

**URBAN DEVELOPMENT DIRECTORATE
MINISTRY OF WORKS
GOVERNMENT OF THE PEOPLE'S REPUBLIC
OF BANGLADESH**

REPORT—IV

**LAND USE PLAN
CHATMOHAR UPAZILA HEADQUARTERS
PABNA DISTRICT**

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CONSULTANT :

A. M. AHMAD & ASSOCIATES
CONSULTING ENGINEERS, ARCHITECTS, PLANNERS
& INDUSTRIAL CONSULTANTS
15, DILKHUSHA C/A, DHAKA-2

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CHAPTER ONE :

1. INTRODUCTION;

Overall administrative re-organisation is one of the important policy of the present Government in which upazila centre is the focal point of all upazila level administrative activities. It will plan and develop all social, economic, administrative and infrastructural services which is needed for upazila region. It will ensure better delivery of facilities and Government services to the door step of the rural masses.

In the light of the above circumstances, it is felt that the upazila centre should grow expeditiously and the preparation of landuse plan/Master Plan for such centre is of utmost importance for better utilization of region's land, people and natural resources. As a result upazila centre will develop as growth centre.

Physical plans for the upazila headquarters to ensure orderly development in the period to 2000 and beyond are part of the total planning process.

This is the final report (Report-IV) for the proposed landuse plan/Master plan of Chatmohar upazila headquarters. This report includes approach, concept, planning principles and description of the final plan with other requirements as mentioned in ANNEX -3 of Terms of Reference.

1.1 Methodology :

The methodology of whole works for the preparation of landuse plan of Chatmohar Upazila headquarters was furnished by the following methods :

(1) Preliminary work :

Mouza Index Map of Scale 1" = 1 mile and Mouza Maps of scale 1" = 330' of Chatmohar Upazila were collected from Land and Revenue office, Dhaka and studied. Reference books such as Village Population Statistics (Pabna District) - 1974, Pabna District Census-1981, Pabna Village Statistics - 1983 and Pabna District Gazette-1979 were collected from Bangladesh Bureau of Statistics, Dhaka and studied. From these secondary sources we have collected information regarding area, demography, history and other socio-economic data of the Project area.

(2) Reconnaissance Survey : On the basis of the reconnaissance Survey, local contacts and other information available from secondary sources, the tentative boundry of the study area of Chatmohar Upazila headquarters was demarcated. For demarcation of the tentative boundry line following major aspects were considered :

- a) Existing Pattern of development surrounding the developed part of the head quarters.
- b) Changing the landuse mouza/area from agricultural activities to non-agricultural activities.
- c) Existing trend and growth pattern of transportation net work.

- d) Availability of flood free and buildable land.
- e) Future potential development/expansion capacity in and around the Upazila headquarters.

(3) Survey :

Following types of survey were carried out for performing the survey work of Chatmohar Upazila headquarters :

(a) Socio-economic survey :

With the help of the questionnaire survey, various socio-economic components stated in the study have performed. There were 172 sample households questionnaire, approximately 8% percent of the total household of the study area was conducted for finding out the socio-economic character of Chatmohar Upazila headquarters.

(b) Hierarchy of Settlements : Determination of the hierarchy of settlements within the Upazila as a whole taking mouza as a unit was based on the population, economic activities, social infrastructure provision and related characteristics. For collection of the above informations, the study team conducted interviews with the Upazila Nirbahi Officer, Upazila Parishad Statistics Officer, Education Officer, Union Parishad Chairman, members and with the local leaders. Pabna District Population Census, Pabna district statistics also helped to determine the hierarchy of settlement.

(c) Existing Landuse Survey :

Followings were the categories of existing landuse in the study area of Chatmohar Upazila headquarters pointed for a mapping on the Mouza Maps 1" = 330' of Chatmohar Upazila during the landuse survey.

I. Agriculture, II. Commerce & Industry, III. Education, IV. Health V. Administrative, Govt. & Autonomous Depts. etc., VI. Recreation, VII. Socio-cultural, VIII. Urban services, IX. Roads, X. Residential, XI. Water bodies, XII. Khas land etc. and physical details on land levels, existing drainage, land, river courses are included in the landuse survey.

(4) Analysis & forecasting :

Forecasted the population & employment on the basis of past trends with allowances for the induced attraction effect of the governments upgrading commitment to 1985, 1990, 1995 and to the year 2000 A.D. have been forecasted. Three categories of forecasting have been made viz. low, medium, high. With the help of medium forecasting, the requirement for various services & residential areas were determined.

(5) Draft Plan : On the basis of the existing landuse survey maps and reports, socio-economic survey report & other secondary informations the draft plan of Chatmohar Upazila headquarters was prepared.

(6) With review of the draft report by the government & suggested modification of the draft report, the consultant has prepared the final report of the landuse plan of the Chatmohar Upazila Headquarters.

CHAPTER TWO:

2. THE UPAZILA IN ITS DISTRICT CONTEXT:

2.1. Location and Physical characteristics of the Upazila :

The name of this Upazila is Chatmohar. It was the headquarters of a thana of the same name under the Sadar sub-division of Pabna district, situated 19 miles north of Pabna on the river Boral. In the north Tarash Upazila, in the south Atghoria Upazila, in the east Faridpur upazila and in the west Rajshahi Zilla is situated. Chatmohar upazila lies between $24^{\circ} - 05'$ to $24^{\circ} - 20'$ north latitude and $89^{\circ} - 10'$ to $89^{\circ} - 25'$ east longitude. The upazila is a wide alluvium plain presenting a low and flat topography. The flood plains occupy nearly 85 percent of the total area of the upazila and are characterised by a gentle topography. The river Boral and Gummani flow through Chatmohar upazila.

The climate of the upazila is moderate. The mean minimum temperature is about 78.2°F in January and the maximum is 97.2°F in April. The level of humidity is around 95% from June to August and around 41% from February to April. Rainfall in the upazila is rather limited during November through February. With the starting of monsoon, the rainfall shows gradual increase and reaches peak from June through September. The average annual rainfall in the district is 137".

PABNA DISTRICT MAP NO.1.



DISTRICT BOUNDARY

THANA

DISTRICT HEADQUARTER

THANA

LOCATION MAP OF CHATMOHAR UPAZILA



2.2 Population and Settlement Distribution

According to Pabna District Statistics-1983, Pabna occupies a physical area of 940 square miles including water area and covers about 1.69% of the total area of the country. At present in Pabna district there are 2 Pourashavas, 8 thanas, 71 unions and 1291 mouzas. In respect of comprising areas Pabna then stands first occupying 174 square miles and Chatmohar thana stands in second position occupying 142 square miles. In Pabna district total population is 1552519 in 1981. Total households are 244227 and the average size of household is 6.36 against 5.8 in Bangladesh. The density of population per square miles 1452 in 1981. The increase of population in the district 47.62% in 1974 over 1961, 23.64% in 1981 over 1974. Among the municipalities Pabna has the highest population of 101080 leading to 15500 households and Iswardi municipality comes next with population 58648 and 8899 households. Again average household size is 6.52 in Pabna municipality and 6.59 in Iswardi municipality against 6.36 in Pabna district.

The Chatmohar upazila commands over 142 square miles which is 15.10% of Pabna district and consists of 11 unions with 208 mouzas. The upazila has 242551 population, the density per square mile is 1497. The average size of household is 6.62 against 6.36 for Pabna district. Variation of population in Chatmohar upazila is 53.90% in 1974 over 1961 and 24.40% in 1981 over 1974. Among the unions the population and households distribution is the following:

<u>Name of Union</u>	<u>Households</u>	<u>Population</u>
1. Chaikhola	3076	19446
2. Chatmohar	4115	26051
3. Dantia bamangram	2789	17739

<u>Name of Union</u>	<u>Households</u>	<u>Population</u>
4. Failzana	2949	19465
5. Gunaigacha	2198	15156
6. Handial	2494	15864
7. Haripur	2998	18663
8. Mulgram	2983	19352
9. Nimaichara	3578	24377
10. Parashadanga	2126	14458
11. Khanmarich	2631	16975

According to number of population Chatmohar union stands first, Nimaichara union stands second and Failzana union stands in 3rd position.

