

URBAN DEVELOPMENT DIRECTORATE  
MINISTRY OF WORKS

FULCHARI UPAZILA SHAHAR LAND USE PLAN  
GAIBANDHA ZILA

SARM ASSOCIATES LIMITED  
DHAKA.

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GAIBANDHA ZILA

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SARM ASSOCIATES LIMITED  
125/A, MOTIJHEEL COMMERCIAL AREA  
DHAKA - 1000, BANGLADESH

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କୁମାରୀ  
ଶ୍ରୀମତୀ

## CONTENTS

CHAPTER	DESCRIPTION	PAGE NO.
CHAPTER- I	1.1 INTRODUCTION ...	1
	1.2 Methodology ...	2
CHAPTER- II	THE UPAZILA IN ITS DISTRICT CONTEXT	
	2.1 Location and physical characteristics of the Upazila	6
	2.2 Population and Settlement Distribution	7
	2.3 Economic performance and Transport linkage	12
	2.4 Socio- Infrastructure ...	25
	2.5 Current Development Projects	28
	2.6 Synthesis : Identification of Hierarchy of Settlements in the Upazila	30
CHAPTER-III	THE UPAZILA HEADQUARTERS	
	3.1 Definition of Sphere of Influence (catchment area)	35
	3.2 Definition of Shahar area ...	35
	3.3 Existing Land Utilization pattern ...	38
	3.4 Physical opportunities and Constraints	44
CHAPTER- IV	FORECAST	
	4.1 Population, Household structure, Density	47
	4.2 Labourforce and Employment ...	50
	4.3 Forecasting of Land requirements, provision standards ...	54
CHAPTER- V	LAND USE PLAN	
	5.1 Approach, Concept, Planning Principal	55
	5.2 Plan description ...	56

CHAPTER-VI	PROGRAMMING AND IMPLEMENTATION	
6.1	Priority actions, Cost implication	59
6.2	Phasing and Urban Deferred	...
6.3	Development Control	...
6.4	Monitoring and Reviewing	...
		61

## LIST OF TABLES

Table No.	Title	Page No.
2-1	Area, Population, its density with variation in different Upazilas of Gaibandha Zila.	8
2-2	Number of Unions and Mouzas in different Upazilas of Zila Gaibandha	9
2-3	Union-wise distribution of population within the Upazila Fulchhari, 1981	10
2-4	Life time migration in Greater Rangpur	11
2-5	Migration from different places to Upazila Shahar	11
2-6	Economically active population ...	12
2-7	Agricultural labourforce ...	13
2-8	Daily average wage rate of agricultural labourer of the district ...	14
2-9	Gross District Products at current price	16
2-10	Economic Performance: Crop production 1981-82	17
2-11	Economic performance : Livestock & Poultry 1977	19
2-12	Industrial Economic performance of Zila and comparable position of the Upazila ...	20
2-13	Length in mileage of Pucca, Semi-pucca and Kutcha roads 1982 ...	22
2-14	Number of buses, trucks, auto-rickshaws, bullock carts and country boats ...	23
2-15	Number of Railway and Bus Stations 1982	24
2-16	Transportation and linkage points of Zila and Upazila	24
2-17	Number of Huts and Commercial Places 1982	25
2-18	Health and Family Planning Units, 1982	26
2-19	Number of Urban Facilities ...	27

2-20	Education Facilities	...	28
2-21	Major Current Development Projects in Fulchari Upazila	...	29
2-22	Hierarchy of Human Settlements by concentration of population	...	31
2-23	Hierarchy of Settlements in terms of service concentration	...	33
3-1	Sphere of influence (catchment area) of Fulchari Upazila	...	36
3-2	Name of the mouzas and other information of Fulchari Upazila Shahar (study area), 1986		37
3-3	Existing land uses in the Fulchari Upazila Shahar (study area), 1986	,...	39
3-4	Administration, Govt. and Autonomous body		40
3-5	Commercial and Industrial Land use	...	41
3-6	Socio-cultural centres	...	41
3-7	Educational Land use	...	42
3-8	Water bodies	...	43
3-9	Land uses by Roads	...	43
3-10	Land Value	...	45
4-1	Projected Population from 1985-2000 in the Sphere of influence of Upazila Shahar Fulchari		47
4-2	Density on medium range of projection of the sphere of influence of Fulchari Upazila Shahar 1985-2000	...	48
4-3	Forecasting of household size in the Sphere of influence (medium projection) of Fulchari Upazila		48
4-4	Projected resident population from 1985-2000 in Fulchari Upazila Shahar (study area)		49
4-5	Density of population against medium range projection in the Shahar area	...	49
4-6	Household size against medium range of population projection in the Shahar area	...	50

4-7	Forecasting of Labourforce of Zila 1985-2000 (medium range projection 1961-81 growth rate 2.00% of active population) . . . . .	51
4-8	Distribution of migrant labour in Zila Gaibandha and its Upazilas. . . . .	52
4-9	Distribution of migrant labour in the Fulchari Upazila, 1985-2000 . . . . .	53
4-10	Total projected population of Fulchari Upazila Shahar, 1985-2000 . . . . .	54
4-11	Design population of Fulchari Upazila Shahar for housing and services, 1985-2000	54
5-1	Estimated Land Requirements 1985-2000 . . . . .	57
6-1	Phasing of development 1985-2000 . . . . .	60

LIST OF MAPS

1. Location Map
2. Gaibandha Zila Map
3. Fulchari Upazila Map
4. Existing and Proposed Land Use Map
5. Town Service Centre Map

LIST OF DIAGRAMS

1. Age Sex Pyramid
2. Potential areas for future Urban development
3. Area showing of one crop two crops and triple crops
4. Land value
5. Area showing of high medium and low

## CHAPTER-I

## 1.1 INTRODUCTION

This report presents landuse plan for Upazila Shahar of Fulchari. Pertinent data have been assembled from field survey and secondary sources, viz., the Upazila Parishad and the Bangladesh Bureau of Statistics.

It is believed that the Plan would provide support to the Government's Policy of Administrative Decentralization at the Upazila level in the following manner :

- o the Plan will serve as a guideline for carrying out development activities because of the (i) location of administrative and associated activities and (ii) population increase at the Upazila Shahar upto 1990 and beyond the year 2000.
- o the studies incorporated in this report will serve as a canvas on which the future Upazila sub-regions development activities would be carried out.
- o the present study also defines the limits of the future Upazila Shahar and incorporates the existing conditions, with particular reference to the infrastructure in the Upazila Shahar area together with the Upazila sub-region within the context of the newly recognized Zila Gaibandha.
- o other matters relating to implementation of the Plan in the framework of investment policies, legal framework and institutional arrangement have been dealt with. Problems of data in some respects, i.e. migration and the labour force have been encountered but these have been resolved to a great extent through adoption of alternate approaches.

### 1.2 METHODOLOGY

This chapter presents the detail of the methodologies followed in the Report. It elaborates the methods of field survey, collection of primary and secondary data, compilation and analysis of data, etc. A flow chart of activities in Diagram-I illustrates the stages of work for the Report. The details are discussed below:

#### Collection of Information from Secondary Sources

Relevant maps e.g. Upazila map, mouza map, contour map and useful literature such as Census Reports, District Gazetters etc. were collected and Consulted for a thorough study of the project.

#### Field Survey

Field survey included a wide range of data collection. The survey was carried out by a group of professionally trained experts, investigators and surveyors. One team performed the socio-economic survey and the other landuse survey of the Upazila Shahar. The questionnaire and checklists used in the survey are given in the Appendices.

#### Socio-economic Survey

Socio-economic survey was carried out through the household questionnaire within the catchment area, and study area by interviewing some selected persons from Government officials and private individuals at Upazila level.

#### Household Questionnaire Survey:

A 13% sample of the total households in each mouza included in the Study Area was considered for household questionnaire (Appendix-I) survey. The study area was determined during the reconnaissance survey. The household samples were selected from different income and occupation groups from all the mouzas of the study area.

#### Catchment Area Survey:

To determine the Zone of influence or the catchment area of the Upazila Shahar, interviews with local knowledgeable persons and the users of services like market, health, education, transport, administration etc. were undertaken. On the basis of these interviews and field observation on existing transportation network and distribution of sub-centres/growth points, the catchment area or the Zone of Influence of the Shahar is determined.

#### Hierarchy of Settlements Survey:

To identify a hierarchy of settlements in the Upazila, mouza-wise population, existing services and facilities were listed using a structured format. Population of mouzas in the census year, 1981 and the concentration of services and facilities were considered to determine the hierarchy of settlements in the Upazila.

#### Interviews:

Interviews with relevant persons were necessary and useful to gather various information for the preparation of landuse plan and for a cross-check of the collected data through other surveys. This also help to conceptualize the various issues in respect of landuse plan of the Upazila Shahar.

### Landuse Survey of the Upazila Shahar

Landuse survey was conducted in the study area of the Shahar, identified during the reconnaissance survey. The mouza map of scale 1" = 330' was used in the survey to plot the existing landuses. Boundary and layout of different categories of landuses were recorded on the map.

### Survey of the Town Service Centre:

The Town Service Centre (Core Area) of the Upazila Shahar was surveyed using the contour map of Bangladesh Water Development Board. This map was upgraded by noting all changes from the previous one and naming all existing man-made structures and physical features.

### Data Processing, Analysis and Forecasting

The data and information collected through field surveys have been processed manually and in most cases presented in tabular and graphical forms.

Analysis has been made to visualise the overall trends of growth of the Upazila economy within the economy of the Zila region. Population and demographic trends together with Government Goals towards social and economic development at Upazila level has been considered. Basically, the analysis leads to indicate sectoral development in spatial context, i.e. at the levels of identifiable growth centres including the study area. Forecasting has been made in terms of population growth in the next ten years with indications upto the year 2000 in the following manner:

High Projection : Based on growth rates on the 1961-1974 trends:

Low Projection : Based on the growth rates indicated by the Bangladesh Bureau of Statistics reflecting downward growth trends as a result of family planning and population control.

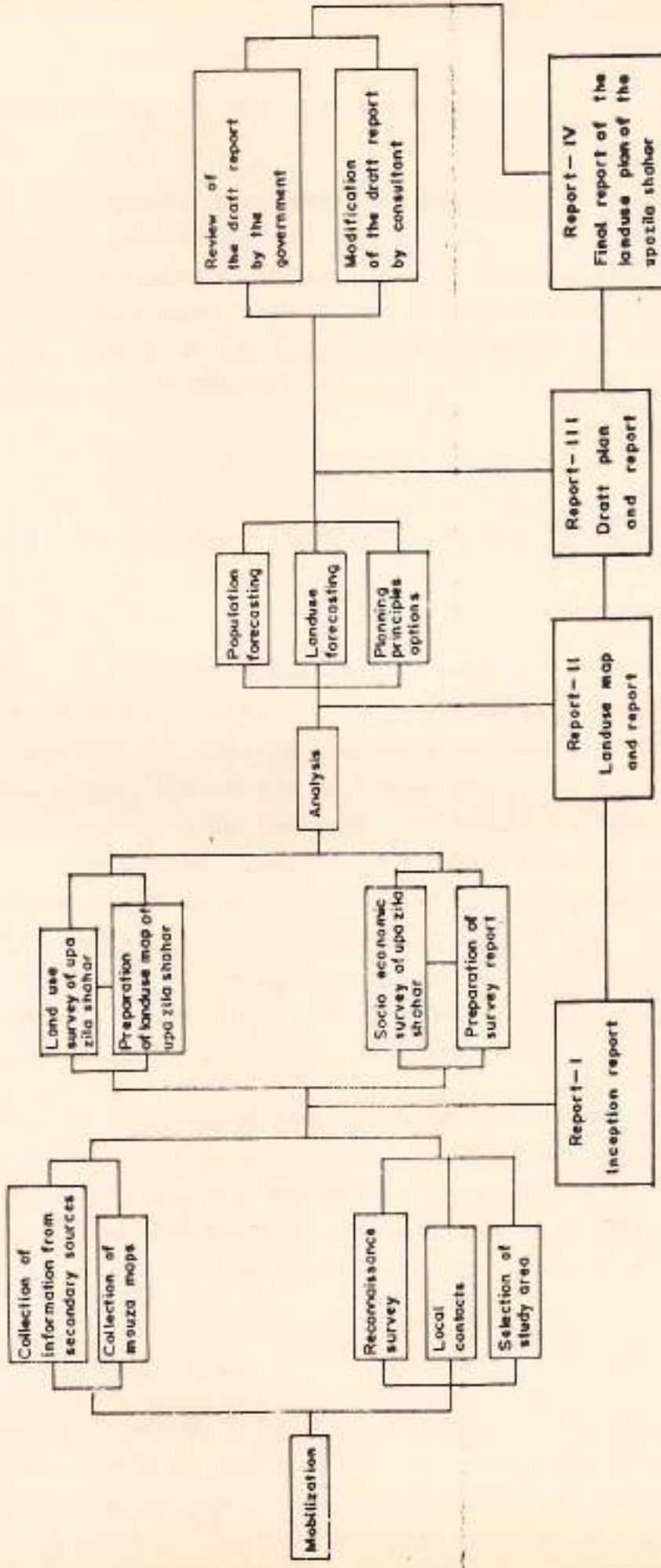
Medium Projection: Based on the rate during 1961-1981.

