Flood Action Plan
FAP 3
North Central Regional Study

Supporting Report IV
Human Resources & Socio-Economics IV.1
Institutions IV.2

February 1993

Financed by:

Commission of the European Communities and
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BCEOM, Compagnie Nationale du Rhone
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NORTH CENTRAL REGIONAL WATER RESOURCES DEVELOPMENT PLAN

FAP-3

SUPPORTING REPORT IV.1 - HUMAN RESOURCES AND SOCIO-ECONOMICS

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CHAPTER 1
INTRODUCTION

1. Introduction

The development objectives of Bangladesh, see (Main Report, Section 1.1.3) are generally as follows:-

- attainment of self sufficiency in food production
- increased employment opportunities and thereby increase in income
- alleviation of rural poverty
- enhancement of the contribution of the industrial sector to the Gross Domestic Product

However in recent years, the occurrence of catastrophic floods, together with a continuing rapid growth in population have restricted progress in achieving these goals. The Government seeks through the Flood Action Plan a comprehensive and more permanent solution to the problem of recurrent floods that cause extensive damage to life and property. In this way it is hoped to secure an environment that allows for sustained economic growth.

This Study (FAP-3) looks at possible economic development that should occur as a consequence of improving the management of the water resources of the Region, and in particular focuses on the impact of flood control options for the Region. The physical aspects of proposed developments relate to infrastructure such as embankments, drainage canals and compartmentalisation. The non-physical aspects relate to the Region's inhabitants, and how they would adapt their activities to the changed conditions.

Planning of resources should be comprehensive and integrated; taking into account consideration the effect on the biological and human systems, as well as the physical aspects. The justification of proposed projects should be, not only in increased production for the region but also in equitable distribution of the benefits. An effort should be made to increase the participation of the rural masses of the region so that increased income benefits the region as a whole.

The impact of projects on the people of the region can only be assessed if the present socio-economic composition of the Region is known. The main objective of the socio-economic component of the present Study is thus to present an overall view of the socio-economic status of the people in the region, highlighting interregional variations with regards to key socio-economic indicators.

The immediate objectives of the study are:-

- gain an appreciation of the development status of the Region and the socio-economic status of the people in the Region.
- assess socio-economic impact of floods on the people in the rural areas of the NCR, especially the farmers, the landless, the fishermen, the boatmen and the artisans
- analyze the perception of different target groups who will either benefit or be adversely affected by the FCD projects
- identify major constraints to development of the rural area of the NCR

POPULATION STUDY

CHAPTER 2
POPULATION STUDY

2. Population Study

2.1 Description of the Project Area: Administrative Boundaries

Figure IV.1.1 shows the administrative divisions of NCR. The divisions are Manikganj, Munshiganj, Narayanganj, Jamalpur, Mymensingh, and Tangail. Only the districts of Tangail and Manikganj are totally included in NCR.

Table IV.2.1 indicates all thanas (or sub-districts) which are included in the NCR, as well as the corresponding number of unions, mauzas, villages, municipalities, wards and mahallas.

TABLE IV.2.1

Details of Administrative Units in NCR

Districts	Thana	Unions	Mauzas	Villages	Municipalities
Dhaka	17	72	951	1751	1
Gazipur	6	36	623	911	1
Manikganj	7	65	1153	1649	1
Munshiganj	5	61	496	821	--
Narayanganj	4	14	167	252	1
Jamalpur	6	49	760	1048	1
Mymensingh	6	68	814	271	1
Tangail	11	99	1938	2474	2
Total NCR	**62**	**464**	**6902**	**9187**	**9**

Definitions used in Bangladesh Census Statistics for the concepts of district, thana, municipality, ward, mahallah, union, mauza and village are given in Annex I.1.2.

2.2 Total Population of NCR in 1981

1) The total population of NCR in 1981 was 12,899,968 according to BBS Census. Total rural population was 9,107,632 total urban population was 3,791,980

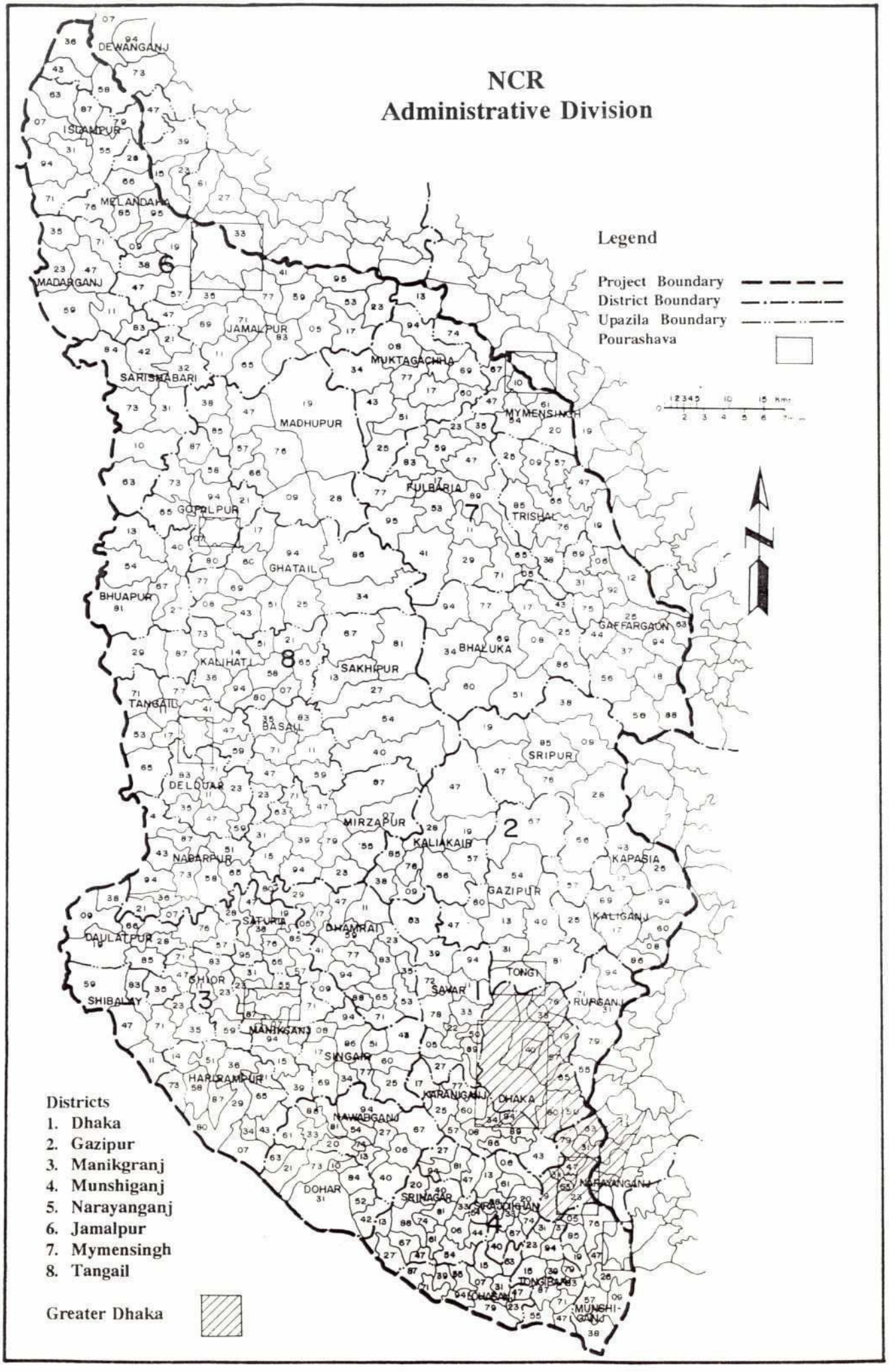
2) Density of population in 1981 was 956 per Km^2

3) Total projected population in the NCR in 1991 is;
   - 15,510,484 with AGR 1.86
   - 15,989,047 with AGR 2.17

   Total rural population is estimated to be 10,843,674 using AGR of 1.76, Total urban population is estimated to be 6,135,681 using AGR of 4.93.

4) Density of population in NCR in 1991 is 1149 or 1185 per/Km^2 (using the 2 different AGR 1981-1991).

Figure: IV.1.1


NCR
Administrative Division
Legend
Project Boundary
District Boundary
Upazila Boundary
Pourashava
0 1 2 3 4 5 10 15 Km
N
DEWANGANJ
ISLAMPUR
MELANDAHA
MADARGANJ
JAMALPUR
SARISHABARI
MADHUPUR
MUKTAGACHHA
MYMENSINGH
FULBARIA
TRISHAL
GOPALPUR
GHATAIL
BHUAPUR
KALIHATI
SAKHIPUR
BHALUKA
GAFFARGAON
TANGAIL
BASAIL
SRIPUR
DELDUAR
MIRZAPUR
KALIAKAIR
NABARPUR
KAPASIA
GAZIPUR
SATURIA
DHAMRAI
KALIGANJ
DAULATPUR
TONGI
SHIBALAY
SHIBPUR
SAVAR
RUPGANJ
MANIKGANJ
SINGAIR
HARIRAMPUR
KERANIGANJ
DHAKA
NAWABGANJ
NARAYANGANJ
DOHAR
SRINAGAR
SONARGAON
TONGIBARI
MUNSHIGANJ
Districts
1. Dhaka
2. Gazipur
3. Manikgranj
4. Munshiganj
5. Narayanganj
6. Jamalpur
7. Mymensingh
8. Tangail
Greater Dhaka

5) Population of Dhaka municipality was 2,475,710 in 1981. It is estimated in 1991 to be 3,406,353 using the general AGR 2.17 (1981-1991), and 3,397,187 in Preliminary Results of BBS 1991 Census. Population of Greater Dhaka 3,440,147 in 1981.

6) Total number of households was 1,892,288 in 1981 it is 3,158,183 or 3,255,626 in 1991 (using 2 different AGR for the period 1981-1991).

Annex I.1.3 gives the total urban and rural population per sub-district in 1981, in NCR.

2.3 Population Density

Annex IV.I.3 shows the density of population of 1981 per union for all thanas and districts of NCR. Maps per Planning Unit are also given in SR IX showing the density of population per union in 1981.

It is important to look at the distribution of densities [1]. For instance, in Jamalpur District, the area located along the Jamuna river is comparatively less densely populated (from 400 to 600 per km^2) than the area located all along the Brahmaputra. This is apparently, because of the continual changes of river banks and erosion of river banks.

The same feature occurs along Padma river in Manikganj District (in Harirampur, Daulatpur and Shibalaya thana) where there are lower densities in areas prone to erosion.

Madhupur Tract has a low density of population mostly ranging from 300 to 599 per km^2; this area covers a part of Mymensingh, Tangail and Mirzapur districts.

Gazipur

However, it must be noted that the size and shape of thanas may hide the distribution of population in the area, which should be adjusted and corrected through interpretation of aerial photographs.

2.4 Distribution of Mauzas and Villages according to their Total Population

For definitions of mauzas and villages, refer to Annex I.1.2.

Mymensingh, Gazipur and Narayanganj districts have the largest numbers of mauzas with a population of 10 000 or more, (14, 12 and 11 respectively). Other districts do not have many highly populated mauzas.

---

1 Although the true spatial distribution of population per union is screened by the organization of local government system in Bangladesh (where on an average 20 spatially contiguous villages with an approximate population of 20 000 constitute one union, and 10 unions with an approximate population of 182 000 constitute an upazila), it can be observed on the map of density of population per union that the size of union is decreasing considerably in the southern part of the NCR (in Manikganj, Munshiganj, Dhaka, Narayanganj districts) and that unions cover much larger area in Madhupur Tract.

Total distribution of mauzas in the NCR by population size.

Mauzas below	500	:	31.2%
Mauzas	500 to 999	:	24.6%
Mauzas	1000 to 1999	:	23.5%
Mauzas	2000 to 3499	:	12.0%
Mauzas	3500 to 4999	:	4.3
Mauzas	5000 to 7999	:	2.9
Mauzas	8000 to 9999	:	0.6
Mauzas	10000 and more	:	0.8

Small mauzas which have population less than 500 in habitants are numerous in Manikganj Dist., (48,9%). Mauzas having population less than 1000 represent more than half of the total number of mauzas in NCR (55.9%).

Scattering of mauzas has to be considered in planning of infrastructure. Exact location and distribution of population can only be analyzed from the interpretation of aerial photographs.

2.5 Population Characteristics

2.5.1 Sex and Age of Population

Sex and age structure for NCR can be obtained from District statistics; but no adjustment can be made for districts which are only partly included in NCR. The Bangladesh sex and age structure is reproduced here as a reference.

2.5.2 Sex Ratio

The male-female ratio in 1991 is seen to be highest in Dhaka district (124.2) followed by Narayanganj (115.4). This may be due to the fact that within the NCR, the highest concentration of economic activities is in these areas and many of the men involved in these activities and living in these areas leave their families in their village homes thus the number of males enumerated turn out to be more than the number of females.

Annex I.1.4 gives sex-ratio per district in 1991.

Sex Ratio in the Municipalities of Dhaka SMA

Sex ratios in the municipalities of Dhaka SMA in 1981 were very high:

141 in Dhaka
131 in Narayanganj
159 in Tongi
132 in other urban areas included in Dhaka SMA

But it is strange to observe that the average size of households was not so low (5.9, 5.7, 5.2, 5.5 respectively) as could be supposed, seeing that most men come to the capital city looking for jobs without immediately setting down in the city with a family.

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TABLE IV.2.2

Distribution of Population by Age, Sex and Residence 1981-1987 (in percent)

Age Groups	Male					Female				
	1981	1984	1985	1986	1987	1981	1984	1985	1986	1987
BANGLADESH										
0-4	16.6	15.7	15.8	14.8	15.0	17.4	16.4	16.4	15.4	15.5
5-9	16.0	16.6	16.6	16.4	16.5	16.5	17.0	17.0	16.9	16.7
10-14	13.9	13.5	13.4	13.7	13.7	12.9	12.7	12.6	12.3	12.7
15-49	42.1	43.9	43.9	44.1	44.2	43.4	45.4	45.4	45.9	45.8
50+	11.4	10.3	10.3	11.0	10.6	9.8	8.5	8.6	9.5	9.4
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
RURAL										
0-4	17.3	15.9	16.0	15.3	15.3	17.6	16.6	16.7	15.8	15.8
5-9	16.6	16.7	16.8	16.7	16.7	16.6	17.2	17.3	17.0	17.0
10-14	14.1	13.4	13.4	13.5	13.5	12.6	12.4	12.2	12.2	12.2
15-49	40.4	43.5	43.5	43.1	43.5	43.2	45.0	45.0	45.3	45.3
50+	11.6	10.5	10.5	11.4	11.0	9.9	8.3	8.8	9.7	9.7
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
URBAN										
0-4	13.0	14.2	14.2	12.0	12.0	16.0	14.7	14.6	12.7	12.8
5-9	12.7	15.5	15.4	15.7	15.6	15.4	15.6	15.6	15.9	15.9
10-14	12.8	14.1	14.0	14.2	14.2	14.5	14.6	14.8	14.6	14.6
15-49	51.4	47.5	47.7	48.6	49.0	44.5	48.5	48.5	49.5	49.8
50+	10.1	8.7	8.7	9.5	9.2	8.7	6.6	6.5	7.3	6.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source : Population Census, BBS 1981

2.5.3 Size of Household

The average size of household per thana ranges between 5.5 and 6. The difference in the average size of household between rural and urban areas is minimal; there is no rural urban difference in Tangail, Gazipur and Narayanganj. This fact would show that in 1981 there was no difference in the behaviour of families in the rural and the urban areas of Bangladesh or that what was considered as urban area in 1981 according to the criteria of BBS was not contrasting enough with rural areas to have any influence on the socio-economic behaviour of families. The size of household in the districts of the NCR have been estimated by BBS as follows (in Preliminary Results of Census 1991).

Mymensingh	4.99
Jamalpur	4.79
Tangail	5.10
Manikganj	5.06
Dhaka	5.53
Gazipur	5.00
Narayanganj	5.32
Munshiganj	5.56

Average ?

It would seem that the average size of household has decreased since the 1981 census.

Field survey results are indicated in Annex-II.

Definition of Household

Individual units in rural areas are the household. Normally a household is built around a nuclear family (depending on its phase in the development cycle, it can be an incomplete or an extended family).

The household is a unit for **production** and **consumption.**

2.5.4 Mortality

Level

The CDR is higher in rural areas as compared to that in the urban areas. It ranged from 13.20/thousand (in 1983) to 10.77/thousand (1980) to 8.50/thousand (1984) in the urban areas. The national average followed closely the rural mortality figures.

2.5.5 Fertility

Level: In all of the years 1980-1988, CBR in the rural areas is higher than that in the urban area (see Table IV.2.3). The national average is quite high ranging from 33.2/thousand to 35.0/thousand over those years. The urban CBR ranged from 22.9/thousand to 29.2/thousand and the rural CBR ranged from 33.9/ thousand to 36.9/thousand.

The Net Reproductive Rate (NRR) for Bangladesh was nearer 2 than 1 over the period 1981-1987. In 1987 it stood at 1.69, the lowest in that period. The NRR in the urban areas was lower than in the rural area. In 1987, urban NRR = 1.17 whilst that for rural area was 1.74.

TABLE IV.2.3

CBR, CDR and Rate of Natural Increase, by Region in Bangladesh

Year	CBR (Per thousand)			CDR (per thousand)			Rate of Natural Increase (per thousand)		
	Rural	Urban	Nation	Rural	Urban	Nation	Rural	Urban	Nation
1980	33.9	29.2	33.4	10.77	6.81	10.18	23.13	22.39	23.22
1981	35.7	24.8	34.6	12.23	7.21	11.50	23.47	17.59	23.10
1982	36.9	22.9	34.8	12.80	6.90	12.22	24.10	16.00	22.58
1983	36.4	27.1	35.0	13.20	7.50	12.30	23.20	19.60	22.70
1984	36.1	25.0	34.8	12.90	8.50	12.30	23.20	16.50	22.50
1985	35.3	28.0	34.6	12.90	8.30	12.00	22.40	19.70	22.60
1986	35.4	25.9	34.4	12.30	8.40	11.90	23.10	17.50	22.50
1987	34.6	24.8	33.3	11.80	7.60	11.50	22.80	17.20	21.80
1988	34.5	24.9	33.2	11.80	7.40	11.30	22.70	17.50	21.90

Source : Statistical Yearbook of Bangladesh, 1990, Table IV.2.2 Table IV.2.3

2.5.6 Fertility, Mortality and Rate of Natural Increase of Population

The trends in fertility, mortality and natural increase in population (Figure IV.1.2) shows a wide range of variation both in the levels and trends in fertility, mortality and population increase according to whether the population is rural or urban. The levels of both fertility and mortality are lower in the urban areas as compared to rural areas. As such, natural rate of increase of population is also lower in the urban areas. However, the CBR in the urban areas shows an erratic behaviour from year to year. From 1980 to 1982 the birth rate was declining with a sudden increase in 1983 followed by a decline in 1984 and another increase in 1985. Since 1985 CBR shows a downward trend. Accordingly, the NI also shows an erratic behaviour. The CBR in the rural areas shows an upward trend for 1980 to 1982, after that a very slow downward trend is noticed. However, the level being very high (above 34.5 per thousand), fertility will be the decisive factor for population growth. Although CDR is higher in the rural areas, it shows a slightly declining trend, both in the rural and the urban areas since 1985.

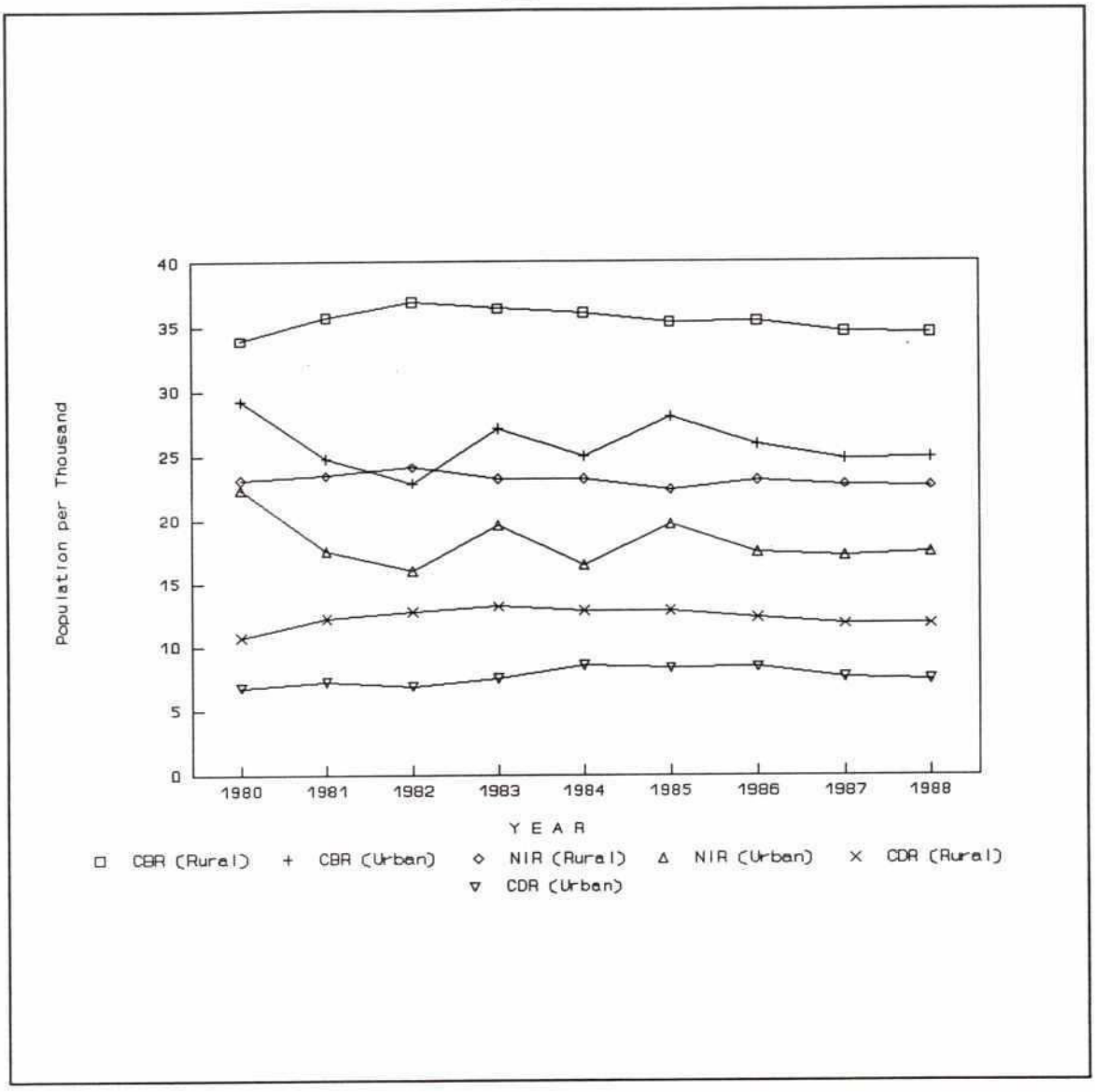
2.5.7 Infant Mortality Rate (IMR) and Child Death Rate (CH.DR)

IMR = The number of deaths of infants under one year of age per 1000 live births in a given year.

CH.DR = The child death rate is the number of death of children aged 1-4 per 1000 mid-year population in the same group.

In 1990, the infant mortality rate was 108 per 1000 (for UNFPA) or 110 per 1000 (for UNICEF). It was 125 per 100 in 1985.

Figure: IV.1.2
Levels and Trends in Fertility, Mortality and Population Increase in Rural and Urban Bangladesh



The high infant mortality rate and child death rate are the main reasons for pro-natalist behaviour among poor people, as uncertainties about the survival of their children haunt parents. Other reasons are either cultural or economic. The cultural one is the custom of early marriage. The economic one is the desire to have sons, to inherit lands and property and to support parents in old age.

2.5.8 Life Expectancy at Birth

In 1988 life expectancy at birth was estimated to be 55.9 for male, 54.4 for female.

2.6 Migrations

Migration is an important component of population dynamics. It leads to spatial redistribution of population and influences the demographic and socio-economic condition of a region as well as the country. As the current districts were not formed before 1981, separate data for each of these do not exist. Some of these are lumped together. However, an idea of net migrations in the districts of the study area is given by Table IV.2.4. Since 1961, only Dhaka shows net in-migrants from other districts. Mymensingh, Tangail and Jamalpur are districts where net out-migration has been taking place over the past decades.

Table IV.2.5 shows migration rate by direction of migration over the 3-year period 1985-1987. In the case of total rural in-migration, most of it is accounted for by rural-rural migration by females in all the 3 years. Marriage being the most important reason for migration.

In the case of total urban in-migration,it is interesting to note that most of it is accounted for by urban-urban rather than by rural urban migration in all the 3 years cited. The male-female differential in the migration rate is also not very wide. The reasons for urban-urban and rural-urban migration cited for the years 1986 and 1987 were mostly marriage and other reasons' rather than economic activities[2]. The importance of marriage as a reason had however declined in 1987 as compared to 1986.

Trend

Nothing much can be said about the trend in the direction of migration, based on data over a 3 year period. However, a noticeable increase in total urban in-migration had accrued between 1985-87, from 17.50/thousand in 1985 to 30.52/ thousand in 1987. But rural-urban migration did not show a steady increase over the period in 1986 it was higher than in 1985 but in 1987 it had declined to the 1985 level.

---

2 Current Levels and Trends of Mortality Fertility, Nuptuality Patterns and Internal Migration in Bangladesh, 1990, BBS p.37.

TABLE IV.2.4

Life Time Net Migrants by Region

Region Farmer	Net Migrants			
District	1951	1961	1974	1981
Dhaka	- 57402	+ 50846	+ 578654	+ 1142369
Jamalpur	--	--	--	- 21343
Mymensingh	- 29755	- 122739	- 111250	- 226925
Tangail	--	--	- 96870	- 24392

(+) indicates net in-migrants from the districts

(-) indicates net out-migrants from the districts

Source : SYB, 1990, BBS Table 2.43 p.76

Tangail and Jamalpur districts were formerly part of Mymensingh district

* Separate data for Manikganj, Munshiganj, Narayanganj and Gazipur are not available.

TABLE IV.2.5

Migration rate by Direction of Migration 1985-1987 (per thousand)

Direction of Migration	1985			1986			1987		
	Both sex	Male	Female	Both sex	Male	Female	Both sex	Male	Female
Rural to Rural	6.47	1.99	12.36	9.18	3.60	15.13	8.15	3.39	13.31
Urban to Rural	0.46	0.34	0.59	0.42	0.36	0.50	0.55	0.42	0.68
Rural Immigration	6.93	2.33	12.95	9.60	3.96	15.63	8.70	3.81	13.99
Urban to Urban	13.21	14.35	11.99	24.05	27.37	20.51	26.46	28.49	24.23
Rural to Urban	4.29	3.82	4.80	6.48	5.82	7.17	4.06	3.37	4.81
Urban In-Migration	17.50	18.17	16.79	30.53	33.19	27.68	30.52	31.86	29.04

Source : Current levels and Trends of Mortality, Fertility Nuptiality Patterns and Internal Migration in Bangladesh, 1990, BBS Table 2, p 35.

2.7 Literacy Rate [3]

Literacy rate of the country was 23.8 in 1981. It is estimated to be 44.21% in 1991 (Preliminary results of Population Census 1991) (population 5 years and above). In the whole country, female literacy rate is about half (16%) of male literacy rate 31.0%.

TABLE IV.2.6

Literacy Rate of Population 5 Years and Above by Region 1981

Districts	Both sex	Male	Female
Dhaka (1)	31.3	39.0	22.2
Jamalpur	14.7	19.7	9.5
Mymensingh	17.6	22.9	12.0
Tangail	20.2	26.8	13.5
Bangladesh	23.8	31.0	16.0

(1) Old division

Annex I.5 gives some recent informations on literacy rate for only 12 thanas of the NCR. Data have been obtained in 1989.

Education and Health Facilities

a) Primary Schools

The existing primary school provision is shown in the following table. Government primary schools are free, but have inadequate staff, lack furniture, equipment and books and are usually housed in buildings of poor condition.

TABLE IV.2.7

Primary School Provision by District 1988

Districts	Total No.of Population (000)	Govt.	Total Schools			Total No. of Teacher
			Non-Govt.	Rural	Urban	
Greater Dhaka	1217	3313	374	3122	565	18325
Jamalpur	229	946	147	1002	91	4307
Mymensingh	731	2712	432	2974	170	12447
Tangail	277	930	155	1023	62	5000
Total	**2454**	**7901**	**1108**	**8121**	**888**	**40079**

3 Literacy rate for population 5 years and above has been defined as number of literate persons of age 5 years and above per 100 persons of the same ages. In 1981 Census, a person was treated as literate if she could write a letter in any language.

b) **Secondary Schools**

Secondary schooling covers the period from class 6 to class 10. Existing secondary school in the area covering the NCR provision is summarized in the following table :

TABLE IV.2.8

Secondary School Provision by District 1988

Districts	Total No.of Pupils (000)	Total Schools		Total No.of Teacher
		Rural	Urban	
Dhaka	460	598	310	13851
Jamalpur	61	164	44	2264
Mymensingh	162	401	101	5601
Tangail	95	239	37	2987
Total	**778**	**1402**	**492**	**24703**

Most Secondary Schools are Non-Governmental

c) **Colleges**

College pupils come from the post secondary school age group, usually between ages 15 and 20. Pupils study for an intermediate degree for two years, which is the preparatory stage for a further 2 years leading to a full degree awarded by the university.

Total college population, for the same zone as mentioned above, reaches 166,234, for 5,073 teachers. Almost 70% of them are found in Dhaka district.

d) **Health Provisions**

TABLE IV.2.9

The District Areas Comprising the NCR Present the Following Facilities

Facilities	Dhaka	Jamalpur	Mymensingh	Tangail	Total
District Hospitals	4	2	3	1	10
Other Hospitals	95	3	8	4	110
Thana Health Complexes	24	8	29	9	70
Dispensaries	115	35	88	54	292
Family Welfare Centres	100	33	50	54	237
Total	**338**	**81**	**178**	**122**	**719**
Beds	**1278**	**127**	**154**	**896**	**2455**

The objectives of the thana level health system is to provide primary health care services including maternity treatment, treatment of common diseases, minor surgery and prevention of spread of diseases.

2.8 Urban and Rural Population

2.8.1 Definition of Urban Population

The definition of urban area has changed over time and differ from one BBS survey to the other. Therefore, it becomes very difficult to try to study the past evolution of urban areas and populations.

- **In 1961 and 1974 census** an urban area was defined to be a concentration of population of at least 5000, with a minimum of Institutions.

- **In 1981 census** urban areas were defined as:
  - standard municipal areas
  - municipalities
  - non-municipal urban areas
  - thana headquarters which were neither municipalities, nor non-municipal urban areas.

- **In 1983-84 census of agriculture**, urban areas are :
  - all 79 municipalities of the country, while the rest of the country including other urban areas was included in rural areas.

So it can be considered that the growth of urban population between 1961, 1974 and 1981 is resulting from.

- the growth of existing urban areas
- the change of former rural areas becoming urban
- in 1981, the addition of thana headquarters which were neither municipalities, nor non-municipal urban areas before.

2.8.2 Total Urban and Rural Population in 1981 and 1991

Annex I.1.6 gives the total population of project area per district and thana in 1981 and 1991. 1991 figures are estimated using 2 different AGR, 1.86 and 2.17.

Distinction between rural and urban population is made using the definition of urban population of population census 1981 (see Annex I-1.2).

AGR 1981-1991 used for rural population projection is 1.76, AGR used for urban population is 4.93. AGR are those of BBS. The consultant has no informations on migrations in the NCR, which could either confirm or invalidate these rates.

Figure IV.1.5 shows percentage of urban population by thana in NCR 1981.

2.8.3 Evolution of Secondary Urban Centres

A network of secondary urban centres should be planned in the near future in the NCR, with social and commercial infrastructures and equipments, with employment opportunities, with stores and workshops for agricultural supplies. These secondary level urban centres could become poles for regional development, should decentralize activities of Dhaka, decrease the in-migration rate to Dhaka and become attractive poles for rural areas.

For these reasons, distinction between modern and traditional urban areas in NCR will be difficult to use in statistics for next years.

2.8.4 Municipalities in NCR

Distribution of municipalities in the NCR fall into 4 categories according to the BCAL (1983-84)

- metropolitan municipalities :Dhaka
- large municipalities(population 100 000 and above : Mymensingh), Narayanganj
- medium municipalities : Tongi(population 50 000 : Jamalpur to less than 10 000): Tangail
- Small municipalities: Manikganj (population less : Munshiganj than 50 000) : Muktagacha, Gopalpur.

2.9 Population Projections

2.9.1 Different Population Growth Rates

Population projections are made on assumptions regarding the trends of fertility and mortality, refined with migrations prospects, wherever it is possible. Such projections are based on a very detailed age structure of population, and on the 5 years plans of the government of Bangladesh for the next 20 years for improvement of all socio-economic factors which influence on the 3 demographic indicators; mortality, fertility, migrations.

Secondary factors (socio-cultural factors, health, improvement, employment opportunities etc.) may also interfere but these cannot be estimated in advance.

Nobody is in a position to assume to-day what will be the evolution and trends of all these parameters. It would be only speculation. Therefore, low and medium variants of projections will be used for the NCR.

[For reference only, but not to be used in this report, MPO and BBS projections are presented in MPO technical Report No.24, based on different assumptions of the evolution of mortality and fertility. MPO had expected a Bangladesh population of 113 M in 1990, assuming that the margin of error would be very small. BBS preliminary report of census 1991 gives a total population figure of 104,766,143. So the margin of error would be 8,233,857 which represents about 8% in excess in the projection. The consultant would agree more on the assumption of BBS which based its projections on the conditions that a sharp fall in fertility will be combined with a sharp decrease in mortality. It is, for instance, a fact that as long as infant mortality and adult mortality are high, fertility will not decrease much, as families need replacement solutions to have manpower, to inherit lands, and to support family members in their old age].

Correlations between mortality and fertility, which determine the trends in increase of population are numerous and difficult to estimate. No demographer is able to forecast correctly the duration of the transition phase of fertility. So 2 variants (low and medium) will be used here for population forecast with differentiations for urban and rural population.

- Average size of household, is supposed to have decreased between 1981 and 1991, but the starting period or transitional phase for decrease is not known.

Population Growth, Different Projection Rates

- According to United Nations population projections the rate of natural growth of population of 2.2 per cent implies that the population will double in 32 years[4].

  Annual growth rate is expected to be 2.69 (5.57 in urban area 2.19 in rural areas) for the five year period 1990-1995 (United Nations projections) (medium variant).

- The population growth rate is targeted to drop from 2.16 per cent in 1990 to 1.81 percent by 1995 in The Fourth Five Year Plan of Bangladesh.

- BBS estimated the natural growth rates of population for the period 1981-1988 as below:

  total 2.18 %
  urban 1.75 %
  rural 2.28 %

  The annual growth rates estimated for the same period were:

  total 2.21 %
  urban 4.93 %
  rural 1.76 %

- It must be noted that all variants of United Nations Projections are higher than projection rates estimated by BBS. (UN variants are calculated considering that net migration = 0)
  The different UN variants are: (Source: World Population Projects 1990-Population)

Projection of total population for 1991 has been made using 2 different AGR (1.86, 2.17). Projection of total rural population for 1991 has been made using AGR 1.76. Projection of urban population for 1991 has been made using AGR 4.93 (see Annex I.1.6).

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4 History of growth of population in Bangladesh.
It took 220 years for the population to double from 10 million in 1650 to 22 million in 1872.
It took 80 years for the population to double from 22 million in 1872 to 41 million in 1941.
In 29 years from 1951 to 1980, the population has more than doubled.

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- **Estimated AGR for Next 30 Years, used for Population Projections by the Consultant**

It is not possible within the frame work of this pre-feasibility study to prepare true projections of population for the NCR for the next 30 years. Too many indicators and demographical, socio-economic characteristics are unknown for the future.

Another difficulty is to decide what can be considered as urban population today and the definition of urban population tomorrow.

It is obvious that urban development of small urban centres in the rural areas will be less important in the future than the ones of district headquarters and of Dhaka. Nevertheless, it is not reasonable to predict the changes of urban areas in the NCR, as there is

1) no study on rural-urban migrations.

2) no development plans to estimate the future increase of socio-economic infrastructures, small industries, cottage industries and services in small urban areas.

Therefore it has been decided to prepare 2 projections rates (1 high, 1 medium), for rural and urban population. It is considered that the increase of population in Dhaka will be the consequence of in- migrants coming from all parts of Bangladesh. Special projections will be made for Dhaka.

TABLE IV.2.10
Projection Rates

	1990-1995		from 1995			
	Total	Rural	Urban	Total	Rural	Urban
High rate	2.69 (2.7)	2.19 (1.9)	5.57 (6.1)	medium variant of UN of		
Medium rate	2.21	1.76	4.93	1.81		

UNFPA Reports
Studies No.120 New York, 1991.

TABLE IV.2.11

Estimated Population Growth Rate (%)

Estimated Population growth rate %	Periods						
	1985-90	1990-95	1995-2000	2000-05	2005-10	2010-15	2015-20
Low variant	2.53	2.52	2.38	2.01	1.67	1.43	1.25
Medium in variant	2.67	2.69	2.60	2.44	2.03	1.67	1.46
High variant	3.03	3.13	2.99	2.83	2.66	2.52	2.15

Considering the UN projection rates, the assumed period to reach the replacement level in medium variant projections will be 2025-2030.

The population goal of Bangladesh government is to achieve a net reproduction rate of 1 (one) by 20051 [5]. Despite progress, this target will not be attained by the deadline (as it is said in a UNFPA Report).

- Preliminary report of the Population Census 1991, gives the following annual growth rate in 1991.
  2.17 as compared to enumerated population, 1981
  1.86 as compared to adjusted population, 1981
- UN estimated projections rates for urban and rural population (medium variant).

TABLE IV.2.12

Estimated Annual Growth Rate

Annual GR	1985-90	1990-95	1995-00	2000-05	2005-10	2010-15	2015-20
Total	2.67	2.69	2.60	2.44	2.02	1.67	1.46
Urban	6.33	6.14	5.81	5.37	4.64	4.09	3.66
Rural	2.02	1.93	1.74	1.48	0.98	0.53	0.21

2.9.2 Preliminary Results of Census 1991

AGR per district 1981-1991 (see Table IV.2.12). The table shows the annual growth rate of population per district between 1981 and 1991 (population figures are provisional):

- District : AGR 1981-1991 (in %)
- Mymensingh 2.3
- Jamalpur 4.6
- Tangail 1.9
- Manikganj 1.0
- Dhaka 4.0
- Gazipur 3.3
- Narayanganj 3.8
- Munshiganj 1.1

5 Net Reproduction Rate 1.00 means each generation of mothers has exactly enough daughters to replace itself in the population

It can be seen that there is a wide variation in the annual population growth rate of all the districts in the NCR. Lowest AGR are observed in Munshiganj and Manikganj, highest in Jamalpur, Narayanganj and Dhaka.

Size of household seems to have slightly decreased since 1981 and on an average seems to be about the same in all district except in Mymensingh and Jamalpur where it could be less than 5.

	1981	1991
• Mymensingh	5.49	4.99
• Jamalpur	4.40	4.79
• Tangail	5.90	5.10
• Manikganj	6.20	5.06
• Dhaka	6.01	5.43
• Gazipur	8.15	5.00
• Narayanganj	5.08	5.32
• Munshiganj	6.00	5.56

2.9.3 Projection to Year 1991 of Total Number of Households

Projections to year 1991 of total number of households have been made dividing the total projected population obtained with the two different AGR 1981-1991, by 2 different sizes of households; 5.7 and 5.2.

5.7 was the national average as well as the NCR average in 1981. According to BBS, the average size of household has decreased during last decade, being now 5.2.

The field survey did not confirm this decrease of average size of household, which, according to the consultant, is too optimistic. That is the reason why 2 calculations are made here (see Annex I.1.9).

2.9.4 Projections of Urban Population in Bangladesh

Projections of urban population have been made by many organizations and through many surveys. As a reference only, projections of World Bank, BBS and MPO are reported here; these informations are extracted from MPO report No. 24.

- World Bank projections are based on predetermined growth rates of the urban population itself, growth rates will be 5.4% between 1985 and 1990, then 4.4% between 2000 and 2005.

- BBS combines a constant growth rate with assumptions of the share of urban in total population.

- MPO projections of urban population are based on 2 assumptions;

  1) the natural rate of increase of population is the same in rural and in urban areas
  2) a fixed proportion of the increase in rural population migrate to urban areas. This proportion is calculated on the basis of the change between 1974 and 1981 and equal to 0.481 (= migration rate).

Growth rate of urban areas will still be around 4% between 2000 and 2005.

- Projections of WB are lower than those of BBS and MPO.

Projection of urban population in the NCR (Dhaka excluded) can only be a theoretical one, as many factors are unknown and cannot be evaluated for the next 20 years. The main factors are:-

- In all urban areas the expected development in the next 20 years
  - social and commercial infrastructures
  - transport network around urban areas
  - entertainment, cultural development
  - income generating activities
  - employment opportunities
  - development of secondary and tertiary sectors.

- The above mentioned factors are the main factors that will
  - change and hopefully improve the way of life and livelihood of people
  - and make urban areas "poles of attraction" i.e., poles of regional development.

- Changes in the standard of living in the urban areas will, in turn, influence:
  - the behaviour of people as regards the composition of family
  - the phenomenon of in-migrations, from rural to urban areas.

Therefore, any regional development should be based on the development of a network of urban centres, from big capital city (Dhaka) to medium urban centres like administrative headquarters (= intermediary level), down to small urban centres which could be, but not only, thana headquarters, big market places, etc.

For each level of this urban network, the growth rate of population cannot be expected to be the same. A preliminary differentiation could be done between modern urban areas like Dhaka and may be Mymensingh, and semi-urban (or semi-rural) areas.

From Annex I.1.6 and I.1.10 giving the total, urban, and rural projections of population per thana for 1991, and the estimated population of municipalities for 1991 (un-adjusted), some interesting findings can be obtained. It appears that for the municipalities of Dhaka, Jamalpur and Mymensingh the generally assumed urban AGR of 4.93 could be too high for the period 1981-1991. On the contrary, it could be that this urban AGR should have been used to forecast a part of rural population 1981 in Tongi, Joydevpur (where there is the new municipality of Gazipur,) and Narayanganj. So in these thanas a considerable part of rural population of 1981 could be now urban, and municipal areas have also increased in size. We could hypothesise that this increase of urban to rural is composed of landless people.

a. Dhaka Municipality

It is interesting (or surprising) to note that the projected population of Dhaka Municipality from 1981 to 1991, using the AGR of 2.17 for total population (without distinction of rural and urban population) is the same as the estimated population of BBS in Preliminary Report of 1991 Census respectively 3,406,353 and 3,397,187). This shows that the

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BBS AGR of 4.93 for the urban areas for the period 1981-1991 was too high as the total of urban and rural population for 1991 then becomes 327 627 (rural) + 4001 598 (urban) 4,329,225 which is much more than the preliminary estimation of BBS.

b. Gazipur District

Gazipur Municipality

Is a new municipality created after 1981 and 1983-84 census. It is in Joydevpur thana. Population of thana without municipality population is in 1991: [H1 = AGR 1.86, H2 = AGR 2.17]

		(T.P.91) [6]	(M.P.91) [7]	
with H1	:	278,722	- 94,028	= 184,694
with H2	:	287,321	- 94,028	= 193,293

Rural population projected for 1991 from 1981 data (based on 1981 definition of rural population) is 273 527, which is much more than the rural population calculated above with deduction of municipality population.

Projected rural population 1991 for Joydevpur thana is 277014 (273527 + 3487), which is nearly the same as total projected population 1981-1991 (with AGR 1.86) : 278722 . This shows that in the past decade a big part of population which was "rural" is now "urban".

Tongi Municipality

Same calculations are :

		(T.P.91)	(M.P.91)	
with H1	:	143,995	- 154,175	= - 10,180
with H2	:	148,438	- 154,175	= - 5,737 which is a nonsense

Rural + Urban projected population 1991 is:

29980 + 153037 = 183017

183017 is much more than projected total population with H2, this is explained by the fact that from 1981 nearly all the population of Tongi has become urban, and is now in 1991 completely urban. Therefore, a higher AGR should have been used (the urban AGR being 4.93) to project all 1981 population.

d. Jamalpur District

Jamalpur Thana

with H1	:	464242 - 101242	= 363100
with H2	:	478669 - 101242	= 377427
		(T.P.91) (M.P.91)	

---

6 T.P.91 = Total Population, 1991

7 M.P. 91 = Municipal Population, 1991

Projected Rural population 1991 is 350,487 which is more or less the estimated rural population with H1 (T.P.91-M.P.91).

Total Rural + Urban Population 1991 is: 350,487 + 148,563 = 499,050 which is much more then TP91 with H2 (478,669).

This could signify either that the urban AGR of 4.93 was too high or that this urban AGR has been applied to a too numerous 1981 urban population.

Sarishabari Thana

with H1 : 272,533 - 34,582 = 237,951
with H2 : 280,942 - 34,582 = 246,360

Rural Population 1991 is: 249,771 which is nearly the same as estimated rural population in H2 (using the 1983-84 BCAL definition of rural population).

Rural + urban population 1991 is: 249,771 + 27,315 = 277,086, which is intermediary between H1 & H2 TP population.

e. Tangail District

Gopalpur Thana

with H1 : 246,515 - 42,185 = 204,330
with H2 : 254,121 - 42,185 = 211,936

Rural Population 1991 is : 206,333 which is nearly the same as Rural Population (definition BCAL 83) with H1. Rural + Urban population 1991 is: 206,333 + 51,333 = 257,666, which is nearly the same as in TP H2.

Tangail Thana

with H1 : 333,903 - 104,387 = 229,516
with H2 : 344,205 - 104,387 = 239,818

Rural Population 1991 is : 242,163, which is a little more that Rural Population (BCAL 1983 definition) with H2. Rural + Urban Population 1991 is : 243,163 + 125,429 = 368,592, which is much more than even TP H2, but may be a more reliable forecast as it is said in 1990 Statistical Yearbook of Bangladesh that Tangail Municipal area has increased since 1981.

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f. Mymensingh District

Muktagacha Thana

with H1 : 308,895 - 21,499 = 287,396
with H2 : 318,426 - 21,499 = 296,927

Rural Population 1991 is 286,478 which is the same as Rural Population (BCAL 1983-84 Definition) with H1. Rural + Urban Population 1991 is : 286,478 + 26,362 = 312,840, which is intermediary between TP 1991 H1 and H2.

Mymensingh Thana

with H1 : 405,470 - 185,517 = 219,953
with H2 : 417,981 - 185,517 = 232,464

Rural Population 1991 is 173,968, which is much less than Rural Population (BCAL 1983-84 definition) H1. Urban + Rural Population 1991 is : 173,968 + 308,907 = 482,875, which is much more than TP 1991 H1 or H2. This may be explained by the fact that besides Mymensingh being the District Headquarters, in the Thana there were already 2 unions which were highly populated (205,579 and 16,880) in 1981.

Another explanation could be that, either the urban AGR was too high for the last decade or that it was applied to an excessive urban population during the decade.

g. Munshiganj District

with H1 : 294,414 - 42,509 = 251,905
with H2 : 303,498 - 42,509 = 260,989

Rural population 1991 : 248,104, which is nearly the same as Rural Population (BCAL definition) in H1. Rural and Urban population 1991 is: 248,104 + 59,966 = 308,070, which is nearly the same as TP 91 H2.

h. Manikganj District

with H1 : 236,918 - 43,528 = 193,390
with H2 : 244,228 - 43,528 = 200,700

Rural population 1991 is 186,893, which is a little less than rural population (BCAL definition) in H1.

Rural and Urban population 1991 is: 186,893 + 60,082 = 246,975, which is nearly the same as TP 1991 H2.

i. Narayanganj District

with H1 : 508,649 - 268,952 = 239,697
with H2 : 524,343 - 268,952 = 255,391

Rural population 1991 is: 302,918, which is much more than rural population (BCAL definition) either with H1 or H2.

Rural and Urban 1991 is : 302,918 + 272,835 = 575,753, which is much more than the highest hypothesis TP 1991 H2. This can be explained by numerous in-migrations in Narayanganj during the last decade.

- BBS estimated growth rate per district Preliminary Report (unpublished) of 1991 census, indicates quite a variation in AGR for districts of the NCR. see Annex I.1.15, which summarizes some preliminary results of 1991 census.

2.10 Labour Force in Bangladesh

Working age population is all population aged 10 years and above. Labour force depends on the population of working age and on the participation rates. Participation varies between men and women. Projections of labour forces depends on population projections and on assumptions of future participation rates.

Basic rates used are the data from BBS 1988 (Report on labourforce survey 1984-85 = RLF) and 1990: Statistical Yearbook of Bangladesh, BBS).

According to RLF,the crude activity rate by sex in rural and urban areas were for 1981, 1984-85 and 1985-86 as follows [8]: refined activity rate is also given for the same periods [9].

TABLE IV.2.13
Activity Rates

Source and Characteristics	Bangladesh			Urban			Rural		
	Both Sex	Male	Female	Both sex	Male	Female	Both sex	Male	Female
1) Crude Activity Rate									
1981 Census	28.8	52.7	3.4	33.2	54.6	4.7	28.3	52.5	3.3
1983-84 LFS	29.9	53.5	5.4	33.3	54.1	8.4	29.4	53.2	5.0
1984-85 LFS	30.2	53.8	5.6	33.1	53.8	8.3	29.8	53.8	5.3
1985-86 LFS	30.3	53.6	6.4	34.0	55.0	9.3	34.0	55.4	9.3
2) Refined Activity Rate									
1981 Census	43.1	78.2	5.1	46.1	73.2	6.8	42.7	79.0	5.0
1983-84 LFS	43.9	78.5	8.0	47.6	74.9	12.5	43.3	79.0	7.4
1984-85 LFS	43.9	78.2	8.2	46.9	74.3	12.1	43.4	78.8	7.7
1985-86 LFS	46.3	81.2	9.8	50.0	78.8	14.0	45.6	81.9	9.0

8 Crude activity rate is the ratio of economically active population of ages 10 years and above to the total population expressed in percentage.

9 Refined activity rate is the ratio of economically active population ofage 10 years and above to the population of the same ages expressed in percentage.

The average number of economically active persons by household was, in 1984-85, 1.86 for whole Bangladesh, 2.47 for all urban areas and 1.78 for rural areas.

Labour forces for 1990, 1995, 2000, can be projected using the expected labour force participation rates of BBS 1990 Statistical Yearbook of Bangladesh, which are :

TABLE IV.2.14

Expected Labour Force Participation Rates (in percent)

(3 different female participation rates)

Year and sex		Labour force participation rate		
		Hy/other is 1	Hy/other is 2	Hy/other is 3
1990	Both sex	44.0	45.0	46.0
	Male	78.2	78.2	78.2
	Female	9.3	11.3	13.2
1995	Both sex	44.7	46.5	48.4
	Male	79.0	79.0	79.0
	Female	10.2	14.0	17.7
2000	Both sex	45.3	48.1	50.9
	Male	79.8	79.8	79.8
	Female	11.2	16.8	22.3

Another projection of labour force in agricultural and non-agricultural sectors has been made by UN ("World Population Prospects 1990. Population studies No.120 New Year 1991) It is reproduced below:

TABLE IV.2.15

Annual Rate of Growth (%) of Labour Force

Labour force	1980-85	1985-90	1990-95	1995-2000	2000-2005	2010-2015
Total	2.79	2.97	3.01	2.94	2.83	2.41
Males	2.68	2.85	2.89	2.83	2.68	2.22
Females	4.36	4.56	4.55	4.2	4.38	4.09
In Agriculture						
Total	1.95	2.03	1.96	1.78	1.56	0.92
Males	1.83	1.90	1.82	1.66	1.39	0.69
Females	3.61	3.74	3.65	3.23	3.34	2.90
In Non-Agriculture						
Total	5.16	5.24	5.16	4.97	4.74	4.05
Males	5.08	5.14	5.07	4.90	4.62	3.90
Females	6.22	6.33	6.26	5.83	5.93	5.49

TABLE IV.2.16

Labour Forces Forecast 1981-2000

(Calculated with UN Annual Growth Rate)

Labour force	Year					
	1980-81	1984-85	1989-90	1990-91	1994-95	1999-2000
Total	3715190	4263197	4935020	5083564	5723819	6616170
Male	3453528	3941779	4536425	4667528	5230938	6014213
Female	215791	267118	333835	349024	417015	512260

Note : A.G.R. for 1980-85 is Total = 2.79, Male = 2.68, Female = 4.36
A.G.R. for 1985-90 is Total = 2.97, Male = 2.85, Female = 4.56
A.G.R. for 1990-95 is Total = 3.01, Male = 2.89, Female = 4.55
A.G.R. for 1995-2000 is Total = 2.94, Male = 2.83, Female = 4.20

2.11 Situation of Economically Active Population in NCR

2.11.1 In Rural Areas

It is considered here that the employment pattern does not differ much in NCR rural areas from those of the whole country.

TABLE IV.2.17

Population in NCR

Population NCR	1981	1991 (H2)		
		H1	H2	H3
Total	3715190	7035181	7195071	7354962
Male	3453528	6434267	6434267	6434267
Female	215791	721632	876822	1024252

Sex ratio 103 H2 = AGR 1981-91 2.17
Male 50.8% Sex ratio 106
Female 49.2% M = 51.46% F = 48.53%

- In fact, the real economically active population in rural areas is much more important, for many reasons expressed in figures by BCAL for the year 1983-1984 BBS).

- The average size of farm population per farm holding in 1983-84 was 6.32 for Bangladesh.

- 65.5% of the total farm holdings got more than 90% work done by the members of the farm holding, and 17.09% got between 50% and 90% of work done by their members. A proportion of about 17% of the farm holdings are thus employing external labourers in a significant way.

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- 47.35% of people aged 10 years and above were engaged in gainful activities (and 35.58% in strictly agricultural activities). Employment of males was highly predominant at 94.75%.

- 52.65% of people aged 10 years and over were engaged in non-gainful activities. The involvement of female population was 82.29% (see chapter on women employment).

- The economically active population is much influenced by flood, as it will be seen from the field survey results.

2.11.2 Women Employment

Female labour force is increasing at a faster rate than that of male. The proportion of female labour force in Bangladesh will increase from 9.3% (variant 1) in 1990 to 22.3% (variant 3) in 2000.

This rate is supposed to increase due to increasing rate of education among women, increasing economic pressure and increasing implementation of income generating programme for rural women, by governmental and different donor agencies.

However, women are suffering from continued limited scope in the labour market.

- Female wages are about 1/5 of that of male in rural non-agricultural sector.
- In rural industries, a female worker receives 57% lower wage compared to a male workers.
- Female wage rate in rural areas is less than 40% of the minimum wage set by the government for agricultural labourers.
- Over 3.4 million women have been displaced as a result of technological development (due to introduction of rice mills, mechanised irrigation etc.).
- Lack of access to asset base (credit, land other capital) needed for self employment (in UNICEF document cited in list of reference).

2.11.3 Youth Labour Force (15-29 Years)(from LES, 1984-85).

TABLE IV.2.18

Youth Labour Force by Age Group and Sex, 1984-85

Percent									
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
15-19	39.0	39.3	39.2	37.7	27.5	41.9	40.7	41.0	36.7
20-24	31.9	31.6	31.7	33.9	32.8	29.8	31.8	31.6	34.9
25-29	29.1	29.1	29.1	28.4	39.7	28.6	27.5	27.4	28.4
Participation and Unemployment Rate									
Participation Rate	44.9	81.6	8.0	44.7	72.7	11.8	45.0	83.2	7.4
Unemployment Rate	3.0	2.4	9.7	6.1	5.9	7.6	2.5	1.9	10.2

The youth labour force was 38.6% of the total labour force in 1984-85. The participation rate was 44.9%. The male youth labour force participation rate was much higher than the female one. It was 81.6%; the female one was only 8.0 percent. The youth labour force unemplomet rate was 3.0% in 1984-85. (9.7% female, 2.4% male)

Unpaid Family Workers (aged 10 years and above) : The male unpaid family workers in both agriculture and non-agriculture sectors represented 93.7% of the total. In agriculture sector, unpaid family workers represented 79.4% of the total. These unpaid family workers (aged 10 years and above) work 15 hours and more.

2.11.4 Child Employment

1. Child labour force (5-14 years) (from LFS 1984-85)
   The participation rates in labour force of children aged 5-9 years were 6.1% for male children and 2.2% for female children. Male child students (5-14 years) were 45.7% of their total population, and female child students were 40.8% of their total population.

2. **Child labour by occupation and status in employment.** Agriculture, forestry and fisheries sector employed most of the working children in 1984-85. (63.3% of the total child labour force). Children employed as service workers were 16.5% and in production and transport sectors, as labourers, were

   12.7%. In agriculture sector, most of the working children were either day labourers or unpaid family workers.