Much data are not available with respect of migration. Although 1974 Bangladesh population census provides minor informations regarding life time net migration in the district. For Pabna district life time net out migrants number is 37,500 in 1951; 70,615 in 1961 and 99,166 in 1974. Migration statistics for Chatmohar upazila has been obtained through socio-economic survey. Out of 172 sample families, 18 families have been identified as in migrants to Chatmohar. Among these 18 families 8 families or 44.45% have been identified as local who have migrated from Pabna district only and 10 or 55.55% families from out side the Pabna district. The pull factors are identified as low land value, availability of work, fertility of land etc.

2.3 Chatmohar upazila Eco. Performances

The main occupation of the people of the upazila is cultivation. The total cropped area is 91520 acres and the total No. of farm holding is 17115. The intensity of cropping is 139.54 in 1981-82. The upazila headquarters is well known as business centre mainly for agri-products. The main products are rice, wheat, jute, sugar cane, chilli, onion, garlic etc.

The total yeild of various category of rice in 1980-81 are 752356 mounds. The total yeild of wheat is 223600 mounds, jute 17170 mounds and Sugar cane is 150000 mounds.

The total No. of persons employment in handloom industry is 1580 in 1981, Employment in education sector is 765 persons engaged in Teaching in 1982. There are 81 persons employed in medical profession in Chatmohar upazila in 1982.

In respect of income the following table represents the broad annual average income of the upazila people.

TABLE - I
Broad income groups

Category	Yearly income in Taka	Income group	No. of Households
1	Below 5,000	Lower income group	34
2	5,000 to 6,999		59
3	7,000 to 9,999	Middle income group	36
4	10,000 to 11,999		20
5.	12,000 to 13,999	Higher income group	11
6.	14,000 to above		8

Total : 172

Source : Socio-Economic Survey - 1984.

The people generally made their expenditures in food, clothing, Education and in daily household expenditures.

In respect of the economic activity, agriculture is the main occupation of the district. There are 940 sq. miles area and 1552519 population in Pabna district. The overwhelming majority of people is dependent mainly on agriculture for their earning and employment. The total number of farm holdings in the district is 2.15 lacs occupying about 77% of the total land of 12 lacs acres in the district. About 75% people of the district are farm population and are directly dependent on farming. The contribution of the industrial sector to gross district income is 6% against 10% for Bangladesh. Handloom weaving is fairly widespread in the district and provide about 57% goods Pabna rank next to Narayanganj. Bangladesh small scale and cottage industries corporation has set up an industrial estate at Pabna.

Transport Linkages :

According to Pabna Zilla Parishad source there are total 386 miles road.¹ Among these road there are 108 miles pucca road, 37 miles semi pucca road and 241 miles Katcha road. There are national road passes through Pabna district connecting important places of the district. Pabna district headquarters is connected by national road with Dhaka via Nagarbari and Pabna connected Kushtia district via Iswardi. Pabna district headquarters is also connected with Bogra via Bera Upazila and also connected with Rajshahi district through Iswardi by national road. Pabna district headquarters is also connected by pucca road with Bera Upazila, Chatmohar Upazila and Satbaria.

Source : Pabna Zilla Parishad - 1984.

Besides there are numerous semi-pucca and Katcha roads which connects the important places of the district. It is worth mentioning that Pabna is linked with the capital city Dhaka by Air service. According to Pabna district statistics - 1983 there are 11 railway stations, 2 steamer/launch stations and 7 bus stoppages in the district. The transport linkages of the district has been shown in the map No. 2 and 3.

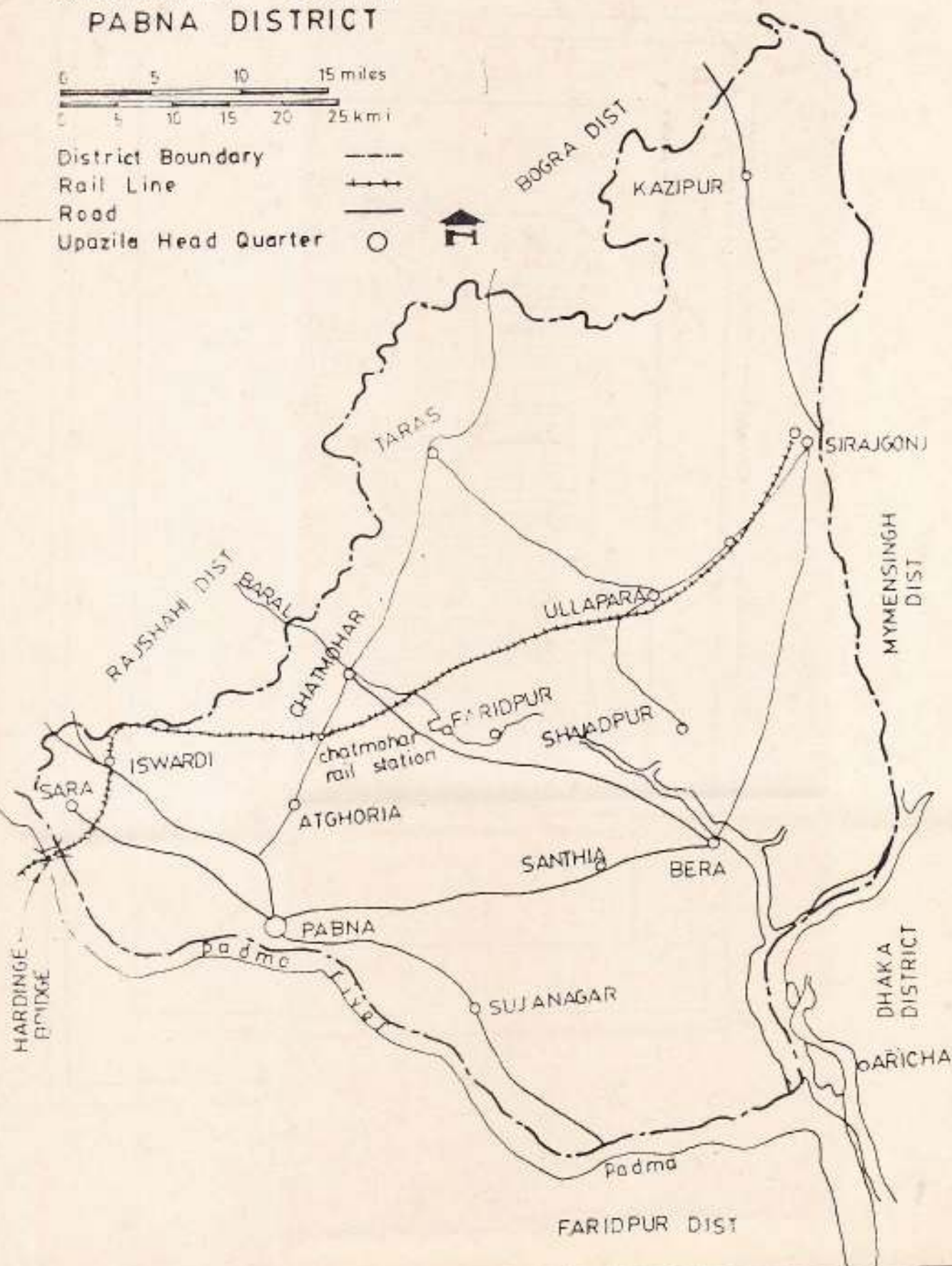
Upazila Chatmohar - Chatmohar is well connected by train, road and water ways with other places of the district. There are three rail stations at Chatmohar, water transport is facilitated by the Boral river. Chatmohar is linked up with Pabna district headquarters by road transport via Atghoria upazila. The rail line connected Chatmohar with Sirajganj, Iswardi railway junction and Rajshahi district. The famous 'Chalan Beel' an important source of fish is situated near Chatmohar and is connected by road. There are only 5 miles pucca road, 8 miles semi pucca road and 75 miles katcha road in Chatmohar. Transport linkages has been shown in the map No. 3.

