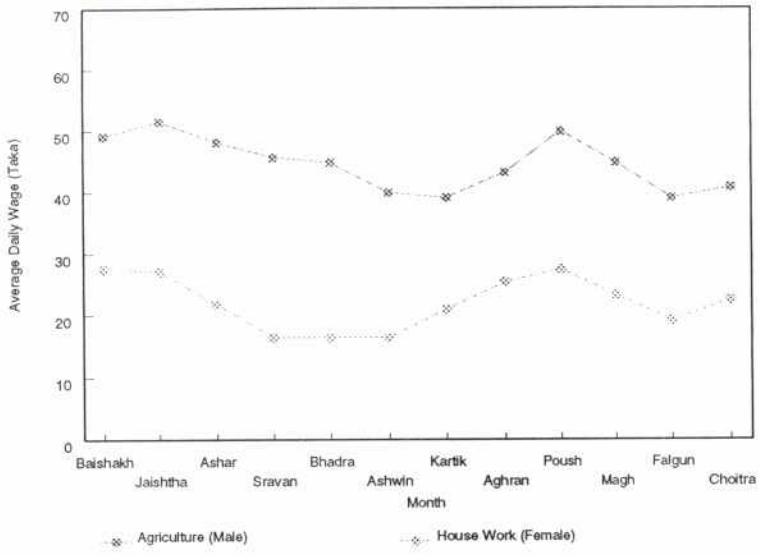
Women engaged as day labourers perform various household tasks. These include washing of clothes and dishes and smearing of courtyards and floors. The remuneration for one day's work is a half *seer* of rice and one or two meals. The best wages are in December-January and May-June which are the harvesting times for *aman* and *boro* respectively (see Figure 4). Women receive lower wages than men in all seasons.

C.3.2 Scarcity and Survival

Land preparation for *boro* starts in mid-November and plantation continues up to mid-March. From March until the harvest of the *boro* crop in May is a period of extreme distress for the poor. Daily food consumption decreases some women make handicrafts to sell at the market. Some go to low-lying downstream areas where the harvesting of *boro* starts earlier.

During the monsoon when the land is flooded, many people go to other *aman* growing districts to work as *kamla*. Some catch and sell fish. Those who do not get enough work, spend from their savings if they have any. Some sell off livestock or other household assets. When all other avenues are exhausted, they borrow money. The rate of interest on loans is high, varying from 10 to 20 percent per month.

Figure 4: Average Wage Rates



Credit

There are three forms of credit available in the village: banks, credit-granting *samities* and private money lenders. Loans from the banks are very difficult to obtain and are effectively not available for the poor villagers. The *samities* offer small amounts of credit at 16 to 20 percent per annum to women for establishing businesses. The most commonly-used source of funds, however, is the money-lender. Money lending is a common practice and many villagers engage in the practice, even the poor. The interest on loan taken from the money-lender is exorbitant, often in the range of 15 to 20 percent per month. Many villagers find themselves living in a credit trap, where funds earned through labour or the sale of crops goes directly to the money-lender only to be borrowed back within a short time.

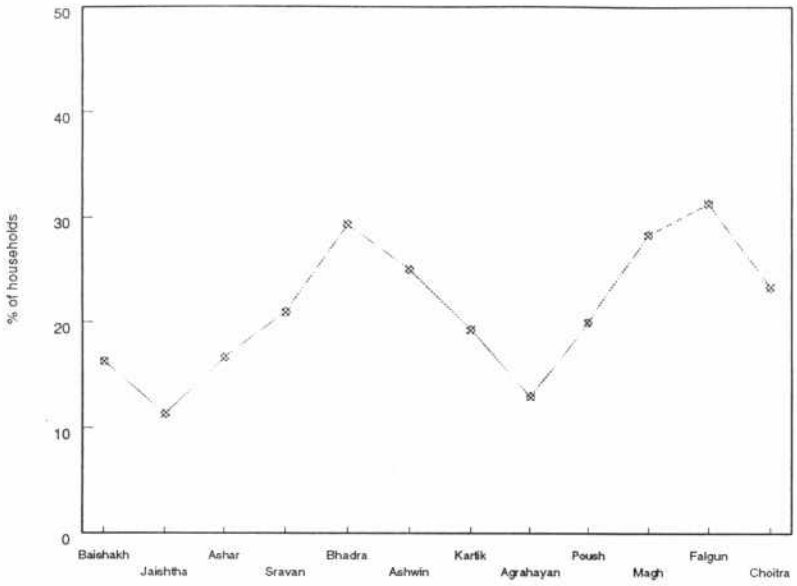
Money is typically borrowed to start crops, usually at the time of planting *boro* or *aman* (Figure 5). The money-lender "invests" in the farmer at a high rate of return, and the investment, with interest, is paid back at the end of the season. Though it is the men who borrow the money, women play a vital role in paying back the loans. They often sell their livestock or ornaments in order to do so.

C.3.3 Labour Migration

Women labourers are usually engaged on a seasonal basis for two months, from mid-March to mid-May. The wage consists of three meals a day plus one *maund* of rice and one *saree*. The work involves parboiling and drying rice, house cleaning and cooking food for the male *kamla*. Though seasonal work is preferred and better paying, those who go outside the village to look for work are often socially disgraced.

There is scarcity of employment from mid-September to mid-November and mid-February to mid-April. At these times people go to other districts for work. Some go to Jaflang (Sylhet) to collect boulders. Of Tk. 140 a day earned, Tk. 100 may be saved. Some people go to Sylhet, Comilla and Noakhali for harvesting rice. The wage is Tk. 50 per day plus food.

Figure 5: Households Taking Loan



Every year, 20-30 people from Birampur village go outside the district, particularly to Comilla, Sylhet and Chittagong, for work. Some go for a season, during *aman* or *boro*, and some stay outside for the year. Those who work on a yearly basis also do house repairing, cattle rearing, etc., in addition to agricultural work. The wage rate is higher outside the area. For example, one labourer engaged on a yearly basis in a village near Mymensingh received Tk. 9,000 in 1994. At that time, the prevailing yearly rate in Birampur was Tk. 5,000-6,000.

Migrant labourers leave behind their families. Sometimes money is borrowed to meet the needs of the family and repaid upon the return of the worker. Often labourers bring money to their families once or twice a month.

C.3.4 Life of the Poor: Case Studies

Case studies on two labourers are presented here in order to give a general understanding of the livelihood pattern of the poorest people in the villages. Profiles of male labourers are presented in this chapter. Case studies of women are presented in Chapter 4.

***Mamun: Portrait of a* Kamla**

Mamun is a landless labourer living in Barha. He is 46 years, married and has two sons and two daughters. They live on a tiny homestead, a quarter of a *katha* in size. His wife is also a labourer.

When they cannot find work outside their home, they weave fishing nets. Mamun makes different types of fishing net on a contract basis. He needs two weeks' time to make a seven-foot-long net in his leisure time.

Mamun works as a farm labourer both inside and outside the village. He works on a daily and a seasonal basis. A calendar of his activities in 1994-95 is presented in Table C-4.

Jalal: Portrait of a Poor Farmer

Sheikh Jalal of village Sonaikanda is a poor farmer. He is 45 years old and lives with his wife, mother and two sons. His only daughter is married and lives with her husband.

Jalal owns 10 *katha* of cultivable land. He inherited 23 *katha* of land including 2 *katha* of homestead from his father. He sold 11 *katha* of cultivable land, and the remaining farm is too small to produce enough rice for his family.

Because his land is low and subject to flooding, he cannot grow *aman*. Lack of irrigation makes growing *boro* problematic as well. In 1995 he tried cultivating *boro* on 9 *katha* of land. Ultimately his arrangement for irrigation failed and he lost the *boro* crop.

To earn a living, he has to work as a *kamla*. But the wage is not enough to make ends meet. Every year he takes loans from neighbours that have to be repaid with interest. Last October Jalal borrowed Tk. 1000 from a neighbour at 20 percent interest per month. He paid Tk. 200 per month as interest, but could not maintain it and had to sell some of his land. He began selling his land in 1988, and in 1995 sold three *katha* to pay for his daughter's wedding. He is now left with only 10 *katha* of inferior quality land.

Jalal's homestead is three to four feet above the level of crop fields. The floor of the house is also elevated two to three feet from the courtyard. The house is damaged each year by flood water. The house was built on an earthen base

Table C-4: Activity Calendar of a *Kamla*

Month	Activity	Income/wage
Baishakh-Jaishtha	Harvesting *boro* rice	1/11th or 1/12th of rice harvested depending on yield and distance of the crop field from house. Daily earning amounts to 10-12 kg rice.
Ashar-Sravan	Net making	Taka 200-300
Bhadra-Ashwin	Transplanting *aman* rice	Taka 40-45 per *katha* (0.08 acre), 3/4th of a *katha* in a day.
Kartik	House construction	Contractual work: taka 300 to build a 6ftx12ft straw hut. 9 person- days' work involved.
Augrahayan	Harvesting *aman* rice	Taka 40-50 per *katha*
Poush-Magh	Transplanting *boro* rice	Taka 40-50 per day
Falgun	Weeding *boro* field	Contractual: taka 30-40 per *katha*. One can clean 3/4th of a katha in a day.
Choitra	Loading sand on truck	Taka 40-50 per day

and becomes dilapidated when the floor sinks. His wife does the necessary renovation work. She collects earth from the river side or from the crop field. Earth has to be stored before the onset of the monsoon as it is not available during the post-flood period. Each year, they raise the base of the house, as well as the entire homestead platform.

Three-quarters of a *katha* of their homestead land is used for rice seed-bed and the remaining for growing vegetables. Jalal's wife takes care of the vegetable garden. She also keeps poultry. She is a member of a BRDB *Samity*. Seven months ago, she got a credit of Tk. 4,000 from BRDB at 16 percent per annum. She has to repay the loan in fifty weekly instalment. She, however, lent Tk. 2,000 to a neighbour at 15 percent per month. With the remaining sum, she bought poultry. In the last *boro* season, she sold all ducks and chickens to pay for irrigation.

Jalal's family uses tube well water for cooking and drinking. They bathe and wash clothes and utensils in the river. During floods, the HTW becomes difficult to access. Rafts are constructed from banana stalks to reach the HTW. Often the waves make it difficult to collect water and they resort to drinking flood water.

Jalal built a latrine close to his house. It is a hole surrounded by a banana-stalk fence. When the area is flooded they cannot use it, and must defecate from a raft on the open water.