2.12 Population of Dhaka

a. **Composition of population** : Administrative units of Dhaka SMA are given in Annex I.1.12.

b. **Total population** : Total population of Dhaka SMA was 3440147 in 1981. Total population of Dhaka municipality was 2475710 in 1981 and is 3397187 in 1991, according to the Preliminary results of 1991 census.

c. Total floating population was 98107 in 1981.

d. Provisional results for 1991 for Dhaka municipality only are :

Wards	75
Mahallas	626
Households	608938
Male	1926745
Female	1470442
Total	3397187
Sex ratio	131.0
Literacy Rate (All ages)	49.31

Evolution of Dhaka Population

Evolution of the population of Dhaka for the future will not be studied here. This is studied by specialists in urban development and would require many different specific research and surveys. It is expected that Dhaka will become a more populated area together with its adjoining zilas Gazipur and Narayanganj, which are located close to Dhaka and which will become more and more urbanised in the future.

TABLE IV.2.19
Bangladesh Demographic Facts

Population total (000)	
Total	115,593
Males	59,560
Female	56,033
Sex ratio (/100 females)	106.3
Urban	15,759
Rural	99,834
Per cent urban	13.6
Population in year 2000 (000)	150,589
Functional age groups (%)	
Young child: 0-4	16.5
Child : 5-14	27.4
Youth : 15-24	20.6
Elderly : 60+	4.6
Elderly : 65+	2.9
Women : 15-49	22.7
Median age (years)	17.7
Dependency ratios: total	87.9
(/100) age 0-14	82.5
age 65+	5.5
Agricultural population density (/hectare of arable land)	8.51
Population density (/sq.km)	803
Average annual change (000)	
Population increase	3,325
Births	5,032
Deaths	1,707
Net migration	0
Annual population total (% growth)	2.69
Urban	5.57
Rural	2.19
Crude birth rate (/1000)	40.6
Crude death rate (/1000)	13.8
Net migration rate (/1000)	0
Total fertility rate (/women)	5.13
Gross reproduction rate (/women	2.50
Net reproduction rate (/women)	1.87
Infant mortality rate (/1000)	108
Life expectancy at birth (years)	
Males	53.1
Females	52.6
Both sexes	52.9
GNP per capita (US dollars, 1988)	170

Sources : Population density on arable land is derived from two publications issued by the Food and Agriculture Organization of the United Nations: FAO production Yearbook 1985 and World-wide Estimates and Projections of Agricultural and Non-Agricultural Population Segments 1950-2025, ESS/MIS/86/2; gross national production per capita: World Bank, World Development Report 1990. Figures for population by sex, population by age group, age indicators, urban-rural population, and population density (/sq.km) refer to the year 1990; figures for average annual change, rate of annual change, and fertility and mortality are the five-year averages for 1990-1995. These data are from the Population Division, Department of International Economic and Social Affairs of the United Nations, World Population Prospects: 1988.

CHAPTER 3
HOUSEHOLD STUDY

3.1 Introduction

A study of the different types of households in the NCR is presented here; mostly it comprises of tables, computed from BCAL 1983-84.

Definitions of Various Types of Households[1]

1. Landless group consists of holdings with no homestead, holdings with homestead but no cultivated area and holdings with homestead and having cultivated area upto 0.5 acres.

2. Farm Households:

   a) Small farm holdings: a farm holding having operated area of 0.05 to 2.49 acres of land
   b) Medium farm holdings: a farm holding having operated area of 2.50 to 7.49 acres of land
   c) Large farm holdings: a farm holding having operated area of 7.50 acres and above.

3. Non-farm Households: households having less than 0.05 acres of land.

4. Agriculture labour households: Households whose major source of income during the preceding year was from working as agriculture labour were considered as agricultural labour households. Agricultural labour was defined as labour exchanged for wages, cash or kind for agricultural activities on land operated by other households.

5. Households involved in cottage industry: Cottage industry was defined as small scale industry producing goods for commercial purposes and operated by the household generally through manual labour and located within the premises. It was a source of income of that household.

3.2 General Information Concerning Land in Bangladesh

Source: Employment, Income and the Mobilization of Local Resources: a study of 2 Bangladesh villages. Bangkok, ARTEP/ILO, 1981, Azizur Rahman Khan, Rizwanul Islam and Mahfuzul Huq.

- From 1960 to 1977, the average size of farms worked by their owner dropped from [3.1] to [3.0] acres, or from [1.24] to [0.8] ha.

- Average size of tenant holdings dropped from 2.4 acre to 1.5 acre, or 0.96 to 0.6 ha between 1960 and 1977.

- Cropping intensity has increased from 1.3 to 1.5 between 1960 and 1983-1984.

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[1] The definitions used here are in accordance with the Bangladesh Bureau of Statistics,

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- The minimum viable holding is considered to be 5 bighas (=1.67 acre = 0.6 ha).

- Average yield increases between 1965 and 1985 have been:

  Boro rice : 0.75t/acre to more than 0.95t/acre = 1.87 to 2.37t/ha
  Aus, Aman : 0.3 t/acre to 0.4/0.55t/acre = 0.75 to 1/1.3t/ha
  Wheat : 0.4 t/acre to 0.9/acre = 1 to 2.25t/ha

  Expected yield in 1987 are (source: MPO, April 1987)
  B.Aus : 1.7 t/ha
  Lt. Aman : 2.20t/ha
  HYV Aman : 4.80t/ha

- Evolution of families which could be functionally considered landless (owning 0.5 acre or less) (or up to 2 acres)

  in 1960 : 35% of all rural households
  in 1978 : 50% of all rural households
  in 1983/84 : 19% of all rural households
  in 1983-84 : 25%

In the NCR, in 1983-84, the group landless + small farmers (holdings 2 acres up to 1 ha) = 76%.

- Evolution in value of a day's work in the fields.
  in 1970, it was 4 kg of rice
  in 1974, it was 3/5 kg of rice
  in 1984, it was 3 kg of rice
  in 1991, it is 5.250 kg of wheat (from October 1991)
  a daily labourer working in the fields needs 3 kg per day to eat sufficiently.

- Chen Lincolu in a Ford Foundation Report, No.24, 1974 (3) had estimated that the accepted minimum foodgrain consumption in Bangladesh is 15oz (425g) of foodgrain per head/day. It is now generally admitted that 16oz of foodgrain is the general minimum requirement.

- in 1980, it was estimated that [70%] approximately, of all rural people did not have an income which would permit them to meet their essential consumption needs. The figures were [41%] for all urban inhabitants.

TABLE IV.3.1

Selected Socio-Economic Indicators by District in Different Periods (source: BBS)

District (Old division)	Per capita Gross irrigated area (acres)	Forest area (000) (acres)	Av-size of farm holding (acres)	Yield of rice (ton/acres)	Yield of wheat (ton/acres)	Average rainfall (inch)	Per Capita Income index (B=100)	Intensity of Cropping
Dhaka 1981	0.30	60	2.7	0.60	0.66	97	99	145.00
1983-84			1.7					
1986-87								176.70
Mymensingh '81	0.02	37	3.3	0.52	0.69	102	91	174.00
1983-84			2.2					
1986-87								198.15
Jamalpur '81	0.22	30	3.7	0.48	0.75	42	91	172.00
1983-84			2.2					
1986-87								196.43
Tangail '81	0.05	114	3.2	0.52	0.78	89	94	200.00
1983-84			2.2					
1986-87								177.07
Bangladesh '81	0.05	0	3.5	0.52	0.72	87	100	
1983-84			2.2					

3.3 Farm Households and Owned Land by Size Distribution

3.3.1 Farm Households : in Bangladesh in 1983-84

In 1983-84 Agricultural census, 70.3% of total farm households of the country were small farm households, covering 29% only of the total land operated.

The medium farm households constituted 24.7% of the total households and operated about 45% of the total farm area.

The large farm households represented respectively 5% of the number of and 25.9% of the area. Among the group of small farm households were the marginal holders with an area of less than half an acre who constituted 24% of the households and 2.7% of the area. (see definitions in Annex I-40).

3.3.2 Owned Land in Bangladesh in 1983-84

- Owned land and operated land would normally be equal since operated area is equal to owned area plus area taken from others minus area given to others. Differences, if any, are explained by exclusion from census of lands owned by persons living in urban areas or residing outside the country. Also, some of the owners of land may be residing in one district while they own land in other district, owned area was slightly more than operated area in the 4 districts of the NCR.

- 95.8% of owned area is operated by the farm households.

3.3.3 Households in Municipal Areas in Bangladesh

To give a total picture of the structure of agriculture during the census of agriculture and livestock in 1983-84, an additional survey has been conducted covering households residing in municipal areas, as many of them own some land, which they cultivate themselves or which they give out on rent or share cropping.

For the whole country, the distribution of land operating households was as follows:

54% were owner operators
11% were owner cum. tenant operators
35% were tenant operators

89% of the operated area was operated by owner operators
8% of the operated area was operated by owner cum tenant
3% of the operated area was operated by tenants.

But distinction has been made within Metropolitan, large municipal and small municipal areas. Estimation of landless households in municipal areas is not made in this report.

3.4 Distribution of Farm and Non-Farm Households per Thana in the NCR in 1983-84

I) Distribution of different types of households, farm households, non-farm households, landless, cottage industry and agricultural labour households, in all the thanas in the NCR (without corrections of part of thana excluded from project areas).

II) Problem of definitions

Statistics on distribution of different types of households are only available in "the Bangladesh Census of Agriculture and livestock: 1983-84 BBS" by households, corresponding total population is not given.

The information are given for rural and urban areas, but definition of urban area is not the same in this census of Agriculture and Livestock of 1983-84 and in the Population Census of 1981.

Therefore, it is not possible to estimate correctly the distribution in percentage of all types of households in rural and urban areas in 1991, as projections of population 1981-1991 are made for rural and urban areas using the 1981 definition of urban area.

It is not possible to estimate with accuracy the changes of population of the 8 municipalities of NCR between 1983 and 1991, as there are no specific studies on migrations in and out for the different municipalities.

For example, in Gazipur district, the total number of household of the municipality of Tongi has increased considerably between 1981 and 1983-84. Although this increase seems excessive it is true that Tongi is now becoming a sub-urban area of Dhaka.

Definition of Urban Area in Population Census 1981

Urban Area: Developed areas where modern amenities like metalled roads, communication facilities, electricity, gas, water supply, sewerage, sanitation etc. exist and which are densely populated and majority (2/3 rds) of whose population is non-agricultural and where community sense is well-developed are known as Urban Areas. Urban areas in 1981 population census comprised four SMAs, 71 municipalities and 46 other urban areas, 336 thana headquarters, hats and bazaars with electricity were also regarded as other urban areas.

Definition of Urban Area in Census of Agriculture and Livestock of 1983-84.

In Bangladesh Agricultural Census 1983-84 urban areas constituted the areas within all 79 municipalities of the country while the rest of the country including other urban areas were included in rural areas. In contrast in the 1981 Population Census, the areas situated within the municipalities and other urban areas including all thanas headquarters were regarded as urban areas.

It must be mentioned that it is explained in Agricultural Census that Post Enumeration check found that 94% only, about of total households in municipalities areas have been surveyed.

Table IV.3.2 gives the summary of urban and rural households, in 1981 (according to population census 1981) and in 1983-84 (according to Agricultural Census 1983-84)

The group of small farm households are more numerous (in percent is the NCR) than the national average in 38 thanas, of a total number of 48 thana.

TABLE IV.3.2

Non-Municipal Households in 1981 and 1983-84 and % Increase per Annum

(from Agricultural Census 1983-84)

Geographic Area	Total Household 1981	Non-Municipal HH 1981	Non-Municipal HH 1983-84	% increase per annum
Dhaka (old division)	1647	1097	1178	3.28
Jamalpur	457	434	434	0
Mymensingh	1191	1144	1167	0.89
Tangail	410	393	396	0.34

Figures in '000

They are less numerous in the following thanas:

- District Gazipur : thana Kalihati, Sripur
- District Jamalpur : thana Dewanganj, Islampur
- District Manikganj : thana Daulatpur, Ghior, Shibalaya
- District Mymensingh : thana Bhaluka
- District Tangail : thana Bhuapur, Sakhipur

The group of large farm households is more important then the National Average in 7 thanas:

- District Gazipur : thana Kalihati
- District Jamalpur : thana Dewanganj, Islampur
- District Manikganj : thana Daulatpur
- District Mymensingh : thana Bhaluka
- District Tangail : thana Bhuapur, Sakhipur

3.5 Distribution of Different Types of Households in 1991

Annex I.1.14 gives the distribution of different types of households within projected rural population of 1991 (AGR 1981-1991:1.76). Calculation is made using percentage distribution of 1983-84 BCAL of rural areas, as there are no other statistics available. Therefore, the distribution must be considered as "too optimistic", as within 6 years the total number of small and non-farm households will have decreased.

Annex I.1.15 gives the distribution of different types of households within projected total population of 1991 (AGR 1991, 2.17). Calculation is made using percentage distribution of 1983-84 BCAL of total areas (Municipal and Rural). This distribution must be considered as a ratio only, and is quite approximate.
Projected number of households in the rural area for 1991 is obtained by dividing total rural population by estimated (BBS) average size of household of 5.2.

Corrections are made for thanas not completely included in the NCR.

3.6 Total Operated Area of Holdings

Total operated area of a holding is the area owned by the household plus the area rented from others minus the owned area given to others for operation. The operated area also includes uncultivated land operated by the household including homestead area.

Operated Area by Size of Land Holding

Thana and size of holdings representing more than 50% of the total operated area are given in Table IV.3.3.

TABLE IV.3.3
Thana with Size of Holding more than 50%

Districts	Thana	Medium	%
Dhaka	Demra	Small	55.82
	Dhamrai	Medium	50.03
	Lalbagh	Small	54.50
Manikganj	Ghior	Medium	50.31
	Saturia	Medium	50.31
Munshiganj	Munshiganj	Small	52.25
	Tongibari	Small	55.77
Mymensingh	Bhaluka	Medium	51.33
	Trishal	Large	53.59
		Medium	51.30
Tangail	Mirzapur	Medium	50.30
	Sakhipur	Medium	52.28
Narayanganj	Fatullah	Small	61.47
	Narayanganj	Small	55.13
	Siddhirganj	Small	70.12

TABLE IV.3.4
Thana and Classes Representing Between 40 & 50% of the Total Operated Land

District	Small	Medium	Large
Dhaka	2	6	-
Gazipur	1	7	-
Manikganj	-	6	-
Munshiganj	4	2	-
Mymensingh	1	6	-
Tangail	2	10	-
Jamalpur	-	7	-
Narayanganj	1	1	-

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TABLE IV.3.5
Thana Where Large Holdings Represent More than 10% & 20% of Operated Land Area

District	10-19.9%	20% and +
Dhaka	3	3
Gazipur	3	3
Manikganj	5	2
Munshiganj	4	-
Mymensingh	4	1
Tangail	7	4
Jamalpur	4	2
Narayanganj	2	-

TABLE IV.3.6
Tenancy and Operated Area by Region

Region (Old divisions)	Percentage of owner holdings		Percentage of owner-cum-tenant holdings		Percentage of tenant holdings	
	Number	Operated area	Number	Operated area	Number	Operated area
Dhaka	64.17	58.19	34.41	41.22	1.42	0.59
Jamalpur	61.94	63.24	36.40	36.11	1.66	0.65
Mymensingh	67.31	65.23	31.72	34.42	0.97	0.35
Tangail	58.11	56.00	38.83	42.88	3.06	1.11
Bangladesh	62.58	58.51	36.04	40.95	1.38	0.55

Source : BCAL 1983-84.

TABLE IV.3.7
Evolution of Number of Size of Different Types of Holdings in Bangladesh from 1977 to 1983-84

Type of holdings	1977	1983-84	Percentage change in 1983-84/77
All holdings	6256	9970	+ 59.37%
Total operated area	21960	22674	+ 3.25
Total owners	3646	6239	+ 71.12
Operated area	12286	13266	+ 7.97
Total owner-cum-tenant holdings	2575	3593	+ 39.53
Operated area	9585	9284	- 3.14
Tenant holdings	35	137	+ 291.43
Operated area	89	124	+ 39.32
Average size of holdings all holdings	3.51	2.27	- 35.33
Owner holdings	3.37	2.13	- 36.80
Owner-cum-tenant holdings	3.72	2.58	- 30.65
Tenant holdings	2.54	0.91	- 64.17

Tremendous increase in all types of holdings are explained by the different methodology and census coverage in the two census of 1977 and 1983-1984. So these figures are only indicative.
Source : BCAL 1983-84.

TABLE IV.3.8

Evolution of Average Holdings, Number of Landless, and Land Tenure Structure by Regions Between 1976-77 and 1983-84

Region/District	Average operational holding per households (ha)		
	1976/77	1983/84	% change
Dhaka	1.10	0.70	- 36.4
Jamalpur	1.47	0.89	- 39.5
Mymensingh	1.33	0.92	- 30.8
Tangail	1.31	0.84	- 35.9

Source : I BCAL 1983-84
II Report on the Agricultural Census of Bangladesh 1977.

Over a period of seven years, the average size of holding per household declined by about 36%. Landless increased by about 23% between 1960 and 1983-84 in Bangladesh, by 52% in Mymensingh district, 15.56% in Dhaka (Old) district.

Owner-cum-tenant farmers have increased a lot between 1977 and 1983-84. But what is most considerable is the enormous increase in the number of pure tenant farmers 880% in Dhaka Division and in Tangail 3000%

TABLE IV.3.9

Change in Ownership

Region/District	Percentage change over 1977		
	Owner farmer	Owner-cum-tenant	Tenant farmer
Dhaka	55.49	55.50	940.00
Jamalpur	101.48	20.04	750.00
Mymensingh	59.60	25.56	478.57
Tangail	81.25	10.88	3000.00
Dhaka R.	60.01	39.69	879.49

3.7 Other Types of Households in The NCR

3.7.1 Agricultural Labour Households

Agricultural labour households mean those households which mainly earn their livelihood by working in the farms of other households for wages in cash or kind. They are mainly landless while some of them reported land of different sizes under operational control.

TABLE IV.3.10

Percentage of Agricultural Labour Households by Region (Old Division) 1983-84

Region	Non-farm households			Small farm households			
	With no operated area	With no cultivated area	Cultivated area up to .04 acres	0.05 to 0.49 acres	0.05 to .0.99 acres	1.00 to 1.49 acres	1.50 to 2.49 acres
Dhaka	32.42	42.69	41.95	46.56	38.05	24.83	15.64
Jamalpur	80.40	77.96	73.46	67.11	44.55	22.73	10.82
Mymensingh	79.47	76.86	72.03	66.82	44.61	21.89	11.19
Tangail	70.35	63.55	56.73	59.10	44.96	27.43	16.62

Source : BCAL 1983-84

Agricultural labour households may have one or more other economic activities to increase their income. These activities are usually keeping bovine animals, sheep-goat, poultry and cottage industry.

TABLE IV.3.11

Percentage of Agricultural Labour Households having other Economic Activities

Region	Agril.Labourh ouseholds	% total households	% keeping bonus	% keeping sheep-goat	% with poultry	% with cottage industry
Dhaka	388608	32.99	38.96	35.46	69.22	6.25
Jamalpur	189378	43.61	20.91	36.75	66.49	2.97
Mymensingh	486467	41.69	25.53	27.13	61.40	5.28
Tangail	147059	37.10	36.95	38.17	67.72	4.52

Source : BCAL 1983-84

3.7.2 Households With Members Working in Cottage Industry

In 1983-84 Agricultural Census, cottage industry was defined as;
"The industry in which production of goods took place manually in the household premise of the producer using elementary equipments the produce was sold and was a source of income of the household. Information on cottage industry was collected for 9 different types of industries: handloom, blacksmithy, pottery, bamboo and cane works, carpentry, brass works, jute and cotton works, oil press and other".

TABLE IV.3.12
Distribution of Households having Cottage Industry by Type and Size of Holding (in %)

Region	Households	Non-farm hh	Farm hh			
			Total	Small	Medium	Large
Dhaka	10.31	11.15	9.88	10.89	6.25	4.65
Jamalpur	4.47	6.61	3.52	4.35	1.65	1.36
Mymensingh	5.18	7.16	4.38	5.33	2.24	1.86
Tangail	8.18	14.74	6.31	7.46	3.50	2.09

Table IV.3.12 shows that more small farm households reported involvement in cottage industry, than other categories of households. In the NCR, on an average the number of households with cottage industries represent between 2 and 7% except in some thanas where they are much more numerous e.g.

TABLE IV.3.13
Distribution of Farm Holdings by Type of Cottage Industry

Region	All	Hand loom	Black smithy	Potter	Bamboo & cane workers	Carpenter	brass worker	Jute cott workers	Ghani (Oil crushing)	Others
Dhaka	8.19	3.31	0.22	0.20	0.72	0.56	0.08	0.85	0.08	2.17
Jamalpur	4.33	0.23	0.18	0.10	0.54	0.47	0.03	0.16	0.60	2.02
Mymensingh	5.02	0.31	0.12	0.14	1.21	0.51	0.03	0.26	0.33	2.12
Tangail	8.02	2.50	0.25	0.38	1.24	0.63	0.15	0.19	0.54	2.15

3.8 Homestead Area per Household and per Farm Household in Bangladesh in 1983-84.

In the country on the average, each farm household had 0.08 acre (= 0.03 ha) and each non-farm household had 0.04 acre (= 0.016 ha) of homestead area.
The size of homestead increased with the size of farm, being respectively 0.06, 0.11, 018 acres (0.024, 0.044, 0.072 ha) for small, medium and large farm households.

3.9 Percentage of Irrigated Area of Farm Households to Cultivated Area

Region	% of Irrigated to Net Cultivated Area 1983-84
Dhaka	23.73
Jamalpur	24.45
Mymensingh	30.50
Tangail	31.18

TABLE IV.3.14
Percentage of Irrigated Area to Cultivated Area (1983-84)

All farm holdings	19.9%
Small farm holdings	22.8
Medium farm holdings	19.0
Large farm holdings	18.3

It is interesting to note that the percentage of area irrigated to the total cultivated area was larger for small holdings than for medium or large holdings.

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CHAPTER 4
SOCIAL BACKGROUND AND SITUATION OF WOMEN

4.1 Social Background and Situation of Women

"Pervasive malnutrition, mass illiteracy (75%), academic unemployment, high maternal and infant mortality, under employment and landlessness are among the major problems affecting the people, especially women, who are even more disadvantaged socially, economically, legally and educationally than men". (source: UNFPA, Dhaka).

"The vast majority of the women in Bangladesh are illiterate, malnourished, poor and deprived. By tradition and cultural norms, women enjoy much lower status compared to men. The discrepancy in the treatment of male and female starts at birth and continues through the different phases of life. In other words, gender inequality is established through socio-economic inequality and distribution of authority and asset between sexes as determined by the family organization and stratification of society, purdah or seclusion often keeps her unreached and denies her access to many opportunities" [1].

4.2 Social Status of Women

In 1991 census, expectation of life at birth was higher for males than for females (55.6 as against 53.8 years). In 1990 (BBS source) they are respectively 56.4 and 55.4 for all the country, and 56.0 and 55.0 in rural areas. (UNICEF source gives the following figures: 59.2 and 53.4).
Literacy rate of women is much lower than for men (16.0 and 31.0 in 1981). Many nutrition surveys indicate that under nutrition and malnutrition are more prevalent in female population than in male one, in each age group.
The very low status of women in Bangladesh is explained by political, socio-cultural factors, which are well known and will not be discussed here, but only mentioned.

- Patriarchal system; girl will leave family at the time of marriage so no investments in health, and education, are made for her;
- Muslim law: In rural areas, traditional seclusion of women do not allow them to go out for work. Due to bad economic conditions in many poor families, some changes have occurred in recent times; women of poor households are now working in the field and in rural works (FFW Programme);
- Legal status: There are differences in Theory and Practice regarding marriages, divorces, polygamy;
- Inheritance of property : Legally women can be owner of land through different inheritance process. In practice, they find it difficult to keep land due to their very bad socio-economic conditions;
- Education: girls are not sent to school for many socio-cultural and economic reasons;
- Poverty of parents;
- Education of girls is considered a financial loss for the family;
- Early marriages of girls;
- Intra-family discrimination for food and health services at all ages. "The woman is the last to take food after her parents-in-law (if living there), husband and children)". BIDS study.

As a consequence female mortality is higher than male mortality in all age groups except in the neonatal one (infants up to 1 month).

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1 UNICEF: "Integration of women in development in the Fourth Five Year Plan : 1990-1995 Dhaka November, 1989".

TABLE IV.4.1

Child Death Rate per 1000 Children of Age 1-4 Years by Sex and Residence, 1986

	Both sex	Male	Female
National	13.1	9.7	14.1
Urban	12.4	9.2	13.3
Rural	13.8	10.4	14.8

Source : Statistical Yearbook of Bangladesh, 1987

TABLE IV.4.2

Child Death Rate per 1000 Children of Age 1-4 Years by Sex and Residence, 1988

	Both sex	Male	Female
National	13.5	12.3	14.7
Urban	8.7	8.5	8.9
Rural	14.1	12.8	15.4

Source : Statistical Yearbook of Bangladesh, 1990

In 1981, the female population in rural areas was 49.2% of the total population; it was 48% in 1983-84, 48.3% in 1984-85 and estimated at 48.5% in 1988.

Sex-ratio in Bangladesh is estimated to be 106.04 in 1991 (Preliminary Report Population Census 1991) Census figures for 1981 show that 17.4% of women aged 40-44 are widowed, divorced or separated. These women, named as "destitute" have no homestead of their own, live in relative's house, have no incomes, except those generated by many private NGO or programmes like FFW.

Furthermore, social status of women is worsening because of increasing poverty in the rural areas. Dowry system has changed. Parents have to give money to the son-in-law at the time of marriage. Very often, husband drives away the wife soon after marriage, to get money from other parents-in-law. All these wives, young, with children, or old, are then abandoned and live in an unacceptable economic and moral distress. It is necessary for any FCD Project, or any development project in the NCR to forecast any participation of this target group.

"One of the stated objectives of the Fourth Five Year Plan is to increase women's participation in the development process, the strategies to achieve this goal is to incorporate women's issues in the country's macro-economic framework and in its sectoral planning" (Source: UNFPA, 1991)

4.3 Employment of Women in Rural Areas

In the rural areas of Bangladesh the role of women, areas, in earning of family income, is never recognized. They, in fact, perform a lot of tasks at home; either alone or with their husband; seed preservation, grain storage and post harvest rice processing (threshing, parboiling, drying husking winnowing, sieving).

They feed milking cow and buffalo, raise poultry, grow, fertilize and irrigate homestead crops and strip jute fibres. They cook and those who can, also teach their children.

Only recently during the last decade, poor women started to work in the fields as agricultural wage labourers (weeding) and on rural works (roads, bridges, embankments) paid by FFW Programme. It is mostly women of landless and small farm or poor households who work as daily labourers due to lack of extra-farm activities. Women whose husbands have migrated for a long period, either to cities or are abroad, have to take care of the husband's farm; under this process, some women are now slowly becoming head of farms. Availability of credit to women is also facilitating this new process.

It is evident that the landless group will increase and that new agricultural technology will not absorb all the potential agricultural daily labourers. Unless there is an agrarian Reform, landless people and very small farmers will not be able to get more land; the only way to improve the level of life of these people (landless, small and marginal farmers, poor women) is ;

- to provide them with extra farm job opportunities
- to help women to develop their agricultural activities in which they are traditionally involved (in and around the homestead areas; fishing, cattle rearing, poultry).

4.4 Involvement of Women in Homestead Agriculture

Development strategies will increase production only in fields (and only in some fields), but what about development strategies impact on women's agricultural activities on homestead areas ?

One of the main objectives of the Fourth Five Year Plan (FFYP) is agricultural diversification, to promote better nutrition of people based on their agricultural production. Participation of women in nutrition of family is significant. They grow vegetables, fruits, spices and trees on homestead area; they are also involved in poultry and cattle rearing and in fish capture (and marketing).

They also sell a part of their production in the market place.

Therefore, all women of the above mentioned poor groups should be important Target Groups in the development strategy, with emphasis on;

- increase of agricultural production
- development of extension services in animal husbandry;
- access to credit facilities
- development of Institutional support (different kinds of groups, co-operatives, already started by many NGOs).

4.5 Employment of Women and Family Planning in Rural Area

Low status of women in Bangladesh, in political, economical and the socio-cultural context are enormous constraints to decrease in population growth. The desire of all families for at least 2 "living" sons is a fact, due to high infant mortality, families want more sons.

Old parents and destitute women are in the last years of their life, economically and morally dependent on their sons to survive.

All women interviewed in the villages said that they wanted jobs, employment, and that they will have less children if they can be sure to get jobs. Job is a condition to improve nutrition level of women and children. And on the contrary to what is generally believed and assessed, it is by improving the quantity and quality of food that birth rate can diminish, and not the contrary. More generally speaking, demographers generally assess that when the incomes of the poorest people increase by 10%, birth rate decreases by 0.7% [2].

High population growth rate, in the first stage, is linked to the process of demographic transition. In this process, population changes from situation of high birth rate and high death to new situation of low birth rate and low death rate.

As long as infant mortality rate does not decrease, women are illiterate, and the level of life is very low, it is simply an illusion to expect a serious decrease in population growth rate.

The main measures to decrease the rate of growth in population should be:

- to increase literacy rate of women
- to improve considerably the status of women
- to procure employment for women.

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2 In "Les Cahiers Francais No.213, October - December 1983

CHAPTER 5
PERSONS ENGAGED IN NON-FARM ACTIVITIES

5.1 Rural Employment and Incomes[1]

BCAL and 1983-84 census indicated that about three quarters of the rural households were engaged primarily in farming, the rest were engaged in non-farming activities.The highest percentage of non-farm households was recorded in Dhaka (Region or Division).

But most rural households have many other occupations and get incomes from both agriculture and non-agricultural sources.

Available data indicate that an average household in Bangladesh obtains a little less than half of its income from farm sources, with regional and local variations of course.

Homestead sources of income from marketing of fruits, vegetable, trees, cattle, poultry are far from negligible. Other sources of incomes are business and commerce, professional services, wages, salaries, housing services, cottage industries crop processing etc.

The distribution of households, number of member, earners, monthly income and expenditure per household by main occupation of the head of household, 1988-89, is described below as an indication of what should be done in the NCR in different areas, for different types of households, taking into consideration for the sample survey many variables;

- main types of physical areas
- main types of cropping systems
- main off-farm sources of incomes
- different level of development of areas
- flood damages to crops, homesteads, cattle, communizations etc.

Incomes and Expenditures of the Household in Socio-Economic Field Survey

Question 29 in the questionnaire of the field survey is concerned with household income and expenditures (see Annex II). The information must not be considered for its absolute value, but for a comparison of their levels for different types of households and in different areas of the NCR.

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1 The average per capita income in 1988-89 is about 56 per cent higher in urban areas than in rural areas.

5.2 Expenditure

Annex I.1.20 indicates the average per capita per day intake of selected food items (gm) in rural/urban areas by survey year.

5.3 Minimum Daily Food Requirement and Different Estimations of "Poverty Line".

- It is generally admitted that the minimum daily food requirement per persons is 16 oz in Bangladesh (equivalent to 165.6 kg per annum).
- A BBS 1988 study has defined the first poverty line as a minimum of daily intake per capita of 2,122 calories, and the hard core poverty level as a minimum of 1805 calories
- BIDS study defines the per capita minimum calories daily requirement as 2,122 calories with a minimum of 437 grams of rice and wheat, equivalent to 1,535 calories (BIDS study, 1988).

Using these criteria, an IFPRI study (February 1991) has estimated "that around 80 per cent of agricultural labour households are in poverty in 1990" and that out of the chronic deficit households on the basis of the minimum income level needed for these minimum cereal requirements, nearly 85 per cent own less than 0.50 acres (0,2025 ha) whereas their percentage in the total population was less than 50 percent.

The same IFPRI study also indicates that urban-poor in Bangladesh spend about 60 per cent of their income on foodgrains.

TABLE IV.5.1

Distribution of Deficit Households According to Landownership 1989-90 (Percent)

Land Ownership Categories	Total Households	Chronic or occasional deficit HH	Chronic deficit only hh
Landless	16	19	29
Functionally landless (0-01-0.49 acres)	33	40	55
Marginal Owner (0.50-1.49 acres)	21	21	11
Small Owner (1.5-2.49 acres)	11	10	3
Medium Owner (2.5-4.99 acres)	12	8	1
Large Owner (Over 5 acres)	7	2	1
Total	**100**	**100**	**100**

Source: BIDS "Analysis of Poverty Trends Project" 62 village survey, 1989-90, p.73 in IFPRI "The Relations between rice price and wage rates in Bangladesh" February 1991.

5.4 Seasonal Variations of Surplus and Shortage of Foodgrain per Thana

Some thana may have surplus of foodgrain during part of the year, following the main harvest, but suffer from foodgrain shortage in the remaining part of the year if other crops are less important. Some thanas that are usually in surplus, may be occasionally in deficits due to a crop failure.

Estimation of Net Availability of Foodgrain per Thana

As many circumstances may affect foodgrain availability per thana, it should be calculated for a larger period of time than one year. 10% deduction, then, will have to be made for need, feed and wastage, as it is usually estimated.

5.5 Relations Between Rice Price and Wage Rates

IFPRI have studied the interrelations between rice price and wage rates in Bangladesh. The economic aspects of this were covered in PSR X, only the social impact will be mentioned here. It is important to note that vulnerable groups (agricultural labour households which will be landless households and also women in search of a remunerated work) are directly concerned by these interrelations. IFPRI study's main findings are the following:

- Amongst the poor, the effect on welfare of a price increase appears more likely to be positive for the poorest households than for those who are less poor. In the long run, the poor benefit from higher rice prices due to the positive relationship between wages and price of staples.

- Rural poverty is related directly and inversely to agricultural production. Interrelationship between real wages, supply of food and food prices are complex. Furthermore, there are seasonal variations and regional variations.

Some authors show that growth of agricultural production tends to reduce the incidence of poverty. Some others observe that "although no firm conclusions could be generated, some evidence was found to support the view that the new technology could accentuate landlessness".

Information on this matter can only be obtained through in-depth field investigations. Seasonal variations influence nutritional status of rural labour households. Months of March-April and October may be considered as critical for agricultural labour households. Districtwise variations in monthly indices of prices of coarse rice are given in Table IV.5.2.

TABLE IV.5.2
Districtwise Peak-to-Trough Differentials
in Monthly Indices of Prices of Coarse Rice

District	Difference (Percent)
Mymensingh	11.00
Jamalpur	19.67
Tangail	21.51
Dhaka	11.51

Source : IFPRI Study see References February, 1991

TABLE IV.5.3

Wages and Food Prices

Year	Money wages	Real wages of 1973-74 price	Price of coarse rice per kg	Wage rate in kgs of coarse rice
	Taka per person per day		Taka per kg	Kg per day
1960	1.95	9.83	0.72	2.71
1965	2.34	10.62	0.83	2.82
1969-70	2.96	9.4	1.1	2.69
1973-74	6.69	6.69	2.93	2.28
1980-81	13.98	7.12	5.23	2.67
1986-87	32.92	8.46	10.05	3.28
Growth rate,1960-1987	12.02	- 1.89	12.26	- 0.20

Source : IFPRI Study February 1991.

TABLE IV.5.4

Regionwise Average Daily Wages (without food) of Agricultural Vide Labour

(Taka per day)

Period	Dhaka Division			
	Dhaka	Jamalpur	Mymensingh	Tangail
1987-1988				
April	35.78	28.12	33.66	27.50
May	36.02	35.00	33.75	32.86
June	34.19	30.00	30.00	25.50
1988-1989				
July	37.06	32.50	30.16	27.71
August	35.18	30.00	32.00	0.00
September	32.85	28.75	34.73	0.00
October	34.00	27.00	25.00	37.00
November	32.00	28.00	31.00	35.00
December	34.00	30.00	28.00	27.00
January	36.00	30.00	28.00	28.00
February	40.00	25.00	32.00	24.00
March	37.00	28.00	30.00	26.00
April	36.00	28.00	28.00	30.00

5.6 Employment and Un-employment (Related to Labour Force)

In the economy of Bangladesh, it is very complicated to measure employment, as the predominant sector which is agriculture, is characterised by:

1) family labour participation
2) periodicity and seasonality of operations.

There is very little unemployment, if we use the definition of BSS 1985[2]. The reported rate of unemployment in rural areas was only 1.6% in 1984-85 in the country.

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2 Definition of "Un-employment persons" used by BBS is the definition of ILO; "the rate of unemployment was taken as the percentage of the unemployed to total civilian labour force".

TABLE IV.5.5

Unemployment (%)

Unemployment Rate (%)	1984-85
Both sexes	1.8
Male	1.4
Female	5.6

It is worthwhile to note that, even if this rate does not mean much in Bangladesh, it is higher for women than for men. BBS LFS 1984-85 noted that 88% of the unemployed rural labour force remained unemployed for more than 24 weeks during 1984-85.

Employment does not increase as fast as the labour force. "During the period 1986 through 1995, the crop production will absorb only around 30 per cent of the increase of rural labour force "(IFPRI study February 1991). It is not specified in the study if the expected increase of female labour force participation is taken into consideration or not.

Another problem of agricultural employment is its seasonal variation in the year, which generates lower wages in slack seasons. This problem will have to be considered in the project. Solutions could be proposed by Food For Work Programme, work could be given to agricultural labours in the slack seasons, in construction or maintenance of rural infrastructures to decrease migrations. IFPRI study also pointed out that "the employment effect of FFW was felt more in terms of higher income than in greater number of days engaged".

5.7 Development of Employment Opportunities in Rural Areas

Employment opportunities in rural areas can be developed in different sectors:

- **in crop sector** : The new seed-fertiliser-irrigation-technology will absorb only a small part of man-power potential in rural areas. Jute, Sugarcane, fruits and vegetables crops have high labour co-efficient. Their development is related to prices policies.

- **in crop processing** : After crop production, crop processing is the biggest source of productive rural employment. Both traditional and modern technologies are used now, the modern ones having a low labour co-efficient. Compensations for women who progressively lose their traditional job have to be implemented.

- **in rural infrastructures** : FFWP, PWP (Rural works), IRWP (Intensive Rural works) SPWP (Special Public works) and many NGO try to give job to landless and poor people, specially in the slack seasons, in construction of small rural infrastructures. These programme are relief oriented.

- **in cottage industries** : List of existing cottage, or Rural industries has to be obtained at District or Thana level in the next stage of FAP-3 study.

CHAPTER 6
CONCLUSIONS, PROPOSALS AND RECOMMENDATIONS

6.1 Some Specifications of Districts

6.1.1 Jamalpur District

According to District Headquarter informations, landless households represent 7.27% of total numbers of households, small farm household (less than 2.5 acres) 82.3%, medium farm household 2.5 to 5 acres = 1 = 2 ha) 10%, big farm household (more than 5 acres, more than 2 ha) 0.53%.

In normal years, all thanas cover their food requirements and have food surplus (according to District Headquarters informations) (Total surplus in 1990-91: 138749 T). Cultivable fallow is land belonging to big landowners who have not enough irrigation equipment to cultivate all their land.

Due to high cropping intensity, landless households are mostly share-croppers. Irrigation is very well developed.

Main problems of farmers are: erosion in Madarganj thana - water management and drainage problems due to construction of local embankments without any appropriate water management study.

6.1.2 Tangail District

Local embankments secure aman crop; if aman crop could be cultivated on a larger scale, it could improve the standard of living of rural poor.

In 1990-91, total surplus of District was 158707 T of cereal. Main constraints of farmers, besides flood are :

- bad agricultural extension services
- high cost of irrigation equipments
- irrigation equipments break-downs
- difficulties to get loans
- high cost of inputs
- marketing problems

6.1.3 Mymensingh District

6600 ha of beels (used for fishery and boro paddy in winter). 13% of land are under crops which do not require any irrigation. 57% are cultivable lands, fallow from 15 October to 29 February, due to lack of irrigation.

Main water management problems of farmers are:

- drainage (mostly of rainwater excess)
- need of tanks to regulate rivers and increase utilization of low lift pumps
- construction of local infrastructures by local institutions without any appropriate water management.

Socio-economic constraints of farmers are:

- insufficiency in bullock power (livestock is affected by flood, deceases, malnutrition)
- sowing time is a big constraint, due to lack of power tiller
- use of local varieties: 52% of farmers still grow local varieties (1 acre of local variety produces 0.53 T of cleaned rice, 1 acre of HYV variety produces 1.20 T cleaned rice)
- insufficiency in fertilizer applications (30 to 50 kg per acre per year instead of recommended 80 kgs)
- recovery of bank loan is very poor.

Objectives of farmers are to develop crops, that do not need irrigation, such as wheat, sugarcane, vegetables, maize, soyabean (poultry feed for local poultry farms), banana, groundnut, mustard, melon. Banana is the most profitable crop (planted on high land).

6.1.4 Manikganj District

Broadcast aman crop is affected by normal flood. For the small and marginal farmers flood often leads to loss of land. Small farmers are not economically solvent. During floods they are often forced to mortagage their land to rich people to obtain rice. They are not able to retrieve the land in time thus forfeiting their claim to it.
Major constraints in the District are:

- seasonal unemployment
- low income
- illiteracy
- low of calories in food consumption
- food deficit
- migrations.

6.1.5 Munshiganj District

Considering all farmers together, level of income (and expenditures) and standard of living is much higher in this district as compared to other districts of the NCR. Crops are quite profitable (potato, aus and aman B paddy, jute).

Medium and large farmowning households get additional incomes from non-farm sources (e.g different types of business remittance from people working abroad). Main problem is finding temporary shelters during the flood. Nevertheless, attention must be paid to the limited capacity of very small farmers, in taking risk and to improvements that may occur by changing cropping patterns.

A case study of a very small landowner in Srinagar thana is presented here as an example.

- very little land is given out on share-cropping
- some land (0.1 acre) was sold last year to meet wedding expenses
- some land is taken on share-cropping
- head of family is also a daily labourer.

The area is flooded each year as most parts of lands are VLL. Before, the farmers used to grow 2 crops, aus & aman. Now, he grows 1 crop. IRRI. This year, 80% of the crop was destroyed by insects. Large expenditure was incurred on inputs.

The farmers also tried another variety of paddy on a small plot of land but the crop was lost. Fishing is forbidden. Members of the family do not eat each day. Wishes of men and women are employment in factory, to survive.

6.2 Conclusions

6.2.1 Objectives of Socio-Economic Studies

Any strategy of development must be judged in terms of its objectives. There has been a reorientation of the objectives of development in the recent years. The emphasis has moved away from increase in production or growth in GNP alone, to growth-with-equity and target group-oriented micro-level development with people's participation, particularly the poorest. The objectives may be broadly stated as follows :

a) Higher productivity and increase in production or growth in GNP. This is just one component of an integrated approach to development. The other important and interlinked set of goals are the following.

b) Distributive justice and equity in sharing the benefits of development.

c) Increase in employment of different groups of people - target groups.

d) People's voluntary participation which may be spontaneous or induced.

e) Maintenance of ecological balance between man and nature, i.e., proper use and efficient management of finite and renewable natural resources such as soil, water, air, forests etc.

f) Last but not the least is self-reliance in development. For a self-sustaining growth, mobilization of domestic resources is a necessity.

The justification of the proposed water management projects is not only in increased agricultural production but also in the associated socio-economic development of the region. A regional increase in agricultural productions is of course an economic indicator of the increased well-being of the region. But that alone does not indicate who benefits from the increased production. Equitable distribution of benefit

among all groups will have to be taken into consideration. An effort should be made to increase total income of the region through increased production as well as increased employment and people's participation, specially the rural poor. Towards this end, knowledge about different groups of people,including the disadvantaged group is required.

Any type of project undertaken for regional development is for the population of the region. The planning horizon encompasses the future. What the future benefits of the projects will be and who these will accrue to may only be assessed when the present socio-economic structure of the region is known. By comparing the existing social, economic and physical conditions with the desired future situation, it will become possible to indicate the future course of action to be undertaken.

The conclusions presented hereafter are made considering all findings of the socio-economic study, which has been based on different specific surveys:

- literature analysis
- statistics analysis
- secondary data analysis
- field trip at district and village level and interviews of different people
- socio-economic field survey conducted at household level using a questionnaire.
- field interview of many knowledgeable persons
- visit to many international, local, non-governmental organisers, institutes, organisations in Dhaka.

The socio-economic study has been designed to:

- gain an appreciation of the development status of the region and the socio-economic status of the people in the region.
- assess socio-economic impacts of usual and exceptional flood on people in the rural areas of the NCR, specially the farmers
- analyse the perception of different target groups who will either benefit, or be affected, or even be not concerned by FCD projects
- identify major constraints to development in rural area of NCR.

6.2.2 Possible Socio-Economic Impacts of FCD Projects

The first conclusion is that people (or target groups) who usually suffer more from flood, and who were mostly affected by heavy flood of 1987-1988, will not be the people (or the target group) who will benefit more (if he will benefit), from FCD projects. These people represent about 60 to 70% of NCR rural population, depending on the area.

TABLE IV.6.1
People Affected by Flood

• Total farm households in NCR (1983-84 BCAL)	69.80%
• - small farms - medium farms - large farms	73.14% 23.50% 2.30%
• Total non-farms households in NCR (with less than 0.05 acres of cultivated area)	30.20%
• Total landless households • Total agricultural labour household	52.28% 36.65%

Worst affected people during extensive flood are landless and very small farmers on the one hand, boatmen, fishermen and some artisans on the other hand. They live hand to mouth, depending on daily incomes; prices of food increase and they cannot adjust their budget to these fluctuations.

FCD projects will not be able to absorb much of the actual and increasing potentialy unemployed and very poor people. The increase of this group will be due to;

- the increase in population
- the increase of landless group (from landless descendants and from small landowners descendants who will become landless)
- the poorest farmers of small farmers group
- destitute women
- women labour force increase (= women whose husband are landless daily labourers or very small land owners or tenants)

FFW Programme will be able to absorb part of this potentially poor people. Increase in cropping intensity and increasing in use of modern cultivation technologies will absorb only a small part.

Therefore development of all other income generating activities is an absolute priority;

- cottage industries,
- homestead farm, growing vegetables and fruits, raising livestock and poultry
- new appropriate technologies for rural women (or what is called"improve intermediate technology")

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Socio-economic impact of 1988 flood should be studied and analyzed at the household level on a long term basis, at least 3 or 4/5 years, because;

- small and many medium farm households have not yet recovered their usual economic and financial situation in 1991, due to different types of losses in 1988 (crops, cattle, household asset, house, incomes, and that resulted in indebtedness);

- 1991 was not a good year for farmers (excessive rains in monsoon season);

- immediate effects of floods are : different losses, diseases, disruption of communications. But secondary and long term effects are considerable and difficult to estimate in money terms (minimizing of food expenditures, of many household expenditures (for health, education, better standard of living).

- A big part of population is living under the poverty line or just at this level[1] and remain quite vulnerable. Only one variable can affect dramatically this economic situation and provisorily give a drastic picture of their situation.

It appeared from the survey that, depending of course on areas and types of households, in general, people are much more concerned of improvement of their socio-economic conditions rather than flood problems. In fact, access to health and education facilities, and to credit without actual constraints (donation, high rate of interest, land mortgaging) are the most urgent needs for all people

- In flooded areas poor people who get some incomes from homestead poultry and other farming activities want elevated and secured homesteads.

Increase in cropping intensity will increase labour demand. But a higher demand for agricultural labour usually pushes up wage rates as well; in the long run, it may stimulate demand for mechanization for ploughing and harvesting.

- There are already some peak season of demand for labour in some areas;
- Small farmers cannot afford to hire much labour, and will find it difficult to pay higher wages to labour (in Manikganj Area, many small landowners have bullocks and plough);
- Power tiller will replace progressively hand driven plough and bullock power. But only big businessmen can afford to purchase a power tiller of good quality (Japanese: Tk.1,125,000, or Tk. 1,065,000). Less fortunate people can only a get Chinese one, at a lower cost (Tk. 50,000), but are discouraged by high cost of maintenance.

Planning units are at different levels of socio-economic development. It can be observed on maps that some Planning Units have many population concentration centres of more than 10,000 people, some Planning Units have no such centres. Roads, railways, cottage and small industries are development factors, which help people from out-migrating. Planning Unit 3, in Mymensingh District, shows higher

[1] 51% of rural population is living below poverty line in Bangladesh

level of development. Cash crops grown bring big profits. All centres are generating incomes (rickshaw pullers, services etc.) Migrations seem to be less than in other part of the NCR,like Manikganj for instance.

In other areas, or thanas, big landowners do not feel secure and will very soon become absenteists absentee landowners living in urban areas.

6.2.3 Land Transfers and Costs, Land Acquisition Procedures

Land Transfers and Costs

Land market in rural areas is very poor. All land is sold under distress, and is divided into smaller and smaller plots.

Analysis of origin of landowning for small, medium and large farmers in field survey indicates that the bulk of land is inherited, a considerable number of plots were purchased in the past 30 years, and few plots were sold, always out of necessity. In fact there is a kind of continuous transfer of plots under well known procedures.

The procedure of losing lands is: mortgage of land due to bad financial situation, necessity to clear debts or to make exceptional expenditures (health treatment, food purchase, marriage of a daughter or sister etc.), and heavy flood (see a case hereafter). Procedures to purchase land are the same, plus two other ones

(1) *people working abroad get sufficient money to purchase a plot of land.*

(2) *Destitute women in the rural areas have difficulty in maintaining their rights on their land and property, (or to obtain due share of crop from their land given on share-cropping), due to absolute contempt of men for these women, with no or minor son, and to Muslim law of inheritance. Some powerful villagers or relatives simply take control of their land and even property directly or indirectly. As percentage of destitute women in the rural areas is considerable and is increasing, considerable amount of land is transferred under illegal procedures.*

Procedures of Losing Lands

Information obtained through consultant's field enquiries conducted in May-June 1991 in Manikganj District (Manikganj thana).

Types of lands	very high land	: 5 acres
	medium highland	: 2500 acres
	medium low land	: 27000 acres
	low land	: 10000 acres

Medium low lands and low land are most affected areas by normal flood. Aman and vegetable crops are affected. Medium high lands are affected in high flood.

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Social Consequences

During high floods of 1987-1988, rich people had bank balance. Medium and poor people whose lands were located in more affected areas lost their crops, and as a consequence had to purchase paddy and sell their land to rich people who could stock large amounts of paddy, they exchanged paddy for lands of poor people. Rich farmers have less division of property than other farmers as they often live in extended family, keeping all plots of all men together and cultivating either with permanent (and daily labourers) or giving a part to share-croppers. The total number of plots of some big farmowners is in some cases tremendous.

Cost of Land Through Enquiries and Field Survey

Cost of an acre of land vary depending on the type of topographical land, the proximity of urban area and roads, and the District.

It is not possible here to give figures for all the different conditions. Some main informations only are given here.

High Land: is the most expensive one, cost of an acre ranges from Tk.5000 (Dewanganj thana in Jamalpur District, Gopalpur thana in Tangail District) to Tk.15000 (Jamalpur thana in Jamalpur District, Ghior thana, near road, in Manikganj District).

MHL : Cost of an acre varies from Tk. 5000 (Singair thana in Manikganj District, Dewanganj thana in Jamalpur District) to Tk. 6500-Tk.7000 (Madhupur thana, Gopalpur thana in Tangail District,) to Tk.13000 and more in Jamalpur Sadar.

VLL : Cost of acre varies from Tk.2500 to Tk.5000.

These costs are only indications as they change considerably in all thanas, land near urban area may cost Tk. 35000, to Tk. 50000 per acre and even more.

Land Acquisition/Requisition Legislation

Land acquisition for water control, drainage and irrigation purposes is mostly done by the government by the LA ordinance of 1982. Land value is based on information from the land records. Value of trees is collected from the Forest Department, and the value of buildings is collected from the Public Works Department. On the basis of these estimates, the Deputy Commissioner offers the claimants compensation. The LA Act of 1989 (1989 Emergency Act) is supposed to accelerate processes of evaluation and compensation. (Refer for details on legislation to FAP-15. Land acquisition and resettlement study. Interim Report August 1991).

In practices, "the method of determining the level of compensation has largely remained the same since the 1948 LA Act. The difference is that compensation under the 1982 Act will be based on the average market value over the preceding 12 months of similar quality of land in the vicinity of the plot being

acquired, as compared to an average of 24 months provided for in the 1948 LA Act " (FAP-15 cited Report).

Land Acquisition by Local Government Authorities

For infrastructures such as roads, small embankments bridges and structures, land is supposed to be provided free as a donation from the community. This means that the authorities cannot take formal possession of land.

Conclusions

The decision making process for land acquisition needs to be reconsidered.

Institutions concerned area:

- the District Land Acquisition Committee (DLAC)
- Central Land Acquisition Committee (CLAC)
- the BWDB, for embankments constructed with FFW aid.

Problems in rehabilitation of displaced persons and compensation for land lost by them are numerous, they will be studied in detail in Phase-II of FAP-15 project.

Some of them are :

- irrelevant systems to determine the value of land and other assets
- non-existence of land acquisition procedure for local government Projects.
- no compensation system for land acquired for construction of embankments by BWDW with Food AID.
- no timely repayment of land lost by displaced people before starting constructions

A detailed study for any type of construction, a full list of persons to be displaced and lands to be compensated will have to be elaborated on the spot, for a correct evaluation of cost of resettlement and rehabilitation of all concerned people.

Three lists will have to be prepared:

- one list indicating people who will lose all their lands + homesteads
- one list indicating people who will lose only homestead
- one list indicating people who will lose only a part of their land.

Socio-Economic Impact of Land Acquisition

Socio-economic impact of land acquisition will be assessed when project sites will be known for each scenario and in each planning unit.

Different variables to be analyzed at that time will be:

- total number of homesteads, their size, their use
- total space left for grazing land for cattle
- all different types of households, landless, farmers (landownership profile) others.
- value of land and changes in value due to construction (for some reason value may decrease, for some other ones it may increase)
- better communication facilities or on the contrary, communication disruption.

Land prices are available from field officers of the Bangladesh Bureau of Statistics, However there is some question about the quality of the data. Crop average is estimated by the Statistical bureau in its survey of "prices paid and received by farmers". The bureau's field agents count the number of plots (in a specific area) planted with each crop. The Bangladesh Agricultural Development Council (BADC) collects data on the use of inputs (seeds for high-yield varieties and fertilizers). (IFPRI study, September 1990 - working paper No.1).

6.2.4 Main Constraints to Development Projects

a. Most households have activities other than farming or agricultural daily labourers, and get considerable incomes from these non-farm activities. In fact, landless, small landowners and medium land owners could not live only on farm income. Landless cannot survive with only one job. Off-farm activities are also becoming profitable sources of income:

- sale of poultry, of fish, for landless
- sale of cattle, milk, fish, for small farm
- rent of draft animals or agricultural implements
- sale of irrigation water for some owners of STWs and DTW.
- rent of land
- farm wages.

b. Fragmentation of Land Owned and Cultivated is extreme for 4 reasons which will not change shortly

- fragmentation of family lands due to law of inheritance
- continuous transfer of land from hand to hand, through sales, mortgaging, purchasing,
- micro-topography of the area; every body wants pieces of different types of land to grow crops in different seasons.
- the need to have stock of small plots of land to negotiate in case of difficulties.

c. Small Land Market

Study on origin of landownership in socio-economic field survey has indicated that most lands are inherited, some are purchased from year to year, few are sold. In fact, rich farmers do not sell much land, on the contrary, they continuously purchase some plots of land. Half of landless will never be able to purchase land; the other half, will never have access to large amount of inputs, except for households who get money from members working abroad.

A considerable number of small plots are changing hands specially those belonging to small or medium farmers following economic situations of these people the consequences being, sale, purchase or mortgage of land.

d. Share-Cropping System

"People are not poor because they are tenant, but they are tenant because the are poor".
Share-croppers are nearly all of them owner of a small plot of land. As they need agricultural implements and bullocks to cultivate, very few daily labourers can be share-croppers.

There is a huge demand for share-cropping tenancy system in the NCR, but few offer land for sharecropping People who give out land on share-cropping are :

- businessmen who do not have time for farming activities
- old men, who cannot work in the field; they sometimes give out their land on share-cropping contract, to their sons;
- women who own land, as they do not work in the fields;
- absentee landowners;
- big landowners who do not have an extended family, and who cannot find enough manpower in peak labour demand seasons;
- new small owners of land, who are not equipped to cultivate themselves.

These cases do not bring much opportunities to small farmers for cultivating land on share-cropping contract.

