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FINAL REPORT  
APRIL 15, 1981

**REPORT OF THE BASE-LINE SOCIO-ECONOMIC SURVEY FOR  
NEEMGACCHI FISH CULTURE PROJECT - 1980-81\***

**(Prepared for Directorate of Fisheries, Government  
of Bangladesh and the British High Commission, Dacca)**

**Md. Mahmud Khan  
Nazrul Islam**

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\* Field survey was conducted during October-November, 1980

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## PERSONNEL

The project was directed by Md. Mahmud Khan and Nazrul Islam. Field survey was conducted by Messers Serajul Islam, Prodip Kumar Saha, Zainal Abedin, Enladul Islam, Karimul Haq and Indo Bhushon Roy. All the above field investigators and Mrs. Nayeema Saadat tabulated the survey data. Mr. Shamim Rabbani performed his duties as office co-ordinator. Messers Enayetullah and Mohiuddin typed the final draft of the report.

**REPORT OF THE BASE-LINE SURVEY FOR  
NEEMGACCHI FISH CULTURE PROJECT**

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DRAFT FINAL REPORT

REPORT OF THE BASELINE SURVEY FOR  
NEEMGACCHI FISH CULTURE PROJECT

SUMMARY

0.01

The present size of the Neemgacchi Fish Culture Project area is about 155 square miles with a population of approximately 166 thousand. In 1974 the population of the project area was 144 thousand of which only 12 percent were literate. The rate of growth of population in the project area is estimated at about 2.6 percent per annum.

0.02 "

In the project area relative importance of children at or below age 5 is much lower than that of Bangladesh as a whole. This might be due to in-migration of families with relatively fewer children. However, the sex ratio (51 percent male) and dependency ratio (0.606 children or old people per active member) are almost identical to the national figures (51% and 0.607 respectively).

0.03

Although some of the project area is relatively newly inhabited, the land-man ratio has already been pushed quite low. The ratio was found to be only 0.49 acres per member. Land per household in the project area was 2.93 acres compared with 1.63 for Bangladesh in 1977. Land owned per household varies significantly among the surveyed villages. In Sastan the ratio was only 0.95 while in Monohorpur it was 4.1 acres.

0.04

In the project area, the size of absolute landless is relatively smaller than in Bangladesh as a whole. Only 8 percent of total surveyed households reported zero land ownership compared with 12 percent in Bangladesh according to the 1977 Land Occupancy Survey. The degree of inequality in land distribution pattern, as measured by Gini coefficient was found to be 0.6557, compared with 0.6577 for Bangladesh.

0.05

The poverty index measured by the percent of total households owning less than 2 acres of land was 61 for the project area (for

Bangladesh 75). Moreover, only about 6 percent of total surveyed households thought themselves to be more than self-sufficient and another 30 percent considered them as just self-sufficient households. About 8 percent of total households can be termed as 'extremely poor' who have only one meal per day over the year round.

0.06

As expected, the major sector of employment in the project area is 'agriculture'. More than 33 percent of the households were day-labourers predominantly working in the agricultural sector. About 62 percent of total households reported crop cultivation as their major source of income. In the fish culture project area fishing was reported to be the main source of income for only 6 households out of 1241 households of 21 villages.

0.07

The extent of land leasing in the project area is much smaller than in Pabna or in Bangladesh as a whole. Only 13.9 percent of total land was reported to be under tenancy arrangements. Extremely wide variations in the extent of tenancy can be observed in the project area. Villages of Raiganj thana and the north-eastern part of Tarash thana show high incidence of tenancy while the low-lying regions of Tarash show almost complete absence of tenancy.

0.08

Among the surveyed households, one quarter reported hiring-in fixed labourers for agricultural, non-agricultural and household works. The total number of fixed labourers hired was 606. Most of the fixed labourers were hired by richer sections of the area. The mean land ownership of households who hired only one fixed labourer was 5.31 acres; the mean was 19.63 acres for those who hired 5 or more fixed labourers. About 85 percent of fixed labourers were hired for agricultural activities.

0.09

Distribution pattern of land owned by households is more skewed than operational land holding distribution. This indicates that in the tenancy market, the net land area received by poor households is greater than the richer households.

0.10

An attempt was made to look into the land mobility pattern of the households over the life-time of the households. Excepting the pure

landless group, all groups are relatively stable. More than 60 percent of total households remained in their respective land strata above 2 acre of land ownership. In the highest group, only 9 percent experienced downward mobility.

## 0.11

Inherited land area determines the position of a household to a great extent. A household inheriting larger land area is expected to be a net purchaser of land over the household's life-time. About 92 percent of total land was purchased by more than 2 acre owners of the surveyed households.

## 0.12

Per acre bullock and buffalo availability in the area was found to be 0.39. The requirement per acre is approximately 0.5 bullock or animal power. The deficit is probably met by cows. Most of the cultivators own ploughs to cultivate their land. Non-agricultural activities in the project area is almost nil. No respondent reported owning weaving or spinning machines or sugarcane crushers. Only 18 reported owning fishing boats out of 401 households surveyed.

## 0.13

Average literacy rate for male members show a steep upward trend as land-size increases. For landless households, 5.7 percent of male members were literate compared with 45 percent for more than 10 acre owners. Female literacy rates show no systematic trend with land ownership upto 4 acres of land-holding. Beyond 4 acre, female literacy tends to move with land ownership.

## 0.14

About 44 percent of the members of landless families belong to the age range 0 to 10 years compared with 30 percent for more than 10 acre owners. Similarly percent of members above 50 years of age was 1.9 and 14.5 for the two groups respectively. It appears that most of the households poorly endowed with land are relatively young families in the sense that they are only recently formed.

## 0.15

For land owners below 1 acre of land the modal occupation was 'day labour' and for all other land groups the modal occupation was 'cultivation of land'. The 201 to 400 decimal land owners are purely

agricultural; 95 percent of the stratum was reported to be engaged in self-cultivation.

0.16

Some of the members of the project area possess various skills like making fishing nets, building boats etc. The project can profitably utilize these skills of the local people for its benefit.

0.17

About 50 percent of total households surveyed were migrated to the project area within the last four generations. Lower land price, higher employment opportunity, and marriage are the most important causes of immigration reported.

0.18

In the tenancy market, importance of absentee owners is quite high; 83 percent of tenanted land belonged to absentee owners. 50-50 sharing of output with owner bearing no input-costs seems the only term of tenancy prevailing in the area. In most areas surveyed, tenancy was on the increase.

0.19

More than 80 percent of households below landholding size of 1 acre participated in the labour market as sellers. No households owning more than 4 acres of land sold their labour power in the market. The mean of labour days sold was 97 days for landless group and 43 days for the land group 201-400 decimal.

0.20

Most of the labour days sold were utilized in the crop sector; About 62.21 percent of total labour was utilized in crop cultivation activities. For the below 1 acre groups, harvesting of crops is the most important activity. One quarter of labour sold in the market went to pond excavation and road construction activities in 1979-80.

0.21

The wage rate per day in the project area ranges from Taka 8 to 12 depending upon the activity performed and place and time of work. Place of work for 44 percent of labour sellers was outside the village of their residence.

0.22

Labour hiring is not as concentrated as labour selling. All land groups excepting the absolute landless hired labour from the market. The 401 surveyed households hired on the average 37 man-days of day labour during 1979-80. In addition to that they hired 116 fixed labourers each hired for an average of 8.4 months.

0.23

The seasonal variation of labour hired-in is also significant in the area. Agrahayana and Poush are the peak activity months for the project area. During Ashwin and Kartic, labour hiring is almost completely absent. Months of Magh to Chaitra (January to April) are also relatively slack periods.

0.24

Many households of rural economy, from both rich and poor strata participate in the commodity market. Below 1 acre groups, percent of households selling paddy is much lower than the higher groups, but they participate almost to the same extent in the market to sell poultry birds and eggs. Goat or sheep is another important marketed commodity of the surveyed households.

0.25

Credit-market in the project area is quite undeveloped. Only a few obtained credit from institutional sources. Moreover, institutional credit is biased in favour of richer section. On the other hand, non-institutional credit was predominantly received by less than 2 acre owners.

0.26

Cropping pattern in the project area is relatively simple. The average cropping intensity was found to be 109.7. Excepting the surveyed households of Madhainagar union, almost all other households cultivate their land only once. Cropping intensity for the land group 01-100 decimal was found to be 134 compared with 106 for more than 10 acre owners. Only 3.4 percent of cropped area was reported under irrigation.

0.27

Broadcast aman paddy and local transplanted aman are the major agricultural crops cultivated in the region. Note that 68 percent of the cropped land was under these two crops in the last agricultural year.

There is considerable variation in cropping pattern between Raiganj part of the project and the Tarash part. In Raiganj part and in some areas of Tarash, HYV paddy and wheat cultivation are quite important.

0.28

The mean yield of b.aman in the project area was found to be 17 maunds per acre. For local aus yield was 15.5 maunds, for local t.aman 17.5 maunds, HYV paddy 48-maunds and for wheat 8 maunds.

0.29

During the survey period, the poorest section of the population reported having less than two meals a day on the average but the richest group had almost three meals a day. Consumption of wheat (number of times eaten) appears much more important for the lower groups. Excepting wheat, the frequency of food intake for all items are directly related with land ownership size.

0.30

No definite trend can be found regarding the influence of land ownership on the source of drinking water. About 61 percent of the landless and 58 percent of 801-1000 decimal group use tubewell as a source of drinking water. Only the richest group use tubewell to a greater extent than landless. Excluding the poorest group, drinking water from tubewell appears to be related with land ownership for all other groups.

0.31

Respondents reported 66 deaths of children since 1971. Diarrhoea is the single most important cause of death among children. Some cases of death were reported to be due to 'not diagnosed' diseases. This category probably includes deaths due to malnutrition.

0.32

Third degree mal-nutrition (extreme malnutrition defined as height to weight index below 61 percent) is extremely rare among children below 10 years of age. Only 2 percent was found to belong to this level. Another 6 percent children were in the 'second degree mal-nutrition level' (index between 61 to 75 percent). Most of the children (67 percent) were found to be normal nutritionally. Normal nourished children in below 2 acre ownership groups was 66 percent of total in the group compared to 77 percent in more than 4 acre ownership groups.

0.33

As one descends along the landholding size the intensity of representation in the rural institutions steadily declines. None of the households owning zero land was found to be represented in any of the institutions. Even the posts for landless in Gram Sarkar were occupied by members from non-zero land-holding households.

0.34

In Bangladesh, the whole village usually constitutes a 'Shamaj', the village institution with judiciary power. 'Shamaj' in most of the surveyed villages consist of more than one competing leaders thus giving rise to conflicting factions. Number of factions in a village may vary from 1 to 5 or more.

0.35

In general, most households have a positive attitude towards the project. Only a few indicated their dissatisfaction over the project's activities. The positive reaction is mainly due to road construction and pond excavation activities which generate employment opportunities for labourers and improve the transport and communication system.

0.36

On the question of joining a cooperative for fish culture in the project area, almost all responded in the affirmative. This indicates that fish culture or trading in fish, although a lower caste job in some regions of Bangladesh, is not considered a socially degrading job in the project area. This might be due to the fact that almost all households resort to fishing from canals and 'beel' during the dry winter season.

REPORT OF THE BASELINE SURVEY FOR  
NEEMGACCHI FISH CULTURE PROJECT

I. INTRODUCTION

1.01

The Neemgacchi fish culture project before 1977 was a part of a bigger fish culture project of the government of Bangladesh. In 1974 a fish culture project was formally approved and became operative in the Northern districts. The aim of the project was to reclaim and develop derelict public ponds and tanks for carp culture. Because of the high concentration of water bodies in two thanas of Pabna namely Raiganj and Tarash, government decided to split up the entire project into two projects -- one with Neemgacchi complex (covering all the unions of Tarash, two unions of Raiganj and three unions of Chatmohor thanas) and other with the remaining part of the project.

1.02

The major objectives of the Neemgacchi project are

- (a) To reclaim and develop derelict ponds and to increase the production of inland fish
- (b) To utilize the banks and adjoining fallow land for planting trees of economic value
- (c) After the ponds are fully developed and production stabilized, to start a process of disinvesting the water bodies to landless groups.

1.03

Although the Neemgacchi project started working in 1974, the progress towards achieving the objectives is quite slow. Till December 1980, the area excavated or cleared for fish cultivation was about 630 acres which is only 38% of total water body within the project's area. More importantly, the project had a target of producing approximately 6 maunds of fish per acre in the first year which was expected to increase to 9 maunds per acre in the third year. But the actual production of fish is well below the target, even in 1976-77 per acre production was only 2 maunds of fish per year. The project officials think that the large scale theft from the ponds by the local poors may explain to a significant extent the low production figure, apart from insufficient input application in the ponds.

## 1.04

The Neemgacchi project covers an area of about 170 square miles (155 square miles excluding Talam union which is included recently in the project) and according to the 1974 census, the area had a population of 152793 with 24,216 households. The water bodies of the project are scattered over the whole region and therefore for profitable cultivation of ponds it is important that the project work very closely with the local population and the activities of the project should have positive impact on standard of living of the population. Therefore, it is useful to know the socio-economic situation of the households of the project area. Directorato of fisheries and the British High Commission felt it necessary to have a baseline survey of the area so that appropriate policies can be formulated and the impact of the project on the different aspects of the households can be estimated by a resurvey of the presently surveyed households at a future date.

## 1.05

The present survey is a socio-economic sample survey of the project area households. The objectives of the survey were to find out some important indicators of socio-economic position of the households, their level of living, their opinion about the project and then to relate them with wealth or income position of the households. More specifically, the project aimed at describing

- (a) The demographic characteristics of the population,
- (b) The degree of inequality of land ownership and other assets,
- (c) The operational land distribution pattern and allocation of the land to different crops,
- (d) The importance of land market and tenurial arrangements,
- (e) The nature of the labour market and employment pattern,
- (f) The occupation, main and subsidiary in income sense,
- (g) The nutritional level of the children,
- (h) The process of labour migration,
- (i) The attitude of the different socio-economic groups towards the project.

Since the British High Commission and Directorate of Fisheries have plans to resurvey the households at a future date some data were also collected to facilitate the identification of the households.

### METHODOLOGY

#### 1.06

A two stage stratified random sampling was used for selecting the households surveyed. In the first stage, villages of the important unions of project area were stratified according to the land-use pattern. Land use pattern of each mouza of Raiganj thana is taken from Serajganj Integrated Rural Development Project report and land use pattern of the mouzas of Tarash was approximated from the land-use map of the thana prepared by the soil survey department. The unions of Chatmohor thana and the Talam union of Tarash were not included in the survey as at the time of the survey, pond area excavated in those unions were either zero or not very significant. Thus the villages were actually selected from nine unions of the project area which cover more than 90 percent of the total reexcavated or cleared water area of the project. The villages of these nine unions were then stratified into four land use patterns (See Annex 1 for details) :

Pattern 1: Triple with some double cropped land (mainly mixed aus/aman with Rabi and some Jute - Rabi)

Pattern 2: Double with some single and tripple cropped land

Pattern 3: Single with some double cropped land

Pattern 4: Single cropped land (b.aman/t.aman, fallow)

Annex 1 also lists the villages according to the land use pattern. Twenty villages were selected randomly from the different strata of land use so that the number of villages selected from each stratum is proportional to the number of villages of the project area in that stratum. Table 1 lists the villages selected for the survey with their 1974 population and area.

- 
1. Actually 21 villages were surveyed although 20 villages were selected randomly. When it was discovered that the village Krishnapur surveyed by the enumerators was not the same Krishnapur village of our sample, the randomly selected Krishnapur was surveyed later.

1.07

After the selection of the villages, a village census was carried out which collected some basic information about all the households

Table 1  
THE SURVEYED VILLAGES  
WITH 1974 POPULATION AND HOUSEHOLD NUMBER

<u>Union</u>	<u>Village</u>	<u>Population</u>	<u>Number</u>	<u>Land Use</u>
SONAKHARA	MAUJAR	317	55(68)	Pattern 2
	HAZIPUR	344	59(69)	Pattern 1
DHAMAINAGAR	KRISHNAPUR	322	65(66)	Pattern 4
	CHANDERPAIKARA	230	40(54)	Pattern 4
	KOMORPUR	159	28(34)	Pattern 4
BARUHAS	BARUHAS	712	111(127)	Pattern 4
	MONOHARPUR	492	81(96)	Pattern 4
	BINODPUR KHORKHORIA	315	54(56)	Pattern 4
SAGUNA	BHETUA	328	61(64)	Pattern 4
	BINNABARI	389	68(90)	Pattern 1
MAGURABINOD	AMBARIA	445	72(80)	Pattern 3
	NOLLUAKANDI	260	39(42)	Pattern 3
NOAGAON	MOHISHLUTI	341	43(50)	Pattern 3
	MATIA	286	45(47)	Pattern 3
	NOBIPUR	106	33(29)	Pattern 4
TARASH	SASTAN	181	32(44)	Pattern 2
	BOROGAON	255	37(74)	Pattern 4
MADHAINAGAR	KHORDOMADHAINAGAR	196	31(44)	Pattern 2
DESHIGRAM	TAGRA	154	32(32)	Pattern 4
	DOGARIA	130	25(31)	Pattern 4
	* KRISHNAPUR	187	40(44)	Pattern 4

\* Not included in the random sample

AREA : in acres

Figures in the parantheses indicates the number of households at the time of the survey (October - November, 1980).

of the villages. On the basis of this preliminary information, the households of each village was stratified into five groups according to their cultivable land ownership.

1. Landless (i.e., cultivable land ownership is zero)
2. Poor household, cultivable land ownership is no more than 2 acres, they represent the below subsistence group cultivators
3. Middle households, cultivable land ownership between 2.01 to 4.00 acres, usually self sufficient cultivators
4. Upper-middle households, cultivable land ownership between 4.01 to 8.00 acres, surplus farmers
5. Big land owners, cultivable land ownership more than 8.00 acres. They represent the powerful households of the village economy.

1.08

This might be noted that our stratification of the village households according to their ownership of cultivable land implicitly assumes that land is the most important means of production and source of power. Although cultivation is regarded as a more prestigious occupation of households than other occupations in a rural economy, a strict direct functional relationship between cultivable land ownership and income and status of a household may not exist. One study shows that the income of households from the crop sector in the village economy is less than 50 percent of total income earned by the households [1]<sup>1</sup>. The study also found the presence of what the report called, 'fish-lords', who had little or no agricultural land but owned a large amount of fishing instruments. For Neemgacchi project area, cultivable land appears to be a very good indicator of economic and social position of a household. Most of the households in Neemgacchi reported cultivation as their principal occupation in income sense. Thus the method of stratification outlined above is good enough for our purpose to stratify the households according to their socio-economic position.

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1. Figures in the parantheses refer to the Notes at the end of the report.

## 1.09

The stratification exercise requires information about land ownership, principal and subsidiary occupation, family size and some indicators of income of the households. A one page questionnaire was used to collect these basic data (the questionnaire is reproduced in Annex A of the report). On the basis of the land ownership data of households, the village households were grouped into five groups explained in para 07. Twenty households were selected from each of these villages in such a way so that fraction of total sample size selected randomly from a stratum was equal to the fraction of total households of the village in that stratum. Since twenty villages were surveyed, the number of households surveyed with a more detail questionnaire was  $(20 \times 20) = 400$ . Annex B reproduces the questionnaire 2 for the survey. The questionnaire was designed to fulfill the objectives of the survey listed above. The questionnaires were changed in the light of the comments received from Mr. Ben Clarkson. Later the questionnaires were field tested and revised again.

FISHERY SUB-SECTOR IN BANGLADESH

## 1.10

Fisheries is an important sub-sector in the economy of Bangladesh which accounts for about 5 percent of GDP and more than 6 percent of the nation's export earning. Development of fish culture is necessary for Bangladesh to improve the nutritional level of the vast majority. In recent years percapita consumption of fish show a downward trend. The present consumption level is only 22 grams per capita per day as against the estimated minimum requirements of 73 grams. The 1973/74 household expenditure survey shows that the lowest 20 percent households of rural Bangladesh consumed only 13 grams of fish percapita per day. Even the highest quintile consume only 53 grams of fish [2]. Though all groups show insufficient fish intake, about 60 percent of all rural households suffer from protein deficiency. Moreover about 90 percent suffer from insufficient calorie and calcium and almost all from insufficient vitamin A intake. Obviously fish can be one important source of increasing the supply of these nutrients. Although fish is the most important source of animal protein in Bangladesh (about 80 percent of country's animal protein supply is contributed by fish), its supply can be increased to a great extent by better use of existing in-land water bodies. It is estimated that the production of fish in Bangladesh from inland water bodies is about 525 thousand tons. However about 75 percent of total pond and tank area needs excavation [3] for fish culture and only in a small water area are scientific methods of fish culture practiced.

## II. PROJECT AREA : AN OVERVIEW

### 2.01

The present size of the project area is approximately 155 square miles which is expected to increase to about 200 square miles in the near future. Numerous tanks and ponds are scattered all over the area and in Tarash alone there are about 1,140 tanks and ponds (Report of the Shamraj Kallan Office of Tarash). The number of tanks with an area of more than 2 acres is atleast in the neighbourhood of 190. Total water area is approximated at 5,000 bighas (Project Proposal, Neengacchi Project [4] ) and at present 1,900 bighas of water area is excavated or cleared. Many of the tanks of the project area were originally excavated by talukdars and zamindars of the locality and as the area declined from its past flourishing position, the feudal lords either left the area or became economically weak (due to British take-over) and it was not possible for them to maintain the huge tanks properly which resulted in dereliction of most of them. Masum Khan's excavation of large tanks in Chatmohor thana sometime during the later part of the 16th century and Rai Banamali Roy and his predecessor's excavation of few tanks in Tarash is known. In Raiganj also some tanks are definitely man-made as evident from the high banks constructed around them. But excavation by zamindars or other lords of lower status cannot explain the extreme concentration of tanks in this region, especially in some parts of Tarash thana. Chalan beel<sup>1</sup> covered very extensive parts of Tarash, Chatmohor and Raiganj in the past. Still a large part of Tarash and Chatmohor fall within Chalan beel. Chalan beel, when it was created, covered an area of 420 square miles but by 1909 it reduced to only 142 square miles. At present the beel is silting up rapidly making new habitations possible. Our survey also found some new villages. It is possible that some water areas are actually water bodies trapped from all sides by raised homesteads and approach roads constructed by the new inhabitants.

### HISTORY AND PLACES OF INTEREST

#### 2.02

The Neengacchi fish culture project area covers some places of historical interest. Tarash thana headquarter was the home of Rai Banamali Roy Bahadur who operated the largest land area of the district

- 
1. The Chalan Beel was formed when the old Brahmaputra diverted its water into the new channel, the Jamuna. Jamuna obstructed the flow of the Padma and caused it to deposit sediments at the mouth of the Karotoya and Atrai the water of which was diverted into a trough to form the beel (District Gazetteers--Rajshahi [5] ).

under Rajshahi zamindari. Many temples of Tarash village (thana head-quarter) were built by the powerful zamindars of the area. Temples of Siva, Kali and Basudev prove its past importance as a centre of political power. Stories about Rani Bhabani (zamindar of Rajshahi. Her area covered all the thanas of Pabna excepting Sirajganj and Kaziour), Roy Bahadur and the earlier zamindars and Behula are quite popular and widely known. Village report 1 [6] narrates a story on Rani Bhabani. Local people even showed us a homestead, a protected well (people call it a well with five openings) and a canal in the village Binsara which they believe belonged to Behula's<sup>1</sup> family. Handial village of Chatmohor thana is another important historical place. Jagannath and Bangla Temple are two very old temples of Handial. Although the exact date as to when the temples were built is not known, Jagannath was obviously built before 1590 A.D. when one Bhawani Das repaired the temple. Moreover Handial was a very important trade centre of Rajshahi and Pabna. Hamilton mentioned that Handial "used to produce four-fifth of all silk, raw or manufactured, used in or exported from Hindustan" (Pabna District Gazeteers [7] ). There are also very interesting stories about the origin of the name Tarash. 'Tarash', it is said, originated from the bengali word 'Trash', meaning terror. The explanations for the name terror are: the tyrannical rule of zamindars, the reign of terror of pirates of Chalan beel, high incidence of malarial fever and little communication with outside world etc. It is of course, true that rebellions against British raj as well as pirates and dacoits used to take shelter in the Chalan beel area which was difficult to approach. It is well known from historical documents that the pirates and rebellions of chalan beel hampered trade and commerce with the Northern areas. Although Tarash is still a place ill connected with other important parts of the country, it appears that at present Tarash is as good or as frightful a place as other ill connected villages of the country. The following poem collected by Shamaj Kallan office from Tarash is worth mentioning here:

Do you want to see the largest beel? Come here and see Chalan  
 Do you want to see the largest village? Come to the village Kalam  
 Do you want to see the highest siva? Come to the village Talam.

Other places of interest are Baruhash village (Imam bari, built by Moghals), Noagaon (home of Raja Bhani Singh, the zamindar during Akbar's reign), Rani Bhabani's road and forests.

- 
1. Behula, the beauty, is a legendary figure. According to the story, Behula was the daughter of a snake-charmer who met Lankhindar, the son of a businessman in a village hat. But Lankhindar, inspite of all the precautions, died on the marriage night by snake-bite, as cursed by Goddess Monosha. However, Binsara is a snake abundant area.

## DEMOGRAPHY

## 2.03

According to the 1974 population census [8], total population of the project area was 143715 (excluding Talam union) of which only about 12 percent were literate as against the 18.5 percent literacy rate for rural areas of Bangladesh. A comparison of the population figures of 1961 and 1974 reveal that the compound rate of growth<sup>1</sup> of population in the project area was much higher than the growth rate in Pabna as a whole. During 1961 to 1974 growth rate of population in Tarash and Raiganj thanas were 3.59 and 2.83 percent respectively compared to 2.66 percent in Pabna district. The higher growth rate of population may be explained by net in-migration to the area from other places as many parts of Chalan beel becomes culturable. The growth rate of population during 1974 and 1980 can be approximated by the population of the 21 surveyed villages in 1974 and at the time of the survey. The growth rate was found to be 2.69 percent for these 21 villages taken together. The inter village variations of population growth rates were also significant. Borogaon, a mouza with two villages, Ulipur and Bipachon shows the highest rate of growth (12% per annum) which cannot be explained by natural growth or in-migration. Our survey suggests that one of the paras of Ulipur was not enumerated by the 1974 census. Excluding the mouza and calculating the growth rate for the remaining 20 mouza<sup>2</sup>, the rate drops to 2.12 percent. Also our survey of Nobipur and Matia might have under enumerated the households as the population in these two villages was found to be lower than their 1974 figure. Table 2 groups the villages into population growth rate groups.

Table 2

Population Growth Rate in 21 villages, 1974-1980

<u>Growth rates (%)</u>	<u>Number of villages</u>	<u>Percent</u>
Below zero	2	9
0 to less than 1	1	5
1 to less than 2	7	33
2 to less than 3	4	19
3 and above	7	33
All groups	21	100

1. The compound rate of growth of population (r) is calculated by using the formula

$$r = \sqrt[t]{\frac{P_t}{P_0}} - 1$$

where  $P_0$  = population in initial period,  $P_t$  = population in period t

2. In most cases mouza (the administrative division) is identical to village excepting Borogaon and Noluakandi mouzas.

It should be pointed out that the calculations based on our survey are only indicative of population growth rates. The survey was carried out during October and November when many poor households move out to other places in search of employment. Although our survey made an attempt to cover the seasonally migrated household members also, it is possible that some households could not be identified.

2.04

The total population of the 21 villages surveyed was found to be 7330<sup>1</sup> of which 3742 were male, i.e. 51 percent of total population were male. According to the 1974 census also about 51 percent (50.76%) of total population of the project area were male. The age distribution of the surveyed households in 21 mouzas are given below with the age distribution pattern in Bangladesh. Although there may have some definitional difference of age groups in our survey and that of 1974

Table 3

Age Distribution of the Population in the  
Project Area and in Bangladesh

<u>Age groups</u>	<u>Percent of total (Project Area)</u>		<u>Percent of total (Bangladesh)</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
Below 1 year	1.15	1.86	4.16	4.25
1 to 5 years	12.76	18.95	17.02	17.20
6 to 10 years	17.72	18.31	14.11	14.13
11 to 25 years	32.48	31.04	30.99	30.74
26 to 45 years	23.68	20.84	22.39	21.97
46 to 55 years	5.21	4.83	5.91	5.90
56 to 65 years	4.14	2.47	3.18	3.31
66 and above	2.85	1.69	2.24	2.49

\* Age distribution in the project area is assumed to be similar to the age distribution of population in 21 mouzas surveyed.

1. The figure does not include the number of fixed labourers living in the village originating from outside.

(1974 census gives population statistics by single integer years starting with zero age), it appears that in the project area the relative importance of children at or below 5 years is much lower than that of Bangladesh as a whole. Up to the age of 10, relative importance of female population is heavier than the male and the opposite holds for all age groups above 11 years in the project area. The dependency ratio, as calculated by the ratio of below 10 years plus 66 years and above population size to the size of active population (11 to 65 years), turns out to be 0.606 for the project area which is almost identical to the Bangladesh figure of 0.607

### GENERAL ECONOMIC SITUATION

#### LAND OWNERSHIP DISTRIBUTION, POVERTY AND INEQUALITY

##### 2.05

The general economic situation of the area is on the whole similar to that of rural Bangladesh at large. But at the same time it has some specifics, arising out of the ecological, historical and other features of the area.

Although for its most part the project is located in a mono-crop area and is of relatively recent inhabitation, yet land-man ratio has already been pushed quite low. The average land-man ratio was found to be only 0.49 acres per person. Of the 21 villages surveyed, the average per household total land area owned varies over a range of 0.95 acre in Sastan to 4.1 acre in Monohorour. Nine villages have the above figure between 2 to 3 acres; while another 8, somewhat more, between 3 and 4 acres. For another two villages the figure is below 2 but above 1 acre, while Sastan and Monohorour are single representatives of the two extremes.

Figures for average cultivable land per household for quite obvious reasons follow a corresponding pattern. Sastan still remains the lone village with a less than one acre figure, while the number of villages having per household cultivable area between 1 and 2 acres increases to 3; those with figures ranging from 2 to 3 acres, to 11. All the remaining 6 villages have average per household cultivable area more than 3 acres but none reaching 4. The land-man ratio is, to some extent, determined by the cropping pattern of the area. A village with higher cropping intensity can support a larger size of the population and thus land-man ratio is expected to be lower in pattern 1 villages compared to other cropping pattern villages. The land-man ratio in our survey was 36.93, 39.37, 11.71 and 57.11 decimals per person for the four cropping pattern areas.