Jalal's activity calendar for 1994-95 is presented below:

Baishakh	Harvested *boro* in his and another village on a contract basis. Earned 2.5 - 3.5 *seers* per *maund* of paddy depending on the distance to the farmhouse. Normally, he harvests four *maunds* a day.
Jaistja	Unemployed
Ashar	Worked in Chittagong transplanting *aman*. Earned meals and Tk. 50-60 per day.
Sravan	Returned to his village to plant *aman* on his own farm. Crop failed due to drought.
Bhadra-Kartik	Remained unemployed. Borrowed money from neighbours.
Aghrahayan	Harvested *aman* for 15 days. Earned Tk. 40 per day in his village and Tk. 50 per day on the other side of the river.
Poush	Transplanted boro on the other side of the river. Earned Tk. 32 per *katha*.
Magh	Transplanted *boro* in his village. Earned Tk. 40 per *katha*. Ploughed his own land four times to prepare for *boro*.
Falgun	Worked on others' farms weeding *boro* fields. Earned Tk. 30-35 per day.
Choitra	Went to Sunamganj to harvest *boro*.

Awlad Hossain, a trader and a rich farmer, bought a LLP this year. Jalal paid him Tk. 70 per *katha* for irrigating his nine katha farm. He also paid for 45 litres of diesel fuel. Before leaving for Sunamganj, Jalal asked his wife to arrange irrigation of his *boro* land with Awlad. She sold her livestock to buy diesel. Unfortunately, Awlad's LLP was out of order. After it was repaired, he used it only for his own land and did not water Jalal's field. Jalal suspects that this was done deliberately to force a distress sale of land.

The proposed dyke alignment cuts across Jalal's land. He will lose 1.5 *katha* land for the dyke and another four *katha* will fall outside the dyke. However, his homestead will be inside the dyke alignment. Jalal is not worried about the dyke alignment because his crop land is of poor quality and he is happy that his homestead will be protected.

C.4. STATUS OF WOMEN

C.4.1 Activities

Economic role of the household members is understood from chapter C.2.4. Data have been collected separately on women's activities in order to have a general understanding about their specific economic roles.

Women are involved in a wide range of activities. The most common activities are fetching of water, vegetable gardening, post-harvest rice processing, poultry keeping and *kantha* making.

Women are mostly self-employed, working mainly as "unpaid domestic labourers". Some women engage in wage-earning activities, such as, fuel collection, post-harvest rice processing and as housemaids. Women from medium and large-sized farm households do not engage in wage employment (see Table C-5).

Table C-5: Activities Performed by Women in Different Categories of Households

Activity	Landless		Small farm		Medium farm		Large farm		Total		Percent	
	S	W	S	W	S	W	S	W	S	W	S	W
Fetching water	54	1	60		17		8		139	1	84.8	0.6
Vegetable	39		53		17		12		121	0	73.8	0.0
Post-harvest	16	18	58	5	22		12		108	23	65.9	14.0
Poultry	29		48		17		12		106	0	64.6	0.0
Kantha making	35	1	36	1	10		6		87	2	53.0	1.2
Bamboo and	24	1	22		7		6		59	1	36.0	0.6
Fuel collection	40	31							40	31	24.4	18.9
Muri/chira	18	1	3		7		5		33	1	20.1	0.6
Biri making			17						17	0	10.4	0.0
Fuel making	5		4		3		3		15	0	9.1	0.0
Net making	3		4						7	0	4.3	0.0
Midwifery	2		1		1				4	0	2.4	0.0
Trading	3		1						4	0	2.4	0.0
Fish processing			2		1				3	0	1.8	0.0
Pottery	1		2						3	0	1.8	0.0
Rice mill			2						2	0	1.2	0.0
House maid		7		3					0	10	0.0	6.1
Earthwork		1		2					0	3	0.0	1.8
Begging	4		4						8	0	4.9	0.0
Total	58	58	70	70	24	24	12	12	164	16	100.0	100.0

Source: NERP Household Survey * S:- Self-employed, W:-Wage Labour

Homegarden

Women grow a large variety of vegetables throughout the seasons in and around the homestead (see Table C-6). Seeds are kept from previous harvests and are widely available at

the market. Seedlings are either raised on the homestead or bought from the market. Cow dung is used as fertiliser.

The value, both economic and nutritional, of home gardens is high, though largely unaccounted. The significance of home gardens and the contribution of women in homestead agriculture may be understood through the following examples.

- Salma Khatun lives in Giriasha village. Her family owns a 0.10 acre homestead and 10 acres of cultivable land. She grows vegetables year round. Last year (July 1994-June 1995), she harvested 1.4 tonnes of vegetables, about three-quarters of which was consumed in the house. She sold excess bitter gourds, water gourds and pumpkins and earned Tk. 1,800 that year.

- Mariam Begum is from Letirkanda. Her family owns 0.12 acre of homestead and 5 acres of cultivable land. She grows vegetables for home consumption only. Last year she harvested over 500 kg of vegetables worth Tk. 3,600.

Table C-6: Calendar for Vegetables Grown in Homestead

Vegetables	Apr-May	May-Jun	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec	Dec-Jan	Jan-Feb	Feb-Mar	Mar-Apr
Pumpkin			H	H	H	H						S
Danta	H	H	H	H	H	H	H					S
Chichinga	H	H	H	H	H							S
Bean				S				H	H	H	H	H
Bitter gourd		H	H	H								S
Cucumber		H	H	H								S
Chal kumra			H	H	H	H	H					S
Kakrol	H	H	H	H	H	H	H					S
Water gourd				S	S			H	H	H	H	H
Papaya	H	H	H	S H	H	S H	H	H	H	H	H	H
Jhinga	H	H	H	H	H	H						S
Spinach	H	H	H	H	H	H	H		S	H	H	H
Lady's finger	S	H	H	H	H	H						
Brinjal	H	H		S					H	H	H	H
Tomato					S				H	H	H	H
Potato							S			H		

Source: NERP field data * S: Sowing, H: Harvesting

- Nurunnahar Begum lives in Sonaikanda. Her family owns 0.48 acre of homestead land and 5 acres of crop land. She grows vegetables for home consumption only. Last year she harvested over 600 kilograms of vegetables, mainly papayas and pumpkins.

- Anjumanara comes from a poor family of Sonaikanda. Her family's farm holding is 1.5 acres, and their homestead is 0.12 acre. She grows vegetables both for home consumption and for sale. Last year, she sold pumpkins, water gourds *danta*, *chichinga*, beans and cucumbers, and earned Tk. 1,360.

C.4.2 Women and Floods

In order to prepare the homestead and family for the floods, women buy or store from their stock food items like flour, rice and other dry foods. They pile earth in the homestead which they use for repairing the house platform after flood water subsides. They make *khancha* (a sort of cage) to safeguard poultry from the flood, and enclose the *bhita* with banana stalks and bamboo to protect it from monsoon waves.

Women and children are often sent to their parents' house during the time of the flood. Those who stay in the village develop strategies for coping with the flood. They cook once a day or once in every two days using portable *chula*. Those who are unable to cook due to shortage of fuel eat dry food like *chira* and *muri*.

When the tube well in the *bari* or in the *para* goes under water, they go by raft to another *bari* or *para* to collect drinking water. Flood water is used for domestic purposes like cooking, washing dishes, clothes and bathing. After the flood passes, women incur debts. Sometimes they are forced to sell assets like livestock and jewellery. With the sale proceeds, they buy materials to repair the house, buy rice for consumption, prepare seed beds for rice or pay off debts.

The Plight of Women

It is the every-day needs that become most difficult for women. Simple bodily functions like defecation become highly problematic. Once the latrines have become unstable, women must go either in the early morning or after dusk since they should not be observed. They use a raft to move and often must perch over the edge of the raft to relieve themselves. For pregnant women or those with infants which must be held, this is particularly difficult.

To reduce the frequency of toilet trips women eat and drink less. Decreased nutrition coupled with bathing and washing dishes in filthy water makes women highly vulnerable to diseases. When they are sick they are still expected to do the daily chores as well as taking care of other sick family members.

Women with small children pass sleepless nights on the *macha* to protect their children from drowning and attack from snakes.

C.4.3 World of Women: Case Studies

Zebunnessa

Zebunnessa (36) lives in Sonaikanda village. She is the only bread winner and the third wife of Chikon Ali (65), formerly a farmer but now a beggar. He earns 1-1.5 kg rice a day, which is not enough for the family. They have six children, and live on the BWDB dyke with other families.

Her parents live in the same village, though in another *para*. She has two sisters and four brothers. Her mother died when she was six years old. Subsequently, her father remarried. when she was 10, her father passed away. Her step-mother worked hard for the subsistence of their family. She used to make rattan and bamboo products to earn a living.

Zebunnessa generally works as a day labourer. A calendar of her activities is presented in Table C-7. In the *Rabi* season, she goes to Chitli Beel to harvest chilies and onion. The demand for labour at Chitli Beel is casual and many women assemble there for work. Not knowing if she will work that day, or how much she will get paid, Zebunnessa wakes up early in the morning and walks to Chitli Beel taking along some bread or rice for lunch. Zebunnessa welcomes any amount of pay. Often she sells the wage she receives in onion or chilies back to the employer, to other families or in the market. She earns roughly Tk. 10-15 a day.

Zebunnessa's husband does not object to her work away from the house. As there are many labourers, she has to keep regular contact with land-owners. "I am interested in working but, unfortunately, work is often unavailable in our village", says Zebunnessa.

She used to keep poultry, but the animals all died. Animal vaccination is not available and many animals die from preventable disease.

Table C-7: Activity Calendar of a Woman Labourer

Month	Activity
Baishakh and *Jaishtha*	Parboiling, drying and husking of rice (10-15 days), smearing the *uthan* and the floor. Wage: 3 meals plus 1.5 kg rice per day.
Ashar and *Sravan*	*Kantha* making. Wage: Taka 30 for a large size *kantha* which entails 2-3 days' work.
Bhadra, Ashwin and *Kartik*	Virtually does not have much work to do in the village. Sometimes, people call her for *muri* making or for other domestic chores. Wage: one *poa* of rice plus one meal for a day's work.
Agrahayan and *Poush*	Parboiling, drying and husking rice. Wage: 3 meals plus 1.5 kg rice per day.
Magh	Smearing *uthan* and *ghar* and some post-harvest rice processing. Wage: 2 meals plus 1 kg rice per day.
Falgun and *Choitra*	Harvesting of chilies and onion from field. Wage: 1.5-2 kg chilies or 1-1.5 kg onion.

Source: NERP field data

The earnings of Zebunnessa and her husband are not adequate and they must borrow to feed the family.

Her eldest son lives in a separate house with his wife. This is contrary to social norms. But Zebunnessa has no objection. She says, "the earnings of my son is not adequate for his family, how can he support us"? Her second son is undergoing treatment in Mymensingh hospital. He has tuberculosis and is not expected to live. Another of Zebunnessa's sons works as labourer on a yearly basis in another house. He gets three meals a day and will receive Tk. 2,000 in cash at the end of the year. In the second year, he will get Tk. 1,000 more.

Floods add distressing dimensions to their lives. Essential commodities become expensive increasing the family's economic stress. Though the flood in 1995 did not inundate their home,

the *bhita* was partly submerged. Her kids helped in fetching water. She had to borrow 25 kg of rice during the flood which is due for repayment in November.