For instance, in Munshiganj District, big farmers are cultivating their land with permanent labourers and daily labourers working on contract basis. Usual duration of share-cropping contract is one year. In some cases, owners keep same tenants for many years.

e. Owners of STW, DTW and LLP are Mostly Large Farmowners

Distribution of irrigation water is made by their fieldsmen to all plots of land. It seems through questionnaires that, besides unavoidable favours made to owner of TW and influential farmers, there is no trouble in distribution of water to all the farmers of the constituted group. But what gives rise to difficulties is mechanical breakdowns, electricity failure, cost of fuel, and water insufficiency in dry season.

f. Declared self-sufficiency in family budget does not necessiarily mean that household members have a decent way of life. Many poor cannot afford to purchase food and live hand to month, without access to any health and education facilities, without security, and remain absolutely vulnerable.

g. From the study of approximate family budgets, it is noticed that health expenditures are extremely insignificant. Food expenditures are the most important ones.

h. In the rural areas, worsening of socio-economic situation of women has been noted. Special attention must be paid to integration of women in FCD projects in the NCR.

6.2.5 To What Extent the Landless Agricultural Labourers are going to Gain from the Strategies of Increasing Production

a. It is assumed that large farm holdings will be the ones to benefit from development strategies for to increasing production, as (1) they have enough land to take risks (2) they have investment capacities (3) they have more credit facilities than others (4) they are already more or less equipped with modern irrigation equipment, power tiller etc. it cannot be expected that new technologies on their land will procure much job opportunities to landless people. why?

b. Cases studied during the fieldwork in Mymensingh District showed clearly that big farmers cannot cultivate all their land by themselves, mostly because of man-power shortage in the peak season. So they give a part of their land to a considerable number of share-croppers.

For Example: A household has 20 acres (8 ha), 30 plots, 10 share-croppers (to 2 acres each)
A household has 30 acres (12 ha), 20 plots, 15 share-croppers (8 khata each).

Share-croppers will employ their family members for field work. Share-croppers are usually all of them owners of a small plot of land, who own some of agricultural equipment.

On the contrary: very few landless can get land on tenancy as:

1) they cannot afford to invest in draft animals
2) they cannot afford to invest in inputs as they have no credit facilities
3) they cannot take the risk of such investments as the lease agreement is verbal and tenancy contract is insecure.

c. Case studies of big farm owners show that profits from farm, if any [2] are re-invested either in agricultural investment, or in non-productive investments (e.g houses in cities, business).
Agricultural investments are threshing machines and modern irrigation equipment. These improvements, suppress job opportunities of thousands of women. (wage for manual threshing of paddy by dheki for women is 2/2 seers of paddy + 3 meals per day).

6.2.6 Vulnerability of Farmers

In macro-economic calculations of impact of any FCD project, the extreme vulnerability of farmers has to be taken into consideration. Impact will not effect all population of one target group as well . Investment capacity of farmers is continuously affected by unexpected events which will with draw them from benefiting group (bad climatic conditions, erosion or silting of their land, health or any social expenditures, debts repayment etc.)

6.2.7 Observations About the Value of Statistics

The socio-economist consultant was requested to use as far as possible existing statistics and secondary data, which has been done in the present study. Nevertheless, she finds it necessary to focus on the risks of statistics manipulations in Bangladesh, without in-depths field control studies.

An example is given here, which is a comparison of the thana distress levels maps elaborated by World Food Programme in Dhaka, and the data on cropping intensities per district and thana given by agronomists and agro-economist of FAP-3.

The 2 figures given in SR X (Figure X.1.3 and X.1.4) maps in annex-III 2 and III-3 have been prepared by and for FFW Programme using two different Distress Factors Systems (DFs), whose objectives were: "weighing socio-economic indicators of poverty and mapping the relative level of distress geographically, and estimating the volume of food and other assistance that should be "notionally" mobilized and allocated to one thana relative to other thanas in both normal as well as crisis periods" ("Distress Factor System: WFP/Dhaka)

The first system used 4 indicators:

a) agricultural production
b) foodgrain prices
c) agricultural wage rates
d) incidence of natural disasters

The second system which was more recent used 15 indicators, which were weighted by senior programme officers who were familiar with all aspects of socio-economic conditions in the different geographical areas. The list reproduced here is taken from a WFP/Dhaka note on Distress Factors Systems.

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2 As there are many cross losses might result from different calamities: hail, insect, excessive rains and flood in specific places.

a)	Food Deficit weight	10
b)	Foodgrain price	7
c)	Agricultural wage rate	10
d)	Landless population	13
e)	Population Density	9
f)	Incidence of Natural Disasters	10
g)	Metalled as % total roads	4
h)	Literacy Rate	4
i)	Access to potable water	5
j)	Hospital Beds per 1,000	3
k)	Primary school enrolment	4
l)	Windowed/Separated women as %	5
m)	Rate of unemployment	9
n)	Doctors per 1,000	3
o)	Kutcha as % total dwellings	4

Source : BIDS "Analysis of poverty trends project" 62 villages survey 1989-90.

Both maps indicate Jamalpur Area (or District) as a distressed one. Jamalpur is according to agronomists, a highly productive area with a very high cropping intensity. In 1982, of the 13 thanas, 11 had surplus and 1 had deficit in Jamalpur district. In 1983, same figures were respectively 8 and 3, and in 1984, these were 8 and 4.

Besides this, geographical differences between thanas and differentiations within different types of households have to be considered, to avoid rapid conclusions on the wealthy situation of Jamalpur District. The following table indicates the distribution of deficit households according to land ownership in a 1989/90 study conducted by BIDS.

Landownership category	Total households	Chronic or occasional deficit households (%)	Chronic deficit only households (%)
Landless	16	19	29
Functionally landless (0-01-0.49 acres)	33	40	55
Marginal owner (0.05 - 1.49 acres)	21	21	11
Small owners (1.50 - 2.49 acres)	11	10	3
Medium owners (2.50 - 4.99 acres)	12	8	1
Large owners (Over 5 acres)	7	2	1
Total	**100**	**100**	**100**

6.3 Proposals

1. Any type of construction must be a multipurpose one, implemented in the framework of an integrated rural development project, so that different target groups can benefit. Any construction which will benefit only one target group will fail, and cause social problems.

2. Institutions have to gain confidence of people. People have to be informed of projects and of their rights, by institutions. In FFW programme very poor people still accept wages under the legal minimum wage rate. Also most of the people do not know what is the legal rate and whether they have to pay a commission to get the job.

   Case studies described in FAP-13 indicate that people, who were not concerned by the construction of rural flood control, irrigation or drainage project would not participate in their maintenance.

3. Small scale flood protection measures, small works, constructed, maintained and benefiting small groups of people will be the more reasonable solution. Cultivable lands are a huge puzzle with micro-pieces where within a small area everybody is growing something else, on different soil with different technics and different economic return. It seems more reasonable to help people organise themselves in small groups rather than to impose on them an institutional organisation plan.

4. A road network, elevated, out of reach of heavy flood, would be necessary to cancel many secondary constraints (marketing facilities, development of socio-economic service etc.) Temporary shelters to house people affected by flood could be constructed there. Linear villages could also be constructed along surelevated roads to keep homesteads out of reach of flood and make easier all social development (as isolated homesteads in water are difficult to reach regularly).

5. Public buildings like schools and market places, could also be constructed to serve as temporary shelters for flood affected people.

6. It is necessary to envisage development of home gardening, tree plantations, goat rearing, poultry farming, all activities which can bring incomes to women, and better diet to household.

7. There are 86000 paddy varieties in IRRI center in Philippines. Wouldn't it be easier to adopt varieties suited to local physical conditions (with the help of adequate agricultural extension services) instead of changing local physical conditions with many risks ?

8. Khas lands are still available in all districts. They could be used for grazing land, and to provide poor people with homesteads of larger size. (List of total khas land distributed to landless people was obtained for all districts except Manikganj district, list of still available land per district could not be obtained by the consultants).

9. In the NCR, Manikganj district is the most affected by heavy floods. Incomes of all types of households are the lowest in this district. Period during which people have to leave their house because of flood is the longest in this district. This district should have a priority in embankment projects planning.

6.4. Recommendations

These recommendations are a basis for the preparation of the TOR of the feasibility studies.

6.4.1 Establish a Hierarchy of Constraints

From the socio-economic point of view, planning units have no homogeneous conditions. Therefore all different development scenarios for each planning unit will have to demonstrate in which order the different constraints can be removed;

- in space (spatial distribution of constraints)
- in time (over coming the constraints in the short and the long run)
- in which target group
- at what cost

6.4.2 Study of Spatial Distribution of All Types of Households

Available statistics are now too old to be adjusted to year 1991. Socio-economic survey was designed to find out flood impact and possible impact of FCD projects on different target groups in rural areas of the NCR. But the distribution in space of these different target groups is not known and will have to be studied at the feasibility level.

6.4.3 Study on Different Types of Migrations

There is no study on migrations in the NCR, either in or out migrations from rural area to urban area, or from urban to urban area. Specific studies on migrations, types, durations, impact on economic situation of households will have to be conducted.

6.4.4 Study on Efficiency of Different Types of Farms

A study on "Economic Development with and without land reform in Bangladesh", in "The Bangladesh Development Studies - Vol. XVII September 1989 No.3" shows that the 2.5 acre farm is the most efficient in Bangladesh.

An agro-economic survey can indicate the productivity of land and labour by farm size, with and without HYV paddy and with and without modern irrigation.

6.4.5 Study of Self-Sufficient Households

Literature and researches indicate that the minimum size of an economic holding is 8 acres, and that the minimum size of a subsistence holding is considered to be 3 acres.

Minimum foodgrain (paddy + wheat) requirements per capita per year are 165.56 kg. Socio-economic survey has indicated that nearly no small farm (less than 2.5 acres owned) provides enough income to households, (most small farms have non-farm incomes.

6.4.6 Study of Institutions

Social assessment of case studies described in FAP-13 operation and maintenance study. Draft Final Report Vol.II September 1991.

Description of many case studies in this Report give a short assessment of institutional and social impacts of projects. Institutional and social impacts of the projects, results from impacts on activities and incomes of different working groups in the rural areas. These working groups have conflicting interests within a very small area: conflicting interest between farmers and fishermen, between farmers whose fields are located near or far from the constructed structure, between influential people and poor ones, between traders, farmers, fishermen, between farmers or any people located inside or outside the project etc.

Main findings of Draft Final Report, Vol.II FAP-13 are:

- agricultural gains of project are nearly always less than expected, modest, or nil. Cropping intensity doesn't increase as fast as expected.

- in nearly no case, local populations have been involved in maintenance of structures. No committee has been created by the BWDB; if the case, local influential person or big landowners are chairman.

- in most cases social conflict appeared, due to conflicting interests

- payment of compensation money for land lost by farmers is the source of many problems. In some cases, BWDB has not yet transferred 10 years after the end of project implementation, the ownership of land lost by villagers

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Conclusion

Within a very small area, interests of different groups of working people are different if not contrary. To have incentive to take responsibilities in any project, people must get benefits in the short term, and understand clearly which profit they will get. Local micro-topographic, scattering of cultivated plots of farmers, numerous cropping patterns and rice varieties, and different capacities to take risks of different types of farmers (small, medium, large) explain that within a short distance, what will bring benefit to some people will consequently bring disbenefit or problems to others.

Therefore, in this difficult context, it is completely unreasonable to imagine that people will work on a project without a strong institutional support. Liaison between BWDB, thana officials, representative of concerned Ministries, unions parishads, and local people have to be strongly established before implementation of any project.

Food For Work Programme

As most of the project work in the NCR are expected to be constructed and maintained by BWDB through FFW programme, impacts of this programme on incomes of rural population has to be analyzed. Institutions will be studied by the institutional specialist of FAP-3. However, some main findings can be reported here.

Main Objectives of the FFW Programme

The main objectives of FFW programme are;

- to improve rural infrastructures
- to increase the agricultural productivity of land and to provide protection from natural disasters through a variety of earthworks (e.g. coastal and river embankments and drainage/irrigation canals)
- to generate lean season employment opportunities for the rural poor
- to facilitate stabilisation of the Bangladesh foodgrain market

In other words, FFWP is made to provide work to poor households in the slack seasons, which follows the end of aman harvest in February. Workers are paid in wheat at the rate of 80% of the average agricultural wage rate[3].

[3] in 1981 official wages are 52.57 seers of wheat per 1,000 cubic feet of earth moved (INFS 1981)

Positive and Negative Impacts of FFWP

Many studies have been conducted on the effectiveness and outcomes of PFDS [4]. Main findings are studied and analyzed by BFPP[4] and IFPRI. Some main impacts, positive and negative, are briefly mentioned here:

1. Positive Aspects

A BIDS and IFPRI study conducted on 4 project sites concluded that FFWP had increased the yield and the value of agricultural production, but very slightly the cropping intensity. Furthermore these impacts were much less for small farmers. Incomes were higher in the project areas, but agricultural wages were less. Much more income came from home activities.

FFWP remains the only source of income for the poorest of the poor, isolated people, women of the poorest farm households and destitute women even if they get less than is due to them, it is better than nothing.

2. Negative Aspects

Many studies estimated that FFW may not in general produce economically viable infrastructures. "CARE International (1988) evaluated its Food for Work projects.. and found numerous irregularies, including underpayment of workers, over-reporting of work, unserviceable schemes, and payments in cash. In 1988 only 28.6 percent of the total programmed FFW budget resulted in economically viable construction schemes. Thus the FFWP in general has not produced viable infrastructure" (IFPRI working paper No.1 September 1990).

The INFS in 1981 reported serious problems in FFWP administration of the projects; i.e., "severe underpayment to workers, and commissions commonly demanded for the privilege of working, irregular payments to workers, and overestimation of the total employment generated. Workers received 76.6% of the wage due to them". (negative + positive impact)

An IFPRI - BIOS study (1985) showed that" the employment effect of FFW was felt more in higher income of workers than in greater number of days employed since FFW employment represented largely a shift from self employment and to a smaller extent from other forms of wage employment" What, on the other side, is a positive impact is that the effect measured in terms of income is highly significant as the salary from FFW is higher than many other ones.

In 1988-89, the average wage rate of 4.6 kgs of wheat given to FFW workers was found to be considerably lower than the quantities of wheat which could be purchased with wage rate for unskilled rural labour of 5.8 kgs of wheat (WFP 1989).

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4 PFDS : Public Foodgrain Distribution System
BFPP : Bangladesh Food Policy Project

Vulnerable Groups Development Programme

The main target group of the VGD programme are poor women who are the principle or sole providers of their families and children. The overall objective of the programme is the improvement of the economic and social conditions of these target groups who belong to the poorest and most vulnerable groups in Bangladesh.

Objective are: income transfers, creation of incomes, generating activities, increase of income earning capacity, increase of health. Eligible households are entitled 32 kgs of wheat per month for a period of two years. In practice, they receive 66% of this amount on average. This programme is partly designed to alleviate malnutrition through increase of incomes.

Annex I.1.1

List of Visited Organizations

World Bank	:	Mr. Ross Wallace Resident Flood Plan Co-ordinator Mrs. Wahidahuk
FAO	:	Mrs. Else Ollgaard Programme officer
World Food Programme	:	Mr. S.R. Khan Senior Programme officer Mr. Masood Hyder Advisor M.A. Engels Junior Professional Officer
UNFPA	:	Mrs. Amina Mahmood Islam Programme officer
CARE	:	Mrs. Barbara. E. Jackson Project Co-ordinator Women's Development Project (WDP)
Heuen Keller International	:	Mr. Menno Mulder Nutrition Surveillance Project
RDRS	:	Dr. Rezaul Haque Project Documentation Administration
UNICEF	:	Mrs. J.A.Rahman Co-ordinator Women in Development
IFPRI	:	Dr. Arold Rice (Interntional Food Policy Research Institute)
BBS	:	Dhaka
BIDS	:	Dhaka

ANNEX I
Supporting Tables

General

The Study is based on both macro-level and micro-level data. Tables in Annex I.1.3 to I.1.20 provide macro-level information which cover either the total population (20.2 million according to the Census 1992 Preliminary Report) or total number of households (3878000 Census 1991. Preliminary Report). These tables are based on secondary data sources. The chief source being the BBS (GoB), mainly the Population Census and the BCAL.

Data by thanas are provided wherever such data were available (e.g. Annexes I.1.3, I.1.6,I.1.9, I.1.14 and I.1.15). Taking census of all the households in all the thanas in the NCR was not within the scope of the present study. Data for 1991 have thus been obtained through either projection from earlier data or from the 1991 Population Census Preliminary Report.

The socio-economic field survey data was collected based on thanas. This information was then converted for use on a Planning Unit basis.

Annex I.1.2

Concepts and Definitions used in BBS Census & Atlas

Distirct	:	The former districts (also treated as Region in BBS Publications).
Zila	:	The former subdivisions upgraded as Zilas.
Upazila	:	Most of the former thanas upgraded and renamed as UPAZILAS: there are 460 Upazilas in the country at present.
Thana	:	Former urban Thanas that have not yet been renamed as Upazilas.
Municipality	:	Urban areas declared and administered as Municipalities under the Paurashava Act. 1977. Currently there are 80 Municipalities in the Country.
SMA	:	SMA stands for Statistical Metropolitan Area. In the 1981 Population Census the urbanized areas in and around the Municipalities of 4 Divisional Headquarters were defined Statistical Metropolitan Areas.
WARD	:	Smallest electoral unit of the Municipality. It is managed by a Ward Parishad (council).
Union	:	Smallest electoral Unit of areas outside Municipality comprising several mauzas (or villages; the union is divided generally into 3 wards for administrative purpose). It has a union Parishad (council).
Mauza	:	Revenue village with a separate Jurisdiction List (JL) Number, area and a map. There are about 62,000 Mauzas in the country distributed amongst both rural and urban areas.
Mahallah	:	The smallest identifiable area under Municipalities. For the purpose of geo-code it is treated as equivalent to mauza. In order to demarcate the Mahallah clearly some marginal adjustment in boundary was necessary in some cases although they may not conform to the exact area. These Mahallahs may be considered more appropriately as Statistical Mahallahs.
Urban Area	:	Developed areas where modern amenities like metalled roads, communication facilities, electricity, gas, water supply, sewerage, etc. exist and which are densely populated and majority (2/3 rds) of whose population is non-agricultural and where community sense is well-developed are known as Urban Areas. Urban areas in 1981 Population Census comprised four SMAs, 71 municipalities and 46 other urban areas. 336 Upazila headquarters, Hats and Bazars with electricity were also regarded as other urban areas.
Villages	:	Villages in Bangladesh have no legal existence so far as their area demarcation are concerned. Often larger parasare also regarded locally as villages. On the other hand mauzas or revenue villages are the recognized smallest administrative units in revenue laws, with maps and well established boundaries and jurisdictions. As a result the Bangadesh Bureau of Statistics have been extensively using the concept of mauza as the smallestadministrative unit in all its statistical programmes. In majority of the cases mauza and villagehave the indentical name and the same area jurisdiction. Only in case of large mauzascomprising more than one villagethe confusion as to the identity of mauza and the villages remains.

Annex I.1.3

Total Urban and Rural Population per sub–district in 1981.

DISTRICT	Sl. No.	Upazila Name	Total Population 1981	Density 1981	Rural Population 1981 [Census]	Urban Population 1981 [Census]
			No.	persons/km²	No.	No.
1	2	3	4	5	6	7
		Dhaka	2748247		275175	2473072
		Cantonment thana	131792	5991	0	131792
		Dhanmondi thana	94047	31349	0	94047
		Demra thana (+)	320452	5431	147873	172579
		Gulshan thana (+)	216055	2920	75585	140470
		Kotwali thana	187195	93598	0	187195
		Lalbagh thana (+)	311129	34570	28015	283114
		Mirpur thana (+)	315187	5434	23702	291485
DHAKA		Mohammadpur thana	205252	13683	0	205252
		Motijheel thana	343137	24314	0	343137
		Ramna thana	164852	27475	0	164852
		Sutrapur thana	309357	103119	0	309357
		Tejgaon thana	149792	21399	0	149792
	01.	Dhamrai	265593	865	250739	14854
	02.	Dohar	145007	954	138326	6681
	03.	Keraniganj (+)	361625	2178	188136	173439
	04.	Nawabganj	242139	992	233708	8431
	05.	Savar (+)	261904	935	245040	16864
		TOTAL	4024515	2785	1331124	2693341
	06.	Joydevpur	231811	523	229736	2155
	07.	Kaliakair	165766	531	163497	2269
GAZIPUR	08.	Kaliganj	168813	857	158842	10186
	09.	Kapasia	72603	660	69187	3416
	10.	Sripur	238984	517	228713	10271
	11.	Tongi (+)	119760	2994	25180 (1)	(94580)
		TOTAL	997737	547	875155	122877
	12.	Dewanganj	56014	644	23261	32753
	13.	Islampur	146652	661	141568	5084
JAMALPUR	14.	Jamalpur	386190	917	294375	91815
	15.	Madarganj	169607	737	164676	4931
	16.	Melandaha	206917	862	197616	7862
	17.	Sarishabari	226664	879	209783	16881
		TOTAL	1192044	589	1031279	159326
	18.	Daulatpur	138740	654	134813	3927
	19.	Ghior	109511	764	106444	3067
	20.	Harirampur	162373	658	150806	11567
MANIKGANJ	21.	Manikganj	197043	1013	156972	37132
	22.	Saturia	136642	859	131655	4987
	23.	Shibalaya	119494	660	118349	1145
	24.	Singair	202184	965	191476	10708
		TOTAL	1065987	778	990515	72533
	25.	Lohajang	148738	1168	145394	3344
	26.	Munshiganj	244862	1580	208383	37060
	27.	Sirajdikhan	197583	1108	197388	195
MUNSHIGANJ	28.	Sreenagar	191063	970	191063	0
	29.	Tongibari	169416	1160	167962	1934
		TOTAL	951662	1105	910190	42533
	30.	Bhaluka	215789	487	205266	10523
	31.	Fulbaria	329739	680	307716	22023
	32.	Gaffargaon	297951	828	277588	20363
MYMENSINGH	33.	Muktagachha	256906	821	240614	16292
	34.	Mymensingh	337227	1533	146116	190911
	35.	Trishal	217818	875	192666	25152
		TOTAL	1655430	738	1369966	285264
	36.	Narayanganj	423040		254422	168618
		Narayanganj thana (+)	196233	12264	174302	21931
NARAYANGANJ		Fatullah thana (+)	132809	2604	80120	52689
		Siddirganj thana (+)	93998	3916	0	93998
	37.	Rupganj	145790	1027	89485	56305
		TOTAL	568830	1732	343907	224923
	38.	Basail	163224	927	145933	9033
	39.	Bhuapur	135851	600	132236	3615
	40.	Delduar	145670	859	134200	11470
	41.	Ghatail	264389	586	260227	4162
	42.	Gopalpur	205025	949	173300	31725
	43.	Kalihati	286192	980	278059	8133
TANGAIL	44.	Madhupur	262544	545	255191	7353
	45.	Mirjapur	294447	804	274542	19905
	46.	Nagarpur	237218	821	236256	8090
	47.	Sakhipur	171498	394	161319	10179
	48.	Tangail	277705	1056	204233	77518
		TOTAL	2443763	719	2255496	191183
N.C.R.		GRAND TOTAL	12899968	956	9107632	3791980

Note: + = have both rural and urban population.

1 = refer to explanation note of the table here attached.

Explanation note of table

The population of Tongi upazila, besides the Municipality of Tongi, is eitherconsidered as rural area or as other urban area, according to different sources of statistics. In fact, this area is becoming more and more urban.

Difference between total population 1981 and addition of rural & urban population 1981 may occur due to different sources of statistics specially for urban areas, onone side, and to errors in additions in some official statistics (Small Atlas area for instance) on the other side.

Insignificance of differences did not motivate to waste timeto adjust populations, as differences represents an infinitesimal percentage of population.

Differences, total 81 to total rural & urban 81

•	Dhaka	district	+ 50 persons
•	Gazipur	district	- 295
•	Manikganj	district	- 2939
•	Munshiganj	district	- 1061
•	Mymensingh	district	+ 200
•	Tangail	district	- 2916

Annex I.1.4

Sex-ratio 1991 (calculated on unadjusted population preliminary results of census 1991)

District	Sex-ratio 1991. MIF
Dhaka	124.2
Gazipur	108.4
Jamalpur	105.3
Manikganj	101.2
Munshiganj	105.1
Mymensingh	104.3
Narayanganj	1115.4
Tangail	103.4

Source : Preliminary Report. Population Census 1991. July 1991, BBS.

SOME RECENT SOCIO-ECONOMIC DATA FOR 12 UPAZILAS OF NCR

(Source Report on the Upazila Development Monitoring
Project BBS-Nov.90 June 91)
Survey conducted in 1989)

District	Upazila	Source of drinking water in % of households						Literacy rate			Economic Category %			Number of College and schools			
		Pond	Well	Cannal	River	Tube Weel	Tap	Both Sexes	Male	Female	Economically octire	Employed	Un Employed	College	High School Boys	High School girls	Junior High School
Jamalpur	1. Sarishabari	0.4	9		1.4	89.2	-	23.74	33.83	12.43	30.78	30.25	0.53	4	16	4	3
	2. Melandah	0.2	12	1.8		86	-	18.69	22.57	14.42	31.1	30.01	1.09	2	17	4	6
	3. Islampur	0.2	19.8		0.2	79.8	-	18.41	24.68	11.71	27.58	26.45	1.13	1	11	2	13
Mymensings	4. Gaffargaon	2	4.2	0.4		93.4	-	31.71	34.79	28.27	29.29	28.6	0.69	3	24	13	29
Gazipur	5. Kaliganj	6.4	6.8			86.8	-	42	51.38	31.75	30.9	30.12	0.78	2	19	3	4
Tangail	6. Bhuapur	0.4	8.8	1	1.4	88.4	-	24.43	32.7	15.54	29.1	27.9	1.21	2	13	3	2
	7. Tangail		24.6		0.4	75	-	23.91	33.55	13.22	28.9	27.85	1.05	3	19	1	3
	8. Ghatail	0.8	34.6	0.2		64.4	-	25.74	30.78	20.13	32.43	31.36	1.07	1	20	5	8
	9. Nagarpur	1.8	18.2		0.6	79.4	-	22.8	28.73	16.49	30.36	29.65	0.71	4	17	4	3
Manikganj	10. Saturia		16.4	2		83.4	-	21.4	28.75	13.53	31.51	30.57	0.94	1	11	1	
	11. Harrirampur		3.6	2		94.4	-	31.27	40.2	22.2	30.76	30.09	0.67	2	9	3	1
Munshiganj	12. Sreenagar	9.4	0.6		1.4	88.6	-	37.89	43.88	31.74	28.46	27.35	1.1	2	15	1	2

* Part only in NCR

Source: C:\123\Socio\se-data1

SOME RECENT SOCIO-ECONOMIC DATA FOR 12 UPAZILAS OF NCR

(Source Report on the Upazila Development Monitoring
Project BBS-Nov.90 June 91)
Survey conducted in 1989)

Sl. Nr.	Primary School	Roads (Km)			No of hats/bazars		Electricity in no house hold %	House holds received credit (%)	Health centres		F.P. Clenic
		Pacca Roads	Semi-Pacca Roads	Kacha Roads	Hat	Bazar			Upz. Health complex	Un. health complex	
1	89	4.00	5.00	204.0	27.0	7.0	4.2	25.8	-	6	1
2	82	1.00	16.00	785.0	12.0	17.0	2.4	24.2	-	2	3
3	81	8.00	10.00	600.0	6.0	10.0	3.2	16.8	-	5	1
4	174	12.95	17.78	886.4	47.0	4.0	5.4	37.6	-	4	3
5	88	10.00	10.00	246.0	32.0	4.0	12.2	13.20	-	7	5
6	62	10.00	1.00	262.0	17.0	5.0	14.4	26.4	-	5	6
7	97	20.30	3.40	325.0	26.0	12.0	16.0	36.6	-	9	10
8	103	37.00	2.00	915.0	33.0	21.0	4.8	8.4	-	10	
9	107	1.00	3.83	429.0	13.0	14.0	5.4	7.60	-	6	8
10	64	5.00	8.00	106.0	10.0	17.0	4.0	12.6	-	6	5
11	78	7.50	8.00	91	9.0	26	6.0	7.2	-	5	4
12	92	13.00	10.00	81.8	7.0	12.0	15.4	28.4	-	3	10

Source : C:\123\Socio\SE-data2.wk1

Total Urban and Rural Population per sub-district in 1981 & 1991 (Projected 1991).

DISTRICT	Sl. No.	Upazila Name	Total Population 1981	Area 1981	Total Population 1991 [Projected] Annual Growth Rate = 1.86		Total Population 1991 [Projected] Annual Growth Rate = 2.17		Rural Population		Urban Population	
									1981 [Census]	1991 [Projected] A.G.R = 1.76	1981 [Census]	1991 [Projected] A.G.R = 4.93
			No.	in sq.km	No.	Density persons/sq.km	No.	Density persons/sq.km	No.	No.	No.	No.
1	2	3	4	5	6	7	8	9	10	11	12	13
DHAKA	*	Dhaka	2748247	267.45	3304399	12355.02	3406353	12736.22	275175	327627	2473072	4001598
		Cantonment thana	131792	21.72	158462	7295.35	163351	7520.44	0	0	131792	213248
		Dhanmondi thana	94047	2.72	113079	41557.85	116568	42840.09	0	0	94047	152174
		Demra thana	320452	59.17	385301	6511.76	397189	6712.67	147873	176060	172579	279245
		Gulshan thana	216055	74.44	259777	3489.71	267792	3597.38	75585	89993	140470	227290
		Kotwali thana	187195	1.72	225077	131087.31	232021	135131.90	0	0	187195	302894
		Lalbagh thana	311129	8.51	374091	43979.66	385633	45336.61	28015	33355	283114	458098
		Mirpur thana	315187	58.43	378970	6485.55	390663	6685.66	23702	28220	291485	471643
		Mohammadpur thana	205252	15.34	246788	16083.68	254402	16579.93	0	0	205252	332112
		Motijheel thana	**343137**	**10.43**	**412576**	**39560.48**	**425306**	**40781.09**	0	0	**343137**	**555219**
		Ramna thana	**164852**	**5.70**	**198212**	**34749.73**	204328	**35821.90**	0	0	**164852**	**266742**
		Sutrapur thana	309357	2.81	371960	132370.24	383437	136454.41	0	0	309357	500561
		Tejgaon thana	149792	6.46	180105	27888.64	185662	28749.12	0	0	149792	242374
	01.	Dhamrai	265593	306.80	319340	1040.87	329193	1072.99	250739	298533	14854	24035
	02.	Dohar	145007	184.30	174351	946.02	179731	975.21	138326	164693	6681	10810
	03.	Keraniganj	361575	167.00	434746	2603.27	448159	2683.59	188136	223997	173439	280636
	04.	Nawabganj	242139	242.40	291140	1201.07	300123	1238.13	233708	278256	8431	13642
	05.	Savar	261904	277.10	314904	1136.43	324621	1171.49	245040	291748	16864	27287
		TOTAL	**4024465**	**1445.05**	**4838880**	**3348.58**	**4988180**	**3451.90**	**1331124**	**1584855**	**2693341**	**4358008**
GAZIPUR	06.	Joydevpur	231891	443.10	278818	629.24	287421	648.66	229736	273527	2155	3487
	07.	Kaliakair	165766	311.50	199311	639.84	205461	659.59	163497	194662	2269	3671
	08.	Kaliganj	169028	195.30	203234	1040.62	209504	1072.73	158842	189120	10186	16482
	09.	Kapasia	72603	352.80	87295	247.44	89989	255.07	69187	82375	3416	5527
	10.	Sripur	2291984	461.90	2755804	5966.23	2840832	6150.32	2281713	2716639	10271	16619
	11.	Tongi	25180	60.20	30276	502.92	31210	518.43	25180	29980	0 ■	0
		TOTAL	**2956452**	**1824.80**	**3554738**	**1948.01**	**3664416**	**2008.12**	**2928155**	**3486302**	**28297**	**45786**
JAMALPUR	12.	Dewanganj	46014	424.80	55326	130.24	57033	134.26	32753	38996	13261	21457
	13.	Islampur	146652	370.40	176329	476.05	181770	490.74	141568	168553	5084	8226
	14.	Jamalpur	386190	481.70	464342	963.96	478669	993.71	294375	350487	91815	148563
	15.	Madarganj	169607	233.00	203930	875.23	210222	902.24	164676	196066	4931	7979
	16.	Melandaha	205478	243.50	247060	1014.62	254683	1045.92	197616	235284	7862	12721
	17.	Sarishabari	226664	269.40	272533	1011.63	280942	1042.84	209783	249771	16881	27315
		TOTAL	**1180605**	**2022.80**	**1419519**	**701.76**	**1463317**	**723.41**	**1040771**	**1239157**	**139834**	**226261**
MANIKGANJ	18.	Daulatpur	138740	225.60	166816	739.43	171963	762.25	134813	160510	3927	6354
	19.	Ghior	109511	143.40	131672	918.22	135735	946.55	106444	126734	3067	4963
	20.	Harirampur	162373	246.70	195232	791.37	201255	815.79	150806	179552	11567	18716
	21.	Manikganj	194104	191.70	233384	1217.44	240585	1255.01	156972	186893	37132	60082
	22.	Saturia	136642	159.10	164294	1032.64	169363	1064.51	131655	156750	4987	8069
	23.	Shibalaya	119494	193.20	143676	743.66	148109	766.61	118349	140908	1145	1853
	24.	Singair	202184	209.60	243099	1159.82	250600	1195.61	191476	227974	10708	17326
		TOTAL	**1063048**	**1369.30**	**1278173**	**933.45**	**1317610**	**962.25**	**990515**	**1179321**	**72533**	**117363**
MUNSHIGANJ	25.	Lohajang	148738	127.30	178838	1404.85	184355	1448.20	145394	173108	3344	5411
	26.	Munshiganj	245443	175.20	295112	1684.43	304218	1736.40	208383	248104	37060	59966
	27.	Sirajdikhan	197583	178.40	237567	1331.65	244897	1372.74	197388	235013	195	316
	28.	Srinagar	191063	218.30	229728	1052.35	236816	1084.82	191063	227482	0	0
	29.	Tongibari	169896	162.20	204277	1259.42	210580	1298.27	167962	199978	1934	3129
		TOTAL	**952723**	**861.40**	**1145522**	**1329.84**	**1180866**	**1370.87**	**910190**	**1083685**	**42533**	**68821**

Continued :

Total Urban and Rural Population per sub-district in 1981 & 1991 (Projected 1991).

DISTRICT	Sl. No.	Upazila Name	Total Population 1981	Area 1981	Total Population 1991 [Projected] Annual Growth Rate = 1.86		Total Population 1991 [Projected] Annual Growth Rate = 2.17		Rural Population 1981 [Census]	Rural Population 1991 [Projected] A.G.R = 1.76	Urban Population 1981 [Census]	Urban Population 1991 [Projected] A.G.R = 4.93
			No.	in sq.km	No.	Density persons/sq.km	No.	Density persons/sq.km	No.	No.	No.	No.
1	2	3	4	5	6	7	8	9	10	11	12	13
MYMENSINGH	30.	Bhaluka	215789	442.90	259457	585.81	267463	603.89	205266	244393	10523	17027
	31.	Fulbaria	329739	485.40	396467	816.78	408700	841.99	307716	366371	22023	35635
	32.	Gaffargaon	297951	391.70	358246	914.59	369300	942.81	277588	330500	20363	32949
	33.	Muktagachha	256906	300.00	308895	1029.65	318426	1061.42	240614	286478	16292	26362
	34.	Mymensingh	337027	372.70	405230	1087.28	417733	1120.83	146116	173968	190911	308907
	35.	Trishal	217818	249.40	261897	1050.11	269978	1082.51	192666	229391	25152	40698
		TOTAL	**1655230**	**2242.10**	**1990192**	**887.65**	**2051598**	**915.03**	**1369966**	**1631101**	**285264**	**461577**
NARAYANGANJ	36.	Narayanganj	423040	93.70	508649	5428.48	524343	5595.98	254422	302918	168618	272835
		Narayanganj thana	196233	15.30	235944	15421.17	243224	15896.98	174302	207526	21931	35486
		Fatullah thana	132809	52.50	159685	3041.62	164612	3135.47	80120	95392	52689	85254
		Siddirganj thana	93998	25.90	113020	4363.71	116507	4498.35	0	0	93998	152095
	37.	Rupganj	145790	234.80	175293	746.56	180701	769.60	89485	106542	56305	91105
		TOTAL	**568830**	**328.50**	**683942**	**2082.01**	**705044**	**2146.25**	**343907**	**409460**	**224923**	**363941**
TANGAIL	38.	Basail	154966	172.70	186326	1078.90	192075	1112.19	145933	173750	9033	14616
	39.	Bhuapur	135851	226.40	163343	721.48	168382	743.74	132236	157442	3615	5849
	40.	Delduar	145670	206.20	175149	849.41	180553	875.62	134200	159780	11470	18559
	41.	Ghatail	264389	430.80	317892	737.91	327701	760.68	260227	309830	4162	6734
	42.	Gopalpur	205025	206.20	246515	1195.51	254121	1232.40	173300	206333	31725	51333
	43.	Kalihati	286192	309.10	344108	1113.26	354725	1147.60	278059	331061	8133	13160
	44.	Madhupur	262544	481.40	315674	655.74	325414	675.97	255191	303834	7353	11898
	45.	Mirjapur	294447	366.30	354033	966.51	364956	996.33	274542	326874	19905	32208
	46.	Nagarpur	244346	324.20	293793	906.21	302858	934.17	236256	281290	8090	13090
	47.	Sakhipur	171498	419.40	206203	491.66	212566	506.83	161319	192069	10179	16470
	48.	Tangail	281751	259.80	338768	1303.96	349220	1344.19	204233	243163	77518	125429
		TOTAL	**2446679**	**3402.50**	**2941804**	**864.60**	**3032571**	**891.28**	**2255496**	**2685425**	**191183**	**309347**
N.C.R.	**GRAND TOTAL**		**14848032**	**13496.45**	**17852770**	**1322.77**	**18403602**	**1363.59**	**11170124**	**13299306**	**3677908**	**5951105**

Note : ■ One part of Tongi: Urban part is included in Dhaka SMA. Population of this urban part is 94580.

△ Estimated density of 1991 calculated on the basis of Area data of 1981.

Source file :C:\FAP3\DTNR\PPES8191.WK1

Annex I.1.6(Contd.)

Annex I.1.7

General informations on different types of households for the 4 divisions of NCR BCAL 1983-84

Informations 1983-84	Total Banglad esh%	Dhaka (1)%	Jamalpur %	Mymens ingh	Tangail
Total households (000)	13858	1178	434	1167	396
Non-farm households	27.30	34.04	30.88	28.71	22.47
Farm households	72.70	65.96	69.12	71.29	77.53
Small farm household (before 2.5 acres) (2)	70.3	78.9	69.7	69.8	72.3
Medium farm household (2.5 to 7.49 acre) (2)	24.7	18.8	26	25.4	24.4
Large farm household (7.50 acrs and +)	4.9	2.3	4.3	4.8	2.3
Owned area small farm (in % of total owned area)	31.7	44	29.9	30.9	36
Owned area medium farm (in % of total owned area)	42.7	41	46.6	44	45.7
Owned area large farm (in % of total owned area)	24.7	14.8	23.6	25.2	18.3
% of owned area to operted area total	98.16	101.02	100.60	101.36	100.15
Farms	95.82	97.01	98.64	99.26	97.65
Non-farm	235.51	254.29	230.00	281.82	277.78
% of operated area to total operated area Small farm	29%	41.2	29.3	29.6	33.9
Small farm	45.1	43.4	47.3	45.2	47.7
Large farm	25.9	15.4	23.3	25.2	18.4

(2) in % of total farm households

(1) old division: includes Gazipur, Manikganj, Munshiganj, Dhaka, Narayanganj, District, in NCR (partly), + Narshingdi District out side NCR.

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Annex I.1.8

Population forecasts per District 1991–2010

[Part included in NCR]

District	Population									
	1991		1995		2000		2005		2010	
	AGR=1.86	AGR=2.17	AGR=1.86	AGR=2.17	AGR=1.86	AGR=2.17	AGR=1.86	AGR=2.17	AGR=1.86	AGR=2.17
1	2	3	4	5	6	7	8	9	10	11
Dhaka	4,838,940	4,988,242	5,525,747	5,696,240	6,282,432	6,476,272	7,087,216	7,305,887	7,832,533	8,074,201
Gazipur	1,199,645	1,236,659	1,369,915	1,412,182	1,557,508	1,605,564	1,757,026	1,811,237	1,941,801	2,001,714
Jamalpur	1,433,273	1,477,496	1,636,702	1,687,202	1,860,829	1,918,244	2,099,203	2,163,972	2,319,962	2,391,544
Manikganj	1,281,707	1,321,253	1,463,624	1,508,783	1,664,050	1,715,393	1,877,216	1,935,136	2,074,631	2,138,642
Munshiganj	1,144,246	1,179,551	1,306,653	1,346,969	1,485,583	1,531,420	1,675,887	1,727,596	1,852,130	1,909,276
Mymensingh	1,990,433	2,051,846	2,272,942	2,343,071	2,584,194	2,663,927	2,915,231	3,005,178	3,221,807	3,321,213
Narayanganj	683,942	705,044	781,016	805,113	887,967	915,364	1,001,716	1,032,623	1,107,060	1,141,217
Tangail	2,938,298	3,028,956	3,355,341	3,458,866	3,814,814	3,932,516	4,303,495	4,436,274	4,756,066	4,902,809
Total NCR	15,510,484	15,989,047	17,711,939	18,258,427	20,137,378	20,758,700	22,716,989	23,417,903	25,105,991	25,880,615

Note : Medium UN variant for Total population as follows :
1990–95 is 2.69
1995–2000 is 2.60
2000–05 is 2.44
2005–10 is 2.02

Source file :C:\FAP3\DTNR\13-11FPP.WK1

Projections of total number of households 1991.

DISTRICT	Sl. No.	Upazila Name	All Upazila Population Census 1981			All Upazila 1983-84			% of H/H of Upazila in NCR [1981]	Total Number of Household 1991 [projected]			
			Nimber of Household for total Upazi			Total Household in Rural area	Household in Municipality	Total		[Annual Growth Rate = 1.86%]		[Annual Growth Rate = 2.17%]	
			Total	Urban	Rural					[Avg. size of H/H=5.2]	[Avg. size of H/H=5.7]	[Avg. size of H/H=5.2]	[Avg. size of H/H=5.7]
			No.		No.	No.	No.	No.	No.	No. of H/H	No. of H/H	No. of H/H	No. of H/H
1	2	3	4	5	6	7	8	9	10	11	12	13	14
	00.	Dhaka [1]		527311			[2] 277022	277022		635305	579576	654907	597459
	01.	Dhamrai	43914	2442	41472	43240				61412	56025	63306	57753
	02.	Dohar	25175	1390	23785	24638				33529	30588	34564	31532
DHAKA	03.	Keraniganj	63793	31375	32418	55073				83616	76282	86196	78635
	04.	Nawabganj	41478	1570	39908	40152				55988	51077	57716	52653
	05.	Savar	43284	3274	40010	36846				60559	55246	62427	56951
		TOTAL	**217644**	**567362**	**177593**	**199949**	**0**	**277022**		**930409**	**848794**	**959116**	**874983**
	06.	Joydevpur	37894	310	37584	37006				53600	48899	55254	50407
	07.	Kaliakair	26575	410	26165	27596				38329	34967	39512	36046
GAZIPUR	08.	Kaliganj	29557	1754	27803	29287				39034	35610	40238	36708
	09.	Kapasia	42921	474	42447	43690			28.9	58037	52946	59827	54579
	10.	Sripur	41123	1830	39293	41044				55259	50412	56964	51967
	11.	Tongi	21824	17516	4308		33130	33130		27691	25262	28546	26042
		TOTAL	**199894**	**22294**	**177600**	**178623**	**33130**	**33130**		**271950**	**248095**	**280341**	**255750**
	12.	Dewanganj	44933	2435	42498	28637			24.3	57109	52100	58871	53707
	13.	Islampur	40760	960	39800	39622			65.6	51127	46642	52704	48081
JAMALPUR	14.	Jamalpur	73781	13965	59816	63409	15986	79395	91.7	98060	89458	101085	92218
	15.	Madarganj	30666	894	29772	31819				39217	35777	40427	36881
	16.	Melandaha	38471	1441	37030	40167				47844	43647	49320	44994
	17.	Sarishabari	42017	3032	38692	41345				52410	47813	54027	49288
		TOTAL	**270628**	**22727**	**247608**	**244999**	**15986**	**79395**		**345768**	**315437**	**356436**	**325170**
	18.	Daulatpur	24870	769	24101	24131				32080	29266	33070	30169
	19.	Ghior	19455	544	18911	18839				25322	23100	26103	23813
	20.	Harirampur	29547	2153	27394	27319				37545	34251	38703	35308
MANIKGANJ	21.	Manikganj	34880	6624	28256	28086	7038	35124		45561	41565	46967	42847
	22.	Saturia	24308	877	23431	23827				31595	28823	32570	29713
	23.	Shibalaya	20935	193	20742	19578				27630	25206	28482	25984
	24.	Singair	35202	1974	33228	34821				46750	42649	48192	43965
		TOTAL	**189197**	**13134**	**176063**	**176601**	**7038**	**35124**		**246482**	**224861**	**254087**	**231799**

Note : [1] : Dhaka SMA = Dhaka Municipality: 367,513 h/h + Tongi Municipality + Narayanganj Municipality + Other Urban Area.

[2] : Dhaka Municipality.

Continued :

Projections of total number of households 1991.

DISTRICT	Sl. No.	Upazila Name	All Upazila Population Census 1981			All Upazila 1983-84			% of H/H of	Total Number of Household 1991 [projected]			
			Nimber of Household for total Upazi			Total Household	Household in	Total	Upazila in NCR	[Annual Growth Rate = 1.86%]		[Annual Growth Rate = 2.17%]	
			Total	Urban	Rural	in Rural area	Municipality		[1981]	[Avg. size of H/H=5.2]	[Avg. size of H/H=5.7]	[Avg. size of H/H=5.2]	[Avg. size of H/H=5.7]
			No.		No.	No.	No.	No.	No.	No. of H/H	No. of H/H	No. of H/H	No. of H/H
1	2	3	4	5	6	7	8	9	10	11	12	13	14
	25.	Lohajang	24842	554	24288	23720				34392	31375	35453	32343
	26.	Munshiganj	41217	6060	35157	34955	6313	41268		56618	51652	58365	53245
	27.	Sirajdikhan	31895	30	31865	30944				45686	41678	47096	42964
MUNSHIGANJ	28.	Srinagar	31931	0	31931	30505				44178	40303	45541	41547
	29.	Tongibari	27667	283	27384	27093				39173	35737	40382	36839
		TOTAL	157552	6927	150625	147217	6313	41268		220047	200745	226837	206939
	30.	Bhaluka	38471	1855	36616	39919				49896	45519	51435	46923
	31.	Fulbaria	59723	4108	55615	55711				76244	69556	78596	71702
	32.	Gaffargaon	55678	3460	52218	57967			99.1	73692	67228	75966	69302
MYMENSINGH	33.	Muktagachha	47934	2915	45019	47520	3028	50548		59403	54192	61236	55864
	34.	Mymensingh	78497	29418	49079	63809	14544	78353	74.1	103248	94191	106434	97098
	35.	Trishal	39328	4420	34908	47872				50365	45947	51919	47364
		TOTAL	319631	46176	273455	312798	17572	128901		412848	376633	425586	388254
	*	Fatullah	23472	9522	13950					30709	28015	31656	28879
	36.	Narayanganj	32291	32291	0	34718	34704	69422		45374	41394	46774	42671
NARAYANGANJ	37.	Rupganj	49633	8932	40701	49088			51.6	67805	61857	69897	63766
	**	Siddhirganj	18161	18161	0					21735	19828	22405	20440
		TOTAL	123557	68906	54651	83806	34704	69422		165622	151094	170732	155756
	38.	Basail	25177	1429	23748	22001				37741	34431	38906	35493
	39.	Bhuapur	23028	595	22433	21360				31412	28657	32381	29541
	40.	Delduar	23189	820	22369	22079				33682	30728	34722	31676
	41.	Ghatail	47246	675	46571	48305				61133	55771	63019	57491
	42.	Gopalpur	35619	5633	29986	31965	6996	38961		47407	43248	48869	44583
	43.	Kalihati	49074	1378	47696	48309				66175	60370	68216	62232
TANGAIL	44.	Madhupur	47130	1253	45877	49374				60707	55381	62580	57090
	45.	Mirjapur	48239	3109	45130	47087				68083	62111	70184	64027
	46.	Nagarpur	41300	1520	39780	37595				54851	50039	56543	51583
	47.	Sakhipur	27659	1656	26003	30185				39654	36176	40878	37292
	48.	Tangail	46524	12633	33891	38151	13778	51929		64212	58579	66193	60387
		TOTAL	414185	30701	383484	396411	20774	90890		565057	515491	582492	531396
N.C.R.		GRAND TOTAL	1892288	778227	1641079	1740404	135517	755152		3158183	2881150	3255626	2970045

Source file :C:\FAP3\DTNR\DT-POP.WK1

Annex I.1.9(Contd.)

Annex I.1.10

Population of Municipalities in 1983–84 and 1991.

Municipalities	In 1983–84 [BCAL]		In 1991 [Population Census]		Location in Administrative Unit	
	Population	Households	Population	Households	District	Upazila
1	2	3	4	5	6	7
Dhaka [Mpt]	Metropolitan	277022	3397000	608938	Dhaka	Dhaka SMA
Manikganj	Less than 50,000	6440	44000	8691	Manikganj	Manikganj
Munshiganj	Less than 50,000	5956	43000	7632	Munshiganj	Munshiganj
Narayanganj	+100,000	32740	269000	52354	Narayanganj	Narayanganj
Tongi	50,000 to 100,000	21255	154000	32309	Gazipur	Tongi
Gazipur *	Does not exist as Mpt.		94000	18765	Gazipur	Joydevpur
Jamalpur	50,000 to 100,000	15081	101000	20194	Jamalpur	Jamalpur
Muktaghacha	Less than 50,000	2857	21000	3958	Mymensingh	Muktaghacha
Mymensingh	+100,000	13721	186000	33283	Mymensingh	Mymensingh
Gopalpur	Less than 50,000	6600	42000	8664	Tangail	Gopalpur
Tangail	50,000 to 100,000	12998	104000	19825	Tangail	Tangail
Sarishabari			34582	7982	Jamalpur	Sarishabari

Note : * Municipalities not considered as Municipalities in BCAL 1983–84.

Source : Preliminar Report Population Census 1991.

Source file :C:\FAP3\DTNR\16-11MUP.wk1

Estimated population of Municipalities for 1991 (unadjusted)

(Preliminary Report Population Census 1991)

Municipality	No.of wards	Mahallahs	Households	Total Population	Sex ratio M/F	Literacy rate all ages
Dhaka	75	626	608938	3397187	131.0	49.31
Gazipur +	3	50	18765	94028	113.5	42.82
Gopalpur	3	33	8664	42185	103.9	25.33
Jamalpur	4	73	20194	101242	108.4	36.80
Manikganj	3	31	8691	43528	108.5	39.48
Muktagacha	3	7	3958	21499	112.6	34.87
Munshiganj	3	33	7632	42509	108.5	40.86
Mymensingh	7	82	33283	185517	112.3	48.68
Narayanganj	12	23	52354	268952	123.3	45.15
Sarishabari	3	28	7982	34582	110.4	29.64
Tangail	5	52	19825	104387	109.3	45.12
Tongi	3	25	32309	154175	129.9	39.80

Source : BBS

+ These municipalities are not considered as municipalities in BCAL 1983-84.

Annex I.1.11

Demographic Information 1981,1991 of the NCR.

Area	Households		Decinnial change	Size of Household		Literacy Rate (all ages)		Sex Ratio Male/Female		Population		Annual Pop. Growth Rate
	1981	1991	%	1981	1991	1981	1991	1981	1991	1981	1991	1991
Dhaka	668984	1045923	56.34	6.02	5.52	14.60	19.30	128.0	124.2	4024515	5774845	4.0
Gazipur	199894	324596	62.38	5.88	5.02	24.90	28.83	110.0	108.4	1176132	1629846	3.3
Jamalpur	270628	390482	44.29	4.40	4.79	12.10	16.28	105.0	105.3	1192044	1871772	4.6
Narayanganj	237830	323103	35.85	5.08	5.38	39.40	32.59	117.4	115.4	1209274	1738668	3.8
Manikganj	189197	231292	22.25	5.63	5.08	18.80	21.81	100.2	101.2	1065987	1173898	1.0
Munshiganj	177136	210918	19.07	6.01	5.60	21.70	28.67	103.0	105.1	1064512	1182176	1.1
Mymensingh	561560	775865	38.16	5.49	5.00	14.60	19.30	104.9	104.3	3085252	3878391	2.3
Tangail	414185	575383	38.92	5.90	5.12	17.00	23.58	103.0	103.4	2443763	2943756	1.9

Source : 1.Bangladesh Population Census, 1981, BBS(GOB).

2.Statistica Yearbook,BBS(GOB), p.566.

3.Unpublished preliminary data, Census 1991, BBS(GOB).

Source file :C:\FAP3\DTNR\DT_DEMOG.WK1

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Annex I.1.12

Dhaka Population Composition

	1981	1991
Area including river & forest (km2)	402.5	(Preliminary Results of Census) id
Area excluding river & forest (km2)	349.0	id
Population Census 1981	3465327	6105000
Floating Population	98107	? (no data)

The population of Dhaka SMA (Statistical Metropolitan Area) is made of :

1. **Population of Dhaka Municipality**
   2,475,710 + 74,920 floating population
   Dhaka Municipality includes 12 thanas (6 thanas have also rural population).

2. **Population of Tongi Municipality**
   94,580 + 2,522 floating population

3. **Population of Narayanganj Municipality**
   1,74,302 + 6,911 floating population

4. **Population of other areas of upazila** = part only (names as OUA)

4.1 **In Narayanganj District: Bandar upazila**
72,213 in SMA but not in NCR + 2941 FP
In Fatullah upazila
52,689 + 1,274 floating population
Narayanganj upazila
21,931 + 13 floating population
Siddirganj upazila
93,998 + 2,194 floating population

4.2 **In Dhaka district**

Keraniganj upazila (part	173439	+	3573 FP
Savar upazila (part)	16864 or 17064	+	451 FP

4.3 **In Gazipur district**

Tongi upazila	25180	+	2

Annex I.1.13

SOCIO-ECONOMIC REPORT

List of Publications

01. Bangladesh Population Census 1981, Bangladesh Bureau of Statistics (BBS), Government of Bangladesh (GOB).

02. The Bangladesh Census of Agriculture and Livestock 1983-84, BBS, GOB.

03. Report on Labour Force Survey, 1984-85, February 1988, BBS, GOB.

04. Statistical Year Book of Bangladesh, 1990, BBS GOB.

05. Monthly Statistical Bulletin of Bangladesh, May 1991, BBS, GOB.

06. Monthly Indicators of Current Economic Situation of Bangladesh, April 1991, BBS.

07. Current Levels and Trends of Mortality, Fertility, Nuptuality Patterns and Internal Migration in Bangladesh. Evidence from Sample Vital Registration System 1981-87, January 1990, BBS.

08. Socio-Economic and Financial Projections, March 1987, Technical Report No.24, Master Plan Organization, Ministry of Irrigation, Water Development and Flood Control, Government of the People's Republic of Bangladesh.

09. Cottage Industries of Bangladesh. A Survey, October 1983, Bangladesh Small and Cottage Industries Corporation, Dhaka.