The above figures reveal availability of land to the villages as a whole and it is quite obvious that even for the most land-endowed village land is scarce. But the inequality of distribution of this scarce resource within a particular village is appalling. Of the total 1241 households (embracing 21 villages) surveyed, 101 (i.e. 8%) do not even have any homestead land. They live either on Khas (i.e. government-owned) land, or on relations', or on the land of their patrons, to whom they are bound by some sort of (although informal) dependence relations. For those who own any land, inequality in ownership can be readily seen from the following table.

Table 4

Total Land Ownership Distribution  
(Project Area)

<u>Land-group (decimals)*</u>	<u>Number of households</u>	<u>% of total households</u>	<u>Total land area (decimal)</u>	<u>% of total land area</u>
Zero	101	8.14	-	-
1 to 100	481	38.76	14933	4.10
101 to 200	171	13.78	26628	7.32
201 to 300	114	9.19	28565	7.85
301 to 400	97	7.82	34531	9.49
401 to 800	141	11.36	80777	22.19
801 to 1200	81	6.53	75647	20.78
1201 +	55	4.43	102834	28.26
<b>All Groups</b>	<b>1241</b>	<b>100.0</b>	<b>363915</b>	<b>100</b>

\* 100 decimal = one acre

Thus the lowest 70% of the households in total owned only 19% of the land, while at the top, the same amount of land was concentrated in hands of only 2.5% (owning more than 15 acres). The biggest single group of households are those owning land from .01 to 1 acre. They alone constitute 39% of the households. Another 14% own land from 1 to 2 acres. The two groups together make up more than half (53%) of the households. Table 4 can be compared with Table 5 which shows the land distribution pattern in Bangladesh and in Pabna according to the Land Occupancy Surveys. Table 5 shows that 67 percent of total households in Pabna own land below 2 acres. In our project area the relative importance of these lower groups was slightly smaller. However their share in total land is almost equal. In Pabna, on the other hand, 45 percent of total land was owned by more than 8 acre owners. In the project area the larger

Table 5

Total-Land Ownership Distribution in  
Bangladesh and in Pabna

Land Groups (decimal)	Bangladesh (1977 Los)		Pabna (1978 Los)		
	% of H.H.	% of land	% of H.H.	% of Land	Mean land
Zero	11.07	-	10.09	-	-
1-100	47.44	9.30	45.30	5.86	0.30
101-200	16.43	14.43	11.48	6.89	1.41
201-300	8.91	13.18	10.54	10.89	2.43
301-400	5.27	11.13	4.60	6.61	3.37
401-800	7.83	26.24	10.28	24.25	5.54
801-1200	1.74	10.24	3.91	16.31	9.79
1201+	1.51	15.48	3.78	29.19	18.11
All Groups	100	100	100	100	2.35

Source: USAID, Dacca.

landowners' share was almost half of the total land. Although the lower groups own more land in Bangladesh as a whole than in the project area, the Gini coefficient of land distribution for Bangladesh and for the project area was found to be 0.6577 and 0.6557 respectively. The Gini coefficient for Pabna was higher, about 0.67, reflecting greater inequality of land distribution in Pabna. The average size of land owned by households was 1.63, 2.35 and 2.93 for Bangladesh, Pabna district and the project area respectively.

2.06

But when one considers cultivable-land-owned, the picture that emerges is still more distressing. As can be seen from table 6, the extent of landlessness (i.e. cultivable land owned being zero) is found to be 31%. Another 32% of the households own cultivable land less than 2 acres each. As many as 72.5% of households in total own only 21% of the cultivable land, while at the other end, 17% of the same belong to only 2% of the households.

Table 6  
Ownership Pattern of Cultivable Land

Land Group in decimals	No. of households	% of total households	Total culti- vable land (decimals)	% of total cultivable land
00	390	31.43	00	0.0
1 to 100	221	17.81	12904	3.85
101 to 200	171	13.78	26055	7.78
201 to 300	117	9.43	29518	8.82
301 to 400	88	7.09	31517	9.41
401 to 800	151	12.17	91633	27.37
801 to 1200	55	4.43	54117	16.16
1201+	48	3.87	89055	26.60
All Groups	1241	100	334799	100

## 2.07

Thus it is to be quite expected that the overwhelming majority of the population of the project Area are in a condition of not being able to eke out a living for themselves. More than 64% of the households reported themselves to be below subsistence level, another 30% being self-sufficient, while only 70 households (out of a sample of 1241, i.e. 6%) thought themselves to be above that level (i.e. affluent). As it is quite well-known that in rural Bangladesh making a livelihood is almost identical to having bare meals; all other 'consumption' being relegated to almost nil. 8% of the households reported to have meals only once in a day even in the comparatively well-off months of Chaitra--Baisak<sup>1</sup> and another 25% having two times a day. For the

1. Chaitra--Baisak corresponds to 15th March to 15th May period. A boro or a winter crop by this time adds to rural cultivators harvest of aman and also the period coincides with land preparation and sowing of broadcast aman and aus and harvesting of winter crops.

'crisis months' of Ashvin and Kartic the corresponding figures shoot up to 10% and 37% respectively. As many as 18% of the households have less than 1/2 seer of rice per head per day. For overwhelming majority (80%) of the households this figure was found to range from 1/2 to 1 seer.

2.08

In the background of an alarming inequality in land distribution the positive correlation between land ownership and family-size is somewhat reassuring ! The following table illustrates the situation.

Table 7  
Size of the Family and Land-Ownership

Size of the family/household	No. of household	% of the total	No. of people	% of the total	Mean household size	Total land (in decimals)	% of the total	Mean (in decimals)
1 to 3	243	19.6	612	8.4	2.5	29731	8.2	122.3
4 to 6	568	45.8	2863	39.1	5.0	121384	33.5	213.7
7 to 9	300	24.2	2304	31.5	7.7	105609	29.2	352.0
10 to 12	92	7.4	994	13.6	10.8	66084	18.2	718.3
13 to 15	28	2.3	381	5.2	13.6	24376	6.7	870.6
16 to 18	7	0.6	118	1.6	16.9	11616	3.2	1659.4
19 +	2	0.2	42	0.6	21.0	3300	0.9	1650.0

The result is well known, bigger families have higher mean land ownership than smaller farmers. At this point, many hypotheses can be forwarded which can be tested later. Two explanations derive from the poverty of the families. Assuming similar birth-rates for all categories of landowners, if extreme poverty results in increased mortality rate among the landless and near landless, family size of the poorer households will be smaller. On the other hand absence or near absence of assets coupled with the bitter and everyday struggle to maintain the mere physical existence and uncertainty about the future sharpens the contradictions of joint families and facilitates its break-down into nuclear families. Another hypothesis may be the positive relationship between family size and upward mobility. Availability of more labour power in a family may help in the accumulation

of greater surplus which contribute to the upward mobility of families. These explanations are not mutually exclusive/ in reality all may act together in this direction. and

2.09

Even if we control the family size (or number of males in the family), inequality remains the fact of life as can be seen from the table 8. If number of male members in the family predominantly determine upward mobility and landownership of a family, land-male ratio of the households should centre around a mean value and inequality of land distribution by land-male ratio should be very small.

Table 8

Land Distribution Pattern by Land-Male ratio

Land-male ratio (decimal/male)	% of total household	Average land- male ratio (decimal)	% of total land
0 to 19	39.55	2.02	1.79
20 to 39	10.33	28.85	4.07
40 to 59	8.64	48.50	5.21
60 to 79	6.78	70.05	6.54
80 to 99	6.05	90.40	6.06
100 to 119	3.95	110.67	5.82
120 to 139	3.23	127.56	5.30
140 to 159	2.74	149.58	5.32
160 to 179	2.18	165.66	4.01
180 to 199	1.94	190.13	4.41
200 and above	14.61	389.14	51.47

The table indicates that only 14.6 percent households whose land-man ratio falls at or above 200 decimal owns 51.5 percent of total land while lowest 50 percent households own only 5.9 percent of total land. The inequality is no less pronounced than the inequality of cultivable land distribution described in Table 6.

## OCCUPATION

## 2.10

Being deprived of the major income accruing resource (i.e. land), the majority of the poorer sections depend for their living on the sale of their labour power, the only resource left to them. More than 33% of the households reported hiring themselves out as day-labourers as their main occupation. Cultivation of land remains by far the most important employment opportunity. Activities other than cultivation was found to be the principal occupation of only 5.33% of the households. Among these, which varies from tailoring, rickshaw-pulling, making handicrafts, teaching, working on govt. service etc. to simply begging, none can be singled out with the lone exception of perhaps carrying out petty business, which accounted for 1.29 of the above 5.33% as an important non-agricultural occupation. 62% of the households did not have any income generating subsidiary occupation. For the bulk of those (38%) who had, the (subsidiary) occupation was hiring out of labour power (14 of 38%). Another 7% and 5% reported petty business and fishing as their subsidiary occupation. It is only remarkable that in a Fish Culture Project Area, out of a sample of 1241 households only 6 reported fishing as their main source of income ! Fishing as a second subsidiary occupation was virtually absent (being the case with only 1.21% of the surveyed households).

Thus notwithstanding the low land-man ratio, non-cultivation opportunities of employment in the Project Area remain of marginal importance. Self-cultivation (cultivating class who do not sell labour power) was reported to be the principal occupation by 61.5% of the households. There are two reasons for this. Firstly, because self-cultivation is traditionally supposed to be the main occupation of all living in the village (as it really was the case not long ago) many may speak of self-cultivation as their main occupation although actually it has ceased to be so. This happens either because of unconscious definitive lumping together of work in ones' own fields with that on co-villagers', i.e. because of inertia; or of prestige-consciousness, as having and working on one's own field is quite naturally considered more prestigious than working for others as day-labourers. Secondly, the practice of leasing out land actually enable some of those owning no or little land to term themselves as self-cultivators.

Occupation of a household, as it is to be only expected, is determined by its land-ownership. Thus it is not surprising that for those 61.5% having self-cultivation as the principal occupation, the average cultivable land area owned turns out to be more than 4 acres (exactly 424.5 decimals) per household, while for those 33%, reporting hiring-out labour as the main occupation, the figure stands at the low level of 11

decimals. Most of the 'non-cultivation folk' are people with little or almost no land, exceptions being the lawyers, Government service-holders, kazis and teachers and this is quite well understood.

## TENANCY

## 2.11

The extent of leasing-in land varies from village to village and hence its effect on income and occupational distribution. Table 9 illustrates the situation. From the table it is evident that the extent of

Table 9

Leasing-in of Land by the Households

Village	Total culti- vable land owned by H.Hs	Total land leased in by H.Hs	Leased in land as % of cultiv- able land	No. of house- holds leasing in land	% of tota H.H Leasi in land
Mauhar	18242	2148	11.77	21	30.88
Hazipur	18959	2929	15.45	22	31.98
Chander Paikara	8097	8860	109.42	29	53.70
Krishnapur	21705	9805	45.17	28	42.42
Konorpur	9961	4957	49.76	20	58.82
Tagra	9121	1716	18.81	13	40.62
Khordo Madhainagar	10632	4724	44.43	11	25.00
Barogaon	22797	1179	5.17	9	12.16
Mohishluti	13339	66	0.49	1	2.00
Matia	8645	313	3.62	2	4.25
Nobipur	8327	710	8.53	3	10.34
Sastan	3577	115	3.21	2	4.54
Ambaria	21216	564	2.66	3	3.75
Noluakandi	8702	255	2.93	3	7.14
Dogaria	10095	1782	17.65	6	19.35
Monohorpur	37257	1751	4.70	13	13.54
Baruhas	47651	990	2.08	5	3.94
Binodpur	18822	91	0.48	3	5.36
Bhetva	17242	1319	7.65	9	14.06
Binnabari	9830	49	0.50	1	1.11
Krishnapur	10582	2219	20.97	10	22.73
<b>TOTAL</b>	<b>334799</b>	<b>46534</b>	<b>13.90</b>	<b>214</b>	<b>17.24</b>

land leasing (13.9% of land) in the project area is much smaller than the importance of tenancy in Pabna or in Bangladesh as a whole. But variations among the villages is very high. Households of Chander Paikara reported leasing-in land greater than the total cultivable land they own. This obviously points to the presence of absentee owners in the village. Another point to be noted from the table is the much lower prevalence of tenancy in Tarash area. Villages of Raiganj thana and the villages of Tarash adjacent to Raiganj thana shows much higher prevalence of tenancy (see the map of the project area). 50-50% share-cropping is almost the sole tenancy arrangement prevailing in the area with leases generally bearing no input costs.

## 2.12

Access to leased land is significantly dependent on the ownership status of the land-seekers themselves. The situation in this regard can be seen from table 10. More than 70 percent of total leased land went to owners whose land ownership is below 4 acres. But still one quarter of total leased land went to more than 5 acre owners.

Table 10

Leased-in Land by Land Ownership of the Leaser

Land Ownership groups (in decimal)	Land area Leased (in acres)	Mean area leased (acre/household)	% of leased land
Zero	10.92	0.11	2.35
1 - 200	191.53	0.29	41.16
201 - 400	135.90	0.64	29.20
401 - 800	63.61	0.45	13.67
801 - 1000	35.64	0.57	7.66
1001 and above	27.74	0.37	5.96
All groups	465.34	0.37	100

It may be expected that apart from ownership status, another important factor in determining the distribution of leased land is the labour availability of the households, which we try to approximate by the number of male members in the family. Incidence of leasing-in land as against the number of male members of the household can be seen from table 11. Those families who do not have any male members cannot

expect to get land from the tenancy market while as the number of males increases, the mean leased-in land also increases. Households with 1 to 3 male members got 0.33 acre of land on the average which was 1.38 acres for households having more than 10 male members.

Table 11

Leasing-in of Land by Number of Males in the Household

No. of Male	No. of house- holds	Total leased- in land(decimal)	Mean for the group	Average no. of males per household
0	15	0	0	0
1 to 3	823	26793	32.6	2.02
4 to 6	350	16472	47.1	4.63
7 to 9	42	2442	58.0	7.55
10 +	11	827	137.8	16.54
<b>Total</b>	<b>1241</b>	<b>46534</b>	<b>37.50</b>	<b>3.05</b>

2.13

Keeping in mind the national index, incidence of leasing in the Project Area is definitely low. Only 17% of the households were leasing-in land. And most of them were getting only a small tract of land as is evident from the table 12. About 60% percent of the households who leased-in land from others got less than 3 acres of land each and they leased-in 46 percent of all leased land. Only 11 households were large tenants leasing more than 5 acres each whose share in the lease market land area was found to be 27 percent.

Table 12

Distribution of land under lease and labour-availability  
of the households

Amount of land leased-in	No. of Leaser	No. of households as % of total	Area leased-in	Area leased-in as % of the total	Land-male ratio of the group
1 to 100	85	39.53	5476	11.77	77
101 to 200	60	27.91	9373	20.14	112
201 to 300	26	12.21	6551	14.08	82
301 to 400	21	9.88	7375	15.85	113
401 to 500	10	4.65	4790	10.29	105
501 to 600	4	1.74	2310	4.96	57
601 to 700	3	1.16	2013	4.33	100
701 to 900	1	0.46	726	1.56	90
900 to 1000	2	0.93	1980	4.25	47
1001 +	2	0.93	5940	12.76	158

### LABOUR MARKET

#### 2.14

Labour market is a very important source of income for a vast majority of rural households. It is mentioned earlier that 33 percent of total households in 21 mouzas reported hiring out of labour as their principal source of income. But the number of households participating in the labour market as the supplier of labour power is much higher, on the aggregate 50.28 percent reported supplying labour in the market. Inter village variations in labour market participation rates is also significant; in Sastan, almost all households (80%) reported selling labour power while the lowest participation percentage was 21% in the village Binodpur. Table 13 shows the number of households reported working as labourer in each of the villages surveyed. The table also shows the number of households reported hiring fixed labour. In the project area hiring labour for four, six or nine months is quite significant. About 68 percent of total households in Dogaria reported hiring fixed labour and only in five villages percent of households hiring fixed labour was below 20. The households who hire fixed labourers for four, six or nine months are usually the richest persons of the rural economy.

It is interesting to note that although only 5.6 percent of the households identified themselves as above subsistence level income group, 25 percent of the households hired fixed labour. Another point to be noted is that out of a total of 606 fixed labourer, only a small fraction of it probably came from among the villagers, only two households in our survey mentioned fixed labour as their principal occupation and another 10 mentioned it as their subsidiary occupation. It appears that most of the fixed labourers

Table 13  
Labour hiring in the 21 villages

Village	Number of households hiring fixed labour	% of total H.H.	Number of fixed labour hired	Number of H.H. working as day-labour	% of total
Mauhar	18	26	25	43	63
Hazipur	18	26	41	39	57
Chander Paikara	13	24	16	29	54
Krishnapur	22	33	42	36	55
Komorpur	10	29	14	15	44
Tagra	9	28	22	18	56
Khordo-Madhainagar	12	27	11	22	50
Barogaon	23	31	32	32	43
Mohishluti	10	20	17	25	50
Matia	6	13	7	23	49
Nobipur	6	21	13	17	59
Sastan	4	9	4	35	80
Ambaria	6	7	20	43	54
Naluakandi	9	21	12	20	48
Dogaria	21	68	34	9	29
Monohorpur	26	27	57	56	48
Baruhash	54	43	146	41	32
Binodpur	17	30	49	12	21
Bhetua	13	20	27	35	55
Binnahari	7	8	10	63	70
Krishnapur	5	11	7	21	48
<b>Total</b>	<b>309</b>	<b>25</b>	<b>606</b>	<b>624</b>	<b>50</b>

are actually outsiders, coming from other villages. Since a fixed labourer is supposed to do all the household activities including the agricultural works (excepting the children and women who help the ladies in their household work) a person is preferred whose family reside at a distant place.

## 2.15

Hiring permanent labour should be directly related with the land and asset position of the households because hiring fixed labour requires surplus income and output and also sufficient land or other means of production where the fixed labour can be employed profitably. Table 14 shows the number of fixed labour hiring households in each of the different cultivable land ownership groups. There is a direct positive relationship between land ownership and percent of the households in a group hiring fixed labourers. Moreover, larger households hire more than one fixed

Table 14

Fixed Labour Hiring By Cultivable Land Ownership

Land groups	Number of H.H.	H.H.s hiring fixed Lab.	(2) as % of (1)
Zero	390	2	0.5
1 - 100	221	5	2.3
101 - 200	171	30	17.5
201 - 300	117	41	35.0
301 - 400	88	41	46.6
401 - 500	48	27	56.2
501 - 600	28	16	57.1
601 - 700	39	23	59.0
701 - 800	36	32	88.9
801 +	103	92	89.3
<b>Total</b>	<b>1241</b>	<b>309</b>	<b>24.9</b>

labourers and the relative importance of them in the fixed labour market is much higher than the figures of column 2 in Table 14 would imply. The small landowners who hire fixed labourers usually hire only one person as a domestic servant or as agricultural worker if the supply of labour in the family is low or if the household head is related with non-agricultural

activities. Table 15 shows the mean cultivable land ownership of the households by number of fixed labourers hired. Note that the mean cultivable land ownership even for those who hire only one fixed labourer was more than 5 acres.

Table 15

Mean Cultivable Land Ownership of Households  
by the Number of Fixed Labourers Hired

Number of fixed Labourer hired	Number of Households	Average Cultivable Land Ownership (acres)
Zero	931	1.19
1	169	5.31
2	79	7.20
3	33	11.76
4	12	11.33
5 +	17	19.63

2.16

All the 606 fixed labourers hired were not employed in the agricultural sector. But most of them were hired to work predominantly as an agricultural worker. In our survey, 516 fixed labourers (i.e., 85 percent) were hired to work in the field. Another 87 fixed labourers were actually domestic servants or cowboys whose wage rate is much lower than the agricultural fixed labourers. Remaining three fixed labourers were hired for activities like shop-keeping, other petty business etc.

EDUCATION

2.17

The Project Area is not an exception to the general illiteracy and ill-education characteristic of rural Bangladesh. The picture regarding the government educational institutions provided by the Thana Education Office at Tarash is as follows:

Table 16Government Financed Educational Institutions in Tarash

Category	Number	NUMBER OF STUDENTS IN CLASS									
		I	II	III	IV	V	VI	VII	VIII	IX	X
Primary Schools	48	2516	2011	1500	1401	1057					
Junior High Schools	6						450	387	207		
High Schools	6*						560	441	356	285	206
Total	60	2516	2011	1500	1401	1057	1010	828	563	285	206

\* For Raiganj part, number of primary schools is not known. In Raiganj part, there are two high schools, one in Sonakhara Union and another in Dhamainagar Union.

There are some non-government educational establishments as well. Information regarding them is compiled in Table 17.

Table 17Non-Government Educational Establishments in Tarash Thana

Category	No.	Average no. teachers in each of them
1. Primary Schools	11	4
2. Senior Madrassahs*	1	11
3. Dakhils*	1	6
4. Forkanias*	16	3
5. Intermediate College	1	13

\*) These represent different types of religious schools.

Non-government education establishments listed in the table receive benefits from the governments except the primary schools. This is because of the government principle of either converting them into government primary schools or leaving them totally without any government benefits.

## 2.18

Direct observation showed that there is not even a primary school in each village. There were cases where some villagers (mostly the well-to-do ones) sent their children to a school in the neighbouring village. It seemed that the situation with religious education is comparatively better. But as because in these primary religious education establishments children are trained only to get by heart Arabic texts from different Holy-Scripts, they remain illiterate even after attending them for years. It is extremely rare to find in the villages a graduate from a college or even a Matriculate.

## SOCIAL AND POLITICAL INSTITUTIONS

## 2.19

These are of two types: one being those, sponsored by the government, for example the traditional Union Councils and the newly installed 'Gram Sarker's. In each village it is quite probable to find a member of the Union Councils. In most cases the very membership was the result of his high land and other asset-ownership (i.e., of the power - base deriving from it) Now the membership only reinforces it. At the time of the survey Gram - Sarkars were yet to be established in most of the villages. In those, where these had been installed, they represented purely an 'affair of the government' with villagers not enthusiastic about them. For the villagers the reaction is quite logical. They see in this new institution just another ramification of the existing ones, holding out for them no hopes for a change. In most cases the office bearers are the nonines of the people already sitting in Union Councils or other such institutions.

## 2.20

In every village there exist non-government institutions, representing the distant remnant of the once republican structure characteristic of the Indian villages for centuries. 'Shamaj' is formally the general meeting of all the adult members of the village. In reality 'Shamaj' now represent the decision of the most powerful (which is a direct function of land-ownership) men of the village (most of the other villagers being in some way or the other dependent on them for various reasons) If these men are agreeable to one another, or if in a village there is only one such man, the village will have only one 'faction' within the Shamaj. Shamaj is a very strong cohesive institution. It is the meeting place of

of all villagers and of all factions of same religion (Muslims and Hindus have different 'Shamaj' in all the villages). Any conflict between or among members of the 'Shamaj' is resolved by 'shalish', the judicial bench of 'Shamaj'. However 'shalish' can seldom solve the conflicts between two 'factions' which continue to exist. Only the conflicts of general interest to all the major faction leaders are tried in the 'Shalish'. 'Shalish' is also not an autonomous institution unrelated with the shamaj of the neighbouring villages. A verdict of a village 'Shalish' which threatens future functioning of the institution are taken up by the neighbouring villages. One such example we observed is the special shalish bench constituted at Neemgacchi by neighbouring shamaj of the village Chander Paikara to reconsider the verdict of the village leader against a landless labourer (see the village report 1).

### 2.21

Although Shamaj is a very stable institution, it may even get split into two or more parts if the conflicts among the faction leaders become so tense that the shamaj no more can perform its functions as a mediating institution for social stability. In our survey, we found a case where the shamaj is in the process of splitting.

### 2:22

It is quite obvious that survival and power of such non-state and non-government institutions is derived from the localized nature of production, consumption and relationships with villagers and its continued aloofness from the centre of devolution of the state power. It is not clear as yet how the Gram Sarkar, newly constituted institution by the government, is going to change the character and activities of shamaj. But it appears to us that the same 'shamaj' will continue to be of significant importance in the life of the people under a new name of 'gram sarker'.

### III. OWNERSHIP OF MEANS OF PRODUCTION

#### LAND

##### 3.01

Part II of the report describes the ownership pattern of land, the most important means of production in the project area. Although the land distribution pattern among the surveyed households should be approximately similar to the overall land distribution pattern, it might be useful at this point to describe the pattern of land distribution among the surveyed households. This is important not only because it facilitates comparison of the land distribution pattern of the surveyed households and all the households of the 20 villages but also because our other social and economic behavioural information are presented by the land-holding groups and thus a knowledge about the absolute and relative size of the sample in various land groups can be very useful in interpreting the results.

##### 3.02

Table 18 shows the land distribution pattern among the surveyed households. Note that the distribution pattern is approximately similar to the overall land distribution pattern as shown in Table 4 of section

Table 18

#### Total Land Ownership Pattern of the Surveyed Households

<u>Land Groups (in decimal)</u>	<u>Number of households</u>	<u>Percent of total</u>	<u>Total Land Owned (acres)</u>	<u>Percent of total land</u>
00	26	6.48	-	-
01- 100	155	38.60	46.47	3.60
101- 200	69	17.21	107.83	8.36
201- 300	34	8.48	89.20	6.92
301- 400	29	7.23	104.01	8.07
401- 500	13	3.24	55.48	4.30
501- 600	12	2.99	66.65	5.17
601- 800	16	3.99	110.30	8.55
801-1000	20	4.99	174.25	13.51
1001+	27	6.73	535.09	41.50
<b>All Groups</b>	<b>401</b>	<b>100.00</b>	<b>1289.28</b>	<b>100.00</b>

2.05. Although table 18 indicates that only 6.48 percent are landless in the sense that they do not own even home-stead land, real landless (who do not own any cultivable land) constitute about 29 percent of our sample. Table 19 shows the cultivable land ownership of the surveyed households. The table also shows the operational land distribution. The lower strata received relatively more land than the upper strata from the land tenancy market which explains the lower degree of inequality in the operational land area distribution.

Table 19

Cultivable Land Ownership of Surveyed Households

Land Groups (cultivable land)	% of total H.H.	% of total cultivable land area	% of total Operational land area
Zero	28.68	-	0.26
01- 100	17.46	2.82	6.15
101- 200	16.21	7.88	9.95
201- 300	8.48	6.51	7.91
301- 400	7.23	7.97	9.41
401- 500	3.24	4.69	4.35
501- 600	2.99	5.25	4.65
601- 800	3.99	8.44	7.95
801-1000	4.99	13.61	13.87
1001+	6.73	42.82	35.50
All Groups	100	100	100

3.03

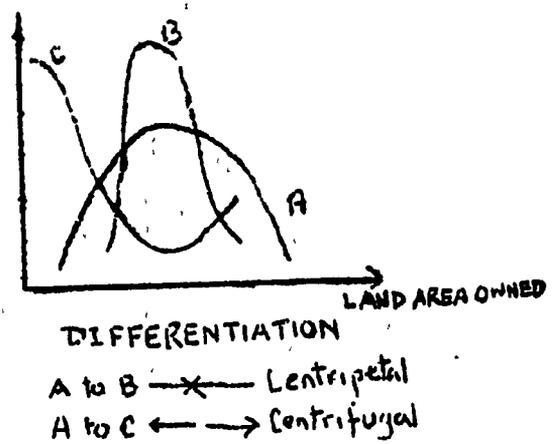
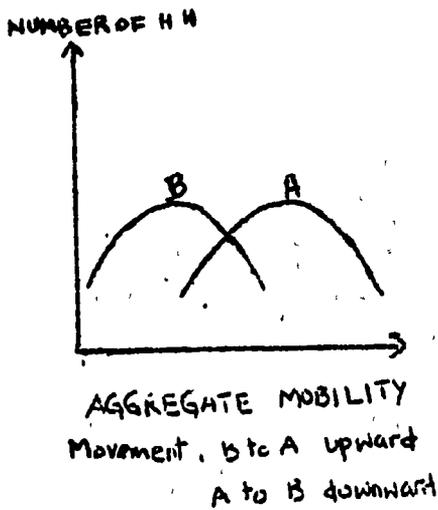
Tables 18 and 19 indicate inequality in land distribution at a point in time. Distribution of means of production in an economy can be extremely unequal and at the same time the economy may allow vertical mobility of households to contain the discontent that arise out of inequality. From the point of social justice also if there are two societies with exactly similar land distribution pattern but one allows vertical mobility in both directions in land distribution while another does not, the two societies cannot be termed as equally unjust. A rigid society creates discontent and political problems as the position of a household in the society is perfectly determined by the position of the head at his birth irrespective of the human qualities he may acquire

over his life time.

### 3.04

Analysis of mobility in the examination of the formation of peasant classes and mode of production is also quite important. Theoretically mobility can be grouped under two broad heads (Shapan Adnan [.9]).

- i. Aggregate Mobility: Upward or downward shift of all the members of the society. The downward movement in the literature is referred to as 'pauperization'.
- ii. Differentiation: 'Non-synchronized relative dispersion of the elements amongst each other'. Differentiation may be either polarization or levelling. These forms of differentiation arise due to the interaction of centrifugal and centripetal forces, the opposite forces working away and towards the median respectively.



The diagrams above explain the types of mobility more clearly. Note that aggregate upward mobility requires supply of new land and aggregate downward mobility may arise when the population-land ratio becomes increasingly unfavourable. In the second diagram, a movement from A to B is levelling in nature as all the households move towards the mean value L. Similarly a movement from A to C represents polarization.

The practical difficulty is to differentiate the different forms of mobility in reality. For example a lowering of mean land holding may be accompanied by some centrifugal mobility or a downward aggregate mobility among the households of lower strata and no mobility of higher strata households. The latter will result in a change of distribution pattern similar to the movement from A to C in figure 2 (which is quite a plausible dynamics for rural Bangladesh as one study has found that richer households do not usually buy land after a certain maximum limit) and given the fact that the richer families are the most stable families in rural society in the sense that the break-up of the household takes place only after the death of the head, it would appear as a case of polarization but in fact it is a mobility much closer to pauperization than polarization.

### 3.05

Another problem with this type of analysis in a land scarce economy is the unequal productivity of land. Without any change of land area, the effective supply of land can be increased by adopting multiple cropping and since improving the land productivity often requires investments in irrigation and seed-fertilizer technology, concentration of land as a means of production as distinct from property measured by land area may change due to unequal access to land productivity improving technology.