REGIONAL CONNECTION OF CHATMOHAR UPAZILA PABNA DISTRICT

MAP NO.2.

0 5 10 15 miles
0 5 10 15 20 25 km

District Boundary ———
Rail Line —+—+—
Road ———
Upazila Head Quarter ○



2.4 Social Infrastructure :

Markets

In every upazila headquarters there are established markets and in district headquarters there are big markets. In the remote areas of the districts or upazilas there are common places locally known as hats/bazars where market operations is carried on and goods are exchanged. At present there are 56 daily bazars and 148 weekly or bi-weekly hats in Pabna district. The same in case of Chatmohar upazila are 10 Nos. of daily bazars and 21 weekly or bi-weekly hats.

Commerce

According to Pabna district statistics -1983 there are 95 Nos. of bank branches in Pabna district and among these there are 6 Nos. established in Chatmohar upazila.

Education

According to the population census 1974 the literacy rate in the district is 14.77% against 20.2% in Bangladesh. At present there are 691 primary schools, 27 Junior high schools, 1351 high schools, 17 colleges, 178 Madrashas and 666 Gonoshikha kendra in the district in 1982. The same for Chatmohar upazila is 107 primary schools, 13 high schools, 1 college and 23 Madrashas.

Health

In Pabna district there are 8 thana health complexes with 123 beds, 15 Charitable dispensary, 2 Missionary hospitals and 4 other health centres with 20 beds. In the district there are 450 registered doctors among them 79 are M.B;B.S. doctors. In Chatmohar upazila total No. of doctors are 10 and 5 are M.B;B.S. doctors. In the upazila headquarters there are one thana health complex with 10 bed capacity and 2 Charitable dispensary and 1 missionary hospital providing medical services to the people.

Other urban services

In Pabna district there are 112 Post offices, 6 telegraph offices and 21 dak bungalows/rest houses. The same for Chatmohar upazila are 11 Post offices, 2 telegraph offices and 3 dak banglows/rest houses.

Utilities:

In Pabna district water supply facilities are provided in Pabna district headquarters and Iswardi upazila. In the rural areas tube-well, tank, river are the main source of water supply. In Pabna district there are 13838 tube wells and of these number 1379 are in Chatmohar upazila that provides drinking water to the people. In Pabna district 222 villages are electrified and in Chatmohar 8 villages facilitated with electricity supply. In respect of recreational services there are 14 cinema halls, 51 registered clubs and 10 public library in Pabna district. But the same is 2 cinema halls and 12 registered clubs in Chatmohar upazila that provide recreational facilities.

2.5 Current Development Projects:

The following development projects are programmed as informed by the Chatmohor Upazila Project Implementation Officer.

List of Dry Season Food for Works Scheme of Chatmohar Upazila in the year 1984-85.

<u>Sl.No.</u>	<u>Name of Scheme with Location</u>	<u>Remarks</u>
1.	Re-construction of Road from Khairas to Mulgram D.C.Road via Khairapara, Under D.B.Gram union Project No. CARE-02.	Allotment order received, Work will be started very soon.
2.	Re-construction of Road from Katanga Bridge to Jonal Road via Jhakra, Under Saikola & Horipur union. Project No.CARE-01.	Allotment order not yet received.
3.	Reconstruction of Road from Handial WAPDA BUND to Char Enayetpur, Under Handial & Saikola Union. Project No. CARE - 3.	Allotment order not yet received.
<u>General</u>		
4.	Re-construction of Road from Bhabanipur D.C.Road to Atlanka, Under Mulgram union. Project No. W.F.P.	Allotment order received. Work will be started very soon.
5.	Re-construction of Bhashaghat to Mirzapur Road via Korokola, Under Nimaichara union. Project No. CB/2103/01 (W.F.P.).	

Source : Upazila Project Implementation Officer,
Chatmohar, Pabna.

Note : Allocated amount is not furnished with the mentioned source.

2.6 Synthesis : Identification of hierarchy of Settlement in the Upazila.

Hierarchy of Settlement depends on many variables. An attempt is made to determine the hierarchy of settlements within the Upazila as a whole based on population, economic activity, social infrastructure provision, transport links and other related characteristics. Mouza has been considered as unit or centre to determine the hierarchy of settlements. Hierarchy regarding population has been shown in Table No. 2. It shows that in 1961 there are 94 mouzas which have population upto 500 and in 1974 the No. of Mouzas are 78. The No. of mouzas are 56 and 55 respectively consisting population ranging 501 - 1000 persons in the same years. 18 and 47 mouzas fall in the population group ranging 1001 - 2000 persons and 5 and 9 mouzas fall in population group ranging 2001 - 3000. And finally 1 and 4 mouzas fall in population group ranging 3001 and above. Mention may be made that mouzawise population is not available in 1981.

Table No. 3 shows hierarchy regarding services. Four groups have been made considering the available services. These can be seen from the Table No. 3. There are 74 and 123 mouzas fall in 'A' category in 1961 and 1981 respectively. The No. of mouzas are 9 in 'B' category in 1981. There are 12 and 5 mouzas in 'C' category in 1961 and 1981 respectively. 'D' category includes 3 and 8 mouzas in 1961 and 1981 respectively. It is notable that mouzawise data regarding services is not available in 1974.

Table No. 2

Hierarchy regarding population

Population range	Y e a r		
	1961	1974 *	1981
	No. of mouza	No. of Mouza	No. of mouza
Upto - 500	94	78	
501 - 1000	56	55	
1001 - 2000	18	47	Not available
2001 - 3000	5	9	
3001 and above	1	4	
TOTAL :	174	193	

* As areas changed in 1974 so No. of mouzas increased.

Table No. 3

Hierarchy regarding services

Category	Y e a r	
	1961	1981
	No. of Mouza	No. of Mouza
(A) Any one of : 1. Primary school, 2. Tubewell, 3. Religious facilities	74	123
(B) Any two of : 1. High school, 2. College, 3. Health centre 4. Bazar	X	9
(C) Any one of : 1. Post office, 2. Telegraph 3. Telephone, 3. Police station 4. Bus station	12	5
(D) Any one of : 1. Electricity, 2. Hospital, 3. Bank, 4. Rail station	3	8 *
No services	102	59
Total :	191	204

* Name of 'D' Category Mouzas:

1. Chatmohar, 2. Choto Shalika, 3. Sarara, 4. Jaberpur, 5. Vadra,
6. Dolong, 7. Narikelpara, 8. Afratpara.

CHAPTER THREE

3. THE UPAZILA HEADQUARTERS

3.1 Definition of sphere of influence/attractiveness;

An attempt is made to identify the Upazila headquarters' socio-economic sphere of influence or catchment area through personal interviews in the bazar, shops, educational institutions, health complex, upazila office etc. The opinion of U.C. chairman, O.C. of thana headquarters, upazila education officer, statistical officer, U.N.O. and other local important persons have been considered with particular emphasis in the process of the work. Two sphere of influences viz., primary and secondary have been identified of the present headquarters area. The primary influences spread over approximately 39.41 square miles excluding the headquarters area. The constituent unions of the catchment area are Mulgram, Chatmohar, Nimaichara, Haripur, Dantia Bamangram, Parswa Danga, Gunaigacha and Chhaikhola. People of these unions generally come to the Headquarters to perform a wide variety of functions of their day to day life. The secondary influence spread over the longer distances and even exceeds the upazila boundry. People from Taras upazila, Faridpur upazila, Iswardi upazila, Pabna district headquarters, Sirajganj district headquarters etc. occasionally visit Chatmohar upazila headquarters mainly for business purposes as Chatmohar has gained reputation as business centre. We have determined the catchment area considering the primary sphere of influence. This may be seen from the map No.4.