10. Bangladesh Census of Non-farm Economic Activities and Disabled Persons, 1986, BBS.

11. Small Area Atlas of Bangladesh Mauzas and Mahallahs of Tangail District, February 1986, BBS.

12. Hamid, M.A., 1991. A Data Base on Agriculture and Foodgrains in Bangladesh (1947-48 to 1989-90), Dhaka, Bangladesh.

13. The Bangladesh Census of Agriculture and Livestock, 1983-84, All volume.

Different Types of Households by Upazila (Rural Area) 1991. [Estimated]

DISTRICT	UPAZILA			FARM HOUSEHOLDS								Non farm Household (¤)		Landless		Household with Cottage industry		Agricultural labour H/H	
	Sl. No.	Name	Total No. of Household	Total		Small		Medium		Large									
				No.	% (▵)	No.	% (▵)	No.	% (▵)	No.	% (▵)	No.	% (▵)	No.	% (▵)	No.	% (▵)	No.	% (▵)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
DHAKA	00.	Dhaka	63,005	23,357	37.07	19,273	30.59	3,765	5.98	319	0.51	39,648	62.93	NA	NA	2,908	4.62	4,889	7.76
	01.	Dhamrai	57,410	38,595	67.23	27,527	47.95	10,024	17.46	1,044	1.82	18,815	32.77	29,016	50.54	5,692	9.91	19,201	33.45
	02.	Dohar	31,672	22,010	69.49	17,787	56.16	3,534	11.16	689	2.18	9,662	30.51	23,017	72.67	4,410	13.93	6,534	20.63
	03.	Keraniganj	43,076	15,312	35.55	12,742	29.58	2,364	5.49	206	0.48	27,765	64.45	34,257	79.53	3,393	7.88	8,007	18.59
	04.	Nawabganj	53,511	28,033	52.39	19,933	37.25	6,878	12.85	1,222	2.28	25,477	47.61	37,016	69.17	6,349	11.86	13,367	24.98
	05.	Savar	56,105	33,888	60.40	24,266	43.25	8,285	14.77	1,337	2.38	22,218	39.60	31,899	56.86	3,070	5.47	18,795	33.50
		TOTAL	304,780	161,195	54.54	124,617	40.89	36,466	11.96	5,152	1.69	143,584	45.46	201,634	66.16	28,711	9.42	79,499	26.08
GAZIPUR	06.	Joydevpur	52,601	36,841	70.04	26,240	49.88	9,154	17.40	1,447	2.75	15,761	29.96	25,947	49.33	1,616	3.07	18,336	34.86
	07.	Kalihati	37,435	30,068	80.32	20,452	54.63	8,062	21.54	1,553	4.15	7,367	19.68	15,288	40.84	1,979	5.29	12,013	32.09
	08.	Kaliganj	36,369	29,740	81.77	22,859	62.85	6,289	17.29	592	1.63	6,629	18.23	15,146	41.65	1,801	4.95	11,291	31.04
	09.	Kapasia	15,841	13,210	83.39	9,561	60.35	3,286	20.74	364	2.30	2,631	16.61	5,849	36.92	914	5.77	5,795	36.58
	10.	Sripur	522,431	415,473	79.53	274,911	52.62	119,941	22.96	20,620	3.95	106,958	20.47	212,669	40.71	19,067	3.65	187,975	35.98
	11.	Tongi	5,765	3,952	68.55	2,972	51.54	863	14.97	117	2.03	1,813	31.45	2,958	51.31	177	3.07	1,718	29.80
		TOTAL	670,443	529,283	78.75	374,323	55.83	134,071	20.00	19,611	2.93	141,159	21.25	281,341	41.96	30,042	4.48	230,478	34.38
JAMALPUR	12.	Dewanganj	7,499	5,070	67.61	3,106	41.42	1,552	20.69	412	5.50	2,429	32.39	3,834	51.13	404	5.38	3,477	46.37
	13.	Islampur	32,414	22,254	68.66	15,014	46.32	5,930	18.30	1,310	4.04	10,160	31.34	16,669	51.43	1,590	4.91	14,139	43.62
	14.	Jamalpur	67,401	47,825	70.96	34,259	50.83	11,889	17.64	1,676	2.49	19,577	29.04	34,039	50.50	2,839	4.21	28,502	42.29
	15.	Madarganj	37,705	27,343	72.52	19,865	52.69	6,510	17.27	968	2.57	10,361	27.48	19,086	50.62	1,865	4.95	15,638	41.48
	16.	Melandaha	45,247	31,696	70.05	23,949	52.93	6,696	14.80	1,051	2.32	13,551	29.95	24,096	53.26	1,779	3.93	19,918	44.02
	17.	Sarishabari	48,033	31,537	65.66	23,477	48.88	7,015	14.60	1,046	2.18	16,496	34.34	26,296	54.75	1,078	2.24	19,689	40.99
		TOTAL	238,299	165,725	69.35	117,377	49.26	40,691	17.08	7,200	3.02	72,574	30.65	123,696	51.91	9,957	4.18	102,326	42.94
MANIKGANJ	18.	Daulatpur	30,867	22,172	71.83	14,283	46.27	6,466	20.95	1,422	4.61	8,696	28.17	14,600	47.30	2,840	9.20	14,238	46.13
	19.	Ghior	24,372	16,302	66.89	11,163	45.80	4,521	18.55	617	2.53	8,070	33.11	12,708	52.14	1,591	6.53	11,254	46.18
	20.	Harirampur	34,529	25,160	72.87	19,000	55.03	5,473	15.85	688	1.99	9,369	27.13	19,907	57.65	2,158	6.25	14,511	42.02
	21.	Manikganj	35,941	24,105	67.07	17,840	49.64	5,714	15.90	552	1.53	11,836	32.93	19,473	54.18	2,175	6.05	13,132	36.54
	22.	Saturia	30,144	20,672	68.58	14,650	48.60	5,436	18.03	586	1.94	9,472	31.42	15,163	50.30	2,759	9.15	13,422	44.53
	23.	Shibalaya	27,098	19,643	72.49	13,801	50.93	4,920	18.16	922	3.40	7,455	27.51	14,850	54.80	1,660	6.12	12,216	45.08
	24.	Singair	43,841	29,546	67.39	22,062	50.32	6,668	15.21	816	1.86	14,295	32.61	23,942	54.61	1,024	2.33	21,156	48.26
		TOTAL	226,793	157,600	69.47	112,807	49.74	39,159	17.27	5,575	2.46	69,192	30.53	120,631	53.19	14,191	6.26	99,925	44.06

Note : (▵) === As % of Total Household of Upazila (column 4), (¤) === Households with less than 0.05 acres of cultivated area were treated as non-farm households. (BCAL) vol.I p.21).

Continued :

Source file :C:\FAP3\DTNR\06-11R91.WK1

Different Types of Households by Upazila (Rural Area) 1991. [Estimated]

DISTRICT	UPAZILA			FARM HOUSEHOLDS								Non farm Household (¤)		Landless		Household with Cottage industry		Agricultural labour H/H	
	Sl. No.	Name	Total No. of Household	Total		Small		Medium		Large									
				No.	% (▵)	No.	% (▵)	No.	% (▵)	No.	% (▵)	No.	% (▵)	No.	% (▵)	No.	% (▵)	No.	% (▵)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	25.	Lohajang	33,290	21,996	66.08	18,649	56.02	3,030	9.10	317	0.95	11,294	33.92	21,617	64.94	1,451	4.36	7,101	21.33
	26.	Munshiganj	47,712	25,848	54.18	22,288	46.71	3,224	6.76	336	0.70	21,864	45.82	33,182	69.55	2,189	4.59	21,227	44.49
	27.	Sirajdikhan	45,195	31,121	68.86	25,730	56.93	4,869	10.77	521	1.15	14,074	31.14	25,998	57.52	3,606	7.98	19,980	44.21
MUNSHIGANJ	28.	Srinagar	43,747	28,102	64.24	22,202	50.75	5,167	11.81	733	1.68	15,644	35.76	26,305	60.13	5,444	12.44	15,054	34.41
	29.	Tongibari	38,457	26,278	68.33	22,899	59.54	3,119	8.11	261	0.68	12,179	31.67	24,270	63.11	2,124	5.52	16,388	42.61
		TOTAL	208,401	133,346	63.87	111,618	53.56	19,330	9.28	2,157	1.04	75,055	36.13	131,586	63.14	14,721	7.06	79,745	38.27
	30.	Bhaluka	46,999	39,203	83.41	22,844	48.61	13,823	29.41	2,536	5.40	7,795	16.59	15,915	33.86	2,567	5.46	17,142	36.47
	31.	Fulbaria	70,456	52,256	74.17	36,765	52.18	13,817	19.61	1,674	2.38	18,200	25.83	32,298	45.84	3,590	5.10	30,439	43.20
	32.	Gaffargaon	63,558	48,471	76.26	36,377	57.23	11,315	17.80	778	1.22	15,087	23.74	27,742	43.65	2,433	3.83	22,326	35.13
MYMENSINGH	33.	Muktagachha	55,092	38,161	69.27	28,555	51.83	8,709	15.81	897	1.63	16,931	30.73	28,773	52.23	2,628	4.77	24,280	44.07
	34.	Mymensingh	33,455	18,955	56.66	13,747	41.09	4,568	13.65	640	1.91	14,500	43.34	21,072	62.99	953	2.85	11,564	34.57
	35.	Trishal	44,114	32,910	74.60	23,549	53.38	8,562	19.41	799	1.81	11,203	25.40	20,302	46.02	1,989	4.51	16,176	36.67
		TOTAL	313,673	229,956	71.49	158,497	50.53	58,667	18.70	7,070	2.25	83,717	28.51	151,824	48.40	13,518	4.31	119,878	38.22
NARAYANGANJ	36.	Narayanganj	58,254	18,383	31.56	16,670	28.62	1,564	2.68	149	0.26	39,870	68.44	39,981	68.63	2,138	3.67	10,212	17.53
	37.	Rupganj	20,489	14,711	71.80	12,176	59.43	2,297	11.21	237	1.16	5,778	28.20	14,412	70.34	4,636	22.63	5,189	25.33
		TOTAL	78,742	33,094	55.13	36,744	46.66	6,046	7.68	618	0.79	45,649	44.87	54,831	69.63	11,634	14.77	17,400	22.10
	38.	Basail	33,413	26,977	80.74	19,672	58.87	6,644	19.89	661	1.98	6,436	19.26	13,529	40.49	4,081	12.21	10,083	30.18
	39.	Bhuapur	30,277	23,678	78.20	15,805	52.20	6,444	21.28	1,429	4.72	6,600	21.80	13,699	45.24	886	2.93	12,784	42.22
	40.	Delduar	30,727	23,325	75.91	17,615	57.33	5,198	16.92	512	1.67	7,402	24.09	15,402	50.12	4,934	16.06	10,202	33.20
	41.	Ghatail	59,583	47,566	79.83	33,732	56.61	11,802	19.81	2,033	3.41	12,016	20.17	24,035	40.34	3,111	5.22	21,540	36.15
	42.	Gopalpur	39,680	30,635	77.21	23,968	60.40	6,131	15.45	536	1.35	9,044	22.79	18,240	45.97	2,300	5.80	15,467	38.98
	43.	Kalihati	63,666	45,169	70.95	35,123	55.17	9,149	14.37	897	1.41	18,496	29.05	33,248	52.22	12,002	18.85	24,563	38.58
TANGAIL	44.	Madhupur	58,430	44,238	75.71	33,061	56.58	9,674	16.56	1,503	2.57	14,191	24.29	28,257	48.36	3,190	5.46	23,739	40.63
	45.	Mirjapur	62,860	49,361	78.52	35,055	55.77	12,863	20.46	1,443	2.30	13,499	21.48	27,633	43.96	4,275	6.80	21,117	33.59
	46.	Nagarpur	54,094	42,546	78.65	30,353	56.11	10,704	19.79	1,489	2.75	11,548	21.35	26,010	48.08	3,445	6.37	19,220	35.53
	47.	Sakhipur	36,936	32,122	86.97	18,762	50.80	11,391	30.84	1,969	5.33	4,814	13.03	11,203	30.33	1,019	2.76	14,661	39.69
	48.	Tangail	46,762	35,966	76.91	26,511	56.69	8,313	17.78	1,142	2.44	10,796	23.09	22,612	48.36	3,645	7.80	17,518	37.46
		TOTAL	516,428	401,583	77.76	289,628	56.08	98,287	19.03	13,678	2.65	114,845	22.24	233,590	45.23	42,259	8.18	191,582	37.10
N.C.R.		GRAND TOTAL	2,557,559	1,811,783	69.80	1,305,719	51.05	420,517	16.44	58,936	2.30	745,775	30.20	1,337,150	52.28	171,540	6.71	937,454	36.65

Note : (▵) === As % of Total Household of Upazila (column 4), (¤) === Households with less than 0.05 acres of cultivated area were treated as non-farm households. (BCAL) vol.I p.21).

Source : BCAL 1983-84, vol.I, Table 4.1, p.105.

Source file :C:\FAP3\DTNR\06-11R91.WK1

Annex I.1.14(Contd.)

Different Types of Households by Upazila (Rural Area + Municipality) 1991. [Estimated]

DISTRICT	UPAZILA			FARM HOUSEHOLDS								Non farm Household (□)		Landless		Household with Cottage industry		Agricultural labour H/H	
	Sl. No.	Name	Total No. of Household	Total		Small		Medium		Large									
				No.	% (△)	No.	% (△)	No.	% (△)	No.	% (△)	No.	% (△)	No.	% (△)	No.	% (△)	No.	% (△)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
DHAKA	00.	Dhaka	655,068	90,588	13.83	70,328	10.74	16,289	2.49	3,970	0.61	564,480	86.17	NA	NA	11,256	1.72	12,194	1.86
	01.	Dhamrai	63,306	42,559	67.23	30,355	47.95	11,054	17.46	1,151	1.82	20,747	32.77	31,996	50.54	6,276	9.91	21,173	33.45
	02.	Dohar	34,564	24,020	69.49	19,411	56.16	3,856	11.16	752	2.18	10,544	30.51	25,118	72.67	4,813	13.93	7,131	20.63
	03.	Keraniganj	86,196	30,639	35.55	25,498	29.58	4,730	5.49	412	0.48	55,557	64.45	68,550	79.53	6,790	7.88	16,022	18.59
	04.	Nawabganj	57,716	30,236	52.39	21,500	37.25	7,419	12.85	1,318	2.28	27,479	47.61	39,925	69.17	6,848	11.86	14,417	24.98
	05.	Savar	62,427	37,706	60.40	27,000	43.25	9,219	14.77	1,488	2.38	24,721	39.60	35,493	56.86	3,416	5.47	20,912	33.50
		TOTAL	959,277	284,317	29.64	215,304	22.44	59,160	6.17	9,853	1.03	703,529	70.36	246,440	25.69	45,174	4.71	108,088	11.27
GAZIPUR	06.	Joydevpur	55,254	38,698	70.04	27,563	49.88	9,616	17.40	1,520	2.75	16,556	29.96	27,255	49.33	1,698	3.07	19,261	34.86
	07.	Kalihati	39,512	31,736	80.32	21,587	54.63	8,509	21.54	1,639	4.15	7,776	19.68	16,136	40.84	2,089	5.29	12,680	32.09
	08.	Kaliganj	40,238	32,904	81.77	25,291	62.85	6,958	17.29	655	1.63	7,334	18.23	16,758	41.65	1,992	4.95	12,492	31.04
	09.	Kapasia	17,306	14,431	83.39	10,444	60.35	3,590	20.74	397	2.30	2,874	16.61	6,389	36.92	998	5.77	6,331	36.58
	10.	Sripur	56,964	45,302	79.53	29,975	52.62	13,078	22.96	2,248	3.95	11,662	20.47	23,189	40.71	2,079	3.65	20,496	35.98
	11.	Tongi	28,546	6,977	24.44	5,304	18.58	1,456	5.10	217	0.76	21,569	75.56	1,750	6.13	389	1.36	1,623	5.69
		TOTAL	237,819	166,362	69.95	118,296	49.74	41,921	17.63	6,145	2.58	71,457	30.05	85,230	35.84	9,494	3.99	70,659	29.71
JAMALPUR	12.	Dewanganj	13,351	9,027	67.61	5,530	41.42	2,762	20.69	734	5.50	4,325	32.39	6,826	51.13	718	5.38	6,191	46.37
	13.	Islampur	34,956	23,999	68.66	16,192	46.32	6,395	18.30	1,412	4.04	10,956	31.34	17,976	51.43	1,715	4.91	15,248	43.62
	14.	Jamalpur	92,052	58,780	63.86	42,430	46.09	14,314	15.55	2,036	2.21	33,272	36.14	37,556	40.80	3,299	3.58	33,641	36.55
	15.	Madarganj	40,427	29,318	72.52	21,299	52.69	6,980	17.27	1,038	2.57	11,110	27.48	20,465	50.62	2,000	4.95	16,767	41.48
	16.	Melandaha	49,320	34,549	70.05	26,105	52.93	7,299	14.80	1,146	2.32	14,771	29.95	26,266	53.26	1,939	3.93	21,711	44.02
	17.	Sarishabari	54,027	35,473	65.66	26,407	48.88	7,890	14.60	1,176	2.18	18,554	34.34	29,578	54.75	1,213	2.24	22,147	40.99
		TOTAL	284,134	191,231	67.30	136,152	47.92	46,818	16.48	8,260	2.91	92,903	32.70	138,936	48.90	11,339	3.99	116,977	41.17
MANIKGANJ	18.	Daulatpur	33,070	23,754	71.83	15,302	46.27	6,928	20.95	1,524	4.61	9,316	28.17	15,642	47.30	3,042	9.20	15,254	46.13
	19.	Ghior	26,103	17,460	66.89	11,956	45.80	4,843	18.55	661	2.53	8,643	33.11	13,611	52.14	1,704	6.53	12,053	46.18
	20.	Harirampur	38,703	28,201	72.87	21,296	55.03	6,134	15.85	771	1.99	10,502	27.13	22,314	57.65	2,419	6.25	16,265	42.02
	21.	Manikganj	46,967	30,024	63.93	22,848	48.65	6,535	13.91	641	1.36	16,943	36.07	20,700	44.07	2,421	5.16	15,067	32.08
	22.	Saturia	32,570	22,336	68.58	15,829	48.60	5,874	18.03	633	1.94	10,234	31.42	16,383	50.30	2,981	9.15	14,502	44.53
	23.	Shibalaya	28,482	20,647	72.49	14,506	50.93	5,172	18.16	969	3.40	7,836	27.51	15,609	54.80	1,744	6.12	12,840	45.08
	24.	Singair	48,192	32,478	67.39	24,252	50.32	7,330	15.21	897	1.86	15,714	32.61	26,318	54.61	1,125	2.33	23,255	48.26
		TOTAL	254,087	174,781	68.79	125,900	49.55	42,799	16.84	6,082	2.39	79,306	31.21	130,394	51.32	15,451	6.08	109,142	42.95

Note : (△) === As % of Total Household of Upazila (column 4), (□) === Households with less than 0.05 acres of cultivated area were treated as non-farm households. (BCAL) vol.I p.21).

Source file :C:\FAP3\DTNR\06-11H91.WK1

Continued :

Different Types of Households by Upazila (Rural Area + Municipality) 1991. [Estimated]

DISTRICT	UPAZILA			FARM HOUSEHOLDS								Non farm Household (¤)		Landless		Household with Cottage industry		Agricultural labour H/H	
	Sl. No.	Name	Total No. of Household	Total		Small		Medium		Large									
				No.	% (▵)	No.	% (▵)	No.	% (▵)	No.	% (▵)	No.	% (▵)	No.	% (▵)	No.	% (▵)	No.	% (▵)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	25.	Lohajang	35,453	23,426	66.08	19,861	56.02	3,227	9.10	338	0.95	12,027	33.92	23,022	64.94	1,545	4.36	7,563	21.33
	26.	Munshiganj	58,365	29,718	50.92	25,741	44.10	3,574	6.12	404	0.69	28,647	49.08	34,681	59.42	2,377	4.07	23,635	40.50
	27.	Sirajdikhan	47,096	32,430	68.86	26,812	56.93	5,074	10.77	543	1.15	14,666	31.14	27,091	57.52	3,758	7.98	20,820	44.21
MUNSHIGANJ	28.	Srinagar	45,541	29,255	64.24	23,113	50.75	5,379	11.81	763	1.68	16,286	35.76	27,385	60.13	5,667	12.44	15,671	34.41
	29.	Tongibari	40,382	27,593	68.33	24,045	59.54	3,275	8.11	274	0.68	12,788	31.67	25,484	63.11	2,230	5.52	17,208	42.61
		TOTAL	**226,837**	**142,051**	**62.62**	**119,306**	**52.60**	**20,434**	**9.01**	**2,312**	**1.02**	**84,786**	**37.38**	**137,657**	**60.69**	**15,492**	**6.83**	**84,929**	**37.44**
	30.	Bhaluka	51,435	42,904	83.41	25,001	48.61	15,128	29.41	2,775	5.40	8,531	16.59	17,418	33.86	2,809	5.46	18,760	36.47
	31.	Fulbaria	78,596	58,294	74.17	41,013	52.18	15,413	19.61	1,868	2.38	20,303	25.83	36,030	45.84	4,005	5.10	33,956	43.20
	32.	Gaffargaon	71,019	54,161	76.26	40,647	57.23	12,644	17.80	870	1.22	16,858	23.74	30,999	43.65	2,719	3.83	24,947	35.13
MYMENSINGH	33.	Muktagachha	61,236	40,874	66.75	30,629	50.02	11,282	18.42	1,778	2.90	20,362	33.25	30,167	49.26	2,787	4.55	25,785	42.11
	34.	Mymensingh	80,381	39,536	49.19	28,397	35.33	7,915	9.85	823	1.02	40,845	50.81	41,669	51.84	2,042	2.54	22,948	28.55
	35.	Trishal	51,919	38,733	74.60	27,715	53.38	10,077	19.41	940	1.81	13,186	25.40	23,894	46.02	2,340	4.51	19,038	36.67
		TOTAL	**394,586**	**271,102**	**68.71**	**191,430**	**48.51**	**70,912**	**17.97**	**8,760**	**2.22**	**123,484**	**31.29**	**181,374**	**45.97**	**16,363**	**4.15**	**143,628**	**36.40**
	36.	Narayanganj	100,835	19,534	19.37	17,534	17.39	1,774	1.76	226	0.22	81,301	80.63	35,618	35.32	2,538	2.52	9,620	9.54
NARAYANGANJ	37.	Rupganj	34,750	24,950	71.80	20,651	59.43	3,896	11.21	403	1.16	9,800	28.20	24,444	70.34	7,864	22.63	8,802	25.33
		TOTAL	**135,585**	**56,204**	**41.45**	**47,584**	**35.10**	**7,783**	**5.74**	**1,557**	**1.15**	**79,381**	**58.55**	**67,890**	**50.07**	**14,898**	**10.99**	**21,952**	**16.19**
	38.	Basail	38,906	31,411	80.74	22,906	58.87	7,737	19.89	769	1.98	7,494	19.26	15,753	40.49	4,752	12.21	11,740	30.18
	39.	Bhuapur	32,381	25,323	78.20	16,903	52.20	6,892	21.28	1,528	4.72	7,058	21.80	14,650	45.24	947	2.93	13,673	42.22
	40.	Delduar	34,722	26,357	75.91	19,905	57.33	5,874	16.92	579	1.67	8,365	24.09	17,404	50.12	5,575	16.06	11,529	33.20
	41.	Ghatail	63,019	50,310	79.83	35,677	56.61	12,483	19.81	2,150	3.41	12,710	20.17	25,422	40.34	3,290	5.22	22,782	36.15
	42.	Gopalpur	48,869	35,896	73.45	28,433	58.18	6,856	14.03	607	1.24	12,974	26.55	18,620	38.10	2,665	5.45	18,070	36.98
	43.	Kalihati	68,216	48,398	70.95	37,633	55.17	9,803	14.37	962	1.41	19,819	29.05	35,624	52.22	12,860	18.85	26,318	38.58
TANGAIL	44.	Madhupur	62,580	47,380	75.71	35,409	56.58	10,361	16.56	1,610	2.57	15,199	24.29	30,264	48.36	3,417	5.46	25,425	40.63
	45.	Mirjapur	70,184	55,112	78.52	39,139	55.77	14,361	20.46	1,611	2.30	15,072	21.48	30,852	43.96	4,773	6.80	23,577	33.59
	46.	Nagarpur	56,543	44,472	78.65	31,727	56.11	11,188	19.79	1,557	2.75	12,071	21.35	27,188	48.08	3,601	6.37	20,090	35.53
	47.	Sakhipur	40,878	35,550	86.97	20,765	50.80	12,607	30.84	2,179	5.33	5,328	13.03	12,398	30.33	1,128	2.76	16,225	39.69
	48.	Tangail	66,193	43,380	65.54	32,490	49.08	9,589	14.49	1,301	1.96	22,813	34.46	23,874	36.07	4,713	7.12	19,755	29.84
		TOTAL	**582,492**	**442,585**	**75.98**	**320,540**	**55.03**	**107,176**	**18.40**	**14,869**	**2.55**	**139,907**	**24.02**	**251,060**	**43.10**	**46,705**	**8.02**	**209,793**	**36.02**
N.C.R.		**GRAND TOTAL**	**3,074,817**	**1,813,423**	**58.98**	**1,332,101**	**43.32**	**420,907**	**13.69**	**60,415**	**1.96**	**1,261,393**	**41.02**	**1,282,276**	**41.70**	**175,144**	**5.70**	**918,367**	**29.87**

Note : (▵) === As % of Total Household of Upazila (column 4), (¤) === Households with less than 0.05 acres of cultivated area were treated as non-farm households. (BCAL) vol.I p.21).

Source : Derived from BCAL 1983-84, vol.I, Table 4.1, p.105 and Bangladesh Population Census 1981, BBS(GOB).

Source file :C:\FAP3\DTNR\06-11H91.WK1

Annex I.1.15(Contd.)

Distribution of Area in the Different Planning Unit of NCRS and Corresponding Population.

DISTRICT	Planning Unit				Total	1	2	3	4	5	6	7	8	9	10	11	12	13	Corresponding Population	
	Area of Planning Unit (ha) :-				1184460	89552	73963	172391	76171	212466	114393	90091	46066	78956	67188	24986	36971	101486		
	Check with 1981				1208372	92051	73686	171205	76224	212147	121687	90520	48082	84171	68643	25204	35138	109614		
	Check with 1985				1184459	89351	73963	172391	76170	212467	114395	90090	46065	78956	67187	24987	36970	101485		
	Check with 1990				1157689	88487	76000	179967	75272	216634	113999	89579	44145	78034	67778	23012	3016	99767		
	UPAZILA																			
	Sl. No.	Name	Tot. Area (ha) [1981]	Tot. Area (ha) [1985]	Tot. Area (ha) [1990]	% of Upazila according to Area estimated for 1985.													Total Population of Upazila [1981]	Population of Upazila (included in NCR) [1981]
	*	Dhaka	26745	29008													100		2747570	2747570
DHAKA	01.	Dhamrai	30680	30742	30741 *							100							265393	265393
	02.	Dohar	18430	15182	15182 *													96	145007	139543
	03.	Keraniganj	16700	16688	16687 *							11				89			361625	361625
	04.	Nawabganj	24240	24481	24484 *							5			49			46	242139	242139
	05.	Savar	27710	28012	28011 *							5	77			18			261904	261904
		TOTAL	144505	144113															4025858	4018374
GAZIPUR	06.	Joydevpur	44510	34716	43982 *					20			23	57					231811	231811
	07.	Kaliakair	31150	31152	31151 *					48	6	6	40						165766	165766
	08.	Kaliganj	19530	19719	15646 *									100					168813	168813
	09.	Kapasia	35280	35281	35280 *									31					250998	80234
	10.	Sripur	46190	46187	46186 *					68				32					238984	238984
	11.	Tongi	6020	5957									68	32					119760	119760
		TOTAL	182480	175012															1176132	1005368
JAMALPUR	12.	Dewanganj	42480	41597	26658	12													246987	41375
	13.	Islampur	37040	34301	34327	52													221114	117420
	14.	Jamalpur	48170	48117	48154	17	30	23		19									424089	394203
	15.	Madarganj	23300	23015	23016	100													169607	169607
	16.	Melandaha	24350	23962	24856	100													206917	206917
	17.	Sarishabari	26940	25832	25868	44	52												226664	218268
		TOTAL	202280	196824	182859														1495578	1147791
MANIKGANJ	18.	Daulatpur	22360	21178	21177 *						33				42				138740	105026
	19.	Ghior	14340	14467	14466 *						23	6			71				109511	109511
	20.	Harirampur	24670	24431	24425 *										60			6	162373	111086
	21.	Manikganj	19170	19297	21280 *							70			30				197043	197043
	22.	Saturia	15910	15427	13444 *						9	91							136642	136642
	23.	Shibalaya	19320	18127	18126 *										82				119494	98200
	24.	Singair	20960	20965	20962 *							100							202184	202184
		TOTAL	136950	133890	133880 *														1063987	959692
MUNSHIGANJ	25.	Lohajang	12750	12889	12889 *													100	148758	148758
	26.	Munshiganj	17520	15532	15532 *											4		81	244862	213679
	27.	Sirajdikhan	17840	17836	17835 *										4	14		82	197583	197583
	28.	Srinagar	21830	19714	19714 *													90	191063	171957
	29.	Tongibari	16220	14628	14627 *													100	169416	169416
		TOTAL	86140	80599	80597 *														951662	901375
MYMENSINGH	30.	Bhaluka	44290	44287	46577			26		74									213789	213789
	31.	Fulbaria	48540	48541	42994			75		25									329739	329739
	32.	Gaffargaon	39170	39170	37414 *			97											318705	309756
	33.	Muktagachha	30000	31331	31780			84		16									236906	236906
	34.	Mymensingh	37270	37415	38102			62											446529	349471
	35.	Trishal	24940	24951	37015			100											217818	217818
		TOTAL	224210	225675	235682														1783486	1679479
NARAYANGANJ	36.	Narayanganj	9370	8584													25	57	20	423040	423040
	37.	Rupganj	23480	23612	23203 *									50				13		293244	205576
		TOTAL	32850	32196	23203															716284	628616
TANGAIL	38.	Basail	17270	17569	15631				68		32									163224	163224
	39.	Bhuapur	22640	22561	21646		29		38											135851	92251
	40.	Delduar	20620	17032	17392						100									145670	145670
	41.	Ghatail	43080	45064	45101		5		61	34										264389	264389
	42.	Gopalpur	20620	21592	22368		100													205025	205025
	43.	Kalihati	30910	29186	29538				77		18									286192	272283
	44.	Madhupur	48140	47773	52126		33		9	58										262544	262544
	45.	Mirjapur	36630	36614	36753				4	37	53	6								294447	294447
	46.	Nagarpur	32420	28892	26873						95	5								237218	237218
	47.	Sakhipur	41940	43524	43011					100										171498	171498
	48.	Tangail	25980	26324	30187						99									277703	275692
		TOTAL	340250	333951	340626															2443763	2384220
N.C.R.	GRAND TOTAL		1549643	1522240																13658350	12724914

Note : Area data 1981 (except Dhaka) collected from Bangladesh Population Census 1981, BBS(GOB).[Supplied by Mr.K.Nizamuddin,Socio-economist,DUL]
Area data 1981 for Dhaka collected from Small Area Atlas of Bangladesh (Mauzas and Mahallahs of Dhaka District) BBS(GOB).[Supplied by Mr.K.Nizamuddin,-Do-]
Area data 1985 collected from BBS Statistics (GOB).[Supplied by Mr.Manoranjan Das, Civil Engineer, BETS]
Area data 1990 [incomplete] collected from BBS Statistics (GOB) and some are from Adam Shumari (asterisk "*" sign).[Supplied by Mr.S.I Choudhury, Hydrologist, BETS]
Population data 1981 collected from Bangladesh Population Census 1981, BBS(GOB).[Supplied by Mr.K.Nizamuddin,Socio-economist,DUL]

Estimated Population of Planning Unit in 1991.

(Ratio calculated in percentage of percentage of upazila included in Planning Unit)

Planning Unit Number	Area [1985]		Estimated Population 1981 (Census '81)			Estimated Population 1991 [AGR=1.86%] [Average size of H/H = 5.7]			Estimated Population 1991 [AGR=2.17%] [Average size of H/H = 5.7]		
	(in km²)	%	No.	%	Density persons/km²	Number	Density persons/km²	No. of Household	Number	Density persons/km²	No. of Household
1	2	3	4	5	6	7	8	9	10	11	12
1	893.52	7.54	737,706	5.80	826	886,993	993	155,613	914,360	1,023	160,414
2	739.63	6.24	604,558	4.75	817	726,900	983	127,526	749,328	1,013	131,461
3	1723.91	14.55	1,486,749	11.68	862	1,787,617	1,037	313,617	1,842,772	1,069	323,293
4	761.71	6.43	589,207	4.63	774	708,443	930	124,288	730,301	959	128,123
5	2124.66	17.94	1,139,598	8.96	536	1,370,214	645	240,388	1,412,491	665	247,805
6	1143.93	9.66	1,006,383	7.91	880	1,210,041	1,058	212,288	1,247,376	1,090	218,838
7	900.91	7.61	831,126	6.53	923	999,318	1,109	175,319	1,030,151	1,143	180,728
8	460.66	3.89	391,729	3.08	850	471,002	1,022	82,632	485,534	1,054	85,181
9	789.36	6.66	661,348	5.20	838	795,182	1,007	139,506	819,717	1,038	143,810
10	671.88	5.67	514,328	4.04	766	618,411	920	108,493	637,491	949	111,841
11	249.86	2.11	437,568	3.44	1,751	526,117	2,106	92,301	542,350	2,171	95,149
12	369.71	3.12	3,195,129	25.11	8,642	3,841,715	10,391	673,985	3,960,248	10,712	694,780
13	1014.86	8.57	1,129,512	8.88	1,113	1,358,087	1,338	238,261	1,399,990	1,379	245,612
N.C.R	11844.60	100.00	12,724,941	100.00	1,074	15,300,038	1,292	2,684,217	15,772,107	1,332	2,767,036

Note :

Percentage in column 3 is calculated on the basis of total area of NCR (bottom of column 2).
Percentage in column 5 is calculated on the basis of total area of NCR (bottom of column 4).

Source : Bangladesh Population Census 1981, BBS(GOB).

Source file :C:\FAP3\DTNR\DT_EST91.WK1

Estimated Population of Planning Unit in 1991.

(Ratio calculated in percentage of percentage of upazila included in Planning Unit)

Planning Unit Number	Area [1985]		Estimated Population 1981 (Census '81)			Estimated Population 1991 [AGR=1.86%] [Average size of H/H = 5.2]			Estimated Population 1991 [AGR=2.17%] [Average size of H/H = 5.2]		
			No.	%	Density	Number	Density	No. of Household	Number	Density	No. of Household
	(in km²)	%			persons/km²		persons/km²			persons/km²	
1	2	3	4	5	6	7	8	9	10	11	12
1	893.52	7.54	737,706	5.80	826	886,993	993	170,576	914,360	1,023	175,838
2	739.63	6.24	604,558	4.75	817	726,900	983	139,788	749,328	1,013	144,102
3	1723.91	14.55	1,486,749	11.68	862	1,787,617	1,037	343,772	1,842,772	1,069	354,379
4	761.71	6.43	589,207	4.63	774	708,443	930	136,239	730,301	959	140,442
5	2124.66	17.94	1,139,598	8.96	536	1,370,214	645	263,503	1,412,491	665	271,633
6	1143.93	9.66	1,006,383	7.91	880	1,210,041	1,058	232,700	1,247,376	1,090	239,880
7	900.91	7.61	831,126	6.53	923	999,318	1,109	192,176	1,030,151	1,143	198,106
8	460.66	3.89	391,729	3.08	850	471,002	1,022	90,577	485,534	1,054	93,372
9	789.36	6.66	661,348	5.20	838	795,182	1,007	152,920	819,717	1,038	157,638
10	671.88	5.67	514,328	4.04	766	618,411	920	118,925	637,491	949	122,594
11	249.86	2.11	437,568	3.44	1,751	526,117	2,106	101,176	542,350	2,171	104,298
12	369.71	3.12	3,195,129	25.11	8,642	3,841,715	10,391	738,791	3,960,248	10,712	761,586
13	1014.86	8.57	1,129,512	8.88	1,113	1,358,087	1,338	261,171	1,399,990	1,379	269,229
N.C.R	11844.60	100.00	12,724,941	100.00	1,074	15,300,038	1,292	2,942,315	15,772,107	1,332	3,033,097

Note :

Percentage in column 3 is calculated on the basis of total area of NCR (bottom of column 2).
Percentage in column 5 is calculated on the basis of total area of NCR (bottom of column 4).

Source : Bangladesh Population Census 1981, BBS(GOB).

Source file :C:\FAP3\DTNR\DT_EST91.WK1 [Lower part]

Annex I.1.17(Contd.)

Total, rural and urban households per planning unit in 1983–84 and 1991.

Planning Unit Number	Total Households							
	Rural 1983	Municipalities 1983 (+6%)	Total 1983 [2]+[3]	Rural 1991 AGR=1.76% P1	Rural 1991 AGR=1.76% P2	Municipalities	Total 1991 [5]+[7] P1	Total 1991 [6]+[7] P2
1	2	3	4	5	6	7	8	9
1	124997		124997	141234	143719			
2	97389	22983	120372	110039	111976	28858	138897	140834
3	251593	17572	269165	284274	289277	37241	321515	326518
4	96069		96069	108548	110458			
5	204309		204309	230848	234911			
6	152351	13778	166129	172141	175170	19825	191966	194995
7	136801	6826	143627	154571	157291	8691	163262	165982
8	50804	16565	67369	57403	58413	16155	73558	74568
9	102959	16565	119524	116333	118380	34920	151253	153300
10	85291		85291	96370	98066			
11	69362		69362	78372	79751			
12	26170	34704	60874	29569	30089	661292	690861	691381
	Without Dhaka Municipality							
13	182657	6313	188970	206383	210016	7632	214015	217648
NCR Toal	1580752	135306	1716058	1786085	1817517			

Note : Computed from BCAL 1983-84.

Explanations

1) Total Household 1983 BCAL 1983-84 in % of % area of upazila included in PU,

2) Total Household in municipalities + 6% to cover 100% of survey , as PEC showed that 94% only of household were surveyed.

3) extrapolated total household from total household 1981 AGR 2.17 from census Pocket Book 1991 of Bangladesh (6) = (4) + (5).

PU 8 & 9 have a part of Tongi municipality

PU (2) is in Dhaka SMA.

It should be studied much more in details & be a study in itself. It is out of the scope of the study. figures are approximate.

4) Projections are made using 1983-84 data, with AGR = 1.76 but it is not possible to know if 1983-84 data for the Project Area, give the situation of 1983 or 1984 (so projections have been made for 7 or 8 years).

P1 = Projection 1 = on 7 years

P2 = Projection 2 = on 8 years

5) Projections are not made from 1983-84 data, as the respective increase rate of each municipality is not known.

Annex I.1.19

Total number of household in 1981, 1983-84 & 1991(estimated) in the Planning Units of the NCR.

Planning Unit Number	Total Households				
	1981 [Census] No.	1983-84 [estimated]		1991 [estimated]	
		AGR=1.86%	AGR=2.17%	AGR=1.86%	AGR=2.17%
		No.	No.	No.	No.
1	2	3	4	5	6
1	126754	133960	135186	152405	157108
2	104195	110118	111127	125281	129147
3	255508	270033	272505	307215	316693
4	98649	104257	105212	118613	122272
5	202292	213791	215749	243229	250734
6	167403	176919	178540	201280	207490
7	144629	152850	154250	173897	179262
8	67515	71352	72006	81177	83682
9	109422	115642	116701	131565	135624
10	91217	96403	97285	109677	113061
11	87683	92668	93516	105428	108680
12	48589	51351	51821	58422	60224
13	200592	211995	213936	241185	248627
NCR Toal	**1704448**	**1801339**	**1817834**	**2049374**	**2112604**
Upazila Total	***1892288***	***1999854***	***2018168***	***2275223***	***2345423***

Source file :C:\FAP3\DTNR\07-11PUH.WK1

Average per capita per day intake of selected food items (gm.)
In rural/urban areas by survey year

Selected Items	Average food intake in grams per day								
	Bangladesh			Rural			Urban		
	1983-84	1985-86	1988-89	1983-84	1985-86	1988-89	1983-84	1985-86	1988-89
Rice	411.6	443.9	441.7	420.2	453.7	448.7	350.4	376.3	395.1
Wheat	64.1	51.7	58.1	62.8	51.3	58.8	74.0	54.3	53.1
Potato	37.2	48.1	39.5	35.2	45.7	37.3	53.2	65.0	55.0
Masoor	10.2	9.2	11.1	9.5	8.3	10.0	15.5	15.7	18.5
Other pulses	15.2	9.4	10.7	0.4	10.0	11.1	6.1	5.0	6.8
Vegetables	107.0	142.3	133.5	104.7	141.0	131.3	125.0	151.0	148.7
Onion	11.2	8.8	10.2	10.9	8.3	9.5	13.9	12.0	15.6
Milk	24.0	25.3	22.0	22.6	24.3	20.8	34.6	32.3	30.8
Mustard oil	5.0	6.1	6.5	5.0	6.0	6.6	5.2	6.7	5.9
Soyabean	2.1	1.2	2.7	1.8	0.7	1.8	4.4	5.0	8.4
Mutton	1.6	1.1	0.8	1.4	1.0	0.7	2.8	2.0	1.7
Beef	4.2	4.8	3.4	3.8	4.0	2.8	7.8	10.3	7.5
Chicken	1.8	2.2	1.9	1.6	2.0	1.7	3.4	3.3	2.8
Eggs	3.3	3.5	5.9	2.8	3.3	6.1	7.6	5.0	4.5
Fish	27.6	36.1	34.8	28.5	34.7	32.5	20.7	46.0	50.9
Sugar & gur	4.9	8.1	9.1	4.8	7.7	8.9	5.3	11.0	10.9
Fruits	17.2	23.8	13.3	16.8	22.0	12.4	20.8	36.0	19.5
Miscellaneous	54.0	48.3	63.6	51.0	47.3	62.1	76.0	55.1	74.7
Total	802.2	873.9	868.8	783.8	871.3	863.1	826.7	892.0	910.4

Miscellaneous items include : fried rice, semai, suji, bread, biscuit, cake, dust-rice, cheena-kaon, barley, cooked cakes, til-oil, nut-oil, vegetable-ghee, ghee, garlic, chillies, turmaric, dhonia, jira, ginger, salt, betel-leaf, betel-nut, jarda, juice, ovaltin, horlicks, curd, cheese, tomato, lemon, jelly, sauce, kasundi, etc.

ANNEX II
SOCIO-ECONOMIC FIELD SURVEY

ANNEX II
SOCIO-ECONOMIC FIELD SURVEY

"Implementation of any rural development Project is disturbing the way of life of people living in their environment. The minimum which has to be done in respect of rights of men and women is to ask them what they need and what they want, before changing anything in their environment".

FAP-3 Socio-Economic Consultant

Note : References to Annex in the text of this Annex II refer to data showed on project supporting files

NORTH CENTRAL REGIONAL WATER RESOURCES DEVELOPMENT PLAN

FAP-3

ANNEX II - SOCIO-ECONOMIC FIELD SURVEY

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CHAPTER I
METHODOLOGY

1.1 Existing Data

According to Terms of Reference (TOR) of the Socio-Economist, and after the initial findings from field trip at District Head Quarters' level and in villages, it has been decided to conduct a survey at household level.

Present situation and expected changes in land ownership and land tenancy patterns, migrations, and incomes, cannot be understood through approximate and old statistics, giving an old **static** picture of the rural areas.

This is also the feeling of other Research Experts, as it is, for instance, explained in the following study. "The Assault that failed: A Profile of absolute poverty in six villages of Bangladesh" UNRISD 1987.

"the national household surveys of monthly income and expenditure conducted regularly since 1973-74 by the Bangladesh Bureau of Statistics deserve mention for their comprehensiveness although because of increasing difficulties of collecting detailed information from rural people about the sources and amounts of income and various items of expenditure, data obtained from such surveys are not consistent with those obtained from micro-studies or production and marketing data".

1.2 Socio-Economic Context

Many physical components and socio-economic indicators influence the farmer's decision for cropping pattern;

- main physical components are:
  - the numerous local infrastructures, secondary embankments, which interfere. Local water management.
  - the continuous changes in secondary hydrological network, with river erosion being compensated by silting.

Existing socio-economic villages studies are quite timely, such as :

- Study of Erik G.Jansen ([1]) it concerns only [1] village in Manikganj District, and only [60] households.

- UNRISD study (see hereunder) concerns [6] villages; only [1] of them is located in the NCR Project Area, furthermore, in each village, only [30] of the poorest families were studied.

- JICA village study concerns [1] village, located outside the Project Area, in Kishoreganj District, where agro-ecological characteristics are not the same as in the NCR.

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[1] Rural Bangladesh : Competition for Scarce Resources

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- Other examples are numerous (Refer to the list of References in annex)

It has to be reminded here that there are about [10000] villages and two million households in rural area of NCR.

- BBS statistics use many different definitions for the same concept, as it will be seen in the Report on Population, as well, in fact, as many other Organizers. Therefore, all comparisons of some concepts at different periods become a time-wasting operation, if even feasible.

For all these reasons, the present socio-economic survey can not absolutely be based on such "erratic" case studies and un-correlated secondary data, only.

- **Main Socio-Economic Indicators are :**
  - size of family
  - size of farm
  - financial situation of farmer
  - capacity of farmer (owner or tenant) to take risks to grow a crop
  - access to credit
  - access to irrigation
  - storage capacity of the farm
  - marketing capacities
  - aptitude of farmer to use low, medium or high agricultural technology
  - extra-farm sources of incomes.

1.3 Regional Constraints

Physical and socio-economic constraints to farming activities all over the NCR are quite different from region to region, in District to District, and in physiographical areas. (Planning Units were not yet determined during first phase of socio-economist assignment). They are described later on. They make it difficult to determine the response of farmers to flood (to exceptional flood) only, as all physical and socio-economic factors are closely interlinked. Exceptional flood may have benefits and disbenefits if we consider different target groups on the one side, and short and long run on the other side. That is why Terms of References for a feasibility study which will be given at the end of the socio-economic survey will be TOR of integrated rural development Project.

1.4 Preparation of Field Survey

a. Terms of References (TOR) on the one side, have made it a difficult task to decide on the survey sampling. There is altogether in the same survey an overview necessary for a general understanding of flood damages to farmers, and detailed one, for interrelation between all categories of farmers in farm production. Physical, human and economic criteria which should be considered to determine the sample, as well as to elaborate the survey from, is numerous and changing (observed during field trips).

b. Physical Criteria

As required by TOR and justified by the study itself, physical criteria to be used for selection of villages to be investigated are :

- flood proneness
- drought occurrence
- agro-ecological zoning
- existing embankments (along main and secondary rivers and in the country side)
- soil zoning
- related to soils, the continuous changes of secondary river beds, therefore in land suitability.

Soil conditions may in some places be changing continuously after each annual flood. In many villages of the flood plain, land classification is made by water-depths, usually correlated with local taxonomy used by the villagers, water depths are directly related to topographical conditions.

So, the consultant would like to focus on that point:

- a detailed topographical map, if available, would have been sufficient in itself to select adequate villages where to conduct detailed survey, particularly surveys on damages due to flood, cropping systems evaluated to flood depths or duration etc.

Considering the local density of population (distribution of population obtained from aerial photograph interpretation would be more correct) and distribution of land holdings and labour forces in relation to the main activities of households for each administrative division of the Project Rural Area, ratio could be calculated to estimate the percentage and type of population affected in normal year and exceptional year by flood.

Without detailed topographical map, without detailed land use map, in such a big area, a restricted sampling can only be done by random.

c. Human Criteria

Human criteria to consider are :

- density of population
- size of household

A map of density of population has been prepared by union; it should be corrected with aerial photographs interpretation to show the distribution of population, as administrative sub-divisions have been more or less established including a determined total number of mauzas and villages.

Detailed data on size of household per thana are not known; average size of household is of no interest for the socio-economist; type of household, nuclear, joint, extended, is the only criteria to be considered.

d. Economic Criteria

Not all areas and not all households are in the same phase of economic development. Not all socio-economic studies conducted in Bangladesh have used the same household classification.

Classification of households can be made on:

- Composition of agricultural labour force
  - owning all land tilled
  - part owner, part rented or fully tenanted
  - rating + agricultural wage labour
  - landless agricultural wage labour

- size of farm land owned
- size of land cultivated
- mode of production (owner/owner-cum-tenant, tenant)
- pattern of economic activity, asset distribution and level of living.

Distribution of farm size according to size and cultivated area, and of farm and land according to land ownership in Bangladesh in 1974 (see Tables II.1 to II.3) show that ownership distribution of farmer is more unequal than size distribution of cultivated land.

TABLE II.1

Distribution of Farm, According to Size and Cultivated Area in Bangladesh

Size of group (in acres)	% of farms	% of land cultivated	
0-2.49	57	21	21
2.5-4.99	26	30	48
5.0-7.49	9	18	
7.5-12.49	5	16	31
12.5 & over	3	15	

TABLE II.2

Distribution of Farms and Land According to Land Ownership

Size of land owned (in acres)	% of farms	% of land owned	
0-2.49	42	12	12
2.5-4.99	31	27	43
5.0-7.49	12	16	
12.5 & over	6	45	45

Source : The Bangladesh Economic Review, January, 1974.

TABLE II.3
BCAL Data on Farms

Size of group (acres)	% of farmer HH	% operated area of all farms	% owned area of all farms
0-2.49	70.3	28.60	30.50
2.5-7.49	24.7	44.40	41.00
7.5 & above	5.94	25.50	24.65
Non-farm		1.48	3.84

Source : BCAL 1982-84

Definitions Used

The non-farm households are those which operate cultivated area upto .04 acres (= 0,0162 ha).

Survey on different types of households in BCAL 1983-84 did not use either the some concepts, or the same definition, or the same coverage as in the 1977 survey ([2]).

The methodology of 1977 sample census was quite different and comparison between the two surveys becomes inaccurate. For information only, the table from the BCAL 1983-84 is reproduced here, with all restrictions expressed by BCAL and summarised hereunder.

TABLE II.4
Number and Area of Farm Households 1983-84 and 1977

Figures in '000
(Except average farm size)

Size of Farm	Number of		% of Farms		Area of Farms		% of Total		Average	
	1983-84	1977	1983-84	1977	1983-84	1977	1983-84	1977	1983-84	1977
Total Farm Households	10045	6257	100.00	100.00	22678	21959	100.00	100.00	2.3	3.5
00.05-00.49	2417	342	24.06	5.47	622	109	2.74	0.50	0.3	0.3
00.05-00.99	1644	648	16.37	10.36	1152	472	5.08	2.15	0.7	0.7
01.00-01.49	1334	799	13.28	12.77	1578	962	6.96	4.38	1.2	1.2
01.50-02.49	1671	1322	16.63	21.19	3221	2574	14.20	11.72	1.9	2.0
Small Farms	7066	311	70.34	49.72	6573	4117	28.98	18.75	0.9	1.3
02.50-04.99	1806	1830	17.98	29.25	6226	6402	27.45	29.15	3.4	3.5
05.00-07.49	677	726	6.74	11.60	4000	4336	17.64	19.75	5.9	6.0
Medium Farms	2483	2556	24.72	40.85	10226	10738	45.09	48.90	4.1	4.2
07.50-09.99	231	269	2.30	4.30	1954	2280	8.62	10.38	8.5	8.5
10.00-14.99	179	204	1.78	3.26	2072	2389	9.14	10.88	11.6	11.7
15.00-24.99	69	93	0.69	1.49	1240	1691	5.47	7.70	18.0	18.2
25.00 & above	17	24	0.17	0.38	613	745	2.70	3.30	36.1	31.0
Large Farms	496	590	4.94	9.40	5879	7105	25.92	32.36	11.9	12.0

Source : BCAL 1977 + 1983/84

[2] It is thus clear that the large increase in number of farm households as compared to 1977 are mainly due to differences in concepts, definitions an coverage and partly due to the substantial increase in the number of small holding. In fact the largest difference is noticed in the smallest group among the four sub-groups of small farm holdings having size of less than 0.5 acres. The number of this sub-group increased from 3.4 lacs to 24.1 lacs, an increase of 606%. In this connection, attention of the users is invited to the differences in concepts and definitions given in this report (in BCAL 1983-84).

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Phase-I study shows the NCR the distribution of holdings [3] in 1983-1984; as in Table II.5

TABLE II.5

Distribution of Holdings, 1983-84

Mymensingh Jamalpur Gazipur Manikganj	District District District District	Small Medium Large	holdings holdings holdings	70% 25% 5%
Narayanganj Munshiganj Dhaka	District District District	Small Medium Large	holdings holdings holdings	85% 13% 2%

- Estimation of consultant in the first phase of NCR study was;
  Small farmer (up to 2.5 acres) 60%
  Medium farmer (2.5 to 7.5 acres) 12%
  Large farmer (7.5 and more) 3%

- District Agricultural Extension officers in NCR use the following classification.

  - below 0.5 acre : landless
  - 0.5 to 1 acre : small farmer
  - 2.5 to 5 acre : medium farmer
  - 5.0 acre and more; big farmer
    (in fact, small farmer must be 0.5 to 2.5 acres).

- Village study conducted in one village situated in Manikganj District, in between 1976 and 1980 gives the following pattern of land ownership.
  - poor peasants : 0 - 0.99 acre
  - small peasants : 1 - 1.99 acre
  - middle peasants: 2 - 3.99 acre
  - rich peasants : 4 acres and above

(Erik G.Jansen: "Rural Bangladesh; Competition for Scarce Resources") Correlations between all sources of informations are difficult do not allow accurate study of the evolution of rural groups since data are not available.

- Due to small size of sample to be surveyed, field survey will not allow a study of distribution of different types of households or farms. Therefore, a pre-classification of households has been necessary to help field surveyors in the selection of households to be interviewed;

  - landless : below 0.50 acre
  - small farm holdings : 0.5 to 2.49 acre
  - medium farm holdings : 2.5 to 4.90 acre
  - big farm : 5 acres and above

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3 farm holding is a unit of production
farmer's household is a unit of consumption
households as well as holdings present very different juridical and sociological situations, from ownership and tenure aspect (in Phase-I: Socio-Economic P.47)

Farm holding is defined as land owned plus land rented in plus land shared in minus land rented and shared out. For study of productivity, farm size is measured by the net amount of land under crop cultivation in acres.

Productivity is generally measured as the ratio of output to associated inputs related to output/acre. Major primary inputs in Bangladesh are land and labour.

Many studies show that small farms (below 2.5 acre) are more efficient in Bangladesh than big farms. Land ownership and land tenancy patterns are changing; number of people depending upon agriculture is also changing. The field survey will try, through a small sample, to estimate and understand these changes. Labour requirements per crop, economic returns per crop and per type of farm holding will be studied by the agro-economist of the Team.

e. Final Sampling of Villages and Households to be Surveyed

Selection of Villages

Selection of village to be surveyed has been decided considering the following constraints:

- necessary to cover the totality of the Project Area, to try to obtain information on local changes in flood proneness, drainage problems, and basic socio-economic data;

- short time allocated to field investigation and processing of data, which involves a small-size sample;

- lack of adequate land use map, indicating;
  - local topographic conditions
  - local land utilizations
  - local cropping patterns
  - population distribution
  - toponymy
  - infrastructures
  - local embankments & civil works infrastructures.

- season for field survey.

Due to the delayed start of the Study, part of the survey had to be conducted in the monsoon season so that the results of the survey were available for consideration in the Interim Report stage of the Regional Study. Although the timing placed some constraints on the practicality of carrying out the survey, in practice the methodology adopted allowed for all village types to be surveyed.

As a consequence, there would be a high logistical constraint to select villages in advance. In case of non-accessibility, the supervisors would have had to select using available old maps 1/50000 of other accessible villages considering the long list for selection criteria. This would have delayed unreasonably the field survey imposing severe time constraints on supervisors. Therefore, one village was selected at random in each sub-district (thana), i.e., in 45 sub-districts.

Sampling Procedure

A purposive stratified sampling procedure was used to cover the whole of the study area, as well as the different categories of rural households. The selection was on the basis of a two level sample:-

(a) Firstly, one village was selected from each of the 45 thanas in the NCR.

(b) Secondly, 12 households of different farming and landless categories were randomly selected from each of the these villages for administering the detailed questionnaires. Besides this, questionnaires were also administered to other categories of non-farm households including fishermen, boatmen and artisans, to obtain information on the impact of flood on these households, and their perception of benefits/disbenefits of FCD projects.

Selection of Villages

The selection of villages were based on the criteria that they covered all the upazilas and all the agro-ecological regions. Other criteria of selection were: distance from rivers, inside/outside proposed embankment locations, distance form roads. etc.

Selection of Households

In each village, 12 households were randomly selected for survey with the questionnaire. The categories of households and the numbers were predetermined. The categories included were:-

- 3 landless households
- 4 small farm holdings or farming household
- 3 medium farm holdings or farming household
- 2 large farm holdings or farming household
  (household = unit of consumption, farm holding = unit of production)

A total of 138 landless, 184 small, 138 medium and 92 large households were surveyed in the Region. In addition 78 fishermen, 52 boatmen and 71 artisans were interviewed to find out flood damages to their houses, assets and occupational equipment.

The questionnaires were designed to include both a general understanding of flood damages to different types of households and their perception about the benefits/disbenefits of FCD projects. More detailed questions were also asked regarding the socio-economic structure and status of farm households and the landless.

f. Information to be Obtained from the Survey

1. The first objective of the socio-economic field survey was to try to analyze the present situation and possible changes of the main socio-economic concepts and indicators for different pre-defined types of socio-economic households all over the NCR.

   It is important to understand what could be the impact of project on all target groups in rural areas, what could be, for each alternative strategy, benefits or/and disbenefits to these groups, and who will be the neglected groups, in fact people not concerned by the project.

The distribution (in number and in space) of all the different types of households, of benefiting disbenefiting and non-benefiting groups were not to be obtained from this field survey, as the size of sample is insignificant (It should be of 20% of total households). This type of sample would be carried out at feasibility study or detailed study's level.

2. Another objective of the field survey is to try to get the flood response of farmers all over the area. That is the reason of the scattering of surveys all over the NCR.