Zebunnessa and her husband discuss family matters between them. She feels that since she earns money for her family, she has a say in decision-making. At the time of wedding of their eldest son, they jointly selected the bride.

Zebunnessa never used contraceptives. She views it to be a sin. She says "I have no right to kill or prevent a life given by *Allah* from coming to this world. *Allah* is responsible for supplying food to the newly born". Her husband holds similar views in this respect.

The construction of a nearby rice mill has adversely affected them. People not only husk rice there, they also get cooking spices powdered. As a result, Zebunnessa's scope for earning is diminishing. Day by day, the cost of living is increasing and life is becoming harder.

Zebunnessa lives from day to day with no plans for the future.

Sheuli

Sheuli Begum lives in Letirkanda. She has three children. Her husband was a landless labourer who died after prolonged illness about eight years ago.

On the death of her husband, Sheuli could not go back to her parents' house as they too were impoverished. She stayed in Letirkanda with her in-laws, and has to support her family of four by her sole endeavour. She makes bamboo and rattan products, as she has done since childhood. She also does post-harvest rice processing, smears others house and makes *nakshi kantha* (embroidered quilts).

Sheuli's work calendar is as follows:

Baishakh	Engages in post-harvest rice processing. Earns 2 meals and 1 kg of rice per day.
Jaishtha	Performs household errands like smearing of houses and does rice processing.
Ashar-Ashwin	Makes *kantha*, bamboo strainers and mats. Wage: Tk. 30-50 per *kantha*, one *poa* (about a quarter of a kg) rice per strainer and Tk. 30-40 per mat.
Kartik	Does household tasks like grinding spices and smears others' houses. Earns one *seer* of rice, and sometimes a meal, per day.
Aghrahayan	Threshing, parboiling and husking of rice, housework. Earns two meals plus 1 *poa* to 1 *seer* rice per day.
Poush-Magh	Works as domestic. She stitches *kantha* and makes utilities with bamboo products. Work is available 10 to 12 days a month.
Falgun-Choitra	Mainly does bamboo work. Sometimes makes *kantha*. Earns Tk. 1,500-2,000 per month.

Sheuli makes bamboo products either on a contract basis, or buys the inputs material and sells the product later. Although it entails arduous work, and does not pay well, she prefers bamboo work. If the market for bamboo products expands, or the bamboo becomes cheaper, Sheuli could do much better. In a day she can make two to three strainers, and a mat in two days.

Against all odds, she was able to save Tk. 2,500. She also borrowed Tk. 500. With this, she arranged the wedding of one of her daughters with a man from Gaokandia. The groom is a farmer, who owns one acre of land. He also cultivates others' land on a share-cropping basis.

She is not able to obtain the amount of rice needed for the family. She finds it difficult to manage even half of the required quantity in the months before the *boro* harvest. On some days, she goes entirely without food. In her struggle for survival, Sheuli receives substantial assistance from her mother and brother who both work in Dhaka. Her mother works as a maid and her brother works in a garment factory. Her mother buys clothes for her children. During *eid*, she gets *jakat* and *fitra* from the villagers.

Momena

Momena comes from a farm household in Letirkanda village. She is 32 and has two children. Her husband, Lal Mia, is a resident of Sonaikanda, an adjoining village. He has three acres of cultivable land. He grows rice and potato, brinjal, tomato and cucumber. These produce bring good cash and their family runs smoothly.

Entire domestic errands are controlled by Momena. She is good at stitching, making bamboo products and *pankha* (hand fan). In addition, she grows vegetables in a small patch of *bisra*. She and her husband each have a *kamla* to help them with their farming chores.

Momena hired a *kamla* on a yearly contract to work in her vegetable garden. She herself makes fences to protect the garden from goats and poultry. She harvests vegetables regularly and sells these in the market through the *kamla*. She keeps the money earned to spend when the need arises. She often makes *chira, muri* and *khoi*. She keeps a dozen ducks, five cows and a goat. She also sells eggs.

Yearly calendar of Momena:

Baishakh-jaishtha	She threshes, parboils and drys rice. She engages some women labourers to help her. The rice is husked at the mill.
Ashar-Ashwin	She stitches quilts, makes bamboo products and tends the vegetable garden. She earns Tk. 1,200-1,500 through the sale of vegetables.
Kartik-Poush	Prepares and harvests *aman* and does post-harvest activities.
Magh-Choitra	Prepares land for vegetable garden and plants.

Recent floods have not caused the family much hardship since their house is located on high ground. Floods disrupt Momena's mobility and can affect her garden. In the last flood, she lost several plants and the seedbed, worth about Tk. 1000. Since there is a HTW inside her house, she has no trouble accessing drinking water. She allows other people to use it. She bathes in the river, and her family shares a *kutcha* latrine with three other families. It as now deteriorated in due to monsoon water.

Momena is happy with her husband. He consulted her when he purchased a plot of land. They discuss what vegetables they will grow. Her husband accompanied her to Mymensingh when she needed a medical check-up, and took her to a market and bought her a *saree* of her choice.

Momena does not use birth control. "I gave birth to my first child four to five years after my marriage and to my second son another four to five years later." Momena and her husband want more children.

Kalpana
Kalpana Rani lives in Barha, a village with a large concentration of fisher households. She is 26 years old and lives with her husband, young son and mother-in-law. Her husband Haripada is a traditional fisher. They live in a *bari* with 11 other fisher families.

From mid-April to mid-December, Kalpana spends time threshing, parboiling and drying rice. She is unhappy with the lack of employment opportunities in the village. She is unable to raise poultry as it would bother other members of the *bari*. A water gourd plant has crept on the roof of her house. She has let it grow there to protect the roof.
During the recent flood, her house was inundated. Leaving behind her belongings on a *macha*, she first took refuge in her brother-in-law's house along with her eight-month-old son. Later on, she moved to her parents' place.

She does not speak much with her husband about family matters. She thinks that it is the man's responsibility to make decisions on important issues. She and her husband want their son to go to school when he grows up.

Ful Banu
Ful Banu is a poor working woman of Barha Village. Her husband, Mosharraf, is a labourer. She is 35 years old and he is 46. He owns a small piece of homestead amounting to a quarter of a *katha*, but owns no cultivable land. They have two sons and two daughters.

Ful Banu and Mosharraf make fishing net. Some 35 years ago, a *moulana* came from Noakhali. Mosharraf learned net making from him, and later taught his wife. Both of them are equally skillful in their work. Ruhul, their ten year old son, worked as a domestic labourer in 1994. This year, he worked for six months in a farmer's house. He tended cattle and received Tk. 800.

Aside from making nets, Ful Banu is involved in rice trading in a small scale. She is a member of a *samity* under *Grameen Bank*. She took a loan of 1,500 taka from the Bank. With the money, she bought paddy and sold it after husking. Prior to her involvement with *Grameen Bank*, she used to borrow money at high rates of interest. "Since I know net-making and I normally have enough orders in hand, I do not have to remain idle," says Ful Banu.

From mid-April to mid-June, she works in a farmer's house. She also works whenever domestic work is available. She gets three meals a day and five kg of paddy each three days for payment. Thus, she can earn 25-30 kg paddy in a month and even more after the harvest of *boro*. At that time, she can earn up to 1.5 *maund* of paddy a month. She also does other types of work as a wage labourer, such as, cooking, smearing of house and rice husking.

C.5. SOCIAL MOBILISATION

C.5.1 Organising Beneficiary Groups

There are both government and non-governmental organisations operating programs to improve the social and economic situation of the people of the area. They organise village-based groups and run various programs. Data have been collected on several organisations having activities in greater Dampara. These are documented in this chapter.

Bangladesh Rural Development Board (BRDB), a specialised government agency, promotes farmers' cooperatives. It is active in almost all villages. RD-12, another government-sponsored program working with poor people, covers Greater Dampara. NGOs work mainly with a target group approach, focusing largely on the landless. All these organisations include community mobilisation component in their activities (see Table C-8).

Table C-8: Community Organisation by Selected Agencies, 1995

Agency	Geographical coverage		Number of beneficiary groups		Number of group members	
	Number of unions	Number of villages	Male	Female	Male	Female
ASA	4	30		92		1,553
BRAC	4	35	5	49	166	1,830
Caritas	4	42	44	45	825	867
Grameen Bank	6	31		41		1,290
BRDB[1]	5	72	127	4	2,249	93
RD-12	7	25	14	37	349	926

[1] Membership figures for 2 unions were not available.
Source: Local office of respective agencies.

C.5.2 Bangladesh Rural Development Board

The BRDB is an autonomous agency within the Ministry of Local Government, Rural Development and Cooperative (LGRD&C). It promotes mainly farmers' cooperatives through a two-tier system: primary cooperative society at the village level and a federation of primary societies at the *thana* level.

Primary cooperatives exist in almost all villages. They are responsible for arranging agricultural credit for members. Members apply for a loan as a group. Loans are made on the following basis: up to Tk. 5,000 for *boro* cultivation, Tk. 4,000 for *aman* cultivation and Tk. 9,000 for

sinking a DTW. A farmer must own at least an acre of land to be eligible for crop loan. The loan must be repaid within six months of the harvest. Loans for DTWs are disbursed in the names of all group members at an amount not exceeding Tk. 9,000 per person. This loan has to be repaid in 18 instalment within 10 years.

Both types of loan are subject to a service charge of 4 percent and an interest rate of 12.5 percent. An additional surcharge of 6 percent is levied for late payment. If one member of the cooperative fails to repay the loan, the whole group is considered to be in default and cannot qualify for other loans.

Floods can be problematic for those taking crop loans. Poor harvest results in non-payment, and further debt (with the 6 percent penalty). Losses in consecutive years can result in distress sales of land to repay the loans.

Ten years ago, weekly meetings were held in the Purbadhala BRDB office, attended by *Cashiers* and *Managers* and members of primary cooperative societies. Members deposited savings regularly. Each participant received Tk. 25 for attending. Topics discussed were land fertility, farm practice, accounting, etc. Now a certain apathy has taken over. There are no weekly meetings and farmers are not repaying their loans. Forty percent of the DTWs are out of order and no initiative has been taken to repair them.

Anisa is a member of the *Purbo Khatuair Krishak Mohila Samabaya Samity* (Farm Women's Cooperative Society of East Khatuair). Her husband divorced her about ten years ago. Since then, she and her child have been living with her parents. She has been a member of the BRDB cooperative for the last 16 years.

She belongs to a group of 18 members. They received a loan of Tk. 10,000 after one year of BRDB membership. Three years later, the group got another loan of Tk. 10,000. Later, the group membership increased to 24. In March 1995, they received yet another loan of Tk. 14,000. They used it for household agricultural activities and purchased livestock.

Many members of the group invested their portion of the loan in *logni karbar* (money lending). Anisa utilised her share in agriculture. She inherited 22 *katha* land from her father. She has been able to increase her holding to 38 *katha*. She also bought two cows, three goats and some poultry.