#### Preparation of Landuse Plan

The following aspects have been considered :

- i) Identification of projects
- ii) Allocation of land and land assembly
- iii) Determination of future township boundaries
- iv) Road network
- v) Detail plan for the future town service centre.

**FLOW DIAGRAM SHOWING THE METHODOLOGY OF PLANNING**



## CHAPTER-II

## THE UPAZILA IN ITS DISTRICT CONTEXT

The background information the physical characteristics and the socio-economic performance of an upazila are important for the landuse plan of the Upazila Shahar. Again, these aspects when compared with its broader region, in this case, the Zila Gaibandha, the position of the Upazila is more clearly visualized exposing the necessity of its development into a Shahar.

### **2.1 Location and Physical Characteristics of the Upazila**

#### **Location**

The location of Upazila Headquarters especially the Police Station was first established in the village Fulchari. Due to river erosion the village Fulchari has already been washed away by the river Jamuna but the name Fulchari has been retained for the Upazila Headquarter though it has been shifted to the village Gozaria. Fulchari Upazila is geographically located on the south-east of Gaibandha Zila Shahar between latitude  $25^{\circ}05'N$  to  $25^{\circ}25'N$  and longitude  $89^{\circ}35'E$  to  $89^{\circ}45'E$ . The distance of Fulchari Upazila Headquarter is about 12 miles (19.20 kilometers) from Gaibandha Zila Shahar.

The Upazila is bounded on the north by Gaibandha Sadar Upazila and Kurigram Zila, on the south by Dewanganj and Saghatta Upazilas, on the east by the Jamuna river and on the west by Gaibandha and Saghatta Upazila. Map - 1 shows the location of the Upazila in the context of the Zila Gaibandha.

#### **Physical Characteristics**

The general topography of the Zila Gaibandha is flat. The river Jamuna flows on the east of the Zila. The eastern part of the Zila is low laying with sandy soil and the major parts of the area are inundated during the rainy season.

WEST BENGAL (INDIA)

\*LEGEND

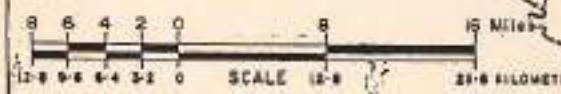
International Boundary	
District Boundary	
Upshi Boundary	
Metalled Road	
Unmetalled Road	
Embankment	
Railway Line (with Bridge)	
River	
River or Khel	
Upshi	

THE HAWAIIAN

A S S A M ( I N D I A )

DINAJPUR DIST.

MAP =



BANGLADESH MAP



JOYPUR HAT

BOGBA DIST.

DEWANGANJ

89° 15'

89° 30'

87° 45'

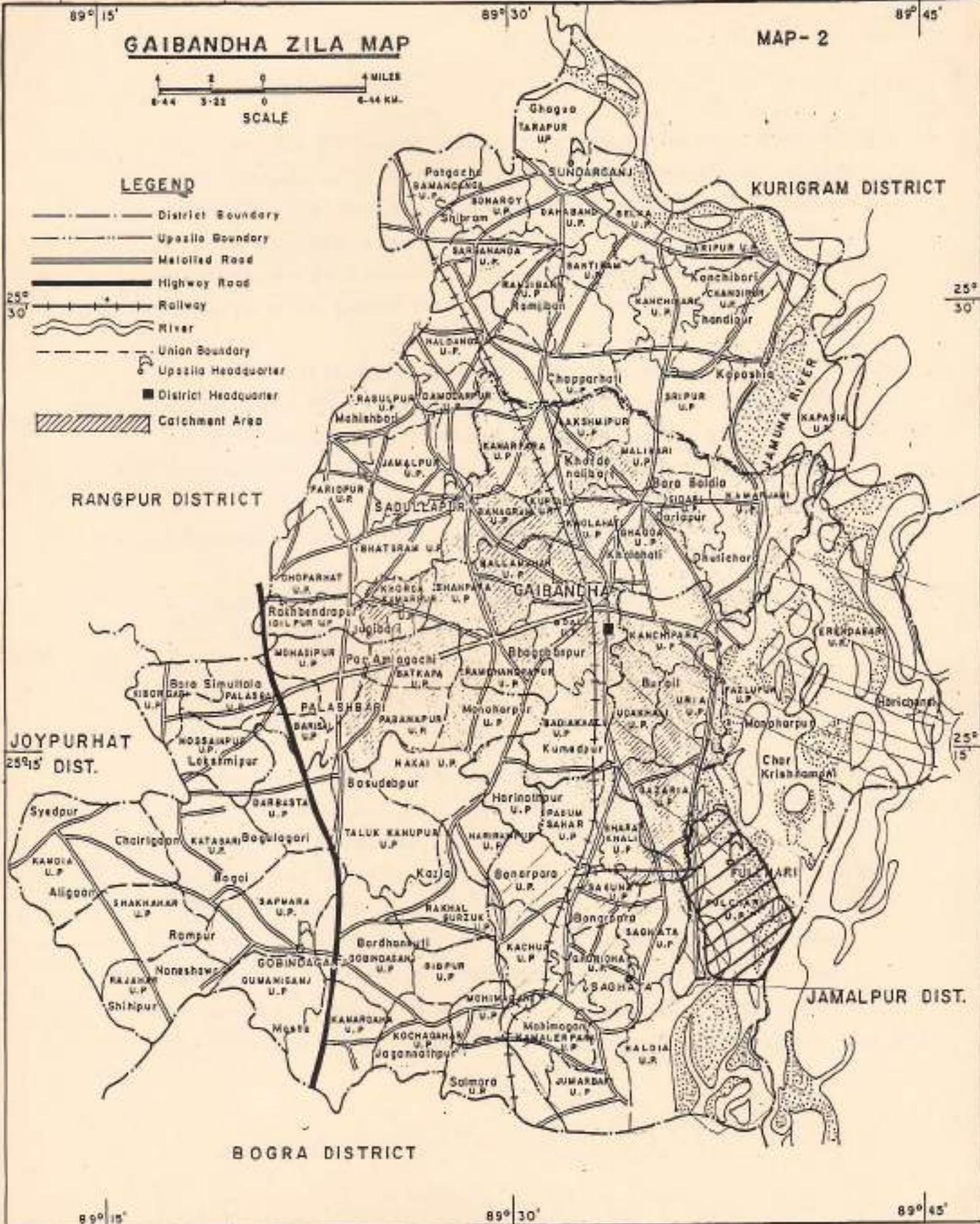
GAIBANDHA ZILA MAP

A horizontal scale bar with tick marks at 0, 2, and 4. The distance between 0 and 2 is labeled "2 MILES" and "3.21 KM". The distance between 2 and 4 is labeled "4 MILES" and "6.44 KM". Below the bar, the word "SCALE" is centered.

MAP - 2

**LEGEND**

- District Boundary  
Upazila Boundary  
Major Road  
Highway Road  
Railway  
River  
Union Boundary  
Upazila Headquarters  
District Headquarters  
Catchment Area



The Upazila Fulchari comprises comparatively low-lying area compared to its adjoining other Upazilas of the Zila. Almost the whole Upazila is subjected to monsoon floods and the areas on the bank of the Jamuna are subject to serious erosion. The existing Upazila Shahar area is also under the threat of erosion.

The Zila Gaibandha lies just on the north of the Tropic of Cancer. The characteristic features of the climate in that part and the Upazila Fulchari is mild with equable temperature, high humidity and plentiful rainfall.

## 2.2 Population and Settlement Distribution.

The population and settlement distribution within the Zila and Upazila are as follows:

Within the Zila.

According to 1981 population census, the total population in Gaibandha Zila was 1569691 of which 801808 were males, and 767883 females. The density of population was 1884 persons per square mile ( 736 persons per square kilometre). Table 2-1 shows that the increase of population in 1981 over 1974 is 16.80% against 21.80% for the country and 15.59% for the Zila. For Zila at the variation between 1964-74 is 41.04%. The table also shows the Upazila-wise distribution of population within the Zila.

Table -2-1 : Area, Population, its density with variation  
in different Upazilas of Gaibandha Zila.

Upazilla/ Zila	Area			P. o	P. u	1974 Population	Density per sq. mile	Variation % 1951- 61	Population 1961-74 1961-74	Density per sq. mile	Variation % 1974-81
	Sq. mile	Sq. km.	Popula- tion								
Fulchhari Upazilla	121	311	67718	560	15.94	99625	825	47.40	116588	964	16.80
Saghatta Upazilla	87	224	108601	1248	30.04	148536	1707	36.77	163882	1884	10.53
Palash- bari Upa- zila	74	190	104382	1392	31.05	156395	2113	49.83	171882	2322	9.90
Sadulla- pur Upa- zila	90	251	117233	1303	32.22	169388	1882	44.49	199477	2216	17.76
Sundar- gon Upa- zila	161	414	187117	1155	25.52	257772	1601	37.76	311260	1953	20.75
Gobinda- Gong Upa- zila	176	452	195648	1112	30.30	272066	1546	39.06	319678	1816	17.50
Gaiban- dia Sa- dar Upa- zila	124	1319	182172	1469	25.05	254020	2049	39.44	286924	2514	12.95
Gaibandha Zila	833	2269	962871	1155	27.51	1357992	1630	41.04	1569691	1884	15.59

Source: Figures of 1981 has been collected from Upazila Parishad. Remaining quoted from Population Census of B.B.S.

The Upazila-wise distribution of unions, mouzas within the Zila are shown in Table 2-2.

Table 2-2 : Number of Unions, and mouzas in different Upazilas of Zila Gaibandha.

Upazila/Zila	Unions	Mouzas
Gaibandha Sadar Upazila	13	136
Polashbari	" 9	161
Gobindagonj	" 17	336
Sadullapur	" 11	166
Saghatta	" 10	117
Fulchari	" 7	80
Sundarganj	" 15	109
Gaibandha Zila	82	405

Source : Bangladesh Bureau of Statistics, Rangpur District Statistics 1983.

#### Within the Upazila

Table 2-1 shows that in 1981 the total population of Fulchari Upazila was 116588, out of which 59719 <sup>were</sup> males and 56869 females. In 1974 the population of Fulchari was 99815. The percentage variation of population between 1974 and 1981 was 16.80% while the increase of population between the period 1961 and 1974 was 47.40%. The density of population is 964 persons per square mile (372 persons per square kilometre) which is much less than the National average density of population (1566 persons per square mile or 612 persons per square kilometre). Table 2-3 shows the Union-wise distribution of population within the Upazila.

Table 2-3 : Union-wise distribution of population within the Upazila Fulchhari

Name of Unions	Number of Households	Number of Population
Erendabari	3697	22646
Fazlupur	2364	15565
Fulchhari	1966	17201
Gozaria	3042	17201
Kanchipara	3919	21030
Udakhali	2726	14851
Uria	2334	13086
Total :	20048	116182

Source : Bangladesh Bureau of Statistics,  
Union Statistics, 1983

#### Migration Pattern

There are data on both in and out migration in the context of the Zila. According to the Bangladesh Bureau of Statistics, the net life time migration of the greater Rangpur Zila was 141682 in the census year 1961, out of which 81501 were males and 60181 females. The corresponding figures in 1974 were 127511 immigrants and 65410 out migrants. The net migration of the census year 1974 was 62029 of which 32852 were males and 29177 females. This trend is still continuing. It may be stated here that most immigrants in the Zila were due to the growing industries along the Rangpur-Bogra Highway and Gaibandha-Rangpur route. Mohimaganj are occupying a very prominent position because there are a number of jute purchasing centres, rice mills & other trade centres. Sugar mill in Mohimaganj very close to Saghatta has accommodated large number of people within this Zila and Upazila.

Table 2-4 : Life time migration in greater Rangpur

	1961			1974		
	Life time in migrants	Life time out migrants	Life net migrants	Life time in migrants	Life time out migrants	Life net migrants
Male	100276	18775	81501	65380	32456	32852
Female	81426	21245	60181	62131	32954	29177
Total	18702	40020	141682	127511	65410	62029

Source : Bangladesh Bureau of Statistics, Statistical Year Book of Bangladesh, 1982 Page 121 Table 3.60 and 3.61 combined.

Table 2-5 shows the migration from different places and settled to Upazila Shahar. According to Socio-economic household survey about 14.15 percent of the total household from different villages within Fulchari Upazila were taking shelter as squatter on the flood control embankment situated very close to the Upazila head quarter. Most of these families were landless by the process of river erosion of Jamuna. Due to the location of Tistamuk rail ferry ghat and the importance of Upazila headquarters about 2.43 percent families came from other Upazilas of Gaibandha Zila to Fulchari Upazila.

Table 2-5 Migration from different places.

Places	No. of migrated household	Percentage of total migrated household	Percentage of the total surveyed household
Within the Fulchari Upazila	29	80.55	14.15
Outside the Fulchari Upazila in Gaibandha Zila	5	13.89	2.43
Outside the Gaibandha Zila	2	5.56	0.97
Total	36	100.00	17.55

Source: Field survey, September, 1986.