3. Main findings of socio-economic field survey conducted in May-June 1991 were analyzed considering results of field survey at household's level.

4. Findings of socio-economic field surveys (at village level and at household level) will help in the preparation of Terms of Reference for studies that will follow

1.5 Survey Sample

Area covered by the field survey is shown on Figure IV.II.1

TABLE II.6

Location Summary

District	No.of Thana	No.of HH surveyed
Jamalpur	6	72
Tangail	11	132
Manikganj	7	84
Mymensingh	6	72
Gazipur	5	60
Narayanganj	1	12
Munshiganj	5	60
Dhaka (rural)	5	60
Total	**46**	**552**

12 households are surveyed in each thana, comprising each time: 3 landless households, 4 small households, 3 medium households and 2 large household.

TABLE II.7

Sample Surveyed

District	No.of Thana surveyed	No.of landless hh surveyed	No.of small hh surveyed	No.of medium hh surveyed	No.of large hh surveyed
Jamalpur	6	18	24	18	12
Tangail	11	33	44	33	22
Manikganj	7	21	28	21	14
Mymensingh	6	18	24	18	12
Gazipur	5	15	20	15	10
Narayanganj (rural)	1	3	4	3	2
Munshiganj	5	15	20	15	10
Dhaka(Rural	5	15	20	15	10
Total	46	138	184	138	92

1.6 Questionnaire

A questionnaire has been prepared for the field survey. It was elaborated following a field trip of consultant at District and village level, in May, June 1991. Many different kind of people have been interviewed (District Head Officers, Thana officers, head of big/medium, small landless household etc.)

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CHAPTER 2
GENERAL INFORMATION OBTAINED FROM THE SURVEY

2.1 Age and Sex Structure in Survey

The socio-economic field survey did not include a specific demographic survey, which requires more time, trained and specialised survey staff and a very detailed questionnaire on household events and health. This was not the purpose of the study.

Nevertheless, informations on age and sex structure of population surveyed have been processed but findings have to be considered carefully as sample is pre-selected.

The features which are significant are;

- the importance of age group 0-4 years, which is less than for rural national average of 1987 (BBS).
- age group 5.9 years, 10-14 years are nearly the same as national average for rural area in 1987 this shows that respondents have not given too bad informations, though their literacy rate poor).
- working age group 15-49 years is, on the contrary, more important in NCR than in 1987 statistics.
- age group of 50 years and more is also a little more important in survey.

There are also some significant variations of each age-group between the different types of households.

2.2 Family Size in Survey

Field survey findings are very interesting and confirm observations from first field trip and interviews generally speaking, the more usual size of household is of [5] members, these households represent 15.8% of the total households (552). The sum of households having 5,6 and 7 members makes 43.2% of the total number of households.

HH	with	4	members					12.7%
HH	with	4	members	5				28.5
HH	with	4	members	5	6			42.1
HH	with	4	members	5	6	and 7	member	55.9

But the distribution of the different size of households vary by type of households. Landless household have never more than 10 members; more large farm households on the other hand, have 15 members or more; it has in fact been observed that large farm households are extended families, cultivating all owned land (themselves or not) under the responsibility of the father or an older brother, with all family member and have permanent labourers. Often some members have either migrated or have another well paid off-farm job.

2.3 Migration and Movements of Population in NCR

In 20% of all households the fathers of the household is not native from the village. This percentage increases in landless groups(30% of hh), & is less in large farmers group(12 %). In other groups it is 18%.

This could signify that (except in the case of landless groups) in 18% of medium in farm households and 12% of large farm households, head of family had to move to another village to find out some land to purchase; it may also signify that lands of the father were scattered in many distant places and that sons settled close to inherited plots of land.

This information could be obtained from questionnaires by crossing this information with question 9.2, but time was not sufficient to do it.

It can be seen that 13% of landless, 17% of small, 21% of medium and 14% of large households have migrated for service reasons. Column (14) indicates that very few people migrated because of flood.

For the NCR 16.4% of all persons who migrated from family were sons, who were away for more than 5 years at the time of the interview. Departure from the family after the flood of 1987-88 and in 1991 are 3.4% and 5.9% respectively.

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CHAPTER 3
FLOOD DAMAGES AS EXPRESSED BY INTERVIEWED PEOPLE

3.1 Flood Damages to Dwellings, Household Assets, Livestock/Poultry, Occupational Equipment, by Different Types of Households, in NCR after Flood Types of 1988.

Flood Damages

- **Landless households**: 70%of total households have reported damages from 1988 flood: 68.8% of households reported damages to dwelling, 9.42% reported damages to Household asset. 34.8% said that their house was completely damaged, 34% said that it was partially damaged.

  In most cases people stayed either on a temporary platform (which they call " scaffold"), or in relative's house within the same village, some for less than 15 days, many for a period of 15 to 30 days, some also for more than a month (this is the case particularly in Manikganj and Munshiganj District).

  Thana where dwellings were preserved from flood in 1988 are : Mymensingh District: all thanas, Gazipur District: Joydebpur, Kapasia super, Tangail District: Ghatail, Sakhipur. Damages to household assets were not so important, (4.35% of hh reported full damages, 5%, partial damages only), this is mostly because landless have not much equipment in their dwelling. Houses being mostly kutcha have been much damaged, as walls are not strong enough to resist flood.

  Damages to occupational equipment were, for the same reason, insignificant (as they had few equipment).

  Thana where dwelling units were damaged by 1988 flood but not by 1987 flood are: Dhamrai, Joydebpur, Kaliakair, Kaliganj, Madhupur.

- **Farmer's group**: About 70% of all farmers (small, medium, large) reported flood damages of different types. About 69% of small and medium farm households and 64% of the large farm households reported damage to dwellings units. 28% of small, 64% of medium and 15% of large farm households reported full damage to dwellings, whilst 41% 48% and 49% of the same categories reported partial damage only.

TABLE II.8

Thanas where no Damages Occurred to Dwellings

	in 1988	Damages in 1988 but not in 1987
Dhaka District	Savar Joydebpur (partially) Kapasia Sripur	Dhamrai Joydebpur Kaliganj
Jamalpur District Mymensingh Tangail	Jamalpur, Madarganj all thanas Ghatail, Sokhipur	 Madhupur

Dwelling of medium and large farmers were saved, certainly due to the highest quality and resistance of floor and walls, in the following thanas, besides the others hereunder mentioned :

District: Jamalpur District: Manikganj District: Munshiganj	Thana: Sarishabari Thana: Manikganj Thana: Sirajdikhan
District: Tangail	Thana: Ghatail Thana: Gopalpur Thana: Kalihati Thana: Mirzapur

It is interesting to note that an increasing percentage of households reported flood damages to dwellings, with increase of farm size. On the contrary, proportionally full damages decreased with the increasing size of farm.

Bigger farms have of course more belongings, more equipments, but also their homestead is of a larger area than others and they could manage to save some part of their assets and equipments.

Other Occupational Groups: Fishermen, Boatmen, and Artisans

78 fishermen, 52 boatmen, 71 artisans have been interviewed, besides the 552 households surveyed, to find out flood damages to their house, asset and occupational equipment.

About 8 per cent of fishermen households, 10 per cent of boatmen households and 17 per cent of artisans households reported no flood damage to their property. Other households reported damage of different intensity. 81 per cent of fishermen households, 87 per cent of boatmen households and 75 per cent of artisans households reported damages to their dwelling units.

Damage to household assets were more important for fishermen: 26% of fishermen households lost all their asset.

Boatmen households did not lose so much occupational equipment (5% totally, 10% partially). But again 38% fishermen and 18% artisans reported loss of occupational equipments.

f. Cost of Buildings of Different Types of Dwellings

A small specific study has been conducted to evaluate the average cost of building of different types of dwellings in the rural areas.

TABLE II.9
Average Cost of Building

Sl.No.	Type	Size	Cost (In Tk.)
01.	Straw roof, jute stick walls and flour	9'x12'	2500
02.	Straw roof, bamboo-strip walls, mud floor	9'x12'	3500
03.	Corrugated tin roof, jute stick walls, mud floor + (some wood)	9'x12'	6000
04.	Corrugated tin roof, bamboo strip walls,mud floor + (some wood)	9'x12'	7500-8000
05.	C.I. sheet tin and walls + (some wood)	9'x12'	12000
06.	C.I. sheet roof bamboo strip walls, mud floor + (some wood)	21'x12'	15000
07.	C.I. sheet roof, C.I. wall,mud floor+ (some wood).		25000

g. Data on Socio-Economic Conditions of Households from Disaster Prone Areas Located in the NCR (From Hellen Keller International, Dhaka).

NGO Hellen Keller International, Dhaka, in its Nutritional Surveillance Project, has defined geographic pockets of undernutrition of population under 5 years of age and disaster prone areas, as " the nutritional status of young children is a very sensitive indicator of sudden changes in food supply and health conditions "(in HKI NSP Technical Report June, 1991)".

Three thanas of the Project are in the NCR (rural areas): Mirzapur and Shakhipur thanas in Tangail District and Saturia in Manikganj District. The estimated value of landless house is half of estimated value of landowner's house.

Some Interesting Socio-economics Findings (HKI NCP): In October 1990 distress sales in the 2 thanas of Tangail were performed only by landless households in the rural areas, as they had few income opportunities, (5%). This rate decreased in December 1990 (2.5% of households) but on the other hand there was a significant rise in the proportion of landless households: 30% to 37%. All these changes are closely related to fluctuations of commodities prices.

The structured value of an average type of house is changing all along the years. Fluctuations of food market, of weekly salaries, together with land pressure put a high proportion of population perpetually in a status of acute distress. Proportion of landless is also continuously changing, as well as the average size of owned land.

These findings, summarised from different HKI NCP Technical Report, intend to indicate, as it has already been indicated in chapter relating to employment, that it is very difficult to determine socio-economic effects of usual flood or exceptional flood only, without integrating all socio-economic indicators of rural life.

3.2 Crop Damage and Causes of Damages by Different Types of Households in NCR

Different types of causes of crop damages have been analyzed for the three types of crop (kharif, rabi season, and annual + perennial crops), for different types of households. This analysis is not made here by location in NCR, as sample is too small.

1. Flood Damages

Flood damages to crops have been serious in the years 1987-88, and 1988-89, where 24.5% of small households, 36.2% of medium, 33.7% of large ones have recorded flood damages to crops for the first year, and respectively 63.0%, 81.9%, 82.6% for the second years, both in the case of kharif season. But flood damages to crops were not negligible in other years; 7.1%, 10.9%, 9.8% of small, medium, large households in 1989-90, and 13.6%, 16.6%, 19.6% in 1990-91 had their crops more or less affected by flood in the kharif season.

All types of households also indicated some flood damages to crops in the Rabi season, in 1988-89, 9.8%, 10.1%, 7.6% of small medium and large households). Totally, the percentage of households whose crops have been affected by flood in each year was;

TABLE II.10

Households Affected by Flood

Year	Kharif season	Rabi season	Perennial crops
1987-88	30.4 % of hh	3.1	2.4
1988-89	73.7 % of hh	9.4	6.3
1989-90	8.9 % of hh	0.2	0.5
1990-91	15.9 % of hh	0.2	0.2

2. Excessive Rain

Kharif crops suffered of excessive rain in the years 1989-90 and 1990-91 (totally 9.7% in 1989-90, and 38.9% in 1990-91). Rabi crops also suffered from excessive rain in the same years (13% and 15.2 of all households mentioned damages). Perennial crops did not suffer at all.

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3. Hail Storm

Kharif and rabi crops also suffered from hail storms in 1991 (6% and 7.2% of households mentioned damages).

4. Untimely Rain

Rabi crops suffered much from untimely rains in 1991 (6.3% of hh mentioned it).

5. Drought

Kharif and Rabi crops suffered from drought in 1989-90 (7.7% of households for kharif corps, 6.0% of households for rabi crops). Same figures are 4.6 and 2.4 for year 1990-91.

6. Pests and Disease

Damages due to pest and disease were considerable in the kharif season in the year 1989-90 (7.2%) and in 1990-91 (18.8%) and in the Rabi season in 1989-90 (13%) and in 1990-91 (17.9%) of the households reported such damages.

This kind of information could be improved and completed with other ones, not processed:

- what is the percentage of fields where crops have been damaged due to different causes, or in both seasons.

Findings from this small sample are, nevertheless, useful to draw the attention on one point:
changes in water management to cultivable fields due to any type of infrastructure, may be risky as consequences of irregularity of rain falls in space, in volume, and in time may be exacerbated and affect cropping operations, unless adequate compensating irrigation and drainage systems are implemented.

3.3 Loss of Incomes due to Inundation by Different Types of Households

A large proportion of all types of households reported to have lost some income because inundation (or exceptional flood) in 1988. A high percentage of artisans and fishermen reported income losses (90% in each group). Landless group seems to have suffered less from flood as regards losses of incomes, 59% in households reported such losses.

Amount of income losses was higher for farmers 76% of small, 76% of medium, and 91% of large farm households reported to have lost more than 3000 Taka. Amount of losses, among other groups, vary.

Socio-Economic Consequences of Inundation (Exceptional Flood)

Increase in debt was the major consequence of inundation for all types of households; it was more acute for small and medium farm households and also the landless, boatmen and artisan households. In other words, it was less acute for large farm and fishermen households.

As it has been reported already dwellings of landless, fishermen, boatmen and artisans households have been much more affected (12%, 40%, 44%, 31% of hh).

Health problems due to inundation were much more serious for fisherman, boatmen and artisans. Disruption of economic activity was acute for fishermen and artisans. Boatmen suffered more than others from disruption in communications.

Farmer's Groups

What should be checked by an in-depth survey is the type of households who lost some land; as it seems that medium and large farm households were more numerous to lose land by selling it.
Some farmers reported in the field trip survey in May-June, that the total crop failure on some irrigated fields lead to many difficulties in loan repayment (loan taken for irrigation equipment, for instance). Some plots of land also have been either eroded, or silted, and have lost their fertility. Some farmers also have to clear debts, to rebuild their dwellings and to purchase new bullocks and implements.

Landless Group : 12% of households faced problems to repair their dwelling unit, 4% had to sell land, 1.5% lost their homestead as a consequence of river erosion. About 59% of landless households reported income loss due to unemployment (25% reported loss of over Tk. 3000).

Other Occupational Groups: Households who mentioned loss of incomes due to disruption of economic activities were numerous (90% fishermen, 60% boatmen, 90% artisans). Their economic activities were stopped for one to three months in most cases, for various reasons. Many reported damage to their occupational tools and equipments during the flood and financial problem of replacing them after the flood had receded. The fishing households said it was difficult to catch fish when there was extensive flooding. Flood had washed away their nets and other gears. Fish trading was depressed. In many cases, flood had caused damage to boats also. Even boatmen said they had lost some income. In many instances the whole family had to live on their boats during the flood so they could not use the boats for commercial purposes. The potters reported that their raw materials as well as their wheels and other tools of trade were washed away during the flood. The weavers had to dismantle their loom and even after the flood had receded they could not set these up until the earthen floor of their dwelling units had dried properly. So one of the most important economic consequences of flood for these households was loss of income. For those who had other occupations such as cultivation, job as daily labourer or petty trade, all these activities too were disrupted and as such income from other sources too had ceased.

3.4 Main Water Management Problems as Perceived by Interviewed Farmers

Detailed questions about water management problems in their fields have been asked to all farmers. Although, it may be argued that questions are not quite technical, and the surveyed sample is small, a quite realistic picture of the situation in each thana, as farmers know very well, if not better than anybody else, has been determined. This gives the water management problems they have to tackle in their fields year after year, decennaries after decennaries, to survive.

Generally speaking, the main problems for cultivation are untimely and excessive rainfall, as 49% and 60% of households interviewed mentioned, respectively, these two problems. Next comes the problem

of flood water staying too long in the field (30% of hh). Then comes lack or insufficiency of irrigation equipment (21.7%).

Flood and drainage problems have been separated as drainage problems may be, in some places, a consequence of excessive rainfall, or of combination (in time or in space) of exceptional flood and excessive rainfall, and neither always nor only, a consequence of excessive flood.

The survey indicates that there is nearly no differences in answers between the different groups of farm size. This is due to the fact that all groups have been interviewed in the same villages, and therefore, face the same water management problems. What makes the difference between groups are the socio-economic consequences of these physical problems in each type of farm.

From tables explained above it again becomes clear that any infrastructure, whatever its size, location and type, will not solve one of the more important problems of farmers, untimely and excessive rains. These problems could only be reduced through highly sophisticated small scale projects with regulation of in and out water flows, and/or with adequate use of adopted rice varieties etc.

3.5 Impact of Floods on Households Incomes and Expenditures

Impact of flood on losses of incomes and job opportunities has been analyzed for the 552 households of the field survey. Impact is largely determined by the capacity of households to maintain their exchanges entitlements, by selling labour, borrowing, and other means. To-day, in rural areas, poor people (landless and small farmers) are very vulnerable more and more dependent on changes and seasonal variations of prices and wages. Therefore, informations on household resiliency is needed to obtain an accurate measure of stress, in usual flooding period and in heavy flooding period.
This household resiliency analysis can only be measured though a very deep household survey which will provide a short term and long term ability to assess stress.

This household survey has to be conducted in the NCR, based on following indicators which are nearly all related to Institutions and could be called stress indicators, as they all interfere drastically on salvation or survival of vulnerable groups;

- price fluctuations
- relations between prices, wages (in time and in geographical areas)
- commodity prices
- savings capacity
- loan facilities (relatives - money lenders)
- access to credit and non-institutional form of credit.

This survey has to be conducted in different types of regions (called developed or underdeveloped considering, list of socio-economic and infrastructures' equipment criteria), and 2 or 3 times in the year taking into account cropping calenders, demands on daily labour, slack seasons, and 4 types of households;

- landless
- farm households
- non-farm households, with incomes off-farms
- farm households with additional off-farm incomes.

This type of field survey requires a long-duration field work, as quantitative informations are difficult to obtain from respondents. A specific organisation of field work and training of enumerators is necessary. This was not the objective of socio-economic field survey as time allocated to the survey was tow short, and survey did not include all agro-economic informations which were supposed to be obtained by the Agro-economists of FAP-3, whose assignment are longer. A household survey on income and expenditures must be an agro-socio-economic survey all together, including also all institutional aspect at least at household level. Interesting results could be obtained from a survey conducted by the Bangladesh Agricultural Research Council. The organisation and objective of this survey is described here under;

"The Bangladesh Agricultural Research Council is forming a network of research stations to investigate farm management practices, the adoption of agricultural technology, and other aspects of the changing farm in Bangladesh. Included on the agenda for these stations will be ongoing surveys of nearby farm and non-farm households to assess the impact of environmental and socio-economic variables on households resiliency and on decisions about consumption, production, and labour supply and demand. There are currently 23 sites; the strategic plan proposes on site for every agro-ecological zone in the country.

The research council is assembling a data analysis/research team in Dhaka, where the data from the different sites will be centralized. The idea is to construct a network for analyzing the impact of changes on agricultural production practices, to organize the data analysis efficiently, and to produce relevant policy information.

Anthropometric data can be collected along with socio-economic farm data at less frequent intervals. The resulting database and network would have a number applications;

Examination of the relationship of human nutrition with the other aspects of farm household behaviour and decision making, including labour supply, farm production, and time allocation, are possible. The effects of commodity prices and PFDS interventions on behaviour and nutrition could be evaluated in a dynamic context. There are numerous benefits to having panel data for these types of analysis.

The geographical diversity of the proposed sites would provide a perfect opportunity for early warning and rehabilitation surveillance. Prior to and after floods, the overall resiliency of these households can be assessed on a real-time basis, providing a picture of vulnerability and recovery. The effects of other disaster, such as drought, could be monitored on an ongoing basis in all areas of the country.

Geographical diversity would also permit the analysis of decisions on production, labour supply, and other household matters for different regions. Some of these regions will presumably be progressing economically at a more rapid pace than others. Having these data will permit answering such questions as: how occupations in rural industries change as growth progresses, how labour is making decisions labour markets are affected, and how food policy interacts with the changes that are occurring. The relations and behaviour of the landless and of farmers (prosperous and poor) can be compared in the two broad type of regions.(10 IFPRI study - working paper 1. September 1990).

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CHAPTER 4
EXPECTED IMPACT OF FCD PROJECT

4.1 Perception of Benefits or Problems which could arise from FCD Project

All households were asked to give their view about FCD projects which could be constructed in the area, if they thought that they will bring them benefits or difficulties. Most households cited many positive or negative points.

But it is highly regretted by the Consultant that at the time of field survey, neither the Planning Units were defined and delimited, nor different development scenarios were proposed. Therefore, it becomes very difficult if not unfair to ask questions to farmers about some project which is still not there and be able to explain to them what will change in water management in their fields. Questions have been asked concerning Flood Control through embankments.

Benefits and problems can be estimated in numbers of times they were cited (or how many respondents cited them). Unit weight can be affected to each time some benefit and problems are cited, them they can be asked according to frequency of citation. Frequencies are also expressed in terms of percentages.

4.1.1. Benefits

Keeping in mind the restrictions due to what was explained to people about FCD, it was observed that 20% only of all households interviewed, and 24% of off-farm households shortly interviewed (fishermen, boatmen, artisans) think that FCD will bring benefit to them or to the area.

10% of households (farm and landless) and 22% of other occupational group of households think that they will not get any benefit from FCD. Some of the households interviewed in Gazipur district (Joydebpur, Sripur, Kaliakair, Kapasia and some in Mymensingh District (Trishal and Muktagacha) reported that they were not affected by flood.

Farmers and Landless

26% of landless 46% of small farmers, 52% of medium farmers and 59% of large farmers thought that crop production will increase with FCD. Some people also stated that FCD projects should allow partial flooding, better drainage, digging of canals or dredging of rivers, as these will improve agriculture (11%, 16%, 16%, 18% of landless, small, medium and large farm households respectively).

Only landless (23% of hh) expected (or may be hoped) that FCDP will procure them more employment. Few households expected improvements in communications from FCDP.

Other Occupational Groups: Fishermen, Boatmen and Artisans

32% of fishermen households, and 25% of boatmen did not expect any benefit for them from FCDP. 27% of artisans said that the projects will bring them more occupational security and more income,.
Only these occupational groups said that FCDP will improve homestead gardening and secure the livestock (18% for fishermen, 13% for boatmen, 18% for artisans).

Many of these households, nevertheless, thought that people in general will benefit from the Project. 22% of fisherman, 50% of boatman, 34% of artisans). 2.56% of fisherman households expected some improvement in their activity from FCDP. Some boatmen who had lost their homestead in river erosion stated that stopping river erosion would benefit the people in areas where rivers were eroding away villages and lands, and would benefit more than structures like embankments.

Many of the respondents in each group (23% for fisherman, 12% for boatman, 13% for artisans) have stated that partial flooding will bring benefit.

4.1.2 Problems

Regardless of occupation, all categories of households have stated that FCD projects will not give rise to any major problems to them.

Farmers

All categories of farmers, over 80 per cent in each category have said that they do not foresee any problem arising out of the construction of a FCD project in their area. This was the first ranking statement. The second ranking statement was that construction of such projects might hamper silt deposition, as such, soil might lose its fertility and farmlands become less productive. The statement that ranked third was that some people may lose their property when land is acquired for the construction of FCD projects. Some of these households also pointed out that breach in the embankments during flood might lead to more extensive damage than otherwise.

Landless

The landless households expressed the same view as the farming households. About 84 per cent said that FCD projects would not lead to any problem. The problems cited had the same ranking as those of farming households.

Other occupational Groups: Fishermen, Boatmen and Artisans

About 49 per cent fishermen, 60 per cent boatmen and 52 per cent artisan stated that there would not be any major problem. However, for the fishermen (26 per cent) and boatmen (29 per cent), the second ranking statement was that FCD projects might cause disruption to their occupation/reduce their income. The peak season for boatmen is the monsoon which also happens to be the flood season. During this season, not only do they get increased number of passengers but as they do not have to follow a particular

water channel, the distance they have to travel becomes shorter. As travel time is also less, they can manage more trips in a day. Any type of structure such as an embankment will be a barrier to free movement of boats. However those who ply on the river mostly foresee no problem. Likewise, fishermen who fish in the rivers say that embankments would not hamper their occupation. But those who fish in the beels are somewhat worried about their occupation. If due to FCD projects beels dry up or if fish cannot come inland from the river then there will be some problem. Many have stated that fish production will decrease if embankments are constructed and fish cannot move freely in to the low-lying areas which are their spawning grounds. About 4 per cent of the artisans, mostly potters, have stated that embankments may lead to loss of income for them and around 18 per cent of the respondents in this group has stated that if free movement of boat is hampered then that will disrupt their occupation. Potters have stated that it is important that the fields be submerged every year by flood water, as this flushes out the chemical deposits in the soil and helps the soil to retain its stickiness which is essential for making pottery. Also they need boats to transport both their raw material and their finished products. Any disruption in the plying of boats will hamper collection of soil and raise their cost of production. The marketing of finished products will also be hampered.

In fact, there are 3 types of consequence of FCDP perceived by peoples: benefits, no benefits, problems or difficulties.

4.2 Impact of Rural Infrastructures

Rural infrastructures have an important impact on all aspects of village life, first of all on agricultural production, labour market and employment, and incomes. Indirectly, impact is a social development through effects on household's consumption, savings and investment capacities, and on economic activities through development of markets.

Unfortunately, there are no data available about rural infrastructures per thana in 1991. The only data available are dated from 1981 census.

Furthermore, effects (positive or negative) of existing infrastructures cannot be studied through field survey, because they are distorted because of the survey's season imposed by the study's time schedule Field survey has been conducted in the monsoon season, in July and August 1991, when most of villages are inaccessible. Enumerators could not spend half of their assigned time trying to reach distant and inaccessible village (i.e., under-developed villages).

Therefore, it is suggested that a detailed study will be conducted at feasibility study level, trying to analyse all socio-economic impacts of infrastructures (roads, markets, banks, access to modern inputs, electricity, social services). This kind of study is closely linked to the study of institutions. (Public Policies, Credit Institutions, Co-operatives, Public Services, NGOs etc.)

Survey sample of (FPRI-BIDS-Study).
Information collected though a 1982 survey of households in 16 villages, selected from a first sample of 129 villages, constitute the basic data of the study. (40 households per villages were studied: total 640 households).

A short view of possible and interconnected effects of rural infrastructures (outside project) on village life is given below. Some figures, not related to the NCR, are taken out from an IFPRI & BIDS study [4].

Impact of Rural Infrastructures on Prices, Transport Costs and use of Irrigation Equipment

Choice of farmers to develop HYV's cultivation is determined by availability of irrigation, which in turn is linked to the degree of accessibility of the village.

TABLE II.11

Diffusion of Tubewell Irrigation by Degree of Infrastructure Development in 1,609 Villages, 1988

Degree of Accessibility of village	Total Number of Villages	Villages without Deep Tubewells	Villages without Shallow Tubewells	Villages with not Tubewells	Tubewells Electrified		Tubewells in Working condition
					Deep	Shallow	
Easy access	648	60	12	7	14	5	97
Moderate access	466	61	15	9	10	3	95
Difficult access	495	70	29	28	2	1	82

Source: Computed from supplementary survey data collected by the International Food Policy Research Institute and the Bangladesh Institute of Development Studies in 1988.

Notes: Villages with easy access are near a motorable road and within 5 miles of an thana headquarters; villages with moderate access are near a motorable road, but more than 5 miles from an thana headquarters; and those with difficult access are not accessible by a motorable road.

Source : IFPRI study October 1990 p. 38.

If farmers can purchase big quantities of inputs at a time, prices are lower, but transport costs must not be prohibitive. Price of rice (not of paddy) is also related to transport facilities which make possible large scale milling of rice and market supply faster.

Impact of Rural Infrastructure on Rural Labour and Employment

Demand and productivity of agricultural labour increase with development of areas sown in HYVs. Locally, infrastructures may not directly interfere in labour market as labour is always available; but seasonal or daily movements of labour are affected by communications net work.

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4 "Development Impact of Rural Infrastructure in Bangladesh" October 1990. IFPRI & BIDS

Survey sample of IFPRI - BIDS - Study: Information collected thorough a 1982 survey of households in 16 villages, selected from a first sample of 124 villages, constitute the basic data of the study (40).

Rural labour supply and demand vary locally with the level of "development" of the village. Level of development of villages can be determined using the main socio-economic criteria [5], and is changing types of employment opportunities. Generally speaking, it is interesting to note, as explained in IFPRI study, that "in developed villages the supply of family labour to crop production is about one-fifth less and the supply of wage labour is about two thirds more than in underdeveloped villages. The supply of wage labour is provided mostly by the landless and marginal landowning groups. Compared with under developed villages, labour use in developed villages is about 12 per cent higher for small farmers, 18 per cent higher for the middle size farms, and less than 2 per cent higher for large farms. In fact, large farms in developed villages use more family labour and less hired labour than those in underdeveloped villages. This pattern of behaviour is difficult to explain. But the effect of farm size on demand for labour may partly explain this result".

TABLE II.12

Supply of Labour to the Market by Landownership Group, 1982

Landownership Group	Days of Hired-Out Labour/Household			Hired-Out Labour as a Percent of Total Labour Supply	
	Under Developed Villages	Developed Villages	Difference	Under Developed Villages	Developed Villages
Landless	224	311	87	52.7	62.1
Landowner	--	--	--	--	--
Small	116	200	84	26.7	41.7
Medium	52	107	55	10.4	21.3
Large	26	39	13	5.2	6.7
All households	121	198	77	26.5	39.4

Source : Computed from survey data collected by the International Food Policy Research Institute and the Bangladesh Institute of Development Studies in 1982.

Notes : Landless own 0 to less than 0.5 acres, small owners own 0.5 to less than 2.5 acres, medium owners own 2.5 to less than 5.0 acres, and large owners own 5.0 acres or more.

5 Main Socio-Economic criteria are : access to transport, to health, education, market, public services. Under developed villages would be villages equipped less than the average, developed villages would be villages equipped more than the average.

TABLE II.13

Demand for Labour for Crop Production in Developed and Underdeveloped Villages,1982

Size of Farm	Family Labour		Hired Labour		Total Labour	
	Under Developed Villages	Developed Villages	Under Developed Villages	Developed Villages	Under Developed Villages	Developed Villages
(Acres)	(days/acre of cropped land)					
Small (up to 2)	38.0	39.1	16.4	22.0	54.4	61.1
Medium (2-5)	25.8	27.1	16.5	22.7	42.3	49.8
Large (more than 5)	19.4	23.6	31.1	27.7	50.5	51.3
All farm households	27.1	29.6	20.8	24.1	47.9	53.7

Source : Computed from survey data collected by the International Food Policy Research Institute and the Bangladesh Institute of Development Studies in 1982 and IFPRI study October 1990 p.50.

Some main findings of IFPRI study have been very briefly presented here, to corroborate the consultant's findings obtained during her field trip and also from household field survey, which are that socio-economic impacts of flood and of any kind of rural infrastructure and development scenario cannot be analyzed for flood and for development scenarios only. Flood (whatever is its cause) is only one of the numerous components of the complex agricultural production system in Bangladesh.

Even NCR division in Planning Units may not be the best solution for the area (NCR). A detailed regional study will be necessary, based on a multicriteria analysis, to determine future poles of development and their expected potential area on which effects will be positive.

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Impact of rural Infrastructures (outside Project) on household income and standard of living.

TABLE II.14

Summary of per Capita Income, by Landownership Group, Developed and Under Developed Areas, 1982

Source of Income	Landless	Small Owner	Medium Owner	Large Owner
Crops				
Developed	385	1.165	2,075	2,651
Under-developed	433	1,144	1,911	3,543
Difference	(-11.0)	(1.8)	(8.6)	(-25.2)
Livestock and Fisheries				
Developed	335	193	242	433
Under-developed	160	162	192	312
Difference	(109.0)	(19.0)	(26.1)	(38.9)
Business & Industries				
Developed	261	180	306	903
Under-developed	286	360	137	434
Difference	(-9.0)	(-50.1)	(123.7)	(108.0)
Wages				
Developed	945	690	345	67
Under-developed	693	354	130	95
Difference	(36.3)	(95.0)	(164.9)	(-29.5)
Miscellaneous				
Developed	436	518	616	778
Under-developed	489	602	736	795
Difference	(-10.8)	(-14.0)	(-16.3)	(-2.1)
Total family income				
Developed	2,362	2,746	3,584	4,832
Under-developed	2,061	2,622	3,106	5,179
Difference	(14.5)	(4.7)	(15.4)	(-6.7)

Source : Computed from survey data collectedly the International Food Policy Research Institute and the Bangladesh Institute of Development Studies in 1982.

Note : Numbers in parentheses are percentages.

Source : IFPRI study October 1990 p.64

IFPRI study indicates close relations between different sources of family incomes, level of development of villages, and size of farms or types of holdings.

TABLE II.15

Average Income from Livestock and Fisheries, Developed and Under Developed Villages, 1982

Items	All Households	Developed villages	Under-developed villages	Difference
Income/household(Tk)				
Poultry	276.0	318.0	243.0	30.9
Milk	488.0	592.0	407.0	45.5
Fish	693.0	872.0	555.0	57.1
Total	1,457.0	1,782.0	1,205.0	47.9
Income/capita(Tk)				
Poultry	43.5	48.3	39.4	22.6
Milk	77.0	90.0	66.1	36.2
Fish	109.3	132.5	90.1	47.1
Total	229.8	270.8	195.6	38.5
Share of total income (%)				
Poultry	18.0	17.0	20.2	- 11.3
Milk	33.5	33.2	33.8	- 1.8
Fish	47.6	48.9	46.0	6.3
Total	100.0	100.0	100.0	000

Source: Computed from survey data collected by the International Food Policy Research Institute and the Bangladesh Institute of Development Studies in 1982.

Difference: [(Developed-Underdeveloped)/Underdeveloped] x 100.

Source: IFPRI study p.59.

Only some main findings of this study are shortly indicated here, as for instance.

"Landless households and small farmers in developed areas obtain a relatively larger share of income from crops than their counterparts in underdeveloped areas".

"For all groups the income per unit of land is constantly higher in developed than under-developed villages. For the small-farmer group, the difference is about 24%".

"On average, households in developed areas derive about 48% more income from livestock and fisheries than those in underdeveloped areas. Family income from fish and milk both perishable products is 46 percent higher for milk and 57% higher for fish in developed areas than in underdeveloped areas". Incomes from business, industry and wages are also related to the level of development of area.

It would have been useful to find out, inside NCR, or inside Planning Units, specific areas, sub-areas of development and underdevelopment, taking into consideration all available data on existing rural works and socio-economic equipments. Detailed maps could be elaborated. This work is hereby unavailable to estimate future direct and indirect benefits and impacts of Projects in NCR.

Recent socio-economic data obtained from surveys conducted in 1989 in some thanas of Bangladesh only are available. Table II.16 some of them could be selected for the multi-criteria analysis, to refine calculations of socio-economic impact of project (as pilot thana, to be selected in different Planning units. (in "Report on the Thana Development Monitoring Project volume-I November 1990. Volume-2 June 1991, BBS).

TABLE II.16

Thanas Located in NCR Housing Socio-Economic Data

Jamalpur	Sarishabari	Melandah
	Islampur	
Mymensingh	Gaffargaon	
Gazipur	Kaliganj	
Tangail	Bhuapur,	Tangail, Ghatail,
	Nagarpur	
Manikganj	Saturia	Harirampur
Munshiganj	Sreepur	

4.3 Impact of Project on Incomes

Generally speaking, it can be estimated that impact of project on incomes of rural population could be:

- Providing work opportunities to poorest people, (landless and small farms, and also destitute women) at time of construction and maintenance of all Rural works (roads, bridges, embankments, digging of canals etc.).

- Providing work opportunities to additional agricultural daily labourers as the total area sown in HYVs will increase and require more manpower.

- Providing either more income, or more food (a better diet) to small farm households.

- Providing either more income or storage capacities of food grain to rich farmers. Additional income will be partly only re-injected in agriculture (through purchase of modern equipments).

- The first impact is dependent on Bangladesh Government targeted interventions (FFW, VGD etc.) The total number of households who will be able to get some work will be calculated when all development scenarios in each Planning unit will provide figures for manpower requirements for construction and maintenance for 5 or 10 years of works.

- For the second impact the agro-economist of FAP-3 calculated that improvements in agricultural technics will provide an additional man-power demand of 10% only.

CHAPTER 5
PROBLEMS AND WISHES OF PEOPLE

5.1 Different Wishes Expressed by Heads of Family (men only)

Last question of socio-economic field survey concerned all wishes of men, if possible expressed by priority order. As it was of course difficult for respondents to put their wishes in priority order, as they need so many improvements for their standard of living, only the five first wishes have been considered and reported. This analysis brings many interesting remarks. After all, man in his environment is the first to be concerned by any project. His life will be affected by the project. He has to be taken into consideration.

For all types of households together the first wish (or need) is"more money" (54.2%), followed by "more health facilities (53.1%). (1). Then, in third position, comes"more land on their own" (46.6%), and flood protection (44.6%). Improvement of irrigation and drainage conditions are expressed by 31.3% and 29.9% of all households.

Education facilities (30.1%), a more beautiful house (21.7%), and improvement of transport facilities (24.5%) come next. 20.3% want more land to cultivate.

In practice, alleviation or removal of some main constraints will alleviate or suppress in turn secondary constraints.

As an example, improvement of communications has a positive impact on marketing, inputs supply, health and education services and employment.

In details : All answers reflect exactly the situation in the NCR. First priorities for landless people are of course more land on their own (37.7%) and more money (34.8%). Then come better access to credit and more loans (9.4%), and employment and flood protection (for better employment opportunities) (6.5%).

First priorities for small farm households are: more money (23.9%) more land on their own (14.7%), flood protection (13.6%) and better access to credit (6.5%), First priorities for medium farm households are; more money (21.7%), flood control 17.4%, more irrigation facilities (10%), more land of their own (8.7%).

First priorities of large farm households are: irrigation facilities (16.3%), more money (15.2%), employment (12%), education facilities (12%), flood control (10.9%).

Here again, it must be noted that too much importance, too much weight must not be given to first order wishes. Other needs expressed in second, third, fourth or fifth rank are mainly as much important for respondents.

5.2 Description of Local Situation, Problems and Needs by District.

Besides socio-economic field enquiries conducted at household level with questionnaires, specific interviews were taken of local knowledgeable persons, who have the best knowledge of local problems. These persons have been selected in different thanas, they are primary school teachers, businessmen, village leaders, large farmers, union council chairman, high school teachers, old literate villagers etc.

Their views about the main problems of the area, expected solutions, problems related to floods, benefits and problems expected from any flood control project is summarized in the following pages.

5.2.1 Jamalpur District

Main problems:

1) **Physical:** river erosion (Madarganj, Jamalpur, Islampur, Dewanganj Up)
   Flood (Madarganj, Melandah)

2) **Agricultural production**:
   - shortage of input
   - inadequate supply of STW, DTW, of fuel for irrigation
   - lack of land for landless
   - inadequate loan facilities

3) **Socio-economic problems**:
   - illiteracy, poverty, unemployment
   - lack of health facilities, of roads and communications
   - bad housing
   - worsening of social status of women

4) **Others:**
   - deterioration of law and order.

Effects of heavy floods

- damages to crops, livestock, homesteads
- crisis of food, cattle feed, drinkable potable water
- disruption of communications, pisciculture, employment
- spread of disease (diarrhoea few) and robbery

small, medium farmers and daily labours are the most affected.

Fears abut FCD Projects:

- problems of land losses and acquisition
- problems of drainage congestion and disturbance of actual irrigation system
- increase of irrigation costs
- loss of soil fertility
- problems of navigation and fishery if there are no sluice gates.

5.2.2 Mymensingh District

Main Problems:

1) **Physical :**
   - river erosion on Brahmaputra river side in Gaffargaon thana
   - flood in Fulbaria Bhaluka thana (locally)

2) **Agricultural production**
   - inadequate supply of DTW
   - dry-running of hand pumps because of intensive pumping of DTW
   - lack of credit facilities
   - increase in number of marginal farmers and landless due to land selling.

3) **Socio-economic**
   - lack of communication (roads)
   - lack of electricity, credit facilities

4) **Others**
   - deterioration of law and order

Effects of floods
   - no flood except in some low lands in nearby rivers Sheila and Brahmaputra. Only some crop damages in some low land areas essentially due to excessive rains.

Fears about FCD Project
   - They only want drainage improvement and more irrigation equipment. Any project has to preserve these two needs.

5.2.3 Tangail District

Main Problems:

1) **Physical:**
   - breach in embankment and flood, sand deposit, no maintenance of embankment (Gopalpur, Ghatail, Mirzapur, Tangail Sadar)
   - river erosion (Mirzapur)
   - deforestation (Madhupur)

2) **Agricultural production:**
   - drainage problem (Gopalpur, Nagarpur,
   - land acquired for Cantonment (Ghatail)
   - lack of irrigation, improved varieties of seeds, credit, agricultural inputs

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3) **Socio-economic:**

- no electricity (Gopalpur, Bhuapur, Ghatail, Mirzapur, Tangail, Nagarpur).
- lack of educational institutions, of communications, of health facilities.

Madhupur Up: is relatively well developed as many NGO's are working there (Caritas, World Vision, Catholic Mission; health, education, employment situation, particularly women, is much better than usual.

Delduar Up: about 50% of household are involved in wearing, but crisis is also here.

Effects of Floods: Effects vary considerably in different parts

- crop damages
- household damages
- communication and disease and feeding persons affected, small, medium farmers, artisans daily labourers.

Fears about FCD Project:

- no fears if drainage system is improved.

5.2.4 Gazipur District:

Main Problems:

1) **Physical:** flood (in Tongi, due to FC embankment of Dhaka, in Kaliganj)

2) **Agricultural Production:**

- need of DTW
- drainage congestion (Kaliganj, Sreepur, Kaliakair)
- shortage of fertilizer, and insecticides
- no sugar mill (75% of cultivable land is under sugar cane Sripur).

3) **Socio-economic:**

- lack of electricity, communications, education, health facilities
- unemployment, landlessness, poverty.

Effects of Floods:

- damages to banana crops (Kapasia)
- damages to homesteads, vegetables crops, communications
- persons mostly affected: fishermen (numerous in Kaliakair and Kapasia), farmers.

Fears about FCD Projects: no problem if an embankment is constructed, if drainage system is improved. Embankment will benefit in many ways.

5.2.5 Dhaka District (rural areas)

Main problems

1) **Physical:** Flood (Nawabganj)

2) **Agricultural production:**
   - drainage (Savar) problems
   - lack of irrigations facilities
   - lack of electricity (for irrigation), of credit facilities, of inputs, of extension services.
   - lack of ponds for pisciculture

3) **Socio-Economic**
   - poverty, food deficit, unemployment
   - lack of health and education facilities

Effects of Floods: not flooded every years
   - in 1987-88 flood, damages to crops, homesteads, cattle, disruption of potable water, communications, spread of disease persons affected : all farmers.

Fears about FCD Projects:no main problem is mentioned except this one of land acquisition, if good drainage system is provided.

5.2.6 Narayanganj District:

Main problems:

1) **Physical:** flood in Rupganj thana river erosion in Fatullah
2) **Agricultural Production** only one crop and lack of irrigation in Rupganj.
3) **Socio-economic** lack of communication, electricity health and education facilities. No mills no factories (Fatullah).

Effects of floods Flooded every year (specially in 1984, 1986, 1987, 1988, 1991). effects on all aspects of rural life; crops, homesteads, health, communications, cattle fodder, persons affected: farmers.

Fears about FCD Projects: no problems are expected; on the contrary Flood Control would bring many benefits: increase of cropping intensity improvement of communications. security for homesteads, more ponds and more factories.

5.2.7 Munshiganj District

Main problems:

1) **Physical:** flood in Srinagar and Louhajang (only one crop in beel in Srinagar)

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2) **Agricultural Production:**
   - lack of electricity, TW
   - lack of cold storage facilities for potato crop
   - landlessness (50% in Munshiganj, 40% in Tongibari)

3) **Socio-economic:**
   - lack of health and education facilities (except in Sirajdikhan)
   - unemployment

Effects of Floods:
   - seasonal flood every year, extensive flood in different years for different areas (1984 to 88). not much crop damages, as main crops are B Aman and potatoes, which need flood. Main problems were communication disruptions and increase in commodity prices.

Fears about FCD Project : embankments along River Meghna will benefit, also along Aerial Beel, if sluice gates are provided.

5.2.8 Manikganj District:

Main Problems:

1) **Physical**: flood in Manikganj in 87,88, 91; Daulatpur, Harirampur, Shibalaya, Ghior, every year, Saturia in 1980,1984, 87-88. River erosion in Daulatpur, Harirampur.

2) **Socio-Economic**: problems of communications, health, education facilities, unemployment.

Effect of Floods:
   - damages to crops, dwelling, homesteads, vegetable crops.
   - problems of cattle fodder and communications. persons affected all farmers.

Fears about FCD Project :
   - some people are not convinced as one embankment has been eroded away last year (Daulatpur).
   - some other people fear bad effects of any breach in embankments.

CHAPTER 6
WORK PERFORMED AND WAGES OF MEN, WOMEN, CHILDREN

6.1 Agricultural Daily Labour in NCR

6.1.1 Availability of Agricultural Daily Labourers by Month

The survey analysed the months where it is difficult to obtain the necessary agricultural labour to work in the fields. Information is given for different type of land holding class. These informations of course have to be related to the different cropping patterns and should be processed by thana as there may be some difference in flood occurrence periods from the North to South of NCR.

It can be observed that the peak season for agricultural labour employment is mid-April to mid-June, and that the slack season is mid-September to mid-November.

Large farmers need more labour in winter season, from mid-November to mid-April than small farmers.

It can be seen that peak season for harvesting and peak season for threshing are the most labour consuming seasons, followed by seasons of transplanting/sowing, and weeding. 55.4% of small farmers, 67.7% of medium ones and 65.6% of big farmers fear a serious shortage of labour if the total area under HYVs increased considerably.

6.1.2 Types of Remuneration Paid to Agricultural Daily Labourers

Considering the frequency of different types of wages of agricultural labours for the main agricultural operations, it can be seen that 55.8% of farming households did not employ any labour for the operation of ploughing + levelling + sowing. 41.3% of farming households did not employ any labour for the operation of ploughing + levelling + transplanting, 28.7% did not employ anybody for weeding, 49.5% for harvesting + transportation of crops, 73% for threshing, and 76% for harvesting+ transportation of crop + threshing.In other words, weeding is the operation which requires more labour.

There are some slight variations in types of wages and amounts, which are explained by the performance of the labour and the availability of labour throughout the year and in different parts.

Wages are also correlated to commodity prices (and especially rice prices).

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TABLE II.17

Types of Wages for Agricultural Operations

For ploughing + levelling +sewing	20 to 30 Tk + 3 meals 30 to 40 Tk + 3 meals
For ploughing + levelling + transplanting	20 to 30 Tk + 3 meals 30 to 40 Tk + 3 meals
For weeding	30 to 40 Tk without meal 40 to 50 Tk without meal
	20 to 30 Tk + 3 meals 30 to 40 Tk + 3 meals
For harvesting + transportation of crops	20 to 30 Tk + 3 meals 30 to 40 Tk + 3 meals 40 to 50 Tk + 3 meals
Threshing	20 to 30 Tk + 3 meals 30 to 40 Tk + 3 meals
harvesting + transportation of crops + threshing	20 to 30 Tk + 3 meals 30 to 40 Tk + 3 meals

Source : Socio-economic survey June, 15 - August 15, 1991, NCRS (FAP-3)

Some labourers get a job contract for a specific task, the amount of contract varies with task, different farm equipment used and different size of land cultivated.

Job contracts are mostly given for ploughing/levelling/sowing operations, and for harvesting + transportation of crop + threshing. In this last case, current amount is 1/7 to 1/8th of paddy crop; it can range from 1/6 to 1/10th.

6.1.3 Permanent Labourers

Big farmers, either themselves cultivating their land or who are "absentee landowner" employ permanent labourer, to cultivate their land and take care of their cattle.

They live on the some homestead, and get a yearly salary ranging from 3500 to 10000 Tk and meal + clothes, according to the work performed.

Women are also employed as permanent or temporary servant, are not usually paid, but they get food clothing and lodging.

Work Performed by Women in Family Farm

Nearly no women declared in the survey to work in family farm for any particular cultivation operation. They only said that from time to time they helped the household head in agricultural operations.

Type of Remunerated Activities of Women and Children

Women and children working and getting a salary were only found in landless and small farms households. Even in these groups, they were very few: 7% of households for women, 2.36% for children aged 10-14 years, and 0.72% for children aged less than 10 years.

Percentage of children aged less than 15 years and working in the family farm decrease as the size of farm increase 16% in small farms, 14% in medium farms, 5% in big farms. Largest participation in field cultivation is weeding (in 2.3% of small farm hh, 7% of medium farm hh, 5% in large farm hh). Very few children declared having a remunerated activity, as also there may not be much opportunities for them in rural areas to get some.

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CHAPTER 7
HOMESTEADS, NON-FARMLAND & FRAGMENTATION OF HOLDINGS

7.1 Homestead Agriculture

Out of the total cultivable land in the rural areas of Bangladesh, homestead land represents approximately 5%. It is not much, but homestead agriculture can be a life-boat to millions of landless people who have only their homestead to survive [6]. The size of homestead varies with the category of farmer. On an average, it ranks from 0.004 to 0.08 ha, but approximately 56% of households have only 0.004 to 0.04 ha of homestead land.

Definitions of homestead could be numerous; it comprises of the home plus adjoining land occupied by a family. Adjoining land (or homestead land) is defined " as the land owned and occupied by the dwelling unit of the household and immediate area surrounding the dwelling unit including court yard, pond, road space around homesteads, space used for cultivation of trees and vegetables and unutilized space" (in "Women's Contribution to Homestead Agricultural Production System in Bangladesh, BARD, December 1988).

Homestead agriculture includes backyard gardening, livestock rearing, poultry raising, fish culture, home forestry and similar activities.

BARD + BARI conducted sample survey on women's contribution to homestead agriculture in 1987. 100 samples were located in Tangail District, Kalihati Thana sample is given in Table II.18 [7].

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6 62% of landless in all Bangladesh. Landless % in NCR varies from one district to another (see tables)

7 Sample of BARD, BARI Study in NCR
Tangail District-Kalihati Upazila

Landless >0.20 ha	22
Marginal 0.20 to 0.50 ha	20
Small 0.50 to 1 ha	39
Medium 1.00 to 2 ha	11
Large more than 2 ha	8
Total	100

TABLE II.18

Assets Situation of the Sample Families in Tangail District (Average Number per Family).

Furniture		Agricultural Equipments		Household machinery		Transport	
Khat	0.24	Thresher	--	Water/Clock	0.56	Rickshaw	0.01
Chouki	1.16	Weeder	0.09	Radio	0.25	Cycle	0.02
Alna	0.18	Plough	0.57	Sewing machine	0.03	Motor	0.01
Table	0.62	Dheki	0.61	Fan	0.07	cycle	
Chair	0.97	Ox	0.36	Tubewell	0.34		
Showcase	0.03	Milch cow	0.73				
Shinduk	0.17	Sprayer	0.04				
Almirah	0.13	Spade	0.66				
(see glossary)		Ladder	0.47				
		Irrigation pump	0.08				

Main findings (in Tangail District, Kalihati thana) Average size of household : 5.8. The percentage of joint family increase with the increase of farm size.

Percentage of houses made of cement increases from 2% in landless families to 19% in large families.

TABLE II.19

Homestead Different Areas by Type of Household

Type of household	Average area in hectare				
	Housing	Garden	Pond/ditch	Arable land	Total
Landless	0.067	0.005	0.001	0.005	0.078
Marginal	0.087	0.012	--	0.004	0.098
Small	0.113	0.005	0.004	0.026	0.148
Medium	0.131	0.008	--	0.048	0.187
Large	0.151	0.031	0.013	0.070	0.265
Average	0.102	0.009	0.001	0.023	0.164
	(75.6)	(6.7)	(0.7)	(17.00)	(100.0)

Source: "Women's contribution to homestead agricultural production system in Bangladesh, BARD, 1988.

Landless and marginal groups have allocated more land of their homestead land in housing than in cultivation land.

The area available for cultivation is the highest among large farm group.

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TABLE II.20

Agriculture Land Ownership Pattern by Farm Category

Farm Category	Average area in ha					
	Own cultivated land	Rented out	Mortgage out	Rented in	Mortgage in	Total Cultivated land
Landless	0.05	--	0.03	0.02	0.01	0.05
Marginal	0.21	0.01	--	0.04	--	0.24
Small	0.63	0.04	0.03	0.06	--	0.64
Medium	1.39	0.09	0.16	0.04	0.03	1.21
Large	3.08	0.87	0.15	0.05	0.09	2.20
All	0.56	0.09	0.05	0.04	0.02	0.48

7.2 Non-farm Land by Type of Households

The survey analysed the utilization of non-farm land by type of household and by district. Some interesting points may be observed, in particular the size of homestead, which increases with the size of farm landowner.

Landless have very small homestead area (0.082 acre on average in NCR), small farm owners have homestead of 0.172 acres on average, medium, have 0.244 acres, and big landowners, have homestead of 0.459 acres.

We can make the same observations for total number of orchards. The total number of households who are owner of an orchard is, 10.87% for landless, 20.11% for small farm owner, 34.78% for medium farm owners and 46.74% for big farm owners.

Pond owners are 8.70% for landless households, 25%, 42% and 51% for small, medium and big farm owner, respectively.

7.3 Fragmentation of Holdings

BCAL 1983-84 gives detailed figures on fragmentation of holdings per size of farm. Data are given per districts and for Dhaka Region. (which comprises 4 districts NCR).

The average number of fragments per holdings is

5.81 in Dhaka
5.94 in Jamalpur
6.07 in Mymensingh
7.19 in Tangail

TABLE II.21

Average Fragments per Size of Holding

	Small holdings			Medium holdings		Large holdings			
Region	0.05 0.49 acre	0.5 0.99 acre	1.00 1.49 acre	1.50 2.49 acre	2.50 4.99 acres	5.00 7.49 acres	7.50 14.99 acres	15.00 24.99 acres	25.00 acres and above

Source : BBS 1989-BCAL 1983-84. Volumes VI.

30.32% of holdings in the survey have 2 to 3 fragments, 22.77% of holdings have 4 to 5 fragments, 21.81% have 6 to 9 fragments, 11.42% have 10 to 15 fragments, 4.6% have more than 16 fragments. On the other hand only 9.07% of holdings have only 1 fragment.

Large farm owners have numerous plots sometimes more than 30, with one farm having more than 56. Reasons for fragmentation of holdings are well known:

- division of family properties
- necessity to have plots of different topographical land
- continuous transfers of lands from farmers to farmers, by selling, purchasing and mortgaging
- preference, by tradition, of farmers to have many small plots instead of a few big ones.
- necessity to have small plots which are used as a "saving bank", and negotiated in case of necessity.

Operated Area of Holding

Total operated area of a holding is the area owned by the household plus the area rented from others minus the owned area given to others for operation. The operated area also includes uncultivated land operated by the household including homestead area.

Owner Holding

Owner holding is the farm holding which is exclusively constituted with the owned land of the holder or any member or members of the holders household. It must not include the holdings which operate land taken from others.

Tenant Holding

It is the farm holding which is exclusively constituted with the land taken from others for operation by the holder or any member or members of holder's household. The holder of a tenant holding operates only the land taken from others on any basis.

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Owner-cum-tenant Holding

It is the farm holding which is constituted with the owned land of the holder or any member of his household and also with the land taken from others by holder or any member of his household. This is virtually combination of owner holding and tenant holding. In other words it is a kind of holding in which the owner owns a part of his holding and has the rest of it as a tenant.

Homestead Area

Homestead area means the area nor residence of the holder's household with its structures, courtyard and the land occupied by the passage to enter and exit. The adjacent land to the household occupied by temporary or perennial crops, ponds and tanks, compact plantations are excluded from the homestead area.

CHAPTER 8
TENANCY CONTRACTS

8.1 Share-Cropping System

In the rural area, land is given for share cropping on the basis of half crop to the two contractors, owner and share cropper. Usually the tenant who cultivates the land bears all cultivation costs, there may be some local changes in the tenancy agreement.

Some cases have been observed where the owner pays half of cultivation expenditures (seeds, fertilizers, water charges) and the tenant pays all labour costs.

In some other cases, owner may pay a part of fertilizer costs. All variants are explained by different types of relationship between the two individuals involved.

Some years back a new government law stated that the owner will get 1/3 of crop, the tenant also 1/3, and the last part of crop will go either go to the tenant if he pays cultivation expenditures, or be divided between the owner and tenant if they both bear the inputs costs. This law had no effect in practice.

Rent : Sometimes landowner rent a part of his land for one or two years for an amount fixed of money. This is the case either of absentee landowners, or of people suddenly in need of cash for any unexpected event in both cases, they cannot supervise or control the work of the tenant in the field.