In the last five years, Anisa has not deposited her savings, as no weekly meeting was held. There is no monitoring from BRDB in this respect. Many members have left and joined groups sponsored by NGOs. Three members from Anisa's group have joined an ASA *samity*.

C.5.3 RD-12

RD-12 (Rural Development-12) is a special project under the Ministry of LGRD&C. The program is similar to that of BRDB, but specifically targets landless people. Members of the *samity* are given training in poultry and livestock keeping, pisciculture, vegetable gardening, handicraft making, etc. They also receive credit for income generating activities (IGAs). The rate of interest is 16 percent per year. The loan is to be repaid in weekly instalment within one year. Each member has to deposit Tk. 5 per week as savings.

Members are supposed to assemble at weekly meetings and repay loan installments. But all members do not attend the meetings. In the meetings of the women groups, men will often deposit their wives savings and loan installments. Abu Ishak, husband of *samity* member Sahera Khatun, found it beneficial to borrow from the *samity*. He loans out the money at 15-20 percent per month. It is the most profitable activity for them.

Rahima of Sankiduari is a member of the *samity*. Four years ago, her husband died. She is 45 and has seven children. Two of her elder children are married one of which, a son, resides in a separate house. Two other sons work as casual labourers. Rahima is involved in *logni karbar*. Prior to joining RD-12, Rahima was with ASA. She has changed to RD-12 because it has a more convenient loan repayment schedule.

Rahima has taken 3 loans. The first, of Tk. 2,000, was spent on her daughter's wedding and some livestock. The second and third loans (Tk. 2,500 and Tk. 3,500) were invested in *logni karbar*.

C.5.4 Association for Social Advancement

The ASA is a national NGO. It has an Area Office in Purbadhala and has been in the area since 1990. Its target audience is poor and landless women. In the villages of greater Dampara, it has organised 92 women's groups in 30 villages with a total membership of over 1,500. Group members activities include organisation building, credit, leadership training, relief and rehabilitation for flood affected people, etc.

A "service charge" is levied for credit at the rate of 12 percent per annum. Post-disaster rehabilitation loans of Tk. 500 are given without service charge. By August 1994, 1,200 group members were served under the normal credit program.

The ASA does not appear to be very responsive to the people's needs. During the flood of 1988, no one was exempted from paying loan installments despite the seriousness of the situation. Once, when the ASA staff went on *Eid* holiday, they collected two installments hardship caused to the borrowers.

Though ASA staff are aware of such issues, they have taken no action, rather they want to raise weekly installments.

TWO FACES OF THE CREDIT PROGRAMS

Panna Begum is the chairperson of ASA's Jaria-Naterkona Landless Women's Society. She makes bamboo products. In the past, she had to borrow money at high rates to buy raw materials and much of her profits went into repaying loans. With economic support from ASA, the situation has improved. She has also attended classes on human rights, nutrition, law, health, income generating activities and group cohesion. Her involvement in the credit program has improved her livelihood, increased her education and awareness and improved her sense of self-esteem.

There are several instances where loans taken by members are not used in the manner intended. Many re-loan the money to others at much higher rates of interest, 10-20 percent per month, depending on the situation. In these situations, the money is no longer in the hands of members. Sometimes husbands manipulate their wives to join the groups. The husband takes the money loaned to the wife and does not repay it. Ultimately, the membership of these women is terminated.

C.5.5 CARITAS

Caritas is a national NGO working in Purbadhala Thana since July 1991. It is active in Purbadhala, Agia, Ghagra, Hogla, Jaria and Dhalamulgaon unions. Its main programs are organising beneficiary groups, health and nutrition education, credit, repairing of UP road/ embankment, etc. Caritas has organised 85 landless groups including 45 women's groups.

It has been involved in the repair of UP roads and embankments in several villages. Caritas repairs roads on request from the communities. The community must bear 20 percent of the costs, and Caritas covers the rest. It has supported the repair of roads and embankments in several villages in greater Dampara.

Caritas also supports road-building schemes in special cases under its flood rehabilitation program.

Long term loans with yearly repayments are given at an annual rate of 12 percent. The interest rate is 6 percent for short term loans with repayments in weekly or fortnightly installments. In Koilati Village in Agia union, 21 members of a group bought four rickshaws after receiving loans from Caritas. Another 18-member group in Agia village purchased 3 rickshaws.

Caritas distributes ring/slabs for water-seal latrines and HTWs at subsidised rates to members. It has distributed ring/slabs for 390 pit latrines and 90 HTWs in Purbadhala Thana.

In Kapasia, there is a women's group named *Kapasia Bhumiheen Mohila Samity*. It has 17 members. The group was formed two years ago. At that time, someone tried to discourage women from joining the group. "These men are money-lenders and are afraid of losing their business", says Rahima, leader of the women's group.

C.5.6 Grameen Bank

The Bank has been operating in this area since 1993. Apart from disbursement of IGA credit to landless women, it provides health education to its clients. Among the IGAs undertaken by women are the keeping of livestock, small scale trading, setting up of a grocery, cultivation of vegetables and making of bamboo products. Aside from IGA credit, the Bank also gives housing loans. The rate of interest on IGA loans is 20 percent per year.

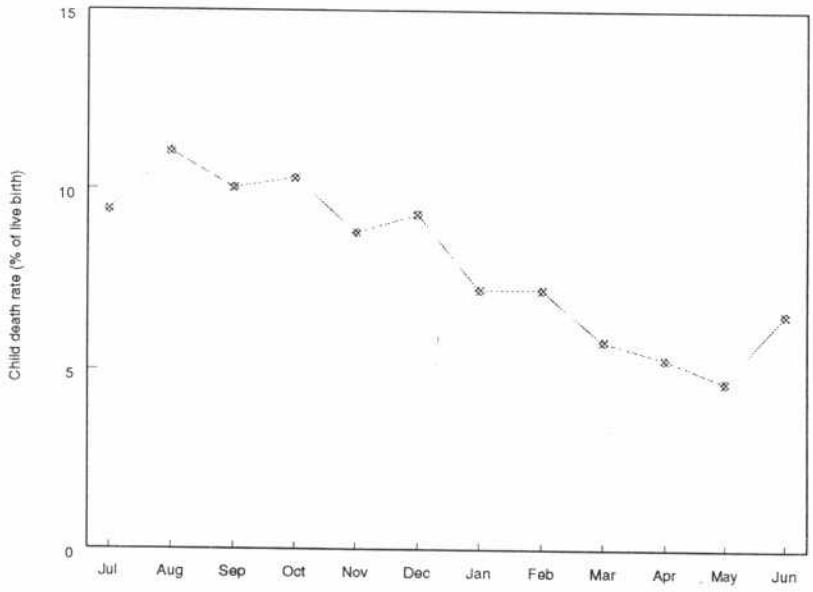
C.6. HEALTH AND SANITATION

C.6.1 Child Mortality

Monsoon months are characterised by recurrent floods, lack of employment, less food for poor people, disruption in the supply of potable water and deterioration in the overall state of sanitation. People become susceptible to various diseases as a cumulative effect of all these factors. Because polluted flood water is used for domestic purposes, people suffer from various water-borne diseases.

An indirect result of flooding is a high incidence of infant and child mortality. Neo-natal, post neo-natal and child death rates are higher in the monsoon months, particularly in August, September and October (see Table C-9 and Figure 6).[1]

Figure 6: Child Death Rate (Below 5 Years)



C.6.2 Prevalence of Diseases

An analysis of disease profiles of patients treated in Purbadhala Thana health centre shows that people mainly suffer from worm infection, diarrhoea and skin diseases. The incidence of diarrhoeal diseases is higher in the post-monsoon period (see Table C-10). Figures presented in Table C-10 may not represent adequately the population, since patients who live nearby and have access to the facility are more likely to be treated in the hospital. It has also been found that

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1 Figures used in Table C-9 are from contraceptive user families who have been monitored by family planning extension staff. They are assumed to be more health-conscious and hence infant and child mortality rates in those families are likely to be lower than the normal rates.

patients who are treated in the *thana* hospital tend to belong to higher age groups. As many as 63 percent of the patients are 15 years old or older, while only 3 percent are less than one year of age and another 9 percent are from one to four years old. This may be indicative of lack of facilities for child health care, and a low priority on child health in the society.

C.6.3 Physical Infrastructure

In Purbadhala *thana* headquarters, there is a hospital with both in and out patient facilities. The hospital is run by a team of professionals and para-professionals. Among them are seven doctors and three nurses. There is also one Family Welfare Centre (FWC) in each union where limited MCH services are available. The FWC is presently operated by a Family Welfare Visitor (FWV). She is also responsible for maintaining and updating a list of "eligible couples" to whom she supplies contraceptives.

Table C-9: Infant and Child Mortality

Month	Live birth	Death			Death rate (% of live birth)*
		Neo-natal (below 1 month)	Post neo-natal (1-11 month)	Child (1-4 year)	
July '94	233	6	6	14	9.40
August	189	10	10	4	11.06
September	238	12	5	6	10.04
October	280	7	3	14	10.32
November	306	10	11	17	8.79
December	381	9	4	10	9.30
January'95	334	13	6	15	7.21
February	353	7	4	9	7.22
March	269	3	6	6	5.78
April	243	3	7	5	5.29
May	206	4	1	3	4.65
June	174	2	2	2	6.53
Total	3,206	86	65	105	7.99

Source: Purbadhala Thana Family Planning Office
* Data correspond to three months' moving average

Table C-10: Disease Profile of Patients Treated in Purbadhala Thana Hospital, 1994

Disease	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	%
Diarrhoea	991	542	652	375	428	391	579	339	491	594	518	603	6,503	12.05
Malaria	3		22	95	3	32	58	24	2	25	18	18	300	0.56
Worm infection	1044	687	729	666	740	597	555	554	679	1037	772	734	8,794	16.29
Peptic ulcer	524	675	441	508	389	271	322	203	303	370	446	229	4,681	8.67
TB	86	86	115	96	89	108	34	112	82	103	95	89	1,095	2.03
Respiratory infection	119	55	247	176	120	108	65	81	97	166	98	128	1,460	2.71
Skin disease	825	581	559	796	445	375	288	342	380	522	302	310	5,725	10.61
Deficiency diseases	357	175	214	130	227	171		42	81	206	97	97	1,797	3.33
Anaemia	202	360	339	439	495	401	549	445	149	422	577	226	4,604	8.53
Asthma	21	39	31	16	18	20	6	6	26	82	41	29	335	0.62
Eye disease	142	107	98	243	32	34	48	95	49	233	123	142	1,346	2.49
Ear disease	106	88	70	62	35	43	56	125	42	149	86	51	913	1.69
Dental disease	48	92	16	43		40		15		8	27	65	354	0.66
Injury	311	166	63	48	71	61	180	196	28	194	137	66	1,521	2.82
Obs/gynie complain	5	12											17	0.03
P.U.O	222	218	305	319	215	197	656	453	256	469	397	220	3,927	7.28
Others	500	759	490	501	568	479	1801	955	460	1393	1595	1098	10,599	19.64
Total	5,506	4,642	4,391	4,513	3,875	3,328	5,197	3,987	3,125	5,973	5,329	4,105	53,971	100.00

Source: Purbadhala Thana Health Centre

C.6.4 Potable Water

Hand tube wells are the main source of safe drinking water. Almost all people use tube well water for drinking purposes. Though some have their own private HTWs, the majority depend on public wells supplied by the DPHE. These are usually located in the homesteads of the village's influential people. During floods, HTWs are submerged, and access to safe water becomes difficult. Some people resort to drinking flood water.