### 2.3 Economic Performance and Transport Linkage

#### Employment Situation & Income.

Information on employment situation at Upazila level is not available. Therefore, the information available with the Bangladesh Bureau of Statistics are used to have an overview of the employment situation in the Upazila. Table 2-6 shows that compared with Bangladesh, the percentage of economically active population over the years are gradually increasing. The increase for female population has been higher than that of male population.

Table 2-6 : Economically active population

	Economically active population in (Fig. in thousand)											
	1961			1974			1981					
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Greater Rangpur Zila	1133	124	1258	1517	60	1577	1749	121	1870			
Bangladesh	14802	2640	17443	19650	869	20519	22430	1189	23619			
Zila as % of Bangladesh	7.65	4.70	7.21	7.72	6.90	7.69	7.79	10.18	7.92			

Source : Bangladesh Bureau of Statistics, Statistical Year Book of Bangladesh, 1982, P-144, Table-4.2

Table 2-7 shows the agricultural labour force in Greater Rangpur. The percentage of agricultural labour force over the years increased gradually.

Table 2-7 : Agricultural labour force

(Fig. in thousand)

	Agricultural labour force in								
	1961			1974			1981		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Greater Rangpur Zila	1039	125	1164	1348	45	1394	1340	36	1376
Bangladesh	13343	1333	14676	15229	609	15838	14139	333	14472
Zila as % of Bangladesh	7.79	9.38	7.93	8.85	7.59	8.80	9.48	10.81	9.51

Source : Bangladesh Bureau of Statistics, Statistical year Book of Bangladesh, 1982

#### Income-Expenditure Pattern

Upazila level information on income-expenditure pattern of the population are not available. Therefore, information on daily wage rates of different occupation categories in the Zila has been considered as the basis of overviewing the situation on income-expenditure pattern in the Upazila. Table 2-8 shows the daily average wage rate of agricultural of the Greater Rangpur Zila.

Table 2-8 : Daily average wage rate of agricultural labourer of the district.

(Taka per day)

Year	Rangpur	Bangladesh
1972-73	4.10	4.72
1973-74	6.18	6.69
1974-75	6.79	9.05
1975-76	7.35	8.82
1976-77	7.54	8.93
1977-78	7.50	9.44
1978-79	9.58	10.88
1979-80	10.17	12.46
1980-81	14.80	13.97
1981-82	15.17	15.48

Note : The wage rate mentioned in the table is for unskilled labourers without land.

Source: Rangpur District Statistics, 1983

### Economic performance

The position of the Upazila in agricultural and non-agricultural sectors are discussed below. The gross district products over different years as presented here shows the trend of economic growth in the broader region, i.e. the Zila Greater Rangpur.

#### Gross District Products:

Table 2-9 presents information on gross district products in the Zila Rangpur. It shows that there is an increasing trend in almost all sectors of economy. This also indicates that the Zila Gaibandha and Upazila Fulchhari might also have experienced similar situation.

#### Performance in the Agricultural Sector:

The economy of the Upazila predominantly depends on agriculture. Majority of the people are dependent on agriculture for their livelihood. Rice, Jute, Wheat, Sugarcane are the important crops of the Upazila. Tables 2-10 and 2-11 present information on the economic performance of the Upazila for some crops, livestock & poultry.

#### Performance in the Industrial Sector:

Table 2-12 shows information on industrial sector performance of the Upazila. It shows that major industries of the Upazila are cottage and small scale industries. In the Upazila headquarters, there are also some industrial development which includes mainly rice husking mills, saw mills, brick fields etc.

Table 2-9 : Gross District Products at Current Prices

Sectors	1977-78	1978-79	1979-80	1980-81	1981-82
1. Agriculture	63.3	61.2	63.7	59.5	56.5
i) Crops	54.5	52.0	53.2	52.6	47.6
ii) Forestry	0.04	0.04	0.03	0.33	0.34
iii) Livestock	6.5	8.2	7.6	6.0	6.9
iv) Fisheries	2.2	2.0	4.0	1.6	1.7
2. Mining and quarrying	-	-	-	-	-
3. Industry	2.1	2.1	1.9	2.8	2.9
i) Large scale	0.7	0.6	0.6	0.9	0.9
ii) Small scale	1.4	1.5	1.3	1.9	2.0
4. Construction	5.0	5.5	5.3	6.1	7.4
5. Power, gas, water & sanitary services	0.04	0.50	0.05	0.12	0.15
6. Transport, storage & communication	4.3	4.5	3.9	5.2	6.5
7. Trade services	10.3	11.1	11.8	9.8	8.9
8. Housing services	6.7	7.1	6.5	6.8	7.3
9. Public admin. and defence	2.9	2.8	2.4	3.8	4.1
10. Banking and insurance	0.5	0.7	0.7	1.3	1.2
11. Professional and Miscellaneous services	4.8	5.0	3.8	4.6	5.1
12. GDP at current market prices	100.0	100.0	100.0	100.0	100.0

Source : B.B.S. Rangpur District Statistics, 1983

Table - 2-10: ECONOMIC PERFORMANCE: CROP PRODUCTION 1981-82

Sl. No.	Name of the crop	Total pro- duction in maunds or Zila Gaiv- bandha	Upazila Gathbandha	Upazila Palash- bari	Upazila Gobinda- ganj	Upazila Sadull- par	Upazila Sagata	Upazila Sunder- ganj	Upazila Fulchhari
1.	Rice (1981-82) Aus + Aman + Boro	8159357 (100)	1409511 (16.86)	458790 (11.47)	1871299 (22.38)	917095 (10.97)	910477 (10.9)	1733001 (20.73)	559154 (6.69)
	Mounds (%) ACRES (%)								
	607212 (100)	93516 (15.40)	63503 (10.45)	121007 (19.92)	70660 (11.63)	55236 (9.09)	164329 (27.06)	38961 (6.41)	
2.	Wheat (1981-82)	982650 (100)	132478 (13.48)	160112 (16.29)	163876 (16.67)	138789 (14.12)	213970 (21.77)	70973 (7.22)	102452 (10.42)
	Mounds (%) ACRES (%)								
	41776 (100)	8306 (19.88)	8049 (19.26)	4949 (11.84)	6280 (15.03)	7171 (17.16)	2710 (8.88)	3211 (7.92)	
3.	Jute (1981-82)	1085695 (100)	109950 (10.12)	182885 (16.24)	183505 (16.9)	136035 (12.71)	144720 (13.32)	65530 (6.03)	261070 (24.04)
	Mounds (%) ACRES (%)								
	58565 (100)	7705 (13.15)	9160 (15.64)	9780 (16.69)	7780 (13.28)	8010 (13.67)	3175 (5.42)	12955 (22.12)	

contd..

ECONOMIC PERFORMANCE : CROP PRODUCTION 1980-81 and 1981-82

18

Sl. No.	Name of the crop	Total pro- duction in maunds of Zilla Cat- bandha	(F1E. Maunds)			
			Upazila Gaibandha	Upazila Palash- bari	Upazila Gobindia- ganj	Upazila Sodhata pur
4.	Sugar Cane (1981-82)	6080834 (100)	45975 (.607)	449754 (6.5)	5418035 (78.74)	828047 (12.03)
	ACRES	13919 (100)	115 (.826)	1000 (7.18)	10842 (77.9)	1657 (11.9)
5.	Festuca (1981-82) Local + HYV + Root	967349 (100)	162045 (16.85)	59416 (6.142)	315481 (32.61)	98754 (10.20)
	ACRES	9824 (100)	1623 (1.65)	601 (6.11)	3132 (31.88)	998 (10.15)
6.	Pulses Masur+Mung +Beshari +Gram+Motor +Mashkali (1981-82)	61185 (100)	6132 (10.02)	9384 (15.33)	10459 (17.09)	3236 (5.288)
	ACRES	7559 (100)	904 (11.95)	1166 (15.42)	1067 (14.11)	425 (5.62)

cont..

Table - 2-11: ECONOMIC PERFORMANCE : LIVESTOCK AND POULTRY 1977

CATEGORIES	Zilla Gaibana- ndha	Upazila Gaibana- ndha	Upazila Palach- bari	Upazila Egan	Upazila Gobinda- ganj	Upazila Sadullapur ganj	Upazila Sunder- ganj	Upazila Fulchon- ri	Upazila Soghata	Upazila Soghata
1	2	3	4	5	6	7	8	9	10	11
1.Cattle No. (%)	569867 (100)	62363 (16.86)	50357 (13.61)	90523 (24.47)	56632 (15.31)	77317 (20.9)	32765 (8.85)	-	-	-
2.Buffaloes No. (%)	3866 (100)	696 (18.00)	252 (6.51)	2047 (52.94)	43 (1.11)	10 (0.25)	156 (4.055)	662 (17.12)	-	-
3.Goats No. (%)	255497 (100)	39893 (15.61)	30502 (11.93)	58478 (22.88)	33188 (12.98)	31802 (12.44)	43239 (16.92)	18395 (7.19)	-	-
4.Sheep No. (%)	926601 (100)	158650 (17.12)	106751 (11.52)	214743 (23.17)	114120 (12.31)	102595 (11.07)	137193 (14.80)	92549 (9.98)	-	-
5.Chicken No. (%)	926601 (100)	158650 (17.12)	106751 (11.52)	21743 (23.17)	114120 (12.31)	102595 (11.07)	137193 (14.80)	92549 (9.98)	-	-
6.Ducks No. (%)	327936 (100)	54212 (16.53)	43997 (15.41)	75161 (22.91)	39180 (11.94)	42248 (12.88)	34634 (10.56)	38504 (11.74)	-	-

Figure in parentheses indicates percentage

Source : Rangpur district statistics, 1983 (B.B.S)

Table-2-12 : Industrial Economic Performance of Zila and comparable position of the Upazila

Indication	Zila		All Upazilas except Fulchari		Upazila Fulchari	
	Quantity	%	Quantity	%	Quantity	%
<b>Cottage Industries (1982)</b>						
- Unit	3619	100	3318	91.68	301	8.32
- Fixed Invest- ment	33330	100	25916	77.75	7414	22.25
- Persons engaged (total)	12706	100	11912	93.75	794	6.25
- Production cost (Lakh taka)	74160	100	65814	88.79	8346	11.25
Sale value	113434	100	101806	89.75	11628	10.25

Source : Bangladesh Bureau of Statistics, Rangpur District Statistics 1983, Table 4.01, Page 75

#### Transport Linkage:

The transport network in the Fulchari Upazila has not yet developed probably due to its peculiar situation. The existing layout of roads within the Upazila Shahar is not good. It is narrow and unsuitable for major vehicular traffic excepting rickshaws and other small vehicles.

The communication of the Upazila headquarters with other important places and Shahars has been improved with the creation of the Upazila since 1983. Fulchari ghat is an important railway Ferry ghat in North Bengal. Thus railway plays an important role of communication within the Upazila, Zila and other parts of the country. The Upazila has now about 5 miles (8 kilometre) of metalled road and 1.0 miles of ( 1.61 kilometre) semi-pucca road.

Length of road mileage according to pucca, semi-pucca and kutcha road within Upazila and Zila is presented in Table 12-13. The existing transport facilities of the Upazila compared with other Upazilas of the Zila are presented in Table - 2-14 & 2-15. The principal transport mode and linkage points within Zila and Upazila are shown in Table 2-16.

Table 2-13 : Length in mileage of pucca, semi-pucca and kutcha roads 1982

Zila/Upazila	Pucca Miles	%	Semi-pucca Miles	%	Kutcha miles	%
Zila Gaibandha	90	(100)	19	(100)	2088	(100)
Gaibandha Upazila	19	(21.11)	2	(10.52)	325	(15.56)
Palashbari Upazila	20	(22.22)	2	(10.52)	66	(3.16)
Gobindaganj Upazila	29	(32.22)	5	(26.31)	700	(33.52)
Sadullapur	5	(5.55)	2	(10.52)	500	(23.94)
Saghatta Upazila	5	(5.55)	7	(36.84)	87	(4.16)
Sunderganj Upazila	7	(7.77)	-	-	160	(7.66)
Fulchari Upazila	5	(5.55)	1	(5.26)	250	(11.97)

Source : Rangpur District Statistics, 1983 (B.B.S)

Table 2-14: Number of buses, trucks, auto-rickshaw and rickshaws,  
bullock carts and country boats.