### 3.06

In the project area, most of the land is monocropped and there is little or no use of modern inputs. Therefore the land area is quite a good indicator of mobility. The methodology to look into the problem is the construction of a transition matrix which relates the present land ownership of the households with their land ownership at the inception of the families. It should be noted that the starting point is not sharply defined and thus the mobility matrix does not represent a movement of households within a particular period of time but rather it gives us an idea about the mobility of the households over the period that elapsed between the time of inception of the households and the time of the survey. At this arbitrary cut-off point (at the time of the survey) different families are at different stages of their existence and assuming similar composition of households at any point in time, the matrix can at least indicate the nature of mobility a household of a particular stratum is expected to undergo. Table 20 is the mobility matrix constructed for the surveyed households. The table indicates that the number of landless at the inception of the existing households were much higher than the number of landless in 1980 (67 compared to 26 at the time of the survey). It is also important to note that the modal land holding group of each stratum at the inception coincides with the present landholding group as is evident from the elements of the principal diagonal of the matrix compared to the off-diagonal elements of the same row. For better understanding of mobility table 21 reproduces table 20 in relative terms:

Table 20  
Land Mobility Matrix of Surveyed Households  
Between Inception and Time of Survey

(Number of Households)

Present land ownership	Land holding group at the inception of the household							Total
	00	01-100	101- 200	201- 400	401- 800	801- 1000	1001+	
00	24	2	-	-	-	-	-	26
01- 100	35	103	10	4	2	1	-	155
101- 200	2	21	34	8	3	-	1	69
201- 400	5	2	20	35	1	-	-	63
401- 800	-	-	3	6	31	1	-	41
801-1000	-	1	-	-	8	10	1	20
1001+	1	-	-	-	2	4	20	27
All Groups	67	129	67	53	47	16	22	401

the elements of the matrix in table 21 represent the relative importance of present strata for each stratum at inception.

Table 21

Land Mobility Matrix

(Percent of initial holding group households)

Present land Owner- ship	Land holding group at the inception of the household							Total
	00	01-100	101- 200	201- 400	401- 800	801- 1000	1000+	
00	35.8	1.5	-	-	-	-	-	6.5
01- 100	<u>52.2</u>	<u>78.8</u>	14.9	7.5	4.3	6.3	-	38.6
101- 200	3.0	16.3	<u>50.7</u>	15.1	6.4	-	4.5	17.2
201- 400	7.5	1.5	29.9	<u>66.0</u>	2.1	-	-	15.7
401- 800	-	-	4.5	11.3	<u>65.8</u>	6.3	-	10.2
801-1000	-	0.8	-	-	17.0	<u>62.5</u>	4.5	5.0
1001+	7.5	-	-	-	4.3	25.0	<u>91.0</u>	6.7
All Groups	100	100	100	100	100	100	100	100

Only 35.8 percent of landless at inception were also landless at the time of the survey. Highest mobility was experienced by the landholding group 101-200. About 50 percent of the group experienced upward or downward mobility. In all the groups a greater fraction of households experienced upward mobility than downward mobility excepting the present highest group which can only experience a downward mobility by definition. Downward mobility is much more important among the lower groups than in land groups above 2 acres of land ownership. Table 22 summarizes the main features of table 20. On the aggregate less than 50 percent of total households experienced mobility in any direction beyond their present holding size group. Sixty-five percent of households who were landless at their inception experienced upward mobility but the opportunities for upward mobility beyond 4 acres seem extremely restricted.

Table 22Extent of Upward and Downward Mobility in  
each Landholding Group (Percent)

<u>Present Landholding</u>	<u>No mobility beyond the original group</u>	<u>Percent of total mobile households experiencing upward mobility</u>
00	35.8	100.00
01- 100	79.8	92.3
101- 200	50.7	69.7
201- 400	66.0	33.3
401- 800	65.9	62.5
801-1000	62.5	66.7
1001+	90.9	-

## 3.07

From the transition matrices presented above, it is clear that some households experienced mobility in the project area, however small be the size of it. The next logical question is what are the important mechanisms of mobility? How did the households acquire or lose their land over their period of existence from inception till 1980?

## 3.08

Inheritance is by far the most important land gaining mechanism. In our analysis inherited land is assumed to be determinant of initial position of a household. Out of a total of 1756 acres of land gained by the households through various mechanisms, 79.42 percent was gained through inheritance alone. Another 16.8 percent land was purchased and the remainder was gained through gift either from father-in-laws or from other relatives of the family. As expected, the upper land groups received a higher share of total inherited land implying that most of them were among the upper stratum at their inception. Households in the landholding group 1001 and above inherited 365 acres of land, about 26 percent of total inherited land. Moreover the upper stratum strengthened their position by land purchase; the households of the group purchased 59 percent of total purchased land and increased their land holding by 47 percent through land purchase. The households who own more than 2 acres of land purchased 92 percent of total land purchased by households. The landless, on the other hand, have little chance of

Table 23Land Area Gained by Present Land Holding Groups  
(All Land area in Decimals)

Land Groups	Area Inherited	Gift Received	Purchased
00	83	66 (79.5)	-
01- 100	8749	1202 (13.7)	881 (10.1)
101- 200	11419	1192 (10.4)	1584 (13.87)
201- 400	13659	1414 (10.4)	3951 (28.92)
401- 800	19235	1419 (7.4)	2805 (14.58)
800-1000	13200	816 (6.2)	2964 (22.45)
1001+	36566	527 (1.4)	17315 (47.35)
All Groups	139477	6636 (3.78)	29500 (16.80)

\* Percent of inherited land within the parentheses.

gaining land through gift, purchase or inheritance. Most of the landless were also landless at their inception although the reverse is not true. Most of the landless at inception moved up to the upper groups through purchase or gift. Hence from Table 23, we can conclude that inheritance is the single most important mechanism of land gain and purchase occupies a distant second position. Gift is also quite significant. In reality, of course, ownership of some land is not clearly defined especially the case of khash land. Some land is possessed de-facto rather than de-jure and so the land area was not reported by the operator. In our survey only 8 households reported operating 4.5 acres of khash land of which 56 percent land area was under direct control of more than 4 acre owners. Hence with the list of land gaining mechanism, possession of khash land should also be included.

<sup>1</sup> A large part of khash land is theoretically under mosque or temples but the most influential individuals of the villages seem to benefit from such land either directly, through leasing the land or indirectly, through controlling or influencing the decision of leasing to others.

## 3.09

The mechanisms of downward mobility were simply the reverse of the mechanisms reported for upward mobility. Sale of land and land area presented to Son-in-laws or to other relatives are the only means of land transaction mentioned. Most of the households reported losing land by sale, only a small fraction, about 2.6 percent (3.8 acres) was gifted to others. All the groups in our survey thus emerge as net gift receivers. Table 24 shows area lost through gift, sale and area gained through purchase for all the landholding categories. The lower groups, i.e.

Table 24

Net Land Purchase by Surveyed Households  
(Area in decimal = 0.01 acre)

Land Groups	Land lost thru gift	Land lost thru sale	Land purchased	Net purchased land	Mean
00	-	149	-	-149	-6
01- 100	66	5513	881	-4632	-30
101- 200	231	3689	1584	-2105	-30
201- 400	83	779	3951	3172	50
401- 800	-	545	2805	2260	55
800-1000	-	594	2964	2370	118
1000+	-	2821	17315	14494	537
Total:	380	14090	29500	15410	38

households with land ownership of 2 acre or less were net sellers of land while households owning more than 2 acres were net purchasers. The mean net purchase of land by the highest group was more than 5 acres. Given that the poorer households were also predominantly poor at their inception,<sup>1</sup> it is thus clear that small holders over the life-time of the families lose their land although gifts received from others decelerate the process of declining to the landless category from their small land holding position. On the other hand, the richer sections accumulate more land over their life-time. Still some households from the lower groups experienced limited upward mobility

<sup>1</sup> Modal year of inception for all land holding size groups were before 1970.

## 3.10

Pond area is potentially a different type of means of production owned by households. The methods of pisciculture can yield very high rates of return from ponds. The project might also be interested to know the distribution pattern of pond area owned. It should be mentioned that a large part of the pond area is owned by the government. Only a few households (27 out of 401) reported owning pond area. The ownership pattern is also very skewed as can be seen from table 25 below. About

Table 25

Pond Area Owned by Surveyed Households

Land Groups	Pond Area (decimal)	Percent
00	-	-
01- 100	-	-
101- 200	11	2.83
201- 400	26	1.95
401- 800	92	6.91
801-1000	102	7.66
1000+	1100	82.64
Total:	1331	100.00*

\* May not add to 100 due to rounding-off error.

83 percent of total pond area is owned by more than 10 acre owners.

## 3.11

The number of ponds and the pond area in a mouza vary significantly from one mouza to another. In Tarash mouza, for example, there are more than 75 ponds with an area of about 100 acres of which only 19 percent were khash. On the other hand Borogaon mouza has only 8 ponds with an area of 23.5 acres of which 85.4 percent were khash.

BULLOCKS AND AGRICULTURAL IMPLEMENTS

## 3.12

Cultivation of land requires other complementary inputs like animal power and instruments of labour. Usually the owners of cultivable land

also own bullock power and implements. Table 26 shows ownership of bullocks or buffaloes and ploughs reported by the surveyed households. The 288 cultivating households owned 514 bullocks or buffaloes and the

Table 26  
Bullock and Plow Ownership

Land Groups	Number of households owning cultivable land	Animals owned	Plows Owned	Mean* Animal owned	Mean cult land operated
00	-	1	1	0.5	1.69
01- 100	70	28	26	0.4	1.20
101- 200	65	72	56	1.1	2.00
201- 400	63	108	70	1.7	3.58
401- 800	41	100	66	2.4	5.40
800-1000	20	63	41	3.2	9.06
1000+	27	142	79	5.3	17.17
<b>Total:</b>	<b>286</b>	<b>514</b>	<b>339</b>	<b>1.8</b>	<b>4.53</b>

\* For those who cultivate land.

per acre bullock availability was 0.39 which is slightly lower than the requirement of 0.5 per acre. The deficit is probably met by cows. In each land group beyond 2 acres the number of ploughs owned is sufficient to meet their demand but the groups above 8 acres need an additional supply of animal power to plough their operational land area. The lower groups lack both ploughs and animals.

### 3.13

Some marginal farmers reported rearing bullocks and cows of others under a sharing arrangement called barga. The household which assumes all the responsibilities of looking after a cow also becomes the owner of that cow's offspring. In the project area 6 bullocks and cows actually used by the cultivators owning less than an acre are the property of bigger farmers. Purchase and sale of bullocks are also quite uncommon. Bullocks are considered an important property rather than a saleable commodity. Still some farmers reported purchasing or selling of bullocks during the period October 1979 to October 1980. Table 27 lists the purchases and sales of bullocks.

Table 27Bullocks Purchased or Sold in Last 12 Months\*

<u>Land Groups</u>	<u>Bullocks reared for others</u>	<u>Bullocks purchased</u>	<u>Bullocks sold</u>
00	3	1	-
01- 100	3	1	7
101- 200	-	10	7
201- 400	-	15	8
401- 800	-	13	7
801-1000	-	5	3
1000+	-	11	8
<b>All Groups</b>	<b>6</b>	<b>56</b>	<b>33</b>

\* During October 1979 to October 1980.

The table reveals that the households surveyed improved their animal power availability over the last year. All the land holding groups were not purchasers of bullocks or buffaloes. It should also be noted that the percent of bullocks sold by a group is marginally higher for lower groups. The richest group reported to have sold 5.6 percent of their bullocks. Although all the groups sell their bullock power, the motives behind the sales may be quite different for the various strata : the lower strata are usually forced to sell their propoerty to acquire a subsistence level while the richer sections might enter the market to dispose of some of their surplus animals.

OTHER IMPLEMENTS

## 3.15

The respondents were also asked to say how many weaving machines, cane crushers or other means of production they owned. Only 18 households reported owning boats for fishing purposes and 68 reported owning fishing nets of large or medium size. The total number of nets owned by them was reported to be 105. Table 28 reports the number of fishing boats and nets owned by the respondents. Apart from fishing nets, the households of the project area make various types of smaller nets, bamboo traps and fishing rods to use during the dry season.

Table 28Number of Fishing Boats and Fishing Nets Owned

<u>Land Groups</u>	<u>Number of Fishing Boats</u>	<u>Number of Fishing Nets</u>
00	-	3
01- 100	2	31
101- 200	1	15
201- 400	6	21
401- 800	6	16
801-1000	1	9
1001+	2	10
<u>All Groups</u>	<u>18</u>	<u>105</u>

## IV. BASIC DEMOGRAPHIC CHARACTERISTICS BY LAND OWNERSHIP GROUPS

## 4.01

Chapter 2 discusses the general demographic characteristics of the project area. But there are also significant differences in the demographic characteristics of different socio-economic categories. Land here again is used as the indicator of the social and economic position of a household. Table 29 below shows the number of males, females and literate population among the surveyed households. The sex ratio in different land groups does not follow a consistent pattern. From a probabilistic point of view the number of males and females should be

Table 29

Family Composition and Literacy by Land Group

<u>Land Groups</u>	<u>Number of male</u>	<u>Number of female</u>	<u>Literate Members</u>	
			<u>Male</u>	<u>Female</u>
00	53	52	3	2
01- 100 .	421	413	38	11
101- 200	192	216	31	10
201- 400	203	191	47	6
401- 800	179	137	57	11
801- 1000	75	85	28	8
1000+	120	122	54	27
<b>All Groups</b>	<b>1243</b>	<b>1216</b>	<b>258</b>	<b>75</b>

equal in each land holding group. In most of the groups the numbers do not vary significantly and it can be accepted that the male-female ratio is almost invariant with the land-size ownership of a household. The average family size, on the aggregate turns out to be 6.13 and as discussed in section II, the sample also corroborates the earlier positive relationship between land ownership and size of family. Table 30 shows average family size, literacy rates for male and female members and the average years of schooling of the literate individuals.

Table 30  
Family Size, Literacy Rate and Years  
of Schooling by Land Groups

Land Groups	Mean family size	% male literate	% female literate	Average Years of School	
				Male	Female
00	4.04	5.7	3.8	6.00	7.00
01- 100	5.38	9.0	2.7	6.10	4.00
101- 200	5.91	16.1	4.6	5.74	4.80
201- 400	6.25	23.2	3.1	4.74	5.00
401- 800	7.71	31.8	8.0	6.04	4.64
801- 1000	8.00	37.3	9.4	7.28	6.87
1000+	8.96	45.0	22.1	7.67	5.89
All Groups	6.13	20.8	6.2	6.25	5.35

\* Mean for the literates only. No illiterate reported to be in the schools.

The average literacy rate for male members shows a step upward trend as land-size increases. For landless households, the literacy rate among male members is only 5.7 percent compared with 45 percent for more than 10 acre owners. The female literacy rate follows no systematic pattern upto the landownership of 4 acres. In the richest stratum a quarter of the females were reported to be literate. The mean year of schooling, however, does not show any strong positive correlation with landholding. For those who went to school, whatever be the land ownership of the family, the mean years of schooling remain stable and it appears that the students from any stratum (especially from lower strata) are unlikely to continue beyond class six for males and class five for females. One important cause may be the physical distance of secondary schools. In the whole Tarash thana, there are only 4 high schools compared to 61 primary schools. Obviously, all those who complete their primary level education have to travel a greater distance to continue their studies. Since social barriers on travelling a greater distance are much higher for girls, especially for girls over 10 years in a muslim society, only

a limited number of girls continue their education. In our survey, 26 female members were reported to have completed 6 or more years at an educational institution. However, most of them were from relatively better-off families and one from the richest group and even completed her university degree. For male members, the factor that influences the decision to continue studies is the productivity of a child and the immediate need of the family. If a household needs additional income to bridge over the gap between income and needs, children who reach the net productive age may become engaged in productive works. Some studies found that 10 year is a cut-off point between net-consuming unit and net producing unit for full-time working by male members. Since the age at class five or six coincides with this cut-off age, some drop-outs may be explained by this factor.

#### 4.02

In our survey, the households of Baruhash village and the villages of Tarash Union seem a bit better in regard to educational attainment and literacy. In Tarash, the infrastructural facilities available for education have obviously contributed to its level of development. Separate school for girls and proximity of the institutions from villages of Tarash Union helped remove or at least alleviated some of the barriers to studies beyond the primary level. Baruhash has also spatial and socio-cultural advantages for higher education. The earliest highly educated persons of the project area belong to the village.

### RELIGION AND SOCIAL STATUS

#### 4.03

The religion of the most of the surveyed households was Islam. Out of 401 households surveyed only 59 households were of religion Hindu. There were also significant variations in hindu-muslim ratios in different villages. For example Baruhash is totally a muslim-village while Sastan, a very poor village of Tarash Union, is a hindu-village. It seems that the villages are predominantly religious clusters, clusters of households of the same religion. Since hindu and muslim households follow different social, cultural and legal systems, hindus and muslims usually have different shamaj in a village, if they coexist, and thus the two religions are quite segregated even if they belong to the same village. These religious clusters also indicate that the settlement of the area took place probably after the 1850's when the religious contradictions first emerged and were institutionalized. Although the households of Sastan reported their religion as Hindu, some authors are of the opinion that the tribal groups called Mohatho, Orang and Bona had different religious institutions and rites quite similar to the hindu traditions. As the society around them is either hindu or muslim and since it was easier for

them to identify themselves as hindu<sup>1</sup> to become a member of the society, or for social prestige, they adopted various hindu worship practices. Most non-muslims in the project area are probably these tribal groups who constitute an important proportion of population in the Raiganj part and also quite important in some villages of Tarash thana.

## 4.04

The households were also asked to rank their social status into three categories, high, medium and low. The respondents' answer to the question was cross-checked and a final ranking of status was obtained. Social status seems to be a direct function of land ownership. Landless and near landless families were reported to have low social status while the richest households have high social status. Although this is the general trend, exceptions are also there. Some landowners owning less than an acre were found to have medium status and this was also the case for some households of more than 10 acre owners. This indicates two important points. Firstly, land is the major means of social status and secondly past family history and occupation of father also play some role in this regard. A household head may have recently acquired the land necessary to become a member of the highest stratum but his position will be determined by his father's occupation. An iron smith's or a weaver's family is unlikely to obtain high social status even if it acquires enough land to become one of the richest households of the locality. Table 31 indicates the social status of the households by land ownership group.

Table 31

Social Status of the Surveyed Households

<u>Land Group</u>	<u>Low Status</u>	<u>Medium Status</u>	<u>High Status</u>
00	26	-	-
.01- 100	145	10	-
101- 200	35	21	8
201- 400	16	44	3
401- 800	1	32	8
800- 1000	-	6	14
1000+	-	3	24

<sup>1</sup> Hinduism is based on birth of an individual. An individual is hindu or non-hindu by birth and unlike other religions, it does not allow any non-hindu to become a hindu by conversion.

## AGE DISTRIBUTION

## 4.05

The overall age distribution pattern obscures one important fact that the distribution pattern varies significantly among the land ownership groups. Average age of the members of the households with little land is greater than that of the members of households of more land. Table 32 indicates that 44 percent of the members of landless families belong to the age range 0 to 10. The figure was 30 percent for more than 10 acre owners. Similarly, the percentage of members above 50 years of age was 1.9 percent and 14.5 percent for the lowest and the highest land group respectively. It appears that most of the smaller owners are young households as reflected by very small relative size of members above 50 years of age and relatively more concentration below 5 year group.

## 4.06

From the data collected it is not possible to find out the fertility rate or birth rates for the project area. As an approximate relative indicator of birth rates of different land groups, the ratio of children below 5 and the adults in the age group 15.1 to 50 were calculated. Table 33 reports the ratios along with the dependency ratios. Assuming that 50 percent of adults are female, the table suggests that if we consider only the living children at the time of the survey, each adult

Table 32

Age Distribution by Land Ownership Group \*

Land Groups (decimal)	Age Groups (Years)					
	Up to 5	5.1-10	10.1-15	15.1-50	50.1-65	65.1 +
00	28.57	15.24	6.67	47.62	1.90	-
01- 100	16.65	22.69	12.00	42.14	3.96	1.56
101- 200	14.57	25.43	14.81	38.27	4.44	2.47
201- 400	15.10	22.92	12.50	41.14	6.51	1.82
401- 800	15.43	20.58	15.11	42.44	3.86	2.57
801- 1000	15.13	21.05	14.47	40.79	4.60	3.95
1001+	12.39	17.95	19.23	35.90	9.40	5.13

\* Figures are the percent of total members in a land group.

Table 33Children-Adult ratio and Dependency ratio

<u>Land groups</u>	<u>Children-Adult<sup>*</sup> ratio</u>	<u>Dependency<sup>**</sup> ratio</u>
00	0.60	0.779
01- 100	0.42	0.721
101- 200	0.38	0.738
201- 400	0.37	0.662
401- 800	0.36	0.628
801- 1000	0.37	0.670
1001+	0.34	0.550

\* Children below 5 years to adult of age 15 to 50 years

\*\* Population below 11 years plus above 65 years to population between 11 to 65.

female had more than one baby in the past five years for the landless group. The figure is 57 percent lower for the richest group. This might be explained by the fact that most of the females in the age group 15 to 50 for lower groups are the wives of the household heads while some of the adult females in upper land groups were not married. Another important point to note from the table is that the poorer families not only have lower means of production at their disposal, they also have to support a heavier unproductive population.

The phenomenon is quite similar to Chayanov's observation on pre-revolutionary soviet agriculture (Chayanov, A.V. [10]): 'Those that sow small areas consist of young families with a large number of young children, and those that sow more consist of older families in which small children donot play such a great part'.

4.07

The date of inception of a household does reveal that the smaller owners are relatively new families. About 34 percent of the existing households were created within the last 9 years for the less than 2 acre owners compared with below 20 percent for more than 2 acre owners. The year of inception for almost all landless and near landless was

within the range 1965-1980. For landowners of more than 8 acres the range is much wider, 1945 to 1980 with majority before 1970.

## 4.08

The total number of children at or below age 5 years were found to be 394 in the 401 households surveyed. The number of female children was 223 which is 56.6 percent of the total children. Assuming equal birth of male and female, the higher figure for females in the project area does not support the contention that female children have higher probability of death than male children by the age of five (Mahtab, Ahmad [11]). However, our sample size is not large enough to arrive at a firm conclusion.

OCCUPATION

## 4.09

In rural Bangladesh, occupation of the members of a household is determined by its resource position. If a household has little material resources to support its members, labour selling becomes the most important means of generating subsistence. Given a set of feasible occupations, naturally higher labour productivity jobs are selected. But the set of feasible occupations, for quite obvious reasons, vary among different land ownership categories. A landless person has little prospect of getting land from the tenancy market and thus cultivation cannot be among the feasible set of occupations for him. As the landless and near landless also lack capital to finance either higher income yielding occupations, most of them end up as day labourers.

## 4.10

Table 34 lists some of the important principal occupations of the more than 10 year old male members of surveyed households. The principal occupations of the members are fewer in number for upper groups. The modal occupations for all groups, as expected, were only two. For land owners below 1 acre of land the modal occupation reported was 'day labour' and for all other groups the modal occupation was 'cultivation' of land. The self-sufficient land group (201 to 400 decimal owners) is purely agricultural, 95 percent of the members working or studying reported their main occupation as 'cultivation'. This is also quite expected and conforms with the theory outlined above. Since this land group has sufficient land to produce the means of subsistence for the households, almost all working members use their labour power in their own farms rather than working outside which in most cases, involves higher psychological cost, unless the surplus generated by the household is sufficient to enable it to choose a more prestigious occupation. Note that the relative importance of 'cultivation' declines for higher land holding strata who invest their surplus in other sectors which are not socially degrading.

Table 34  
Principal Occupation of Male Members  
 (Percent of members in each group)

Occupation	LAND GROUPS						
	00	01-100	101-200	201-400	401-800	801-1000	1001+
Day labourer	80.77	54.63	10.58	-	-	-	-
Fixed labour	7.69	14.35	5.77	-	-	-	-
Cultivation	3.85	21.29	74.04	94.74	88.57	86.36	78.26
Fishing	-	0.92	-	-	-	-	-
Business	-	0.46	-	-	-	-	-
Teaching	-	-	0.96	1.05	2.86	-	-
Student	-	1.39	1.92	4.21	8.57	13.64	15.22
Service	-	-	0.96	-	-	-	4.35
Contractor	-	-	-	-	-	-	2.17
Pump operator	3.85	-	-	-	-	-	-
Other	3.85	6.94	5.77	-	-	-	-
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Note: Percentages may not add to 100 due to rounding-off error.

#### 4.11

Since the lower land groups own little means of production, their occupation is expected to be more diversified i.e. they tend to work in any sector or occupation where productive employment is feasible. Income can also be increased by higher participation rate in the labour market and lower involvement in activities which yield income in the future. Table 35 reports some of these indicators for different land holding groups. The number of occupations for lower and upper groups does not vary significantly but almost all members of the poorer groups have a subsidiary

occupation which varies from seasonal begging to cultivation, business, boatrowing etc. The participation rate is also higher for lower groups, i.e., in lower groups almost all members (about 88%) within the age range 10 to 65 participated in productive activities compared with 61 percent for the highest group, if studying is also considered productive. If students are excluded the figure drops to 51 percent. It is not only that the lower groups cannot afford a male of 10 years or above to stay idle: even some female members of these households work outside, either as day labourers in the field or as maid servants or helpers in another house.

Table 35

Male and Female Participation rates

Land Groups	Female working <sup>1</sup> outside(%)	Male Participation rate <sup>2</sup> (percent)
00	16.7	88.13
01- 100	16.9	89.26
101- 200	4.8	89.27
201- 400	-	82.25
401- 800	-	73.30
801- 1000	-	48.35
1001+	-	50.93

- Notes: 1. Female working outside as a percent of total women above 10 years of age.
2. Participation rate = ratio of male members reported working to total male members in the age group 10.1 to 65.
3. In the above table 'student' is not considered as an occupation.
4. 15 percent of females above 10 years were reported students in the land holding groups above 8 acres.

Note that participation rate among the female members is much lower than the males reflecting possibly the fewer jobs available for females. Female members of more than 2 acre owners are purely self-employed although 11 members from above 2 acre groups reported 'day-labour' as their subsidiary occupation. This possibly reflects higher social rigidity for females, i.e., female members working outside the home is considered more degrading socially than male members working outside.

#### SKILL ACQUIRED

#### 4.12

Some members of the surveyed households reported possessing various skills which they use to earn additional income. Only a small fraction of total reported these as their principal or subsidiary occupation. For example, 138 among the surveyed members said they were skilled in net-making, five in boat building and 10 in various handicrafts. Still only one household reported making handicraft products as his subsidiary occupation. This might be due to the fact that skill alone without other inputs, which often require cash, is not sufficient to start the occupation. It is also possible that the market for the products in the rural society is restricted as to make the income that can be earned from these rural industries or crafts very low compared to the income that can be earned in other occupations. Table 36 shows the number of skilled members in various trades by land groups. Note that most of them are from lower land strata.

Table 36

#### Number Skilled in various Non-agricultural Activities

Land Groups	Skilled in Net Making		Boat and other Implements(male)	House repair and Handicrafts	
	Male	Female		Male	Female
00	6	-	2	1	-
01- 100	41	13	2	10	1
101- 200	27	5	5	-	1
201- 400	27	6	1	3	-
401- 800	6	5	-	1	-
801- 1000	1	-	-	-	-
1001+	-	1	-	-	-

## V. MIGRANTS AMONG THE SURVEYED HOUSEHOLDS

### 5.01

Many households of the project area are not local inhabitants; the head himself or his predecessors came to the area from other places. The process of in-migration in the project area, especially in Tarash still continues. The population growth rate in Tarash during 1961 to 1974 was much higher than the average growth rate in Bangladesh which also points to in-migration. As the land-man ratio approaches saturation point, the net-immigration rate is also expected to decline. Some mouzas of Tarash are of quite recent inhabitation. Binnabari is one of the newly created villages of the area. Char Binnabari, another mouza adjacent to Bhetua is not yet inhabited but the local population think that the area will be inhabited soon. This process of inhabitation of new land is obviously limited by the availability of land. Table 37 lists the villages (mouzas) with their number of households migrated within the last three generations (within grand-father's time) or 4 or 5 generations earlier. The table indicates that some of the surveyed villages were settled long ago while some of them are quite new. Noluakandi, Sastan, Dogaria, Binodpur Kharkhoria are the relatively older villages. Nobipur, Monohorpur, Binnabari and Tagra were settled in relatively recent years. Half of the surveyed households living in the area settled at a very early time. The remaining half migrated within the last 4 or 5 generations. About 20 percent came to the area within their grand fathers time. The very new villages which are in the process of formation were not in the list of the villages from which our sample was drawn. The 1974 village census lists only the mouzas which were inhabited in 1974. Hence the mouzas inhabited recently, i.e., within 1974 to 1980 were not in our Sampling Frame and therefore our migration figures under-estimate in-migration. Some villages can be found which consist of households which migrated within the last 5 or 6 years. Still our sample can be useful in identifying the causes of in-migration even if many of the present heads were not migrants themselves.

Table 37

Migrants Among Surveyed Households

Village	Migrated Within past three generations	Migrated within 4 or 5 generations	Original inhabi- tants or migrated long ago
Noluakandi	-	-	20
Ambaria	-	-	20
Mohishluti	5	-	15
Matia	4	-	16
Sastan	1	-	19
Nobipur	17	-	3
Baruhas	4	-	16
Borogaon	7	2	11
Dogaria	2	-	18
Monoharpur	16	-	4
Binnabari	16	-	4
Bhetua	4	2	14
Binodpur-Kharchoria	2	-	19
Tagra	1	16	3
Krishnepur	4	12	4
Chanderpaikara	7	8	5
Konorpur	4	15	1
Hazipur	4	13	3
Mauhar	6	9	5
Khordo-madhainagar	4	13	3
<b>Total:</b>	<b>108 (26.93)</b>	<b>90 (22.44)</b>	<b>203 (50.62)</b>

## 5.02

Before going into a theoretical discussion of migration it is useful to explain the nature of migration we are analyzing. Our migration process is not seasonal in nature. We asked the existing households about their original habitations and who in their family and for what reasons came to the place. Therefore the decision to migrate, whether made by the present head himself or his father or grand-father, was a life-time decision. Secondly our concept of migration deals with migrations where the head himself takes the decision to migrate rather than an individual member of the household. Of course, it is not necessarily true that all migrants came with their families, yet it seems plausible in a new habitation. One thing is quite obvious; we are not dealing with female migration, which is the most important form of migration in rural Bangladesh. A study found that of the total out-migrants from a village 67 percent were females who moved out of the village due to marriage (Chaudhury, R.H., [12]).