Note : For details of involved mouzas please see Annex - 3.

3.2 Definition of Headquarters area.

The present Chatmohar upazila headquarters was the previous thana headquarters of Chatmohar thana. At present in the headquarters area there existed the thana office, upazila complex and Chatmohar college. In respect of medical facilities the thana health complex is providing services to the people. There are two daily bazars in the headquarters area. Other facilities like Post office, Dak Bunglow, bank branches and schools are also present. The present headquarters area is divided into two parts - one centering the present thana and health complex and the other around the newly set up upazila complex. A new land use facilities is created for the upazila complex. In between thana centre and upazila centre there developed compactly built up residential area. This area is densely populated and there is no scope of planning proposal. There are two trends of land uses - one is centering the thana and health complex towards the Chatmohar rail station along the road and other around the upazila complex. The Baral river flows by the north side of both the thana area and upazila complex and stands as a physical barrier so it cannot be extended towards north. Both the present bazars are situated near the river.

Note : For details of involved mouzas please see Annex - 4.

3.3 Existing Landuse facilities and utilization characteristics:

The study of existing landuses with a view to landuse planning has got prime importance in planning. The total study area covers 3482.24 acres or 5.44 sq. miles of land. This includes agricultural, commercial, educational, recreational, residential etc. categories of land. The table below shows the broad landuses of the total projected area.

TABLE NO. 4

Distribution of total land in major uses

<u>Sl. No.</u>	<u>Category of landuses</u>	<u>Area in Acres</u>	<u>% of the total landuses.</u>
1.	Agriculture	2972.53	85.38
2.	Commerce & industry	11.25	0.32
3.	Education	13.10	0.37
4.	Health	7.90	0.22
5.	Administrative	8.35	0.23
6.	Recreational	3.90	0.11
7.	Socio-cultural	7.95	0.22
8.	Urban services	38.10	1.09
9.	Roads	122.77	3.53
10.	Residential	296.39	8.53
TOTAL :		3482.24	100.00

Out of the total land agriculture sector occupies 2972.53 acres or 85.38 percent, commerce and industry occupies 11.25 or 0.32 percent. Educational institutions cover 13.10 acres or 0.37 percent of the total land. Health services occupies 7.90 acres

or 0.22 percent and 8.35 acres or 0.23 percent of land belongs to administrative services. Recreational facilities cover 3.90 acres of land and their percentage stands as 0.11 percent of the total land. 38.10 acres of land belongs to urban services and the respective percentage is 1.09 percent of the total land. Socio-cultural uses occupy 7.95 acres of land, leading to 0.22 percent of the total landuses. Roads occupy a bigger share of land i.e. 122.77 acres or 3.53 percent of the total land. Residential land uses dominate over 296.39 acres or 8.53 percent of the total landuses. According to area coverage, agricultural use comes first, then residential use and roads occupies the third position.

Agriculture and Forestry.

From the table it appears that among the landuses agriculture land dominates highest percentage. There is no forest area or reserved land for afforestation.

Commerce and Industry

In the upazila headquarters there are both commercial and industrial landuses. The commercial landuses comprises with bazar shops and banks.

Educational facility

In the education facility there are primary schools, High schools, college and Madrasas.

Health Facilities.

Health facility consists of upazila health complex and veterinary service and occupies 7.90 acres of land.

Administrative and Govt. Departments:

Under the above heading land utilization is made for thana headquarters, Upazila headquarters, Food godown etc. which occupy 8.35 acres of land. The respective landuses has been presented in Table below :

TABLE No. 5.

<u>Landuse</u>	<u>Area in Acre</u>	<u>% of the total Govt.& etc.land</u>	<u>% of the total study area</u>
Thana Headquarters	1.60	19.17	0.04
Upazila Headquarters	5.50	65.88	0.16
Food Godown	.65	7.78	0.10
Union Parishad	.05	0.59	-
Sub Registry office	.55	6.58	0.01
TOTAL :	8.35	100	0.22

Landuses in Socio-cultural and urban services:

In these categories of landuses there are Mosque, Eidgah, Mandir, Graveyard, Electric supply, Tank, Telegraph office etc. existed. The total land under those uses is 45.05 acres.

Road Network:

The table illustrated below shows the distribution of land in different category of existing roads.

TABLE NO. 6

Distribution of land in different category of roads

Type of Road	Katcha		Pucca		Total		% of the total area in road	% of the total study area
	Length in mile	Area in acre	Length in Mile	Area in Acres	Len. in mile	Area in acres		
Major	1.60	11.67	3.38	24.59	4.98	36.26	29.53	1.04
Secondary	8.00	38.80	1.20	5.83	9.20	44.63	36.36	1.28
Local	13.37	38.90	1.02	2.98	14.39	41.88	34.11	1.20
TOTAL:	22.97	89.37	5.60	33.40	28.57	122.77	100.00	3.52

There are 22.97 miles Katcha roads and 5.60 miles pucca roads. All these roads occupy 122.77 acres of land.

Residential landuses:

Total residential landuses has been distributed according to the different category of houses and occupy 296.39 acres of land which is 8.51 percent of the total land.

3.4 Physical opportunities and Constraints:

Though Chatmohar upazila headquarters is a small urban centre but almost every household possesses land. Distribution of families according to different size of land holding is shown in the table No. 7.

TABLE NO. 7

Distribution of families according to different size of land holdings.

<u>Ownership pattern</u>	<u>No. of families</u>	<u>Percentage</u>
Landless	5	2.9
Only home stead	46	26.76
Below .33 acres	5	2.90
.33 acres - .66 acres	3	1.74
Below one acre	5	2.90
1 to 2.00 acres	24	13.95
2.1 to 3.0 acres	12	6.97
3.1 to 4.0 acres	19	11.05
4.1 to 5.0 acres	9	5.23
5.1 to 6.0 acres	10	5.81
6.1 and over	34	19.78
TOTAL :	172	100

From the table it follows that out of 172 families 121 families owned land. From personal contract it is known that in land tenurial system there are owner cultivator, owner cum share cropper, only share cropper; all these shorts of practices exist.

Sometimes the landuse is determined by the nature of land value and acts as an important indicator in landuse planning. In the table below the category of landuses and respective land values have been shown.

TABLE NO. 8

<u>Sl. No.</u>	<u>Name of Mouza</u>	<u>Land value per acre in Taka</u>	<u>Remarks</u>
1.	Dolong	1,05,000	Res. + Agri.
2.	Chatmohar	1,20,000	Res.+Com.+Admn.
3.	Vadra	22,500	Agri. + Res.
4.	Gaigar	18,000	Agri.+Low land
5.	Arazi Uthali Khamarpara	21,000	-do-
6.	Kumargara	18,000	Agri.+ Res.
7.	Bothor	19,500	-do-
8.	Madha Salika	27,000	-do-
9.	Uthali	27,000	-do-
10.	Sarara	18,000	Agri.+Res.+Com.
11.	Choto Salikha	1,00,000	-do-
12.	Choto Guakhara	22,500	Res. + Agri.
13.	Narikelpara	66,000	-do-
14.	Jaberpur	22,500	-do-
15.	Bora Singa	22,500	Agricultural
16.	Afratpara	51,000	Res. + Agri.
17.	Pachim Mathurapur	27,000	Agricultural

Note : Res. = Residential, Agri. Agricultural, Com.=Commercial
Admn. = Administrative

Source: Landuse survey - 1984.