Name of the Transport- ation	Total produc- tion of zile Gajibanda	Upazila Gaibon- dha	Upazila Palash- bari	Upazila Gobinda- pur	Upazila Saduli- pur	Upazila Saghata	Upazila Sunder- ganj
1. Buses (%)	2 (100)	2 (33,33)	-	2 (66,66)	-	-	-
2. Trucks (%)	11 (100)	6 (54,54)	1 (9,09)	2 (27,27)	1 (9,09)	-	-
3. Auto Rick- shaw (%)	3 (100)	-	2 (66,66)	-	-	1 (33,33)	-
4. Rickshaw (%)	3565 (100)	2210 (62,02)	950 (26,66)	50 (1,40)	100 (2,80)	38 (1,06)	105 (5,19) (.84)
5. Country Boat (%)	425 (100)	50 (11,76)	10 (2,25)	25 (5,38)	6 (1,41)	172 (40,47)	62 (14,58) (23,52)
6. Bullock carts	2003 (100)	250 (8,91)	400 (14,27)	725 (25,86)	125 (4,45)	693 (24,72)	460 (16,41) (5,35)

Figure in parentheses indicate percentage

Source : Rangpur district statistics 1983 (BBS)

Table 2-15; Number of Railway and Bus stations 1982

Zila/Upazila	Railway station No.	(%)	Bus station No.	(%)
Zila Gaibandha	14	(100)	7	(100)
Gaibandha Upazila	4	(28.57)	2	(28.57)
Polashbari *	-	-	2	(28.57)
Gobindaganj "	1	(7.14)	2	(28.57)
Sadullapur "	2	(14.28)	1	(14.28)
Saghata	5	(35.71)	-	
Fulchari	1	(7.14)	-	

Source : Rangpur District Statistics, 1983

Table 2-16 : Transportation and linkage points of Zila &amp; Upazila

<u>Transportation</u>	<u>Principal linkage points</u>
1. Road Transportation	
- Pucca Roads:	
Gaibandha-Rangpur Branch Road	Upazila of Polashbari, Pirganj & Mithapukur and Rangpur Metropolitan area and important places like Bara Darga and Tulshi Ghat Bazar.
Saghata-Sundarganj Branch route	Bonarpara, Basatkali and Gaibandha Pourashava, important place like Khanka Sharif in Gaibandha
Polashbari-Sherpur Branch route	Upazila of Gobindaganj Sibganj and Zila Shahar Bogra, important place like Mohastangar and historical place.
- Kutcha roads	Kutcha roads branch off from the Pucca roads and links all hats and bazar.

TransportationPrincipal linkage points2. Railway

Tistamukh Ghat-Rangpur-Dinajpur

Connects Upazila centres of Fulchari, Saghata, Sadullapur, Sundarganj, Dirgacha, Kaunia, Lalmonirhat and Zila, Gaibandha, Kurigram, Rangpur, important place like Bonarpara (Railway Junction, Mohimaganj - Sugar Mills)

3. Waterway

Bahadurabad Ghat Kurigram

Connects Upazila, Fulchari, Chilmari, Roumari, Rajibpur and Zila Gaibandha important place like Balashi Ghat (Steamerghat)

2.4 Socio- Infrastructure

In Tables 2-17, 2-18, 2-19 & 2-20 information on the existing social infrastructure of the Upazilas are presented. These Tables present information on hats and bazars, health and family planning units, education and other available services and facilities.

Table 2-17 : Number of Hats and Commercial Places, 1982

Hats/ Bazar	Zila Gaib- bandha	Gai- ban- dha	Palash- bari	Gobinda- ganj	Sadulla- pur	Sagatha- ganj	Sunder- ganj	Fulchari
Daily Bazar	54	6	9	9	15	7	7	1
%	(100)	(11.11)	(16.66)	(16.66)	(27.77)	(12.96)	(12.96)	(1.85)

Weekly	123	21	11	15	20	13	30	13
Bi-weekly	(100)	(17.07)	(8.94)	(12.19)	(16.26)	(10.56)	(24.39)	(10.56)

Figure in parentheses indicates percentage

Source : Rangpur District Statistics, 1983 (B.B.S)

Table-2-18: Number of Health and Family Planning Units, 1982

Name of Units	Zilla Gaibandha	Upazila Gobindapur	Upazila Palashibari	Sundarban	Sagutha	Sunderganj	Fulchhari
1. Upazila Health Complex (%)	100 (20.0)	1 (20.00)	1 (20.00)	1 (20.00)	1 (20.00)	1 (-)	1 (-)
Beds (%)	45 10 (22.22)	-	25 (55.55)	10 (22.22)	-	-	-
2. Charitable dispensary (%)	38 10 (26.31)	2 (5.26)	11 (28.94)	6 (15.78)	7 (-)	7 (18.42)	2 (5.26)
3. Missionary Hospitals (%)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
Beds (%)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
4. Other Health Centres (%)	5 1 (20.00)	2 (40.00)	- (-)	2 (20.00)	- (-)	- (-)	- (-)
Beds (%)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
5. Family Welfare Centres (%)	32 10 (31.25)	- (-)	14 (43.75)	5 (15.6)	2 (6.25)	1 (3.12)	1 (-)

Table- 2-19 : Nature of Urban Facilities and their extent.

Facilities	Zilla Gaibandha	Gairbandha	Uppazila	Sadullapur	Sagaria	Sunderganj	Fulchhari
1. No. of Trade Centres(%)	177	27	20	24	35	20	37
2. Tube-wells (%)	17794	6540	1424	1947	1600	2424	3132
3. Villages electrified (%)	27	3	6	8	1	6	2
4. Post office (%)	80	13	11	20	11	8	13
5. Telegraph Office (%)	10	1	1	2	1	2	3
6. Dak Bunglow and Rest House(%)	13	3	1	3	1	3	2
7. Bank Branches (%)	56	19	4	10	9	7	4
8. Other Govt. Offices (%)	361	110	30	86	31	36	27
9. Cinema Halls (%)	6	3	1	1	-	1	-
10. Registered Club (%)	64	7	10	33	2	10	2
11. Public Library(%)	3	2	-	-	1	-	-
12. Orphanage(%)	1	1	-	-	-	-	-
13. Shabesram	1	1	-	-	-	-	-

## AGE SEX PYRAMID OF THE STUDY AREA

(FULCHARI UPAZILA)

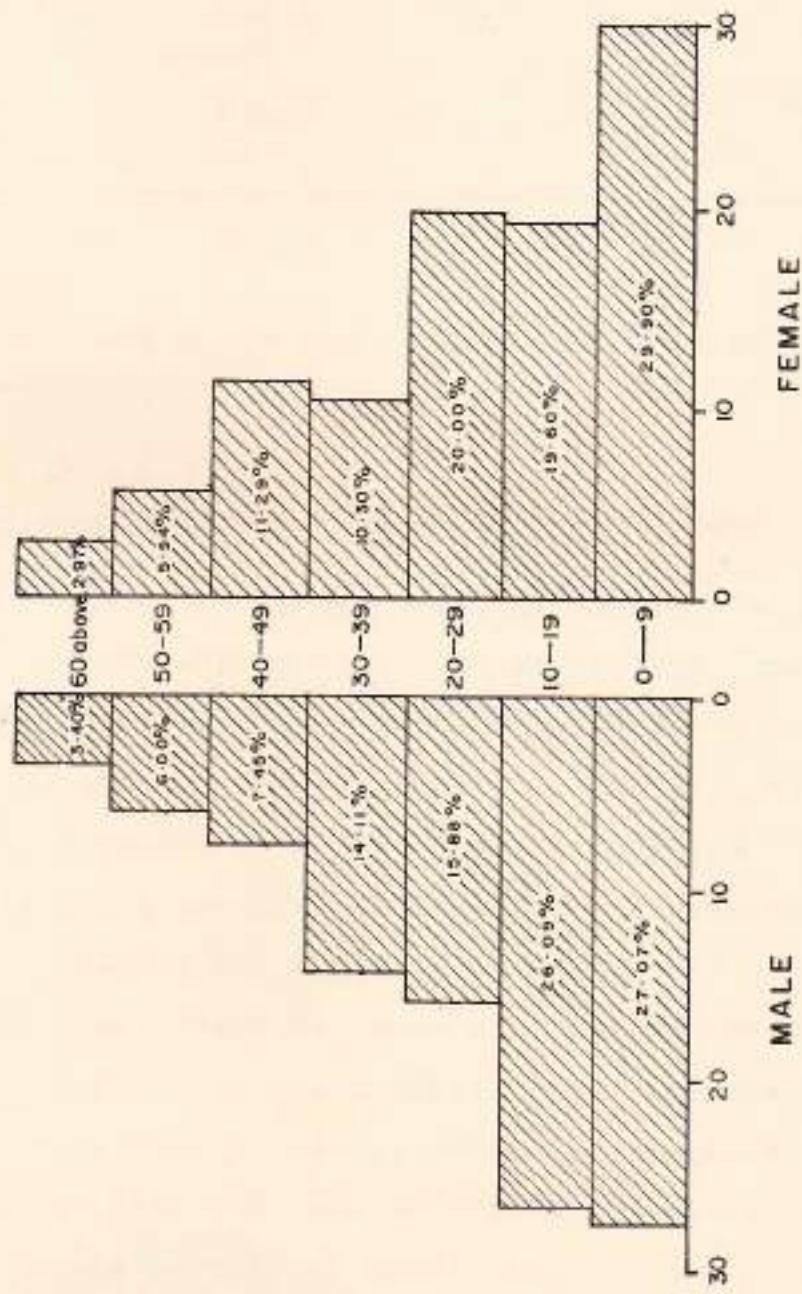


DIAGRAM - I

Table -2-20: Education Facilities

Indication	Zila		All Upazilas except Fulchari		Upazila Fulchari	
	Quantity	%	Quantity	%	Quantity	%
1. Primary Schools	764	100.00	717	93.85	47	6.15
2. Secondary Schools	197	100.00	189	95.94	8	4.06
3. Colleges	11	100.00	11	100.00	-	-
4. Madrasha	181	100.00	178	98.34	3	1.66
5. Gonosikhya Kendras	7	100.00	7	100.00	-	-
Total	1160	100.00	1102	95.00	58.00	5.00

Source : Bangladesh Bureau of Statistics, Rangpur District Statistics, 1983,  
P.P. 83-87.

## 2.5 Current Development Projects

The Upazila Authority with the grant of ADP (Annual Development Programme) undertakes different projects in various development sectors such as agriculture, irrigation, animal husbandry, education, transportation, communication, building construction, physical infrastructure, health and social welfare and small & cottage industry for the development of the Upazila. Besides these, there are some foreign organisations which also undertake several projects for developing different infrastructure facilities of the Upazila. CARE, & WFP are performing the construction and reconstruction works of roads against food for work programme. Table 2-21 shows the detail picture of Current Development Projects undertaken by (i) Upazila Parishad (ii) CARE and (iii) Food for Work Programme (WFP).

It is notable that the projects are distributed in different Union Parishads with a rational allocation of fund passed in the Upazila Parishad Meeting. This has, therefore, a spatial consequence to develop physical infrastructure and required facilities in the Upazila in the near future.

Table 2-21: Major Current Development Projects in Fulchhari Upazila, 1985-86

Sl. No.	Name of the project	Fund allocation in Taka
1.	Development of Upazila Nursery	20,000.00
2.	Construction of Pucca Drain at Baushi	50,000.00
*3.	Construction of youth training centre at Frenchabari & Tengra Kandi	15,813.00
4.	Construction of Natidanga Culvert	1,29,824.00
5.	Construction of Box-culvert at Parul, Gunabari Banghi	2,33,502.00
6.	Construction of Kalir Bazar Bridge	3,60,367.00
7.	Construction of Seed Store at Fulchhari	1,22,000.00
8.	Construction of house for Madanerpara Clinic	76,000.00
9.	Development of Sports and culture	1,07,265.00
10.	Electrification of Fulchhari Bazar	9,105.00
11.	Construction of Bachelor Apartment at Upazila Parishad	1,23,447.00
12.	Construction of Harichandi Primary School	1,00,000.00

## 2.6 Hierarchy of Settlements:

The hierarchy in term of settlements classified with the ranges of population concentration and the range of services provided by them, are presented in the following tables.

### Human Settlements Hierarchy:

There are a few implications which are related to the growth of Upazila Shahar in terms of sharing of developments and population growth of the Upazila Sub-region along with other important settlements in the next 10-15 years. These are :

- A. Incremental changes in the status of settlements in terms of both population increase and concentration of services;
  - B. Spacing and geographic distribution of these fast growing major settlements.
- A. Incremental changes/Migration etc.

Smaller settlements as shown in table 2-22 with population upto 500, in hierarchy 6 have been decreasing all the time since 1961. Conversely, the number of all other settlements (except hierarchy 3 & 2 in 1974) with population 500-1000, 1001-1500, 1501-2000, 2001-2500, and 2501-3000 and above, i.e. hierarchies 5,4,3,2 and 1 are progressively increasing. The trend indicates two possibilities: either, migration of population from the small size settlements are taking place or small size settlements are also rapidly growing and thereby becoming identified as settlements at the higher order. In hierarchy 3 and 2, the population in 1974 have decreased, the probable reasons might be the population migrated to India or other areas of Bangladesh during liberation period since 1971, or immigrated to adjoining Upazilas for the changing of river bank. A more critical look may reveal that in recent years the increase in the number of settlements under hierarchies 5 to 1(except 3) is quite slow. The big-size settlements(hierarchy - 4)are increasing very fast. The decrease in the number of small-size settlements (hierarchy 6 ) is also very slow, probably there is continuous out-migration of population from Fulchari to other Upazilas. Table-2-23 showing

Table -2-22: Hierarchy of Human settlements by concentration of Population

Hierarchy by population	1961 No.	1974 No.	1974 Variation %	1981 No.	1981 Variation %
Hierarchy-1 population 2501 and above	5	12	140.00	17	41.67
Hierarchy-2 population 2001-2500	4	4	- 20.00	7	75.00
Hierarchy-3 population 1501-2000	5	3	- 40.00	7	133.33
Hierarchy-4 population 1001-1500	9	13	44.44	16	23.08
Hierarchy-5 population 501-1000	14	20	42.86	24	20.00
Hierarchy-6 population 500	41	23	(-) 43.90	29	(-) 26.09
	79	75		100	

Source : Population census in 1961 and 1974. Figure in 1981 has been collected from Upazila Statistics Office.

potentials of growth in terms of administrative, educational institutions of higher order, and socio-Economic infrastructure for growth such as daily bazar, banks and electricity. Gozaria has been noted the highest rank within the Upazila.