## 5.03

From the discussion of Annex-6 on migration theories we can here summarize the probable causes of rural-rural migration:

1. Better employment opportunity and better income;
2. Land cheaper in relation to the output that it can produce;
3. Price of subsistence commodities are lower;
4. Forced exodus from origin because of natural calamities or other 'push' factors;
5. In search of better living;
6. Better investment opportunity.

## 5.04

The households which migrated to the projected area within their grandfathers' time were asked to provide the major causes of their spatial mobility. Table 38 reports the causes which the respondents mentioned. Note the 32 percent of those who reported a cause mentioned lower land price as the determining factor. Another 19 households reported employment opportunity as the cause of migration. Marriage is another equally important cause. 19 household heads came to the area after their marriage and in most cases when the husband moves to the wife's place, it is almost certainly for getting the land of the father-in-law. Five households came later to get land from father-in-laws. When a household head loses all his land, the next line of defense is the land his wife will get from her father.<sup>1</sup> Thus

<sup>1</sup> In Islamic Law, both daughters and sons must get a share of the father's property. In Bangladesh, the normal practice is, however, that the land of a daughter remains under her brothers who pay some output of the land as rent. This is because the land a daughter gets is only a small part of total (hence, it is only a tiny plot in most cases) and the landless or near landless may be interested to take physical possession of it.

whenever feasible, a declining small landholder or landless person presses his wife to demand the land which she should inherit legally.

Table 38  
Reasons for Migrating

Reasons	Frequency	Percent	Rank
Cheap land	37	32.46	1
Employment opportunity	19	16.67	2
Migrated after marriage	19	16.67	2
Land lost thru river erosion	10	8.77	3
To earn a better living	8	7.02	4
In search of better settlement	6	5.26	5
Multiple causes (low price of goods, relative, cheap land etc.)	6	5.26	5
To get father-in-laws property	5	4.38	6
War	1	0.88	7
Khash land available	1	0.88	7
Others	2	1.75	-
<b>Total:</b>	<b>114</b>	<b>100.00</b>	<b>-</b>

### 5.05

The project area is not a well connected rural region. Hence the migrants are also expected to originate in rural areas. Respondents were also asked about the family's earlier place of residence. The answers are summarized in Table 39 below:

Table 39  
Place of Earlier Settlement

Earlier Settlement	Frequency	Percent	Approximate Distance
Rajshahi	12	9.76	2 to 6 miles
Bogra	14	11.38	1 to 10 miles
Dacca	1	0.81	50 to 100 miles
Comilla	1	0.81	100 to 120 miles
Jessore	1	0.81	-
Other thanas of Pabna	51	41.46	5 to 30 miles
Internal migration, within the project area	43	34.96	1 to 5 miles
<b>Total:</b>	<b>123</b>	<b>100.00</b>	<b>1 to 120 miles</b>

It is interesting to note that some households travelled much further than from the place of origin to the nearest town. It does not support the widely believed idea that villagers are attracted by high levels of living of the towns and villagers pushed out of the village economy migrate to towns for earning a living. Rhoda's study also found that poor rural households do not move to towns; major so-called rural-urban migration is actually semi-urban centre to urban migration (Rhoda).

## VI. MARKET STRUCTURE

### 6.01

The market is an important part of any economy although its nature and working principles differ significantly depending upon the level of development of the society. Ancient society is perhaps the only social formation which requires no market for goods or services. With the development of productive forces and with greater specialization, markets gradually became more and more important and today's society is inconceivable without a fairly well developed market where the individuals participate to meet each others need in the process of production and consumption. In rural societies also markets play a very important role. Although rural markets are not closely articulated, regional markets establish exchange relations among the members of the locality and help smooth functioning of the economy. Defined in a broad manner, market is a very wide concept incorporating all forms of exchanges or exchange relations that develop in a rural economy. Each particular good or service has its own market and so markets can be as numerous as the number of goods and services exchanged. For simplicity and for clarity in discussion it is often useful to lump some goods and services together and group the markets under a few heads. Firstly, from production side markets can be grouped into two; market of means of production and labour market. From consumption side, market can also be grouped into two: market of goods and services and credit market. Thus we have four basic markets -

1. Market of means of production;
2. Labour market;
3. Market of goods and services;
4. Credit market.

The methodology of subdividing the market implicitly assumes away capitalistic relations in production. In a capitalist agriculture "credit market" should be termed "capital market", which is an integral part of production rather than consumption. The assumption is necessary because our survey did not ask any question about the use of credit obtained from various sources and thus it is impossible to analyze whether the credit market is really capitalistic in nature or not, although a very simplistic characterization is possible on the basis of the information available about the nature of the credit market.

### MARKET OF MEANS OF PRODUCTION

#### 6.02

The most important means of production in a rural economy is land thus "market for means of production" really means the land market in a rural economy. In an agricultural land scarce economy ownership of land provides subsistence security and social status and thus land area is seldom sold to others. In Section IV we discussed land mobility and our

discussion clearly reveals that land purchased or sold is only a small fraction of total land area. Only under extreme hardship may a household decide to sell the plot of land it owns. But another form of exchange is quite widespread: the tenancy market. Theoretically a tenancy market can arise, from the supply side, due to the following reasons (Hossain, Mahabub [14], Khan, Mahmud [15]):

1. Technology in agriculture is primitive and the optimum size of farm predominantly determined by the technology is quite low. Land ownership above the technically determined optimum size encourages leasing out of land. It should be noted here that optimum size is also a function of land fragmentation, average distance of the plots from the homestead etc.
2. Some land owners may have non-agricultural occupations and so for efficient cultivation of land they may decide to enter the tenancy market.
3. Some small owners also lease out land for lack of complementary inputs like draft animals, ploughs etc.
4. Big landowners who do not directly cultivate the land have two alternatives before them; either to cultivate the land by hired labour or to lease-out the land. If the land owner is a profit maximizer the choice will depend upon the ratio of wage rate to land rent and since, given the wage rate, the cost of cultivating land by hired labour increases more than proportionately due to the opportunity cost of supervision time, the equilibrium is expected to be a combination of both. If the landowner is not a profit maximizer, he may decide to lease-out his whole land which reduces the cost of supervision to zero (feudal type). Leasing-out of land is also not independent of the labour market, because higher leasing affects the wage rate. In a perfect market, of course, land leasing should not have any impact on wage. But, as it is well known, labour market as well as tenancy market are far from perfect. Participation in the labour market is socially degrading and so many households who have surplus family labour to use outside may decide to keep them idle. Land leasing is really a method of using this surplus labour power which normally would not enter the market. Hence, in effect, leasing increases supply of labour and reduces the wage rate.

### 6.03

From the demand side, there must exist some households who have surplus family labour or implements to cultivate additional land. Usually, the smaller farmers fulfill the above conditions and they are in fact the major lessees. In any case, it is evident that a necessary condition for the existence of a tenancy market is inequality in land distribution. The sufficient condition is the presence of landowners of types explained in section 6.02 above. Depending upon the nature or type of the lessors and the lessee, the operational land distribution may emerge more unequal or more egalitarian than the land ownership distribution.

In traditional economy, as the economies of scale of land cultivation are either zero or negative (some authors have found that the sum of elasticities of a Cobb-Douglas production function is usually less than unity in agriculture implying diminishing returns to scale), the resultant operational land distribution is almost always more egalitarian (Alamgir, Mohiuddin [16]). Table 19 of part III shows that for our 401 households also cultivable land ownership distribution is more skewed than operational land distribution. Our discussion on tenancy provided below also supports the point.

#### 6.04

Incidence of tenancy in the project area, as compared to Bangladesh as a whole, is low. In the 21 villages surveyed area leased-in constituted 13.9% of the total cultivable area and the number of households leasing-in comprised 17.24% of the total number of households (respective indices for Bangladesh as a whole being 23% and 39% approximately). But there is a spectacular variation in the importance of tenancy from village to village. Chander Paikara of Dhamainagar Union (in Raiganj thana) is probably an exceptional case where area leased-in is about 109.43% of the total cultivable land that was owned by all the villagers taken together. It was, however, evident that with regard to tenancy the situation in Raiganj part of the project area sharply differs from that of the Tarash part (see table 9). Almost all the villages having an area leased-in more than 10% of total cultivable land belonged to Raiganj thana or were adjacent to it. It appears that in a good number of villages of this part of the project area the incidence of tenancy is higher than the national average (for example, in Krishnapur, Komarpur and Khordo Madhainagar the figures were as high as 45.17%, 49.76% and 44.43% respectively). But in Tarash thana of the 15 villages included in the survey, 3 villages had the above figure at a level less than 1% and in another less than 5%. The marked variation in the extent of tenancy in the two adjacent thanas is probably the outcome of the historical process of settlement (or inhabitation) witnessed by them, which in turn was conditioned by their specific ecological conditions.

In order to have an idea about the tenancy market of the project area as a whole, it may be useful to examine the situation unionwise. We will therefore first consider the tenancy situation in the two unions of Raiganj thana and then move west and southwards to the unions of Taras.

#### Sonakhara Union

The two villages of this union included in the survey were Mauhar and Hazipur. Information regarding tenancy for this union is compiled in table 40.

Table 40

Extent of Tenancy in Sonakhara Union

Land Group	No. of Households surveyed	No. of H. owning cultivable land	Cultivable land area (decimals)	No. of H. leasing in	Area leased-in	No. of H. leasing out	Area leased out
00	-	-	-	-	-	-	-
01- 100	15	4	198	-	-	-	-
101- 200	10	9	1295	2	297	-	-
201- 400	6	6	1577	1	66	-	-
401- 500	1	1	400	-	-	-	-
501- 600	1	1	574	-	-	-	-
601- 800	1	1	693	-	-	-	-
801-1000	4	4	3515	-	-	1	231
1001+	2	2	5480	-	-	2	1815
<b>Total:</b>	<b>40</b>	<b>28</b>	<b>13732</b>	<b>3</b>	<b>363</b>	<b>3</b>	<b>2046</b>

It is quite evident that as far as tenancy is concerned the sample of households drawn for the second questionnaire in this union was not quite representative. The sweeping (i.e. the first questionnaire) - survey showed that 30.88% of households in Mauhar and 31.88% in Hazipur were leasing-in land and the area leased-in constituted 11.77% and 15.45% of the total cultivable land of these two villages respectively. Lease-out area of these 40 households in Sonakhara union was about 20.5 acres.

Of the 297 decimals leased-in by the households belonging to the 101-200 decimal land-group, 264 (i.e. 89%) decimals were from absentee-owners and all of this land was double cropped. The remaining 33 decimals and another 66 decimals leased in by the household from the 201-400 land groups were owned by relatives of the tenants themselves. This part of the leased-in area could be cropped only once. Again, of the total 363 decimals (264+33) = 297 decimals were under lease with

these households for a period of 3 to 5 years, while the remaining 66 decimals were on lease from last year or the year before. The tenants were also asked about the landholding status of the lessors; most of them were reported to be from the more than 8 acre landownership group. The area obtained under lease showed a marked decline compared to that of the previous year when 8 households, 4 belonging to the 101-200 decimal-group and one each from 01-100, 201-400, 601-800 and 801-1000 decimal-groups, were leasing-in a total of 990 decimals.

Demainagar Union

The villages included in the survey of this union were Komorpur, Krishnapur and Chander Paikara. Table 41 helps to bring out the tenancy situation in this Union.

Table 41

Extent of Tenancy in Dhamainagar Union

Land Group	No. of household surveyed	No. of H. owning cultivable land	Cultivable land	No. of H. H. leasing in	Area leased in	No. of H. H. leasing out	Area leased out
00	2	-	-	2	273	-	-
01- 100	30	7	375	13	3094	-	-
101- 200	8	8	1109	7	2111	-	-
201- 400	8	8	2161	7	3000	-	-
401- 500	1	1	421	-	-	-	-
501- 600	1	1	465	1	264	-	-
601- 800	-	-	-	-	-	-	-
800-1000	5	5	4132	4	1188	-	-
1001+	5	5	10740	1	330	2	429
All Groups	60	35	19403	35	10260	2	429

\* Land area in decimals.

Thus more than 50% of the households surveyed reported to be leasing-in land and the area leased-in constituted 53% of the total cultivable land of the surveyed households. This is quite compatible with the findings of the sweeping-survey which showed the corresponding figures for the individual villages of Komorpur, Krishnapur and Chander Paikara to be 58.82%, 42.42% and 53.7% and 49.76%, 45.47% and 109.42% respectively. About 92% of the land leased-in belonged to absentee owners, locally called 'Mohajans'. These are rich people who are living at various near-by or quite far off important trading and administrative centres, and are engaged in non-agricultural occupations while at the same time owning a considerable amount of agricultural land in these areas. The rest of the land leased-in was owned by richer co-villagers who were at the same time distant or near relations of the tenants themselves. It should be noted that the co-villagers' land was leased to tenants all of whom were only marginal cultivators belonging to the 01-100 decimal-group. But more an important point is that (as can be seen from table 41) some households with large ownership status were at the same time leasing-in land. As regards the period of tenancy the situation was quite diverse. While 38% of the leased-in area was being cultivated by the same tenant for two or three consecutive years, 60% was under lease with the same cultivators for a longer period (even as long as 10 years). It appeared that the extent of leasing was on the increase. Compared to 10260 decimals at present, the total area under tenancy in 1974 was reported to be 6517 decimals. It is, however, difficult to make any conclusive statement because there is considerable scope for understatement arising simply out of the difficulty of recollecting events dating back a period of 6 years.

#### Madhainagar Union

The sole village included in the survey of this union was Khordo Madhainagar. Of all the villages of Tarash Thana that come under the survey it showed the highest incidence of tenancy. The village census revealed that a quarter of the households of the village were leasing-in land, and the leased-in land constituted 44.43% of the total cultivable area. The findings of the second questionnaire survey regarding tenancy of this village are summarised in Table 42. Thus of our sample of 20 households, 6 (i.e. 30%) were leasing-in a total area of 858 which constitutes only 19% of the total cultivable land. For the most part (i.e. 85%), the land under lease was double-cropped, while on the remaining 15% the only crop that can be grown is B. Aman. The period of tenancy varied over a range from 1 to 5 years for different tenants with different tracts of leased-in land.

Table 42

Extent of Tenancy in Madhainagar Union

Land Group	No. of H. surveyed	No. owning cultivable land	Cultivable land area	No. leasing-in land	Area leased in	No. leasing out land	Area leased out
00	-	-	-	-	-	-	-
01- 100	10	2	145	1	231	-	-
101- 200	3	3	475	2	132	-	-
201- 400	3	3	688	2	165	-	-
401- 500	-	-	-	-	-	-	-
501- 600	1	1	500	-	-	-	-
601- 800	1	1	532	-	-	-	-
800-1000	1	1	771	1	330	1	66
1001+	1	1	1500	-	-	1	792
All Groups	20	12	4611	6	858	2	858

Baruhas Union

Three villages of this union were included in the survey. They were: Monohorpur, Binodpur Kharkhoria and Baruhas. Table 43 illustrates the tenancy situation in the union as could be gathered on the basis of the second questionnaire information.

It is quite evident that tenancy is of marginal importance for the union. Although 6 out of a sample of 60 (i.e. 10%) households were found to be leasing-in, the total area leased-in constituted only 4.8% of the total cultivable area. The first questionnaire survey which included all the households of the villages showed leased-in land to constitute 4.7%, 2.08% and only 0.48% of the total cultivable area in Monohorpur, Baruhas and Binodpur Kharkhoria respectively (see table 9). Absentee-ownership seemed to be quite prominent, accounting for 67% of the total land leased-in by the surveyed households. Tenancy appeared

Table 43

Extent of Tenancy in Baruhas Union

Land Group	No. of H.H. surveyed	No. of H. owning cultivable land	Cultivable land area	No. of H.H. leasing-in	Area leased-in	No. of H.H. leasing-out	Area leased out
00	3	-	-	-	-	-	-
01- 100	20	14	712	1	66	3	117
101- 200	8	8	1224	1	165	-	-
201- 400	12	12	3689	1	165	1	132
401- 800	10	10	5506	3	479	1	538
801-1000	2	2	1749	-	-	-	-
1001+	6	6	5082	-	-	1	330
All Groups	61	52	25156	6	1205	6	1117

\* Land area in decimals  
to be on the increase. Last year, although the number of households (of the sample) leasing-in was the same, they were leasing-in a slightly smaller amount (1189 decimals) of land. But in 1974, only 4 households were leasing-in altogether 595 decimals of land. Period of tenancy varied over a wide range. There were tenants who were cultivating the same tract of leased-in land for over 10 years.

Soguna Union

Of the villages of this union only two, namely Binnabari and Bhetua, were included in the survey. The stratified sample of 40 households, 20 each from two villages, showed the following situation regarding tenancy.

Table 44  
Extent of Tenancy in Soguna

Land Group	No. of H.H. surveyed	No. of H. owning cultivable land	Cultivable land area	No. of H.H. leasing-in	Area leased-in
00	1	-	-	-	-
01- 100	22	10	507	6	326
101- 200	7	7	786	-	-
201- 400	5	5	1286	5	644
401- 800	2	2	1221	-	-
801-1000	2	2	1568	1	66
1001+	1	1	2310	-	-
<b>All Groups</b>	<b>40</b>	<b>27</b>	<b>7678</b>	<b>12</b>	<b>1036</b>

\* Land area in decimals. Leased-out land was reported to be zero.

The first questionnaire information showed Binnabari to be the village with the least incidence of tenancy. Only 1.11% of its households were leasing-in land, which in the aggregate constituted only 0.5% of the total cultivable area. For the other village i.e. Bhetua the indices were much higher, being at the levels of 14.06% and 7.65% respectively. It is therefore evident that the corresponding figures (30% and 13.5%) brought out by the above table are not representative.

Of the leased-in land, 38% was double-cropped and most of the rest being single-cropped. It seemed that leasing of land is rather a recent phenomena. Total land leased-in by the surveyed households in 1974 was reported to be only 16 decimal, for the last year the reported figure was 680 decimals.

Deshigram Union

Tagra and Dogaria were the two villages of Deshigram Union which came under the survey. The first questionnaire information revealed that leased-in land constituted 18.31% and 17.65% of the cultivable land in these two villages respectively. But only about 1/5 of the households in Dogaria were leasing-in land, while in Tagra they comprised as much as 40.62%. Information from the second questionnaire survey has been compiled in table 45.

Table 45

Extent of Tenancy in Deshigram Union

Land Group	No. of H.H. surveyed	No. owning cultivable land	Cultivable land area	No. of H.H. leasing-in land	Leased in area
00	3	-	-	1	66
01- 100	10	5	198	4	693
101- 200	6	6	946	3	429
201- 400	9	9	2298	4	1419
401- 800	6	6	3260	-	-
801-1000	3	3	2319	1	132
1001+	3	3	4941	-	-
All Groups	40	32	13962	13	2739

\* Land area in decimals. Leased out land was reported to be zero

Thus about 1/3 of the surveyed households were leasing-in land, but total land leased in by them constituted only 19.6% of the total cultivable land. Absentee-ownership was quite significant: 65% of the leased-in land belonged to them. Land leased-in from near or distant relations made up 25.3% of the total leased-in land. For most of its part this is a Union of two cropped land; 60% of the leased-in land could be cropped twice; while on another 26.6%, B. Aman was the only crop grown.

Over time the practice of tenancy was found to be growing. Of the same households only 7 reported leasing in 1974, to a total of 1980 decimals, and by last year the area had increased to 2739 decimals, being leased by 12 tenants. The period of tenancy was found to vary over a wide range. A significant portion (about 74%) of the leased-in land had been under plough with the tenants for more than 5 years. Another 19% had been under lease with the same households for more than 10 years.

Noagaon Union:

Matia, Mohishluti and Nobipur were the three villages of this Union which were surveyed. Table 46 contains part of the information obtained from the second-questionnaire survey.

Table 46

Extent of Tenancy in Noagaon Union

Land Group	No. of households surveyed	No. of H.H. owning cultivable land	Cultivable land area	No. of H. H. leasing-in land	Leased in area
00	6	-	-	-	-
01- 100	20	43	515	4	343
101- 200	11	11	1394	2	132
201- 400	10	10	2737	2	115
401- 800	7	7	3725	-	-
800-1000	1	1	660	-	-
1001+	5	5	7804	-	-
All Groups	60	47	16835	8	560

\* Land area in decimals. Leased out land was reported to be zero.

The practice of tenancy is yet to be widespread in this Union. Only 13% of the households were leasing-in 560 decimals of land which comprises 3.3% of the total cultivable area. The first questionnaire

survey also came up with similar results. Only 4.25% of households in the first and 2% in the second were leasing-in land which accounted for 3.62% and 0.49% of the total cultivable land of the two villages respectively. The union being almost wholly located in a one-cropped area, 94% of the leased-in land was of this category while a meagre 6% was cropped twice. The importance of absentees in the market, in contrast to many other unions was not very significant, contributing only 17.7% of the total leased-in land. It appears that most of the tenants were leasing-in from their relations living in the same village. Land from relations made up half of the leased-in area. One significant aspect was that all the households (of the sample) that were found to be leasing-in land had already been cultivating it for over 2 years; in other words, the sample revealed no case of land being newly (i.e. in the last two years) leased-in. Thus while the area under lease last year was the same as in 1980 only 2 households reported to have leased in an area of only 132 decimals in 1974.

#### Magurabinod Union

The two villages of this union which came under the survey were Ambaria and Noluakandi. Tenancy in this union is of marginal importance. Total leased-in area constituted only 2.66% in the former and 2.93% in the later village and households leasing-in comprised 3.75% and 7.14% of the total number of households in the two villages respectively.

Table 47

#### Extent of Tenancy in Magurabinod Union

Land Group	No. of H.H. surveyed	No. of H.H. owning cultivable land	Cultivable land area	No. of H.H. leasing-in	Leased in area
00	8	-	-	3	115
01- 100	9	7	426	3	164
101- 200	8	8	1006	-	-
201- 400	6	6	1650	-	-
401- 800	5	5	2673	-	-
800-1000	2	2	1485	-	-
1001+	2	2	3300	-	-
<b>All Groups</b>	<b>40</b>	<b>30</b>	<b>10540</b>	<b>6</b>	<b>279</b>

\* Land area in decimals. Leased out land was reported to be zero

This is obviously another union with tenancy of only marginal importance. Although 15% of the surveyed households were leasing-in land, the total area leased-in constituted only 2.6% of the total cultivable land. Even when all the households of these two villages are considered only 3.75% of them in the former and 7.14% in the latter were leasing-in any land and the areas leased-in constituted only 2.66% and 2.93% of the total cultivable land of the two villages respectively. The entire leased-in area was single-cropped - a reflection of the general ecological situation in which the union is located. Likewise, there was no case of absentee-ownership. It seemed that over the last two years there was no increase in the total area leased-in. But it turned out that there was significant fragmentation in the leased-in land. The same 279 decimals which are now shared by 6 tenants, were last year under plough with only 2 tenants. Comparison with the 1974 figure reveals an increase in the extent of tenancy (both area and the number of tenants) over the past years. About half of the land presently under lease belonged to the relations of the tenants themselves.

#### Tarash Union

Sastan and Borogaon were the two villages of Tarash Union that came under the survey. Tenancy did not occupy a prominent place here. Land leased-in constituted only 3.21% and 5.17% of the total cultivable area in the two villages respectively. Table 48 illustrates the tenancy situation with the 40 households which comprised the sample.

Table 48

#### Extent of Tenancy in Tarash Thana

<u>Land Group</u>	<u>No. of H.H. surveyed</u>	<u>No. of H.H. owning cultivable land</u>	<u>Cultivable land area</u>	<u>No. of H.H. leasing in</u>	<u>Leased in area</u>
00	3	-	-	-	-
01- 100	19	8	305	-	-
101- 200	8	5	1154	1	66
201- 400	4	4	1155	-	-
401- 800	4	4	1914	-	-
801- 1000	-	-	-	-	-
1001+	2	2	2640	-	-
<b>All Groups</b>	<b>40</b>	<b>23</b>	<b>7168</b>	<b>1</b>	<b>66</b>

\* Land area in decimals. Leased out land was reported to be zero.

Thus there was one household out of a sample of 40 (i.e. 2.5%) leasing-in 66 decimals of land (i.e. less than 1% of the cultivable area) The first questionnaire survey which covered all the households of these villages showed that 4.54% of households in Sastan and 12.16% in Borogaon were leasing-in land. But leased-in areas constituted only 3.24% and 5.17% of the total cultivable land respectively in the two villages. The 66 decimal tract leased in by a small cultivator owning less than 2 acres of land, was single cropped and it belonged to a villager who own more than 8 acres of land.

#### 6.05

Thus it appears that the situation with tenancy varies widely over the Project Area. In most of the unions of Tarash thana the incidence of tenancy was low probably because of the fact that these are areas that not many years ago happened to be part of the Chalan beel proper and therefore were still uninhabited. As the population grew and its pressure on land increased, people started to settle in these otherwise very low-lying areas as well. And as there was still land available to be brought under plough, leasing-in of land was not necessary. But as this process eventually reached a point of saturation the practice of tenancy started. With Raiganj Thana and Unions of Tarash adjacent to ti, which is an area of relatively earlier settlement and which has gone through the whole process of infeudation and sub-infeudation, tenancy is, for obvious reasons, quite significant.

Importance of absentee-ownership was a thing to be clearly noted. Of the total land leased-in by the surveyed households 83.5% belonged to absentee-owners. As regards tenancy arrangement, 50-50% sharing of the output with owner bearing no input-costs seemed to be universal for the whole project area. Since this is an area where HYVs are yet to establish themselves, where, therefore, traditional local varieties of rice are the dominating crop, the modifications of tenancy arrangements which can be noticed in some others parts of the country to accompany the adoption of HYVs were not to be found. But this notwithstanding, application of chemical fertilizers was found to be quite common. And it was revealed that in many cases the owners were asking their tenants to apply fertilizer even though they would not be sharing its cost in any manner. Owners were also found to be advising their tenants which of the (local) varieties of rice were to be grown on this land. There were few cases of owners providing loans to their tenants, (the terms of loans being varied). But, on the other hand, there were cases of owners demanding some extra payment from the tenants (mostly in the form of a lumpsum to be paid by the tenant in order to get the land under lease). There were instances of owners demanding free-of-cost labour services (of various forms) from the tenants as well.

People leasing out land in most cases were, whether absentee or non-absentee, large owners of land. But there were a few cases of marginal farmers not having the necessary implements for cultivation (mainly plough and bullock power) and not being in a position to afford the required working capital, leasing-out their land only to become "full-time agricultural wage-labourers". As regards trend, it seemed that despite some exceptions, in most of the Unions, tenancy was on the increase (for example, compared to 1974). Other things remaining the same, with further increase of the pressure of population on land, the number of tenants competing for land may increase changing the terms of tenancy in favour of landowners. This might make it profitable to cultivate additional land by tenants rather than by wage labourers. Hence, the trend of increasing importance of tenancy may continue in the future. Of course, land under tenancy is limited by the land ownership of bigger owners. At the same time, if land concentration also increases, land under tenancy will almost definitely continue to show an upward trend.

### LABOUR MARKET

#### 6.06

Like any other market, the labour market has also its supply and demand functions. In a traditional agricultural analysis of labour from the demand and supply sides in the market only gives a partial analysis of labour utilization and employment. The more important and relevant variable in the traditional agriculture, which determines income and levels of living of the vast majority, is the opportunity of productive utilization of labour, rather than wage rate or even extent of labour hiring in the market. Our survey tried to cover all the three aspects of labour use : labour supply in the market, labour demand and labour utilization in family farms or in other family activities. Unfortunately, determining the extent of self-employment is almost impossible through administering a structured questionnaire. Although in our survey, self employed households did mention their peak activity and slack activity months, most of them could not recall the average number of days they worked per month during peak or during slack. As self-employed members do not have any fixed working hours, their employment figures were found inconsistent with the requirements and also created the problem of aggregation of hired labour days and self employed labour days. Hence our analysis is a partial one and the overall pattern of employment should be approximated from the labour hiring of the households.

#### 6.07

Firstly let us analyze the labour market from the supply side. From the earlier discussion of occupation of the surveyed households, it is clear that supplying labour power in the market is a very important occupation of the households of the project area. The actual number of labour suppliers is much greater than mentioned in table 34. Table 49

shows the number of households hiring out labour as well as the number of family members participating in the market. In the lower groups almost all households supplied labour power in the market as day labourers.

Table 49

Labour Hired-out by Households Surveyed

Land Groups	No. of H.H. in the group	Number of H.H. hiring labour out	% of total H.H. hiring labour out	Average No. of labourer per H.H.
00	26	23	88.46	1.17
01- 100	155	131	84.52	1.62
101- 200	69	38	55.07	1.66
201- 400	63	16	25.40	1.81
401- 800	41	-	-	-
801- 1000	20	-	-	-
1001+	27	-	-	-
<b>All Groups</b>	<b>401</b>	<b>208</b>	<b>51.87</b>	<b>1.59</b>

Even from the 201-400 decimal land group one quarter of the total households participated in the labour market as sellers. This size is usually considered the subsistence group landholding size. The average number of members per household working as day labour increases from 1.17 to 1.81 as land holding increases from zero to 4.0 acres, but given the fact that the size of the family is directly related with land and also that the poorer households have proportionately higher number of children below age 5, the participation rate should be inversely related with land-holding.

6.08

The average number of days hired out by an individual is dependent upon the landownership of the household to which the individual belongs. The more assets are owned by a household, the more self employment opportunities there are for the members and therefore, since there is a

physical limit to labour supply, the less man-days are supplied in the labour market. The landless labourers and marginal owners who do not have sufficient means of production for productive self-employment constitute the major groups of labour hirers. Table 50 shows the number of household members hiring out labour with the total man-days hired out.