From the table we see that the highest land value prevails in Chatmohar mouza which is the core area or central area and the landuses are comprised by residential, commercial and administrative uses. The second highest land value is found in Dolong mouza which is situated near the Chatmohar mouza.

The present built up area is so unplanned and compact that there is little scope of planned development. The existing growth area is mixed up with commercial and residential area. The pattern of settlement is linear and nucleated. The trend of development is towards south to the the Chatmohar rail station along the metal road. Towards north development has not taken place as the river Baral stands as a natural barrier. A new landuse opportunity has been created due to the establishment of the upazila complex. The surrounding area of land is suitable for planned development. So planning proposal would be made keeping in view the present trend of development and land suitable for future development.

CHAPTER - 4

4. FORECASTS

4.1 Population, Household structure, Density :

Within sphere of influence:

Forecast of population is made based on past trend taking into consideration the induced attraction effect of the government's upgrading commitment. It includes high, medium and low projection over the years 1985, 1990 and 2000 A.D. In the Table No. 9 forecasted population of catchment area of Chatmohar Upazila has been shown.

TABLE NO. 9

Forecasted Population of Catchment area of Chatmohar Upazila headquarters.

1961	1974	1985	1990	1995	2000	Growth rate *	Level of Projection
32501	51603	108572	228435	320265	449011	7.1	High
32501	51603	92988	121442	158603	207135	5.5	Medium
32501	51603	71418	82773	95933	111186	3.3	Low

Forecasted population stands as 108572 in 1985, 228435 in 1990 and 449011 in 2000 A.D. according to 7.1. Growth rate which is considered as high growth rate. As per medium growth rate the same are 92988 in 1985, 121442 in 1990 and 207135 in 2000 A.D. and as per low growth rate the population stands as 71418 in 1985, 82773 in 1990 and 111186 in 2000 A.D. 5.5. and 3.3 have been considered as medium and low growth rate respectively.

* Assumed comparing the growth rate 3.3 of 1961-74 and growth rate 7.1 of 1974-81.

Within headquarters :

Forecasted population for Chatmohar Upazila headquarters has been shown in Table No. 10 :

TABLE NO. 10

1961	1974	1985	1990	1995	2000	Growth rate *
8228	12201	17027	19811	23050	26818	3.07%
8228	12201	16434	18816	21544	24667	2.75%
8228	12201	15165	16742	18483	20405	2.6 %

It reveals that the population stands as 17027 in 1985, 19811 in 1990 and 26818 in 2000 A.D. as per high growth rate 3.07%. As per medium growth rate 2.75% the population are 16434 in 1985, 18816 in 1990 and 24667 in 2000 A.D. and as per low growth rate 2.6 % the population are 15165 in 1985, 16742 in 1990 and 20405 in 2000 A.D.

Household structure and density in catchment area:

Forecasted population, Household structure and Density of catchment area of Upazila headquarters have been shown in Table No. 11:

TABLE NO. 11

Years	Population ¹	No. of Household ²	Density per sq. mile
1985	93248	14279	2366
1990	121782	18649	3090
1995	159047	24356	4035
2000 A.D	207714	31809	5270

1. Considering migration rate shown in Table - 14.

2. Taking 6.53 persons per household for Chatmohar Upazila in 1981.
Source : Pabna District Statistics - 1983.

* Assumed comparing the growth rate 3.07 of 1961-74 and growth rate 2.6 of 1974-81.

To find out total household 6.53 persons per household has been taken as calculated for Chatmohar Upazila in Pabna District Statistics - 1983. The table reveals that the No. of household and density per square mile increase with the increase of population over the years.

Household structure and density in Headquarters area:

The Table No. 12 shows the household structure and density of population per square mile for Chatmohar Upazila headquarters.

T A B L E - 12

Forecasted population, Household structure and Density of Chatmohar Upazila headquarters:

Years	Population ¹	No. of Household ²	Density per sq. mile
1985	17255	2472	5015
1990	19756	2830	5743
1995	22621	3240	6575
2000 A.D.	25900	3710	7463

1. Considering migration shown in Table No. 13.

2. Taking 6.98 persons per household as reveals by survey results - 1984.

To find out total household 6.98 persons per household has been taken as found in socio-economic survey. From the table it follows that the density of population is more in headquarters area than the catchment area.

Migration

To find out total population, 0.28% migration rate has been considered for catchment area as found in socio-economic survey. For headquarters area 5% population increase is assumed as induced effect for government upgrading programme. The respective figures can be seen for both headquarters and catchment area from Table No. 13 and Table No. 14 :

TABLE NO. 13

4.1 Migration - Chatmohar Upazila headquarters area
(According to Medium Forecast)

1985	1990	2000	Migration rate 5.28%(adding 5% induced effect
16434	18816	24667	
821	940	1233	
17255	19756	25900	Total

TABLE NO. 14

Migration - Catchment area of Chatmohar Upazila head-
quarters (According to Medium Forecast).

1985	1990	1995	2000	* Taking Migration rate 0.28%
92988	121442	158603	207135	
260	340	444	579	
93248	121782	159047	207714	Total

* 0.28% Migration rate as reveals from survey report-1984.

4.2 Labour force and Employment:

Labour force and Employment projection for catchment area of Chatmohar Upazila Headquarters have been shown in Table No.15 :

TABLE NO. 15.

	Medium projected population in the years			
	1985	1990	1995	2000 A.D.
1. Total Population	92988	121442	158603	207135
2. Student and dependent 50% of total	46494	60721	79301	207135
3. Total Male labour 50% of the above-2.	23247	30360	39650	51783
4. Total Female labour 2.93% of the above-3.	697	910	1189	1553
5. Total Labour	23944	31270	40839	53336

The same stands as 23944 persons in 1985, 31270 in 1990 and 53336 in 2000 A.D.

The same projection for Chatmohar upazila headquarters has been illustrated in Table No.16.

TABLE NO. 16:

4.2. Projected labourforce and Employment of Chatmohar Upazila Headquarters area.

	Medium projected population in the years			
	1985	1990	1995	2000 A.D.
1. Total population	16434	18816	21544	24667
2. Student & dependent 50% of total	8217	9408	10772	12333
3. Total Male labour 50% of above-2.	4108	4704	5386	6166
4. Total Female labour 2.93% of above-2.	123	141	161	185
5. Total Labour	4231	4845	5547	6351

The respective figures stands as 4231 in 1985, 4845 in 1990 and 6351 in 2000 A.D.

4.3 Land requirements, provision standards :

The Table No. 17 shows the provision standard and land requirement according to the guidelines given in Annex-2 of Terms of Reference (TOR). In this Table the land requirement for commerce, industry, social, administrative, cultural, urban services and others have been shown. If we assume 55% Percentage as per TOR for these landuse and the rest landuse i.e., Residential 45% then the land requirement stands as 960 acres in 1985, 1255 acres in 1990, 1622 acres in 1995 and 2027 acres in 2000 A.D. Here it is important to note that some variation of provision standard and land requirement is made for the following reasons. As per guidelines services to be provided for the population of headquarters and its catchment area. But there are some services and facilities for which people of catchment area will not come to the headquarters. For, example, Mosque, graveyard and primary schools. In the like manner for some other services and facilities people will not regularly come to the headquarters area. For example, weekly hat, daily bazar and even for high school level education. Because, there are 7 weekly hat, 6 daily bazar, 52 primary schools, 7 high schools and 2 junior high schools already existed in the catchment area. So for such cases we have considered $\frac{1}{5}$ of the population of catchment area to provide facilities in headquarters area. In some other cases the whole upazila is considered. For example, Hospital, Maternity centre, stadium, Telephone exchange, Thana, Bus station, College, Upazila complex etc. The details of proposed landuses has been included in Annex No. 5.