Numbers of farm holdings in Mymensingh District are more than double that of the number in other districts in the NCR, in 1983-84, corresponding operated area is three times larger than operated area of the two districts of Jamalpur and Tangail. But only a small part of Jamalpur and Mymensingh District are in the NCR. In BCAL 1983-84 land tenure characteristics of holding are not given by thana; so only data calculated in percentages will be considered here, by district.

Generally speaking, it can be noted that the total number of owner holdings is less in Tangail district (69.54%) than in Jamalpur and Mymensingh districts (75.16 and 76.12%). Number of tenants holdings is a little more (3.06% as against 1.66 and 0.97). But the number of owner-cum-tenant holdings is higher in Tangail District (38.8%) than in the other two (36.4 and 31.72).

In the 3 districts and Dhaka Region, the area given out represents between 15 to 19% of the owned land of owner holdings.

Tenants who are only tenants are very few (0.97% in Mymensingh to 3.06% in Tangail). Owner-cum-tenants are owners of 23 to 30% of the total owned area, and cultivate 34 to 43% of the total cultivated area.

They give out for cultivation 6 to 9% of their owned land and take in for cultivation 34 to 38% of the total land operated by them and 11 to 15% of the total land operated in the district.

8.2 Findings of Field Survey

Only 25.4% of all owner holding cultivate all their land themselves. 30.4% of them cultivate only a part of their land and give out the rest of this owned land on different types of tenancy contract the most current one being mortgage (71.4%) followed by share-cropping (38.1%), and rent (8.73%).

As a comparison, BCAL 1983-84 indicates that the percentage area of owner holdings given out is 15 to 19% only according to Districts, which makes big difference.

In survey samples, 46% of holdings have been given out entirely, mostly on share-cropping (76.9%) and on mortgage (26%).

Owner-cum-tenants represents 33.1% of total owner holdings in the survey, 31 to 39% in BCAL Census. O.C.T. cultivating their entire farm and some land taken in on different types of tenancy, are 19%, share-cropping being the most usual type of tenancy (in 93.7% of holdings), mortgage coming far behind (15.2%).

Owner-cum-tenant cultivating one part of their land themselves and one part of land given out and one part of land taken in on different types of tenancy represent 13.28% of all O.C.T., share-cropping being also the most usual type of tenancy contracted.

Few Owner-cum-tenants have given out on tenancy all their farm, and taken on tenancy some land, (0.72% of all O.C.T.).

A detailed analysis of all these different types of land tenure could be made by different areas, and different sizes of farms. Such factorial analysis would take time and is beyond the scope of this survey and the time for field survey analysis. Furthermore, a detailed field survey should be conducted again in different places to check, analyses, and understand all these components. That work should be made at feasibility level study.

Small landowners, cultivate much more than they own in Dhaka and Munshiganj district (areas close to Dhaka where absentee landowners may be more numerous). Big landowners cultivate much less than they own in all districts.

8.3 Characteristics of Share-cropping in the NCR

Owners Who Gave Some Land on Share-Cropping to Other Farmers

66.7% of small farmers 76.4% of medium farmers and 53.6% of large farmers, gave out land for share cropping. Duration of contract is very rarely for more than 1 years.

19% of small farmers gave their land on a basis of one to two season(s) contract only; 47.6% gave land on a three seasons or one year contract. None of the farmers gave his land to the share-cropper for more than one year.

Medium farmers gave land mostly on a three (3) seasons/1 year contract basis (56%); 14.7% on a 1.2 seasons) contract basis 3% on a 2 to 3 years' contract basis and 3% for more than 5 years.

Large farmers mostly gave land on a 3 seasons/1 year contract basis (29.3%); 17% gave land for one or two seasons only, 2.4% for two to three years, 2.4% for three to five years, and 2.4% for more than five years.

Reasons for short duration of contracts are numerous;

1) It is the local tradition
2) Faith in share-croppers is not that usual
3) The owner may be suddenly in a difficult situation and be obliged to sell a part of land.
4) On the other side, the share-cropper may also have some reasons to stop cultivating the same plot of land year after year.

In special cases, which could be observed during field survey, landowners, who have so many plots scattered all over the area, try to give land to share-croppers whose homesteads are located close to their plots. In that case, share-croppers, if they are working well, will keep the same land for several years continuously.

The summary should that is most cases, share-cropper pays all cultivation costs, but there are some cases where the owner also pays a part. In that case, he pays half of expenditures.

Here again there are many variants of the traditional share-cropping system where the share-cropper pays all expenditures, variants vary conjunctural personal situation of both contractors; some arrangements can always be made.
Share of harvest is always half for small landowners. In other farm size groups, there are some variants where the share-cropper keeps either 2/3 or 1/3 of crop. In the case of crop failures, both landowner and share-cropper share the loss.

Owners Who Take Some Land on Share-Cropping from Other Farmers

55.4% of small farmers 51.8% of medium ones, have taken land on sharecropping. It must be noted that farmers who have given land to share-croppers may also have taken land on share-cropping.

TABLE II.22

Duration of Contract for Share-cropping

Duration	Small farm owners		Medium farmowners		Large farmowners	
	Given out	Taken in	Gven out	Taken in	Given out	Taken in
1-2 seasons	19.1%	21.6	14.7%	25.9	17.1%	0
3 seasons or 1 years	47.6%	32.4	55.9%	25.9	29.3%	33.3

It is worthwhile to note that duration of contracts for land given out to share-croppers is not the same as for land taken in. In particular, large farm owners do not seem to be interested in taking land on share-cropping contract for a short period, i.e. for less than one year. On the contrary, 11% of them have taken land on share-cropping contract for more than one year (1 to 2 year)

In the case of large farm owners also, all share-croppers have paid all cultivation expenditures, except the irrigation charges which are paid by owner in 33.3% cases and by share-cropper in 77.8% cases.

Constraints to Increase Agricultural Production in Medium and Large Farm (households members are advanced farmers, some are literate, some have off-farm good jobs)

It must not be expected in the short run of Project Implementation, that procuring irrigation facilities and HYV, the full potential of production will be realised.

There are many socio-economic constraints which interfere to slow down the benefit that the "best" farm, fulfilling the best conditions for production could obtain.

Parcellisation of Land [8].

Big farms are divided in a considerable number of plots, because of successive inheritages, different land suitabilities, and some other "personnel" reasons.

This makes difficult timely ploughing, timely sowing, timely irrigation, and work of Agricultural Extension officers.

Owner of power tiller and tubewells are either big farmers or/and businessmen; influential people are of course the first to be satisfied for renting power tillers or distribution of water.

Maintenance of TB and Irrigation Equipment

Sometimes, the person in change of maintenance of irrigation equipment is not specially trained. Bad maintenance delays distribution of water that, in some cases has caused failure of 80% of crop.

Irrigation Charges are Sometimes High for Farmers who are not Owners of TW.
Some examples

- 1/4 of crop of irrigated field, for the TW owner.
- high cost of inputs (fertilizer diesel)
- low price of rice : At harvest time, modern farmers have to sell about half part of their harvest, to cover cultivation expenditures. At that time, cost of paddy is very low. Last year difference between purchasing price and selling price was Tk.350 to Tk.180/maund.

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8 Some Examples:
1 hh has 20 acres, 30 plots 10 share-croppers
1 hh has 30 acres, 20 plots, 15 share-croppers
1 hh has 8 acres, 9 plots, share-croppers & permanent labourers.

- other constraints of "modern" farmers, or of "advanced" farmers are all more or less related to Agricultural Extension officers and Institutional deficiencies:

  - difficulties to get loan
  - very bad agricultural extension services
  - non-availability of HYV, or no advice to use them
  - no poultry extension officers to advise them.

- socio-economic demands

  - literacy for women, functional literacy courses in the evening;
  - family planning for women also. (villages located near the main road have not been visited for many months by FP officers).

Small and medium farmers have a great incentive to produce more, but cannot always obtain the necessary resources to do it. Access to irrigation equipment may have increased considerably in the past years in some places, but access in itself might not be sufficient to increase production, as;

- farmers, if owners of equipments, may have run into debt and find it difficult to pay for labour services and, other inputs,

- if not owner of equipment, water charges may be prohibitive and distribution of water in his plots untimely, due to priority order to other farmers. Cultivation of improved varieties under irrigation requires a strict cropping pattern and adequate inputs utilization, to get the best return.

Some large farmers have easy access to all necessary resources to increase crop production in their fields but does not always have the necessary incentive to do it.

In some cases, for social reasons they prefer to distribute their plots of land to tenants, it cannot be considered, in estimation of project economical impact, that the total cultivable land potentially suitable for irrigation and new seed cultivation technology, supposing its are a can be estimated, will be cultivated under higher cropping intensity.

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CHAPTER 9
INCOMES AND EXPENDITURES OF ALL TYPES OF HOUSEHOLDS FROM FIELD SURVEY

9.1 General

Processing of all questionnaires gave interesting information about incomes and expenditures of all types of household. Incomes indicated here include incomes from farm (sale of crops) but exclude food production from farm which has been consumed by the family.

Informations obtained are accurate for poor people (landless, small and more or less for medium farm households), as they earn and spend so little that they know very well their budget. They are approximate for large farm owners for different reasons. Some do not want to divulge their incomes some do not exactly remember all items of income and expenditures in the year as it is very difficult to do so.

Nevertheless, what is of interest here is the comparison of levels of incomes and expenditures by type of household and variations in the different areas (or districts) of NCR.

It appears clearly that Manikganj is the poorest district of NCR, and Munshiganj the richest. Average annual incomes of landless households ranges from Tk.9000 to Tk.19500 per year, the minimum being in Manikganj District (Tk.9180) and the maximum in Mymensingh District (Tk.19500). Average annual expenditures of landless households ranges from Tk.12000 to Tk.23200 with a minimum in Manikganj District (Tk.11900) and a maximum in Munshiganj District (Tk.23200).

- Annual average income per household of small farm owners ranges from Tk.13300 (the minimum in Manikganj District) to Tk.29300 in Gazipur District it is exceptionally high in Munshiganj District , where it is of Tk.55200. Annual average expenditures per household of the same ranges from Tk. 19000 (in Manikganj) to Tk. 48000 in Munshiganj District.

- Average annual income per medium farm owning household ranges from Tk. 26500 (in Manikganj District) to Tk. 63000 in Mymensingh. It is exceptional in Munshiganj District of Tk. 83000. Annual expenditures for same households range from Tk.30300 (in Manikganj District) to Tk. 52000 in Mymensingh District with an exceptional one of Tk.65600 in Munshiganj District.

- Annual average income per large farm owning household ranges from Tk.41000 (in Manikganj District) to Tk. 185600 in Tangail District. Expenditures range from Tk. 60000 (in Manikganj District) to Tk.109000 (in Munshiganj District)

In Munshiganj District, remittance from family members working or having worked abroad has increased the level of incomes and expenditures, as well as income from the cash crops (potato).
Mymensingh District is an advanced district in the NCR, with good roads and railways, many population centres with more than 1000 people and many cash cops (jackfruit, bananas, sugarcane, etc.) which bring much profit. Manikganj is definitely the District of the NCR in the more dramatic situation. Incomes are poor, socio-economic conditions are poor, out migrations are important. It should be the District where to start implementation of FCD Project.

CHAPTER 10
DETAILED CASE STUDIES AND HOUSEHOLD BUDGETS PER DISTRICT AND PER TYPE OF HOUSEHOLDS

10.1 Landless Households ; A Presentation per District

10.1.1 Landless Households in Dhaka District (rural) (15 households).

- 3 out of 15 are not owner of their homestead.
- Minimum size of homestead : 0.01 ha
- Maximum size of homestead : 0.30 ha.

All homestead were damaged in 1987 and 1988 floods. People had to move for a period of 15 days to one month, either to relatives houses, high land, road or stayed on scaffolds and boats.

Most of households lost 2 to 3 months' incomes as daily labours and boatmen, in 1988 (average monthly income lost: Tk.1200). As a consequence, they increased their indebtedness.

2 out of 15 became landless as they incurred exceptional expenditures (health, repayment of loan). Others have inherited their landless status. 3 rent some land, as they still have some implements.

Cattle, poultry, and few homestead crop (fruits and vegetables) are source of incomes of women. Most of the members of the household take only 2 meals per day, and purchase foodgrain on a daily basis. Most of them have borrowed some money, either from relatives or from money lenders (rate 10% per month). Use of loan is mostly for food purchase.

Main wishes of men are more money to clear their debts, build a stronger house, be able to meet expenses for health, education and food and have more land, wishes of women are the same.

10.1.2 Landless Households in Gazipur District

In Joydevpur, Kapasia and Sripur thana, homesteads were mostly damaged in 1988. Causes of landlessness status are various:

- 3 households sold land some years back to cover expenditures, (marriage, health expenditure);
- 1 household lost his land in Rangpur District in 1988
- in 2 cases, father's land was too small to be divided
- in the remaining case, family is landless since a long time.

Those who sold land recently and have still some implements may operate some small plot of land under share-cropping contract.

Depending on the household composition (number of working members), nearly all of them have two different sources of incomes (daily labours + another job; constructions, small business, fishing, handloom etc.) Nearly all households rear cattle and raise poultry for selling and for family consumption. Only those (very few) who have sufficient homestead area get some income from selling fruits.

Main objective of saving money is to purchase a plot of land.

10.1.3 Landless Households in Jamalpur District

All households are landless from a long time (from father or grand father's time), except in Dewanganj thana where the 3 households lost their land in 1984 due to Jamuna river erosion. Except in Jamalpur Sadar thana(1), all other households faced difficulties in 1987 and 1988, during and after flood. Their house was damaged, they had to move to some other elevated place for 15 to 40 days depending on the village (they went to Bazar, Islamic Institution, Railway Station etc.)

Goat breeding and trading and poultry farming are considerable sources of incomes. Indebtedness of daily labourers increased after 1988 flood, as they lost incomes and had to repair their house.

Main wishes of people are ; solvency,money, food sufficiency, free health and education services, employment, a stronger house and if possible, land.

10.1.4 Landless Households in Manikganj District

Number of Household Interviewed: [21]

Half of the households are not owners of their homestead (including 2 widows head of hh who are living in relatives' house). All homesteads have been damaged during flood of 1987 and 1988, some in 1984 also. People either live for 2 to 3 months in some relative's home or stay at home on scaffolds, or on nearby elevated roads. Causes of landlessness are various: river erosion (Padma river), inheritance, khas land picked up by influent people. Main source of income is farm wages. Only 2 households had some very small plot cultivated on share-cropping and mortgage contract (42 bigha and 1.5 bigha).
Loss of incomes during 1988 flood were considerable between 2 to 3 months agricultural wages, which is equivalent to about Tk.1800 to Tk.2800, according to the type of daily work performed (daily wage in 1988: average = Tk.20).
Loss of goats and poultry were also considerable in 1988 flood for these people for whom these are a non-negligible source of income and of food consumption (milk + eggs).
In Shibalaya and Ghior districts, as examples, some villages are very poor, without any Social welfare Organization, and always suffer from inundation, even in normal years.

Main wishes of people (men + women) are :

- more money to clear their debts
- more food, a stronger house, health and education facilities, clothes, and land. (See case studies 4A and 4B)

10.1.5 Landless Households in Munshiganj District

Average Size of Household:

In most cases households become landless in father's time for covering household expenditures. 5 households out of 15 cultivate some very small plots of land. 9 out of 15 get incomes from fishing (either in open water or in jointly owned pond. All homesteads have been damaged in 1987-1988 floods; people had to live about 1 month on a platform in their house.

All households (except 1) have taken loans from different sources and at different interest rates. (family members, relatives, farmers, money-lenders, shop-keeper and Grameen Bank (3 only). Total amount borrowed by the 14 households is Tk.48900, which comes to an average loan per household of Tk.3500 approximately.

Purposes for taking loans are :

- food purchase
- household and health expenditures
- repayment of debts
- house repairing
- exceptional ones are :
  - purchase of one cow
  - marriage of daughter
  - potato cultivation.

Main wishes of people are : more money for solvency, more health facilities and better house, more loan facilities, and cultivating on share-cropping contracts (not easily available).

10.1.6 Landless Households in Mymensingh District (18 hh)

Average Size of Homestead 0.099 Acres

Situation of landless people interviewed in Mymensingh District is quite different, and somewhat better than those of Manikganj District. First of all, there are no damages to homestead due to flood, and no losses of incomes and periodical worsening of socio-economic conditions.

Nearly all heads of households became landless since father's time; they could not cover family expenditures or their land was too small to be further divided between sons.

Nearly all households have at least two different sources of incomes sometimes more.

- 9/18 are agricultural daily labours
- 8/18 are cultivators (either on their owned plot of land or on land taken on share-cropping or on mortgage).
- 5/18 have a small business

- 10/18 fish either in openwater or in their pond owned jointly
- other are drivers, cattle-breeder etc.

11 households only have taken loans, at different rates (15%, 20%, 50%/month depending on the pattern and loan duration. 1 hh has mortgaged his remainder plot of land to purchase a tubewell jointly with 2 other owners 1 hh has taken land on mortgage and given it out on share-cropping.

If people can save money, they would like to take land on share-cropping contract or on mortgage.

10.1.7 Landless Household in Tangail District

4 heads of hh are newly separated from father's household who could not give their sons any part of their small land. All other households are landless since father or grand father's time.

Flooding is different in each thana

Tangail Sadar	always submerged
Sakhipur	never submerged
Nagarpur	flooded in 1988
Mirzapur	flooded in 1981-87-88
Madhupur	flooded in 1981-87-88
Kalihati	flooded in 1981-87-88
Gopalpur	flooded in 1985-87-88
Delduar	flooded in 1985-87-88
Bhuapur	flooded in 1985-87-88
Basail	flooded in 1980,84,87-88
Ghatail	never flooded

10.1.8 Landless in Cluster Village

a) A Case of a Cluster Village Located 4 or 5 Miles from Mymensingh Built 2 Year Back.

There are 42 households, selected people are all landless from a long time. Some of them are widows. They have been given a "kutcha" dwelling unit [9] and 3 chicken but no land, no pond for fishing and washing. Even the border 30 cm wide along homesteads belongs to government, they can just plant 1 or 2 banana trees and grow some vegetables per household. 3 TW have been built (1 is already out of order).

Up to 42 hh
- 3 are share-croppers
- 1 is building contractor
- 1 is maintenance labourer for TW of Union Parishad
- 3 have rickshaws (income is less in rainy days)
- 34 are daily labourers.

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9 Construction of Non-permanent Nature

All would like jobs, all are in debts, they can only borrow money from money lenders, as their relatives are as poor as themselves.

b) A Cluster Village in Manikganj District (Harirampur thana)

There are 30 households in this cluster village. They all lost their land 13-14 years back because of river erosion in the same thana, then moved on char lands, where again they lost their land. Each household got 8 decimals of land, + a bamboo house with a corrugated iron sheets roof. All the 30 households are owners of the pond, where they bathe and fish.

Out of 30 heads of household, 4 are fishermen (fish prawns in rivers), 26 are agricultural daily labourers which means that seasonally they get Tk.20 + 2 meals per day. There are 3 TB for domestic purpose, Madrasa school has been destroyed by a storm.

Wishes of people (men and women): employment and some money to do some small business. A co-operative was started 7 months back, trying to collect Tk.10 per month/family. Even this small monthly saving is difficult to obtain from each family !
They can no more be share-croppers, as they were before, as they have no more bullocks and implements.

10.1.9 Conclusions on Landless

- Many landless households are landless since 3,4 decades or even more, which means that they cannot change their status within 2 generations.

- Incomes from farm are mostly small cattle (goat) trading and sale of milk, sale of poultry (children and eggs),more rarely sale of fruits as their homestead space is very small.

- Landless, who are only daily labourers, cannot fully meet their family expenditures and have a very low standard of living.

- For all landless household, food consumption is quite insufficient in the rainy season, which is the slack season and also the season when they are often ill.

- Some landless households are not even owner of their homesteads. Homestead plot is the last plot in property division that the father can give to his son.

- In Manikganj District, people have to find out shelter for a long period (2-3 months) in flood time.(in some places of Jamalpur, only for 1/2 to 1 month) of interest.

- Landless cannot take loan from traditional sources as they cannot repay. They can only get small loans from money lender, at high rate (10% month).

- Main wishes of landless are solvency, food sufficient strong house or house of their own, land, health and education facilities, employment.

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10.2 Small Farm Owners

10.2.1 Small Farm Owners in Dhaka District (20 Household)

17 household inherited land (86 plots but 1 household inherited 12 plots, average number of plots/household, 4,6). 8 households only could purchase land; 4 household had to sell land within the last 3 year period.

All households have agricultural implements and draft animals (Total number of cattle; 29 cows, 7 bullocks, 6 oxen, some small cattle also). In all households women have poultry.

17 households hired agricultural daily labourers, but mostly for weeding, harvesting and transporting crop. Only 1 household has a share in a STW. All households have some plots irrigated by STW or DTW. Irrigation charges are; 1/4 of crop yield from fields irrigated by DTW, Tk.700, Tk. 800 or Tk.1000 per bigha for irrigation from STW.

12 households had non-farm incomes : In 5 households, people were also farm wage - labourers. But only 5 households had a positive balance. All the other ones survive by taking loans from friends and moneylenders and by mortgaging some land or selling cattle.

Impacts of the last heavy flood of 1988 were; shortage of food, of seeds, of money, of agricultural inputs, sale of land, and diseases.

It can be said that 3 years after a heavy flood, small farmers have not yet, recovered and remain quite vulnerable.

10.2.2 Small Farm Owners in Gazipur District (20 Households)

17 households out of 20 have non-farm source of income. (different types of business, artisan, 1 fisherman). 7 households only had a positive balance, but 7 had a balance not too much disastrous. Only 6 household could sell some foodgrain, 12 had purchased some.

Main agricultural productions and types of land vary throughout the district. Irrigation requirements vary from place to place.

All households except one inherited land from father (128 plots = 6.7 household), 7 households purchased some land. 5 households sold land within lat 3 years. Nearly all households are equipped with agricultural implements 15 have ploughing animals; nearly all of them have poultry.

13 households hired wage-labourers to cultivate their land. In almost all cases, farmers ploughed their field themselves. Other farmers could not afford to pay for extra labourers.

10.2.3 Small Farm Owners in Jamalpur District (24 Households)

Economic situation of small landowners in Jamalpur District vary a lot depending on the location (which are thanas in the study for convenience of references in all socio-economic survey).

It can be said that the 2 variables which mostly influence the in economic status of households are : flood and non-farm sources of incomes.

If there are no non-farm sources of incomes, cattle trading is a profitable activity for men.

General Figures Obtained from Field Questionnaires

1. Up to 24 households, 19 have inherited land from father (all or part of land); 11 have purchased land; 6 have sold some plots of land within last 3 years.

2. All households, except those located in Jamalpur Sadar and Melandah thanas, have had their house damaged by flood. They had to find shelter for 15 days to 1 month. In Jamalpur Sadar, the union surveyed, Ramagachha, was not affected by flood but an area located half a mile to the south was much affected in 1988, with water as deep as 7 to 8 feet. Another part of the same union was affected by excessive rains in 1988. Cultivable lands were damaged, but not homesteads.

3. 4 households out of 24 had a positive balance in family budget at survey, during the monsoon 1991.

4. All households, except in Madarganj thana where they cultivate char lands, irrigate a part of all their land with modern equipment (STW, DTW, LLP). Only one farmer was owner of the well; another owned jointly with other family members; in 3 cases, owner was a relative (brother, uncle, father).

   Irrigation charges vary from one place to the other usual rates are :
   For STW Tk.500/bigha/crop = 2-3 months + fuel or Tk. 1000/bigha/crop = 2-3 months without fuel. (Before 1990, rate was Tk.400 - Tk.600/bigha/crop without fuel). Rates have increased following the increase of fuel price.
   For DTW Tk.520/bigha/crop and fuel in Sarishabari, 1/4 of total crop of irrigated plot.
   Every STW can distribute water to 7-8 cultivators (=30.35 bighas = 4 to 4.7 has).

5. 19 households out of 24 are well equipped in agricultural implements. 3 only have no cattle, 18 have poultry (men or/and women), 3 have a pond or a share in pond, 7 are fishing in open water.

6. 18 employ agricultural daily labourers to help them to cultivate their land, 2 have permanent labourers.

7. 11 have non-farm sources of income (small business salaries) 2 are fish-traders, 4 have off-farm incomes : farm wages rent of draft animals, 9 get substantial profit from cattle trading.

8. 15 households have taken loan.

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Most Profitable Crops According to Farmers

Most benefiting crops in view of farmers vary of course in different areas. They are:

- in Dewanganj thana :
  IRRI 11 in LL,
  BR 11 in MHL
- in Islampur thana :
  HYV in MHL (HYV T Aman)
- in Madarganj thana:
  A man B in VLL
  Local Aman T in LLL
- in Jamalpur thana :
  IRRI in MHL
  Jute in MHL
- in Melandah thana :
  Boro P. in MLL
  IRRI and Jute in MHL
- in Sarishabari thana:
  HYV Aman T + Mustard in MHL wheat and chilies in MHL
- **Wishes of Women**

Main wishes of women are better health and education facilities, more money and more loan.

Constraints of Farmers

With full agricultural equipment and irrigated land, no farmer is able to have enough income to cover his expenditures. Reasons for their situation are:

- high cost of fertilizers, farmers cannot afford to pay for enough fertilizers, so the production of their fields is less.
- high cost of rice before harvest, and low cost at harvest time.
- exceptional expenditures in some cases, which immediately burden family budget (health, wedding etc.)
- except in Jamalpur Sadar and Melandah they have not yet recovered from losses from 1988 flood and remain vulnerable and are in debts.
- food insufficiency from Mid-March to Mid-May.
- peak seasons in employment of agricultural daily labourers, which is mostly Mid-April to Mid-June.

There are many in-migrating labourers in the Jamalpur area during the monsoon season, coming from everywhere. But wages rates may increase and all farmers cannot afford to pay more. There is now a reciprocity system which is in practice (called Dapadar), it is somehow an exchange of farm labours.

Table II.23 indicates the type and amount of losses of farmers in heavy flood of 1988, and the percentage they represent to 1991 annual estimated household total income.

TABLE II.23

Type of Flood Losses (1988)

Thana	Balance in Family Budget 1991	Type of losses (L) and problems after 1988 flood	Amount of Losses (Tk)	1991 total hh income (Tk)	Losses in % 1991 income %
Dewanganj	- - - -	L Crop incomes, cattle, poultry L Poultry, loan, land mortgaged L Cholera L All crops,land debts increase Crops+house	10000 7500 25000 4250	6600 10500 13450 17275	
Islampur	- - - -	L Poultry,incomes from farm L Crops Debts increase L Crops loans decrease of all expenditure	? 4000 2000 3000	14725 200 1250 3000	
Jamalpur	+ + - -	- - - - Land mortgaged (exceptional expenditure) (Exceptional expenditure)	-- -- -- --	31600 73800 15000 36900	
Madarganj	- - - -	L Crops Nil part land mortgaged char land eroded L Char land eroded part land mortgaged L Wages & incomes as a vendee L Of land which became khas land L Of house land mortgaged Seeds, poultry	3000-4000 -- -- 3000, 4000	7600 3650 10400 7600	
Melandah	+ - - -	L Crops land mortgaged L Crops Land mortgaged Food deficiency	4000 12500 nil nil	42200 20480 19810 1000	
Sarishabari	+ - - -	L Crops, houses L Crops,money, food crisis L Crops L Crops land mortgaged L Goats (exceptional expenditure)	50000 ? 3000	36300 8800 13650	

Besides these estimated losses, other effects cannot be estimated:

- reduction of all household expenditures
- food deficiency
- disease
- losses of working days due to illness of any member of the household, which are nearly as numerous as losses of working days due to inundation of cultivated lands.

It can be seen from the table above that 11 households have mortgaged out a part of their land; in most cases, it was to cover expenditures (health, education, food, purchase of cows) and because land production is not good for 2 years. As a consequence land was mortgaged immediately after the 1988 flood.

10.2.4 Small Farmers in Manikganj District (28 Household)

1. All farmers (except a widow) are owners of their homesteads, but all have suffered a lot in the heavy flood of 1988, and also in 1987 flood. All had to take refuge on nearby roads, dykes, or on platforms in their house. They also had to repair their house.

2. Out of the 28 households, 25 have other sources of income than their farm: 19 from non-farm activities, 2 by selling irrigation water, 4 are also agricultural daily labours.

   It must be pointed out that no household living only from their farm production had a positive balance not even those getting some extra income from farm wages. This shows that agriculture alone cannot support the families of small landowners.

   The only case of self sufficiency is specific land owned is given on rent (1.35 acre), and landowner take land on share-cropping contract (0.81 acres).

3. 15 households out of 28, pay agricultural daily labourers to cultivate their land. But 4 out of 28 do not cultivate their land, which is either mortgaged or given on rent or share-cropping.

4. 19 households are well equipped in agricultural implements, 15 have cattle. But one of the best equipped farmers is not self-sufficient (got a negative balance).

5. Out of 24 households (as 4 do not cultivate their land), 16 use irrigation (STW and DTW); out of 16 users, 6 are fully or partly owner of the STW or DTW.

6. Out of 28 households 27 had inherited a part of or all their land and 14 had purchased some land.

7. Incomes from big and small cattle and from poultry are considerable. Usually big cattle is owned by men, small one and poultry by women but there may be variants. Use of big cattle is draught and work, then breeding, trading, selling of bye-products (milk and cowdung) and consumption of milk. Small cattle and poultry are for trading, breeding and consumption of goat milk, eggs and chicken (hen and ducks).

Irrigation charges to non-equipped farmers are:

- 1/3 of crop production of the plot irrigated by STW
- 1/4 of crop production of the plot irrigated by DTW

8 Out of 28, 13 households obtained a positive balance of family budget. 4 took loan for purchasing land, irrigation equipment and repair of house. Other households with negative balance took loan for family expenditures (5 only took loan).

Constraints of these Small Farmers

- Even productive farm households are vulnerable in case of any unexpected calamity or disaster. Indebtedness increases and it becomes more and more difficult to solve them.

- Impact of heavy flood can be estimated in losses of incomes, crop production, cattle, poultry, farm wages, and damages to homestead and houses.

But other impacts of flood are very important but cannot be calculated, in fact, they are not estimated by farmers because they cannot do it they are:

- incapability to repay loans and instalments
- food insufficiency for many months
- bad socio-economic conditions for affected people disruption in communications, health and education services or attendance, marketing difficulties, bad health etc.
- Dispatching of irrigation water to fields of farmers who are not owners of well is decided by STW or DTW's owners' fieldsmen. There are some conflicts in water distribution, but also untimely or insufficient distribution of water is due to technical problems or electricity failure.

Harirampur and Saturia seem to have few irrigation equipment. (no use of irrigation in Harirampur, only in 1 case in Saturia).

Wishes of Women

Whatever is the priority order, main wishes of women are always the same;

- More money, easier access to loan, flood protection to protect their house and homestead, better health and education facilities and land.

Best profitable crops

- peanut on sandy soils MLL in Daulatpur thana
- mustard and jute on MHL
- onions on MLL
- IRRI 8 paddy on MLL in Shibalaya
- Sugarcane on HL in Singair
- IRRI 8 paddy on VLL.

Approximate Estimation of Losses due to 1988 Flood per Small Farmer in Manikganj District

An attempt to estimate all types and amount of losses due to 1988 flood has been made for each small farm household in Manikganj District. It is also calculated in percentage of declared 1991 total income of household.

The consultant is aware of approximation of these data but nevertheless give them here to show which kind of detailed field study should be conducted to really know the impact of flood on standard of living of different type of households, depending on location in District, composition of household, and additional sources of incomes at that time.

In fact, losses are much more important as capability to repay loan and instalments, insufficiency of food consumption, consequences on health of family members are not evaluated.

Farmers know very well how many days of work or wages they lost, value of lost cattle, poultry, value of crop lost, repair of house.

TABLE II.24
Losses due to Flood 1988

Thana	Family budget balance in survey 1991	Losses due to flood in 1988		Total income 1991 ([10]) Tk.	Loss in % of total income 1991 (%)
		Amount Tk.	Nature L=Loss		
Daulatpur	+ + - +	14000 15200 18000 4400	Sold boat L Crops, poultry L Business sold house L Cattle, Poultry L Crops, poultry	22000 45800 7350 13450	64 33 245 33
Ghior	+ - - =	do not cultivate his land 8000 ? ?	 L Farm wages L Land Mortgaged 2 plots of land for food	 7520 9200 8000	 106 ? ?
Harirampur	- + - +	8000 ? 5000 1988 (5000 1987 9500 1991) 20000	L Farm wages L Farm wages L Crops L Crops L Dwelling unit	8520 8200 24000 30500	84 21 66
Manikganj	+ + - -	15000 (same in 1991) 10000(Same in 1991) 1500 ?	L Crop L Crop L Crop,poultry L Land	45300 38000 19300 23600	33 26 8
Saturia	- + + +	7000 3000 ?	L Crop L Crop no repayment of loan no money, no food	3960 30400 20000 13200	177 10
Singair	- - - -	? 25000 2400 Land given on rent	L Farm wages L Farm incomes L Farm wages	14450 49600 7200 13760	 50 33
Shibalaya	- + +	10000 8000 2500	L Crop L Crop L Wages L Incomes in selling trees & cattle	1120 7320 6150	 110 41

[10] Includes farms, non-farms, off-farm inocmes

10.2.5 Munshiganj District (20 Household)

It is not very easy to give a picture of small farm households here, as situations vary a lot. Out of 20 household, 6 had another source of income (3 got money from sons working abroad, 3 are wage earners); these people give their land on rent. 14 households have no agricultural implements, 7 of them rent some.

12 household are daily labourers or/and contractors for ploughing, or labourers paid on contract for specific task. 14 households have inherited all or part of their land, 10 have purchased some land, 2 sold some plots recently. Only 12 have few cattle for ploughing.

Nearly all of them have a pond. They are either full owners as have share, in the ponds. But these are are flooded each year and fishery is not a productive activity.

People in general do not complain much, as they grow profitable crops; potato in MHL, mixed aus and aman B paddy, and jute.

Main problem is to find a decent living place for 1/2 to 1 month during the flood period. Cattle is be rare due to lack of grazing lands.

10.2.6 Small Farmer Owners in Mymensingh District

1. As everywhere else in the NCR, small farmers cannot live on agricultural incomes only, (14 household have non-farm incomes) 9 households out of 24 had a highly negative balance in family budget (incomes/expenditures). 5 had a nearly balanced budget (rather negative). In these 16 cases, 2 were negative or nearly balanced because of exceptional expenditures (health treatment, repayment of loan).

   Finally, 10 households had a positive balance. All of them had non-farm incomes (business, trade, rickshaw puller (near Mymensingh), cottage industries, or selling fish). Even in 2 cases, balance was positive because they just sold land.

2. All households have inherited a part or all of their land from father 6 have purchased some land, 5 sold a part within last 3 years.

3. All homesteads were preserved from flood in 1988, but not all the farm lands. Farm land have been damaged during 1988 flood in Fulbaria and Bhaluka thanas mostly.

4. All households are more or less equipped with agricultural implements. 12 have traditional irrigation equipments. None is equipped with modern irrigation equipments 20 have cattle (cows mostly, for ploughing and milk), but also calves, even goats for trading. Most of the households have poultry, which belong to women in 16 households.

5. 12 households are fully or jointly owner of a pond, 12 (other or same) households catch fish in openwater. Selling fish has a peak season in Trishal thana.

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6. 10 households have mortgaged out a part of their land, for many different purposes;

   - to purchase food, a cow, to cover health or agricultural expenditures, to repay loan.

7. 13 households only have employed agricultural daily labourers to cultivate their fields. 12 have irrigated part of their land, from LLP or DTW belonging to farmers or co-operatives. Rate is Tk.800 and fuel/104 decimals for LLP, Tk.500/65 decimals for DTW.

8. 12 households have taken loan, from friends, relatives or Mohajans (none from any Bank or Society). In most cases loan have been taken to help in household expenditures (food purchase, health treatment).

Constraints

Increase of cropping intensity can be only one objective of a multipurpose development project. Much income is obtained from sources other than the farm. e.g owner of 1.04 acre cultivates 6.24 acres. No irrigation, no hired labourers.
Farm is well equipped in implements and cattle. Extra incomes come from money obtained as a daily labour and rickshaw puller, sale of vegetables and cattle trading. Balance is positive.

10.2.7 Small Landholdings in Tangail District (44 Household)

1. Out of 44 household, 36 have another source of income than farm:

   - 29 have non-farm incomes (business, trace, handloom in Delduar up., or any other salary). Out of the 29 households, 11 get in addition, substantial incomes from cattle trading, rent of draft animals or selling milk.

   - 5 are also agricultural daily labourer, one also gets income from cattle trading.

   - 2 households get income from cattle trading or rent of draft animals.
   - 8 households have no other source of incomes other than their farm; all had a negative balance.

2. Incomes from cattle trading, milk and poultry are considerable all over Tangail District. Incomes per household depend of course on total number of domestic animals but there is an average number of animals per farm considering that small farm holdings does not have much grazing land for cattle, and much space on their homestead for small cattle and poultry.

From the questionnaire it is seen that;

- 34 household up to 44 have cows, or oxen, or bullocks (1 or 2 cows in general: in 23 household
  (1 or 2 cows in general : in 23 household
  1 or 2 bullocks : in 10 household

1 or 2 oxen : in 10 household
calf or calves: in 18 household
sheep or goat : in few household only.

Poultry is usually kept and owned by wives of heads of households (nearly in all household).

Incomes/year from cattle trade may vary from Tk.1800 to Tk.5000 on the average (can go up to Tk.9000). Incomes from poultry vary from Tk. 500 to Tk. 1000 (meat and chicken), more for ducks.

3. 6 households have a pond or a share in a pond, 25 catch fish in openwater.

4. 39 household out of 44 have inherited part or all their land from father. 17 have purchased land. 7 have sold some land since the last 3 years. 21 have mortgaged out a plot or 2 of land to get cash money for urgent expenditures.

5. Except in Sakhipur thana and, to a less degree, in Kalihati, (depending on the location), losses of crops, incomes, and domestic animals have been considerable after the 1988 flood ([11]). Losses mentioned (type amount) are naturally related to the main job, main source of incomes of household. Depending on the case, big losses of crops or of poultry may be as much disastrous. Furthermore, loss of cattle hamper field ploughing next season. Loss of crops is also loss of seeds.

   Usual consequences of such disastrous situation is more indebtedness, either from banks, relatives, or from money lenders, farmers. (interest rates vary a lot).

   - mortgaging of some plots of land
   - sale of land, or cattle, or part of crop
   - food deficiency
   - necessity to purchase again poultry, food, at high cost.

6. 4 households have sold foodgrain without purchasing any. They are shop keepers or businessmen. 2 households have sold less than they purchased, 4 households have sold more than they purchased, 32 household have only purchased food grain, without being able to sell any part of food crop, 1 household neither sold nor purchased.

7. 37 households irrigate a part or all their land from STW or DTW. None is owner of any equipment, except one farmer who has 1/23 share in a STW. Irrigation charge vary from place to place and on the ownership (private farmers or co-operative society).

   - for STW irrigation: 1/4 crop of field irrigated, (in Delduar, Bhuapur, Ghatail, Basail, Kalihati)
     - 33% of crop, or 5/16 (5 bundles for 16 bundles) in Tangail, Nagarpur
     - for co-operative society DTW: 1/3 crop.

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11 In Basail up, there are no crops in kharif season, because excess of water. so there were no damages in 1988 flood.

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8. 32 households have agricultural implements, 28 employ agricultural labours to cultivate their land. (3 or 4 have mortgaged out or given out on share-cropping all their land and do not cultivate). But farmers employ in most cases only a few labourers to help them and not the total manpower usually required to cultivate one bigha. Many farmers say they would like to employ more labour if they could afford.

   Average required man power per bigha is:

   - ploughing/levelling/sowing : 15 m/4 days : Tk.25 + 3 meals
     or 20 m/2 days: Tk.40. + 3 meals
   - ploughing/levelling/transpl.: 20m/2 days: Tk.20 + 2 meals
     15m/4 days : Tk.25 + 3 meals
   - weeding : 8 m/4 days: Tk.20 + 2 meals
     10 m/4 days: Tk.25 + 3 meals
   - harvesting/transport of crop: 8m/1 4 days: 30th + 3 meal
     12m/4 days: Tk. 30 + 3 meals
   - Threshing 8 meal: Tk.30 + 3 meal
     7 meal/4 days: Tk.30 + 3 meal

   Many farmers employ only 2 or 3 daily labour per cultivation operation.

9. Half of the households have taken loan. Others do seasonal business, mortgage land, take small loan from farmers and live from hand to month.

10.3 Medium Farm Owners

10.3.1 Medium Farm Owners in Dhaka District (15 Household)

All households except one inherited land from father(100 plots) 8 households purchased land; but some a very long time ago. 5 households are partly owner of a STW or DTW. Cattle is not much important only (10 households have some; total effect: 30 (bullocks, cows, oxen).

14 households have poultry (owned by women).

13 households had non-farm incomes (6 households had remittance from abroad as some family members were working abroad). 10 households a had positive balance. 9 households got incomes from orchard (sale of fruits, tree, vegetables). 4 households have 1 or 2 permanent labourer living in their homestead.

10.3.2 Gazipur Medium Landowners(15 Household)

9 household out of 15 have non-farm sources of incomes. 10 households either cultivate less land than owned, or no land at all (given on share-cropping or on mortgage). Reasons why are various, depending on conjunctural family situation (disease of head of hh, repayment of debts.)

Too many variables have to be included in the study of farm balances, each of which interfere on a small size sample.

Sources of incomes are numerous: business, money from sons working abroad,cattle trading,sale of fruits (jackfruit) trees, fishing. This is reflected in the number of households who could sell foodgrain from their field production: 10 households out of 15 households.

The area is not affected by flood but by excessive rains (in 1991 for example) and drought. Therefore some cultivated land may suffer from excessive rain, but dwelling units are not damaged.

- 13 households inherited land from parents (83 plots all together) 13 households purchased land (79 plots) 3 households sold 1 plot within the past 3 years.

- 2 households have no implement and no draft animals, they give all their land on share-cropping. Total number of cattle is very few: 28 (bullocks, cows, oxen). Women own and get income from poultry in nearly all households.

- Only 8 households hired agricultural daily labourers. Others either cultivate themselves, or do not cultivate their land. (see case studies 17A,B).

10.3.3 Jamalpur District(18 Household Medium Landowners)

1. 7 households out of 18 have non-farm sources of incomes.
   6 households get considerable profit from selling cattle and poultry. (average: Tk.4000 - Tk.5000/year/cattle trading, average: Tk.1000 - Tk. 2000/year/poultry).

   All households getting extra non-farm incomes could sell a part of their paddy production. None had to purchase foodgrain to feed the family. This is not the case of households without non-farm incomes but with incomes from cattle and poultry, as all had to purchase foodgrain.

   Positive or negative balance does not mean much in the case of medium farm owners, as many healthy households had self-sufficiency but a negative balance, because they took large amount of loan for exceptional expenditures.

   None of the purely agricultural households had a positive balance. 5 could sell some part of crops but 2 of them again had to purchase foodgrain.

2. 15 households have inherited land, 10 have purchased lands, 4 have sold land during the last 3 years. 16 households are well equipped with agricultural implements. 14 households have some cattle for ploughing. In 15 households women own poultry. 3 household are jointly owner of a pond, 10 are used to catch fish in openwater.

3. 12 households have given out some plots on mortgage to get some cash money for special urgent expenditures, specially after 1989 flood.

4. Only 2 farmers have no irrigated land. Only 4 farmers do not employ agricultural daily labourers to cultivate their land. 12 households declared loans, but others take small loan from time to time from neighbours.

Main Losses and Problems due to 1988 Flood

Loss of land, loss of crops and agricultural incomes, land mortgaging, indebtedness, damages to houses (except in Jamalpur and Melandah thanas).

10.3.4 Medium Landowners in Manikganj District

In a small sample, it is very difficult to find out relations between three variables; sale/purchase of foodgrain, positive/negative balance, non-farm source of incomes. It might be that households who sold much crops were also those with a positive balance, but again, exceptional features may interfere to disturb direct links between the two (as for example wedding, disease treatment expenditures).

Out of 21 households, 11 had non-farm incomes, 2 were also employed as daily labourers. 10 have declared to have taken loans. Others used to take small loans or find some other sources of incomes to purchase food on a daily basis.

1. Out of 21 households, 20 have inherited land from father, 13 have purchased land, 7 had to sell land in last 3 years.

2. 20 households are equipped with agricultural implements, 1 has a Power Tiller. 19 have cattle, for ploughing which give also some other sources of income (milk, trading, breeding), 18 have poultry (men or women). 5 have a pond, but they are always over flooded.

3. Only 14 households irrigate a part or all their fields with STW, DTW. 2 have a share in a STW and DTW.

4. 11 households have mortgaged out a part of their land.

5. 17 households pay regularly agricultural daily labourers to help them in cultivation of their fields. 6 households have permanent agricultural labourer (or cow boy).

6. Irrigation charges are: Tk.200 + 1/4 total crop for irrigation from DTW or Tk.405/bigha. 1/4 crop for irrigation from STW.

Constraints

Some farmers do not find it profitable to cultivate land because of high cost of inputs (fuel for irrigation, fertilizers).

Even many medium farmers live day to month. If they do not take "traditional loans" (Refer to question no.28.2 in questionnaire), that does not mean that they did not need to take loan, but on the contrary that they cannot afford to take loan. To purchase food, they take take some very small loans for a short duration from neighbours, they rent draft animals, sell some crop, work as daily labourer, and do small business.

10.3.5 Medium Landowners in Munshiganj District (15 Household)

Efficiency of medium size farm owned in Munshiganj District cannot be obtained without an in depth agro-economic study of some farmers, as main income are derived from three main sources:

- potato cultivation
- business
- work of some members of the family abroad in gulf countries.

Farming here is completely different than in the other parts of the NCR, environment is also completely different as main problem is a drainage one.

1. Only one household did not mention any non-farm income. He may well have forgotten to do it. All the others are involved in some kind of business (1 is daily labourers). 11 had a positive balance.

2. Land is inherited in 13 cases: (77 plots = 6 plots household) 9 households purchased land (31 plots), only 2 households sold land within the last 3 years.

3. Households have nearly no implements to cultivate (4 households only), and no cattle for ploughing. Land is ploughed on power-tiller contract, and cultivated by wage labourers. 5 households employ permanent labourers. 12 cows are owned by 7 household mostly for milk production. 10 households also have poultry (women business). 13 households have a pond (fully or on share), they are overflooded each year and used mostly for domestic purposes. (washing and bathing). Few land is irrigated, depending on local physical conditions.

   Main problems, besides drainage, are:

   - water management for better use of chemical fertilizers
   - slack season for employment of young people
   - indebtedness (see case study no. 20)

10.3.6 Medium Farmowners in Mymensingh District (18 Household)

9 households out of 18 got non-farm incomes, 2 more earned some money as farm wage labourers. 9 households have a positive balance, besides having sold a part of their foodgrain crops. (14 household sold a part of this foodgrain crops, 6 only purchased some).

All households inherited land from their father (totally 173 plots = 10 plots (household) 10 households purchased land (52 plots). 4 had to sell land within the last 3 years. 15 households out 18 have agricultural implements, others gave land on share-cropping. Total capital is not much: 15 households owned some cattle: 16 bullocks, 24 cows and some calves). Only 10 households have declared some poultry owned by women.

Only 3 households did not hire any labourers for cultivation, 5 households had a permanent agricultural labourer. 6 households are owners (fully or on share) of irrigation equipment.

- 4 of a DTW (share 1/25, 1/18, 1/17, 1/12).
- 2 of a LLP.

13 households out of 18 have irrigated a part or all of their fields. Fishing is an important activity here, as (4 household have a pond or a share of a pond in which they fish. Fishing Department started activities this year.

Wishes of these medium size farmers are :

- more DTW and electricity
- health facilities, and security
- digging of canals
- more fishery activities.

Among households having a positive balance, 2 sold land last year, on the contrary, among households with a negative balance, 2 purchased land last year.

10.3.7 Medium Landowners in Tangail District (33 Household)

1. Out of 33 households, 20 have non-farm incomes (business, wage-earners, pensioners, cottage industry workers service). 2 of them also sell irrigation water. 4 households sell irrigation water but all do not have a positive balance due to exceptional expenditure (sister's marriage). 4 households mostly live on cattle trading, in Sakhipur thana where there are no irrigation facilities and where HYV Aus and Aman crops are not grown.

2. Out of 33 households, 17 had a negative balance, 13 of them having sold foodgrain. 15 had a positive balance. 1 had an approximately balanced budget.

3. 13 households have sold foodgrain but did not purchase any. 7 households have sold more foodgrain than they purchased 4 household have less foodgrain than they purchased only 6 households have purchased foodgrain without selling anything.

4. 13 households declared to have taken loan from Bank, Society, relatives or money lender. Other farmers manage to earn some daily wage from place to place and time to time, borrow some small amounts of money,or sell land.

5. 15 households mortgaged out some plots of land to cover their cash needs and expenditures. 3 have taken some plots on mortgage, to help in the same way other farmers.

6. 31 households out of 33 have inherited land from father. The total number of plots inherited is tremendous. 266 plots - 8.6/household on average. 19 households have purchased 109 plots of land = 5.7 on average, per household. 7 households have sold plots within the period of last 3 years.

7. 29 households are well equipped in agricultural implements. 11 have traditional irrigation sytem. 9 are fully or partly owner of a STW or DTW (6 on share basis). 28 households have cows, bullocks or oxen to plough their fields [12], 1 or 2 cows on average, very rarely 3 cows. Total number of animals owned by 28 household:

   - cows : 39
   - bullocks : 13

In nearly all households women are owner of poultry. Average annual income is estimated to be Tk.400 to Tk.1000. 17 households have a pond or have a share in a pond, or a tank; but fish production does not seem to be much; some ponds are dry in dry season 16 household catch fish in openwater.

8. Nearly all households (except 3) hire some agricultural daily labourer to cultivate their fields, but not always for all cultivation operations. Ploughing is often done by household members. The number of labour employed depends on 3 conditions:

   - presence, in homestead, of permanent labours
   - type of work to be performed, amount of weeds
   - financial situation of farmer, as in peak season, manpower is more expensive. Wage rates increase from Mid-April to Mid-June, because of labour shortage.

   12 farmers have employed 1 or 2 permanent labourers, who cultivate their land and work as cow-herds. If the permanent labour work in the fields as well as tend cows, his salary is on the average Tk.4000/year, + 3 meals + clothes.

   It must be noted that many farmers have another activity which is time-consuming; that is the reason why they employ permanent labourers. It can also be noted that "direct farming" is preferred, here, to "indirect farming" or share-cropping.

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12 and for breeding & trading & milk selling
- oxen : 14
- calves : 11
- sheeps & goats : in 9 households.

9. Except in Sakhipur thana all farmers irrigate a part or all their land, from STW in 26 household, from DTW in 4 cases. Irrigation charges are: 1/4 of crop in most cases for STW water (there are variants:5/16 of crop in Mirzapur thana, 35% of crop in Nagarpur up, 1/4 of crops + Tk.100 in Gopalpur up etc.)

10.4 Large Farm Owners

10.4.1 Dhaka District

79 plots of land are owned, 58 have been purchased from years 1960s, progressively. 3 plots only have been sold. All households are living from business as well as from farm resources. All have a positive balance, except 2 of them who just borrow some money to purchase land and STW, otherwise, usually, balance is more than positive. Only 3 households are owners or part owners of a STW. 7 households have an orchard, 8 a pond. Total number of cattle own 33 (without small cattle). 7 households have permanent or temporary labourers living at home.

10.4.2 Gazipur District (10 Household)

- 200 plots are inherited by 10 households (= 20 household/plot on average)
- 57 plots have been progressively purchased since years 1960 (1)
- Total number of plots owned: 257 (= 25.7/household on average)
- 7 plots only have been sold last 3 years.

On the contrary of what could be observed in Manikganj District, large farm owners, here give a lot of land on share-cropping contract:total of 111 plots = 43% of plots owned.

These farmers are more businessmen than farmers, have no agricultural equipment (no implements and no cattle), and much land (more than 3.5 ha). Farmers who cultivate a part of their land have permanent labours at home. Men are paid Tk.6000 to Tk.8400/ year, women, Tk.600!!!, they hire additional daily labourers.

- 6 households have an orchard, 5 have a pond
- Total cattle owned is 27
- 5 households are owner or part owners of a STW, DTW, LLP

(1) One farmer owns and cultivates [56] plots; 4 other ones own and cultivate more than 30 plots.

10.4.3 Jamalpur District (12 Household)

179 plots are inherited, which represents, 15 plots/household. Only 6 households purchased land (35 plots). Only 3 households sold land in the last 3 years. 9 households are owner of a STW. Only 35 plots are given out on share-cropping contract, and 7 plots are mortgaged, some of them being still cultivated by owners.

All households except one have permanent labourers staying full year at home. 10 households had a positive balance, even though many of them had no farm income. All household hired agricultural daily labourers, for all cultivation operations. Only 1 household purchased a small amount of foodgrain. All others have sold foodgrain.

10.4.4 Large Farmowner in Manikganj District. (14 Household)

- Plots inherited: 187 (13.4 plots household. Plots purchased: 73 (between 1860 and 1991) total 260. Plots sold last 3 years (4).
- The total plots cultivated by owners themselves : 216 = 83%.
- Total cattle owned : 30 cows, 16 bullocks, 7 oxen.
- 7 households have an orchard, very few have a pond for fishing
- 6 households fish in openwater.
- 8 household have at home 1 or more permanent labourers and maid servants - [13] Agricultural permanent servant does the ploughing operations. For other operations, daily labourers are hired. 2 households are owners of a Power-Tiller.
- Total plot given on share-cropping : 35, on mortgage 7. This gives few opportunities to small farmers to find land to cultivate on share-cropping contract.
- Only 3 households are owner or joint owner of a STW or DTW.
- 8 households had non-farm incomes, 4 households had off-farm incomes (rent of draft animals, sale of irrigation water).
- Nearly all (except 1) households sold a big part of their crop production, but 6 of them finally had a negative balance (=income do not cover expenditures). Only 4 households took loan.
- Size of family is much bigger than the average in the country or the NCR, like for all big land owning households in the NCR. Average size is 8.6, but there are 9 families of 9 members or more.

Some Basic Informations

- 59 plots have been inherited, 70 purchased by 10 household. Dates of purchase started in 1960, then went on progressively until recently. Only 2 plots were sold recently.
- 8 households have a pond, 3 an orchard.
- Only 26 plots were given out (by the some owners) on share-cropping contract, 18 were given out on rent, 14 are mortgaged but are still cultivated by the owners.

All Agricultural Operations are Made on Contract Basis.

- Ploughing, levelling: by tractor (PT) - Tk. 4000/acre
- Weeding: 30 daily lab./5 days/Tk.50 = Tk.7500/acre
- Harvesting, transport of crop : 30 daily lab./5 days/acre get 1/6 the of harvest.

13 Salary rate for male permanent lab: Tk. 5,000 to Tk.10,000 & clothes & meals year maid servant are sometimes not paid: they get clothes and food.

Village Rahatpur in union Baghutia (Daulatpur thana) and Gauribardia in Kanchanpur union (Harirampur thana) are flood affected and much damaged and threatened by river erosion. In the village of Mailagi (Ghior union and Ghior thana), and village Pasehim Borondi Chak (Saturia thana, Dhancora union), most of the households are landless and small farmers, and very poor.

10.4.5 Munshiganj District (10 Household)

In this district (or area) nearly all large farmowners are businessmen, who cultivate their land with the help of daily labourers paid on contract basis. They have few or no implements and cattle. But this system does not give opportunities to the numerous landless to obtain some land to cultivate on share-cropping contract.

Some villages (as in Tongibari thana) are not equipped with irrigation systems. Potato and tobacco and jute are the main sources of income. B.Aman and B.Aus do not grow well. Many households are not self-sufficient in foodgrain, but get much income from non-farm (business) activities. Loans are taken by these farmers, to purchase Power-Tiller, for potato cultivation inputs and to invest in big business.

10.4.6 Mymensingh District (12 Household)

1. 11 households have inherited altogether 141 plots (=12.8/household on average); 10 households have purhased 107 plots (=10.7/household on average),4 households sold some land recently. 8 plots only have been purchased in 1990-1991. Purchase of some plots started in the 1960's. Total number of plots owned by 12 household: 248 = 20.7/household.

2. Total number of plots cultivated by owners: 233 = 94%. 19 plots are given on share-cropping, 10 are mortgaged out.

3. Total cattle for all households is : 23 cows, 17 bullocks, 6 oxen + some calves and goats. Women, as elsewhere, get profit from poultry.

4. 10 households get good profit from pond fishery. There is a big fish farm in Trishal thana. 5 household have orchards.

5. 6 households have a share in DTW or LLP, 2 are full owners of one. Traditional irrigation is also practiced.

6. 9 households have 1 or 2 permanent agricultural labourer (Male) or servant (Female). All of them hire agricultural labourer.