Table 50

Labour Hired Out by Land Groups

Land Groups	No. of members hiring out	Man-days	Mandays/ Worker	Man-days/ H. H.
00	27	2223	82.33	96.65
01- 100	212	14214	67.05	108.50
101- 200	33	3479	55.22	91.55
201- 400	29	682	23.52	42.62
401- 800	-	-	-	-
All Labourer	331	20598	62.23	98.08

Employment per worker declines rapidly with farmsize, i.e. the landless and near landless were employed for a higher number of days than the others. Note that the households of 201-400 decimal land group supplied only 42.62 days in the market and each labourer from the group worked less than 25 days. This reflects their preoccupation in their own farms. The mean employment figure of the table is very low, only two months per year. Since the survey relied heavily on the memory of the labourers, one should not take the figures seriously. It is only indicative of how different groups fared in the labour market as suppliers.<sup>1</sup> One important aspect of the labour market which is obvious from the table is the absolute predominance of less than 1 acre owners in the labour market. They supplied about 70 percent of

<sup>1</sup>

The employment figures seem underestimation of total work done over the last one year. Because even for absolute landless the employment figure is 82 days which can yield an income of Tk. 900 approximately per year; the income is barely sufficient to keep one adult member at his subsistence level.

total labour days hired out. They also were employed about 108 days per household, the highest level of employment among the labour-hiring groups.

## 6.09

Average employment during peak and lean months also indicate that the employment figures are at least 14 percent under reported. The mean monthly average days of employment during the peak period was reported to be 21 days and the average length of the peak season was reported about 2 months for all day-labourers. In the slack season the average employment and average length of slack was reported to be 3 days and 1.5 months respectively. Since slack or lean period was defined as the time of lowest employment opportunity available to a family, all other months must have generated higher employment than the employment obtained during the slack period. Assuming that all other months are also similar to slack period with respect to employment generation, total average employment figure comes to 72 compared to 62 days reported by the labourers.

## 6.10

Table 50 shows the aggregate labour hiring situation. The 20598 man-days were utilized in different activities. As expected most of the labour-time was utilized in the crop sector. Table 51 summarizes man-days hired out by activities. For the below 1 acre groups, harvesting of crops is the most important activity. Road construction and pond excavation are also reported to be an important employment generating sector for the groups 01-100 and 101-200. On the aggregate about a quarter (22.7 percent) of total labour sold in the market went to pond excavation and road construction activities. The modal activity for the landholding sizes 1 to 2 acres and 2 to 4 acres was land preparation activities for crops. Since modal labour utilizing activity for all groups combined is harvesting of crops, it is obvious that harvesting of crops is the peak activity period for the project area. As 1 to 2 acre owners also cultivate their land, most of them probably remain busy in their field during the peak period and thus cannot participate in the labour market to the same extent as the marginal landowners or landless workers. Also note that the workers of the landsize group 201 to 400 decimal take part in excavation works to a much lesser extent; while on the aggregate such works account for 23% of mandays sold, the figure was only 12% for that group.

Table 51

Man-days Hired Out by Work Performed

Labour Using Activities	Land Groups			
	00	01-100	101-200	201-400
Land preparation for crops	420	2624	547	175
Weeding	473	2139	617	132
Harvesting of crops	545	3103	592	175
Other cultivation activities	140	1229	315	-
Pond Excavation	210	1496	254	38
Road construction	201	2013	406	50
Carpentry	-	-	180	-
House repair	172	751	359	112
Other	62	859	209	-
<b>All Activities</b>	<b>2223</b>	<b>14214</b>	<b>3479</b>	<b>682</b>

## 6.11

Wage-rate is another important determinant of income of the poorest group in the rural society. In fact, days employed and wage rate are both equally important for the day labourers. There are various theoretical explanations in the available literature which deal with the mechanisms of wage determination in a rural economy. The following is a list of some hypotheses proposed:<sup>1</sup>

<sup>1</sup> See Bardhan, Kalpana [17] for a review of the literature.

1. Nutrition-Wage Hypothesis: Wage rate is institutionally fixed and the level of wage is determined by the nutritional requirement of the labourers' families.

2. Subsistence-Wage Hypothesis: It again holds that the wage-rate is fixed and determined by the subsistence-needs of the labour supplying households.

3. Productivity-Wage Hypothesis: Wage is determined by the productivity of labour. Thus it is not constant or fixed. The higher productive activities should have higher wage rate (each activity has a fixed labour coefficient).

4. Equilibrium-Wage Hypothesis: Like any other commodity labour market has its own demand and supply curves. Demand curve, we know from theory, is the marginal productivity curve of labour. The supply curve depends upon the wage rate and the preference pattern between work and leisure at different levels of income and the absolute physical constraint of labour supply.

For the rural sector of Bangladesh, it is argued elsewhere that the institutionally fixed wage hypotheses cannot be accepted (Khan, M.M. [18]). In the past few years wages were not constant and fluctuations in real wages seasonally or over time are quite significant. Table 52 shows the mean wage rates in different activities by landholding groups.

Table 52  
Wage Rate of Labour Activities  
(Taka / Manday)

Activities	Land Groups			
	00	01-100	101-200	201-400
Land Preparation	11.01	11.18	10.85	9.88
Weeding	10.78	10.41	10.88	10.00
Harvesting	12.09	12.57	11.82	11.75
Other Cultivation	11.50	10.76	9.66	-
Pond Excavation	8.40	9.19	9.35	8.50
Road Construction	10.10	9.77	9.80	8.83
House repair/construction	8.37	8.63	9.08	10.00
Other Activities	8.00	9.76	9.32	-
Carpentry	-	-	15.00	-

From the table, it is clear that wage rates vary according to the activities performed.<sup>1</sup> But the wage rates vary not only with the particular activity but also with the time at which it is performed. Thus the higher wage for harvesting may not be a reflection of higher productivity of labour during harvest compared to other activities but rather higher demand for labour at the harvesting period. The data we have collected also allows us to analyze the relationships between the wage rate, and the net deficit over and above non-wage income. According to the first two hypotheses family size should be directly related with wage if other things like landownership, income from other sources etc. are kept constant. For lack of time as well as for difficulties of testing the hypotheses by manual tabulations, the hypotheses were not tested. But given the variations of wage among the households of the same group and the households of different groups, it appears that wage rate determination is much more complex than a simple interaction of demand and supply. Imperfections in the market like lack of knowledge, patron-client relationship etc. obviously play an important part.

#### 6.12

With the variations of wage rate the place of work must also be considered. Household members do not necessarily work in the same village as the household and wage differentials may to some extent be explained by the geographical places of work which have different socio-economic structure. Table 53 reports the importance of different places of work for different land-size groups.

#### 6.13

At a future date we will try to test whether place of work can explain the variations of wage and even if it can explain them, we need to examine the choice of place of work by individuals. The pattern of choice of place is not at all clear from the table. This might be the problem of our classification. A place 'outside the thana' by definition is considered a more distant place than any other village of the union which is not necessarily true. Some of our villages were very close to the thana boundaries. Landless people are expected to travel greater distances than landowning labourers. The labourers from other land groups also work in their field and so they are expected to travel shorter distances. From the answer to question 11, we find that the landless and near landless do travel greater distances in search of employment opportunities.

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<sup>1</sup>

In pond excavation activities average wage rate was reported to be lower than the official wage rate of 3 seers of wheat (equals Tk. 9).

Table 53

Place of Work of Day Labourers  
(percent of total in a group)

	Land Groups				All Groups
	00	01-100	101-200	201-400	
Within Village	62.26	53.33	60.11	65.63	56.01
Neighbouring Villages	23.58	21.88	17.26	28.12	21.45
Within Union (not 1 and 2)	8.49	14.26	11.90	3.12	12.78
Within thana	2.83	6.97	6.55	3.12	6.28
Outside the thana	2.83	3.56	4.17	-	3.47

## 6.14

The labour market analyzed from the supply size can indicate availability of employment opportunity within the area and in neighbouring places. The demand side of the labour market concentrates on the demand for hired labour by the individuals within the project area and thus it might be a better indicator of wage labour employment opportunity within the project area. But it should be noted that the demand side figure, as it is obtained from the households surveyed, does not include the employment created by governmental activities or the Neegacchi project. However, the impact of the project on employment can be approximated from the supply side figures. Table 54 shows the mandays hired by different landholding size groups and the number of permanent or fixed labourers hired with their mean wage rates. Total mandays hired by the surveyed households were about 15 thousand mandays in a year which is 28 percent lower than the hired-out figure mentioned in Table 50. The average mean wage rate was reported to be Tk. 11 per day without meals (i.e. the cost of meals is included in the wage rate if wage is partly paid in meals). The households hired about 116 fixed labourers over and above the day labourers hired. Fixed labourers are usually paid Tk. 100 to 125 in cash monthly with three meals a day plus some clothes in the whole year. The wage rates for fixed labourers in Table 54 include

Table 54

Labour Hired by-Different Land Size Groups

Land Group	Mandays hired	Mean wage (Tk/day)	No. of fixed labourers	Mean months employed	Wage Rate (Tk/Month)
00	-	-	-	-	-
01- 100	475	10.98	-	-	-
101- 200	456	10.86	1	9.0	250.0
201- 400	2827	11.76	7	9.3	196.7
401- 800	3742	11.44	23	7.8	210.5
801-1000	2093	11.62	23	8.7	195.1
1001+	5160	10.90	62	8.4	220.1
<b>All Groups</b>	<b>14753</b>	<b>11.30</b>	<b>116</b>	<b>8.4</b>	<b>214.5</b>

both cash and meal paid per month. If the fixed labourers are productively employed for the whole month, the wage rate they receive is lower than what a day labourer could earn when employed for an equivalent number of days. Even if we assume the daily wage as low as Tk. 9 per day, a day labourer can earn Tk. 270 per month while a fixed labourer is earning only Tk. 214. The wage of fixed labourer may not be always less than that of day labourers. Theoretically wage differential between a day labourer and a fixed labourer may arise due to the following reasons:

1. Risk of unemployment: A day labourer is by definition employed daily and so runs the risk of not being employed in the next day. On the other hand, a fixed labourer has no such risk, atleast for the next few months. Due to the lower risk, a labourer may be willing to accept a lower wage per unit of work if employed as a fixed labourer rather than as a day labourer;

2. Risk of Labour Availability: Just as a labourer runs a risk of unemployment, an employer may also run a risk of non-availability of labour, especially during the peak activities. From the above discussions, it is clear that harvesting of crops is the peak activity of the region and thus any loss of crop at harvest due to lack of labour not only means a loss of income but also a loss of past investment. To lower the loss,

it might be profitable for richer farmers to ensure labour supply during the peak by employing fixed labourers. If this is the only or most important determinant of the prevalence of fixed labour hiring, the wage rate of a fixed labourer per day should be higher than that of a day labourer.

3. **Productivity Differentials:** Another cause of wage differential between the labour units supplied by day and fixed labourers is their unequal labour productivity. A day labourer is employed when he is required, i.e. a day labourer has a specific task to do in the day. Since a fixed labourer is hired for some months, his work also fluctuates from one month to another. During the slack period his productivity is expected to be very low, while very high during the peak. Although the final outcome for the wage rate depends upon the overall work performed or to be performed by a fixed labourer in a household, it is usually believed that in most of the households, fixed labourers for most of their time cannot be employed as productively as day labourers and thus their wage should be lower.

The wage differential is the resultant of all the three forces. They act together to determine the wage-gap and depending upon the absolute importance of one reason or another, wage rate per unit of time of a fixed labourer may be higher, equal to or less than the wage rate of a day-labourer. In our case the wage rate is lower, indicating that reason 2 may not be very important, i.e., the employers' risk of not finding a labourer during peak is more than offset by the risk of unemployment of the day labourers. If we assume away the productivity differentials discussed in reason 3 above, the wage differential, i.e. Tk. (270-214) or Tk. 56 per month is the estimated cost of risk of unemployment for a labourer.

### 6.15

The mean labour days hired by the surveyed households, as expected, also vary significantly among the landholding size groups. Table 55 shows the mean labour days hired by households with the number and mean months of fixed labourers hired. Mean days hired increase with the increase of farm size. While the households of 01-100 landholding group hired only 3 days of labour in the last one year, the highest group hired 191 days. Moreover, they hired an additional 19.29 man-months of fixed labour per household. Given the seasonal peakedness of labour demand almost all households need outside labour supply at some point in time. This explains the labour demand of the less than 2 acre owners.<sup>1</sup> Note that

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<sup>1</sup> Some smaller owners work in non-agricultural sector. They also hire labour and even hire one fixed labour to cultivate the land they own.

Table 55Mean Labour Days Hired by Land Groups

<u>Land Groups</u>	<u>Man days hired</u>	<u>Mean number of fixed labourer hired</u>	<u>Man-months of fixed labour hired</u>
00	-	-	-
01- 100	3.06	-	-
101- 200	6.61	0.014	0.13
201- 400	44.87	0.111	1.03
401- 800	91.27	0.561	4.37
801- 1000	104.65	1.150	10.00
1001+	191.11	2.296	19.29
<b>All Groups</b>	<b>36.79</b>	<b>0.289</b>	<b>2.43</b>

above 4 acres of land ownership, labour hiring per household more than doubles indicating that the major source of demand in the labour market is the households above 4 acres of land ownership. In fact, their demand for wage labour and fixed labour time was about 75 percent and 92 percent of total labour hired respectively.

## 6.16

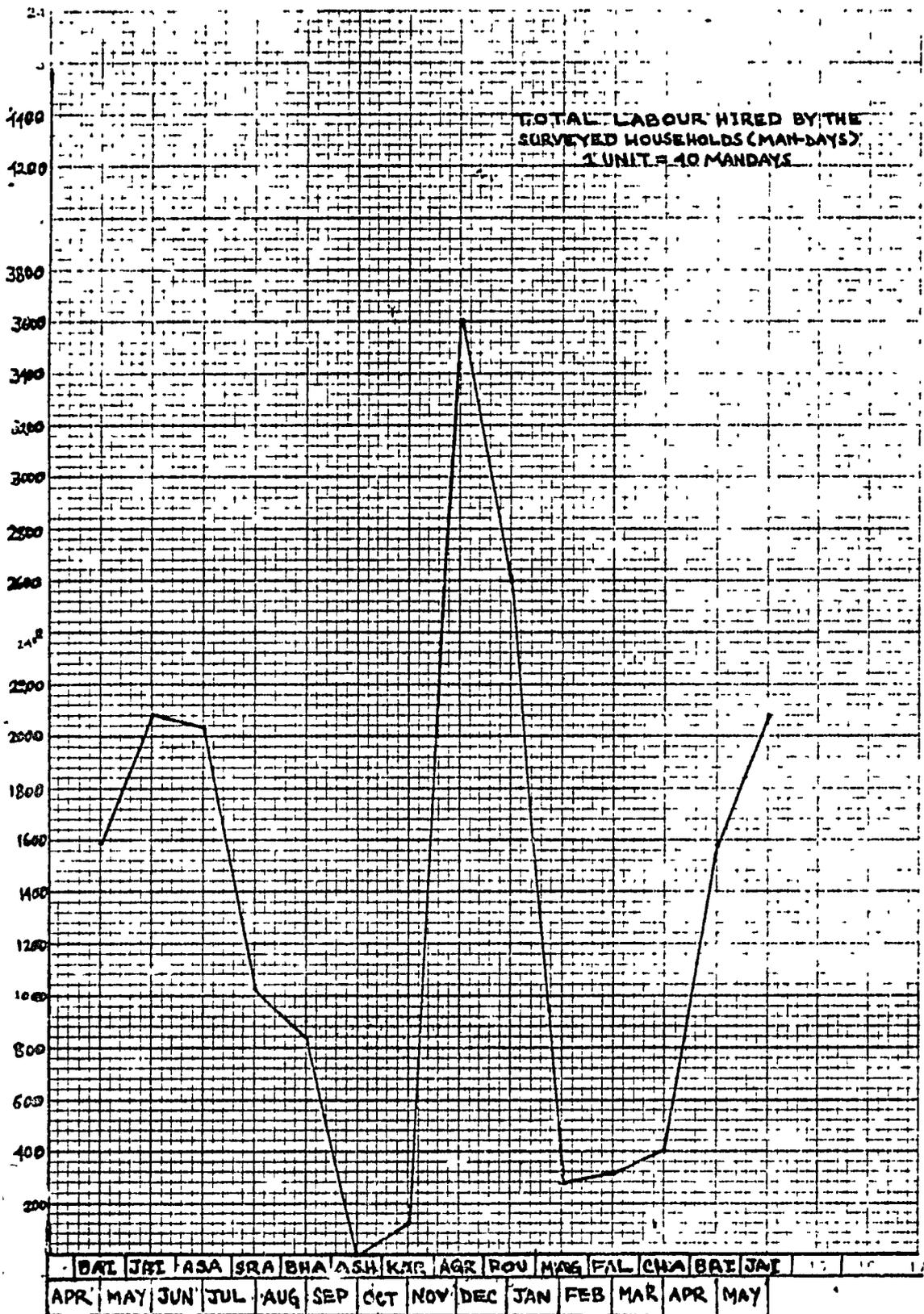
Table 56 shows the monthly pattern of labour demand in the labour market. Since the project area is predominantly an aman cultivated region, the peak activity month coincides with the harvesting period of aman paddy as is evident from the table. (Bengali months Agrahayana and Poush are the peak harvesting month of broadcast aman. The bengali months coincides with the period 15th November to 15th January). Another important point to be noted from the table is the almost complete absence of labour hiring during the months Ashwin and Kartic (15th September to 15th November approximately). In almost all areas

Table 56  
Labour Hiring by Months of the Year  
(Man-days)

Months of the Year	Total Labour Hired by			
	Less than 2 acre owners	2 to 4 acre owners	Above 4 acre	All groups
Baishakh (Mid April-Mid May)	58	333	1199	1590
Jaishtha (Mid May-Mid June)	93	374	1596	2063
Ashar (Mid June-Mid July)	119	399	1514	2032
Sravan (Mid July-Mid August)	93	311	625	1029
Bhadra (Mid August-Mid Sept.)	69	260	506	835
Ashwin (Mid Sept.-Mid Oct.)	-	-	-	-
Kartik (Mid Oct.-Mid Nov.)	-	12	110	122
Agrahayana (Mid Nov.-Mid Dec.)	252	734	2544	3530
Poush (Mid Dec.-Mid Jan.)	236	321	2007	2564
Magh (Mid Jan.-Mid Feb.)	39	56	188	283
Falgun (Mid Feb-Mid Mar)	23	117	173	313
Chaitra (Mid-Mar-Mid Apr.)	21	99	262	382
<b>Total:</b>	<b>1003</b>	<b>3025</b>	<b>10724</b>	<b>14752</b>

of Bangladesh Ashwin-Kartik are the lean agricultural months. In Agrahayana and Poush, less than 2 acre owners hired about 50 percent of their total labour hiring. The peakedness of demand in these two months is much less prominent for other landsize groups. The following graph shows the seasonal pattern of labour hiring by all groups.

88



6.17

Table 57 shows the wage rate of labourers reported by the employers by types of work performed and landownership group. There is no firm evidence from the table that the upper groups use their political power and social position to employ labourers at a lower wage.

Table 57  
Wage Rates Reported by Employers  
(Tk./Day)

Land Groups	Land preparation and sowing	Weeding and other activities	Harvesting of crops	Threshing*	House repair
00	-	-	-	-	-
01- 100	10.50	10.00	12.50	-	9.60
101- 200	10.68	8.60	13.28	-	8.50
201- 400	11.21	11.31	14.00	-	8.33
401- 800	11.75	10.41	12.95	-	9.10
801-1000	11.58	11.66	13.06	11.5	8.75
1001+	9.94	11.75	11.98	-	9.00

\* In the richest strata fixed labour is employed for threshing.

But the table indicates that for more than 10 acre owners, wage rates for land preparation and sowing and harvesting of crops are much lower than the wages paid by other land groups. This might be explained by the fact that the richer households employ labourers for a higher number of days and so, in order to get higher employment opportunity workers may be willing to accept a lower wage than the market wage rate. The resultant income can still be higher for the worker even though the wage rate is lower which encourages the big owners to employ the same person for their future work.

## 6.18

Apart from direct purchase or sale of labour power in the market some cultivators reported practicing 'badli' or the practice of exchange labour. In badli system a cultivator works in the field of another cultivator on condition that the equivalent number of days will be paid by labour power. This is really a type of barter exchange. Badli system requires that the two parties must own some land. Furthermore, their seasonal peaks for labour requirements do not usually coincide. Otherwise this system of labour exchange cannot be used for the advantage of both. Since most of the households in the rural areas operated some land during the 19th and first half of 20th century, the prevalence of badli was probably much more important than it is today, because exchanging labour power in such a situation is the only means of arranging additional labour power during peak of activities. Thus with the emergence of landless workers, badli has undergone a rapid decline. It can be argued that the practice of 'badli' might increase to some extent in the future as many of the cultivators face liquidity problems to pay the wage bills. In the project area only 170 mandays of labour were exchanged for an equal number of man-days of labour. We also asked the labourer to specify the month when he supplied labour to others. Almost all mentioned the months Jaista to Bhadra which are not the peak agricultural months for the area although the months represent the next busiest period. It appears that during the peak months (harvesting period), the landowners cannot practice badli as it almost always overlaps with others' peak (Aman is a photosensitive crop and its harvest period is quite short lived). Since land preparation and sowing dates are much more flexible than harvesting (land preparation and sowing dates of b. aman are extremely flexible; see costs and returns survey for sowing dates of b. aman), badli can be practiced during the land preparation stage of the crop (Baishak to Bhadra).

## 6.19

The survey also asked the respondents the wage at which they would be willing to work in pond excavation or road construction works. As expected the landholding groups above 2 acres said they would be unwilling whatever the wage rate. For lower groups also some households reported that they would not work in pond excavation or road construction activities even though the wage rate was very high. For others willingness to work at a particular wage rate depends upon the month of work. If the authorities excavate ponds or construct roads during Ashwin, Kartic, Falgoon, Chaitra and Baishakh most of the households reported their willingness to work at the existing wage rate of 3 seers of wheat per day. In Jaista, Ashar, Agrahayan, Poush and Sravan, the wage rate would have to be much higher to attract the labourers. In Agrahayan and Poush, the wage rate would have to be as high as 5 seers of wheat per day, compared with 3-1/2 - 4 seers during Jaista, Ashar and Sravan.

The project should therefore concentrate its excavation activities during the months of Ashwin, Kartic, Magh, Falgun and Chaitra. This will help increase the income of the local poorest.

### COMMODITY MARKET

6.20

The commodity market in the village economy is a slightly advanced form of barter. Commodities are exchanged either in a daily market or in a village hat which usually take place twice a week. The daily markets are located at some important villages and the commodities exchanged in the market are only some perishable commodities like fish, milk etc. At Neergaschi and Tarash, there are two daily markets. A more important institution for the exchange of commodities is the village hat. Hat is not only a market place, it is also a place of social gathering and exchange of views. Every adult male of the villages around a hat visits the hat on the hat day. In most of the hats of the project area, we observed the predominance of petty sellers. From very early in the morning people get ready for the hat and visit the hat with the commodities they like to sell. Most of the sellers are at the same time buyers; villagers sell their surplus commodity and buy the commodities they need. Paddy, rice, vegetables, fish etc. are exchanged within the members of the locality. The chief cash earning commodities are rice or paddy, poultry birds and eggs which are purchased by agents of businessmen of Shirajganj, Bogra and Pabna. The movement of the commodities out of the hat to commercial places is much more important for the Raiganj part. From Tarash, due to poor communications, the outward movement of poultry birds and eggs is quite low, although increasing recently due to better road communication developed from Solonga to Tarash.

The location and timing of the hats are well planned. From any village of the project area, the nearest hat is within 3 miles of walk. Most of the villages have two hats within 4 or 5 miles. The distance enables even the poorest to go to the hat to exchange the commodities they have. Also the hat days of adjacent hats do not coincide and this ensures that the seller can go to at least two hats to judge two market places. For example, Neemgacchi hat days are Thursday and Monday and the nearest hat from Neemgacchi, Shaliageri hat takes place on Wednesday and Sunday. Chandaikona, a very important hat of the Raiganj thana, takes place on Saturdays and Tuesdays. Table 58 shows the commodities sold reported by the respondents. The frequencies indicate that not all households do or can participate in the hat or market. Selling rice or paddy is much more important for higher land groups. For the landless and near landless, poultry birds and eggs were reported the most important article sold in the hat. Selling goats is also quite important. The

Table 58

Number of Households Reported Selling Commodities

Land Group	No. of H.H.	Number of H.H. Selling						
		Rice/paddy	fish	Poultry and eggs	Goat/sheep	Cow	Wheat	Milk
00	26	1	1	11	3	-	-	-
01- 100	155	19	5	46	8	-	-	9
101- 200	69	42	-	22	2	1	6	3
201- 400	63	47	1	24	3	4	4	1
401- 800	41	36	-	11	5	1	2	1
800-1000	20	20	-	6	-	2	1	-
1001+	27	25	-	6	1	-	4	-

modal frequency commodity for landgroups upto 1 acre is poultry birds and eggs, but paddy or rice for all other groups. Fish was not reported to be an important saleable commodity. Most households catch fish from the water bodies for self consumption.

## 6.21

Distance or place of the selling spot is an important determinant of price received by the sellers. The smaller landowners usually travel lower distances, i.e., they sell their commodities to the nearest hat. Selling the commodities at a more distant hat which is well connected with important urban and commercial centres can increase the real income of the poor. Since they sell only a small quantity of goods, they have little incentive to travel greater distances for a higher price. The bigger landowners, however, reported travelling greater distances probably because minor price variation can mean a significant change of absolute income for them.

CREDIT MARKET

## 6.22

In the project area the credit market is not at all developed. The more important source of credit is non-institutional, i.e. credit

obtained from friends, relatives, landlords or moneylenders. The institutional credit sources are much less significant and they are biased towards the bigger land owners. In the last 12 months, 23 borrowings out of 39 was made by more than 4 acre owners. In the year before that, the share of smaller holders was slightly better. It should be noted that our credit questions asked only the frequency of borrowing, not the amount of taka borrowed. Although in the last 12 months 59 percent of the number of borrowings from institutional sources went to more than 4 acre owners, the value share of them is expected to be much higher as the larger landowners are in better position to borrow more from institutional sources. Smaller landowners are the principal borrowers from non-institutional sources. In the last 12 months 52 borrowings out of 58 was made by less than 4 acre owners. In the earlier year also 186 borrowings out of 189 were made by them. Table 59 shows the number of households reported borrowing and the total frequency of borrowing from institutional and non-institutional sources.

Table 59

Borrowing from Institutional and Non-Institutional Sources

Land Groups	No. of H.H. borrowing*	No. of times borrowed in the last 12 months		No. of times borrowed in the year before that	
		Institutional	Non-institutional	Institutional	Non-Institutional
00	5(19.2)	-	1	-	9
01- 100	58(37.4)	4	36	7	114
101- 200	28(40.6)	6	12	5	44
201- 400	23(36.5)	6	3	7	19
401- 800	13(31.7)	8	2	7	1
801-1000	9(45.0)	5	2	4	1
1001+	16(59.2)	10	2	5	1

\* Figures in the parantheses show the percent of households of a group borrowing.

Non-institutional sources, as the nature of the market shows, obviously finance the consumption needs of households. Although the landless need consumption loans most, note that only 19 per cent of them received any loan. This might be due to the high risk of lending to the landless. Marginal owners receive loans to a greater extent than the landless.

Interestingly the bigger land owners are important borrowers; about 50 percent of more than 8 acre owners borrowed last year. Most of them, however, borrowed from official sources.

VII. CROPPING PATTERN

## 7.01

Cropping patterns in the project area are relatively simple. Most of the area is mono-cropped and only in a small fraction of total area is double or triple cropping practiced. To give an idea about the extent of multiple cropping Table 60 calculates the cropping intensity in each of the unions surveyed. Excepting Madhainagar Union, all other

Table 60  
Cropping-Intensity in the Surveyed Unions

Unions	Cultivable land (operational)	Cropped Area	Cropping Intensity(%)
Sonakhara	120.49	155.10	128.7
Dhamainagar	292.34	321.74	110.1
Madhainagar	46.11	79.56	172.5
Deshigram	167.01	171.70	102.8
Tarash	72.34	83.45	115.3
Noagaon	173.95	184.37	105.9
Magurabinod	108.19	124.88	115.4
Soguna	87.14	88.64	101.7
Baruhas	252.44	238.24	94.4
All Unions	1320.01	1447.68	109.7

unions can be considered mono-cropped areas. Baruhash shows the lowest cropping intensity, less than 100%, and it is predominantly a b. aman cultivated area. In Raiganj part of the project area, b. aman is relatively a less important crop compared to the area of local aus, HYV aus and transplanted local aman. The overall cropping intensity was found to be about 110% indicating that on the average only 10 percent of the total cultivable area of the respondents was cropped twice during the last year.

7.02

The overall cropping intensity indicates the mean intensity, but cropping intensity often varies significantly among landholding groups. Table 61 shows cropping intensity by land ownership groups. Below 1 acre owners reported highest cropping intensity among all the land ownership groups. Above 8 acre owners reported lowest intensity of land used. Different studies also obtained this inverse relationship between land-ownership and cropping intensity. Smaller owners tend to use their land

Table 61

Cropping Intensity by Land Ownership  
Groups

Land Groups	Cropping Intensity	Irrigated area (ac.)	% of Area Irrigated
01- 100	134.06	3.57	3.314
101- 200	114.45	1.98	1.331
201- 400	110.65	14.96	5.977
401- 800	115.82	7.43	2.898
801-1000	104.43		
1001+	106.41	21.45	4.348
All Groups	110.83	49.39	3.412

more intensively to increase their income than the bigger farmers. Table 61 also shows the area irrigated by the cultivators. In the project area, irrigation is almost completely absent; only 3.4 percent of total cropped area was reported under irrigation. Moreover most of the irrigated area belongs to big land owners : out of 49 acres of irrigated land, 58.8 percent was irrigated by more than 4 acre owners. Thus, better agricultural lands are either controlled by the bigger owners or they can better afford the cost of irrigation. Before the introduction of the Neengacchi project, irrigation was relatively more important atleast in Borogaon Mouza. Households of Borogaon reported that they used to irrigate

about 85 acres of land by using the water of the Borogaon pond to grow winter crops.<sup>1</sup>

## 7.03

Cultivators of the project area cultivate only a few agricultural crops. Broadcast aman paddy and local transplanted aman are the major agricultural crops cultivated; more than 68 percent of the cropped acreage was under these two crops in the last agricultural year. Table 62 shows area cultivated by crops and by land groups. The importance of crops cultivated in descending order are Broadcast aman (deepwater paddy), transplanted local aman, aus local, wheat, aus or boro high yielding variety, transplanted high yielding aman, mixed aus and aman, oil seeds, jute, local

Table 62  
Crops Cultivated During the Last Agricultural Year  
(in acres)

Land Groups	b.Aman	T. Aman (L)	Mixed Aus/Aman	Aus (L)	Aus/Boro (HYV)	Wheat	Jute
00	0.33	-	-	.66	0.49	0.33	-
01- 100	29.83	33.55	0.66	33.02	5.91	2.11	-
101- 200	65.18	36.52	2.63	28.05	2.67	7.00	1.83
201- 400	96.83	66.24	11.99	42.34	13.95	8.72	2.03
401- 800	125.94	40.55	7.89	38.48	2.39	20.30	1.40
801-1000	72.59	51.66	2.78	40.09	7.19	3.96	2.62
1001+	268.51	103.70	5.96	48.87	14.29	23.35	4.91
All Groups	659.21	332.22	31.91	231.51	46.89	65.77	12.79

boro paddy, vegetables and pulses and spices. Note that the mixed aus/aman is not as important as is suggested by the cropping pattern groups of the

<sup>1</sup> Now in Borogaon, a shallow tubewell is used for irrigating the winter crops.

mouzas. B. aman paddy is nearly half of total area cultivated. Due to sedimentation of the beel it appears that t. aman and aus are becoming more important displacing b. aman. As mentioned earlier, there are also considerable variations in cropping pattern between the Raiganj part of the project and the Tarash part. The Tarash part is a predominantly b. aman area while the Raiganj part is growing t. aman and aus on a considerable scale. However, wheat and HYV boro or aus cultivation appear more important in the Soguna Union, a union of Tarash where cultivators irrigate part of their land during the dry season to grow these dry season crops. For the timing of the crops cultivated, the reader is referred to the crop-calender of the project area.