TABLE NO. 17

4.3 Provision standard and land requirement over the years according to TOR.

Service	Provision standard	Unit requirements				Land requirements/acres			
		1985	1990	1995	2000 A.D.	1985	1990	1995	2000 A.D.
Market/industry	1T popn 1.5 acres	110	141	141	233	165	211.5	271.5	349.5
Primary school	5T popn 2 acres	22	28	36	46	44	56	72	92.0
High school	20T popn 5 acres	5	7	9	11	25	35	45	55.0
Collage	-do-	5	7	9	11	25	35	45	55.0
Dispensary	5T 1 acre	22	28	36	46	22	28	36	46.0
Maternity	-do-	22	28	36	46	22	28	36	46.0
Hospital for Upazila	12 acres	5	7	9	-	25	35	45	55.0
Administrative for Upazila	12 acres	-	-	-	233	12	12	12	12.0
Park/open space	1T popn 1 acre	110	141	181	11	110	141	181	233.0
Cinema hall	20T popn 0.5 acre	5	7	9	11	2.5	3.5	4.5	5.5
Stadium	20T popn 3 acres	5	7	9	11	15	21	36	33.0
Community centre	20T popn 1 acres	5	7	9	46	5	7	9	11.0
Religious facilities	5 T popn 0.5 acre	22	28	36	11	11.0	14	18	23.0
Cemetery	20T popn 5 acres	5	7	9	11	25	35	45	55.0
Post office	20T popn 0.5 acre	5	7	9	11	2.5	3.5	4.5	5.0
Telephone exchange	20T popn 0.5 acre	5	7	9	11	2.5	3.5	4.5	5.0
Police station	20T popn 2 acres	5	7	9	11	10	14	18	22.0
Bus station	20T popn 1 acre	5	7	9	-	5	7	9	11.0
Residential	100 persons per acre	-	-	-	-	172	197	226	259.00
TOTAL :		200.5	887	1118	1374				

Note : T = Thousand, Popn. = population

For Design and service population, see Table No. 9 & 10.

CHAPTER FIVE

5. LANDUSE PLAN

5.1 Approach, concept, planning principles.

Firstly, a reconnaissance survey is undertaken by the consultant planners to determine the study area. Secondly, a landuse survey is made through C.S. Map to identify the existing landuse character. Simultaneously a socio-economic survey is undertaken to have socio-economic conditions of the people. Determination of the catchment area is made on the basis of the direct or primary socio-economic influence of the headquarters area. It is this catchment area on which the basis of population forecasting is made. Finally, land allocations and determination of planning area is made on the requirements of the forecasted population following the guideline of planning provision standards given in Annex - 2 of TOR.

Master Plan does not deal with detail planning. Rather we can call it landuse zoning plan as mentioned in the TOR identifying suitable locations for social, administrative, economic, circulatory and other appropriate landuses. Broad landuse zones have been identified. Detailed planning would be done under zonal plan.

Effort is made for maximum utilization of the scarce land. As a policy to retain existing urban landuses as far as practicable we have tried to incorporate the existing urban land uses in the planning proposals, so that maximum possible facilities and services can be provided with minimum disturbances of the existing landuse pattern.

5.2 Plan description:-

On the basis of forecasted population and land requirement finally the planning area for Chatmohar Upazila headquarters has been fixed to 2221.46 acres or 3.47 sq. miles approximately. The proposed broad land uses has been shown in Table No.18. The proposed land allocations for respective uses are for commerce and industry 311 acres or 13.52%, 64.11 acres or 2.89% for Education, 19 acres or 1% for Health facilities, 71.43 acres or 3.21% for Administrative uses, 38.51 acres or 2% for Recreation (open) and 2.61 acres or 0.21% for recreation(closed) purpose. The other landuses are 60.33 acres or 2.71% for socio-cultural, 36.82 acres or 2% for urban services, 57.99 acres or 3% for Major Roads, 57.87 acres or 3% for Secondary Roads, 40.89 acres or 2% for Local Roads, 1127.72 acres or 49.55% for Residential uses, 222.11 acres or 10% for Urban deferred and 111.07 acres or 5% as Reserves.

As the existing builtup area of Chatmohar upazila headquarters is subdivided into two parts viz. Thana area and Upazila Parishad area, so the planning proposal is made around these two areas connecting them by roads. There are also two trends of landuses centering these two places. One trend proceeds towards Chatmohar Rail station along the pucca road originating from thana area and the other created for setting up upazila complex.

A more than 60'-0" Katcha road runs from Upazila complex area to Chatmohar Rail station through which landuses may be developed. These two roads form a triangle area which is selected for future development purpose, as there is no scope of planning proposal in between the thana and Upazila Parishad area which is heavily built up residential area. Western part of existing

Upazila Health Complex, Thana and Chatmohar College also selected for planning proposal as very nearer to these services, so that the surrounding parts of these existing landuses can be developed in planned way. The existing Baral river which flows by the northern parts of the headquarters and stands as an obstacle to northern development of the headquarters. But there are huge settlement on the northern part of the river who are the serviced population of the headquarters area. Therefore, to connect this area with the headquarters planning proposal extends to this area with bridge proposal over the river Baral. Some facilities and services also proposed in this area.

Some 25 acres of land has been earmarked as Housing Estate to develop a planned residential area. 13.52% of the total land has been earmarked for industrial estate which will be the source of employment for the growing population. A central park provision is made in the central place so that everybody can enjoy the facility.

Community centre, Super market, Library provisions are near the Central park. Other recreational facilities both open and closed also proposed in different spot of the proposed area. A stadium is also proposed near the existing college and proposed high school and vocational training institute so that it could be utilized throughout the year. Marketing and commercial facilities have been distributed in a well planned way so that the inhabitants can avail the facility from walking distance. To utilize the water transport

facility two launch ghats are proposed near the Baral river in both sides. The whole area is proposed to be connected by well planned road network which include both existing and proposed roads. Road network is distributed in such a way that the headquarters can be connected with other surrounding Upazilas which may be seen from the Plan.

TABLE no. 18

5.2 Distribution of the existing and proposed landuse
of the Chhatmohar Upanila headquarters (Planning area).

Sl. No.	Categories of Landuses	Total area in acres (existing)	Additional Proposed area in acres	Total planned area in acres	% of the total planned area
1.	Commerce and Industry	10.30	300.70	311.00	13.52
2.	Education	7.55	56.56	64.11	2.79
3.	Health	8.30	10.7	19.00	1.00
4.	Administrative	16.60	54.83	71.43	3.21
5.	Recreation(open)	1.94	36.57	38.51	2.00
6.	Recreation(closed)	2.61	0.00	2.61	0.12
7.	Socio-cultural	6.80	53.53	60.33	2.71
8.	Urban services	8.40	28.42	36.82	2.00
9.	Roads : Major	18.52	39.47	57.99	3.00
10.	Roads : Secondary	33.24	24.63	57.87	3.00
11.	Roads : Local	29.28	11.61	40.89	2.00
12.	Residential	266.20	861.52	1127.72	49.55
13.	Urban Deferred	-	222.11	222.11	10.00
14.	Reserve	-	111.07	111.07	5.00
TOTAL :		409.74	1812.72	2221.46	100

CHAPTER SIX.

6. PROGRAMMING AND IMPLEMENTATION.

6.1 Priority actions, Cost implications?

It is not possible to provide the proposed services at a time. So that priority may be decided as per the following schedule:

Priority Schedule

- | | | |
|--|---|----------------|
| 1. Revenue earning | : | Infrastructure |
| 2. Production and employ-
ment oriented | : | development. |
| 3. Housing | : | |
| 4. Education - Health facilities | : | |
| 5. Recreation | : | |

Revenue earning landuses should be started first. For examples market, commerce etc. It will help to boost up revenue for govt. expenditures and at the sometime will provide day to day service to the people. Production and employment oriented landuses such as industry may be given 2nd priority. Side by side infrastructure development will be made for function and operation of proposed landuses under schedule 1 and 2. Providence of housing facilities for the people may be given 3rd priority. This people exclusively meant for the induced attraction effect. 4th priority may be given for education and health. Recreational facilities may be provided at the 5th stage.