B. Spacing and Geographic Distribution:

Map 3 shows the location of the major settlements together with some other places and transportation net work. All the major settlements are located on the Fulchari-Saghatta route. The spacing of these settlements indicates the growth along this main transportation corridor. In a way this means all major settlements identified (Table-2-23) would be facing competition with the settlements growing along the Fulchari-Saghatta route and therefore may not have accelerated growth. This table also shows that Gozaria Mouza obtains the highest score 115 which indicates that services are concentrated in the Upazila headquarters at a higher level than other mouzas. The next important settlements are Burail, Kanchipara which are mainly important for rural markets and education centre. The Table 2-23 further shows that there are a number of other settlements where some services and facilities are available.

Map 3 shows the location of important settlements in order of services provided by them i.e., their position in the hierarchy. It shows that these settlements are mainly located in the areas usually not affected by floods.

## FULCHART UPAZILA

Table- 2-23

Hierarchy of Settlement in terms of Service concentration

Sheet No. 1

Mouza	Population (1981)	Services with score										Total
		10	4	4	6	7	5	5	7	6	4	
Jhanjair	(981)											12
Ziadanga	(315)											11
Katlamari	(4541)											21
Tengrakandi	(1686)											9
Harichandi	(249)											12
Zigabari	(4657)											9
Gozaria	(9421)	10	4	4	6	7	5	5	7	6	4	53
Paglarchar	(1027)											11
Chikirpotol	(1300)											11
Galna	(1223)											11
Patahdhoya	(2416)											16

Note: i) Population above 5000 carry 20 score  
 ii) Population 3000-5000 carry 15 score  
 iii) Population 2000-3000 carry 10 score  
 iv) Population upto 2000 carry 5 score

FULCHARI UPAZILA

Table - 2-23 : Hierarchy of Settlement in terms of Service concentration

Sheet No. 2

Mouza	Upazilla Admin. set-	Services with score										Total
		10	4	4	6	7	5	5	7	6	4	
Burail	(3173)	5					6	5				43
Chalua	(1483)	5										21
Haripur	(1561)	5										17
Kathur	(2622)	10										16
Kanchipara	(342)	5										25
Udyakhali	(3781)	15										29
Boraikandi	(511)	5										9
Uria	(6379)	20										38

## CHAPTER - III

## THE UPAZILA HEADQUARTERS

3.1 Sphere of Influence (Catchment Area)

Sphere of influence in the immediate hinterland surrounding the Shahar area within a distance of 2 to 3 miles. People from surrounding areas normally commute such distances to take the advantages of various services of the Shahar area. The catchment area of Fulchhari Upazila Shahar was determined on the basis of spatial distribution and immediate hinterland which is likely to get benefits from different services of socio-infrastructure. The criteria to determine boundaries of this area is to consider influence of Huts in which case the boundary line is almost equidistant from both the Upazila Centre and the 'Hat' concerned. The sphere of influence or the catchment area is shown in Map-3. The catchment area of Fulchhari Upazila Shahar is about 6670 acres(2700.40 hectare) and comprises 8 mouzas. Table 3-1 shows the area (mouzas) included within the sphere of influence.

3.2 Definition of Upazila Shahar

The Upazila Shahar has been tentatively decided to be the study area. The Shahar area has been identified on the basis of the spread of urban and semi-urban functions around the Upazila Complex and the principal transportation network. This area wholly or partially will be considered as the planning area of future township by the assessment of land requirements and physical constraints as determined in Chapter-4 (Paragraph-4.3). The boundary of the Shahar area has been shown on Map-3. The table 3-2 shows the area and constituting mouzas of Upazila Shahar Fulchhari.

Table -3-1 : Sphere of Influence of Fulchhari Upazila

Sl. No.	JL No.	Name of Mouza	Total Area		Involved Area		Total Population			Involved Population	
			Acre	Hectare	Acre	Hectare	1961	1974	1981	1961	1974
1.	24	Chalua	932	377.39	932	377.39	1528	2230	2736	1528	2230
2.	25	Udakhalia	1212	490.69	1212	490.69	2339	3169	3781	2339	3169
3.	26	Sinria	545	220.65	545	220.65	750	1129	1307	750	1129
4.	27	Katlamari	1467	593.93	1467	593.93	2646	3707	6836	2646	3707
5.	28	Jhanjharia	443	179.35	443	179.35	645	1067	981	402	612
6.	36	Ratanpur	2351	951.82	590	232.87	2353	3489	4083	1252	1744
7.	23	Kethur	1066	431.58	1066	431.58	1682	2250	2622	1682	2250
8.	18	Urta	2075	840.08	415	168.02	3571	5504	6379	808	1412
<b>Total :</b>			<b>10091</b>	<b>4085.42</b>	<b>6670</b>	<b>2700.40</b>	<b>15514</b>	<b>22545</b>	<b>28725</b>	<b>11407</b>	<b>16253</b>
											<b>21172</b>

Source : Population Census in 1961, 1974 & 1981  
B.B.S.

Table-3-2 : Name of Mouzas and other information of the Fulchhari Shahar Area(Study area) 1986

Sl. No.	JL No.	Name of Mouza	Total area in Acres		Involved area Hectare		Total Population		Involved Population	
			Hectare	Acre	Hectare	Acre	1961	1974	1981	1961
1.	68	Gajaria	2738	1108.50	1143.64	463.01	6829	7396	9421	2852
2.	7	Ullah (Saghata Upazila	665	262.00	16.12	6.63	2012	2865	3515	- - -
<b>Total :</b>			<b>3393</b>	<b>1377.73</b>	<b>1159.76</b>	<b>469.64</b>	<b>8841</b>	<b>10261</b>	<b>12736</b>	<b>2852</b>
Source : Population Census B.B.S.			1961	1974	& 1981					3091 3938

### 3.3 Existing Land Utilization pattern

#### Existing Landuse Pattern

The existing landuse pattern in the Upazila Shahar Fulchari is an outcome of a long and constant process involving various natural, socio-economic and political factors. Map - 4 shows the existing landuse pattern, provision of facilities, and land utilization characteristics in the Shahar. About 1159.76 acres of land is included in the study area. The study area has grown with mixed landuses of residences, administration and Govt. offices, educational institutions, health facilities, recreation facilities, utility services, commercial and industrial establishments, water bodies, roads, agriculture etc. These are scattered all over the area. Major parts of the study area is still under agricultural use representing 82.10 percent of the total land in the study area. The rest 17.90 percent of the land is under non-agricultural uses. The Table 3-3 shows the major landuses in the study area and the details are shown separately for each major category

The utilization characteristics of different landuse in the Shahar area are discussed below:

Table 3-3 : Existing Landuse of Study Area

Land use	Name of Mouza(Acreage)		Total land in study area		Percentage of total
	Gazaria	Ullah	Acre	Hectare	
1. Residential	44.73	0.78	45.51	18.43	3.92
2. Administrative Govt. Deptt.	52.02	2.86	54.88	22.22	4.73
3. Commerce	2.53	-	2.53	1.02	0.22
4. Industry	1.50	-	1.50	0.61	0.13
5. Education	6.95	-	6.95	2.81	0.60
6. Socio-cultural	1.19	-	1.19	0.48	0.10
7. Utility services	0.05	-	0.05	0.02	0.04
8. Water bodies	79.23	0.71	79.94	32.37	6.89
9. Roads	14.78	0.24	15.02	6.08	1.30
10. Agriculture	940.72	11.47	952.19	385.50	82.10
Total :	1143.70	16.06	1159.76	469.54	100.00

Source : Field Survey, September 1986

#### Residential Area

Residences are scattered all over the survey area. But except in eastern part of Upazila Parishad, the central part and north-western part of the Upazila Parishad the settlements are comparatively dense. It has already pointed out that most of the land in the Shahar are lying below the flood level and the settlements are usually affected by flood. Thus most of the settlements are clustered in nature, being built up new home

steads in available high land. A considerable number of temporary settlements were found on the flood control embankments. These were built by those people who became homeless by process of river erosion. Residential area within the study area comprises about 3.92 percent of the total area and the houses are mostly katcha in nature. Some two or three storied residential buildings were found in Upazila Complex.

#### Administrative and Govt. Department:

The administrative, Govt. departments and autonomous bodies comprise an area of 54.88 acres, which is equivalent to 4.73 percent of the total land in the study area. Upazila Parishad Complex, Upazila headquarters, railway property and other non-Govt. organizations have also been included in the administrative and Govt. Departments. Table 3-4 shows details of landuses and its percentage in the study area.

Table 3-4 : Administrative, Govt. and Autonomous body

Sl No	Land use	Area		Percentage of total
		Acre	Hectare	
1.	Upazila Headquarters	6.43	2.60	11.72
2.	Police Station	3.53	1.43	6.43
3.	Revenue Office	0.05	0.02	0.09
4.	Union Parishad Office	0.03	0.01	0.05
5.	Fishery Office	0.04	0.02	0.08
6.	Anser Office	0.05	0.02	0.09
7.	BADC Office	0.07	0.03	0.13
8.	Social Welfare	0.05	0.02	0.09
9.	Railway Property:			
a)	Railway line	29.99	12.14	54.65
b)	Railway dead line	2.14	0.87	3.89
c)	Railway borowpit	12.50	5.06	22.78
<b>Total :</b>		<b>54.88</b>	<b>22.22</b>	<b>100.00</b>

Source : Field survey, September 1986

**Commercial and Industrial Area:**

The land occupied by commercial and industrial activities in Fulchari Upazila study area is 4.03 acres and represents 0.35 percent of the total study area. Table 3-5 below shows the landuse by commercial and industrial activities:

Table 3-5 : Commercial & Industrial landuse

Sl. No.	Land use	Area		Percentage of the total
		Acre	Hectare	
1.	Commerce	(2.53)	(1.02)	(62.78)
a)	Shop	0.10	0.04	2.48
b)	Market	2.30	0.05	57.07
c)	Bank	0.13	0.93	3.23
2.	Industry	(1.50)	(0.61)	(37.22)
a)	Rice mill	0.25	0.10	6.20
b)	Brick field	1.25	0.51	31.02
Total :		4.03	1.63	100.00

Source : Field survey, September 1986

**Socio-cultural Centres:**

There are some Socio-cultural centres in the study area. Table 3-6 reveals that about 0.10 percent of the total land in the study area is under the Socio-Cultural activities. Details have been shown in Table 3-6.

Table 3-6 : Socio-cultural Centres

Sl. No.	Land use	Area		Percentage of of the total
		Acre	Hectare	
1.	Mosque	0.25	0.10	21.00
2.	Graveyard	0.05	0.02	4.21
3.	Eidgah	0.89	0.36	74.79
Total :		1.19	0.48	100.00

Source : Field survey, September, 1986

### Health Services

For rendering the health services, there is no hospital in the study area. Only a charitable dispensary is located in Upazila Complex.

### Educational Establishment

In the study area, there are two schools one for boys and for girls, one madrasha and two primary schools over an area of 6.95 acres of land. The land covered by high school, primary school, and madrasha are shown in Table 3-7.

Table 3-7 : Educational land use.

Sl No	Land use	Area		Percentage of the total
		Acre	Hectare	
1.	Boys and Girls High School	3.03	1.23	43.60
2	Primary School	2.32	0.94	33.38
3.	Madrasha	1.60	0.65	23.02
Total :		6.95	2.81	100.00

Source : Field survey, September, 1986

### Public Utility Services:

Only about 0.05 acres of land is covered by public utility services. Post office, Telegraph office are included in this category. About 0.04 percent of the total land in the study area is under the Public Utility Services.

### Water Bodies:

A considerable portion of land in the Fulchari Shahar area has been occupied by water bodies, like river, canals, ponds and ditches all scattered in the study area. According to Table 3-3 about 6.89 percentage of the total study area is under this category. The land covered by river, canals, ponds and ditches have been shown in Table 3-8.