7.04

One interesting point that emerges from the above table is the relative importance of t. aman and aus for the smaller land owners compared to larger owners. The modal crop for landless is aus and for less than 1 acre owners it is t. aman. For higher groups, the modal crop is b. aman. Crops cultivated may be an outcome of technical constraints and/or socio-economic position of households. Although some studies have found that the bigger owners, as they are labour deficit families, tend to cultivate less labour intensive crops, in our case, technical considerations appears more important. The land area of b. aman has little or no alternative use; t. aman or aus cannot survive the deep water level where b. aman is grown. However, a closer analysis of the crop selection decision among the other crops cultivated may indicate the importance of socio-economic determinants. Such analysis is not attempted here but it is clear that the decision to cultivate wheat, aus (HYV), aus (local), boro (local), pulses, vegetables etc. must have been influenced by the family's labour supply relative to its land area. Another factor which enters the decision-making process of the household is its own cereal requirement. Consumption needs encourage the smaller farmers to allocate a greater fraction of their land to cereal cultivation. Note from the table that the smaller farmers do not cultivate jute, and their area under oil seeds, vegetables, pulses or spices is also quite unimportant compared to the relative importance of these non-cereal crops for higher groups. Table 63 shows the relative importance of cereal and non-cereal crops for different land ownership groups. The relationship between relative importance of land allocated to cereal and land ownership is very strong indicating that other factors apart from subsistence need also play important role in determining the acreage allocation. Other factors which influences decision to cultivate crops include benefit-cost ratios of competing crops, cash cost of crop cultivation, labour requirements of crops, proximity to important trading or urban centres, crop rotation considerations for increasing fertility of the soil etc. Land owners owned to larger areas of land the modal crop for landless is aus and for less than 1 acre owners it is t. aman. For higher groups, the modal crop is b. aman. Crops cultivated may be an outcome of technical constraints and/or socio-economic position of households. Although some studies have found that the bigger owners, as they are labour deficit families, tend to cultivate less labour intensive crops, in our case, technical considerations appears more important. The land area of b. aman has little or no alternative use; t. aman or aus cannot survive the deep water level where b. aman is grown. However, a closer analysis of the crop selection decision among the other crops cultivated may indicate the importance of socio-economic determinants. Such analysis is not attempted here but it is clear that the decision to cultivate wheat, aus (HYV), aus (local), boro (local), pulses, vegetables etc. must have been influenced by the family's labour supply relative to its land area. Another factor which enters the decision-making process of the household is its own cereal requirement. Consumption needs encourage the smaller farmers to allocate a greater fraction of their land to cereal cultivation. Note from the table that the smaller farmers do not cultivate jute, and their area under oil seeds, vegetables, pulses or spices is also quite unimportant compared to the relative importance of these non-cereal crops for higher groups. Table 63 shows the relative importance of cereal and non-cereal crops for different land ownership groups. The relationship between relative importance of land allocated to cereal and land ownership is very strong indicating that other factors apart from subsistence need also play important role in determining the acreage allocation. Other factors which influences decision to cultivate crops include benefit-cost ratios of competing crops, cash cost of crop cultivation, labour requirements of crops, proximity to important trading or urban centres, crop rotation considerations for increasing fertility of the soil etc.

Table 63  
Relative Importance of Area Allocated to  
Cereal Crops

Land Groups	% of area under cereal	% of area under other crops
00	100.0	-
01- 100	98.2	1.8
101- 200	96.6	3.3
201- 400	97.8	2.2
401- 800	95.9	4.1
801-1000	97.6	2.4
1001+	94.8	5.2

## 7.05

Table 64 shows the yields per acre of the different crops cultivated by the respondents. The yields does not show any systematic relationship with landownership. It is usually argued that the per acre yield of smaller farmers is greater than the bigger farmers in a traditional agriculture (an agricultural economy where possibilities of substitution between human labour and machinery and land and chemical compounds are quite limited). In traditional agriculture labour is the most important input for increasing productivity of land and thus it can be expected that the households who are well-endowed with labour will produce more per acre by more intensive use of their labour power. Our survey, as the table indicates, does not support the above hypothesis. For wheat alone, smaller farmers seem to have performed better. For b.aman, the yield rate is very erratic. It might be due to the lumping of various b.aman varieties. B.aman is a very old paddy of Bangladesh and scientists have discovered as many as 500 to 600 varieties of it. During our survey also we observed many varieties of b.aman. Some of them are highly tolerant to flood and drought while others are more delicate and with lower resistant power. Farmers cultivate many varieties of b.aman, highly tolerant low yielding varieties as well as delicate and relatively high yielding varieties to minimize the risk of crop failure. Obviously the risk factor depends upon the normal flooding phenomenon of

the plot or plots cultivated by a household and therefore reaction of one farmer may be quite different from another for same quality land depending upon the number of plots owned by the family, flooding of the plots etc.

Table 64  
Yield Per Acre of Crops Cultivated  
(maund/acre)

Land Groups	B.Aman	Aus(L)	T.Aman	Aus/Boro (HYV)	Wheat	Oil Seed
00	30.0	15.0	-	42.0	9.0	-
01- 100	17.6	15.7	15.8	41.0	9.9	4.2
101- 200	19.1	15.7	16.3	51.3	8.4	4.3
201- 400	16.8	17.7	18.1	51.0	6.6	6.0
401- 800	16.2	16.2	17.5	55.5	8.1	6.6
801-1000	15.9	15.0	17.7	44.1	7.5	N.A.
1001+	16.8	18.1	17.7	46.5	7.5	5.4

Notes : NA = Not available

For paddy output is given in terms of paddy per acre (1 maund of paddy = 25 seers of rice).

# CROP CALENDER OF NEEMGACGHI

## PROJECT AREA (JANUARY, 1981)

CROPS.		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
		MAG	FAL	CHA	BAI	JAI	ASH	SRA	DHA	ASH	KAR	AGR	POH	MAG	FAL	CHA
BROADCAST AMAN	1.															
	2.															
	3.															
BROADCAST. AUS.																
T. AMAN. (LOCAL) (HYV)																
BORO (HYV)																
PURBACHI	1.															
	2.															
MIXED AUS/AMAN																
WHEAT.																
JUTE.																
MUSTARD	1.															
	2.															
CHINA.																

### NOTES.

B. AMAN 1: BHADRER DHAN OR SAMPATTI DIGHA  
 2: ASHWINI DIGHA, KARTIC DIGHA.  
 3: DACCA, BARON, KHAGURA, SHADA DIGHA. JAITAGOROL.

PURBACH 1: SOWING AND HARVESTING DATES FOR RAIGONJ.  
 2: SOWING AND HARVESTING DATES FOR TARASH.

MUSTARD 1: SOWING AND HARVESTING DATES FOR RAIGONJ.  
 2: SOWING AND HARVESTING DATES FOR TARASH.

## VIII. LEVELS OF LIVING

### 8.01

It is well-known that the nature of differences in the levels of living in rural Bangladesh is quite different from that in the urban centres. In the cities, difference in economic status has its stark manifestation in the most modern amenities and comforts of life being enjoyed by one section of the population with the other living in the most inhuman conditions of wretched slums just next to their walls. In the villages the picture is somewhat different. The general level of living there is low and this is the obvious result of the continuous exploitation of the rural economy as a whole within the general framework of the national economy.

### 8.02

Thus members of even the richest households of the village do not differ significantly from the poorer co-villagers in their clothing, education and manners. Modern amenities of life are sure to be absent in their houses as well. But this does not mean that we have an all-pervading egalitarianism in our rural society. As is obvious from the foregoing discussion of the pattern of ownership of the means of production, we have in the villages of the project area a sharply differentiated structure. And this differentiation obviously cannot but have a reflection in the differentiated levels of living of the population. Though on a much compressed scale, this is reflected in the differentiated conditions of housing (i.e. number of houses, the material of which they are built, etc.), in sources of drinking water and especially in the difference of food they can afford to have. Thus in the villages, differences in economic status stem not from having a car or from being able to afford travel abroad, but from the simple arithmetic of how many times a particular household can afford to have a bare meal of rice. The project area is, quite naturally, not an exception to this

## FOOD

### 8.03

Of the households surveyed a detailed inquiry was made as to the food taken by them over the past seven days (i.e. a week). The summarised results have been compiled in a table which is presented below:

Table 65

Consumption of Different Food-Items Over Past  
Seven Days

(Number of times by an average-household)

Land Groups	Rice	Wheat	Dal	Mus- tard	Ghee	Fish	Meat	Eggs	Vege- table
00	12.4	6.5	1.4	5.7	0.00	7.9	0.4	0.1	5.3
01- 100	14.1	5.6	2.6	6.0	0.02	8.0	0.5	0.6	6.5
101- 200	17.2	3.2	2.6	8.1	0.4	9.0	1.3	0.4	7.5
201- 400	18.9	2.6	4.9	9.9	0.15	10.4	0.8	1.0	7.9
401- 800	19.9	1.7	4.3	10.4	0.20	11.6	2.4	0.9	8.9
801-1000	21.0	2.5	6.1	13.0	0.80	10.1	1.4	1.1	8.5
1001+	20.5	2.9	10.1	14.7	1.80	11.0	2.3	2.3	10.9

The picture is quite self-evident. The poorest section of the population could not even afford two meals of rice a day over the period under inquiry. It may seem that adding in the wheat consumed, these families were on the average having almost three meals a day. But it should be kept in mind here that not being able to have three proper meals a day, these people were trying to divide a very small amount of food available for a day into 2 or 3 meals. Thus their hunger remained unsatiated after each of their meals. The trend in the consumption is to be noted. On the one hand wheat appears to have a negative income elasticity. But there is a break-even point. At the top consumption of wheat is again found to increase. This is explained by the fact that very rich households tend to adopt the 'bhodrolok' practice (a manifestation of sophistication) of having 'breakfast' (nasta) instead of a meal of rice in the morning. Traditionally rice is eaten at all meals. Thus while poorer people take wheat out of poverty and tend to substitute it with rice whenever increase in income makes it possible for them, very rich families resort to wheat-items for breakfast as a symbol of their 'enlightenment' catching up with the urban gentry and thus establish their higher status. Consumption of all other food-items usually rises with income. The obvious thing that can be seen from the table is the

highly unbalanced nature of the diet. And this is true even for the richest households. For the poor this is particularly true. 'Dal' (i.e. pulses) is generally termed as the 'poor man's protein'. But it appears that the poor have neither the rich man's protein (i.e. meat, eggs, fish etc.) nor the 'poor-man's'. Whatever protein is being consumed is mostly going to the richer households.

## 8.04

Meat and eggs are clearly luxury-items. For the poor people poultry birds and eggs are the only few things which they can offer to the market in order to fetch some rice or wheat. Therefore, it is only under very extraordinary circumstances that they can allow themselves the extreme luxury of consuming meat or eggs. The maximum that they expect is to fetch some rice or wheat which they can then proceed to consume with some salt, a bit of chilli, or other things of that nature. Thinking of consuming 'ghee' (a costly milk-product) is simply arrogance on their part. Even with the richer households 'ghee' is only an occasional food-item. Even consumption of vegetables is not very common. Very late recession of water from the land and its very early submersion in most part of the project area do not allow pulses to be grown. The very same reasons do not allow winter vegetables to be grown on a large scale. But this should not prevent the villagers from using their kitchen gardens as the source of vegetables for their own consumption and even for sale. While there are some instances of this being the case, yet it seemed that traditionally growing and consuming vegetables is not very common in the area.

## 8.05

Mustard oil is used in the preparation of food items other than rice and bread baked from wheat. Hence its consumption is only an indirect index of the consumption of other food-items as accompaniment to rice or bread. (The poorest sections do not even bother to bake breads from wheat as this entails the cost of fuel-either money or usually the labour in fetching organic materials to be used as fuel. They therefore just mix the flour with some water and eat it uncooked.)

## 8.06

The survey was conducted during the so-called crisis months i.e. the pre-harvest months of Ashwin-Kartik. So it can be expected that for other better-off months the consumption picture will turn out more encouraging. But this can hardly be said regarding fish because this was exactly the peak period in fishing and fish-availability. It is, therefore, to be admitted that for the overwhelming majority of the population even consumption of fish is dismally low. And this is all the more distressing if it is kept in mind that the area for its most part is engulfed with water bodies (practically constituting part of the 'Chalan Beel') and is an area where a major Fish Culture Project is long underway.

## SOURCES OF DRINKING WATER

8.07

The sources of drinking-water available to the people of the project area were as follows: (1) Tube well, (2) Protected well, (3) Open well and (4) Pond. But it was found that nobody was drinking water from ponds. More than 50% of the surveyed households were drinking water from tube wells. The remainders were fetching water for drinking from wells. Most of these (85%) were open while another 15% were protected.

No definite trend can be found regarding the influence of land-ownership on the source of drinking water as can be seen from table 66. Most of the richer households were, however, found to have a tube-well sunk in their own compound or in their proximity and were drawing water from it. It has been stated earlier that people belonging to zero-land group are those who do not have even a homestead of their own. These people in a good number of cases were found to live on or near the compound of the richer households with whom they were bound by various informal

Table 66

Sources of Drinking Water for Different Land Groups  
(In Percentages of the Surveyed Households)

Land Groups	Tube Well	Open Well	Protected Well	Total
00	61	30	9	100
01- 100	39	54	7	100
101- 200	46	48	6	100
201- 400	54	40	6	100
401- 800	53	33	14	100
801-1000	58	32	10	100
1001+	78	15	7	100

dependence-relationships. This partly explains the higher percentage of this group drinking water from tube-wells. As for the rest, this percentage seems to be positively correlated with the land-ownership status. But regarding percentages of protected-wells no such definite trend can be asserted.

## CHILD MORTALITY

8.08

Information gathered from the surveyed households regarding child mortality since 1971 can be seen from table 67.

Table 67

Number, Causes and Age of children at the Time of Death

Land Groups	No. surv-eyed	No. of deaths	Age at the time of death	Causes of death
00	26	7	From 3 to 5 years - 2 Less than 1 month - 5	Not diagnosed - 2 Complications during delivery - 3
01- 100	155	27	From 1 month to less than 1 year - 8 From 1 year to less than 3 years - 4 From 3 years less than 5 years - 7 5 years or more - 3	Small Pox - 3 Typhoid - 1 Diarrhoea - 5 Fever - 4 Malarial Fever - 1 Not Diagnosed* - 9
101- 200	69	13	Less than 1 month - 2 From 1 month to 1 year - 4 From 1 year to 3 years - 6 From 3 years to 5 years - 1	Drowned in water - 1 Diarrhoea - 5 Dysentery - 2 Fever - 1 Not Diagnosed - 4
201- 400	63	11	Less than 1 month - 2 From 1 month to 1 year - 3 From 1 year to 3 years - 2 From 3 years to 5 years - 2 5 years or more - 2	Tetanus - 1 Small Pox - 1 Diarrhoea - 2 Not Diagnosed - 7
401- 800	41	7	Less than 1 month - 1 From 1 month to 4 years - 1 From 1 year to 3 years - 2 From 3 years to 5 years - 2 5 years or more - 1	Drowned in water - 1 Cholera - 1 Tetanus - 1 Diarrhoea - 2 Fever - 1 Not Diagnosed - 1
801-1000	20	5	From 1 month to 1 year - 1 From 1 year to 3 years - 2 From 3 years to 5 years - 2 From 1 year to 3 years - 1	Diarrhoea - 3 Malaria - 1 Not Diagnosed - 1 Typhoid - 1
1001+	27	1	From 1 year to 3 years - 1	

\* Cases of mal-nutrition have been lumped together with those totally not diagnosed under this head.

As was already noted in the discussion on demography, most of the households of the zero land-group were new families with young spouse having one child  $\sigma \sim \tau \sigma$ . This explains the observed low incidence of child-mortality among them.

## 8.09

The information of the table is representative of the distressing conditions of health-care that are general for the villages. Of the diagnosed diseases causing death to children diarrhoea is the single most important one. And given the villagers' knowledge about diet, this is only to be expected. Malnutrition resulting in death is quite frequent and this is reflected in the preponderance of 'not diagnosed' diseases accounting for children's death. Delivery of children is invariably being carried out by village maids. Insufficient care and unhygienic practices result in births being followed by deaths in a few days. As is well-known no arrangements for health care (not to speak of their adequacy) exist in the villages. Life and death are totally entrusted to the hands of nature and a few quacks. Surely children cannot escape their fate being born and having to live in the villages!

## INDEX OF MALNUTRITION

## 8.10

Poverty and low income of households create the problems of malnutrition among the members. All members are not equally affected by low income of the households. The children and the pregnant women, who need better food supply are worst affected by poverty and low income of the household. In our survey we tried to estimate an index of malnutrition among the children below 10 years of age. Degree of malnutrition of a child can be approximated by three ways:<sup>1</sup> examining the diet of the children and estimating the calorie and other food contents of the diet, anthropometry or measuring height, weight and circumference of the arm and comparing them with the age of the children and lastly, detailed laboratory assessment of deficiency. For an one shot survey, anthropometry is the most useful way of estimating the degree of malnutrition. The survey measured height and weight of the children and noted the age of children as reported by respondents. Obvious mis-reporting of age was corrected by more intensive questioning. Since the age figures are not very dependable, our index of nutrition is based on height and weight measurements.<sup>2</sup> The percent value of the

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<sup>1</sup> We are grateful to Dr. Sultana of Children Nutrition Unit, Dacca, for educating us about the various aspects of malnutrition and the method of constructing the malnutrition index.

<sup>2</sup> Weight to height index is constructed by dividing the weight of a child by the weight of the standard child of the same height expressed in percentage.

index is grouped into four categories, normal nutrition level (91% and above), first degree malnutrition (76 to 90%), second degree malnutrition (61 to 75%) and third degree malnutrition (below 61%). Table 68 shows the number of children in different categories by three major land groups, below subsistence land group (00-200 decimal), self sufficient group (201-400 decimal) and more than self sufficient land group (above 400 decimal owners). Note that third degree malnutrition is extremely rare in the project area. Only 2 percent of the children whose height and weight information are available were found to belong to this extremely low nutritional level. Another 6 percent children were in the category 'second degree mal-nutrition'. It is clear that most of the children in the project area are normal and about 33 percent was nutritionally deficient. Prevalence of malnutrition is not also equal among the three land groups considered. In the below subsistence group 66 percent of the children were found to be normal by the above index compared with 76 percent for above self-sufficient land group.

Table 68

Degree of Mal-nutrition Among Children \*

Land Groups	Mal-nutrition			
	Normal nutrition	1st degree	2nd degree	3rd degree
00-200	157 (65.69)**	57	20	5
201-400	47 (60.25)	28	2	1
401+	75 (76.53)	19	3	1
All Groups	279 (67.22)	104 (25.06)	25 (6.02)	7 (1.67)

\*\* Figures in the parantheses indicate row percentages.

\* The height and weight figures of Sonakhara, Madhainagar, Dhamainagar, Baruhas and Deshigram unions are used in the above table.

## IX. REPRESENTATION IN THE RURAL INSTITUTIONS

### 9.01

Rural institutions having some sort of organizational form can be classified into two broad heads: (i) government sponsored and (ii) not sponsored by the government. Among those sponsored by the government, union councils were, not very long ago, the most prominent ones. These are the local government bodies at the level of the unions. Each Union is divided into various wards (which may or may not coincide with the villages, depending on their populations). Members from each ward and the Chairman and Vice-Chairman for the whole union are elected by direct vote on the basis of universal franchise. All government agencies in their extension work in the villages very closely depend on these councils. In the channelisation of government resources these play the role of vital links. Thus for the villagers union councils embody formidable authority. It is well known that from late sixties in some parts of the country other organisational set-ups were also set up under the aegis of various executive agencies of the government. Important among them are the co-operatives under the three-tier system of the I.R.D.P. As these emerged as a channel for the flow of credit, holding their offices also turned out to be important. In the general agricultural extension thrust undertaken since approximately that period I.R.D.P. co-operatives are not alone. There are instances of attempts at other organizational set ups as well. Notwithstanding these ramifications, Union Councils remained central to village life. All these other set-ups with their very specific functions tended to be intimately connected with the authority of the Union Councils.

### 9.02

Establishment of Gram Sarkars (Village Government) is, in this respect, the most recent phenomenon. The survey was carried out at a time when Gram Sarkars were literally nascent or even, in some villages, yet to be formed. Under the new arrangement each village will have a 'full-fledged' government with a President, a Vice-President, 6 Ministers (with distinct and specified portfolios such as Education, Religion, Finance etc.) and 6 Members: all being elected (selected?) by the villagers by direct vote. Of the Members, 2 are to be elected from amongst landless and another 2 from women. Officially it is professed that much authority will be relegated directly to the village-governments even if that will amount to undermining the authority that the traditional union councils have exercised hitherto.

## 9.03

It is quite obvious that with the introduction and setting up of gram sarkers, nominal participation in government sponsored institutions by the villagers has increased. The mere increase in the number of the posts to be held in government institutions and the aforementioned specified requirements might have made it possible for the down-trodden sections to have some of their people named as office-bearers. But table 69 shows that involvement of poorer sections in the Gram-Sarkers has not been that significant. Along with the Gram-Sarkers there has been on the part of the government another programme of setting up Youth Complexes in every village. These complexes have been entrusted with the right to collect levies on trade at the local market-places as a source of finance. The members of the complexes are expected to establish independent or collective enterprises, using this money and additional finance to be obtained from the banks. Although the drive for setting up gram-sarkers has been quite thorough this is not so in the case of Youth Complexes. In most of the villages youth-complexes were yet to be established.

## 9.04

While with households owning large amounts of land every other household was found to be holding some post in the local government bodies, as one descends along the landholding size the intensity of representation in the rural institutions steadily declines. None of the households owning no homestead land was found to be represented in any of the institutions; not even through members of their kin-group (with one lone exception). With households having a homestead but no or very little cultivable land the condition is not very different, although some of them have richer kin holding offices in some of these institutions. Another thing that can be noted is that most of these are cases of recent inclusion. It will be not a mistake to associate these inclusions with the setting up of gram sarkers (as will be evident from table 70). It may seem curious that despite specified requirement of having representatives of the landless in the gram sarkers their actual representation is so little. This is explained by the fact that in many cases the wealthier families had their grown up but not separated sons (and hence from legal point of view not owning any land) to occupy the seats reserved for the landless. Information regarding the type of the institution and capacity in which representation is achieved can be obtained from table 70.

Table 69

Representation in the Rural Institutions

Land Groups	No. surveyed	From amongst family members	From kin-group	Period of Association	
00	26	0	1	Less than 1 year	- 1
01- 100	155	9	15	Less than 1 year	- 17
				From 1 to 3 years	- 4
				More than 3 years	- 3
101- 200	19	2	8	Less than 1 year	- 6
				More than 3 years	- 4
201- 400	63	3	6	Less than 1 year	- 7
				More than 3 years	- 2
401- 800	41	10	5	Less than 1 year	- 8
				From 1 to 3 years	- 2
				More than 3 years	- 5
801- 1000	20	11	2	Less than 1 year	- 7
				From 1 to 3 years	- 1
				More than 3 years	- 5
1001+	27	15	2	Less than 1 year	- 5
				From 1 to 3 years	- 4
				More than 3 years	- 8

Table 70  
Specifications of Representation to the Rural  
Institutions

Land Groups	Description of the Institution and Post	Frequency
00	Member (Gram Sarker)	1
01- 100	Chairman (Union Council)	2
	Member (Union Council)	2
	President (Gram Sarker)	10
	Ministers (Gram Sarker)	8
	Member (Gram Sarker)	2
101- 200	Member (Union Council)	2
	President (Gram Sarker)	3
	Minister (Gram Sarker)	5
201- 400	Chairman (Union Council)	4
	President (Gram Sarker)	3
	Ministers (Gram Sarker)	2
401- 800	Secretary (Union Council)	3
	Member (Union Council)	3
	President (Gram Sarker)	6
	Ministers (Gram Sarker)	3
801- 1000	Secretary (Union Council)	1
	Member (Union Council)	5
	President (Gram Sarker)	4
	Ministers (Gram Sarker)	3
	Chairman (Union Council)	3
1001+	Member (Union Council)	6
	President (Gram Sarker)	7
	Minister (Gram Sarker)	1

## 9.05

While assessing the information of table 70 it should be kept in mind that for each land-group representation through members of the kin group is included. Otherwise it may seem that there are many landless people as Chairmen of the Union Councils and Presidents of the Gram Sarkers !

## 9.06

But in rural life the most powerful institutions are those not sponsored by the government. Generally they go by the name 'Shamaj'. Formally 'Shamaj' is the general body of the villagers. But in reality for reasons quite obvious it represents the decisions of the most powerful households of the village. Decisions are taken in the general meeting of the households (represented through their adult members) belonging to the Shamaj. There is of course no written (or for that matter unwritten) statute laying down the jurisdiction of the Shamaj.

## 9.07

Virtually anything and everything come under its jurisdiction. Decisions of the Shamaj, although they do not have any legal backing are in practice binding on the members. Cases of insubordination are treated with boycott en masse. Behind the seeming harmlessness of the measure lies its cruel coercive nature.

## 9.08

In a village where most of the poorer majority are in one way or other dependent on the well-to-do households, unity of the village depends on whether these powerful families are in amity among themselves or not. If there is hostility among them then grouping within the Shamaj is quite likely but total split in the Shamaj is of course an extreme outcome. In most of the villages although the Shamaj is not split, it has become the arena of much in-fighting among two or more rival factions headed by powerful households. Thus factions are cases of vertical cleavage in rural life and these run across the horizontal demarcations. To this day they constitute the major aspect of factional activities in the villages. But despite these infights, in most of the villages we found the Shamaj not split. In Binodpur Kharkaria the 'Shamaj' which remained split for some-time got reunited after the leading families of the rival factions reached an amicable settlement. But if the village is inhabited by both Muslims and Hindus then invariably the two religious communities have separate 'Shamaj'. Here religion divides them, not factional interests. Table 71 gives a picture of the Shamaj as observed in different villages.

Table 71

Factional Alliances of Surveyed Households

Village	No. of Factions	Relative Strength of Different Factions.*
Tarash	2	A-5, B-10, N-5
Ulipur	4	A-8, B-5, C-1, D-3, N-2
Matia	3	A-13, B-3, C-3, N-1
Tagra	2	A-10, B-7, N-3
Khordo Madhainagar	2	A-7, B-8, N-5
Hazipur	2	A-10, B-1, N-9
Mouhar	2	A-8, B-2, N-10
Komorpur	2	A-11, B-3, N-6
Krishnapur	4	A-7, B-5, C-2, D-1, N-5
Chander Paikara	3	A-1, B-2, C-1, N-16
Dogaria	2	A-6, B-14
Bhetua	3	A-10, B-9, C-1
Baruhas	5	A-1, B-3, C-8, D-2, E-2
Monohorpur	5	A-1, B-11, C-1, D-2, E-2
Binodpur	2	A-8, B-2, N-10

\* Alphabets are used as substitutes for the names of the faction leaders (a faction is known by the name of its leader); N denotes 'neutral'.

Thus the number of factions within a Shamaj in a village can be as many as 5. In the other 5 villages factions are non-existent.

## ATTITUDE TOWARDS THE PROJECT

## 0.09

Seldom are the villagers (especially the ordinary, poor ones) asked to express their opinion regarding any project undertaken by the government. Hence when asked to express their opinion regarding the Fish Culture Project which is underway in their thanas, the villagers were caught quite unprepared and many of them were baffled. Obviously in most cases they did not have any opinion formed, but when asked to be readily and instantaneously expressed. Instead, being faced with the question and urged to express whatever came into their minds they tried to form an opinion and finally express it. The relationship between the project and the villages surveyed varied considerably. There were some villages which were entirely situated on the bank of the Fish Culture Project tanks. But there were others which had not had any of their tanks being taken over by the project and did not have any such instances in their immediate neighbourhood either. In the former cases the villagers could draw from their own, immediate experience, evaluating the changes that they had undergone when the tank passed into the hands of the project. But in the later, the villagers had either to fall back on the experience of others or to use their imagination in working out the possible consequences for them of the project being extended to their village.

## 9.10

But in neither of the types of cases were the villagers unanimous in their opinion. A highly simplified version of the opinions gathered is presented in the table 72. It is simplified because innumerable varieties of qualitative answers have been typified into three categories.