On average there is one public HTW for 20 households. When HTWs break down, they may remain out order for quite a while, due to several reasons. Spare parts are not always available, and there is often a dispute over who should pay for the repairs.

In some villages HTWs run dry when STWs and DTWs are in operation for irrigation. In recent years, the DPHE has been installing Tara pumps to address the situation. At present, Tara pumps account for about 30 percent of total HTWs in greater Dampara (see Table C-11).

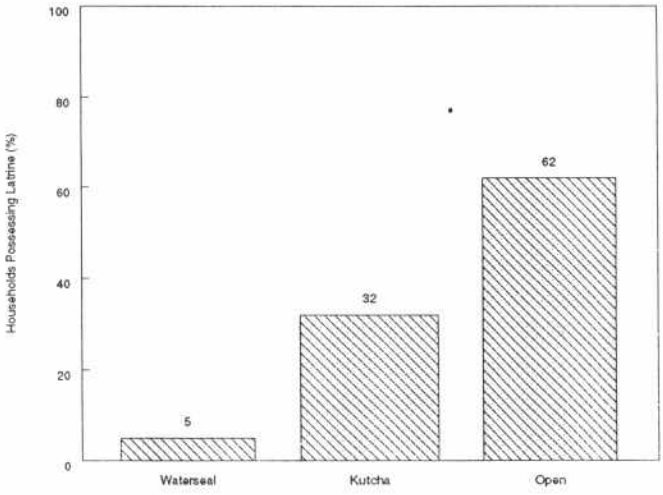
Table C-11: Statistics on Public HTW, 1995

Union	Total number of hand tube wells			Number of running hand tube wells		
	Suction lift	Tara	Total	Suction lift	Tara	Total
Hogla	189	76	265	168	75	243
Ghagra	180	68	248	169	66	235
Jaria	187	66	253	177	61	238
Purbadhala	202	82	284	188	81	269
Agia	175	77	252	166	76	242
Balia	153	96	249	138	96	234
Baola	156	93	249	136	93	229
Rupasi	203	53	256	195	52	247
Phulpur	227	74	301	225	72	297
Total	1,672	685	2,357	1,562	672	2,234
Percentage	71	29	100	70	30	100
Percentage of running TW				93.4	98.1	94.8
Population/TW			91			96

Source: DPHE, Purbadhala Thana and Phulpur Thana

C.6.5 Sanitation

Figure 7: Status of Latrines



The state of sanitation is appalling. The NERP household survey showed that as many as 62 percent of households do not have any fixed place to defecate. Few medium and large farm households (about 5 percent) possess water-seal latrines. Others have *kutcha* latrines (see Figure 7). During the monsoon months, *kutcha* latrines go under water. In the river side villages, *kutcha* latrines are washed away by the swelling water. At that time, people defecate in open water.

C.7. WATER MANAGEMENT

C.7.1 Management Practices

Water is at some times highly in surplus and at other times extremely scarce. There are the obvious, seasonal variations in water supply. These dictate the behavioural patterns and practices of the people. There are also regional variations in supply which leads to contention and confrontation between groups of people.

The most obvious water-related problem is that of flood. People make a distinction between *barshar pani* (monsoon water) and *bonya* (flood). *Barshar pani* is a normal rise in water level which is expected and desired for growing rice, for navigation and for fish culture. *Bonya* refers to an abnormal rise in water level that is unusual, unexpected, unwanted and that damages crops, homes and roads. The *bonya* makes life difficult and often hazardous. People take protective measures to save their property from floods. Common practices are the construction of dykes and the excavation of canals so that water can be drained out quickly.

In the dry season, many water bodies dry up. There is a shortage of surface water both for irrigation and for domestic purposes. In response to the scarcity of surface water, people try to impound water in *khals* and rivers to use it for irrigation.

C.7.2 Kalihar Nadi

Kalihar Nadi, a tributary to the Kangsha river, originates at Koma Beel and passes through several villages of Purbadhala thana. It joins the Kusmai Khal near the Kangsha river and assumes the name Rajakhali Khal. The length of Kalihar Nadi is 25 kilometres.

Kalihar Nadi is connected with several *khals* throughout its course. Among these are:

- *Chandraghona khal* in Gangerbera village;
- *Kusmai khal* connecting *Kusmai beel*;
- *Bamonkhali khal* connecting *Kazi beel*, *Lamba beel* and *Majher beel*;
- *Dauramota khal* connecting *Singra beel* and *Doba beel*;
- *Atla khal* connecting *Atla beel*;
- *Singra gang* connecting *Bailla beel*;
- *Eya khal* which was connected with the *Kangsha* and was subsequently closed in Dampara village;
- *Goinyapurir khal* connecting *Apan beel*;
- *Koityakhalir khal* connecting *Bara beel*.

During the monsoon, traditional and mechanised boats ply in the channel, transporting people and merchandise. Commodities are transported from larger growth centres like Jaria and Jhanjail to smaller ones like Sheolabazar, Chanderbazar, Dudhibazar and Hatkholabazar.

At different points there are *sanko* (bamboo bridges) for the channel crossing. In 1994-95, nine *sanko* were built over the channel. The construction and maintenance of a *sanko* is done by a family with the support of the village people. Each farm household pays from two to ten kg of rice to the family after the *aman* harvest.

A section from Sheola ferry *ghat* to Kandapara is leased out for fishing. Adhar Babu of Purbadhala, a prominent fisheries lease-holder has been awarded the lease this year. The fishing right on the channel, however, excludes the area of a big *doba* (ditch) in the channel bed which is reportedly owned by a family from Dampara. People from nearby villages use the water from this *doba* for domestic purposes. They are also allowed to fish in it.

The water of the channel is used for irrigation, as well as for domestic purposes, by the people of adjoining villages. Some households use the water of this channel for drinking.

Water levels in the channel start falling in the month of October. Before the advent of the *boro* season, two big closures are built, one at the eastern side of the confluence of Kalihar Nadi and Kusmai Khal and the other to the west of Kalihar village. This is done to retain water for irrigation and fisheries. Several *bundhs* of smaller elevation are built between the larger closures by individual farmers. This year, four small closures were built. Both the traditional *don* (wooden tool for lifting water) and the LLP are used to draw irrigation water from the channel.

By mid-February the channel dries up, so surface water is available only for preparing seed bed, land preparation for *boro* and transplantation of *boro*. After that, farmers must use STW and DTW for irrigation.

Table C-12: LLP Schemes in Kalihar Nadi, January 1995

Village	Number of scheme	Irrigated area (ha)
Shankiduari	5	53
Panisana	3	28
Biljora	3	65
Moniarkanda	1	34
Rampur	1	6
Hironnopotti	2	15
Rangamaitta	3	19
Shankiduari	1	6
Boyaliakanda	1	6
Dogachhi	4	23
Nishchintapur	1	6
Sonaikanda	1	6
Kandapara	2	15
Letirkanda	2	15
Total	30	297

Source: NERP field data

In January 1995, as many as thirty irrigation "schemes" were using LLPs in the Kalihar Nadi (see Table C-12). Each scheme watered the land of one or more households, covering areas ranging from 6 to 65 ha, the average is 10 ha.

The typical irrigation plan is initiated and controlled by one large farmer. He owns the LLP and sells water to land-owners adjacent to his plots. Sometimes one farmer owns many pumps, thus indirectly controls a large area.

In the dry season, farmers use the slope and the bed of the channel for the seed bed, the cultivation of *boro* and oilseeds. Those who own land on the bank of the channel extend their plots up to the channel bed. Some have also levelled the slope of the channel by excavation or infilling to grow *boro* rice. This practice has been observed in Dholkar and Kalihar. The middle

line of the channel bed is considered as the boundary for land-owners on either side of the channel. Attempts to encroach beyond this line are resisted, often with violence.

C.7.3 Balia Nadi

This is a 17 km-long channel that flows through Purbadhala Thana. It joins Tutiar Khal in Khatuair and then meets the Jaria Nadi after draining the Pakhla Beel. Jaria Nadi initially had its outfall in the Kangsha, but has since been closed by the road/dyke of the Kangsha River Project.

Balia Nadi once drained Padmai Beel. Due to construction of the Hogla-Sadhupara road and the encroachment of the channel bed by farmers, the channel no longer exists to the west of Balia village.

The people of Balia, Meghshimul, Sattati, etc. use the water of this channel for domestic purposes. Ditches are dug in the channel bed in order to store water when the channel dries up in February. Fences are erected to protect the water from cattle, but the ditches dry up usually by March.

In 1974, the channel was closed near Jagir village to hold water for irrigation. Another closure was made in Balia village. Between Balia and Jagir, there are nine LLPs operated by nine influential farmers from the villages of Balia, Meghshimul, Sattati and Berail. The total area irrigated by these LLPs is about 100 ha.

The closure made near Jagir is permanent, and those who use water for irrigation pay for its maintenance. The poorer farmers who use the *don* for lifting water also have to pay. The nine people operating LLPS control the water in the Balia-Jagir section of the channel and do not allow any other LLPs to be used.

Fishing is not allowed on the pretext that those who made the closure have all rights to the water. It is claimed that fishing makes the water turbid and unusable for domestic purposes. When fishers cut the closure, the LLP owners lodged a complaint against them in the *thana*.

In 1989, the water level in the channel was very high in the post-monsoon period, and the farmers who had land on the banks of the channel were not able to prepare their seed beds. One night, some people from Balia cut the closure. The LLP owners lodged a case against them, and the closure was subsequently repaired. To avoid similar incidents, a small canal was excavated on one side of the closure to drain out excess water when needed.

Another closure was once built, further upstream from the present location. It caused water-logging on the surrounding land. Among the affected people were two large farmers of Meghshimul who objected to the closure, which was then shifted further downstream. This has, however, negatively affected some farmers who are now facing a scarcity of surface water for irrigation.

West of the bridge (under construction) along the Kapasia-Purbadhala road, the channel bed is used for growing boro rice. The section from Urdha Beel to Manja Beel, known as the Bishkakunir Khal, is leased out for fishing. Villagers are allowed to catch fish in this channel for their own consumption. The people of Meghshimul, Udharkanda and Ramkanda use this channel for transportation of merchandise to Jaria and Jhanjail during the monsoon months.

There are three LLPs under operation in Urdha Beel and six more in the Bishkakunir Khal. Near the site of each LLP, STW pipes have been installed by some farmers. When the channel dries up in February, they operate the STW for irrigation.