Table 3-8 : Water bodies

Type of Water bodies	Occupied land Acre	Occupied land Hectare	Percentage of the total
River	63.35	25.65	79.25
Canal	4.46	1.80	5.68
Pond	7.67	3.11	9.59
Ditch	4.46	1.80	5.68
Total :	79.94	32.36	100.00

Source : Field survey, September, 1986

#### Road:

There are two kinds of roads found in the study area, i.e. semi-pucca and kutchas. Almost 73.04 percent road network in the study area is kutchha. The average width of semi pucca road has been found to be 18 feet and its approximate length are 0.37 mile. The total length of kutchha road in the study area has been found 8.69 miles and its average width is 12 feet. The total area covered by semi-pucca and kutchha roads is 11.73 acres, which is 1.30 percent of the study area. Details of land uses covered by road infrastructure have been shown in Table 3-9:

Table 3-9 : Land Use by Roads

Sl. No.	Land use	Roads			% of the total	
		Width in ft	Length in mile	Area Acre	Hectare	
1.	Semi-pucca	18'	0.37	0.76	0.31	5.06
2.	Kutchha	12'	8.69	10.97	4.44	73.04
3.	Embankment	12'	2.26	3.29	1.33	21.90
Total :			10.95	15.02	6.08	100.00

Source : Field Survey, September, 1986

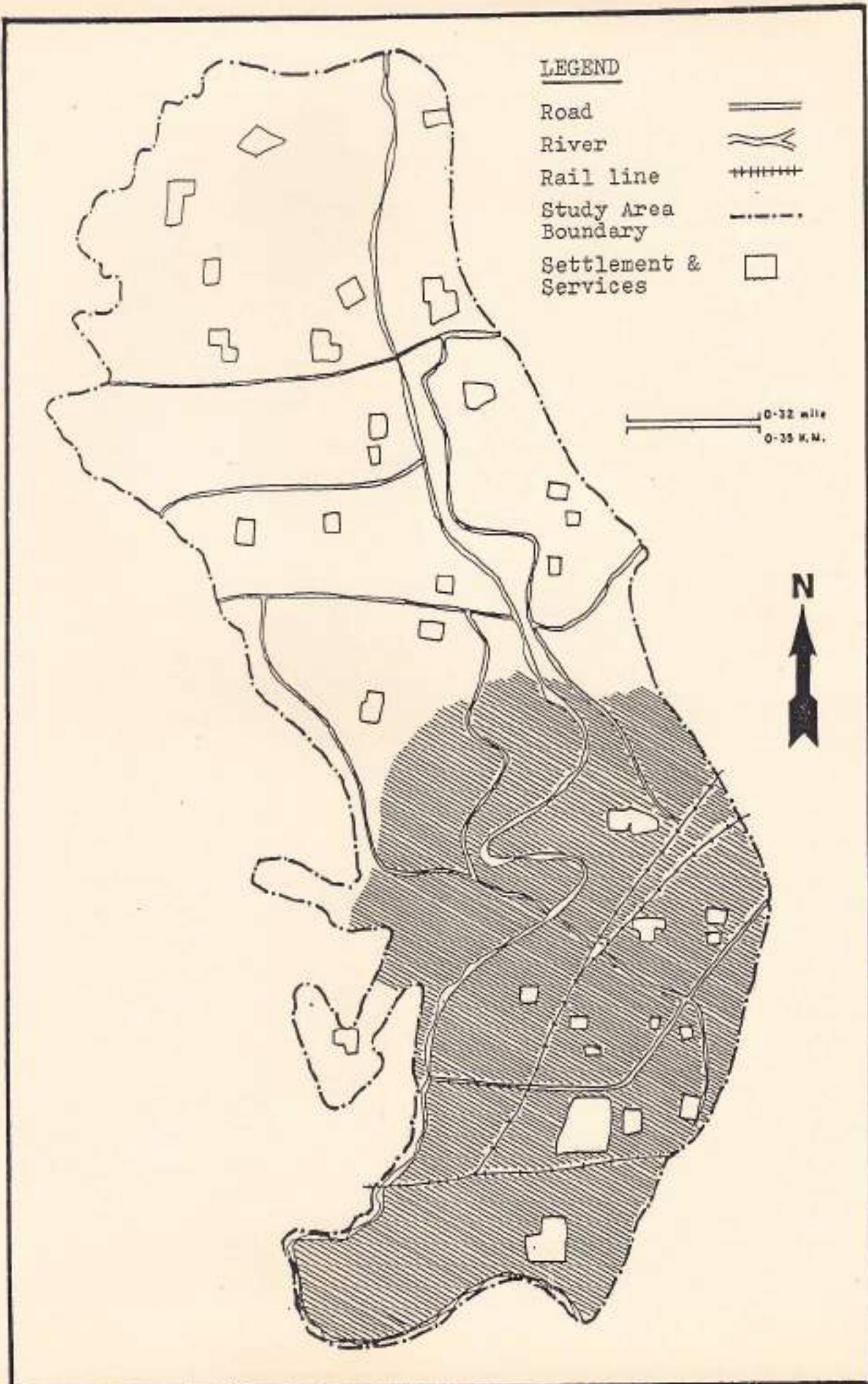


Fig. 2 Potential areas for future Urban development

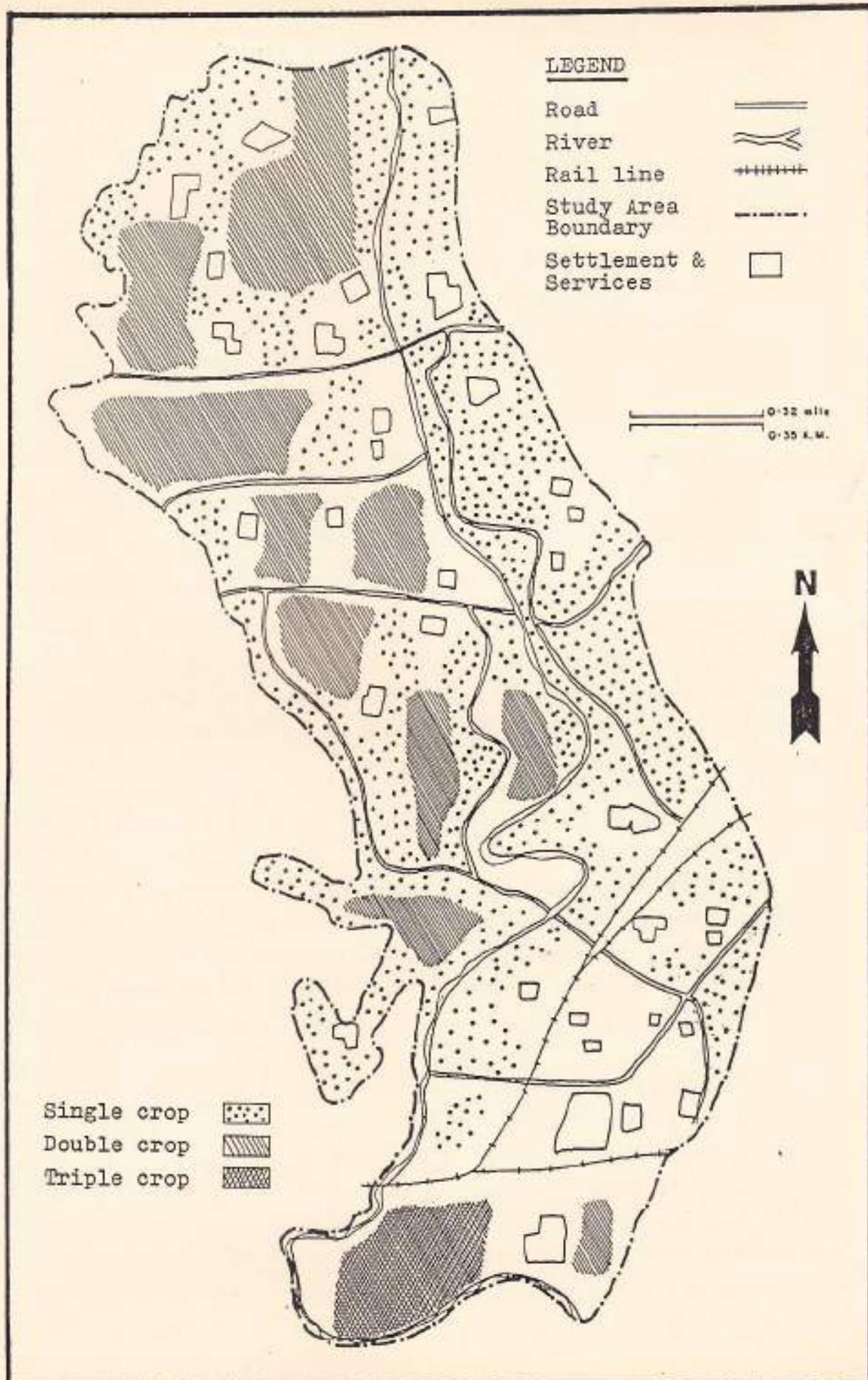


Fig. 3 Area showing of one crop, two crop and triple crop.

### 3.4 Physical Opportunity and Constraints

#### Opportunity

The location of railway ferryghat over the Jamuna river the fish market within the Shahar will have special attraction in the growth of economic function. Sufficient land area on the north-east corner of the Upazila Shahar near ferryghat and the centre have been proposed for commercial and industrial area.

#### Constraints

There are several limitations for the future expansion of the Upazila Shahar. The eastern boundary of the Upazila Shahar is very close to Jamuna river as such the Upazila Shahar can not be expanded on the eastern side on the southern and western part of the Fulchari Upazila Shahar there is no scope of expansion due to Upazila boundary of Saghatta. Thus the Shahar area would be expanded only towards north of the Upazila Complex.

A second constraint is that the study area occasionally experience on rush of tidal water & the intervention of natural water courses creating enormous problem of water logging within the future township. The present trend of uncontrolled developments are actually blocking natural water courses. Thus appreciable development can not be expected unless the thrust of development is carried out.

#### Land Level

With reference of VAPDA contour map, the land level of the study area has been ascertained. The area has interesting topographic features. A vast area is still lowlying and floodable. Settlements have cropped up in the buildable high lands, which are now usually free from floods. With the increase of population and demand for lands new settlements are being built by raising low lands by earth filling. Earth is collected by digging ponds, which also serve as source of water. During

monsoon season low lands with settlements goes under water. Existence of large number of ditches and low lands make it difficult for extension of settlement and construction of roads. The contour points in the study area have been found to be as low as 56' & as high as 64'. Details of land level has been shown on contour map 5.

#### Land Value

Land in the study area has been classified into five categories according to their prices prevailing in the land market as collected from Upazila revenue office. Table 3-10 shows the details of land values in the study area.

Table 3-10 : Land Value

Sl. No.	Category	Average price per acre	Land level
1.	Surrounding Upazila Complex and bazar	TK. 70,000/-	High
2.	Residential	" 60,000/-	High
3.	Agricultural	" 50,000/-	High
4.	Agricultural	" 30,000/-	High
5.	Pond/Ditches	" 20,000/-	Very Low

Source: Upazila Revenue office, September, 1986

Highest land value have been found in the Upazila core area and lands which are buildable for residential, commercial and industrial purpose according to suitable locations. Low land value prevail in those areas which are not buildable or requires huge filling for reclamation. Usually the agricultural land and ditches that go under water during monsoon fall in this group. The highest land value has been found to be Tk. 70,000/- at Upazila core area and bazar areas, while the lowest has been found to be Tk. 20,000/-; ditches, low lands and ponds are included in the lowest category.