Table 72Attitude of the Villagers Towards the Project

(in percentages of the households)

Land Groups	Positive	Negative	Not Sure
00	67	25	8
01- 100	77	18	5
101- 200	73	17	10
201- 400	71	15	14
401- 800	58	24	18
801- 1000	78	16	6
1001+	84	12	4

It appears that the majority of the respondents had a positive opinion about the project. But this is a bit misleading. It turned out that most of the respondents (especially the poorer ones) are ready to appreciate the project if it will create for them considerable employment opportunity. As it happened, most of the villages surveyed were still awaiting the Fish Culture Project Extension. Hence for them it was quite natural to come out with answers incorporating 'if's. But in villages which had already undergone such extension a big percentage of households expressed dissatisfaction with the project because it has reduced their opportunities for fishing. So long as the tanks are of the status 'Khas' (i.e. supervised by the government's general administration, in other words, without any supervision) the people have free access to their fish resources, natural and 'uncultivated' though they are. But once taken over by the Fish Culture Project this access is stopped altogether. This is quite detrimental to their interests because fish from these natural resources served not only for their own personal consumption but could be exchanged to get other necessary commodities. As has already been stated earlier, the augmented fishing which is resulting (or at least supposed to result) from fish-culture efforts is not in any way benefiting the neighbouring people. The only benefit which the villagers experience is the employment opportunities provided by the work of re-excavation of these tanks. But this

is an one-shot augmentation in employment. True, maintenance and periodical cleaning of the tanks create further, though periodical rather than permanent employment opportunities. Extension of the project to a particular village entails collateral investment works as well, especially in the construction of roads etc. Above all this means a flow of government funds into the locality (whatever particular form this may happen to assume) which carries a cherished promise of an upward pull by the government of the otherwise down-trodden, cast-away village-economy. Construction of roads is welcomed not only because it creates employment opportunities but also as such. The area being for the most part low lying, roads are relatively few. For most of the year people have to depend on boats for transport. Therefore the people of the locality are especially grateful to the project because it has caused some major roads to be built connecting different important trading 'hats'. Thus increased employment opportunity resulting from re-excavation, maintenance, cleaning of the tanks and other allied works, construction of roads and some other spilling over effect of the flow of funds accompanying such extension, these are the three major reasons cited by the respondents that motivated them to have a positive attitude towards the project. (It is to be noted that the area being for its most part 'mono-crop', increase in employment opportunity is of crucial significance for its population.) On the other hand, restrictions on the access to fishing in these tanks is the single major factor accounting for their negative attitude. The state of not being sure which of the two factors weighed more heavily, was manifested in multifarious formulations which have been typified under the broad category 'not sure'.

#### ON JOINING COOPERATIVE

##### 9.11

Faced with the option whether to join a co-operative, divested with the ownership of the tanks in which necessary fixed investment for introducing fish-culture has already been carried out, in order to carry on the operation of these 'running concerns' so as to accrue benefit from them the respondents turned out to be quite unanimous. Almost all (98.5%) of them came out with affirmative answers to this question. Those who rejected such an offer, did so on the grounds of non-availability of time. These rich farmers have not only much land to engage their time in supervision (for cultivating by hired-labour) but also other occupations to contend for any time left over.

Table 73Reaction of the Households to the Proposal of Joining  
to Cooperatives

(percent of households)

Land Groups	Affirmative	Negative	Not Sure	Total
00	100	0	0	100
01- 100	100	0	0	100
101- 200	100	0	0	100
201- 400	100	0	0	100
401- 800	97	3	0	100
801- 1000	94	6	0	100
1001+	85	5	10	100

But there were others who apprehended that nothing good comes out from such ventures except breeding more corruption and therefore would not like to join into such effort.

9.12

To the overwhelming majority, however, there was no point in declining an offer whatever it may be. The conditions in which they find themselves are already so distressing that to them there is hardly anything to lose from the seemingly unarmful proposal of owning a disinvested tank, may be in common with others. It is in this mood that most of respondents reached their affirmative answer. Obviously there was no question of economic calculations and no effort of thinking it over thoroughly. When nothing is required to be put at stake, and when respondent is not alone in the venture (cooperative), it is something which will cost him nothing at worst. Hence proposal for joining into cooperatives to assume control over the disinvested tanks won almost complete approval.

9.13

It should also be mentioned that although this is a beel-area, people with fishing as their main occupation are almost non-existent. There is nothing surprising in this because fishing can become the permanent and principal occupation only with people living by the side of prodigious perennial water bodies, for example large rivers. In such areas special sects of people arise with fishing as their hereditary profession. There are cases where in a village the cultivators look down on those living on fishing, and the latter is regarded as a relatively inferior profession. But naturally no such psychological barrier to the adoption of fishing as a profession arises in the project area. This also in some part explains the readiness of the villagers to engage themselves in occupations arising out of the disinvestment of the project tanks to them.

## X. IMPLICATIONS FOR THE PROJECT

### 10.01

The following comments are based on the assumptions that the project will continue to excavate ponds, construct roads and cultivate the ponds excavated.

### 10.02

A comparison of poverty, inequality and income in two groups of Neengacchi project, namely Minshayar group and Neengacchi group, shows that Tarash has a lower cropping intensity, lower prevalence of tenancy, lower labour demand in the market etc. This makes Tarash a poorer area compared to the area of Neengacchi group. Since the ponds of the project under cultivation create output which is managed and marketed by government officials, local people have little interest in protecting the income of the ponds (whereas agricultural crops receive some degree of social protection and the social system of protection emerged precisely because most villagers are landowners and they are interested in protecting their crops). Therefore, government ponds are productive assets the output of which is unlikely to receive any social protection. Furthermore as many households of the project area are very poor and used to fish from the ponds, especially in Tarash, the problem of theft of fish from the ponds is expected to continue. The problem is expected to be much more acute in Tarash than in Raiganj for two reasons:

i. There is more poverty in Tarash than in Raiganj and moreover, in Tarash the extent of land tenancy is low implying that poor groups neither have any property of their own nor receive land from others to cultivate for themselves.

ii. Many of the ponds in Tarash before the takeover by the project, had some economic value to the local population, either as a source of fish or as a source of water. Hence, the extent of theft of fish from ponds, which is a direct function of social discontent coupled with poverty of the population, appears to be greater in Tarash. The solution of the problem does not lie in better protection of ponds by appointing more guards or destroying the fishing nets captured by raids. The latter may make the problem worse rather than improving it. The approach should be to incorporate the alleged thieves in productive activities of the project and to create a sense of participation among the members of the village in various activities of the project.

## 10.03

Some water bodies, it was reported, were used to irrigate the adjacent land during the winter season. Since the project's take-over of the ponds, the ponds have been used exclusively for fish culture (at least officially). This meant a loss of productive asset of the villagers in some areas. Although some illegal sale of water from ponds was reported for cultivating low water requiring winter crops, the general attitude towards the project in areas where ponds were used productively was hostile. The project should evaluate the benefit that accrues to the local population from a water body before taking it over. The higher the benefit, the greater is the resistance the project is expected to face. Moreover, if the social benefit of a pond prior to the takeover is higher than the expected benefit after the takeover, the project should decide not to take-over the pond. However, many ponds in Dhamainagar union and other adjacent places have zero economic value at the moment, and they can certainly be excavated and used for fish culture. Such derelict ponds also exist in Tarash which should be excavated first. However since most of the zero-economic value ponds are in Raiganj part and Northern part of Tarash, the above suggestion implies excavating ponds in better-off regions of the project area. If the present system of cultivation of ponds and marketing of the fish continues, the ponds have little impact on the local economy although they create social benefit by increasing the supply of fish proteins. Hence if present practices continue the spatial choice of pond excavation according to the poverty of the population has little relevance, if any. Landless or near landless people travel great distances in search of employment opportunity and it is not necessary to excavate a pond near a poor village to employ the poorest sections of the project area. If the present system of cultivation and marketing is changed to incorporate the local people, spatial selection of ponds and roads to be constructed are both important for alleviating poverty.

## 10.04

One important benefit the local population derive is the employment opportunity created by the project. It was mentioned earlier that about one quarter of total employment of labourers was generated by road construction and pond excavation works. Pond excavation alone accounted for 10 percent of total employment in the last year. Hence, without the projects excavation work, income of the labourers could be roughly 10 percent lower than the present income. The project benefited the lowest income groups by increasing their income. The timing of the excavation or road construction work is also important. If the excavation work is undertaken in Ashwin-Kartik, the lean months of the project area, the labourers can be obtained at a lower wage and abundant labour supply is ensured. During Chaitra and Baishak, the poorest of

the poor can participate to a greater extent than other landowning labourers who start ploughing their land for the next crop. Thus if the project wants to complete a big job within a short period of time, the months of Ashwin and Kartic (September 15th to November 15th) are the most suitable period. There are also the months in which the poor would prefer the project to start its work. The project, should wherever feasible continue its employment generating activities in the months of Chaitra and Baishakh (15th March to 15th May) which is expected to increase the income of the poorest.

## 10.05

It seems that there is no need of increasing the wage rate offered by the project for excavation work, as long as it is paid in kind. Some labourers also indicated their willingness to accept a job at a wage lower than the wage paid by the project. This divergence between the wage fixed by the government and the wage at which a labourer is willing to work only creates malpractices in the employment of labourers. The divergence should be as low as possible. This is not to suggest that wage rate should be lowered but to oppose some suggestions made by some local officials that the wage rate fixed is too low to perform the huge activities of the project and therefore the project should have its own decision making power regarding the fixation of the wage rate which should consider local conditions. In our survey, many poor households expressed their willingness to work at the existing wage rate for almost the whole year round excepting the months of Agrahayana and Poush (November 15 to January 15). Moreover, as explained proper timing of the work can ensure labour supply sufficient to start and complete huge projects like road construction, pond excavation etc. on a large scale. Wage increase will widen the divergence between the demand and supply price of labour, encourage migration from distant places which further widens the gap only to benefit the contractors or the officials concerned.

## 10.06

During our personal discussions with the local people, many of them identified road construction as a positive developmental activity for the area. Our survey did not try to estimate the social benefit of road construction in the project area but some general discussion on benefits of roads can be made. The first point to note about roads is its integrative effect with other markets. Markets in rural areas are segregated and roads can integrate them. Integration can be of two types: internal integration, i.e., integrating the local markets, and external integration, i.e., integrating local markets with important urban and commercial centres. External integration often destroys local industries as better quality urban goods penetrate the market but it appears to us that for the project area external integration as well as internal integration can be quite helpful. Rural industries are almost completely

absent in the area, especially those which produce commodities that are close substitutes for urban industrial commodities. Hence, the negative impact of the integrating effects with urban centres is expected to be low. Products made from bamboo and fishing nets may get a better market from the integration. Moreover, the poorer households sell their poultry birds and eggs, goats, milk etc. in the market. The buyers of these products are limited in number in rural areas. Only a better connection with urban centre or regional commercial centres can improve the price of these commodities. For example, due to poor communication with the major road, Tarash market faces difficulties in selling perishable commodities while in Neemgacchi we observed many 'agents' of urban businessmen purchasing poultry products, poultry birds and rice and paddy on the hot days. Higher price for the commodities sold does not imply a better real income for the poor unless the price increase of the commodities purchased by them remains lower than the price increase of the commodities sold. The overall benefit of the roads to local population depends upon the total purchase and sales of commodities. If the net outflow of commodities from the project area to other important commercial centres is positive, the net benefit of the road to the local population as a whole will be positive. To landless or marginal farmers net benefit may be positive, negative or zero. Since paddy or rice is the major produce of the area, and since it has also a local demand, the impact of roads on the price of paddy/rice is expected to be much lower than its impact on the prices of poultry birds, eggs, fish and hand-craft products implying that, under normal circumstances poor and marginal cultivators will also be benefited by road construction. The internal roads help decrease the price differentials among the local markets. To get a better price, the bigger owners usually travel a greater distance than smaller owners, as we have seen earlier. This indicates imperfections of the market and that the price differentials among the markets are greater than the cost of transportation. Internal integration of the markets lowers the price differentials and thus ensures a better price for those who market their commodities in a local market (whether because of the meagre amount of commodity they sell or because the opportunity cost of time for them is much higher than the benefit of marketing commodities at a more well connected market). Hence construction of the roads will be welcomed by all especially by the richer sections who can reap greatest benefit from better marketing. For the project itself, we propose that the decision to construct a road should be evaluated from the project's point of view as the social benefit of it will be too difficult to estimate. Let us assume that the problem is to decide between a pond excavation and road construction from project's point of view. Let the total length of the road to be constructed be  $L$  and let the road connects  $N$  number of ponds with an area of  $A$ , and average yield per acre  $Y_n$ , with the main road. The price of the product before and after the road is  $P$  and  $P_1$  respectively. Let us also assume that after road excavation, the variable cost of pond cultivation will decline because of lower loss of fingerlings and

lower transport cost of inputs. This increases net yield of ponds. Let net income before road construction be  $(PY_n - VC)$  per acre, where  $VC$  is the variable cost of pond cultivation before road construction. Hence net benefit from road construction can be represented as,

$$NB_{RC} = \sum_{t=1}^T \frac{AY_n(P_1 - P) - (VC_1 - VC)}{(1+r)^t} - C$$

where  $VC_1$  = variable cost after road construction and  $C$  = total cost of road construction. Similarly, let the yield rate of a pond be  $(Y_1, Y_2, Y_3 \dots)$  in period  $(1, 2, 3, \dots)$ . If the fund  $C$  can be used to excavate  $A_1$  acres of pond, net benefit from pond excavation can be estimated as,

$$NB_{PE} = \sum_{t=1}^T \frac{A_1 (Y_t P - VC)}{(1+r)^t} - C$$

Road should be constructed if

$$NB_{RC} > NB_{PE} \text{ from the project's point of view.}$$

### 10.7

Lastly, a few words on the long term objective of the project of disinvesting the pond areas to landless groups. The department of rural social service of Tarash has some experiences in organizing the landless for maintenance and cultivation of ponds in some villages of Tarash.

After one and a half years of investment and hard work by all landless, the pond area now is in the process of transfer from the hands of the landless group to the secretary of the group, who himself was a landless labourer. The funds appropriated by him made him rich enough to bribe the local officials of settlement to declare that the pond area was leased to the secretary earlier. The harvest will obviously go to the secretary and all the landless have lost interest in cooperating with each other in that area. For Neemgacchi project, of course, such transfer will not be feasible, although the appropriation of fund or output by the group leaders remain a perfectly possible outcome. However mal-practices are not unique to non Government groups. The more important problem, we think, is to organize a viable institution of the landless. The landless, as an economic category exists but it is not a social class in-itself. In our survey only 25 percent of the villages did not have any factions within the Shamaj. It can be expected that most of the villages

of the project area are subdivided into factional groups. These factions are not horizontal economic groups but they cut across all the groups vertically, including the landless. The landless therefore, belong to different factional groups and hence are difficult to organize into one group. The process of cooperation among the landless should be encouraged by the project and in factionless villages landless households should be organized to maintain the ponds or supply labour during harvesting. The economic returns of the landless group in some villages may encourage formation of viable institutions in others as well. The project officials must be very careful in identifying a landless group. The son of a rich farmer is nominally landless. But such nominal landless must be excluded as potential members of the landless groups. The objective of disinvesting the ponds to real landless households is obviously highly recommendable but it is at the same time very difficult to carry out. On joining cooperative, note that almost all responded in the affirmative and if the richest section is also interested in ponds, only a sincere effort on the part of the project officials and political will of the government can bypass them. However, hypassing the richer section without any organization of the landless will be equally damaging. The process of organizing the landless and incorporating them in various activities of the project should start immediately.

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Stratification of the Village by  
Cropping Pattern

Definitions of Land Use Patterns

Pattern 1 : Triple with some double cropped land (mainly mixed aus and aman with some broadcast aman - rabi crops).

Pattern 2 : Double with some single and tripled cropped land (broadcast aman-rabi crops, with some mixed aus and aman - rabi crops).

Pattern 3 : Single with some double cropped land (mainly b. aman - fallow and boro - fallow).

Pattern 4 : Single cropped land (b. aman or transplanted aman - fallow).

Pattern 1

Raiganj Thana

Village	J.L.No.	Area	Population 1974
Dhamainagar	29	1,015	889
Shirtala	30	1,022	1,111
Utra Hazipur	31	280	386
Nimgacchi	38	225	438
Bhuiat	39	368	608
Modhupur	40	172	416
Bansail	41	361	497
Khai Chala	42	367	691
Akra	43	311	724
Rupakhara	81	350	725
Sonakhara	82	265	546
*Hazipur -	83	200	344
Srirawpur	84	333	877
Gopalpur	85	190	432
Kajia	86	221	459
Pashchim Atgharia	87	266	522

Village	J.L.No.	Area	Population 1974
<u>Tarash Thana:</u>			
*Binnabari	81	266	389
Katabari	80	1,278	635
Noakhala	80	-	906
Himnagar	80	-	609
Dhamaihat	80	-	54
Ishwarpur	80	-	582
Nado Saidpur	83	1,493	3,183
Bfnado	-	-	167
<u>Pattern 2</u>			
<u>Raiqani Thana:</u>			
Bandi Har	32	190	249
Gotitha	33	477	520
Dostpara	34	263	461
*Mauhar	35	441	317
Shitalpai	36	77	76
Pulla	37	200	381
<u>Tarash Thana:</u>			
Bisamdanga	128	365	116
Dattabari	128	-	230
Ramkrishnapur	128	-	74
Boail	128	-	175
Teghari	128	-	80
Kanchaneswar	130	511	588
*Khordo-Madhainagar	131	165	196
Madhainagar	132	675	989
Jangiraganti	143	-	675
Chak Sarappur	144	103	228
Saruppur	145	696	1,026
Bhikanpur	146	275	473
Jhurjhuri	147	391	681
Boalia	148	646	1,403
Madhabpur	149	191	349
Gopinathpur	149	-	130
Dakhin Mathurapur	150	261	460
Srikrishnapur	151	396	809
Bidi Magura	152	141	168
Solapara	154	646	1,287
Santan	165	131	299
Alokdiar	-	-	160
*Sastan	153	135	181

Pattern 3Tarash Thana

Village	J. L. No.	Area	Population 1974
Mamkuria	86	1,724	2,124
*Ambaria	94	292	445
Dobila	95	679	898
Mohesh Pauhali	87	274	436
Konabari	-	-	143
Chak Rauhali	-	-	90
Birail	88	258	353
Rauhali	89	-	471
Noagaon	90	734	1,358
Binod Bhatra	177	111	152
Banlabau	174	248	382
Kholabaria	175	134	182
Hasanpur	176	125	280
Bhatra	178	320	614
Hamidpur	-	-	145
Kalidasnili	164	331	628
Bhaiat	166	891	565
Chak Bhaiat	-	-	45
Bansh Baria	-	-	537
Kalupara	167	352	1,023
Khalkula	168	285	406
*Matia	169	230	286
Malipara	170	201	500
Chaupakhia	172	301	400
Pabarpara	-	-	398
Debipur	93	460	550
*Mohishluti	92	384	341
*Noluekandi	96	-	260

Pattern 4Raiganj Thana

Khidra Subara	1	129	94
Sarail	2	505	458
*Krishnapur	3	387	322
Khial	4	214	238
Sadra	6	167	178
Arjuni	7	259	191
Nabankatha	8	138	171
*Chanderpaikara	9	206	230
Aditya Baria	10	121	143
Andara	11	326	290
Jamtail	12	584	589
Goalpara	13	200	197

Village	J.L.No.	Area	Population 1974
Kurcha	14	245	238
Majhura	15	748	220
Banka	16	858	991
Binsari	17	155	278
Uttar Faridpur	18	409	293
Khata	19	179	217
Golpa	20	301	133
Lakshini Kolathar	22	103	44
Noupa	23	888	422
Barail	24	83	253
*Komsapur	25	269	154
<b>Tarapur Thana</b>			
Langamura	62	133	142
Digharia	63	1,021	1,141
Singra	64	510	554
*Baroharsh	65	625	712
Sarabari	66	316	303
Sachandighi	71	209	247
*Monsapur	58	761	492
Chhatrapur	60	222	176
Barapota	59	355	277
Dalash	57	510	374
Lau	55	254	176
Datarai	54	71	107
Randighi	53	277	252
B...	56	971	991
E...	50	278	191
P...	51	551	755
K...	110	304	445
B...	113	114	88
Ch...	67	1,004	945
Ch...	68	122	265
Ch...	69	183	94
B...	70	784	349
*B...	70	-	315
K...	109	245	199
A...	111	194	222
B...	110	1,673	1,279
C...	72	886	695
P...	73	506	275
D...	74	1,022	658
E...	78	698	328
K...	79	1,395	1,579
Majhura	105	790	547

Village	J. L. No.	Area	Population 1974
Moluakandi	96	116	253
Kamarsan	103	428	346
Makarsan	104	1,174	640
Kushabari	82	1,203	775
Char Kushabari	82	-	2,430
Magurabinod	98	1,607	856
Saguna	100	272	674
Magula Mukunda	101	499	305
Gauripur	158	499	542
Dakhin Syampur	84	846	676
Goalgram	-	368	190
Chak Rachhulla	163	172	343
*Nobipur	-	208	106
Dighi	-	797	391
Sakai	173	191	314
Kahit	108	997	889
Tarash	157	1,259	2,770
Kaurail	155	611	557
Khutigaccha	156	414	792
Chala Magura	160	116	103
*Borogaon	159	304	255
Betrasen	137	151	173
Char Joykrashana	162	223	488
Mangalbaria	161	231	167
Raghunili	161	-	270
Sherajpur	118	-	176
Sonapatil	142	696	1,026
Bhadra	140	1,088	984
Malsin	117	309	281
Balra	115	280	310
Gurma	116	426	461
Dhankurti	135	256	289
Radhakantapur	43	103	261
Krishnapur	40	151	107
Uttar Mathurapur	139	241	237
Madarijan	141	320	280
Subhar	134	217	170
Bettasin	137	-	221
Bilaspur	123	223	105
Pausher	133	327	256
Goarukhi	122	147	225
Wasin	138	360	356
Kasta	119	392	387
Dewra	7	610	505
Uttar Shyampur	8	532	456
*Tagra	11	127	154
Ushaikol	10	139	137

Village	J.L.No.	Area	Population	
			1974	
Pashchum Paikara	33	276	145	
Deshigram	34	509	503	
Baidipara	9	177	177	
Singarpada	35	166	170	
Sakmal	36	204	149	
Duliawar	37	414	458	
Arangail	120	1,078	842	
*Dogaria	120	-	130	
Khilgaon	48	229	324	
Silandaha	49	304	290	
Kumalu	126	250	325	
Chandi Bhog	125	212	339	
Khir Pota	127	168	241	
Bhatrapara	129	79	128	
Jantihar	38	319	305	
Choota Majdakhina	41	203	261	
Baro Majdakhina	42	274	283	
Nara Teghari	46	283	312	
Gurpipul	47	789	794	
Dhalapara	51	96	81	
Bhogalman	44	173	262	
Karnaghosh	39	383	458	

The land use pattern of the villages of Tarash thana is approximated by comparing the land-use pattern map of Tarash with the Tarash thana mauza map. Land use pattern of the villages of Raiganj is taken from the SIRDP report ( ). Now the number of villages in each of the above four patterns are:

Land Use Pattern	Number of Villages	Percent of Total	Number Selected for Survey	
			No.	%
Pattern 1	24	13.19	2	10.00
Pattern 2	29	15.93	3	15.00
Pattern 3	28	15.38	4	20.00
Pattern 4	101	55.49	11	55.00
All Patterns	182	100.00	20	100.00

From the above list of land use patterns of the villages<sup>1</sup> of the project area, villages were selected randomly from each type of land use pattern. Number of villages selected from each pattern was approximately equal to the fraction of total villages in the pattern. The list of land use patterns indicates the villages randomly selected for survey by an asterisk on the left of the village name.

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<sup>1</sup> The land use pattern tables list the villages of 9 unions which were selected for survey. The unions of Chatmohor and the Talam union of Tarash thana were excluded as the excavated or cleared area by the Neemgacchi project in those regions are either nil or not very significant.

Poverty and Inequality in the  
Surveyed Villages

Various methods of measuring inequality have been developed by the welfare economists. All the measures of inequality developed are static in nature and no account is taken of individual mobility. Third part of the report discusses the mobility of the surveyed households over time. This annex calculates three indices of inequality - the Gini coefficient, the coefficient of variation and the poverty measures for all the 21 villages surveyed. Gini coefficient is measured by using the formula.

$$\left[ 1 - \sum P_i (CPL_i + CPL_{i-1}) \right] \text{ where}$$

$P_i$  is the fraction of households in the  $i$ th landholding group,  $CPL_i$  is the cumulative fraction of land owned upto the  $i$ th group. The coefficient of variation is simply the ratio of standard deviation to the mean of a distribution. Poverty measure is defined by the proportion of households in each of the villages below 2 acre of cultivable land ownership. Following table shows the inequality measures calculated for the surveyed villages. Note that all the inequality measures donot give same ranking of poverty and inequality. By poverty index Sastan is the poorest village while Baruhas is the richest village. Note that Gini coefficient and poverty index rankings are quite highly correlated. This might be due to sensitivity of the Gini coefficient to extreme values.

Inequality Measures for the  
Surveyed Villages.

Village	Gini Coefficient		Coefficient of Variation	Poverty (%)
	Total Land	Cultivable Land		
Mauhar	0.644 ( 9)	0.684 ( 8)	0.7229(13)	69.1( 4)
Hazipur	0.656 ( 7)	0.695 ( 6)	0.5367(17)	63.8(11)
Chander Paikara	0.692.( 4)	0.699 ( 5)	0.6508(14)	74.1( 3)
Krishnapur	0.736 ( 3)	0.759 ( 4)	0.5274(18)	65.7( 9)
Komarpur	0.677 ( 5)	0.783 ( 3)	0.4309(21)	68.3( 5)
Tagra	0.592 (14)	0.610 (14)	0.7789( 8)	63.4(12)
Madhainagar	0.615 (12)	0.637 (12)	0.7750( 9)	67.4( 7)
Borogaon	0.583 (18)	0.599 (17)	0.8053( 5)	59.5(15)
Mohishluti	0.668 ( 6)	0.689 ( 7)	0.6614(13)	66.0( 8)
Matia	0.546 (21)	0.559 (21)	0.8699( 3)	68.1( 6)
Nobipur	0.625 (11)	0.636 (13)	0.8037( 6)	51.7(18)
Sastan	0.739 ( 1)	0.817.( 1)	0.5206(19)	88.6( 1)
Ambaria	0.586 (17)	0.606 (16)	0.7532(10)	60.0(14)
Noluakandi	0.587 (16)	0.595 (18)	0.8847( 2)	64.3(10)
Dogaria	0.572 (19)	0.587 (19)	0.8214( 4)	48.4(20)
Monoharpur	0.639 (10)	0.670 (10)	0.5970(16)	56.3(16)
Baruhas	0.590 (13)	0.608 (15)	0.7997( 7)	46.5(21)
Binodpur Kharkhara	0.564 (20)	0.571 (20)	0.8992( 1)	50.0(19)
Bhetua	0.651 ( 8)	0.679 ( 9)	0.5985(15)	60.9(13)
Binnabari	0.738 ( 2)	0.806 ( 2)	0.4866(20)	87.8( 2)
Krishnapur	0.589 (15)	0.657 (11)	0.7356(11)	54.5(17)

'Chander Paikara' - A Special  
Case in Tenancy

In 'Chander Paikara', a village of Dhamainagar Union in Raiganj Thana, the situation with tenancy is quite special. All the villagers of this village taken together owned a total cultivable area of about 81 acres. But the area leased-in by the villagers added up to another 89 acres. Thus the villagers in Chander Paikara were cultivating more someone else's land than their own (land leased-in constituting 109% of the total cultivable area owned). Quite in conformity with this, those leasing in, constituted a large percentage among the villagers. More than half (54%) of the villagers were tenants. If it is remembered that for Bangladesh as a whole the area leased in constitutes not more than 25% of the total cultivable area and the number of households leasing-in, not more than 30%, then it is quite obvious that as regards tenancy, the case with Chander Paikara is quite special.

The major reason for such preponderance of tenancy is historical. Specifically, the reason was that during the British Zamindari period, Chander Paikara had gone through considerable 'sub-infeudation'. The East Bengal Land Acquisition and Tenancy Act of 1950 evicted the Zamindars but ownership rights of the 'sub-infeuds' under this Act remained unhurt. Thus the abolition of the Zamindari system could not for the villagers convert the land they tilled into land of their own. The 'sub-infeuds' had a free-hand in disposing of their owned land. As most of these, in the case of Chander Paikara, were from the Hindu community who preferred to migrate to India, they sold out their ownership. It is quite natural that most of the buyers turned out to be the rich officials of these very 'sub-infeuds', while the rest were people from the business world, residing in the same ownerships as the semilords and their officials. In most cases the new owners retained the old farmers to cultivate their land but altered the arrangements. If previously the cultivators were required to pay the rent, now they were to give up half of the produce.

This is the general pattern of the history that made tenancy so widespread in Chander Paikara. And this also explains why tenancy in Chander Paikara is mostly linked with absentee ownership.

For example, four members of some 'Sheikh family' owned a total of more than 50 bighas. The breakdown is produced in the following table:

Table - 1

## Absentee Owners from Sirajganj

Name of the Owner	Area (bighas)	Name of the Tenants	Area Leased-in (bigha)
<u>From Sirajganj</u>		Bayat Ali	15
		Abul	2
1. Nizam Sheikh	22½	Muja	1
2. Shahzahan Sheikh		Mozahar	1
		Rustam Ali	3½
3. Samad Sheikh	17	Bayat Ali	5½
		Zainal	2½
		Abul	4
		Yar Ali	2
		Muja	3
4. Zainal Sheikh	16½	Bayat Ali	8½
		Bahadur	7
		Abul	1

It is to be added that the latter two i.e. Samad Sheikh and Zainal Sheikh were respectively the Circle Officer of Ullapara Thana and Peshkar at the Sirajganj Court. On the other hand, the first two were brothers. It is quite likely that Samad and Zainal Sheikhs just divided among themselves a property otherwise acquired jointly. From among the tenants, the name of Bayat Ali can easily be singled out. Bayat Ali had been the village Headman. Thus he was originally in possession of much of the land that he is now leasing-in. The absentee owners quite obviously look for someone dependable to whom to lease out their land. It was gathered that the 'Sub-infeud', ex-owner of the land, himself, on transferring the ownership right to the new owners advised them to let their land to Bayat Ali, who was then currently cultivating that land recommending him to be a reliable man. Bayat Ali thus, although a tenant, was a rich farmer who mainly depends on wage-labour for actual tilling of the land. Due to serious breakdown of health Bayat Ali can no longer himself work in the fields, but in any case he is mainly an employer and supervisor of hired labour. Thus although he has to give up half of the produce to the absentee mahajans from Sirajganj, he is actually giving up the produce of someone else's labour, and he himself is living on exploitation as well. The politico-economic physiomy of the case is more close to the 19th century English Landlord-farmer-labourer

model than to the tenancy arrangements more usual for Bangladesh, where more land-endowed co-villagers (either jotdars or rich farmers) lease-out their 'extra' land to the poorer, with higher man land ratio, households in order to benefit from their relatively greater endowment of labour.