7. All households had a positive balance usually. (In 2 cases exceptional expenditures made it negative provisorily). In only 6 households non-farm incomes are obtained, from business, some working and sale of irrigation water).

8. No household purchased any amount of foodgrain.

All except one (the exceptional case of health treatment to pay) sold foodgrain. Only 1 household declared a loan, to purchase land.

Wishes of people are: dredging of rivers in some places (Fulbaria), but no embankment, education facilities, more irrigation equipment and agricultural extension services.

10.4.7 Big Landowners in Tangail District (22 Household)

1. All households have inherited all or a part of their land (255 plots of land totally, which makes an average of 11.6 plots/household). 19 households have purchased land, a total of 208 plots (=11/household) 5 households sold some land (12 plots) within the last 3 years. Totally, these 22 households own 463 plots of land, which makes an average of 21 plots/household! Many plots have been acquired in the 1960-1970 period, some other ones since the beginning of 70's to 80's. Few are purchased very recently.

   Out of 22 households, there are 8 extended families, 3 with 20 to 21 members. There are also several very small sized households, composed usually of old people who have 2,3 or 4 permanent labourers (Men & Women) living at home, and who give their land on share-cropping contract.
   That is why giving an average size of household is of absolutely no meaning in the case of such type of households.

2. All households except one who does not cultivate any more have much agricultural implements, and ploughing and draft cattle. Total cattle owned is; 37 bullocks, 49 cows, 14 oxen and calves and goats. Income from cattle trading may be on the average from Tk.3000 to Tk.8000/year/household. All women (or nearly) get income from poultry (on average Tk500 to Tk.3000 for chicken and eggs) per year.

   15 households have 1 or several permanent labourers living at home, male or female. Yearly salary is Tk.3000 to Tk. 6000 and meals and clothes for men, Tk. 3000 to Tk. 3500 for female. Nearly all farmers hire daily labourers, except for ploughing operations.

3. 10 farmers are full owners of a STW or DTW. 4 farmers are joint owners of one. All farmers irrigate part or all their land.

4. 5 households have a pond more or less suitable for pisciculture, but 11 catch fish in open water. 11 households have an orchard, from which they get substantial incomes.

5. The total number of plots cultivated by the owners themselves is :293, = 63.3% of the total number of plots owned. Approximately 140 plots (30.2%) are given out on share-cropping). 49 are mortgaged out (10.6%) (Bandhaki and khat types of mortgages). Main purpose of mortgaging land is big investments either in business or in construction of a house in the urban area; it may also be for covering exceptional expenditures, for election or wedding of a daughter.

6. 5 households purchased some foodgrain, 19 sold much. Only 3 households had no non-farm incomes. 8 household had a negative balance, nearly in all cases just because they had to incur exceptional expenditures (purchase of land marriage ofdaughter).

Besides business, sale of cattle and of irrigation water are good sources of incomes. In Basail and Bhuapur Thana nobody grows any more aus and aman paddy crop, because of excessive water logging and damages to crop in 1988. In Madhupur thana there is no concern over flood.

In all other thanas, farmers lost considerable amount of crops and incomes in the flood of 1988, but they could recover through sale of land and cattle, without taking, big loans.

That makes all the difference with medium and small farmers, who have less property to sell and have to take loans or borrow money in bad years.

Very few large farmers had taken loans, except for cattle purchasing.

CHAPTER 11
HOUSEHOLD BUDGETS

11.1 Presentation of Some Household Budgets per Different Types of Households and per District

TABLE II.25

Landless Household Budget - Dhaka District

Household composition	:	7 members		
Household sources of incomes	:	Head of household is agricultural daily labourer wife sell poultry & by-products 2 sons are boatmen		
Annual income (estimation)	:	poultr	Tk.	1500
		farm wages	Tk.	12000
		non-farm wages	Tk.	2400
		Total	**Tk.**	**15100**
Annual expenditures (estimation)	:	food	Tk.	10600
		clothing	Tk.	1000
		construction & repair of	Tk.	500
		Dwelling	Tk.	500
		religious ceremonies	Tk.	1000
		health	Tk.	800
		transportation		
		Total	**Tk.**	**14400**
Loan from relative			Tk.	1000
Household Composition	:	4		
Household sources of income	:	Head is daily labour		
Annual income	:	Labour	Tk.	5475
Annual expenditures	:	food	Tk.	9000
		clothing	Tk.	1500
		fuel	Tk.	180
		Health	Tk.	200
		transportation	Tk.	50
		Total	**Tk.**	**10930**
			Tk.	4000

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TABLE II.26
Landless Household Budget - Gazipur District

Household composition	:	Member:	2 and & 3 children	
Household sources of income	:	Agricultural daily labour		
Annual income	:	wages	Tk.	8500
Annual expenditures	:	food	Tk.	6500
		clothes	Tk.	1000
		repair of DU	Tk.	500
		religious ceremonies	Tk.	300
		health	Tk.	2000
		Total	**Tk.**	**10300**

The household has no land for homestead only a house no cattle no poultry no other sources of incomes and takes loans.

TABLE II.27
Landless Household Budget - Jamalpur District (Jamalpur Sadar)

Household composition	:	6 members (3 adults)		
Household sources of income	:	Agricultural wages		
		poultry	Tk.	--
Annual income	:	wages	Tk.	10000
		brokery	Tk.	5000
		sale of poultry	Tk.	500
		sale of eggs	Tk.	300
		Total	**Tk.**	**15800**
Annual expenditures	:	repairing of house	Tk.	800
		rice	Tk.	9760
		wheat	Tk.	1000
		pulses	Tk.	300
		fish	Tk.	260
		vegetables	Tk.	500
		sugar	Tk.	100
		eatable oil	Tk.	300
		dry fish	Tk.	400
		self onion-chilli	Tk.	900
		birri-cigarettes	Tk.	400
		education	Tk.	1000
		health	Tk.	300
		clothing	Tk.	1000
		religious ceremonies	Tk.	300
		kerosene	Tk.	300
		Total	**Tk.**	**16620**

Loan Tk. 500

No loss of income due to flood (in Jamalpur Sadar)

TABLE II.28
Landless Household Budget - Manikganj District

The poorest of the poor				
Household composition	:	2, old person & 1 girl		
Household sources of incomes	:	poultry bamboo selling girl is a house-servant		
Household annual income	:	poultry	Tk.	600
		farm wages	Tk.	500
		bamboo selling	Tk.	1000
		help from son	Tk.	1000
		Total	**Tk.**	**3100**
Household annual expenditures	:	food	Tk.	4250
		cloths	Tk.	500
		fuel	Tk.	120
		health	Tk.	200
		Total	**Tk.**	**5070**

The household is too poor to take loan from anybody.

TABLE II.29
A Landless Household Positive Balance

Household Composition	:	5 members		
Household source of income	:	agricultural wages		
Household annual incomes	:	poultry	Tk.	2500
		farm wages	Tk.	6740
		non-farm wages	Tk.	1500
		Total	**Tk.**	**10740**
Household annual expenditure	:	food	Tk.	3320
		clothing	Tk.	1500
		fuel	Tk.	300
		repair of D.U	Tk.	250
		marketing	Tk.	2000
		religious ceremonies	Tk.	150
		health	Tk.	500
		education	Tk.	50
		Total	**Tk.**	**9246**

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TABLE II.30
Household Budget - Munshiganj District

Munshiganj Sadar Upazila			
Household sources of incomes	:	7 decimals of land cultivated (jute,potato) Workshop labour in Dhaka	
Annual income	:	jute & potato land selling labour **Total**	Tk. 5700 Tk. 45000 Tk. 12000 **Tk. 62700**
Annual expenditures	:	food other household expenditure wedding religious ceremony,health,education seed & fertilizer **Total**	Tk. 26000 Tk. 3400 Tk. 35000 Tk. 1350 Tk. 1000 **Tk. 66750**

No loan

TABLE II.31
Household Budget - Mymensingh District (Muktagacha Upazila)

Household composition	:	1 adult		
Household incomes	:	agricultural wages & openwater fishing		
Annual income	:	fish catching farm wages **Total**	Tk. Tk. **Tk.**	6000 5000 **11000**
Annual expenditures	:	food cloth fuel **Total**	Tk. Tk. Tk. **Tk.**	5000 300 100 **5400**
Small Famers: Jamalpur District (Islampur Upazila)				
Household composition	:	4 members : 2 adult, 2 children		
Household incomes	:	calves	Tk.	200
Household expenditure	:	farming expenditures cattle feed household expenditure social & others **Total**	Tk. Tk. Tk. Tk. **Tk.**	2200 1200 4835 3200 **11435**
Loan Owned land Irrigated land (by STW) 0.65 acres All crop production is consumed Head of household involved in small fish trading	: :	Tk. 500 0.65 acres		

TABLE II.32

Details on Household Expenditure

Details on household expenditures			
Farm expenditures :	seeds	Tk.	300
	fertilizers	Tk.	400
	insecticides	Tk.	100
	irrigation costs	Tk.	1000
	processing of paddy	Tk.	200
	transportation cost	Tk.	200
	cattle feed	Tk.	1200
	Total	**Tk.**	**3400**
Housing expenditures :	construction of house	Tk.	800
	utensils	Tk.	200
	taxes	Tk.	15
	land revalue	Tk.	20
	Total	**Tk.**	**1035**
Food expenditures :	rice	Tk.	2400
	pulses	Tk.	2400
	fish	Tk.	500
	meat	Tk.	200
	vegetables	Tk.	300
	edible oil	Tk.	100
	Total	**Tk.**	**3800**
Social expenditures :	gifts	Tk.	300
	education	Tk.	200
	health	Tk.	300
	clothing	Tk.	600
	entertainment	Tk.	200
	religious ceremonies	Tk.	1000
	social ceremonies	Tk.	200
	transport	Tk.	250
	kerosene	Tk.	150
	Total	**Tk.**	**3200**

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TABLE II.33

Small Farmers Household Budget-Manikganj District (Daulatpur Upazila)

A positive balance (with non-farm incomes)			
Household composition :	5 members: 2 adult & 3 children		
Household annual incomes :	crops	Tk.	12000
	business	Tk.	10000
	Total	**Tk.**	**22000**
Housing annual expenditures :	household	Tk.	6500
	social	Tk.	1500
	farm	Tk.	6260
	Total		**14260**
Bank loan : Tk. 8300, for purchase of land			
Land owned : 1.98 acres (9 plots)			
Land cultivated : 2.64 acres (10 plots)			

TABLE II.34

Small Farmers Household Budget-Manikganj District (Singair Upazila)

A negative balance (without non-farm incomes)			
Household composition :	13 members: 8 adults, 5 children		
Household annual incomes, farm :	jute	Tk.	2800
	sugarcane	Tk.	35000
	off-farm sale of irrigation water	Tk.	10800
	Total	**Tk.**	**49600**
Household expenditures :	farm expenditures	Tk.	33300
	food expenditures	Tk.	6620
	Social expenditures	Tk.	11500
	Total	**Tk.**	**57720**
Loan : 45000 Owned land : 1.87 acre cultivated land : 4.34 acres Owner of all agricultural implements and of 1 STW + 1 rice mill.			

TABLE II.35

Small Farmers Household Budget-Munshiganj District (Munshiganj Upazila)

A negative balance(without non-farm incomes)				
Household composition	:	8 members: 6 adults, 2 children		
Household annual incomes	:	rate & potato	Tk.	35400
		pumpkin	Tk.	1500
		farm wages	Tk.	3600
		Total	**Tk.**	**40500**
Annual expenditures	:	food	Tk.	27000
		clothing	Tk.	2000
		other household	Tk.	3300
		social expenditures	Tk.	13000
		rent on land	Tk.	2400
		seeds & fertilizers	Tk.	10000
		transport	Tk.	1000
		Total	**Tk.**	**58700**
Loan	:	5000		
Land owned 1.05 acre	:	15 plots		
Land operated	:	1.47		
Land cultivated 1.33 acres	:	16 plots		
Cultivable land & homestead land				

TABLE II.36

Small Farmers Household Budget-Munshiganj District (Lauhajang Upazila)

A positive balance (with non-farm incomes)				
Household composition	:	6 members: 4 adults & 2 children		
Household annual incomes	:	crops : mustard	Tk.	3500
Farm		spices	Tk.	8200
		jute	Tk.	2700
		Total	**Tk.**	**14400**
		poultry	Tk.	1000
		milk	Tk.	3600
		non-farm business	Tk.	18000
		sale of fish	Tk.	3000
		Total	**Tk.**	**40000**
Expenditures	:	household	Tk.	14920
		social	Tk.	3800
		farm	Tk.	10100
		Total	**Tk.**	**28820**
Loan	: Tk.5000 for purchase of inputs for crop cultivation			
Owned land	: 0.69 acres 1 plot			
Cultivated land	: 4.05 acres 6 plots			
Operated land	: 4.37 acres (with homestead land)			

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TABLE II.37

Small Farmers Household Budget-Mymensingh District (Bhaluka Upazila)

A more or less balanced family budget (with non-farm incomes)			
Household composition :	6 members: 2 adult, 4 children		
Household annual incomes :	farm: Jute	Tk.	1500
	livestock	Tk.	900
	poultry	Tk.	360
	off-farm	Tk.	1000
	wages	Tk.	7000
	non-farm	Tk.	10760
	Total		
Total annual expenditure :	household	Tk.	9200
	social	Tk.	1600
	farm	Tk.	300
	Total	Tk.	11100
No loan Owned area : 0.78 acres (also cultivated) he can grow only 1 corp a year Land is irrigated by LLP (not owner)			

TABLE II.38

Small Farmers Household Budget-Mymensingh District (Bhaluka Upazila)

A nearly balanced family budget without non-farm income but with, exceptional expenditure			
Household composition :	8 members: 7 adults, 1 child		
Household annual incomes :	farm crops	Tk.	15000
	livestock	Tk.	6000
	poultry	Tk.	6000
	ginger	Tk.	1000
	Total	**Tk.**	**28000**
Household annual expenditures :	household	Tk.	12700
	social	Tk.	2000
	farm	Tk.	7000
	repayment of loan	Tk.	7500
	Total	**Tk.**	**29200**
Land owned : 3.36 acres Land cultivated : 2.46 acres Irrigated by LLP (not owner)			

TABLE II.39

Small Farmers Household Budget-Mymensingh District (Trishal Upazila)

A positive balance, with selling of fruits and vegetables and non-farm incomes			
Household composition :	6 members: 2 adults, 4 children		
Household annual incomes :	farm: fruits	Tk.	10000
	vegetables	Tk.	5000
	non-farm: business	Tk.	5000
	non-farm wages	Tk.	8000
	Total	**Tk.**	**28000**
Household annual expenditures :	household	Tk.	10500
	social	Tk.	6700
	farm	Tk.	8500
	Total	**Tk.**	**25700**
Loan : Tk.3000 Land owned : 1.25 acres Land cultivated : 2.00 acres (without irrigation)			

TABLE II.40

Small Farmers Household Budget-Mymensingh District (Trishal Upazila)

A positive balance of a fish trader			
Household composition :	3 members: 2 adult, 1 child		
Household incomes :	poultry	Tk.	500
	selling fish	Tk.	24000
	Total	**Tk.**	**24500**
Household expenditures :	household	Tk.	12200
	social	Tk.	1600
	farm	Tk.	3550
	Total	**Tk.**	**17350**
No loan Land owned : 1.04 acres Land cultivated : 1.36 acres 4 ponds taken on lease (joint ownerships of 3 equal shares of ponds located in Gazipur District)			

TABLE II.41

Small Farmers Household Budget-Mymensingh District (Muktagacha Upazila)

A sound farmholding (with non-farm incomes)				
Household composition	:	5 members: 2 adult, 3 children		
Household incomes		farm: crops	Tk.	8000
		non-farm: wages	Tk.	4000
		cottage industries	Tk.	3000
		Total	**Tk.**	**15000**
Household expenditures	:	household	Tk.	7,300
		social	Tk.	3500
		farm	Tk.	2300
		Total	**Tk.**	**11000**
No loan Owned land : 0.92 Cultivated land : 1.12 Irrigated land : 0.31				

TABLE II.42

A Small Landowner in Tangail District

Household composition : 5 members: 3 adults, 2 children				
Annual incomes :	farm :	mustard	Tk.	5000
		jute	Tk.	5000
		lentil	Tk.	3000
		fruits	Tk.	800
	off-farm :	poultry	Tk.	1500
		eggs	Tk.	500
		Total	**Tk.**	**15800**
Annual expenditures :	farm :	cultivate	Tk.	4300
		cattle	Tk.	1000
	household :	house	Tk	500
		taxes	Tk.	220
	food :		Tk.	7250
	social :	wedding	Tk.	15600
	transport :		Tk.	700
		Total	**Tk.**	**29570**
Land owned : 1.12 acre Land cultivated : 1.12 Land irrigated : 0.84 No declared loan He sold land to face the situation				

TABLE II.43

A Benefiting Small Farmholding - Tangail District (Shakipur Upazila)

Household composition	:	4 members: 3 adults, 1 child		
Household incomes	:	foodgrain	Tk.	10100
		paddy by-products	Tk.	1000
		jute	Tk.	500
		sole of cattle	Tk.	2800
		sole of poultry	Tk.	200
		sole of milk	Tk.	5000
		sole of eggs	Tk.	350
		Total	Tk.	350
Household expenditures	:	farm	Tk.	5000
		cattle purchase	Tk.	3700
		house	Tk.	312
		food	Tk.	5400
		social	Tk.	2800
		kerosene	Tk.	1000
		Total	Tk.	17912
Loan : Tk. 3000				
Land owned : 1.21 acres				
Land cultivated : 2.46 acres				
Land irrigated : 1.65 acres				
Cattle poultry incomes are about half of crops incomes				

TABLE II.44

Medium Farmers in Gazipur District (Kaliganj Upazila)

A self sufficient & positive balance farm				
Household composition : 4 members : 3 adults, 2 children				
Land owned and cultivated land : 3.10 acres				
Land irrigated : 2.10 acres				
No purchase of foodgrain				
Household incomes: from farm	:	sole of paddy	Tk.	7500
		sole of jute	Tk.	2800
		sole vegetables	Tk.	3000
		sole livestock	Tk.	6000
		Total	**Tk.**	**22300**
Household expenditures: household	:	food	Tk.	5200
		cloth	Tk.	1500
		fuel	Tk.	1040
social	:	health	Tk.	200
		religious ceremony	Tk.	2000
Farm	:	miscellaneous	Tk.	9450
		Total	**Tk.**	**19390**

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TABLE II.45

Medium Farmers Household Budget-Gazipur District (Sripur Upazila)

Household composition : 8 members; 4 adults, 4 children Land owned & cultivated : 4.90 acres No irrigation Foodgrain purchase: Tk. 2400			
Incomes: Farm :	jute + sugarcane	Tk.	30000
	poultry	Tk.	3000
	palcutrees	Tk.	3000
	vegetables	Tk.	12000
	selling trees	Tk.	15000
	Total	**Tk.**	**15000**
Expenditures :	household	Tk.	40000
	social	Tk.	16000
	farm	Tk.	9280
	Total	**Tk.**	**65280**
Land remains fallow for 8 to 9 months due to lack of irrigation facilities			

TABLE II.46

Medium Farmers Household Budget-Manikganj District (Ghoir Upazila)

A medium farmowner with a positive balance and non-farm incomes				
Household composition :	5 members: 4 adults & 1 child			
Household annual incomes :	farm	crops(paddy & mustard)	Tk.	15250
		livestock	Tk.	3500
		poultry	Tk.	300
		fruits	Tk.	1000
	sale of irrigation water		Tk.	4000
	Total		**Tk.**	**24050**
Household annual expenditures :	household		Tk.	13700
	social		Tk.	3000
	farm		Tk.	6300
	Total		**Tk.**	**2300**
Land owned : 4.50 acres = 1.82 ha Land cultivated : 5.45 acres = 2.20 ha Partly owner of DTW (share =1/32)				

TABLE II.47
Medium Farmers Household Budget-Manikganj District (Daulatpur Upazila)

A negative balance, foodgrain self-sufficiency, but highly indebted medium farmowners			
Household composition : 7 members: 3 adults, 4 children (4 students)			
Household incomes :		Farm crops(groundnut) livestock poultry fruits vegetables mustard **Total** business rest of draft animal **Total**	Tk. 1200 Tk. 3000 Tk. 500 Tk. 300 Tk. 1000 Tk. 3000 **Tk. 19800** Tk. 5000 Tk. 4000 **Tk. 28800**
Annual expenditures:		household social farm **Total**	Tk. 18500 Tk. 21000 Tk. 9000 **Tk. 48500**
Loans:	BKB : Tk. 10000 relatives : Tk. 1000 Mohajan : Tk. 4000		
Land owned : 4.95 acres = 2 ha Land cultivated : 5.61 acres = 2.27 ha (much has been spent for education of children)			

TABLE II.48
Medium Farmers Household Budget-Munshiganj District (Munshiganj Sadar)

A medium farmowner in Munshiganj District			
Household composition : 6 members: 5 adults, 1 child Land owned 3.15 Land cultivated 2.94 No irrigated land :			
2 plots of land mortgaged out, 1 mortgaged in no draft animal			
Incomes :	farm	jute potato another cereal fruits **Total**	Tk. 2800 Tk. 100000 Tk. 1800 Tk. 500 **Tk. 105100**
	non-farm	business	Tk. 12000
		Total	**Tk. 117100**
Expenditures :		household social farm Total	Tk. 11200 Tk. 22000 Tk. 66900 Tk. 100100
Food purchased: Tk. 6000 (Paddy) Loan : Tk. 20000			
Problem to recover mortgaged land			

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TABLE II.49
Medium Farmers Household Budget-Mymensingh District (Trishal Upazila)
"The newly formed medium size farm owned"
This case is typical of extended family household in Mymensingh Area.

Household composition 12 members: 7 adults, 5 children			
Owned land : 3.64 acres (also cultivated)			
Land is recently purchased, with incomes and savings from crops business (chili in Sylhet rice, jute etc. in Dhaka: 2 brother are businessmen).			
Household incomes :	sale of foodgrain	Tk.	5000
	business	Tk.	500000
	Total	**Tk.**	**505000**
Household expenditures :	household	Tk.	22500
	social	Tk.	18700
	farm	Tk.	15000
	land purchase	Tk.	200000
	Total	**Tk.**	**256200**
(1 permanent agricultural labourers)			

TABLE II.50
Medium Farmers Household Budget-Tangail District (Madhupur Upazila)

A medium landowner in Tangail District (Madhupur upazila)			
Household composition :	6 members: 2 permanent labours = 6 adults + 2 children		
Land owned :	2.70 acres = 1.09 ha		
Land cultivated :	2.70 acre = 1.09 ha		
Land irrigated :	1.20 acres = 0.49 ha = 44% of land		
No foodgrain sold :	rice purchased Tk. 2250		
Annual incomes from farm :	paddy by products	Tk.	1500
	wheat by products	Tk.	800
	potato	Tk.	500
	mustard	Tk.	800
	jute	Tk.	500
	eoliths	Tk.	700
	vegetables	Tk.	300
	fruits	Tk.	500
	Total	**Tk.**	**5400**
Off-farm :	sale of cattle	Tk.	1500
	sale of poultry	Tk.	1500
	sale of milk	Tk.	500
	sale of eggs	Tk.	300
	Total	**Tk.**	**3800**
	non-farm business	Tk.	2000
	Total	**Tk.**	**11200**
Annual expenditures :	farm	Tk.	3900
	permanent job	Tk.	7000
	purchase poultry	Tk.	12400
	house	Tk.	7100
	social	Tk.	4000
	other	Tk.	1000
	Total	**Tk.**	**24500**

TABLE II.51

Medium Farmers Household Budget-Tangail District (Basail Upazila)

A not self-sufficient medium farmland			
Household composition	:	8 members: 6 adults, 2 children	
Land owned	:	3.46 acres	
Land cultivated	:	2.69	
Paddy sold	:	Tk. 9600 (48 maunds)	
Incomes	:	paddy	Tk. 9600
		sale of poultry	Tk. 140
		Total	**Tk.** 9740
Expenditures	:	farm(hired labour + fertilizer + insecticides)	Tk. 9690
		food	Tk. 4120
		social	Tk. 4990
		kerosene	Tk. 960
		Total	Tk. 19760
Loan : Tk.1000			
No crop cultivated in kharif season in this upazila			
Household is permanently suffering from hunger			

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TABLE II.52

Large Farmers Household Budget-Dhaka District (Dhaka Sadar)

1 (one) rich large farmowners in Dhaka District, Dhaka, Savar					
Household composition :	11 members : 9 adults, 2 children + 2 permanent labourers, 1 Teacher, 1 Imam.				
Land owned :	29.70 acres = 12 ha (15 plots)				
Land cultivated :	22.44 acres = 9.08 ha				
Land irrigated :	8.25 = 3.34 ha				
Incomes :	farm :	crops	Tk.	116500	
		livestock	Tk.	4000	
		poultry	Tk.	3000	
		fish	Tk.	3500	
		Total	**Tk.**	**127000**	
	off-farm :	rent of land	Tk.	20000	
		sale of irrigation water	Tk.	12000	
			Tk.	00000	
		Total	**Tk.**	**32000**	
	non-farm :	business	Tk.	30000	
		Total	**Tk.**	**189000**	
Expenditures :	household :	food	Tk.	10000	
		clothing	Tk.	8000	
		furniture	Tk.	500	
		fuel	Tk.	3000	
		repair	Tk.	2000	
		Total	**Tk.**	**23500**	
	social :	religious ceremony	Tk.	10000	
			Tk.	1000	
		health	Tk.	2000	
		education			
		Total	**Tk.**	**13000**	
	farm :		Tk.	17800	
		Total	**Tk.**	**54300**	

TABLE II.53

Large Farmers Household Budget-Manikganj District

Large farmowner			
Household composition : 5 members : 4 adults,1 child(+1 P Labourer) Land owned : 13.78 Land cultivated : 10.40 Land irrigated : 1.82			
Incomes :	farm	Tk.	9250
	non-farm	Tk.	18000
	off-farm	Tk.	000
	Total	**Tk.**	**27250**
Expenditures :	household	Tk.	6500
	social	Tk.	11500
	farm	Tk.	20000
	Total	**Tk.**	**38000**
Loan : Tk. 3000			
Household is self sufficient, but family budget is negative			

TABLE II.54

Large Farmers Household Budget-Tangail District (Mirzapur Upazila)

Household composition : 10 members: 9 adults, 1 child Land owned : 2.97 acres Land cultivated : nil			
All land is given on share-cropping contract			
Incomes :	Farm: food grain	Tk.	12000
	potato	Tk.	1000
	mustard		8000
	jute	Tk.	10000
	lentil	**Tk.**	4000
	vegetables		3000
	jackfruit		10000
	mango		10000
	papaya		2000
	poultry & eggs		3000
	business		14000
	Total		**77000**
Expenditures :	for farm	Tk.	10000
	for cattle	Tk.	6500
	house	Tk.	1700
	food	Tk.	3900
	miscellaneous	Tk.	900
	social	Tk.	12500
	transport & kerosene	Tk.	1000
	Total	**Tk.**	**34800**
No loan declared			

Flood Action Plan
FAP 3
North Central Regional Study

Supporting Report IV.2
Institutions

February 1993

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SUPPORTING REPORT IV.2 - INSTITUTIONS

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CHAPTER 1
INTRODUCTION

1. Introduction

This Institutions report is not designed to address any specific proposed project, but rather to identify the current institutions which operate in the North Central Region and which would contribute to water development projects in the future. The methodology proposed herewith is a recommendation only. The actual methodology suited to achieving the goal of water resource development remains difficult to achieve and depends on the willingness and adaptability of many parties involved in the development process.

Until recently local government in Bangladesh was based on the Upazila, of which there were 460 in the country. The Upazila system however was replaced in 1992 by a Thana System (Thanas in general have the same boundaries as the former Upazilas). The Thana is the focal point for the provision of field staff from Ministries and ministerial representation occurs through 'officers' or, 'Engineer' (for Local Government Engineering Department).

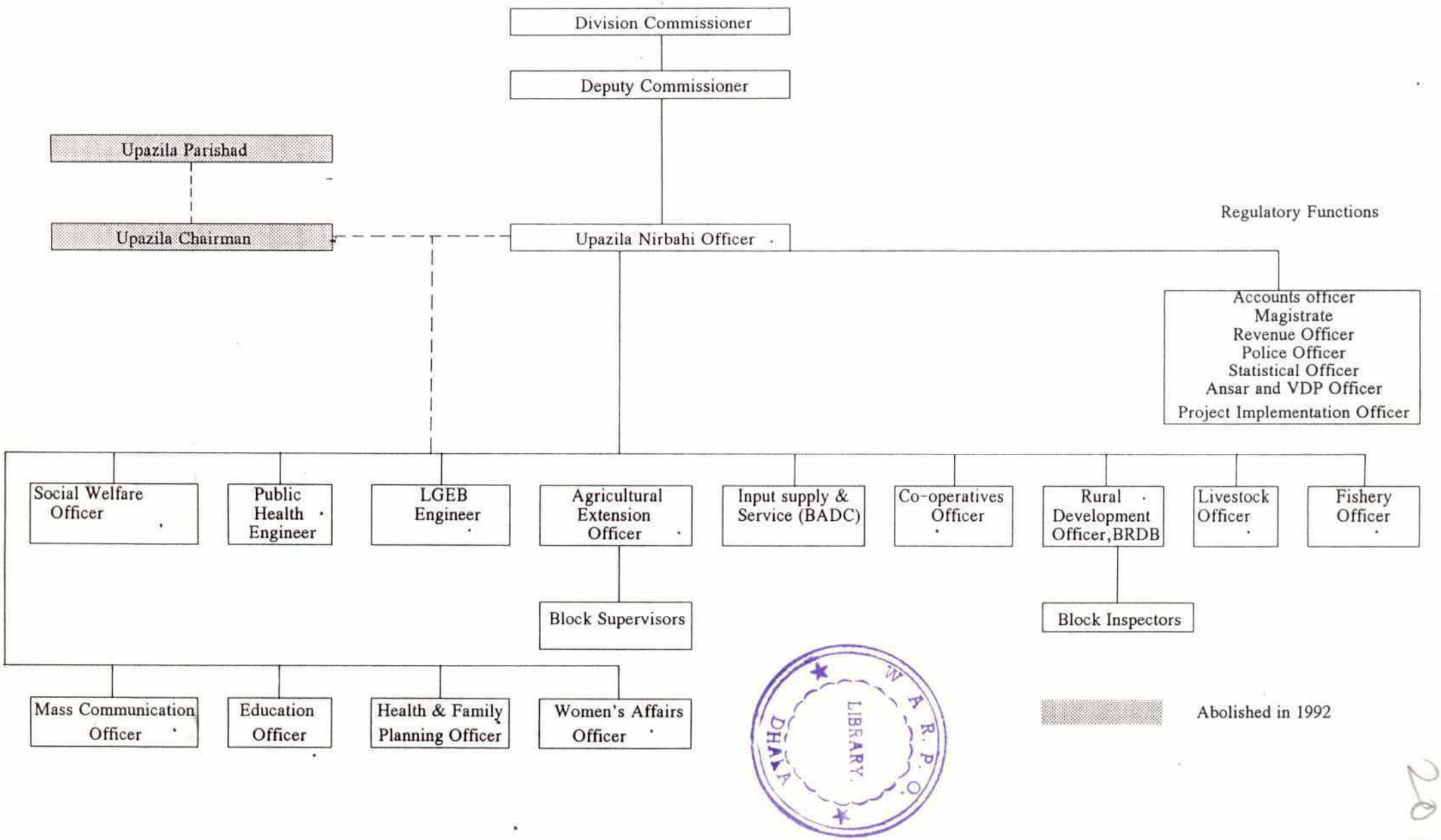
Thana officers are responsible for the direct provision of services to the rural population and the following departments are present in each Thana:

- Nirbahi Officer
- Fishery Officer
- Livestock Officer
- Rural Development Officer
- Co-operatives Officer
- Agricultural Officer - responsible for Agricultural Extension and Input Supply and Service.
- Local Government Engineer - responsible for the implementation of the Thana Rural Development Programme.
- Public Health Engineer
- Social Welfare Officer
- Education Officer
- Health Family Planning Officer
- Women's Affairs Officer
- Mass Communications Officer
- Accounts Officer
- Magistrate
- Police Officer
- Statistical Officer
- Ansar and VDP Officer
- Project Implementation Officer

While there is wide agency provision at Thana level, only two departments maintain out-reach programmes. These are BRDB through its system of block inspectors to supervise co-operative formation and the Department of Agricultural Extension through block supervisors to provide agricultural extension information via key (demonstration) farmers.

All government agencies suffer severe financial shortages, which result in a shortage of resources to develop adequate programmes and insufficient transport to supervise existing activities. The financial and resource shortages are worsened by the state of under-development and poverty and the ineluctable necessity to accept stringent financial discipline. This has been a perennial problem and the shortfalls in governmental provision have to an extent been counteracted by NGO activities which have been undertaken precisely to fill such gaps.

Figure IV.2.1 Organisation of Upazila Administration



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Until recently local government was based on the Upazila system (Upazilas have now been superseded by Thanas), and Upazilas were headed by the Upazila Chairman, who was an elected official and was assisted by the Upazila Nirbahi Officer (UNO) who is an established civil servant. There was a distinct division of responsibility, with the UNO being responsible for regulatory functions, such as the judiciary and police (see Figure IV.2.1) and the Thana Chairman being responsible for area development through directing line agency implementation. GOB has however, recently abolished the Thana Chairman system and an alternative structure has yet to be decided. The UNO (now the TNO) is currently handling all line agency implementation.

Two national agencies operate at rural level independently of the Thana. These are the Bangladesh Water Development Board, which is responsible for the development of national water resources, and the Bangladesh Agricultural Development Corporation, which was originally set up to promote a wide range of rural activities but whose activities have gradually been superseded and which now only provides major service through the distribution of seed and some agro-chemicals (see Annex I, pp SRIV.2,I-12).

1.2 Current Agency Implementation

One of the major constraints to the development of the effective delivery of services to end-users in the village is the existing lack of accountability among government servants. Line agency officials receive their orders from above and are only accountable to their superiors. It has also been shown that placing line agencies under the supervision of the Upazila Chairman in many instances served to impede rather than enhance service provision.

Furthermore, the absence of any legal body at Thana level which is responsible for government service co-ordination and is also susceptible to public pressure allows the continuance of an inefficient system.

While the existing line system has the capability to function efficiently, it is felt that such will not occur until 'top down' planning is abandoned in favour of a 'demand driven' model generated by villagers' needs. This will require that the 'farmer' as the primary object of development be abandoned in favour of the concept of 'villager' encompassing all residents irrespective of relationship to the land. Access to the range of services available from line agencies will require that the overall demands of the rural population are taken into account, rather than accepting agricultural production as the major focus.

A Bangladesh village is a unit composed of family groups with varying degrees of economic and social power. Income amongst the poorer sections of the community is subject to access to land obtained through patron/client relationships, while marginal individuals are frequently solely dependent on the largesse of richer villagers. Two major institutional groups have been involved in specific programmes to improve the living standards of the poorer sections of the agricultural community. These are BRDB through its co-operative programme (particularly through its programmes for the landless and destitute) and non-governmental organisations through activities aimed at similar target groups. Yet, while these institutions have undoubtedly contributed to the improvement of living conditions for the poor, they have largely operated outside the context of integrated development plans[1].

This report attempts to redress this imbalance by outlining the components of an integrated water resources development programme in which the landless and the poor are regarded as an integral part of the development process.

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[1]. Food For Work at present provides an important source of funding for rural improvement and maintenance works undertaken via government agencies and NGOs. However, the establishment of integrated water resources development programmes would generate sufficient local labour and or funding to negate the need for extraneous inputs such as FFW.

CHAPTER 2
Institutional Planning

2.1 Social Considerations in Project Identification and Planning.

A number of problems arise during the existing planning process which contribute to a negative view of water resources development (WRD) projects. Principally, these are :

Consultative Mechanism

BWDB decides that structural works are appropriate in a particular location and plans accordingly. While LGED has a major role to play in project definition and design at Thana level, only a limited number of small-scale WRD schemes have been devolved to them to date and there is little opportunity for LGED to define its own priorities within the wider planning context. BWDB plans, until recently, have involved limited consultation only with the population to be affected and little identification of the number and type of beneficiaries and dis-beneficiaries to result from the scheme. This is a major factor in assessing the viability of any development project and needs to be incorporated into the planning process.

Social Disbenefits

Obviously, where a proposed project results in major social dis-benefits in terms of negatively affected population, its sustainability is questionable.

Even where the balance of a proposed project falls in favour of the public good, it is necessary to both identify groups to be disadvantaged and to work with these groups to determine practical remedies to shortfalls to redress the balance. Groups thus affected appear to fall into four major categories:

i) **Those who lose land**

This involves individuals directly affected by the legislative process. While adequate right of redress is in place on the statute books, compensation levels are inadequate because:

- they reflect the prevailing market price based on land registry prices (the value of land transactions registered with the Revenue Officer at Thana or District Level) during the previous twelve months. The value of land deals registered is frequently under-estimated in order to avoid adequate paying the full transfer tax and plaintives are frequently drawn into legal actions in order to obtain compensation, thereby incurring expensive legal fees.

- the value of land is not static. FCD/I schemes, at least theoretically, enhance the productive capability of an area and this in turn increases the value of land. The FAP-15 study estimates that immediate post-implementation land values increase by between 150-200% and it is felt that a similar percentage should be added to compensation levels in order to ensure that displaced land-owners have sufficient compensation to acquire the same area of land elsewhere in the area if such land is available.

ii) **Those with diminished productivity of land**

Individuals thus affected are largely those whose land is located on the river side of embankment projects. Not only may the construction greatly increase the vulnerability of their homesteads and land, but the value of land in the location will decrease considerably. The FAP-15 investigation of the Kurigram Project found that 48% of all households thus affected became squatters on the embankment.

The project planning process therefore needs to provide for this group through a combination of one or more of the following measures:

- directly acquiring the land between the proposed embankment and river through the payment of adequate compensation.
- providing alternative agricultural opportunities; possibly through increased use of the proposed embankment.
- providing safe homestead areas inside the embankment
- providing non-agricultural income opportunities.

iii) **Those who lose their livelihood**

This group principally involves full-time open-water fishermen. WRD projects seldom have a positive effect on open-water fisheries because:

- a controlled hydrological regime results in less open water within the project area.
- large-scale FCD/I schemes frequently have a deleterious effect on the quantity of fish available because controlled river flows affect migratory and spawning patterns.
- full-time fishermen increasingly compete with each other and with farmers who fish open waters on a part-time or seasonal basis.

While the Department of Fisheries is concerned to maintain or increase the level of fish available within a completed FCD/I area, this focuses on culture fisheries; which in turn entails access to land which can be developed for fish breeding or can be used for the creation of fish ponds.

Full-time capture fishermen are a resource-poor group who rely on the utilization of open water which is a communal asset over which they have no control. Specific programmes are therefore necessary to provide alternative livelihoods for this group and need to be identified at an early stage of project planning.

iv) **Those whose livelihood is likely to diminish**

This group principally involves women from poorer households. Women are increasingly moving away from labour centred on the house, and earning money from field-based and post-harvest activities. WRD schemes enhance the productive capability of an area by allowing increases in HYV varieties of rice and increasing the demand for labour (particularly during harvest times); thereby increasing employment opportunities for women in specific tasks.

However, this greater demand for labour may not necessary result in more job opportunities. Increases in demand the demand for female labour are initially met from within the household, with the net result that potential or predicted benefits have not been realized and female-headed households become increasingly disadvantaged in relative terms.

In addition, there are likely to be shifts in occupational structure which increase competition for female employment opportunities. The displacement of marginal farmers and full-time fishermen is likely to increase the number of females seeking work opportunities in order to compensate for short-falls in family income.

These will come into competition with existing female workers and this will contribute to the continuance of low rates of pay.

The planning process must therefore take account of these potential shifts in occupational structure by identifying programmes designed to ensure that the most vulnerable group (female headed households) are not further disadvantaged during the development of WRD projects.

2.2 Public Participation in Project Planning

The presentation of a full package of measures as outlined above will do much to allay fears and to generate overall public support for a project. This being said, care should be taken to ensure that those affected by the project are fully aware of what the project entails and aware of their rights in relation to the provision of line agency services and of their duties concerning the Operation and Maintenance (O&M) of the scheme.

In order to meet these objectives, it is necessary to begin the process of group formation and mobilization at the earliest opportunity and this should not be left until project implementation begins. Projects take time to implement and enthusiasm is likely to wane if public support is not reinforced.

Pre-implementation activities should include.

a) Investigation of groups to be adversely affected by the project in order to:
   - identify alternative sources of income
   - identify the appropriate institutions (both governmental and NGOs) to facilitate access to these services;
   - ensure that the process of group formation continues smoothly.

b) Commence effective group formation of farmers/sharecroppers in order to:
   - increase awareness of the potential range of government services at their disposal;
   - facilitate access of small and marginal farmers to these services through group formation and increased access to line officers;
   - assist these groups to obtain maximum productive use of land through defining and achieving their own objectives via a 'demand driven' model.

2.3 Towards a 'demand driven' model.

As was stated at the outset, the current system of area development and line agency delivery is 'top down' with line directives being decided in Dhaka and area development priorities being defined at District and Thana level.

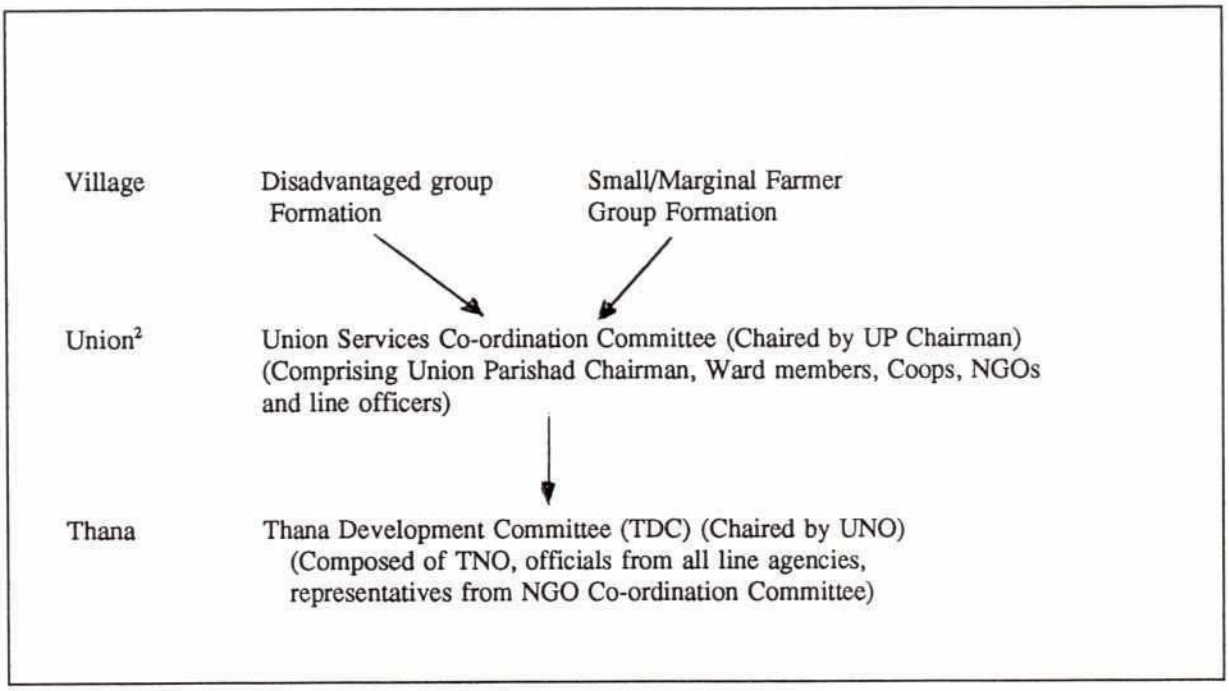
Such a system has little ability to absorb or react to demands from below and would require both modification and strengthening of services to accommodate these new demands. Figure IV.2.2 presents one possible method of providing these services to Thana level.

Group formation at village level would concentrate on the organisation of individuals to be disadvantaged through the proposed development plan and activities would be aimed at assisting them to obtain full benefit from alternative opportunities to be defined by themselves during initial planning consultations. NGO's would be suited to initiating this group formation process.

Small/marginal farmer group formation would be directed towards making individuals aware of the rural development services which the government provides and assisting small/marginal farmers to outline their own development priorities.

No additional provision need be made for medium/large farmers because they are already conversant with system provision and would not need any special programmes in order to be able to react to increased agricultural possibilities.

Figure IV.2.2
Possible Facilitation of Demand-Driven Services up to Thana Level



Once individual/group priorities are defined, these could be discussed at ward level in order to determine the services required and information passed on to the Union Services Co-ordination Committee and finally to the Thana Development Committee.

NGOs could play an important role in the field through promoting group formation/mobilisation and would therefore constitute an integral part of the development process. NGO representation would be present at Ward level as part of the Ward Services Co-ordination Committee and in the Thana Development Committee through the NGO Co-ordination Committee; which would have the function of both co-ordinating NGO activities and defining short-falls in line agency provision.

The TDC could also comprise sub-committees dealing with specific aspects of service provision (e.g. NGO services, provision of services for fishermen, services for women, programmes for the destitute).

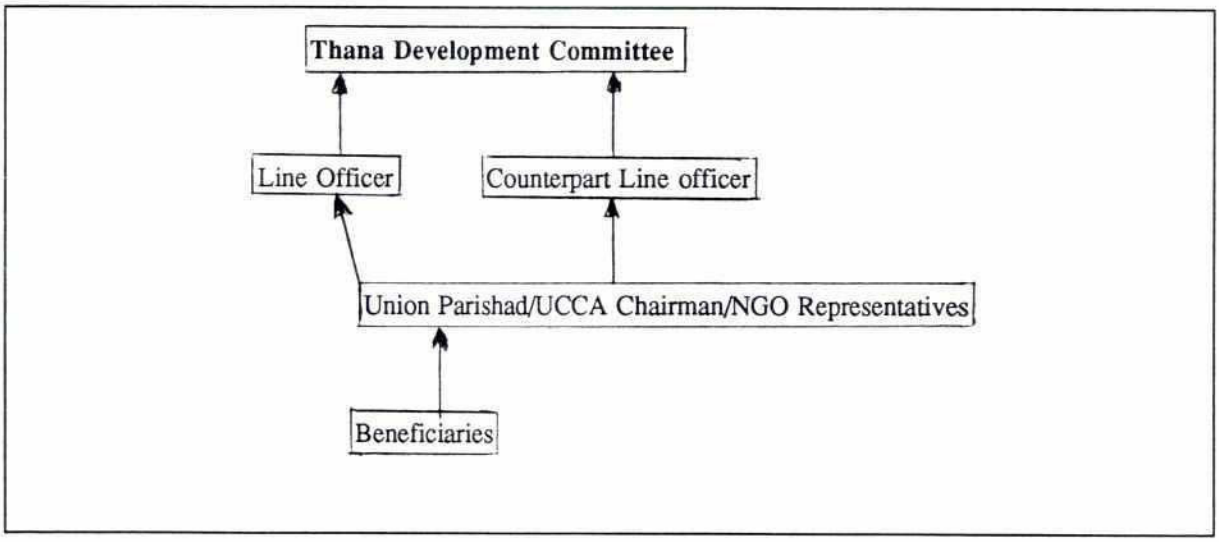
[2] The existing organisational structure in Bangladesh is based on Mauzas as the smallest administrative unit. In many cases Mauzas are contiguous with villages and it is suggested that information flows between Union and Mauza would be facilitated by an intermediate (Ward) co-ordination body covering 3 or 4 villages/Mauzas.

2.4 Line Agency Accountability

A critical factor influencing the provision of line agency services is the degree of public accountability of agency officials. Under the present organisational system, line agency staff are responsible to their immediate superiors, who are in turn responsible for passing directives down. This organisational structure has little if any capability to accommodate demands from below and there is little repercussion if any such demands arise and are not met. While having its faults, the Upazila Chairman system did at least in theory provided some degree of electorial influence in Upazila development. Now that this system has been dismantled and line agencies will have to work with the TNO, there is no mechanism for public influence and such will remain the case until the planned political reforms are made public.

Public accountability could be built into the system at the level of the Thana Development Committee (TDC) by aligning elected representatives (Union Chairmen) with Thana agency officers via a counterpart system. Under this system, monitoring of public demand for services would occur through beneficiary feedback coming up the system via the Union Parishad to the Union Chairman and from the Union Chairman to the relevant Thana Officer. (See Figure IV.2.3)

Figure IV.2.3
Possible Counterpart Line Officer System



2.5 Relationship Between Thana Development Committee and District Development Committee.

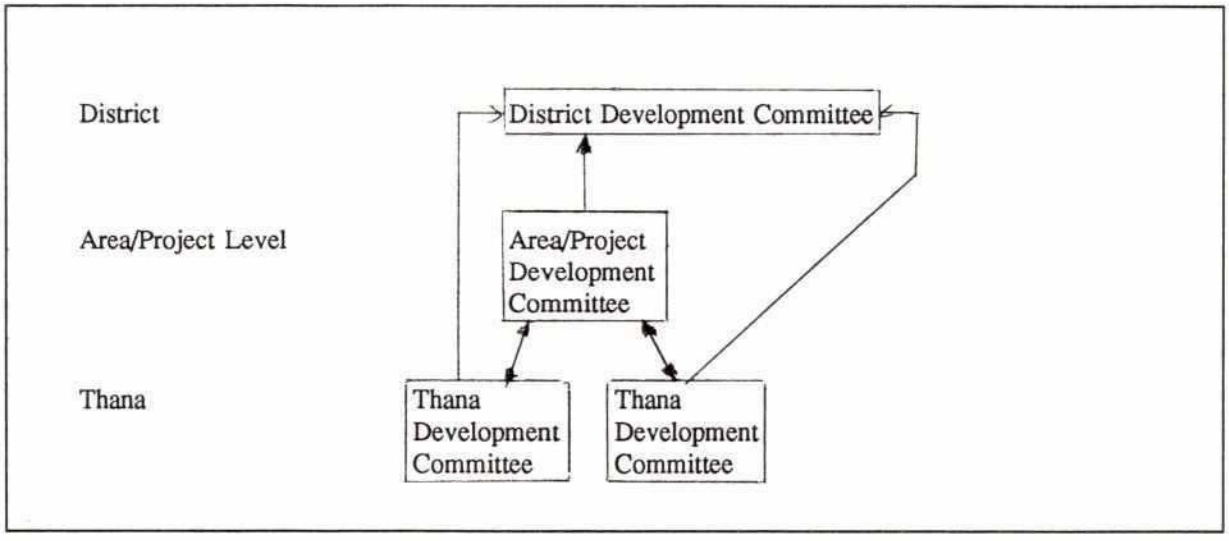
Having outlined the possible role and function of proposed Thana Development Committee, it remains to discuss its potential relationship to macro-level planning at district, regional and national level.

National and Regional Flood Action Plans will create a situation in which the opportunities for development are increased by virtue of greater control of water flows. This will in turn require both national and regional plans to be designed and implemented. The definition and design of national and regional development plans will obviously have to radiate from the centre and responsibility should follow the exiting organisational structure down to district level.

However, it is felt that the relationship between the Thana Development Committee and the District Development Committee should be a consultative process; particularly concerning Water Resources Development (WRD) implementation and it is proposed that an intermediate body (An Area/Project Development Committee) could be set up to facilitate this consultative process (see Figure IV.2.4). This body could comprise:-

- at least one representative per Thana elected by the counterpart Thana line officers
- the TNO from each Thana
- Representative(s) from NGO Co-ordination Committee.
- Representative(s) from Line Agencies
- Representative(s) from BWDB/LGED
- Representative(s) from the Deputy Commissioners Office

Figure IV.2.4
Potential Coordination at Upazila Level and Above



2.6 Effect of Model on BWDB

BWDB is the organisation charged with the construction, maintenance and operation of Water Resources Development (WRD) structures. Under the proposed organisational structure, a number of responsibilities would be devolved to other institutions. Principally these would be:-

- Operation of WRD structures devolved to water user groups under the co-ordination of Ward Services Co-ordination Committee and Union Services Co-ordination Committee
- BWDB to retain responsibility for major plant (sluice gates, locks, etc).
- Operation of Irrigation Systems devolved to Irrigation groups under co-ordination of WSCC and USCC. BWDB to retain responsibility for major plant (sluice gates, locks, etc)
- Embankment maintenance to be conducted by landless/displacees and female headed households.
- Embankment construction to be conducted wherever possible by local people to be affected by the scheme.
- BWDB/LGED to be responsible for the construction/sub-contracting of structures beyond local competence.

This would leave BWDB with a core of responsibilities centring on consultative/planning activities, with the major emphases being on providing technical expertise on water management as part of the 'bottom up' consultative process.

2.7 Changes in Agency Orientation

The development of a "demand driven" model with maximum local participation will in some case require substantial modification and re-orientation of agency provision. Table IV.2.1 identifies potential institutional liaison at Thana level in order to develop and facilitate 'demand driven' services and beneficiary involvement. The table differentiates agency inputs according to whether they would provide 'Direct' inputs ('D') in terms of the actual conduct of the activity or 'Indirect' inputs ('I') through playing a supporting or minor role.

While a number of the activities identified in the table already involve inter-agency co-ordination, institutional inputs which require additional liaison or involve undertaking additional roles are identified below as "Modified Role" (MR)

It is observed that the present lack of accountability creates the feeling by certain agencies that they do not have an obligation to participate in development. It is to be hoped that the institution of the counterpart line officer would at least assist in this regard.

01. The Rural Development Officer could provide inputs for:

Resettlement	through organising co-operatives among resettled population to provide Services(MR).
Embankment construction	through organising work local groups to participate in construction (MR)
Embankment utilisation	through organising landless and female groups to develop agricultural or agro-forestry schemes on embankments (MR)
O&M	facilitate group formation for operation and maintenance of FCD and Irrigation projects(MR)
Agricultural Land utilisation	through established co-operative formation structure
Non-Agricultural Land Utilisation	through establishing coops for non-agricultural land use projects
Culture fisheries	provision of group organisation and finance
Open water fisheries	provision of group organisation and finance
Changes in sedimentation	organisation and financing of work groups to combat sedimentation (dredging irrigation canals, khals, etc.) (MR).
Changes in erosion	organisation and finance of groups to undertake anti-erosion measures where necessary (MR).

02. Fishery Officer

Resettlement	develop fishery based opportunities for those re-settled (MR)
Embankment utilisation	develop borrow pits for aquaculture where appropriate (MR)
Culture fisheries	development of closed water fisheries
Open water fisheries	development of open water fisheries both within and outside water development projects
Changes in sedimentation	direct contribution through ensuring maintenance of water flows for aquacultural systems
Changes in erosion	indirect contribution through ensuring maintenance of water flows for agricultural systems.

TABLE IV.2.1

POTENTIAL INSTITUTIONAL INPUTS AT UPAZILA LEVEL AND BELOW INTO WATER RESOURCES DEVELOPMENT

Sl. No.		Land Acquisition	Resettlement	Embankment Construction	Embankment Utilisation	Domestic Water Supply	Drainage	Irrigation	O&M	Agricultural Land Utilisation	Non-Agricultural Land Utilisation	Culture Fisheries	Open Water Fisheries	Infrastructural Improvement (Land Transport)	Infrastructural Improvement (Water Transport)	Changes in Sedimentation	Changes in Erosion
01.	Rural Development Officer(BRDB)		D	D	D				D	D	D	D	D			I	I
02.	Fishery Officer		D		D							D	D			D	D
03.	Livestock Officer									D	D						D
04.	Co-operative Officer		D														
05.	Agricultural Extension Officer		D		D		I	D	I	D	I						
06.	Agricultural Input & Service Supply (BADC)				D			D		D				D	I		
07.	LGEB Rural Works Programme		I	D	D		D	D	D					D	D	D	D
08.	LGEB Public Health Engineering		D			D											
09.	Social Welfare Officer		D														
10.	Education Officer		I														
11.	Health & Family Planning Officer		D			D											
12.	Women's Affairs Officer		D		D	I				I	I						
13.	Mass Communications Officer	D	D		I				I		I	I	D	D	D		
14.	NGO Credit		D		I				D								
15.	NGO Group Mobilisation		D	D	D		D	D	D	D	D			D	D		
16.	Dept of Forestry		D		D					D	D			D			D
17.	BWDB	D		D			D	D									

D = Direct input
I = Indirect input

03. Livestock Officer

Agricultural land utilisation livestock promotion and fodder production,

Non-agricultural land utilisation livestock promotion and fodder production

Changes in erosion promotion of both trees and fodder plants and of controlled grazing on areas subject to erosion(MR),

04. Co-operatives Officer formation of groups amongst resettled population (MR), continuation of registering and monitoring of established coops.

05. Agricultural Extension Officer

Resettlement provision of agricultural services to re-settled groups (MR).