Cost estimates made roughly on the basis of present land value and development cost. It is important to note that specific cost estimates will be made by the respective implementing authority for the particular projects on the basis of the current costs, because cost is variable. However, at the present estimates average land value has been taken as Tk.42,000 per acre for land acquisition and Tk.1400 per 1000 cft. for land development cost. Total land acquisition cost stands as Tk.264.26 lakh and land development cost stands as Tk.1005 $\frac{1}{2}$ lakh for total 623 acres of land for different category of landuses. Total cost stands as 1269.94 lakh and finally 1392.53 lakh assuming 10% cost for contingency, overhead and price escalation. The cost estimates have been shown in Table No.19 .

TABLE NO. 19

Cost estimates of Proposed services for Chatmohar
Upazila headquarters.

Services	Area to be developed in acre	Cost components		Total cost	Remarks/ cost covers
		Land acquisi- tion	Land deve lopment		
Commerce and industry	300	126	396	522	Cost covers Market, industry, commercial office etc.
Education	44	18.48	79.83	98.31	Primary school, high school, colleges etc.
Health	10.20	4.28	18.50	22.78	Health complex, dis- pensary, maternity centre etc.
Administrative	11.50	4.43	20.84	25.27	Administrative uses
Socio-cultural	18.64	7.82	33.82	41.64	Community centre, mosque, library etc.
Recreational	38.51	16.17	93.16	109.33	Both closed and open spaces.
Urban services	21.82	9.16	39.59	48.75	P.O., T.O., Bus sta- tion, PBS station etc.
Roads	75.68	31.79	136.98	168.77	Major, secondary, local roads etc.
urban deferred	77.70	32.63	140.97	173.60	35% of total urban deferred.
Housing Estate	25.00	10.50	45.36	55.86	Others will be deve- loped under Zonal plan
TOTAL :	623.05	261.26	1005.05	1265.94	

Note : Costing is made on the basis of the interviews with
the local people, leaders and authority.

6.2 Phasing, Urban Deferred.

6.2.1 Phasing: plan implementation should be done in some phases at an interval of 5 years upto 2000 A.D. It should be related to the national 5-year development plans. Development activities, for approval by the Government, should be broken up into Annual Development Programme (ADPs). Phasing of development activities according to the plan is shown below :

<u>Sl.</u>	<u>Sectors</u>	<u>1985-90</u>	<u>1990-95</u>	<u>1995-2000</u>
1.	Land development (for housing)	35%	45%	20%
2.	Administrative	70%	20%	5%
3.	Industry	40%	55%	5%
4.	Commerce	40%	50%	10%
5.	Educational	45%	50%	5%
6.	Health	50%	40%	10%
7.	Recreation	45%	50%	5%
8.	Roads	60%	30%	10%
9.	Others	35%	40%	25%

6.2.2 Urban Deferred : Approximately 10% of the total built up area has been earmarked in the plan as urban deferred for unforeseen future activities.

6.3 Development control :

To ensure timely implementation of the plan provisions the implementing authority must have some legal power. The plan should be passed by the government. To implement the upazila plans on an uniform basis there should be some rules and regulations containing powers to acquire land or to impose development controls etc. like East Bengal Building construction Act. 1952 or Town Improvement Act etc. There should be provision in the Govt. Annual Budget to allocate money for upazila parishad to implement the plan provisions.

6.4 Monitoring, review :

The Upazila Parishad will be the custodian of the plan. There are many government/autonomous bodies to function in the Upazila level. They have to construct their office or acquire land for their project purpose. The Upazila Parishad will inform the Govt. agencies/autonomous bodies about the plan provisions, so that the landuses can be regulated as per plan provisions.

The plan has been formulated on certain assumptions, conditions or requirements may be change in future. So to cope up with the changing conditions the plan should be revised after every five years.

A N N E X - I

Age and sex structure of population.

Age in years	Sex					Percentage of total.	Total household.
	Male No.	%	Female No.	%	Total		
0 - 5	77	11.60	82	15.26	159	13.23	
6 - 9	66	9.94	78	14.50	144	11.99	
10 - 14	108	16.28	84	15.62	192	15.99	
15 - 19	102	15.38	64	11.90	166	13.82	
20 - 24	71	10.70	51	9.48	122	10.15	
25 - 29	67	10.09	37	6.88	104	8.66	
30 - 34	29	4.36	32	5.95	61	5.07	
35 - 39	24	3.61	29	5.39	53	4.40	
40 - 44	30	4.51	28	5.20	58	4.82	
45 - 49	21	3.16	14	2.60	35	2.91	
50 - 54	16	2.40	10	1.85	26	2.16	
55 - 59	15	2.25	6	1.11	21	1.74	
60 - 64	18	2.71	10	1.85	28	2.32	
65 and over	20	3.01	13	2.41	33	2.74	
Total	664	100	538	100	1202	100	172

Source : Socio-Economic survey - 1984

ANNEX -2

Distribution of migrated families according
to local and non-local characteristics.

Sl. No.	Causes of migration.	Territorial orientation				Total	%
		Local No.	%	Non- local	%		
1.	Low land value	2	25.00	6	60.00	8	44.45
2.	Availability of work	1	12.50	1	10.00	2	11.11
3.	For fertile land	1	12.50	-	-	1	5.55
4.	For permanent settlement	3	37.50	3	30.00	6	33.34
5.	For bright future	1	12.50	-	-	1	5.55
Total		8	100	10	100	18	100

Source : Socio-Economic survey- 1984 .

A N N E X - 3

Detailed statistics of catchment area of
Chatmohar Upazila headquarters area.

Sl. No.	Name of Mouza	J.L. No.	Total area in acres	Involved area in acres	Population	
					1961	1974
1.	Bahadurpur	142	79.99	79.99	479	828
2.	Majgram	138	586.54	586.54	260	527
3.	Kabirdiar	145	122.03	122.03	312	561
4.	Amritkunda	146	146.60	146.60	582	744
5.	Chalk Uthali	147	128.77	128.77	349	569
6.	Paschim Mathurapur(part)	143	603.24	582.24	1156	217
7.	Aunkutia	141	923.79	923.79	1160	122
8.	Bhadra(part)	110	539	34.09	41	77
9.	Arangi Uthali Khamarpara(part)	111	130	82.97	81	12
10.	Narikelpara(part)	102	155	10.98	17	34
11.	gaingar (part)	98	124	76.44	126	918
12.	Dharail Mallikpat	97	452.22	452.22	591	954
13.	Agsoail	100	421.87	421.87	567	907
14.	Punchsoail	99	365.80	365.80	589	859
15.	Paschim Ramnagar	88	555.16	555.16	677	1197
16.	Bother (Part)	87	1191	856.81	1001	1370
Total 1 :			- 6527.01	5426.30	7427	12278

Sources: (1) Village statistics = 1961 population census.

(2) Village population statistics = 1974 population census.

Detailed statistics of catchment area of
Chatmohar Upazila headquarters area .