C.7.4 Tutiar Khal

Tutiar Khal connects Kusmai Beel with Balia Nadi. It is five km long and passes through the villages of Purbadhala Thana. It is also connected with Singradigha, Chotobakla and Pakla *beels*.

The channel has suffered encroachment for *boro* cultivation. The western part of the *khal* has been occupied for many years. Five closures have been built on this *khal* to facilitate irrigation. Among these, one has been constructed by the members of a BRDB *samity* in Tutia. In January 1995, four LLPs were under operation. While only a few farmers are using the water of this *khal* for irrigation, others, about fifty households in Tutia village, use the water of Singradigha Beel and a village tank for irrigating their land.

Out of 90 households in Tutia village, 48 live on the bank of the *khal*. They use the water of the *khal* for domestic purposes. Others use the water from village ponds or from the Singradigha Beel. The people of Tutia also catch fish in the *khal*. People outside Tutia are not allowed to catch fish.

Tutiar Khal used to drain Kusmai Beel. However, since the construction of a closure, the water now passes through the Paitla Khal. The people of Tutia feel that the Paitla Khal should be excavated for better drainage.

C.7.5 Dhalai Nadi

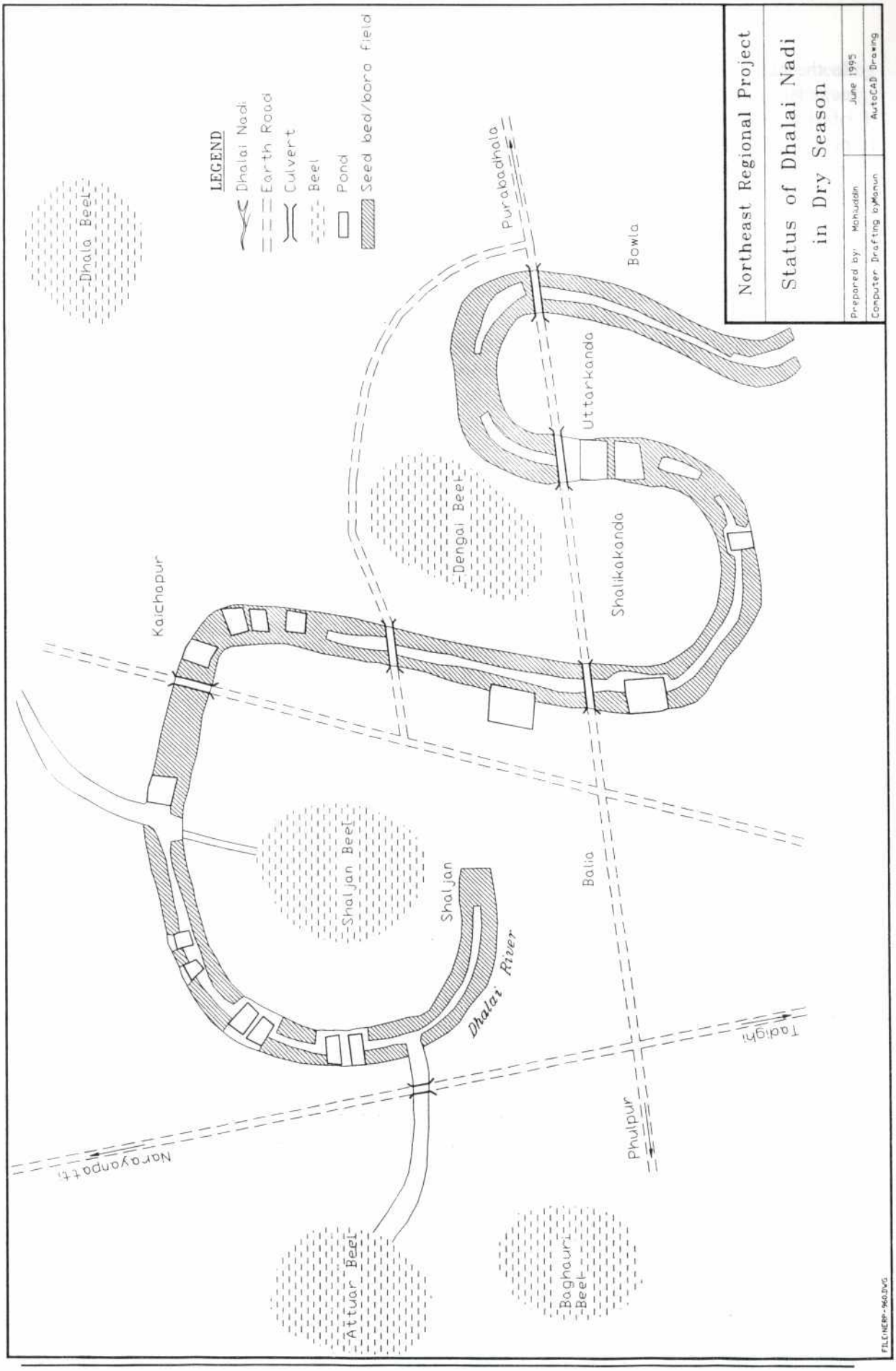
Dhalai Nadi is a long channel passing through Phulpur and Purbadhala *thanas*. Within the Dampara project area, its catchment area includes parts of Balia and Baola unions. The Deola, Baghaura and Attua *beels* are drained by Dhalai Nadi through the Attuar Khal. Often the water of the Kharia River also passes through these *beels* and ultimately through the Dhalai Nadi.

Due to encroachment and siltation, Attuar Khal and Dhalai Nadi cannot adequately drain monsoon waters. As a result, Araton Kanpara village is frequently flooded.

The bed of the Dhalai Nadi has been transformed into agricultural land and ponds in many places (see Figure 8). Land-owners on both sides of the channel have occupied the bed leaving only one or two meters for water to flow. Ponds are made mainly by the wealthy. They use the ponds for as water reservoir and for fishing. To facilitate drainage, small drains have been built on the side of these ponds. Pond owners do not want the re-excavation of Dhalai Nadi.

To facilitate drainage in the Dhalai Nadi, the present Chairman of Balia union, Motaleb Ali Sarkar, excavated the Mortujalir Khal. This negatively affected the farmers in Dhala Beel due to excess water in the time of boro cultivation. This year, the Chairman wanted to re-excavate the Mortujalir Khal, but his attempt was resisted by the farmers of Dhala Beel. From Mortujalir Khal to Kaichapur village, Dhalai Nadi is no longer visible.

Figure 8


LEGEND
Dhalai Nadi
Earth Road
Culvert
Beel
Pond
Seed bed/boro field
Northeast Regional Project
Status of Dhalai Nadi
in Dry Season
Prepared by: Mahiuddin
June 1995
Computer Drafting by:Manun
AutoCAD Drawing
Purabadhala
Bowla
Uttarkanda
Shalikakanda
Dengai Beel
Dhala Beel
Kaichapur
Shaljan Beel
Shaljan
Dhalai River
Balia
Phulpur
Narayanpath
Attuar Beel
Baghauri Beel
FILENERP-960.DWG

In the past, Shaljan Beel was connected with Dhalai Nadi by a *khal* that has since silted up completely. An influential farmer of Shimulia village built a house on this *khal*. Since the water of Shaljan Beel cannot be drained, crops on about 200 ha of land in the *beel* are affected. Many people have already sold their land in the *beel* and migrated to other places as a consequence. All these lands have been purchased by a few influential people including the Chairman of Balia union.

Due to the silting up of the Dhalai Nadi, adjoining villages suffer from drainage congestion and crop damage. Among the severely affected villages are Charalpara, Araton Kanpara, Shaljan, Shalikakanda and Uttarkanda.

In the entire section of the channel up to Baola, no LLP is used. The farmers generally use STW for irrigation.

C.7.6 Dyke in Naterkona: Case Study

In the past, flood water flowed from north to south inundating Naterkona village. To protect the village, *Union Parishad* Chairman Mia Hossain, father of present Chairman Motiur Rahman, took the initiative to construct a road-cum-embankment in the early sixties. There was shortage of fund. The Chairman requested the local people to contribute. The villagers participated by providing labour.

Over the years, the road was repaired during the tenure of successive chairmans. However, the condition of the road gradually deteriorated as parts of it were eroded by the water coming from the *Shibganj Dhala*. During the monsoon, the people had to walk across mud and water to reach Jaria.

After the flood of 1988, a group of people in the village urged the Chairman to rebuild the road. The Chairman secured support from a certain Fazlur Rahman, an influential village labourer, for the construction work.

Caritas had built a road on Nolua Charpara. Having seen this, Fazlur Rahman with a friend applied to Caritas for construction of a road in Naterkona. The proposal was approved. A team from Caritas came to take measurements of the road. A committee with Fazlur Rahman as Chairman was formed to supervise the work.

The Committee asked the local people to put their signature on a blank sheet of paper. They were told that their consent was needed whether they wanted a road. Later, it was written on the sheet of paper: "we shall contribute land for road and also provide land for collecting earth for the road free of cost". At the same time, a member of the committee collected signature of the villagers on another blank sheet of paper telling: "this application is not for our road, as it has already been decided that this would be built, but for another road running from Charpara to Naterkona". But afterwards, he mentioned on top of the application: "there is no need for a road". As a consequence, upon receiving the letter, Caritas stopped the work of the road in Naterkona.

In the following year (1989/90), a group of people contacted Caritas regional office in Mymensingh and Purbadhala thana office. They were informed of a new procedure that Caritas would fund the construction of the road if the local people contribute 20 per cent of the total cost.

Fazlur Rahman (Committee Chairman) and the UP Chairman decided to call a village meeting for collecting subscriptions. They made a plan that they would convince the people by saying: "those who are going to contribute money are likely to profit from this project". The UP Chairman told the audience that they needed to contribute tk 46,000 which was 20 per cent of the total cost of the road and he would contribute 10 per cent of the amount, that is, tk 4,600. He asked others to volunteer. At first, Fazlur Rahman and two other persons agreed to arrange tk 4,600 each. Later, some more people including the members of the committee agreed to pay the stipulated amount. Each of them formed respective groups of contributors from amongst their neighbours and friends.

Under the supervision of the committee, the work started again in January 1992. The work was completed in the following March. The episode of the Netrokona dyke shows that the people, in desperation, get united and take initiative at a micro level.

C.8. WATER TRANSPORT

C.8.1 The Shrinking Sector

In this land of water the boat has traditionally been a vital mode of transportation. Development has brought roads, and with the roads come trucks and other alternative modes of transportation. Since the rise in truck traffic in 1982, the boat's share in freight traffic has declined. Though passenger traffic is higher in the monsoon months, the network of roads that has developed offer transport by rickshaw through the year.

There are about 152 boats presently in operation by the people of greater Dampara. About half of the boats (47%) are mechanised and these are mostly used in freight transport. The bulk of the traditional boats carry passengers (see Table C-13).