Embankment utilisation provision of agricultural advice to embankment utilisation schemes (MR)

Drainage ensuring correct water supply to facilitate agricultural land users' models (MR)

Irrigation provision of advice on water requirements for rice and non-rice crops in order to ensure maximum land utilisation resulting from models and demands as defined by agricultural land users (MR).

O&M ensuring that water user groups and operating committees provide the correct amount of water for optimum agricultural production (MR)

Agricultural land utilisation provision of advice on agricultural requirements to realise farmers' demand (MR)

Non-agricultural land utilisation co-ordination with livestock, fisheries and other concerned agencies to maximise efficient use of non-agricultural land

06. BADC provision of seed and agro-chemicals where appropriate to facilitate,

- embankment utilisation
- efficient irrigation in relation to new or modified cropping patterns
- efficient agricultural land utilisation through multi-crop models
- infrastructural land transportation through road embankment utilisation

Note: Also direct beneficiary through being able to better service rural outlets because of improved roads.

- infrastructural improvement for water transport through providing inputs for embankment utilisation projects.

Note: Also direct beneficiary through being better able to service rural outlets because of improved water transport.

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07. LGED Rural Works Programme

Resettlement	-	Provision of employment opportunities for resettled population during construction phase (MR).
Embankment construction	-	provision of employment opportunities for local population in embankment construction
Embankment utilisation		- provision of employment opportunities through embankment utilisation
Drainage	-	organising construction of drainage schemes
Irrigation	-	organising construction of irrigation schemes
O&M	-	organising O&M of irrigation and drainage schemes
Infrastructural Improvement (Land transport)	-	construction of roads construction of bridges and culverts
Infrastructural Improvement (Water transport)	-	ensuring clear waterways (MR)
Changes in sedimentation	-	ensuring clear canals and waterways
Changes in erosion	-	construction of structures to prevent soil erosion (MR)

08. LGED Public Health Engineering

Resettlement	-	planning and implementation of water, sanitation and communal facilities for resettled population (MR)
Domestic water supply	-	provision of portable water and sanitation facilities for rural population

09. Social welfare officer - co-ordination of service provision for resettled population

10. Education officer - provision of educational facilities for resettled population

11. Health and family planning officer

Resettlement	-	provision of health and family planning services
Domestic water supply	-	training in personal and public hygiene

12. Women's affairs officer

Resettlement	-	development of income generating opportunities for re-settled women(MR)
Embankment utilisation		- assist in womens group formation
Domestic water supply	-	assist in training in personal and public hygiene (MR)
Agricultural land utilisation	-	formation of women's groups for agriculturally-related IGAs
Non-agricultural land utilisation		- formation of womens groups for non-agricultural land use IGAs.

13. Mass communications officer (MR)

Direct role in informing the public during the planning process about

- o land acquisition
- o resettlement
- o open water fisheries
- o land transport plans
- o water transport plans

Indirect informational role in providing information on

- o embankment utilisation
- o operation and maintenance
- o non-agricultural land utilisation
- o culture fisheries

14. NGO credit

Provision of seed capital for group enterprise amongst

- o re ttled population
- o operation and maintenance groups
- o agricultural and non-agricultural IGAs.

15. NGO group mobilisation

assist/promote group formation for

- o resettled population
- o embankment construction
- o embankment utilisation
- o drainage schemes
- o irrigation schemes
- o operation and maintenance
- o agricultural land utilisation
- o non-agricultural land utilisation
- o road maintenance (Including embankment utilization)
- o population displaced as a result of restrictions on water transport.

16. Department of forestry

Planning, advice and provision of trees for

- o resettled population (MR)
- o embankment utilisation (MR)
- o road embankment utilisation
- o anti-erosion schemes (MR)
- o non-agricultural land utilisation
- o tree planting on agricultural land/houselots.

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17. BWDB

(Medium and large scale FCD/I schemes)

Land acquisition	-	act as major co-ordinating agency for FCD/I planning with local population (MR).
Embankment construction	-	planning and design of embankments. Supervision of local participation in construction (MR).
Drainage	-	participate in planning and supervision of drainage schemes along with beneficiaries (MR)
Irrigation	-	participate in planning and supervision of irrigation schemes along with beneficiaries (MR).

Having identified institutional input in pursuance of 'demand driven' development it remains to identify institutional requirements as they related to developmental options for NCR. The following section identifies such requirements in the five sub-regions.

CHAPTER 3
Sub-regional Institutional Requirements

3.1 Jamuna and Padma Flood Plains

Principal hydrological problems identified in the Jamuna Flood Plain are those associated with river inundation, which results in serious erosion and sedimentation. There is therefore a need for flood control and drainage. Given the high population densities and intensive land use in these planning units, water resources projects need to emphasis. Agricultural intensification (particularly irrigation), which will require major institutional inputs from:

LGED Rural Works Division	construction and planning
BADC	for input supply
NGO	credit and group mobilisation
AEO	facilitate group agricultural demands.

FCD construction will be a serious option and will result in population displacement. This will require major institutional inputs from:

Rural Development Officer	for the formation of co-ops amongst displacees
Co-operative Officer	promote the formation of co-ops amongst displacees.
Fisheries Officer	promote open and closed water aquacultural opportunities for displacees.
Public Health Engineering	for provision of sanitation and potable water supplies for resettled population.
Social Welfare Officer	ensure maximum ease of transition from old to new location.
Health and Family Planning Officer	ensure adequate health care for re-settled population.
Women's Affairs Officer	promote female Income Generating Activities (IGAs) amongst re-settled women.
NGO credit and Group Mobilisation	promote collective enterprise.
Agricultural Extension Officer	facilitate agricultural demands arising from farmer's defined needs.
Department of Forestry	promote social and agro-forestry opportunities.
Mass Communications Officer	provide constant explanatory role about all aspects of the re-settlement process.
Indirect inputs would be provided by	
Rural Works Programme	through possible provision of labour opportunities.
Education Officer	through providing educational facilities for the rural population.

FCD will also result in major construction works and could provide opportunities for direct employment during the construction phase and employment though embankment utilisation during the post-construction phase. Ensuring employment opportunities during construction would require major institutional inputs from:

BWDB	for the supervision of embankment construction for medium and large scale projects.
LGED Rural Works Programme	for the supervision of embankment construction for small scale projects.
Rural Development Officer	to promote construction group formation.
NGO Group Mobilisation	to promote construction group formation.

Embankment Utilisation will require:

Rural Development Officer	to promote co-operative enterprise amongst groups using embankments.
Fishery Officer	to promote use of borrow pits for aquaculture where appropriate.
Agricultural Extension Officer	to provide advice on agricultural opportunities relating to embankments and their environs.
BADC	to provide inputs for agricultural opportunities.
LGED Rural Works Programme	to ensure effective embankment maintenance.
Women's Affairs Officer	to promote women's use of embankments.
NGO Group Mobilisation	to promote group exploitation of embankments.
Department of Forestry	for the provision of inputs and advice concerning social and agro-forestry opportunities on embankments and environs.

Indirect inputs would be provided by:

Mass Communications officer	though informing participants of opportunities at all stages of proceedings.
NGO	by providing credit for small-scale activities associated with embankment utilisation.

3.2 Madhupur Tract North and South

Principal hydraulic problems are those associated with localised flooding of valleys coupled with the need for water retention in flat areas during the dry (winter) season. Population levels are less dense than those of the Jamuna and Padma flood plains and there will be relatively little population displacement as a result of embankment construction.

An overall approach to rural development is recommended involving drainage, irrigation, sedimentation control, agricultural and non-agricultural land utilisation and open water and culture fisheries. The following institutional inputs will be required to meet these objectives:

Drainage and sedimentation

BWDB	for the development of medium and large scale drainage schemes in consultation with local people.
LGED Rural Works Programme	for the development of small scale drainage schemes in consultation with local people.
NGO group mobilisation	to promote group formation to undertake regular sediment clearing of canals and waterways.
Agricultural Extension Officer	to ensure maintenance of correct water supply for optimum agricultural production as defined through farmer's models.

Irrigation

LGED Rural Works Programme	for the development of small-scale drainage schemes in consultation with local people.
Agricultural Extension Officer	to ensure maintenance of correct water supply for optimum agricultural production as defined through farmer's models.

BADC	for the provision of seed and agro-chemicals to meet the requirements of farmer's models.
NGO	group mobilisation to promote irrigator groups and responsibility for O&M of irrigation schemes.

Agricultural land utilisation would require inputs from:

BRDB	to promote co-operative group formation.
Livestock Officer	for livestock and fodder promotion.
Agricultural Extension Officer	to assist farmers to define and realise cropping models for optimum agricultural production.

Non-agricultural land utilisation would require inputs from:

NGO	mobilisation to promote group formation associated with different land uses.
Department of Forestry	in defining possibilities for non-agricultural land use and supplying technical advice and trees.
Women's Affairs Officer	assist in the promotion and formation of women's groups
Information Officer	through informing non-agricultural land users of development possibilities.

Fisheries promotion

Fisheries Officer	to promote open water and culture fisheries
Mass Communications Officer	though informing local residents of aquacultural and non-aquacultural income earning opportunities.

Old Brahmaputra River System (PU3+Part PU9)

These planning units suffer from water retention resulting from precipitation and localised river flooding, which in turn results in serious sedimentation problems. Local drainage works are therefore recommended. Institutional inputs for this activity should involve:

BWDB	for the development of medium and large scale drainage schemes in consultation with local people
LGED Rural Works Programme	for the development of small scale drainage schemes in consultation with local people
NGO Group Mobilisation	to promote group formation to undertake regular sediment clearing of canals and waterways.
Agricultural Extension Officer	to ensure maintenance of correct water supply for optimum agricultural production as defined through farmer's models.

Agency implementation at Field Level

Having identified potential institutional inputs from specific agencies in pursuance of an integrated approach to water resources development, it remains to discuss co-ordination needs for implementation.

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LGED would appear the agency best placed to undertake actual implementation co-ordination. It already has a history of embankment construction and maintenance and has acquired some experience of fostering local participation in small-scale irrigation schemes in the Faridpur and Kurigram districts (see Institutions Supporting Report....)

This being said, the number of potential inputs identified are more numerous than those being currently co-ordinated by LGED and consideration also needs to be given to the institutional requirements for facilitating a 'demand driven' model as identified in Sections 4.4 and 4.5.

It is therefore recommended that a pilot project be instituted in the NCR to investigate the practical aspects and problems of service provision for 'demand driven' rural development. Such a project would ideally involve a proposed small-scale FCD/I scheme (less than 1,000 acres) in order that problems can be adequately addressed prior to large scale implementation of the delivery system.

Overall management would be through an administrative body comprising governmental/line agency officials, with the Consultant acting as advisor.

Such a project would require a duration of at least give years; with two or three of these involving local participation in planning and construction and in promoting group formation in preparation for effective O&M.

It is also worth noting that the same lead time would be required for the re-habilitation of projects. While physical structures may exist in such locations, systems for O&M are at best extremely weak and there is no provision for 'demand driven' services. It is felt that two to three years should be allowed for group promotion and involvement, with at least on addition two years to ensure effective implementation.

SR IV.2 - INSTITUTIONS SUPPORTING REPORT
ANNEX I

1 Local Government Organization

Until recently the Upazila system formed the basis of local government organization and it was implemented between 1983 and 1984. Prior to this, administration followed the British colonial system, with orders coming from the centre through the District Commissioner, who had wide powers within his region. Sub-divisional officers were responsible for the implementation of central policy and were responsible for 7 or 8 thanas. At the thana level, the Circle Officer held administrative control with line officers being responsible for policy implementation.

This system allowed for little flexibility or local control in decision making. Thanas were sub-divided into Unions, with each Union having a directly elected Council. While the Union Council could forward proposals to the thana officers, access to funds was very limited and the Union Council had no real power.

Much the same is true of thana and District. The thana council was composed of a Union Chairman and thana line officers and was chaired by the sub-divisional officer. District councils were composed of one nominated Union Chairman from each thana, district line officers and the District Chairman. In both cases, voting power was restricted and local representatives had only advisory status.

The Upazila system represented a break with the past because responsibility and finance for development planning were devolved. Following legislation passed in 1982, thanas were upgraded to Upazilas and sub-districts either phased out or upgraded to Districts.

In addition, local representation was increased through the introduction of Upazila Parishads (councils) headed by an elected Chairman, while a system of Union Parishads (of which there are on average 10 per Upazila) was instituted.

The Upazila Parishad was invested with the authority to plan, implement and finance development projects and is provided with an annual allocation from the Annual Upazila Development Budget, which can be allocated as the Parishad wishes, within broad sectoral allocations defined by the government. Additional finance is available through the Food For Work (FFW) programme and a 'personal ledger account' to cover the salaries and administrative costs of deputed officers.

The Upazila Parishad was assisted by class-1 officers (who have at least a Bachelor Degree) who are deputed by the line agencies and who were under the control of the Upazila Chairman and paid from the 'personal ledger account'. This placed substantial technical and implementational capability at the disposal of Upazila Parishads, which each have an overall staff in excess of 250 people.

This is not to argue that the Upazila Parishad is in charge of all activities. The police, judicial, military and sectors requiring large-scale co-ordination such as flood control, elections, and railways remained within the formal administrative system under the jurisdiction of the Upazila Nirbahi Officer (UNO), who is responsible for administrative activities within the Upazila. (see Figure IV.2.1).

As McCarthy (1987) has pointed out in a review of Upazila level government, investing so much power in the hands of the Upazila Chairman was not necessarily in the best interest of rural development. The allocation for block grants allowed major scope for physical infrastructure and there was a tendency to favour 'visible' projects at the expense of 'intangibles' such as agricultural or rural-based development activities.

This in turn created problems for line officers when seeking funding because they were subject to the approval of the Upazila Chairman and funds may not have been granted even when projects were in line with national directives.

The domination of communications by some Upazilas Chairman also inhibited end-group delivery. McCarthy (*McCarthy, Dr.F.E. 'Upazila-level Government in Bangladesh' unpublished paper, Cornell University, August,1987*) found that some Upazila officers complained that they were unable to communicate directly with their directorate but instead communications had to go through the Upazila Parishad. Thus, requests for line officers to perform certain tasks were subject to the indirect sanction of the Union Chairman.

The position of Upazila Chairman has recently been abolished by GOB as part of increasing emphasis on democratisation. No alternative structure had been decided (at the time of writing this report, early 1992) and the UNO is currently responsible for supervising Upazila functions.

Organisation Structure

Figure IV.2.1 presents local government organisational structure at Upazila level and highlight those line agencies which are changed with the provision of agricultural and/or rural development services. The principal governmental agencies so concerned are the Department of Agriculture through the Department of Agricultural Extension (and indirectly through the Bangladesh Agricultural Development Corporation) the Ministries of Livestock, Fisheries, Co-operatives Officers, Bangladesh Rural Development Board through the Rural Development Officer, and the Local Government Engineering Bureau.

2 Local Government Engineering Department (LGED)

LGED was set up in 1984 (as the Local Government Engineering Bureau) to provide technical assistance at District and Upazila (now Thana) levels for the construction, operation and maintenance of local civil infrastructure. LGED has two distinct wing at Thana level comprising Production and Development in association with BRDB and Infrastructural Development.

Briefly, its major activities conducted under Infrastructural Development are to:

- provide technical assistance to Zila, Thana and Municipal authorities through direct project implementation or through the preparation of technical materials (Preparation of Thana Planning materials; design of manuals; preparation of guidelines/ methodological materials).
- implement infrastructural development projects; either internally or externally funded.

General infrastructural development is carried out under the Infrastructural Development Programme (IDP) and activities conducted involve:

- Construction of Rural and Feeder Roads Type B.
- Construction of bridges and culverts on Feeder and Rural Roads.
- Construction and rehabilitation of primary schools.
- Development of physical structure of Growth Centres and Rural Markets.

- Development of small-scale Water Resource Schemes including the re-excavation of khals and the construction of embankments, and sluices and regulators.
- Maintenance of rural infrastructure (roads, schools, etc.)

LGED major sources of funding at Thana level are :

- Its own development budget
- The Annual Thana Development Fund
- Donor-aided projects
- Development projects for other Ministries
- Food for Work (FFW) Programme

The FFW is mainly utilised under the Rural Maintenance Programme (RMP) for rural road repair. The number employed in the RMP in each Union is 15 (fifteen) women usually drawn from female headed households who are responsible for maintaining 15 (fifteen) miles of rural roads within each union. They are paid Tk. 24.00 (Taka Twenty four) per day and work a six-hour, six-day week (excluding GOB holidays). The RMP provides employment for some 60,000 destitute women and operates in 4095 out of 4600 Unions in Bangladesh.

LGEDs' involvement in small-scale water resources projects is at present concentrated in the Faridpur and Kurigram districts. The approach taken by LGED is one of beneficiary involvement through direct participation in the formation of landless labour groups using field assistants, through the use of labour contracting societies and through the use of local contractors.

The organisation of these schemes follows the methodology set out in the 'Operation and Maintenance of small scale Flood Control and Drainage Scheme' produced by the Intensive Rural Works Programme, MLGRDC, Dhaka, 1986. Thirty two small scale flood control schemes are planned for the Faridpur area, with about a half of these already completed and three schemes being handed over to local committee. (See FAP-13, Draft Final Report, Vol.1).

Local Committees are responsible for 'O & M' and maintenance of earthworks is carried out by women's and landless labour groups throughout the year, while landless groups are also involved in structural and feeder road maintenance on a continuous basis. The labour force is further strengthened during the winter months through labour contracting societies undertaking periodic maintenance and construction.

In a review of one such project (the Rupatala Water Resources Scheme), the FAP-13 team found that;

- the level of planning input from local people was small,
- although landless labour groups were organised through field assistants and both a training programme and an O&M manual had been provided, there was no long term provision for social organisers.

Regarding issues highlighted, the FAP-13 team concluded that;

a. There was a problem in motivating people to invest in schemes, thereby limiting actual ownership and the desire to assume control.
b. There was a problem in encouraging people to save money and deposit it into a fund to cover O&M costs.
c. The projects are very small (less than 1,000 acres) and even a successful long-term outcome would still leave doubts about the applicability of this methodology to large-scale BWDB Schemes.

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3 The Directorate of Women's Affairs

The Directorate of Women's Affairs has a Women's Affairs Officer at Thana level who is largely concerned with:

- Increasing awareness among the female population of legal rights and entitlement under family law.
- Socio-economic development through the promotion of small-scale IGAs.
- The promotion of public health programmes.

4 The Directorate of Livestock

The Directorate of Livestock is vested with the management, administration, research, and extension of livestock resources of the country. The Bangladesh Agricultural University produces graduates in the livestock and veterinary sciences. Three Veterinary Training Institutes controlled by DOL offer training courses for sub-professionals.

DOL is very much constrained by lack of resources. However, under an ADB-funded project, equipment, buildings and transport at the District level, have been will be provided to a limited extent for the development of curative and preventive activities,

5 Directorate of Fisheries

The Directorate of Fisheries is responsible for fisheries resources extension services and for the enforcement of fisheries ordinances. The major thrust of DOF extension services has been to promote fish production through the management of demonstration ponds, hatchery construction and operation research and extension.

There have however been recent moves into capture fishery management through inter-agency agreements with BWDB to manage selected waters and through lease agreements with the Ministry of Land. The latter arrangement involves MOF being responsible for issuing licenses to individual fishermen and being responsible for the stocking of beels and open water systems. This is a departure from the past whereby the Ministry of Land leased water bodies is the highest bidder and represents an attempt to spread social benefits.

Staffing levels at Thana level consist of a Fisheries Officer plus an Assistant Fisheries Officer and a Field Assistant.

6 Bangladesh Rural Development Board (BRDB)

The BRDB was formerly called the Integrated Rural Development Programme (IRDP) and was re-organised in 1969 to promote and strengthen the growth of Co-operatives in Bangladesh.

According to its, Charter, the role of BRDB is to:

- promote village-based co-operatives and Thana Central Co-operative Associations (TCCAs) so that they become, in the shortest possible time, autonomous, self-managed and viable institutions;
- encourage functional co-operatives for sponsoring income-generating activities for the rural poor;
- promote intensive irrigated agriculture as a means of co-operative development as well as for the efficient use of irrigation facilities;
- channel and ensure productive utilization of institutional credit through village co-operatives and promote members' accumulation of deposits and savings union of central co-operation associates (VCCS);

- encourage financially viable TCCAs to diversify activities, especially into the marketing of agricultural inputs and produce;
- arrange for effective training of members;
- promote the growth of federations of TCCAs at District and National level with a view to progressively handing over to them the promotional, motivational and educational functions relating to rural development;
- liaise with concerned agencies for mobilizing supplies, service and support for the co-operative system;
- engage competent evaluation teams and research institutions to evaluate the progress and effectiveness of projects and programmes conducted by the Board.

Specific co-operative programmes exist for the promotion of target groups and these include:

KSS	=	Krishi Samabaya Samity	(Farmer Co-operative Society)
BSS	=	Bittaheen Samabaya Samity	(Landless Co-operative Society)
MBSS	=	Mahila Bittaheen Samabaya Samity	(Female Landless Co-operative Society)
MSS	=	Mahila Samabaya Samity	(Female Co-operative Societies)

BRDB is managed by a Governing Council Chaired by the Ministry of Local Government, Rural Development and Co-operatives; with the Additional Secretary in charge of the Rural Development and Co-operatives Division acting as Vice-Chairman. Other member of the Governing Council comprise representatives from related Ministries and agencies plus five elected representatives from the National Federation of TCCAs.

The Chief Executive Officer of the Board is the Director General, who is GOB official with the rank of Joint Secretary/Additional Secretary and he is assisted by Six Directors.

Representation at District level is through a Deputy Director BRDB, who is in charge of Thana Development Officers; each of which has an Assistant Thana Rural Development Officer. Table I.1 shows the performance of BRDB since inception to June,1991.

7 Department of Co-operatives

The Register of Co-operative Societies is primarily responsible for the registration, audit and inspection of all co-operatives under the Co-operatives Societies Act (1940). There are co-operatives other than TCCA/KSS/BSS/MSS/MBSS, called traditional co-operatives under the management and control of the Co-operative Directorate. Because of emphasis on Comilla-type co-operatives, traditional co-operatives have mostly become redundant and inoperative. The co-operative staff, being limited in number, is over-burdened and is not in a position to fully audit and inspect large numbers of the TCCAs and KSS/BSS/MSS/MBSSs.

Despite the number of years during which the co-operative movement has been active, and the importance accorded to co-operatives by GOB, active participation represents a low percentage of the rural population. It is considered that 13% of rural households have become members of TCCA/KSS/BSS/MBSS. However, it has been found that sometimes more than one member of a household has become a member of the co-operative. At present, there is however no evidence to suggest that TCCA/KSS/BSS/MBSS membership is expanding rapidly enough to meet GOB's development targets.

No NGOs nor the Grameen Bank have registered as co-operatives and this appears to be the result of traditional domination of co-operatives by influential and/or wealthy farmers at the expense of the poor. Thus while the objective of co-operatives is to disperse cheap credit in the rural areas, it is the better-off who have been able to gain benefit and NGOs whose efforts are directed at the rural poor have chosen to organized on an informal but highly supervised basis.

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TABLE I.1

Performance of BRDB since Inception to June 1991

1. Inclusion of

a.	Upazilas	452
b.	Thanas	05
	Sub-Total	**457**

2. Organisation and registration of Central Cooperation Associates (CCAS)

a.	Upazila	444
b.	Thana	5
c.	Upazila Landless	144
	Sub-Total	**593**

3. Organisation of primary societies

a.	Farmers	66669
b.	Landless (Male)	15249
c.	Landless (Women)	9902
d.	Women	6185
e.	Informal groups	2095
	Sub-Total	**100100**

4. Enrolment of members

a.	farmers	2433312
b.	Landless (Male)	428747
c.	Landless (Women)	246997
d.	Women	191722
e.	Informal group	35164
	Sub-Total	**3335942**

5. Sale of shares : Tk. 308.95 million

6. Deposit of Saving : Tk. 476.67 million

7. Breakdown of Loans

	Loan investment Million (Tk)	Loan realisation Million (Tk)	Loan overdue Million (Tk)
Farmers societies	7237.78	4658.99	1574.97
Women societies	224.15	167.05	6.27
Landless societies	809.70	465.31	175.66
Informal groups	27.32	18.02	--
Collection of total interest			Tk. 574.91 Million
Collection of service charge			Tk. 172.18 Million

8 Department of Agricultural Extension

8.1 Agricultural Services

The Department of Agricultural Extension (DAE) is headed by the Director General based in Dhaka and has representation down to the block level - a block consisting of between 800-1000 ha. The Department has five divisions and two wings. One of the divisions, the Field Service Division, is responsible for extension services in the field. The other divisions and wings are responsible for programming, co-ordination and back-up services for extension at the national level, but remain under the technical and administrative control of the Director General. Figure-1 illustrates the organogram of the Directorate of Agriculture Extension.

Each district has a Deputy Director, Agriculture Extension, supported by an Assistant Director, Agriculture Extension, a Training Officer and four Subject Matter Specialists - two for crops, plus one each for plant protection and water management. These officers, together with Scientific Officers from the research institutes, constitute the District Technical Committee(DTC).

At Thana level, the Thana Agriculture Extension Officer (TAEO) is supported by two Subject Matter Officers (SMOs), an Assistant Agriculture Officer (AAO), a Junior Agriculture Officer (JAO) and a plant protection unit. The latter consists of a Plant Protection Inspector (PPI), a Spray Mechanic (M) and two plant Protection Mukaddams (PPM).

8.2 Existing Situation in the Area

Staffing

All sanctioned professionals are in position at District level. At the Thana level also most of the staff are available. Some of the officials appointed are actually engaged in administrative duties or managing horticultural nurseries and running paddy demonstrations at the Thana level.

Physical Facilities

Only the TAO in the Thana is provided with residential accommodation. The ERP-1 has provided residential accommodation and office facilities to a limited number of Block Supervisors by renovating some of the Union Seed Stores (USS's) constructed in the early sixties to provide housing for two such individuals.

Lack of adequate transport has been a perennial problem influencing staff ability to provide field services at Thana level and below.

Responsibility for final delivery of advice to farmers lies with Block Supervisors, with each having responsibility for a Union and is and being expected to provide assistance farmers in an area of between 800 and 1000 acres through working with between 8 and 10 key farmers. Information and advice is provided via the Training and Visit (T&V) system, under which key farmers are used as 'conduits' in the information system and provide examples of, and advice on, the efficacy of new techniques for other farmers to follow.

Block Supervisors attend training seasons once every two weeks to receive technical packages for onward transmission during the following fortnight to farmers. These packages are developed centrally in Dhaka by the National Technical Committee and transmitted via Regional and District Technical Committees.

Current Provision of Field Services

The present performance of the DAE staff in the area is poor and they are failing to make any impact with the farmers. Staff dealing directly with farmers are trying to put across a message they do not fully understand because they lack adequate training and one which has little meaning to farmers because it is based on research station trials which have not been tested adequately under local conditions.

The appropriateness of these packages is further questionable because little advice is given by the National Technology Committee on irrigation. This arises because irrigation is the responsibility of BWDB and although specific advise and instruction on irrigation is supposed to be developed by District Subject Matter Specialists in areas having high levels of irrigated agriculture, such advice is sporadic and insufficient to meet farmers' needs. Furthermore, this top-down approach is insufficiently flexible to allow adaptation to local conditions and its effectiveness is therefore reduced.

At a wider level, the value of continuing the T&V system has been increasingly questioned in recent years. While historically of value in the development of agriculture in Bangladesh, (particularly rice) the T&V system has tended to concentrate on large farmers because of the relatives high costs of inputs associated with growing HYV rice (*see, for example, R.H. Morton 'Making the Link: Private and Public Ventures for Technology Transfers in Bangladesh'. Unpublished paper presented to the Bangladesh Extension Society, December 27, 1990.).*

The country is now approaching self-sufficiency in rice production and while there is still considerable scope to increase boro rice cultivation, this crop has a high water requirement and there appears to be an increasing need for alternative production options to meet the needs of small farmers who could maximize income by growing crops requiring less water.

Furthermore, increasing population on a relatively fixed area of land is leading to a diminution of holdings amongst poorer sectors of the farming community as plots are sub-divided between sons. This will in turn result in increases in the number of marginal farmers and DAE programmes will need to take account of these changes.

There has to date been little, if any, consideration given to farmers perceived needs, nor have DOE staff been sufficiently well trained to identify farmers' research and development needs.

Morton (op at) states that there is a need to develop an integrated approach to agricultural development through re-training staff to deal with :

- farmer groups rather than individuals
- provide demonstration sites and field days for farmers to see and discuss developments
- provide specific programmes for women
- increase the effectiveness of information dissemination through greater use of mass media techniques.

9 OTHER GOVERNMENTAL AGENCIES INVOLVED IN RURAL DEVELOPMENT

9.1 Bangladesh Agricultural Development Corporation

The Bangladesh Agricultural development Corporation (BADC) was formed in 1961 as a semi-autonomous statutory body within the Ministry of Agriculture to promote agricultural development through providing;

- o Seed development and distribution
- o Fertilizer distribution
- o Management skills managing agricultural estates and the production and marketing of new crops.
- o Provide agriculture machinery, implements, and supply, operate and maintain tube wells and lift pumps.
- o Develop minor irrigation works
- o Form co-operatives.

Since its establishment, BADC has grown into one of the largest organisations in the country and has a present staff strength of approximately 20,000 people. The BADC Board is headed by the Chairman, with five Member Directors in charge of Seeds, Irrigation, Engineering, Planning, Finance and Supply. A lot of its work is promotional, and it functions as an outlet for government input subsidies. At present most of the inputs supply except seeds and fertilisers other than Urea, TSP and AGP have been privatized and the organisational structure of BADC is likely to undergo a drastic change.

Subsequent historical change has rendered many of these functions obsolete. Co-operative formation is now the responsibility of the Bangladesh Rural Development Board (BRDB) and minor irrigations works is now theoretically the responsibility of LGED.

Although the planning, implementation and operation and maintenance of small irrigation schemes remains within the scope of BADC activities, the operation of DTWs, STWs, HTWs and LLPs has since 1990 increasingly gravitated into the hands of the private sector.

Seed production and agro-services now constitute the primary activities of BADC, with the current emphasis being on the production of specific types of quality seeds. (See Phase-I Reconnaissance Survey NCR).

Input Supply

Seeds: BADC is responsible for the production, procurement and distribution of seed to farmers. BADC obtains seed internally from its own seed multiplication farms (SM farms) and from contract growers, with BARI and BRRI supplying seed stock for multiplication through the foundation and certification phases. Under the Contract Growers Scheme (first initiated in January 1974 under IDA assisted Cereal Seeds Project), BADC procures certified seeds from the Contract Growers. There is importation of seed, wheat, potatoes and winter vegetables for propagation.

Seed is distributed to the Thana, where it is available from normally rented stores, or from Thana Fertilizer Storage Godowns, which have become redundant due to deregulation of fertilizer marketing.
Farmers can obtain their quota of seeds directly from BADC registered seed dealers at the Thana and village levels who in turn obtain their supply from BADC stores.

The New Marketing System of 1984 has resulted in the private sector assuming responsibility for the sale of fertilizer to farmers, with BADC providing wholesale distribution through 75 Primary Distribution Points (PDP) and 61 Thana sales Centres (Chowdhury, 1988).

Fertilizer: BADC was responsible for the importation and distribution of all fertilizers in Bangladesh. Since the introduction of the New Marketing System (NMS) in April 1984, BADC has marketed fertilisers through wholesale dealers only. This system has now been replaced by privatization of the fertilizer procurement and distribution system.

Pesticides: Importation, wholesale distribution, storage and retailing are handled by the private sector. The manufacturers or their representatives have a chain of retailers in the village and there appears to be adequate stocks. Commonly used pesticides are malathion, diazinon, dimacron, furadan and dithane; which are all widely available.

9.2 Agricultural Research

Established in 1973, Bangladesh Agricultural Research Council (BARC) co-ordinates the research activities of all agricultural institutions in the country and is empowered to allocate funds to other institutes for research under its contract-research programme. The institutes engaged in agricultural research in the country include:

- Bangladesh Rice Research Institute (BRRI)
- Bangladesh Agricultural Research Institute (BARI)
- Bangladesh Jute Research Institute (BJRI)
- Soil Resources Development Institute (SRDI)
- Bangladesh Institute of Nuclear Agriculture (BINA)
- Sugarcane Research and Training Institute (SRTI)
- Bangladesh Tea Research Institute (BTRI)
- Fisheries Research Institute (FRI)
- Marine Fisheries Research Institute (MFRI)
- Forest Research institute (FRI)
- Bangladesh Agricultural University (BAU)

Several other universities and organisations including NGOs also carry out BARC - funded research activities.

The Bangladesh Agricultural Research Institute (BARI) has a wide range of responsibilities covering all the important crops that are not already covered by specialized crop-specific institutes. Apart from rice, jute, sugarcane and tea, BARI is responsible for research into and propagation of all field crops and has special projects dealing with wheat, oilseed, potatoes, tobacco, vegetables and citrus fruits. This research is organised into 11 (eleven) divisions;

- Agronomy
- Plant Breeding - also responsible for Research and Development
- Plant Pathology
- Pathology
- Entomology
- Horticulture
- Soil Science
- Agricultural Engineering
- Agricultural Economics
- Post-Harvest Technology, Analytical Services, and
- On-farm Research.

The headquarters of BARI is located in Joydebpur and the Institute has four Regional Agricultural Research Centres located in Jessore, Iswardi, Jamalpur and Hathazari; each of which have four sub-centres.

The organisation most closely associated with the field implementation is the Division of On-Farm Research Development of BARI. In the past, this has concentrated on simple cropping systems but has recently moved into Farming Systems research which includes fodder production, field crops, horticultural crops and fuelwood trees. This research is aimed at optimising productivity of agricultural systems through adaptive research trails in order to ensure that agricultural systems are accurately tailored to local agro-climatic and soil conditions. It will also take account of physical, biological and socio-economic factors.

The most important of the other institutions is the Bangladesh Rice Research Institute (BRRI) located at Joydebpur, 30km from Dhaka, which has an establishment of about 250 scientists and has an annual budget of about Tk. 110 million. It is organized into 12 research divisions and 3 support divisions and, in addition to its research functions, it engages in extension, training and demonstration of appropriate rice technology to the farmers. Founded in 1971, it has developed 25 strains of HYV rice and has improved 26 local varieties. It has a germplasm collection of over 4000 rice cultivars.

9.3 Agriculture Credit

The Bangladesh Bank is responsible for the control and execution of GOB's agricultural credit policy. The national structure of agricultural credit comprises the Central Bank itself, Bangladesh Krishi Bank (BKB), four nationalised commercial banks (NCBs), (namely the Sonali, Janata, Agrani and Rupali banks) Bangladesh Samabaya Bank Ltd. (BSBL) and affiliated Co-operatives. The Bangladesh Rural Development Board (BRDB) sponsors co-operatives which are mainly financed by the Sonali Bank and which are also a part of the agricultural credit system. In addition to the Governmental activities, non-government organisations (NGOs) contribute to the agricultural credit needs of the country.

9.4 The Bangladesh Bank

The Bangladesh Bank was established in December 1971. In addition to its responsibility to the control of the money supply, it has regulatory power over credit institutions and establishes reserve requirements as well as maximum interest rates. It offers refinance facilities to credit institutions and uses a system of preferential interest rates to divert credit towards priority sectors. Interest rates differ not only between the agricultural and other sectors but also within the agricultural sector itself.

In 1977 BB advised BKB and NCBs to finance a short term agricultural credit programme known as "Taka 100-crore Special Agricultural Credit Programme". This programme led to a considerable expansion in the short term credit to agriculture. The volume of this credit fund has expanded manifold. The NCBs have also been encouraged to increase their activities in rural areas. The Agricultural Credit Department of BB has also provided refinance for the issue of term loans.

In 1990-91 Bangladesh Bank issued a circular for implementing a credit programme of Tk. 12500 million through credit institutions which included the following:

	Items for investment	Short term Tk. Million	Term Tk. Million	Total Tk. Million
1.	Crop production (except tea cultivation)	6500	-	6500
2.	Tea leaf production	1100	250	13500
3.*	Irrigation equipment and machines	-	900	900
4.	Livestock development	-	750	750
5.	Pisciculture	150	250	400
6.	Agriculture machines and equipment	-	350	350
7.	Others	1750	500	2250
	Total	**9500**	**3000**	**12500**

* *Later on the amount of credit was increased from Tk.900 Million to Tk.1500 Million by BB.*

The responsibility for distribution of agricultural credit of Tk. 12500 was divided among different institutions as under :

Credit Instruction	Amount (Tk. Million)
Sonali Bank	2330
Janata Bank	1170
Agrani Bank	1090
Rupali Bank	470
Pubali Bank	50
Sub-Total	**5110**
Bangladesh Krishi Bank	5000
Rakub	1100
BSBL	300
Bangladesh Rural Development Board	990
Sub-Total	**7390**
Total	**12500**

The amount of Tk. 12500 million was earmarked for the following activities:

A. Short term loan for
A.1 Crop production (except tea)
A.1.1 T. Aman
A.1.2 Rabi Crops
- a. Boro
- b. Wheat
- c. Potato
- d. Sugarcane
- e. Mustard/Groundnut
- f. Other rabi crops (Pulses, Vegetables)

A.1.3 Summer crops
- a. Aus/B.Aman
- b. Jute
- c. Maize
- d. Other Summer crops (Sesame, Summer Vegetables)

A.1.4 Cotton
A.1.5 Tobacco

A.1.6	Other crops(Ginger, Almonds, Vegetables)
A.2	Tea
A.3	Processing and marketing of agricultural produces
A.4	Potatoes cold storage
A.5	Socio-economic activities
E.1	RPP/RFP
E.2	Swanirbhar
E.3	Other Socio-economic activities
A.6	Pisciculture
F.1	Shrimp Culture
F.2	Aquaculture
A.7	Other short term loan activities such as banana cultivation.
B.	Term Loan for
B.1	Irrigation machines and equipment
B.1.1	Deep Tubewells
B.1.2	Shallow Tubewells
B.1.3	Lowlift Pumps
B.1.4	Hand Tubewells/Rower Pumps
B.2	Livestock development
B.2.1	Draft animals
B.2.2	Animal fattening/milch animals/Poultry/goat farms.
B.3	Pisciculture
B.3.1	Pond fisheries
B.3.2	Shrimp culture
B.3.3	Aquaculture
B.4	Agriculture machines and implements
B.4.1	Power Tillers
B.4.2	Tractors
B.4.3	Other agriculture machines
B.5	Horticulture (Banana, Pineapple cultivation, etc.)
B.6	Tea garden development
B.7	Agro-based industries
B.8	Rural transport (Boat, Rickshaw, bullock carts etc.)
B.9	Betel Leaf cultivation
B.10	Socio-economic Programmes
B.10.1	RPP/RFP
B.10.2	Swanirbhar
B.11	Other term loan Programmes (Silk Cocoon production, Rubber Plantation etc.)

The BB in their circular also fixed the ceiling for loan per acre and per person. As many as 34 items were covered for loan proposes, with the minimum amount per acre and per person being was Tk.2533 and Tk.6333 respectively for sesame cultivation and the maximum being Tk.60259 and Tk.150648 respectively for betel leaf cultivation. A person owning only 0.5 bigha or 16.5 decimals of land is considered eligible for a loan. The same circular mentions the periods for disbursement and collection of short term credit.

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9.5 Department of Forestry

The Department of Forestry (DOF) come under the administrative head of the Agriculture and Forest Division of the Ministry of Agriculture. The department has a custodial role and is changed with:

- protection and management of forest wealth of the country
- harvesting of forest produce on sustained-yield basis to meet the requirements of consumers and wood-based industries
- raising of plantations with high yielding varieties of species to improve the quality of forests
- horizontal expansion of tree cover within the country through the Forest Extension Service
- realisation of revenue, preparation of budget, auditing, accounting, etc.
- education and training of manpower
- research on forest products (for forest based industries) and forest management.
- protection and propagation of wildlife coupled with the enforcement of the Wildlife Preservation Act (1973).

9.6 Field Services

DOF has little representative at Thana level beyond the general promotion of tree planting. In pursuance of this objective, each Thana has allocated some government land for the raising of seedlings for sale to the public at a nominal price. While DOF has junior members responsible for raising seedlings, the promotion of seedling plantation is currently the responsibility of the Department of Agricultural Extension.

In addition to general provision of trees for unplanned planting, DOF has two specific forestry programmes relating to government (largely khas) land. These are:

An agro-forestry scheme under which landless families are given access to (but not ownership of) three acres of land; of which one half acre is for a houselot. The remainder must be strip planted with 3 by 3 meter spaced rows of trees interspaced with 10 metre wide strips which may be used for agriculture. Proceeds from timber sales are divided equally between the individual and the government. The programme covers 6,000 acres nationwide and 1,500 acres have been taken up so far.

Twenty eight thousand (28,000) acres have also been allocated for fuelwood production. Under this scheme, participants are granted rights to 5 acres of newly forested land for a seven year period, with the proceeds from fuelwood sales being split between the individual and the government 60%-40% respectively. Approximately 11,000 acres have been taken up under this programme so far.

In addition to the provision of programmes on government land, the Department of Forestry is working in conjunction with the Bangladesh Tobacco Corporation to provide small-scale commercial farming opportunities. Under this scheme, roadside, canal and railing embankments are given over to tobacco cultivation, with 80% of the proceeds going to the grower, 10% to the Thana, and 10% to the government.

9.7 Department of Environment

Prior to the late sixties there was no separate establishment or legislative provision related to or responsible for environmental pollution control or environmental management in Bangladesh. Municipal and other local bodies tried to control water pollution and smoke nuisance, while the Directorate of Public Health Engineering was responsible for construction of community water supply as also sewage disposal systems. They had very limited competence.

The "Factories Act" gave some vague powers to the Chief Inspector of Factories and his staff to control the use, handling and discharge of pollutants primarily to protect the health and well-being of workers. The CrsPc (Criminal Procedure Code) contains provisions which could be used by the civil administration to handle critical situations of pollution.

The Water Pollution Control Act of 1973 resulted in the setting up of a small unit comprising 27 persons under the Department of Public Health Engineering (COPHE) who initiated the monitoring of stream water quality at a number of locations.

In 1977 the GOB promulgated the "Environment Pollution Control Ordinance (Ordinance No. XIII of 1979) which continues to be the only effective legislation. The Ordinance provided for a 16-members Environment Pollution Control Board (with the member in charge of the physical planning and housing sector in the planning commission acting as Chairman) and an "Environment pollution control cell" with the Director as Executive Head. The board was to lay down policies for the control, prevention and abatement of environmental pollution and to suggest measures for the implementation of such policies. The actual implementation was the responsibility of the cell, which started working with a manpower of 26. The Environment Pollution Control Project was initiated in 1977 and had a manpower of 118 and continued till May 1985; when the Department of Environment Pollution Control (DEPC) started working with a total manpower of 70. The Department has its headquarters in Dhaka and four divisional offices at Chittagong, Khulna Rajshahi, & Bogra. The headquarters has a manpower of 26 (6 officers 14 staff and 6 MLSS) and each divisional office has a staff of 11, with laboratory facilities to analyses water.

9.8 Recent Development

The department has now been renamed as Department of Environment (DOF) and was placed under the newly-formed Ministry of Environment and Forestry in August 1989. The objective of the Department is overall environmental protection and improved environmental management.

The main objectives of the environmental protection programme are :

i) to ensure long-term sustainable all round development of the country;

ii) to conserve the national heritage of Bangladesh in terms of both natural resources and the quality of life;

iii) to ensure a healthy and meaningful living environment for all citizens.

In order to play its new role, GOB has agreed to increase the number of staff to 388.

A three-year ADB funded T.A. project entitled "National Environmental Monitoring and Pollution Control" commenced on the 1st August 1989, with the objectives of enhancing national environmental planning, assessment and monitoring capacity.

In addition, the environmental infrastructure implement component of "Dhaka Urban Infrastructure Improvement Project" (again funded by ADB) is meant for strengthening DOE's capability through providing

i) Office-cum-laboratory Buildings,

ii) Procurement of lab equipment,

iii) Logistic support (vehicles etc.),

iv) Funds for 44 additional staff.

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9.9 Legislation

The present environmental protection in Bangladesh covers or tends to cover laws on the :

- Control of environmental pollution,
- Protection of environmental health
- Conservation of natural and cultural resources.

The Environment Pollution Control Ordinance (Ordinance No. XIII of 1977) is the only effective law in the field of environment. To make the law more comprehensive and the penalties more stringent, a new revised ordinance named "Bangladesh Environment Preservation Ordinance" is under consideration for approval.

9.10 Activities

The responsibilities of the Department of Environment is include;

- Co-ordinating environmental assessment and monitoring,
- Undertaking certain assessment and monitoring tasks such as on-site surveillance of development projects and follow-up monitoring of developments to determine if environmental improvement measures are effective,
- Preparing reports for planning and implementing agencies,
- Promoting environmental awareness through public information programmes,
- Controlling and monitoring of industrial pollution

9.11 Bangladesh Water Development Board

The principal institution concerned with FCD/I planning and construction in Bangladesh is the Bangladesh Water Development Board, which is under the Ministry of Irrigation, Water Development and Flood Control (MIWDFC). BWDB has the long term goals of:

- Providing irrigation water to about 11.0 million acres of cultivatable land (along with BADC, BKB, BRDB and private organisations).
- Providing flood control and drainage facilities to about 8.25 million acres.

By the end of 1985, BWDB has providing irrigation Water to about 0.475 million acres and had brought about 6.4 million acres under its flood protection and drainage programmes.

Much of BWDB planning involves medium to large scale irrigation projects but because of the absence of an overall strategic plan, BWDB has involved itself in small-scale irrigation schemes (Choudhury, 1988).

10 FCD/I Development, Operation and Maintenance

10.1 BWDB Assistance in Planning

BWDB provides assistance to Thanas in the development of both the Thana Drainage and Embankment Plan (TDEP) and the Thana Irrigation Plan (TIP). Both are part of the National 5 Year Development Plan.

The planning process is similar in both cases, with each initial plan having to identify the existing situation (local water drainage and flood pattern for TDEP and existing and proposed irrigation schemes for TIP). These plans are then developed to include proposed flood control and drainage schemes and low-cost, low-technology irrigation schemes respectively.

Both plans are then reviewed by BWDB. At this Plan 2 stage, BWDB will evaluate the plan in relation to the effects of proposals on nearby Thanas and identify major drainage projects outside of the technical capacity of the Thana Parishads (for which BWDB will then assume responsibility), as well as identifying additional proposals requiring BWDB technical assistance.

The review of the TIP follows much the same course, with BWDB identifying complex water control schemes requiring its technical assistance and providing and operating water control equipment.

While aimed at providing a consultative planning process between the Thanas and BWDB, the institutional relationship between the two institutions remains unclear. While provide technical service to the Thana Parishad either through directly assuming responsibility for projects beyond the technical capability of the LGED or through providing additional technical support to the LGED, this would appear to represent a division of labour between organizations, rather than as an integrated approach to FCD/I planning.

Furthermore, neither organization appears to be accountable to the other. Thus, while BWDB has to review TDEP-2 and TIP-2 before the respective final Plan 35 can be drawn up, there appears no legal requirement for the Thana to take account of BWDB comments and, conversely, BWDB appears under no obligation to reciprocate by submitting its own plans to the Thana for review.

10.2 Linkages between BWDB and LGED

The only two linkages between BWDB and LGED are:
The District Steering Committee which is presided over by the Deputy Commissioner of respective districts. Executive Engineers of BWDB and LGED, representatives of NGOs, and the Thana Officials under the same District are invited to attend these meetings.

It generally discusses pre-selected topics covering on-going development activities, especially Food for Work, under different Thanas, of that district. The presence of BWDB and/or LGED officials seems to be optional and depends on the relevant major agenda issues.

District Co-ordination Committee - co-ordinates different organizational development activities, their progress, interruption, overlap and future development issues.The attendance by different organization's representatives at these meetings varies and is irregular.

There is also provision for constituting an Thana Technical Sub-Committee to review future Food For Work programme and other Thana development schemes. This Committee is headed by the respective Thana Nirbahi Officer (TNO) with the Project Implementation Officer (PIO) as member secretary. The Thana Engineer (TE). Sub-divisional Engineer (SDE) of BWDB and a few other Thana are members of this committee. It is expected that such a committee will review proposed Thana development schemes. However, in general, plans are rarely charged on the basis of wider implications for drainage and flooding, and the BWDB SDEs rarely attend the meetings.

10.3 Thana Drainage and Embankment Plan.

- o Major drainage schemes that need highly technical support (and equipment) will be undertaken by BWDB.
- o The Thana Parishad through its "Drainage and Embankment plan will undertake small scale drainage schemes.
- o BWDB will assist the Thana where additional technical assistance is needed in local problematic flood control in order to ensure that nearby Thanas are not adversely affected.

10.4 Thana Irrigation Plan

- o BWDB will provide technical assistance to the Thana for examining the Thana Irrigation Plan and will also assist in preparing complicated water control schemes;
- o BWDB will operate major water control structures and regulators and will supply irrigation water as and when needed.
- o LGED will provide technical assistance for the Thana Irrigation Plan. It will supply a Planning and Drainage manual for irrigation channels and water control structures to the Thana Parishad. Where necessary it will co-ordinate with BWDB, BADC and other organizations.

10.5 Operation and Maintenance of FCD/I Schemes

BWDB maintains its own system of operation and maintenance on a project by project basis (see organizational scheme below).

BWDB O&M SYSTEM

Zone	**Zonal Chief Engineer**
	Executive Engineer (Responsible for O&M Division)
Project	**Sub-Divisional Engineer** (who is responsible for the day to day running of a project or part of a project)
	Section Officers (who are responsible for the day to day running of a project or part of a project)
	Work Assistants (who are responsible for the direct supervision of embankment maintenance)
	Khalashi (who are responsible for guarding and operating sluices & may also guard sections of embankments)

10.6 Funds for BWDB O&M

BWDB draw its funds from four sources. These are ;

- o an annual allocation from the Governmental Revenue Budget which is mainly used to cover staff costs, with some money being used for the operation and repair of completed projects;
- o the Development Budget which is used to construct new projects that are partly or completely financed by foreign and or to facilitate the O&M of completed portions of on-going projects;
- o the cash Foreign Exchange Budget which is used to purchase foreign supplies and materials for completed projects;
- o Food for Work Programmes.

Food for Works Schemes are mainly used for embankment maintenance and construction and the excavation and cleaning of drainage and irrigation canals.

The BWDB allocation from the Revenue Budget is barely adequate to meet basis staffing costs and certainly insufficient to finance much in the way of regular O&M work on existing projects. The BWDB FFW Programme therefore provides the backbone of maintenance works and this in turn is limited by the size of the wheat allocation, which only allows for emergency repairs on a priority basis.

BWDB provides supervision of the work and the wheat is distributed via local Thana Chairman, TNO and Union Parishad.

Local labour for maintenance of rural works is largely employed through the Food for Work Programme, which is funded by CARE and administered by GOB either directly, as in the Rural Maintenance Programme (RMP), or via BWDB, whose Food For Work Programmes mainly concerned with the construction and rehabilitation of embankments' and the excavation/re-excavation of drainage and irrigation canals. The number employed in the RMP in each union is 15 (fifteen) women usually drawn from female headed households who are responsible for maintaining 15 (fifteen) miles of rural roads within each union. They are paid Tk. 24.00 (Taka Twenty Four) per day and work a six-hour, six-day week (excluding GOB holidays). The RMP provides employment for some 60,000 destitute women and operates in 4095 out of 4401 Unions in Bangladesh.

10.7 NGOs in Bangladesh

A large number of Non-Government Organisations (NGS) work in Bangladesh. Their main emphasis is on the poor and disadvantaged people of the country. More than 400 NGOs age engaged at national level. The number can exceed 10,500 if the local level voluntary organisation are taken into account.

The NGOs were registered with the Ministry of Social Welfare and Women Affairs. Now a separate NGO cell has been established for dealing with matters relating to NGOs. Most of these NGOs depend on foreign donations for funds. External agencies also channelise funds through them.

While comprehensive information on NGO activities has yet to be collected, the following information has been collected:

10.8 BRAC*

This is perhaps the largest NGO in the country with a regular staff of 4200 and 3,600 teachers.. During 1990, this organisation collected Tk. 756,718,000 and provision for spending on various projects was made for Tk. 633,374,114. The sources of funds were as follows:

		Tk.in '000	%
o	Contribution from donors	516,345	68.2
o	Income from sale proceeds from BRAC's income generating projects	240,373	31.8
	Total	**756,718**	**100.0**

The donor were Novib, ODA, DANIDA, SIDA, UNICEF, NORAD, EZE, SDC, Ford Foundation, Interpares/CIDT, USCC, OXFAM are other.

The project undertaken included:

o Rural Development Programme	(RDP)
o Child Survival Programme	(CSP)
o Livestock Development Programme	(LDP)
o Primary Education for Older Children	(PEOCH)
o Housing for the Rural Poor	(HRP)
o Rural Credit Project	(RCP)
o Haor Development Programme	(HDP)
o Ganokendra Journal	(GJ)
o Vulnerable Group Development Credit Programme	(VGDCP)
o Hatirdia Integrated Development Programme	(HIDP)
o Facilitation Assistant Programme on Education	(FAPE)
o Printing and Publication	(PP)

Alleviation of poverty and empowerment of the poor are the major goals pursued by BRAC. The main features of BRAC strategy is to operate as capacity initiator, by;

i) Creating awareness amongst the targets groups of their own problems,

ii) Organising target populations into effective working groups,

iii) Increasing their awareness of their capability to sense their legal and civil rights.

BRAC has introduced the Rural Credit Programme and an amount of Tk. 180,762,695 was disbursed for 92,645 loans in 1990 covering 10 sectors. The recovery rate was 99 percent. The total membership of Rural Credit Programme was 61,934 by the end of December 1990 and savings mobilisation was Tk. 10,187,885.

Current Programmes of BRAC are:

o *Rural Development Programme* - a multisectoral programme working for poverty alleviation, employment and income generating and mobilisation of landless poor.

o *Rural Credit Project* - a self financed credit project.

o *Women's Health and Development Programme* - a health project which is a continuation of the Child Survival Programme.

o *Non-Formal Primary Education Programme* - to education programme for children of poor households who have never been to school.

o *Handcraft Production and Marketing* - Siriculture industry

o *Income Generating Commercial Enterprises* - BRAC Printing Press and Cold Storage Plant

o *Training, Research and Evaluation, Rural Enterprises, Management Development Programme, etc.* - Support services to core programmes and projects.

10.9 Proshika Manobik Unnyan Kendra

Since 1974 Proshika has been assisting the groups of rural poor through enabling them to undertake various social and economic activities through motivational work, training input, and credit support. Perhaps this is the second largest NGO. They have set up 49 Area Development Centres, of which 14 are in the NCR. They have covered 3415 villages of 429 unions under 70 thanas in 26 districts. So far 23,252 group have been organised of with 11,637 (50.05%) of these being women's groups.

Training course have been organised for 1041 human development (formal), 3370 human development (non-formal), 429 practical skills development (formal) and 769 practical kills development (non-formal). Total participants were 50,203 men and 93,700 women. In financial year 1990-91, 60, 671 men's group members and 60,208 women's group members received loan totalling Tk. 61,793,812 and Tk. 58,740,263 respectively. These were dispersed under 3589 and 4066 projects respectively.

Realisation of RLF loans was 90.3%. During the period under report, 978 learning centres were established where 18,540 group members were trained in adult literacy. Moreover, 14,569 children were sent to schools under the children's schooling component.

750 tubewells were sunk and 12,035 sanitary latrines were supplied under Health Infrastructure Building Programme.

10.10 Nijera Kori

The development efforts of NIjera Kori are concentrated upon the rural poor who are capable of providing physical labour but cannot assure their daily needs. Nijera Kori supports this class of people through raising their consciousness and making them self reliant. Nijera Kori adopts the idea that development can be sustainable only through ensuring the participation of the majority people in:

o decision making
o implementation of development programmes, monitoring and evaluation of the programme
o sharing the benefits of the development.

At the same time, the role of women in development should be ensured. All its programmes are directed to established human rights in a democratic manner.

Nijera Kori has covered 4 (four) divisions in 17 districts and 37 Thanas. It has organised 1356 male and 1593 female groups.

Total number of members:	o Male	=	36964
	o Female	=	32961
	Total:Male + Female	=	69,925
Amount of savings :	Males group savings	Tk. 67,09,184	
	Female group savings	Tk. 34,04,961	
	Total	Tk. 101,12,145	
Basic training has been provided to:	o Males	=	490
	o Females	=	389
	Total	=	879
Higher training to	o Male	=	33
	o Female	=	14
	Total	=	47

They also have economic activities where group saving fund are utilised and profits are distributed to participant members.

They have social activities which are mainly directed against drug abuse, establishment of rights of members, taking combined group action against any illegal activity by influential people. In addition they provide legal aid to poor people.