From the point of view of area, absentee owners from another 'Betkhor', a settlement of Sherpur Thana of Bogra District, and some 6 miles away from Chander Paikara, are probably more important. Three relations from Betkhor own as much as 115 bighas of land in this particular village. The breakdown is given in the following table:

Table - 2

## Absentee Owners from Betkhor

Name of the Owner	Area Owned (bighas)	Name of the Tenant	Area Leased-in (bighas)
1. Hazi Moslemuddin	55	Fazlur Rahman	1½
		Mozahar Ali	3
		Korban Ali	7½
		Yar Ali	1½
		Shamsher Ali	6
		Jan Mohammad	2
		Asgar	1
2. Lutfur Rahman	55	(Names could not be collected)	25
3. Entaz Ali	5	-	-

Entaz Ali is a grandson of Hazi Moslemuddin, while the other Lutfur Rahman is his nephew. Differing from the owners from Sirajganj, these engage in self-supervised cultivation as well. Thus Entaz Ali was practising self-supervised cultivation on all of his 5 bigha of land. His grandfather, Hazi, while letting out a total of 22½ bighas, was himself supervising cultivation on the rest, i.e. the major portion of his ownership. And his cousin was also retaining as much as 25 bighas for self-supervised cultivation while letting out the remaining 30 bighas to the tenants. Among other reasons, of course the proximity is the most important factor which makes self-supervised and alternative cultivation possible for them.

Among other absentee-owners, one Abdus Sattar from Rupakhara of Raiganj thana is quite important. He owns in Chander Paikara a total of 33 bighas of land and lets it out to different tenants in the following manners:

Table - 3

Tenants of Abdus Sattar of Rupakhara

Name of the Tenant	Area (bighas)	Relation with Other Tenants
1. Rustam Ali	15	
2. Hazrat Ali	2½	Cousin
3. Khorshed Ali	5	brother-in law
4. Asgar Ali	2½	Nephew
5. Samad	1	Uncle
6. Jan Mohammad	1	brothers
7. Afsar Ali	4	Son
8. Monsoor Ali	2	

That the tenants are all relations to each other should not surprise one. In most of the traditional villages in Bangladesh, the co-villagers are mostly at the same time mutual relations either by birth or by subsequent marriage. The finding that all the tenants of Abdus Sattar are at the same time mutual relations is a reflection of this, so to say, all-pervading circumstance and does not necessarily reveal anything of overriding significance.

Of the other cases of absentee-ownership and tenancy mention can be made of two brothers, Montu and Tarifur from Bhabanipur, the old centre of the Rani Bhabani's estate, owning 19 bighas of land in total. This was lent out to Bahadur (12½ b.), Mokhles (2½ b.) and Samad (4 b.). There is another Tofazzel Hossain from Tabaripara of the same Raiganj thana owning 16 bighas. Some Shabu from Bhabanipur was also reported to be owning an area of approximately 25 bighas.

Thus it is quite evident that leasing-out of land from amongst the villagers in Chander Paikara is almost nil. On the other hand, every second villager was dependent on leased in land. Villagers thus compete among themselves in their bid to obtain land under lease from the owners. The owners in their turn exploit the situation by making more and more demands from the tenants which quite obviously transcend the usual 50-50% share. In their general bid to get more of the produce, the absentee owners prefer those having enough bullock power and other implements, i.e. the already well-off farmers as their tenants. Thus it is the marginal tenants who are finding it increasingly difficult to get land under lease. On the other hand, there is a drive on the part of the absentees themselves to supervise the cultivation (with wage labour), and thus procure the whole produce. This makes a general shortage of land in the tenancy market.

Chander Paikara therefore provides a case not only of bigger extent of absentee-ownership and tenancy, but also of the diverse conditions, features and tendencies that can be found in this realm. It also shows that easy generalisations, though very tempting, may however obscure many specifics and complexities, which are very vital in coping with a reality that actually is quite rich in them.

Hats in the Project Area

The seat of commodity exchange market in a rural economy is known as hat. A hat is a very important institution of the rural economy. Unlike daily bazaars, which are few in number, a hat facilitates exchange in a large scale. Bazaar is not a place of exchange of commodities. Usually a bazaar acts as the meeting place of two distinct groups - the sellers and the buyers. The sellers bring some perishable commodities in the morning for sale which are purchased by the salary earner and other non-cultivating classes. This explains why bazaars tend to be located in areas where there are a large number of government officials. A hat, on the other hand, is a place of exchange. There are not distinct sets of buyers and sellers. A large number of sellers are at the same time buyers. Since a hat has to satisfy the varied needs of rural households by establishing exchange relations, for efficient working of the system, a hat should be the market place of many households and of a large varieties of commodities. To ensure these, hats sit only once or twice a week. The selection of hat days also enables effective integration of smaller hats with the bigger hats.

Like any other market, hat is predominantly for establishing exchange relations. Three functions of hats can be identified. Firstly, a hat is a place of exchange which satisfies the needs of the rural households. Many petty sellers go to the hat to dispose of their surplus commodities and to purchase the commodities they need with the sale proceeds, probably keeping some cash to pay taxes or to purchase chemical fertilizer, pesticides etc. Secondly, a hat establishes exchange relations between the rural areas and the urban and commercial centres. <sup>nan</sup> <sup>enter</sup> ~~Food~~ and other subsistence commodities which are produced in the rural economy. Urban areas and the rural societies come in contact through the village hats. The agents of urban businessmen purchase commodities (especially paddy, rice, poultry birds and eggs) from the hats where they are available in large quantities. Thirdly, hats act as the centre of social and political interaction at a wider scale and also as media of information and knowledge with the world outside the village economy. Often postmen in rural areas visit the local hats to distribute the letters, village leaders visit hats to meet local people as well as to discuss problems with other village leaders. This social aspect of hat is so important that it has become a part of the culture for household heads to visit the nearest hat on the hat days.

The following gives a list of hats within the project area. About half-a-century ago, the number of hats was much lower. The hat-names underlined were the only hats that existed 50 years ago. Others have been created in within the last 50 years.

Name of the Hats in the Project Area

<u>Shaliagari</u> (Wed, Sun)	<u>Binsara</u> (Sun, Wed)	Tarash (Fri, Mon)
Dhamainagar	Dhamaij (Sat, Tues)	<u>Handial</u>
Shonakhara	Nado-Sayeedpur (Wed, Sun)	
Neemgacchi (Thurs, Mon)	Baruhas (Fri, Mon)	
Noagaon (Thurs)	<u>Gulta</u> (Sat, Tues)	
<u>Ulipur</u> (Sat, Tues)	Katagari (Fri, Mon)	
Keshnadighi (Fri)	Kajibari (Sat, Tues)	

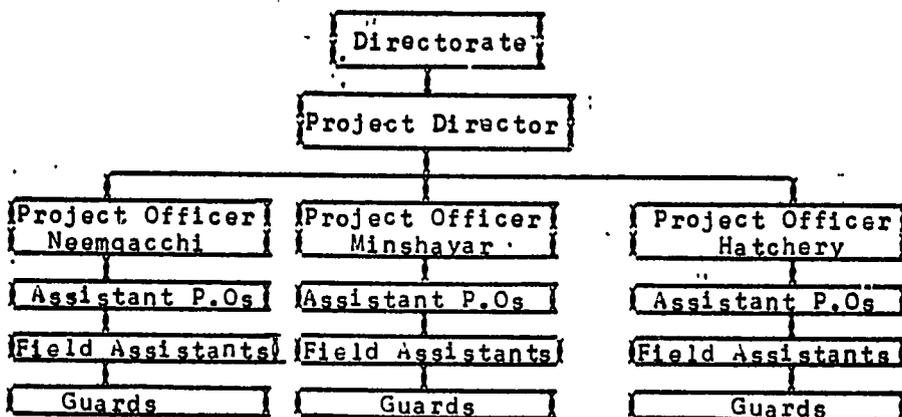
Hence, there was a rapid increase in the number of hats in the project area. Moreover, the hats have undergone important qualitative changes. Previously important hats have declined in importance and new hats located along the Dacca-Bogra road are becoming increasingly important. Ulipur was one of the most important hats of the locality. Salanga, another hat of Raiganj, located by the side of a river was much more important than it is today, although it is still one of the most important hats in the area. This change of importance of hats is due to the change in the communication and transport system. Boat in earlier years, was the most convenient means of transport. Due to dereliction of the minor rivers and sedimentation of Chalan beel, the important hats (Ulipur, Salanga, Binsara) become difficult to approach and as a result hats along the road became relatively more important.

Note on the Fish Culture Project

Neemgacchi Fish Culture Project started its operation from 1977. Before that date, the project was a part of a bigger project of the government. As the Neemgacchi and Tarash areas show high concentration of tanks and ponds, for efficient cultivation of them Neemgacchi was defined as a separate fish culture project. The total water area of the present project is approximated at about 5000 bigha (or, 1667 acres) of which less than 2000 bigha was under fish culture during 1979-80. In 1981, it is, however, estimated that more than 3000 bigha of water area will be under culture (Notes of Mr. Harding). Obviously, the progress of the project in terms of its scale of operation is very slow and by the end of the third year of the project, it could reclaim and culture less than half of the targeted area set by the revised project proposal.

The project is headed by a director who is responsible for overall performance of the project. Presently his office is located in Pabna town, some 70 miles from the Neemgacchi head quarters. A new office of the project director is being constructed at Neemgacchi. Under the project director three project officers look after the three groups of the project, namely the Neemgacchi group, the Minshayar group and the hatchery. All the three project officers reside in the project area. The project officers are assisted by the assistant project officers, one APO for each unit of a group. The organogram of the Neemgacchi Project is illustrated below:

ORGANOGRAM. OF NEEMGACCHI FISH CULTURE PROJECT  
P A B N A



The benefit-cost ratio for the project during 1979-80 fiscal year was very unfavourable like the earlier years. Even if we assume that the project spent no money earlier, and distribute the capital outlay of 1979-80 alone over 50 years<sup>1</sup>, total cost of the project in the year comes to Tk. 15.5 lacks. If 15 percent is the minimum rate of profit, the income of the project should be atleast 17.3 lack taka. But in 1979-80 the project earned an income of only Tk. 4.7 lacks. In other words, the benefit cost ratio for 1979-80 was as low as 0.272. This low income reflects inefficiency of the project in terms of marketing, production and cost saving. In the last year, the project even failed to earn a revenue equal to the variable cost component. According to theory, a firm should cease its operation if its income falls short of the variable cost incurred. A producing unit, whatever be the scale of its operation, should not go into production if variable cost exceeds the revenue to be earned from its production. Here, we have a serious case of discrepancy between variable cost and revenue earned; variable cost exceeded the income by 257 percent. Let us now look into the cost and income figures more closely. One important cause of low income was the low tender price of fish in 1979-80. The tender price was only Tk. 218 per maund which should be atleast twice the figure. In 1980-81, income is expected to improve because of the better tender price. Per maund price of fish (fish of more than 1 seer weight) for 1980-81 has been fixed at Tk. 360 in Neemgachi and Tk. 450 in Tarash.<sup>2</sup> However, for smaller fish, the price is only Tk. 230 per maund. Even if we assume that all fish of 1979-80 could be sold at the present tender price of big fish Tk. 8 lacks could be earned which is still lower than the variable cost. Our field survey suggests that the present tender price is quite reasonable and thus the problem of the project is to attain higher efficiency, higher production at a lower cost. Without better production and cost management, it is obvious that the project can never become a profitable enterprise.

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1. Depreciation cost per year Tk.3.5 lacks if time = 25 years  
and Tk.3.4 lacks if time = 50 years

Depreciation was estimated on the assumption that the capital cost of Tk. 22.9 lacks incurred during 1979-80 was the total capital cost of the project. In reality, the figure will be much higher and the break even income of the project in 1979-80 prices will be much higher than Tk. 17.3 lacks.

2. It is surprising that the tender price of fish in Tarash is much higher than in Neemgacchi, the better connected region of the project.

Our field visits also suggest that without reorganizing the whole project structure and developing appropriate incentive system based on efficiency the prospect of achieving higher efficiency is almost nil. The level of inefficiency of the project can be easily estimated by comparing the cost and return structure of a pond in Tarash with those of the project. The pond was leased by a businessman in 1979 for two years. The leaser used 20 thousand fingerlings in his 11 bigha pond and his total cost of cultivation was Tk. 10,100. Total revenue earned by the businessman from the pond was Tk. 48,000. Thus the benefit-cost ratio for the pond was 4.75 and net income (for two years) was 37,900 Tk. Note that he obtained a output of about 13 maunds of fish per acre of pond area per year. The figure might be an over-estimation but still the production must be very close to it as the leaser of the pond has paid Tk. 32,000 as the lease rent of the pond. Obviously, the pond in question is atleast 7 times more efficient than the Neemgacchi project ponds from the production point of view. For the Neemgacchi project if the area could be leased out to individuals at a rate of 727 Tk. per bigha per year (half the rate the leaser in our case paid), total revenue that could be earned is about 12 lack taka. Moreover, the arrangement can save the cost of fingerlings, fertilizer, pay of fishermen labour, transport of fuel and others etc. The present system of selling fish by maunds is so flexible that it encourages corruption. The flexibility is further increased by allowing two different tender prices for fish. All fish should be marketed at a fixed price if the present system of catching and marketing of fish continues. Preferably, the system should be changed in favour of leasing pond and tanks to villagers. The project should maintain its experts only to advise the lessees on better fish culture practices and also to maintain the hatchery.

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Note on Migration Theories

Most migration literature deals with rural-urban migration and the well known Todaro model was also developed to explain the phenomenon. But our migration cases are examples of rural-rural migration rather than rural-urban migration. Still the motives or push and pull factors are general enough to explain all migration phenomena ; they are not peculiar to rural-urban migration only. The following pages summarize some theoretical models of migration. The reader is referred to Rhoda (Rhoda, R.E. [ 13 ] ) for a brief survey of the theories.

Lee's sociological theory identifies four general factors which influence migration decisions. The factors are : Origin factors, destination factors, intervening obstacles and personal factors. Origin factors are the attractive or undesirable characteristics of the original place of residence. The attractive aspects exert a 'pull' on the households and work to hold them while the undesirable, unattractive factors exert a 'push' force, pushing them out. The decision to migrate, to some extent, is determined by the resultant of these two opposing forces. However, many of the attractive or unattractive characteristics of an economy can be identified only when it is compared with other places which have also their own 'pull' and 'push' forces. The pull and push forces of destination are thus closely interconnected with the evaluation of attractiveness or unattractiveness of the origin. However, we can conceive a situation when to a household a village economy may become absolutely unattractive rather than just relatively, when the resources the individual household owns or the relationship it has with others cannot even generate an income sufficient to reproduce him and his family. In such cases, the migrants have no particular fixed destination. The pull and push factors of the origin and the destination are not the only factors considered. The destination factors compared to origin factors may be quite attractive but still some intervening obstacles may work against migration. Distance of the new place, and social and cultural differences also play an important role. To explicitly emphasize that the decision to migrate is a personal decision, personal factors are cited as one important general factor. Pull and push factors are direct function of personal social and economic position. A village may be very attractive to a household because of the household's high landholding and high social status and at the same time the village may be quite unattractive to a landless household because of low cropping intensity, low non-agricultural work available etc.

The economic models are the cost-benefit models and Todaro's expected income model. The benefit-cost model assuming that the individuals are benefit maximizers and thus if net benefit increases by migrating to a new place, individuals, will decide to migrate.

$$\text{Benefit } B = \sum_{t=0}^T \frac{Y_t}{(1+r)^t}, \text{ where } Y_t = \text{income difference between}$$

the origin and the destination,  $T$  = expected remaining lifetime,  $r$  = rate of discount. Theoretically benefit can also include non-monetary benefits. Similarly,

$$C = C_0 + \sum_{t=0}^T \frac{C_t}{(1+r)^t}, \text{ where } C_0 = \text{initial cost of}$$

migration and  $C_t$  = extra cost incurred in the new place at time  $t$ . According to the theory, households or individuals will migrate if  $B/C > 1$ , i.e.,  $B > C$ .

Todaro model argues that the propensity to migrate depends upon "expected" income differential, i.e., the decision making process considers two variables (i) real income difference between origin and destination (which was rural and urban in Todaro's model) and (ii) probability of obtaining a job in destination. Expected income at a new destination in any period 'varies directly with  $P(t)$ , the probability of having a job in that period. Thus one could easily conceive of a situation in which the urban-rural (destination-origin) real income differential was positive while the expected differential was negative' (Todaro, M.P). Thus a differential income is not sufficient for migration : what is important is the differential plus a high probability of getting a job.

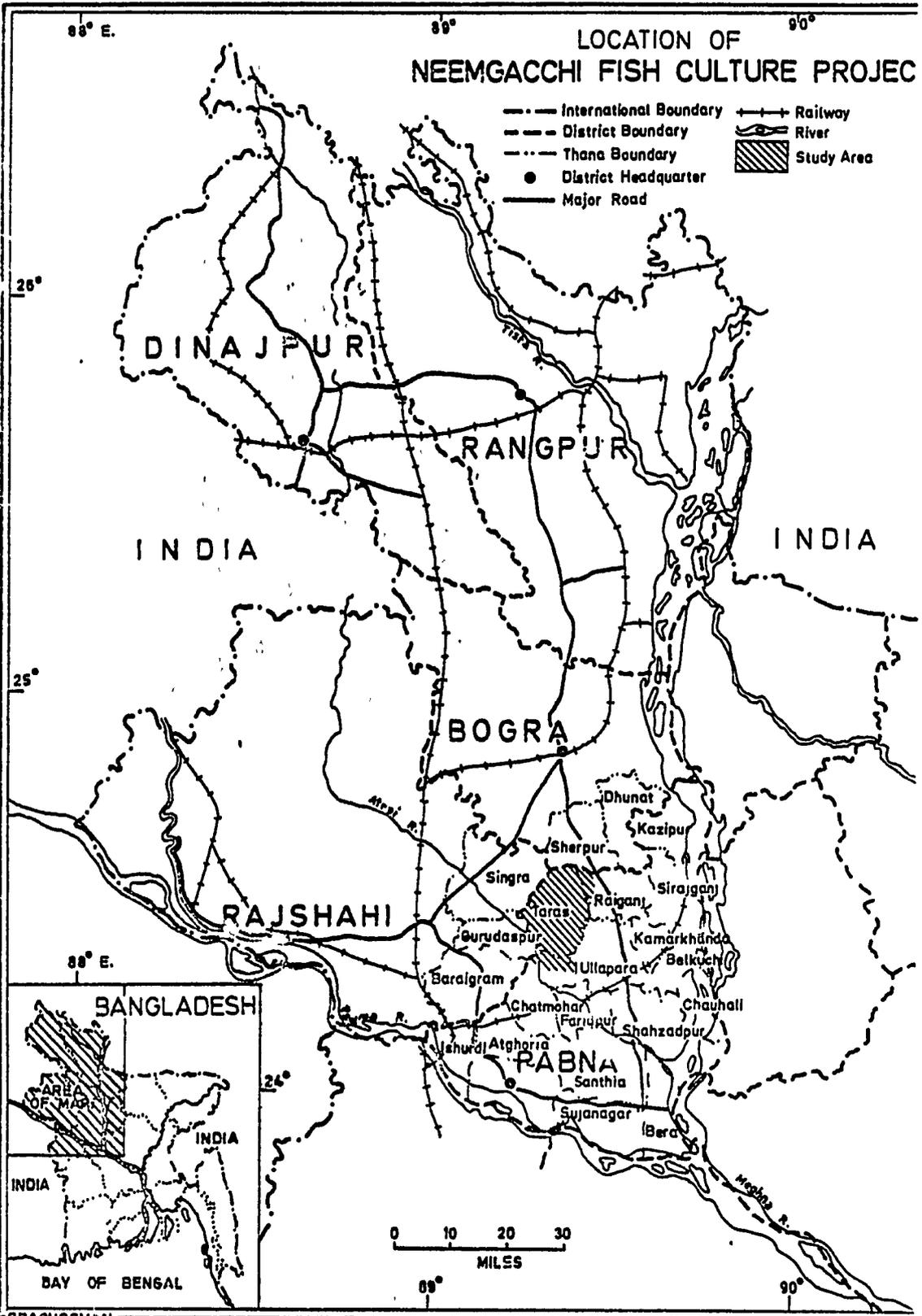
From the above discussion of theories and from our overall knowledge about the project area some a priori reasons for migration can be identified. For the poorest section of a rural economy, the decision to migrate should consider income from employment as day labourer in the place of origin and in destination. To the very poor, the more important decision variable is total income rather than wage rate. Different village communities show different seasonal wage pattern depending upon the cropping intensity, agricultural peak, use of modern technology etc. Thus to increase income, it may not be a good decision to migrate permanently but to migrate seasonally to earn a higher income. Only if a region demonstrates higher employment opportunity and/or higher wage (or wage rate not low enough to make the income from wage earning lower than what could be earned previously), may a labourer decide to

migrate. Availability of Khash land which can be cultivated without incurring substantial cost may also encourage the poor to migrate and settle in the new area. For land owners, especially for the smaller owners, an income differential creating factor is the price of land in relation to crops produced. Let us assume that the owner is an output maximizer and that his concern is to supply more agricultural product for family consumption. Let the unit price of land be  $P_L$  and  $P'_L$  at origin and destination respectively and let average productivity of land be  $Q_L$  and  $Q'_L$ . Hence sale of unit land at origin can finance purchase of  $P'_L/P_L$  units of land which gives  $(P'_L/P_L) Q'_L$  output. Obviously if there is no cost of migration, the family will decide to migrate if

$$Q_L < \frac{P'_L}{P_L} \cdot Q'_L$$

or  $\frac{Q_L}{Q'_L} < \frac{P'_L}{P_L}$  i.e., a family will decide to migrate in the

absence of profit motive in production or cost of migration, if the ratio of land productivity at origin and destination is less than the ratio of land prices at the two places. For a profit earning farmer of course, the price ratio of the product is important. It should be noted that prices are also important for buyers, i.e., the households who produce little or no commodity of consumption but sell their service or labour to earn income. They might tend to move to places where their consumption bundle is relatively cheap compared to the income they can earn. There may also exist a group of families who like the profit seeking farmer try to invest in other non-agricultural activities like trade to earn a higher rate of return. Since profitability in non-agricultural activity depends crucially on market demand, better communication and market information etc., these relatively richer households often migrate to trade centres from the rural areas. The above discussion may lead one to think that all migration originates from 'pull' factors, the attractiveness of the destination. This is not necessarily true. Some migrations are predominantly determined by 'push' factors, the forces pushing households among from their origins. The push factors may be natural calamity and destruction of wealth, war and law and order problems, inability to acquire subsistence need due to insufficient means of production etc. Since such migrations are not based on the 'pull' and 'push' considerations of the two alternative places, the migrants often have no fixed destination and may end up in a wrong place. A process of trial and error (period of vagrancy) either settles them in a place where they can survive or they continue their search till their death. In Bangladesh, this floating population may be quite significant due to absolute scarcity of land and massive unemployment and underemployment.







VILLAGE CENSUS

QUESTIONNAIRE 1  
NEEMGACCHI FISH CULTURE PROJECT  
SOCIO-ECONOMIC STUDY

Serial Number :  
Thana :  
Union :  
Village :  
Para :  
Malaria Card Number :

1. Name of the head of the household :
2. Family size (total) :

Age male members									
Age female members									

3. Land owned (specify the unit):  
Cultivable land owned (specify the unit):
4. Main occupation (income sense):  
Other occupations (in descending order):
5. Number of times rice taken in a day -  
    in Chaitra-Baishak :  
    in Ashwin-Kartik :
6. Amount of rice required per day for the family:
7. Whether below subsistence/self - sufficient/above subsistence.
8. Do you/your family members work as day-labourer? Yes/No.
9. Do you hire-in labour seasonally/permanently? Yes/No  
If yes, number:..... for household work:.....  
    agricultural :..... other
10. Land leased in (area) :



c. Leased-in land

Leased No.	Area leased	Terms	How many times cropped (Khonda)	Ownership status of leaser	Relation with the leaser	Period of tenancy	Whether absentee
1							
2							
3							

\* (1) Less than 1 acre owner (2) 1 to 2.0 acre (3) 2.0 to 4 acre (4) 4 to 8 acres (5) 8 or more.

Land leased in last year: Land leased in 1974:

d. Lease-out land

Tenant No.	Area leased	Terms	How many times cropped	Period of tenancy	Relation with tenant
1					
2					
3					

Land area leased out last year: Land area leased out in 1974:

- e. If land is leased (c or d above) does the land owner generally
- Dictate input use?
  - Dictate cropping pattern?
  - Give loans for production?
  - Demand labour service?
  - Demand extra payment?

5. Crops cultivated in the last crop year\*

Crops	Area	Irrigated area	Yield	Chemical Fertilizer use (Yes or No)
B. Aman (Deepwater)				
T. Aman (Local)				
T. Aman HYV				
Boro Local				
Boro HYV				
Wheat				
Oil Seed				
Pulse				
Vegetables				
Aus Local				
Aus HYV				
Jute				
Sugarcane				
Mixed Aus/Aman				

\* Enumerators should ask name of the crops cultivated in different seasons, starting from the present Aman season.

6. Household Assets:

a. House

House No.	Roof type	No of Rooms	When Constructed		When last repaired	
			Year	Month	Year	Month
1.						
2.						
3.						
4.						
5.						

b. Animals and Birds

Type	No. of Adults	Owned or reared for others	Purchased in last 12 months		Sold in last 12 months	
		Number	Number	Value	Number	Value
Bullocks						
Buffalos						
Milch Cows						
Goat/Sheep						
Poultry birds						

c. Agricultural Implements

Type	Number owned	Number hired	When hired (season)
Plow			
Rake			
Power Tiller			
Tractor			

7. a. Hiring of Labour by Household

Which Months?	Nature of Works	Mandays hired	Wage Rate

b. Months when badli practiced:

c. Labour hired out by the family in the last 12 months? Yes/No

If yes, number of family members hiring out labour:

Type of work (specify months)

- |                                  |               |        |        |
|----------------------------------|---------------|--------|--------|
| 1. Land preparation for crops.   | Days worked : | Wage : | Place* |
| 2. Weeding                       | Days worked : | Wage : | Place  |
| 3. Harvesting                    | Days worked : | Wage : | Place  |
| 4. Other cultivation activities. | Days worked : | Wage : | Place  |
| 5. Excavation of ponds           | Days worked : | Wage : | Place  |
| 6. Road constructions            | Days worked : | Wage : | Place  |
| 7. House repair/construction     | Days worked : | Wage : | Place  |
| 8. Others                        | Days worked : | Wage : | Place  |

- \*1. Within the village, 2. Neighbouring village,  
3. Not 1 & 2 but within the Union, 4. Not 1, 2 & 3 but within the thana, 5. Outside the thana.

d. In which months at the existing excavation work-wage the respondent or his family members will not work outside?

- |                 |                              |
|-----------------|------------------------------|
| Jaistha-Ashar   | At what wage willing to work |
| Sravan-Bhadra   | At what wage willing to work |
| Ashwin-Kartik   | At what wage willing to work |
| Agrahayan-Poush | At what wage willing to work |
| Magh-Falgun     | At what wage willing to work |
| Chaitra-Baishak | At what wage willing to work |

8. Fish cultivation (if pond area owned or leased)

Area cultivated	Average yield per day	Type of fertilizer used	Where Marketed*	To whom sold**

\* Hat : 01, within the village : 02, at homestead : 03

\*\* Villagers : 01, Fishermen : 02, Outside traders : 03

9. a. No. of times borrowed from official sources in last 12 months: in the last 2 years:

b. No. of times borrowed from unofficial sources in last 12 mts. in the last 2 years:

c. No. of times advanced loans to others in the last 12 months:

10. Market Participation

Commodities sold	Where sold*	How transported	Distance

\* At homestead : 01, hat : 02, within the village : 03

11. Information on household members:

1. a. Children 10 or below:

	Male	Female
Age		
Height		
Weight		

b. Adult members (above 10 years)

	Male	Female
Age		
Years of Schooling		
Literate?		
Skill in net making		
Skill in boat building		
Other skill (specify)		
Main occupation		
Subsidiary occupation		
Peak Months		
Which Months		
Nature of work		
Place of work		
Distance from homestead		
Average days work per month		
Wage/salary/return		
Lean month		
Which months		
Nature of work		
Place of work		
Distance from homestead		
Average days worked		
Wage/salary/return		

\* Lean months : No. or little work within the village.

12. Would respondent be interested in joining a cooperative for catching and marketing fish from one of the government tanks?  
If no, why?

13. Which of the following have you eaten in the last week?

Items	Rice	Wheat	Dal	Mustard oil	Ghee	Fish	Meat	Eggs	Veget.
No. of Items									

14. Death of children in household since independence (1971)

Child No.	Age at Death	Cause of Death
1.		
2.		
3.		

15. Source of drinking water : Tube-well, open well, protected well, pond, other.

16. Representation in rural institutions:

Description of institution	Period of association	In what capacity
Family members	1	
	2.	
	3	
Kin group	1	
	2	

17. Non-agricultural activities:

- a. No. of weaving machine owned/hired : Rents:  
Value produced by one person in a day (Hours):  
Cost (input) of production per day: labour cost:  
Inputs required (Non-labour): Labour: Self/Hired/Self+hired.
- b. Cane crusher owned/hired: if hired, rents:  
Value or amount produced in a day (Hours)  
Labour : Self/Hired/Self + hired  
Labour required:  
Cost (input) of production per day : Labour cost:

c. Handycrafts : Inputs:  
 Output produced from 1 bamboo:  
 Days of work required:  
 Price of inputs:                      Labour: self/hired/self + hired

d. Fishing boats owned/hired:      If hired, rents:  
 Fishing nets owned/hired:  
 Fish production per day:  
 Fishermen employed:

e. Other occupations:

Inputs required	Cost of inputs (excluding human-labour)	Output produced	Value of output	Labour required
1.				
2.				
3.				
4.				

18. Land ownership of the family at inception:

Land acquired:

Area	How Acquired	Date

Land Lost:


19. Attitude towards Project:

20. Factional Alliances:

Shamaj:

Interviewer's name:

Date :

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