Table C-13: Distribution of Boats by Type

Boat type	Number of boats			
	Passenger	Cargo	Total	Percentage
Traditional	45	35	80	53
Mechanised	22	50	72	47
Total	67	85	152	100
Percentage	44	56	100	

Source: NERP field data

There are about 30 boat-building carpenters in the study area. They live in Jaria, Naterkona, Khatuair, Sonaikanda, Roghurampur and Ghagra. The wage rate is Tk. 80 per day. The system of contractual wage is prevalent. For example, wage for building a boat of 250-*maund* capacity (about 10 tons) is 5,000 taka - representing about two months' work. The boat-building industry has dwindled due to low demand for boats.

C.8.2 Traditional Passenger Boat

A traditional *gudara* (passenger ferry boat) is smaller in size and is used mainly for river-crossing. Mechanised passenger boats are mainly used for longer routes. The times and frequencies of the boats are fixed according the calendar of the day of *haat* (market) and the time-table for trains. Mechanised boats are mainly used for transporting merchandise.

Ferry boats ply at different locations to transport people across the *Kangsha* along the Jaria-Guatala section. These are Jaria, Letirkanda, Sonaikanda, Kapasia, Ghagra, Roghurampur, Patera and Guatala. Besides, ferry boats ply at Dudhi and Letirkanda on the *Kalihar Nadi* and one at Berail on the *Balia Nadi*.

During the monsoon, Boats ply in the *Kalihar Nadi* and the *Balia Nadi* and transport merchandise to different market places along these two rivers, mainly from Jaria and Jhanjail. During the dry season, their confluence with the *Kangsha* dries up and boat cannot ply.

As many as 36 *gudara* carry passenger between Jaria and Jhanjail. Owners and crew of all these boats come from Charpara village of Jaria union. None of them owns any cultivable land. They operate their own boats. They formed the *Jaria-Naterkona Ferry Ghat Nou Paribahan Samity* (Jaria-Naterkona River Transport Association) in 1990.

Traditional boats have an average crew of 3, and mechanised boats an average crew of 4. The income of a traditional ferry boat with 3 crew (owner plus two crew) is divided as follows: one-fourth to the boat owner as rent of the boat and one-fourth to each of the crew including the owner-operator.

C.8.3 Traditional Cargo Boat

About 35 traditional country boats owned by the people of greater Dampara are used in transportation of goods. These mainly cater to the needs of the traders operating in local markets. The carrying capacity of a local cargo boat ranges up to 250 maunds (about 10 tons). They transport various merchandise like rice, jute, vegetables, spices, sand, boulder, brick, fertilisers, diesel, firewood, etc. Transportation network connects local markets and growth centres. Among these are Porakandulia, Ghagra, Guatala, Kapasia, Durgapur, Shibganj, Birishiri, Jamdhala, Sakkarbazar, Muktirbazar, Najirpur, Kalmakanda, Thakurakona and Brahmankhali. They also bring rice to Jaria from different villages.

One boat is generally operated by a crew of 3 including the owner. The system of sharing of income is similar to that of a passenger boat.

C.8.4 Mechanised Passenger Boat

A mechanised passenger boat is locally known as a trawler or launch. One such boat can carry 50 to 150 persons depending on its size. From Jaria, 22 launches ply in different routes in the monsoon season. In the dry season, only 7 launches ply. The routes are shown in Table C-14.

A passenger train shuttles three times a day between Jaria and Mymensingh. The launch time-table is fixed in accordance with the train time-table. Launch-owners maintain a schedule of operation negotiated among themselves.

More people travel by launch in the wet season than in the dry season. In the dry season, people use earthen roads. Many rickshaws ply in the dry season. Since river

Table C-14: Mechanized Passenger Boats Plying from Jaria

From Jaria to	No. of boat	Seasonality
Roghurampur	3	Monsoon
Guatala	5	Monsoon
Porakandulia	7	Whole year
Dhobaura	3	Monsoon
Muktirbazar	3	Monsoon
Durgapur	1	Monsoon

Source: NERP field data

transportation takes more time. Due to low water level in the river, the launch operators enhance the fare in the dry season. For example, a launch fare from Jaria to Porakandulia is Tk. 3 in the monsoon, and increases to Tk. 5 in the post-monsoon period.

In most cases, the launch is operated by the owner himself. In addition, he hires a staff of four. After deducting all expenses, the owner receives half of the income and the other half is shared by other crew members.

C.8.5 Mechanised Cargo Boat

Mechanised cargo boats are known as *tempoo*. There are 50 *tempoo* in greater Dampara. Among these, 30 belong to the people of Naterkona. These are run by diesel and are equipped with one or two engine(s). Carrying capacity varies from 4 to 25 tons. Most of the *tempoo* are of the smaller size. Only 3 are relatively bigger, having a capacity of more than 20 tons each.

Small *tempoo* are used to carry goods between Jaria and other nearby markets, such as, Sorchapur, Durgapur, Najirpur, Porakandulia, Ghagra, Guatala, Sakkarbazar, Jamdhala, Muktirbazar, Fakirabazar, Thakurakona, Shidli, etc. Big ones carry goods to all these markets and also to far away marketing outlets like Bhairabbazar, Munshiganj, Dhaka, Kamlaghat, etc.

The principal commodities transported by *tempoo* from Jaria are rice, timber or sand. On the return trip, they bring fertilisers, diesel, kerosine and stationeries. Freight rates are based on distance and seasonality. Rates are higher in the dry season as it is difficult to ply boat in certain routes due to low draft.

C.8.6 Boatman's Life: Case Studies

Salahuddin, a *Tempoo* Operator

Salahuddin is 45 years old. He owns a *tempoo*. He lives in Charpara and has a family of eight. He came from a poor family and lost his father at the age of five.

Salahuddin started working as a boatman at the age of twelve. At that time, there were no mechanised boats. In the early eighties, he found employment on a mechanised boat, and in 1993, he bought an old *tempoo* for Tk. 5,000. He invested Tk. 12,000 to refurbish it. He used his savings and took a Tk. 3,000 loan from ASA. Now he can earn taka 750 to 1,000 a week after expenses including fuel and wages of the other crew members.

Salahuddin does not own any cultivable land. His wife makes household utilities, using bamboo and cane, to sell at the market. She usually works during the period from mid-March to mid-June and mid-October to mid-February. During the harvesting period of *boro* and *aman*, her products sell well in the market. In each harvesting season, she earns about Tk. 1,000-2,000. She is saving this money for their daughter's marriage.

Salahuddin transports merchandise from Jaria to other markets within a range of about 40 kilometres. Wholesalers bring commodities like edible oil, soap, biscuit, sugar, molasses and salt from Dhaka, Mymensingh and Bhairabbazar to Jaria by truck. These are then transported by retailers to local markets via *tempoo*. The freight rate is negotiated on the basis of distance. For example, the rate per *maund* from Jaria to Durgapur is Tk. 4 and that from Jaria to Porakandulia is Tk. 3. His income drops during the dry season and during flood times.

Shukuruddin, the *Gudara Majhee*

Shukuruddin lives in Charpara. He is 22 and owns a *gudara* boat. He does not own any cultivable land. Previously he was employed as a *majhee* (country boat operator) since the age of 15. He used to receive one-fourth of the revenue earned by the boat and had a daily income of Tk. 35 to 50. He managed to save Tk. 50-100 a month. About a year ago, he bought an old boat for Tk. 2,000. He spent an extra Tk. 2,000 to repair it. He invested mainly from his own savings, but also received some financial support from his father.

Shukuruddin provides ferry service across the Kangsha between Jaria and Jhanjail. Occasionally he gets contracts for transporting cargo to other places. Rice and sand are the principal commodities transported. Though he works round the year, his income diminishes in the dry season. The ferry rate drops from one taka to half a taka in the dry season as the river shrinks. The demand for freight traffic also decreases in the dry season.

Metaphysical World of a Majhee

O the benign Messiah I call you
Protect me while I cruise
In your gracious name
The mighty river I sail across.

The boat is made of three planks
Spliced with one another
I want to narrate my anguish
How faraway my Lord you are?

The river flows with swirling wave
I feel scared and panicked
The water is full of wilderness
Sharks and reptiles everywhere.

I submit completely to you
I belong to you O Lord
And I beg for your kind favour
To see you at the eternal course

(Boatman's Song)

During the last monsoon (1994), his average daily income from ferry service was Tk. 125 after deducting the share for the other crew. He also had five other contracts. Once his boat was hired by a wedding party for Tk. 400 and on four occasions, he transported merchandise to different places. The total revenue earned was Tk. 1,200. After paying the crew, his net income was Tk. 600.

From mid-October to mid-April he was solely dependent on income from the *gudara*. His net income was roughly Tk. 75 per day during this period. From mid-April to mid-August his net income was roughly Tk. 125 per day. He can save Tk. 150-200 per month. He must repair the boat twice a year which involves substantial expenses.

Shukuruddin faces uneven competition from mechanised boats as traders prefer the *tempoo* for transportation of their merchandise. He has to depend mainly on ferry servicing for his living. A bridge over the Kangsha is presently being constructed and is expected to be open for traffic in the next one to two years. Shukuruddin is anxious about the future because he expects to lose work at that site.

Singing songs, and lost in deep thought, this traditional *majhee* crosses the river bringing his passengers into eternity.

C.9. DAMPARA BUNDH

C.9.1 Background

The need for an embankment on the Kangsha has been expressed by local people for many years. The issue of the Dampara Bundh was first raised during the peasant movements against the feudal land-renting system in the 1930s and the 40s. Eventually local farmers were mobilised to provide voluntary labour for the construction of a 300-meter *bundh* in Dampara village along the Kangsha river in the mid-forties.

In 1946, at a peasants' conference in Netrokona, the Dampara Bundh was identified as a major problem. The *bundh* was causing the discharge of the Kangsha to enter through Naya Khal, flood surrounding villages and damage *aman* crops on vast areas of land. In response, the peasant leaders attempted to close the mouth of Naya Khal, but, due to high water velocity in the river, the attempt failed.

Finally, in 1949 large tree trunks were placed across Naya Khal and both banks of the *khal* were embanked to protect the *bundh*. The people on the other side of the river however, were not satisfied. Thinking that their crops would be at risk, they cautioned the people of Dampara that they would cut the *bundh*. The situation became tense and the *bundh* was guarded around the clock, but nothing came of the confrontation.

The *bundh* and both embankments of the Naya Khal were eroded during floods. They were repaired both by the *Union Parishad* and by flood-affected villagers living on both sides of the *khal* at different times. More recently CARITAS has become involved in the maintenance of the *bundh*. Since 1989 it has also been extended by 2 km through the collective work of local people, the *Union Parishad* and CARITAS.

The *bundh* provided some benefit to the people of the area. But after the formation of the Shibganj dhala, water levels changed and the *bundh* was no longer effective as a flood-protection device.

People want a dyke on the right bank of the Kangsha. Villages which are now vulnerable to flood would then be protected from the spill of the Kangsha (see Table C-15, Figure 9).