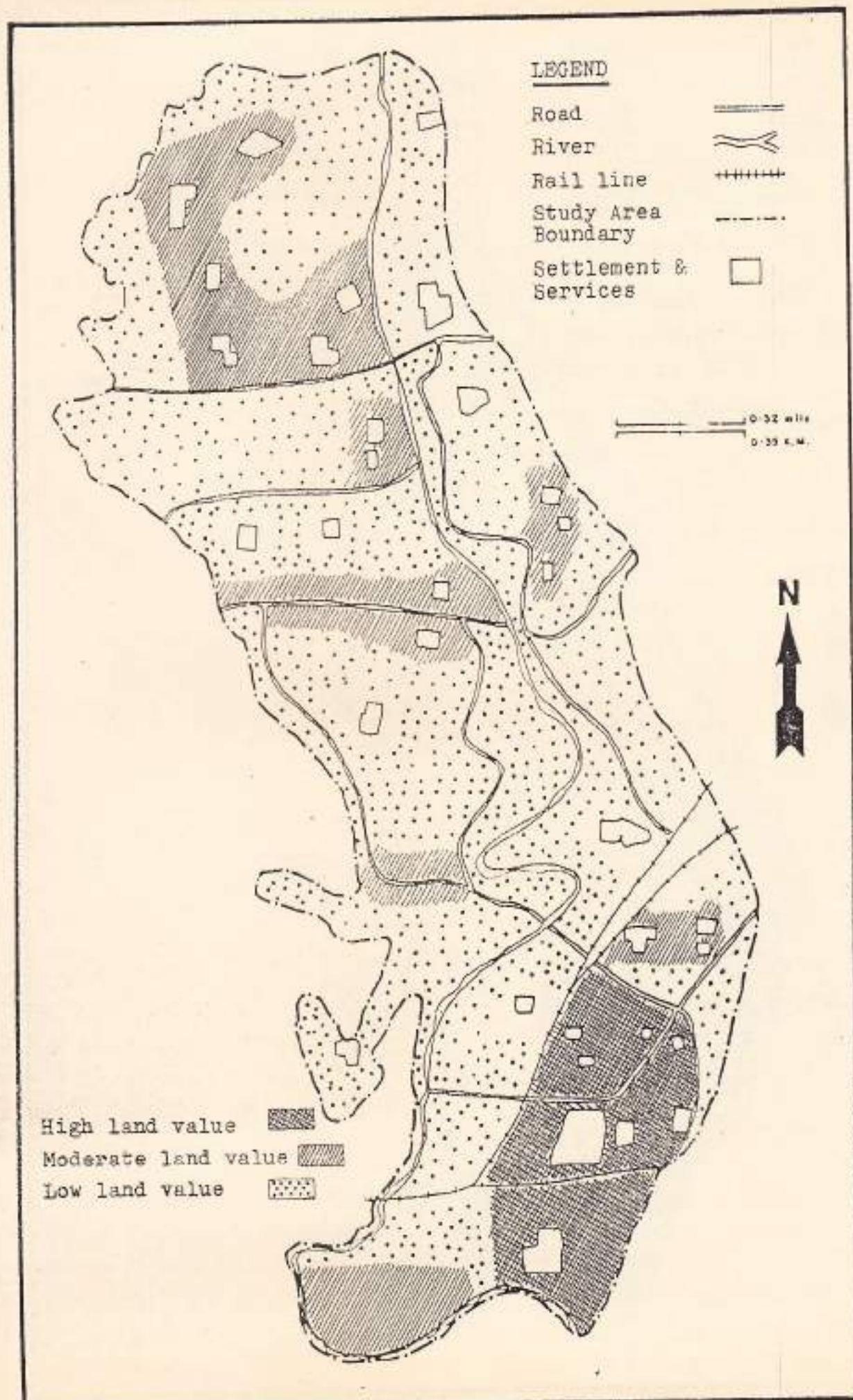


Fig. 4 Land Value

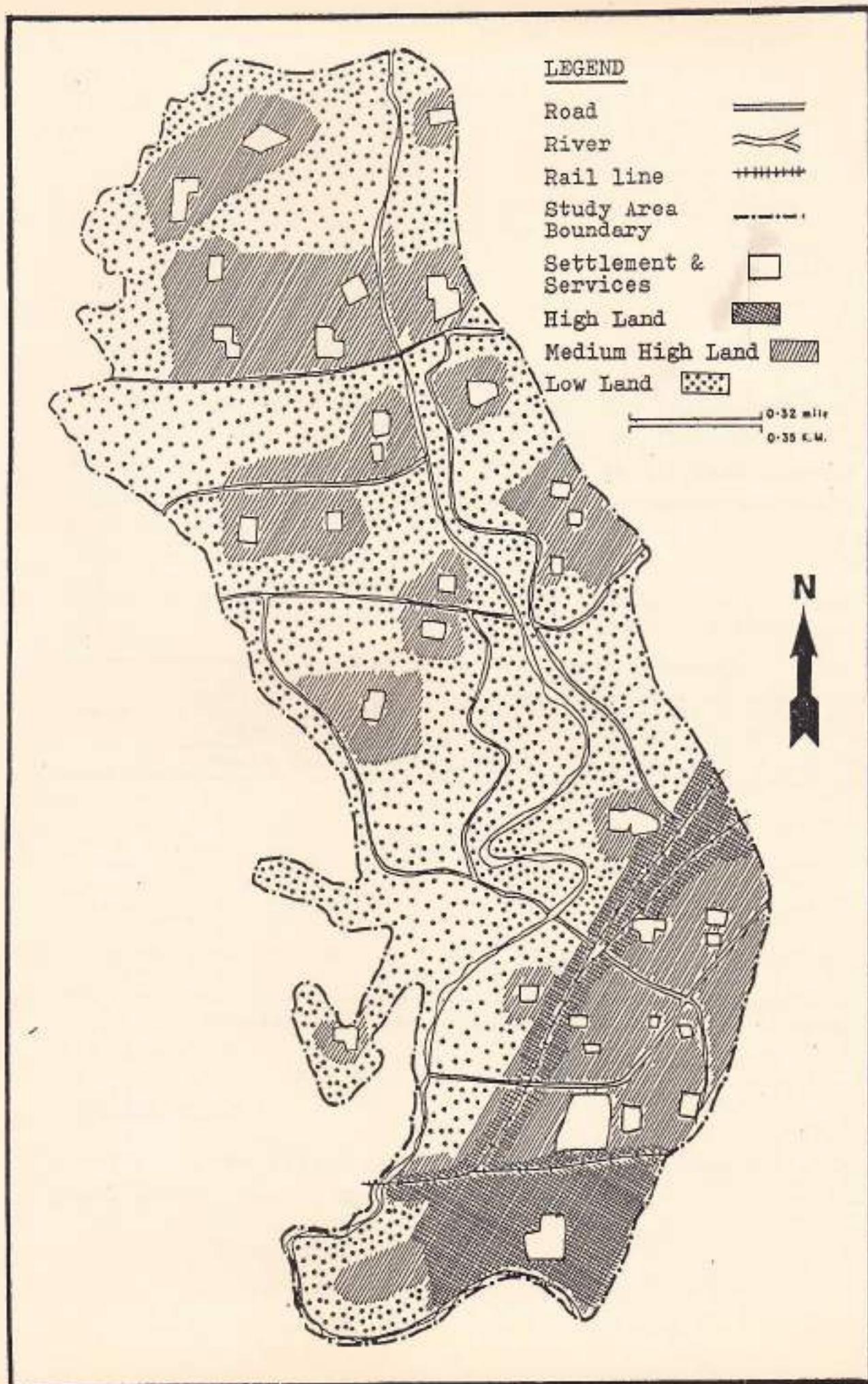


Fig. 5 Area showing of High, Medium and Low.

## CHAPTER IV

## FORECASTS

## 4.1 Population, Household Structure and Density

Within Sphere of Influence

Population Projection

The following table shows the projected population for the period 1985-2000 on high, medium and low levels. In making the projections, the positive effects of family planning and population control together with aspects of migration have been considered.

Table 4-1 : Projected Population from 1985-2000 in the sphere of influence of the Upazila Shahar Fulchhari

Year	High		Medium		Low Assumed growth rate
	Pop. 1974	Pop. 1981	Pop. 1961	Pop. 1981	
	16253	21172	11407	21172	
	Growth rate=3.85%		Growth rate= 3.14%		2.50%
1985	24625		23959		23369
1990	29745		27964		26440
1995	35929		32639		29915
2000	43398		38096		33845

Note : Population in 1981 is considered as base population

Density Levels

Considering the medium range of projection the density per acre is shown in table 4-2

Table 4-2 : Density on medium range of projection of the sphere of influence of Fulchhari Upazila Shahar 1985 - 2000

	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
1. Area	6670	6670	6670	6670
2. Population	23959	27964	32639	38096
3. Density/acre	4	4	5	6
4. Density/Hectare	10	11	12	14

#### Household Structure

The household structure in the catchment area is presented in table 4-3 in terms of number of household in 1985-2000 for medium level of forecasted population.

Table 4-3 : Forecasting of household size in the sphere of influence (medium projection) of Fulchhari Upazila Shahar, 1985-2000

	Population and Household sizes				
	1981 (Base Year)	1985	1990	1995	2000
Population	21172	23959	27964	32639	38096
Household size	5.80	5.50	5.00	4.50	4.00
No. of household	3650	4356	5593	7253	9524

Note : Household size is expected to decline with urbanization within the Shahar

#### Forecasting of resident population in the Upazila Shahar

The following table shows high, medium and low level population projection of the Upazila Shahar, i.e., the study area which has been tentatively assumed to be the Upazila Shahar. As shown in table 4-4, the growth rate of medium projection is less than the national average growth rate(2.6%). Thus high level of forecasted population is considered as resident population of shahar area.

Table 4-4 : Projected resident population from 1985-2000  
in the Fulchhari Upazila Shahar (Study Area)

Year	High		Medium		Low
	Pop. 1974	Pop. 1981	Pop. 1961	Pop. 1981	Assumed growth rate
	3091	3938	2852	3938	
	Growth rate = 3.52%		Growth rate = 1.63%		1.20%
1985	4522		4201		4130
1990	5376		4555		4384
1995	6391		4938		4653
2000	7598		5354		4939

Note : Population in 1981 is considered as base figure

#### Density Levels

Considering the high level of projected resident population the density per acre is as follows:

Table 4-5 : Density of population against high level of projection in the Shahar area, 1985 - 2000

	1985	1990	1995	2000
1. Area (acre)	1159.76	1159.76	1159.76	1159.76
2. Population	4522	5376	6391	7598
3. Density/acre	4	5	6	7
4. Density/Hectare	10	11	13	16

#### Household Structure

Considering the high level of projected resident population the number of total household in the Shahar area is as follows:

Table 4-6 : Household size against high level of population projection in the Shahar area, 1985 - 2000

	Population and household size			
	1985	1990	1995	2000
Population	4522	5376	6391	7598
Household size	5.47	5.25	5.00	4.75
No. of Household	827	1022	1278	1599

Note: i) Household size in 1985 has been quoted from Socio-economic survey in the Fulchhari Shahar area.

ii) Household size is expected to decline with urbanization.

#### Aspects of Migration:

In the present study re-distribution of incremental population and labour force of the Zila among the growth centres are considered. If investments continue to increase in future inter-district migration is likely to accelerate. Such a study can conveniently be made on inter-regional economic development basis since investment goals are difficult to anticipate, only re-distribution of incremental labour force of the district has been considered.

#### 4.2 Labour force and Employment.

There is hardly any dependable datum for correct estimate of labour force and employment in urban and rural areas of Bangladesh. However, in the planning exercise, potential labour force has been estimated on the basis of working age population i.e. 10 years and above as generally adopted by authorities like the Bureau of Statistics. A second criteria has been adopted to exclude the educated and the aged population which cover not less than 50 percent of the total population.

The growth of labour force of newly re-organized Zila is presented in Table 4-7 and labour force of Upazila is given in Table 4-8.

Table 4-7: Forecasting of Labourforce of Zilas 1985-2000  
 (medium range projection 1961-81 growth rate  
 2.00% of active population)

Year	1961	1981	1985	1990	1995	2000
1. Total population 10 yrs. and above of Greater Rangpur Zila	1258000	1870000	2024148	2234823	2467425	2724237
2. Male						
- Assumed % of item 1	-	50%	50%	50%	50%	50%
- Labour	-	935000	1012074	1117412	1233713	1362119
3. Female labour participation						
- Assumed % of item 1.	-	5.4%	7.00%	8.5%	10.0%	11.5%
- Labour	-	100980	141690	189960	246743	313287
4. Total male & Female labour	-	1035980	1153764	1307372	1480456	1675406
5. Migrant Population (Urban labour)with Zila						
- Assumed % of item 4.	-	30%	30%	30%	30%	30%
- Labour	-	310794	346129	392212	444137	502622
6. Share of new Zila Giabandha						
- Assumed % of item 5	-	25%	25%	25%	25%	25%
- Labour (urban migrant)	-	77699	86532	98053	111034	125656

Note : The active population of 1961, 1981 and Female labour participation rate has been quoted from Bangladesh Bureau of Statistics, Statistical Year Book, 1982, Table 4.2 page 144

Table 4-8 : Distribution of migrant labour in Zila Gaibandha and its Upazilas

	1985	1990	1995	2000
1. Zila	86532	98053	111034	125656
- %	100%	100%	100%	100%
2. Upazila Gaibandha				
- Assumed % (19%)				
- Labour	16441	18670	21096	23875
3. Upazila Polashbari				
- Assumed % (11%)				
- Labour	9519	10786	12214	13822
4. Upazila Gobindaganj				
- Assumed % (20%)				
- Labour	17306	19611	2207	25131
5. Upazilla Sadullapur				
- Assumed % (12%)				
- Labour	10384	11766	13324	15079
6. Upazila Saghatta				
- Assumed % (11%)				
- Labour	9519	10786	12214	13822
7. Upazila Sundarganj				
- Assumed % (19%)				
- Labour	6441	18630	21096	23875
8. Upazila Fulchari				
- Assumed % (8%)				
- Labour	6923	7844	8883	10052

Distribution of Migrant Labourforce.

The following table shows the potential labours of the Upazila and its assumed distribution among various growth centres and growth points within the Upazila including Upazila Shahar.

Table 4-9 : Distribution of migrant labourforce in the Upazila Shahar 1985-2000.

	1985	1990	1995	2000
1. Total migrant labour of Upazila				
- %	100	100	100	100
- Labourforce	6923	7844	8883	10052
2. Upazila Shahar				
- %	40%	40%	40%	40%
- Labourforce	2769	3178	3553	4021
3. Other places in the Upazila				
- %	60%	60%	60%	60%
- Labourforce	4154	3745	5330	6031

Total Projected Population of Upazila Shahar:

The following Table shows the projected resident and migrant population of the Upazila Shahar:

Table 4-10 : Total projected population of Fulchhari Upazila Shahar, 1985 - 2000

	1985	1990	1995	2000
1. Upazila Shahar residential population.	4522	5376	6391	7598
2. Assumed migrant labour in Upazila Shahar	2769	3178	3553	4021
3. 40% commuting population of item 2 not like to live in Shahar	1108	1271	1421	1608
4. Actual migrant labour in Shahar (2+3)	1661	1907	2132	2413
5. Total population of Shahar (1 + 4 )	6183	7283	8523	10011

#### 4.3 Forecasting of land Requirements Provision Standards

Design population as the basis of land requirements in the Upazila Shahar:

The following table gives the design population of the Upazila Shahar. It may be pointed out that the residential land area and the land required for the establishment of primary schools have been considered for the population who will be residing in the town.