C.9.2 Present Status

The Greater Dampara Water Management Project has been identified as a prospective intervention in the NERP pre-feasibility study. A dyke along the right bank of the *Kangsha* between Jaria in the east and Meda in the west has been proposed as a part of the structural intervention. The length of the proposed dyke is about 30 km. The dyke would pass through several river-side villages of Jaria, Ghagra and Baola unions.

C.9.3 People Outside Dyke Alignment

The proposed Dampara dyke is expected to protect several villages from flood waters from the Kangsha. Unfortunately, some will be left outside the dyke alignment because of the required setback distance from the river bank. A total of 516 households in 16 villages who are living

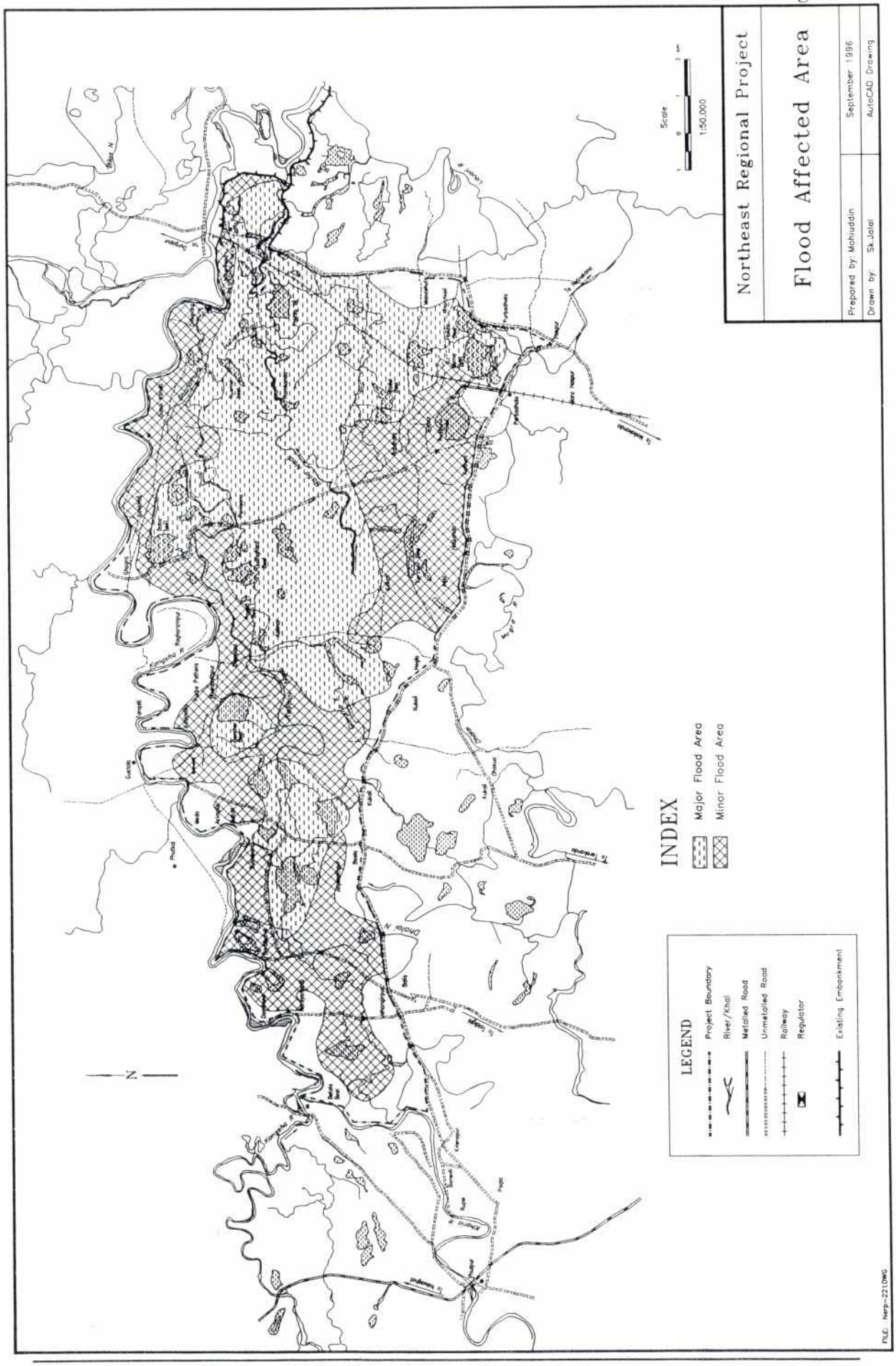

Northeast Regional Project
Flood Affected Area
Prepared by: Mohiuddin
September 1996
Drawn by: Sk.Jalal
AutoCAD Drawing
Scale
1:50,000
INDEX
Major Flood Area
Minor Flood Area
LEGEND
Project Boundary
River/Khal
Metalled Road
Unmetalled Road
Railway
Regulator
Existing Embankment
N
FILE: NEP-221.DWG

Table C-15: Villages Affected by Flood

Major flood problem		Minor flood problem	
Villages affected fully	Villages affected partly	Villages affected fully	Villages affected partly
Jaria	Budhi	Kandapara	Budhi
Naterkona	Poshchim Moudam	Letirkanda	Poshchim Moudam
Khatuair	Berail	Sunaikanda	Berail
Barha	Bohuli	Kapasia	Behuli
Bhitorgaon	Hogla	Giriasha	Hogla
Chhuchaura	Ghagra	Hatdhala	Ghagra
Kharchail (Purbadhala)	Kalihar	Kalduar	Kalihar
Bardhar	Oti	Batta	Oti
Noagaon (1)	Bishwanathpur	Sattati	Bishwanathpur
Noagaon (2)	Gopinathkhila	Agia	Gopinathkhila
Purbo Moudam	Baola	Koilati	Bola
Meghshimul	Shalikakanda	Balia	Birampur
Rangamati	Koichapur	Kharchail (Agia)	Serilya
Hironpatti	Kaichapur	Baniakanda	Shalikakanda
Basha	Ramsona	Sankiduari	Koichapur
Dogachhi	Bilasathi	Dampara	Kaichapur
Panisana	Narayanpatti	Purbo Pathera	Ramsona
Dudhi	Beltia Balia	Pathera	Bilasati
Biljora	Charalpara	Moheshpatti	Narayanpatti
Boalikanda	Silpur	Boratia	Beltia balia
Katkushi		Bisharadpur	Charalpara
Sohela		Ailatoli	Silpur
Sutiapara		Meda	
Sutarpara		Baultali	
Mohdipur		Ajampur	
Kachandhara		Satashi	
Boroikandi		Moishaunda	
Bandakona		Araton Kanpara	
Nolchapara		Domkona	
Baripakuria			
Konapara			
Salonga			
Paiska			
33 villages	20 villages	29 Villages	22 Villages

Source: NERP field data

along the right bank of the Kangsha have their homesteads outside the proposed dyke alignment. They are mostly landless and poor farmers. Only one-fifth of them possess agricultural land more than one ha.

The homestead size of the majority of households located outside the alignment is very small. As many as 44.4 percent of households own less than one-tenth of an acre of land. Another 51.1 percent possess 0.1 acre to 0.5 acre. Only 3.5 percent of households have homesteads of more than half acre (see Table C-16).

Findings show that 29 percent of households having homestead outside the dyke alignment do not possess any agricultural land. About half of the households having homestead outside the dyke alignment posses agricultural land on both sides of the proposed alignment and another 13 percent possess land only inside the proposed alignment. Ten percent of households possess agricultural land outside the dyke alignment only (see Table C-17).

Table C-16: Homestead Size Outside Dyke Alignment

Size of homestead	Number of households	Percentage
Small	229	44.4 44.4
Medium	269	52.1 52.1
Large	18	3.5
Total	516	100.0

Source: NERP Dyke Alignment Survey

C.9.4 Issues and Concerns

In terms of shelter for the people and productive potential, the relative significance of the homestead need not be exaggerated. It has been observed that poor households, particularly those who do not possess any cultivable land, use homestead land more intensively than better-off people, because the latter has the opportunity to derive income from agricultural land.

During the monsoon, the dyke is likely to increase the flooding of those homesteads located between the river and the dyke. The cooperation of the affected people has to be solicited to protect and maintain the dyke in order to avert any possible conflict.

Table C-17: Land Ownership Status of Households Having Homestead Outside the Dyke

Village	HH	Homestead area	Agricultural land ownership inside/outside dyke alignment							
			Only inside		Only outside		Both sides			Landless HH
			HH	Area	HH	Area	HH	Area inside	Area outside	
Khatuair	19	2.16			2	0.88	12	36.00	11.04	
Gangerbera	24	2.72			5	0.52	18	16.67	4.52	1
Letirkanda	118	16.52	26	75.34	22	9.14	46	106.33	36.31	24
Sonaikanda	19	2.09	5	8.28	2	0.58	3	1.82	1.06	9
Kapasia	15	3.04					15	40.04	6.41	
Giriasha	60	6.87	10	11.82	2	1.10	31	59.06	8.17	17
Ghagra	72	7.07	10	8.20	2	0.32	20	12.63	7.89	40
Bainja	7	1.20			6	6.00	1	0.25	0.50	
Roghurampur	15	2.45					15	14.42	3.78	
Dampara	24	4.38	4	14.00	4	2.97	12	7.81	6.29	4
Purbopathera	37	8.81	2	3.50	4	0.60	15	35.21	12.86	16
Pathera	25	12.11	3	5.45			20	37.68	15.11	2
Kashimala	27	7.62	1	1.00	1	0.50	20	55.00	19.85	5
Projapotkhila	7	1.03	2	0.80			2	2.50	0.26	3
Moheshpatti	5	1.11					3	3.00	0.82	2
Bisharadpur	17	5.50			2	0.50	12	17.30	13.85	3
Total	516	85.80	67	129.67	52	23.11	247	448.34	150.66	150
% (HH)	100		13		10		48			29

Note: land areas are in acre
Source: NERP Dyke Alignment Survey

C.10. EPILOGUE

In conventional literature, water management projects are rationalized in terms of benefits accruing mainly from crop saving. The economic and social significance of homestead-based activities is often ignored. However, the contributing role of this informal sector is no less important. This has been evident in chapter 4. Homestead-based economic activities performed by women would be boosted under a fovourable water regime.

Stories narrated in the case studies show how the people earn their livelihood through optimal use of opportunities and resources. This is often interrupted by disasters like flood. Floods bring dislocation in the communities and accelerate the process of marginalisation of the vulnerable groups. Their experiences, thoughts, feedbacks and proposals had been an important tool in designing the project. The case study of Netrokona dyke is indicative of the willingness of the people in project activities. It also suggests that, in the absence of an appropriate institutional structure, such efforts may result in conflicts and failure. Hence, it is necessary to have appropriate arrangements where the concerned communities would be able to participate.