The requirement for other services the population of catchment area is also considered.

Table 4-11 : Design population of Fulchhari Upazila Shahar for housing and services 1985 - 2000.

	1985	1990	1995	2000
1. Design population for housing (Upazila Shahar Pop. & migrant population)	6183	7283	8523	10011
2. Design population for other services (Shahar population + population of sphere of influence)	30142	35247	41162	48107

## CHAPTER V

## LAND USE PLAN

## 5.1 Approach, Concept, Planning Principles

The planning concept for the preparation of land use plan for the Upazila Shahar is primarily related to the Government's policy of administrative decentralization. The pertinent legislation enjoins upon the Upazila Parishad a mandate of services provision to the rural areas. In this way, by implication there is a commitment to carry out economic development and employment generating activities by Government agencies at the Upazila Shahar and other growth centres. In addition there will be construction of Government buildings and infrastructure at the Upazila Shahar. There are spatial consequences of these developments.

- o First, functions to be located at the Upazila Shahar will be commensurate with social and physical infrastructure requirements of the Shahar's projected population in addition to functions relating to the economic and employment generating activities shared by the shahar and other growth centres.
- o Second, projected population of the Zila will be shared by the Upazila Shahar, other growth centres within the Upazila and outmigration of the Zila population.
- o Third, the land requirements for housing are catered to the needs of the population of the Upazila Shahar. Requirements for social facilities are also to account for the population of the Sphere of Influence.

In the present plan the following aspects have been considered:

- o Identification of sizeable township around the Upazila complex on the basis of total land requirements.

- o The urban and structure at Fulchhari Upazila is considered in terms of present developments and the local physical conditions imposed by the railway ferryghat and river-side functions as well as inter-upazila transportation service.
- o Optimum uses of land

#### 5.2 Plan Description

The following table shows the different landuses proposed in the plan on the basis of identified projects:

**Urban Structure:** The structure of the township has been proposed to be rectangular in shape followed linearly with the river course of Jamuna. The central/employment area is located in and around the railway ferry ghat and the Upazila complex. Areas beyond this central areas would have residential areas arranged on 5000-population basis. Each neighbourhood will have its primary school, religious facilities, play field, open space and a few shops. The facilities of high school, college, markets, Parks, industry and other socio-culture and urban services will be enjoyed by the neighbourhoods and the areas of sphere of influence.

**Road Network:** The network of the roads has been proposed keeping in the view of retained existing intra-Upazila roads linking with the Upazila central area, railway ferry ghat and with the interior roads connecting the neighbourhoods. Among the neighbourhoods there are local roads generally outlining their peripheries. Internal roads within the neighbourhoods have not been shown,because these should be proposed at the time of preparing detail plans of all areas before implementation.

Table 5-1 Estimated Land Requirements 1985-2000

Fulchhari Upazila

Sl. No.	Name of land use	Prevision standard	Exist- ing land (acre)	Land requi- rement upto 2000 (includ- ing exist- ing) acre		Proposed land Acre	% of the total
				Acre	Hectre		
1.	(a) Commerce	1.5 acres per 1000 population	2.53	27.16	7.32	2.96	0.63
	(b) Industry		1.50	45.20	27.42	11.10	2.37
2.	Education		6.95	28.06	19.02	7.70	1.64
	-Primary school (Shahar Popn)	2 acres per 5000 Population		4.00		7.07	
	-High school	5 acres per 20,000 population		12.03		6.42	
	-College	5 acres per 20,000 population		12.03		5.53	
3.	Health		0.02	12.03	7.14	2.89	0.62
	-Health Complex	5 acres per 20,000 population		12.03		7.14	
4.	Administration/ Judiciary		10.25	16.81	22.96	9.30	1.98
	-Upazila Complex	12 acres per Upazila Shahar		12.00		12.85	
	-Police Station	2 acre per 20,000 population		4.81		6.35	
	-Inssar/VDP			-		3.78	
	-Others						
5.	Recreation			56.53	25.51	10.33	2.20
	-Park	1 acre per 1000 population	-	48.12		13.56	
	-Cinema Hall	0.5 acres per 20,000 population		1.20		0.71	
	-Sports Stadium	3 acres per 20,000 population		7.21		5.35	
	-Shishu Park			-		3.39	
	-Play Field			-		2.50	

Sl. No.	Name of land use	Provision standard	Exist- ing land (acres)	Land requi- rement upto 2000 (includ- ing exist- ing acre)	Prepared land		% of the total	
					Acre	Hectre		
6.	Socio-cultural			1.19	19.24	18.03	7.30	1.55
	-Community Centre	1 acre per 20,000 population		2.41		0.90		
	-Religious facility	0.5 acres per 5000 population			4.81		2.14	
	-Cemetery	5 acres per 20,000 population			12.03		13.38	
	-Town Hall						0.71	
	-Public Library						0.90	
7.	Urban Services			0.05	4.80	5.66	2.29	0.49
	-Post Office	0.5 acre per 20,000 population			1.20		0.90	
	-Telephone Exchange	0.5 acre per 20,000 population			1.20		0.90	
	-Transport Terminal	1 acre per 20,000 population			2.40			
	Others							
	-Power Supply					1.00		
	-Water Supply					0.90		
	-Fire Service					1.25		
	-Gas Transmission					0.71		
8.	Housing (Shahar Popn)	100 persons per acre		45.51	100.11	311.66	126.18	26.87
	-Housing Estate					24.50		
	-Private Houses					278.16		
9.	Urban deferred	10% of the Shahar Area			115.97	25.81	10.45	2.23
10.	Road	5-10% of the Shahar Area		15.02	115.97	70.33	28.47	6.06
11.	Reserve	5% of the total Shahar Area		1076.74	57.98	618.90	250.57	53.36
	-Dend/Ditch/River			79.94		67.81		
	-Railway property			44.61		44.61		
	-Agriculture			952.19		506.48		
				1159.76		1159.76	469.54	100.00

CHAPTER - VI  
PROGRAMMING AND IMPLEMENTATION

6.1 Priority actions, cost implications

Development of a large number of Upazila and Zila Shahars throughout Bangladesh is a gigantic task for the Government. Mobilization of financial and other resources is a typical problem. Availability of international fund are generally linked with cost recovery in most cases. Considering this view the following priorities are relevant :

- development of revenue earning project sites.
- development of accesses
- acquisition and development of proposed road and commercial spaces as above.

The land use plan shows these road spaces, commercial industrial and social service sites (school, health etc.). Development of the Upazila site nearing completion and commercial sites are the priority action areas. It is expected that residential areas will be densified gradually with the increase of economic activities. Expansion of services should go ahead according to population increase.

6.2 Phasing and Urban Deferred

The following table illustrates phased development of services including land development for housing on 5 years time frame.

Table 5-2 : Phasing of development, 1985-2000

Sectors/Services	1985-90	1990-95	1995-2000
1. Land development for housing (acres)	35%	45%	20%
2. Commerce	30%	35%	30%
3. Industry	40%	40%	20%
4. Infrastructure	40%	35%	25%
a. Roads			
b. Education			
c. Health			
d. Recreation			
5. Administrative Offices	80%	10%	5%
6. Others	30%	35%	25%

Map 4 (proposed land use plan) shows roughly the phased development.

Urban deferred areas are shown on the plan. These areas would be utilized when necessary, specially if actual population exceeds the medium forecasting.

6.3 Development Control : In the context of Upazila re-organization ordinance 1982 the development control measures are difficult to enforce. Because there is no adequate legal provision to prohibit and to undertake preventive measures against unauthorised development. Under the Local Government system the Pourashava Ordinance and probably the East Bengal Building Construction Act 1953 can be adopted for the Upazila Parishad unless other suitable measures are adopted by the Government. In any case the Upazila Parishad should be the custodian of the plan.

#### 6.4 Monitoring and Reviewing

**Monitoring :** The Upazila Parishad will act as the key agency in the Government for monitoring all developments and development controls within the Upazila Shahar as stipulated in this plan. Five Year Plans, and Annual Development Plans should be prepared by the Parishad and approved by the Government on project basis. Since all the development agencies at the Upazila level have been integrated for the purpose of carrying out developments, the Upazila Parishad will also monitor the progress with the sectoral agencies at the regional and national level.

**Review :** Review of the plan should be made in terms of planning studies and landuse surveys after about 10 years. Because beyond this period generally population projection may not hold good. The major road network proposed in the plan at present should be followed strictly so as to ensure general developments consistent with the urban structure envisaged. Revision may be made in accommodating unavoidable contrary landuses.

SOCIO-ECONOMIC SURVEY FORM

Type of Group

1.0 IDENTIFICATION OF HEAD OF HOUSEHOLD

Name..... Age.....

..... Occupation (with designation)

..... Religion.....

2.0 IDENTIFICATION OF RESPONDENT

Name . . . . . Age. . . . .

Education . . . . .

Occupation (with designation) . . . . .

Religion . . . . . Relation with head of the  
household. . . . .

Mousa. . . . .

Village. . . . .

Union . . . . .

Upazila. . . . .

District . . . . .

Sample No. . . . .

3.0 INTERVIEW SCHEDULE

Date ..... hours . . . . .

Name of Interviewer. . . . .

Signature . . . . .

Name of Supervisor. . . . .

Signature :

## 4.0 HOUSEHOLD STRUCTURE

Q. Give the names of every one in the household (start with the head of the household).

What is the relation of this person to the head of the household?

Female (x)

Sex

Age

Occupation

Salary or Income  
week/per month

- |     |  |  |  |  |
|-----|--|--|--|--|
| 1.  |  |  |  |  |
| 2.  |  |  |  |  |
| 3.  |  |  |  |  |
| 4.  |  |  |  |  |
| 5.  |  |  |  |  |
| 6.  |  |  |  |  |
| 7.  |  |  |  |  |
| 8.  |  |  |  |  |
| 9.  |  |  |  |  |
| 10. |  |  |  |  |
| 11. |  |  |  |  |
| 12. |  |  |  |  |

5.00 HOUSEHOLD BEHAVIORAL PATTERN

6.00 HOW DOES THE HOUSEHOLD SPEND ITS CASH ON  
THE FOLLOWING ITEMS :

Sl No.	Item	Taka
--------	------	------

1. Education (monthly)

2. Food (monthly)

3. Rent (monthly)

4. Health (monthly)

5. Clothing (yearly)

6. House improvement (yearly)

7. Transport (monthly)

8. Others (specify)

7. SPATIAL/MOVEMENT SYSTEM WHERE DO YOU/YOUR  
IN MATES GO FOR THE FOLLOWING :

Transport	Daily marketing	employment	recreation
	UZ town   Other	UZ   Other	UZ   other
	places	town   places	town   places

1. By foot
2. By-cycle
3. Bus
4. Rail
5. Waterway.

8.00 HOUSEHOLD BEHAVIORAL PATTERN AFFECTING CHANGE OF LAND USES  
AND PROBLEMS OF LAND USE PLANNING.

	Yes	No
a.1 Any change of land use made	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
a.2 Type of land use: Housing: for		
own occupation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
renting	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Shops	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Industry	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Workshop	<input checked="" type="checkbox"/>	

9.00 MIGRATION (since 1981)

	1.	2.	3.	4.	5.
	Sl. No.	Age	Sex	Outside UZ	Within UZ
9.1 Out-migration: Number of persons with age & sex (make a list of under items 1,2,3 and tick under 4 & 5).					
9.2 In-Migration : Number of persons with age & sex (make a list under items 1,2,3 and tick under 4,5).					

10. Yearly agro-based income and landuse information.

Categories	Amount of land in acre	Income in Taka
Household		
Cultivable		
Uncultivable		
Single		
Cropping		
Double cropping		
Multiple cropping		
Pond/ditch		
Others		
Total :		

**11.00 Yearly Non-Agro-based income**

Categories of income	Income in Taka
a) Services	
b) Business	
c) Rickshawpuller	
d) Handicrafts	
e) House-rent	
f) Day labour	
g) Hawkers	
h) Maidservant	
i) Others	

**12.00 Number & Category of House**

Category	Number
Pucca House	
a) Single storied	
b) Double storied	
c) Multi-storied	
d) Pucca wall C.I. roof	
e) Thatched wall C.I. roof	
f) Mud wall tile roof	
g) Mud wall thatched roof	
h) Thatched wall and roof	
i) Others	

**13.00 Source of water:**

- a) Supply of water
- b) Pond
- c) Tube well
- d) River
- e) Other

**14.00 Source of light:**

- a) Electricity
- b) Kupi
- c) Harican
- d) Others (if any)

**15.00 Sanitary conditions of Kutcha toilet, Pucca toilet, none.**

**16.00 Suggestion regarding the development of Upazila.**