Sl. No.	Name of mouza	J.L. No.	Total area in acres	Involved area in acres	Population	
					1961	1974
17.	Jabar kol	81	1269.40	1269.40	410	637
18.	Pailanpur	78	70.83	70.83	478	753
19.	Paikpara	80	135.48	135.48	76	189
20.	Gunaigacha	183	605.24	605.24	993	1250
21.	Bara Salika	82	294.39	425	739	82
22.	Ramchandrapur	185	245.55	245.55	584	72
23.	Mahela	181	923.79	923.79	1465	1965
24.	Mallikpur	180	160.46	160.46	138	311
25.	Baraguakhara	179	327.85	327.85	281	440
26.	Pravakarpara	172	88.21	88.21	149	253
27.	Bejpara	173	280.87	280.87	320	581
28.	Tagtala	169	586.71	586.71	850	1362
29.	Maramkhali	148	68.87	68.87	184	250
30.	Goalbari	170	47.51	47.51	80	141
31.	Chirail	171	762.70	762.70	256	405
32.	Chakgopalpur	94	227.62	227.62	830	199
33.	Sondaha Pukurpar	95	670.01	670.01	563	1585
TOTAL :			6765.49	6765.49	7846	11416

Sl. No.	Name of Mouza	J.L. No.	Total area in acres	Involved area in acres	Population	
					1961	1974
34.	Baruria	92	407.67	407.67	462	1126
35.	Haripur	96	639.79	639.79	1596	2106
36.	Panchbaria	115	132.60	132.60	318	253
37.	Rampur	119	308.75	308.75	275	583
38.	Nastalipur	118	138.23	138.23	250	381
39.	Husagari	117	177.37	177.37	177	409
40.	Katuli	116	183.85	183.85	247	346
41.	Lautia	112	592.38	592.38	331	482
42.	Bangala	140	777.43	777.43	829	1371
43.	Tengarjani	192	144.41	144.41	236	336
44.	Biri Boalia	189	472.65	472.65	939	1296
45.	Mandatosh	188	550.15	550.15	678	1376
46.	Karkola	71	561.00	561	847	1185
47.	Chinabathkur	15	1017	1017	2143	3449
48.	Nangolmora	11	392	392	661	1124
49.	Katenga	89	1221	1221	2147	3301
50.	Boalmara	90	1448	1448	881	2103
TOTAL: 2164.24					13017	21227
						2288

Sl. No.	Name of Mouza	J.L. No.	Total area in acres	Involved area in ac.	Populations	
					1961	1974
51.	Dautia Koyra -para	139	1038.03	1038.03	1280	1939
52.	Purba Tiartola	137	397.32	397.32	247	400
53.	Bahediar	149	207.74	207.74	305	484
54.	Shahapur	150	287.92	287.92	464	719
55.	Santoshpur	168	129.54	129.54	156	251
56.	Suigaon	167	445.93	445.93	437	665
57.	Kainara	174	144.17	144.17	138	274
58.	Arangail	177	585.23	585.23	458	697
59.	Pathailhat	175	246.73	246.73	296	481
60.	Krisnapur	178	143.28	143.28	129	265
61.	Mallikbaria	197	197.61	197.61	261	441
62.	Arjunpur	196	43.73	43.73	40	66
TOTAL:			3867.23	3867.23	4211	6682

A N N E X - 4

Chatmohar Headquarters area statistics

Sl. No.	Name of mouza	J.L. No.	Total area in acres	Involved area in acres	Population	
					1961	1974
1.	Chotoguakhara(P)	83	595.38	347.84	393	597
2.	Dolong	101	248	248	676	997
3.	Paschim Mathurapur(P)	143	605.24	17	33	44
4.	Uthali	108	496	666	816	85
5.	Sarara	106	185	185	366	492
6.	Bothor(P)	87	1191	333.75	390	635
7.	Madhya Salikha	84	102	102	236	337
8.	Kumargara	85	413	413	922	1435
9.	Choto Salika	105	193	193	896	1113
10.	Vadra(P)	110	539	505.05	605	1150
11.	Arangi Uthali Khamarpara(P)	111	130	47.30	45	7
12.	Marikelpara	102	155	155	244	481
13.	Jaberpur	107	72	72	71	189
14.	Bara Singa	86	61	61	54	81
15.	Chatmohar	104	182	182	2129	3046
16.	Afratpara	103	77	77	925	572
17.	Gaingar (P)	98	124	47.30	77	209
TOTAL :			5368.62	3482.24	8228	12201

Source : (1) Village statistics = 1961 population census.

(2) Village population statistics = 1974 population census.

Proposed Landuse for Chatmohar Upazila headquarters area
In 1985 - 2000 A.D.

Services	Provision standard	Unit requirements in acre										Land requirements in acres		Area considered
		1	2	3	4	5	6	7	8	9	10	11	12	
Market & Commerce office	6 acres for 10 thousand popn.			3	4	5	6	18	24	30	36		HQ+1/5 of catchment area	
Small industry	-			-	-	-	-	-	-	-	266		Upazila	
Primary school	2 acres for 5 thousand popn.			3	3	4	5	6	6	8	10		HQ.	
Secondary school(boys)	5 acres for 10 thousand popn			3	4	5	6	15	20	25	30		HQ+1/5 of catchment area	
Secondary school(girls)	- do-			3	4	5	6	15	20	25	30		-do-	
Hospital	10 acs.for Upazila			1	1	1	1	10	10	10	10		Upazila	
Maternity centre	5 aacs. -do-			1	1	1	1	5	5	5	5		-do-	
Dispensary	1 acre for 10 thousand popn			3	4	5	6	1	4	5	6		HQ.	
Upazila HQ	-			1	1	1	1	12	12	12	12		Fixed for U.Z.	
Central Park	5 acres for 20 thousand popn.			8	9	11	12	16	18	22	24		HQ.	
Stadium	6 aacs.per Upazila			1	1	1	1	1.5	1.5	1.5	1.5		HQ.	
Community centre	1.5 acres per U.Z.			1	1	1	1	1.5	1.5	1.5	1.5		HQ & Upazila	
Auditorium	1.5 -do-			1	1	1	1	1	1	1	1		HQ.	

...../.....

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>
Library	1 acr. per Upazila	1	1	1	1	1	1	1	1	1	HQ.
Religious facility	5 acres per 5 thousand popn.	3	4	4	5	1.5	2	2	2.5	HQ.	
IDGHAH + Central mosque	3.25 acres per Upazila HQ.	1	1	1	1	3.25	3.25	3.25	3.25	3.25	HQ.
Graveyard	12 acrs. for U.Z.H.Q.	1	1	1	1	12	12	12	12	HQ.	
Post office	0.5 acres for 20 thousand popn.	1	2	3	4	0.5	1	1.5	2.0	HQ + 1/5 of catchment area	
Telephone exchange	0.5 acr. for Upazila	1	1	1	1	.5	.5	.5	.5	Upazila	
Thana HQ.	3 acres for U.Z.	1	1	1	1	3	3	3	3	-do-	
Bus station	2 acres for 40 thousand popn.	1	1	1	2	2	2	2	2	HQ + 1/5 of catchment area	
College	8 acres for U.Z.	1	1	1	1	8	8	8	8	Upazila	
Girls college	6 acres -do-	1	1	1	1	6	6	6	6	-do-	
Madrasa	3 acres for HQ.	1	1	1	1	3	3	3	3	HQ.	
Waste dumping	1 acr. per U.Z.HQ.	1	1	1	1	1	1	1	1	HQ.	
Housing Estate	25 acrs. for U.Z.HQ.	1	1	1	1	25	25	25	25	HQ	
Water supply station	2 acres -do-	1	1	1	1	2	2	2	2	HQ.	
PBS station	10 acres	1	1	1	1	10	10	10	10	as PBS station existed.	
Tailkhana	5 acrs. for Upazila	1	1	1	1	5	5	5	5	Upazila	
Open space/Play plots	1 acre for 2 thousand popn.	2	3	4	5	1	1.5	2	2.5	HQ.	
Cinema hall	0.5 acres for 20 thousand popn.	1	1	1	1	6	6	6	6	HQ & Upazila	

QUESTIONNAIRE-SOCIO-ECONOMIC SURVEY OF CHATMOHAR UPAZILA 1984

1.. Head of the Household

a) Name

b) Religion :- i) Village.

ii) Union/Municipality

iii) Upazila

iv) Zila

2. Name of Interviewer :-

3. Socio-economic condition of the household.

No.	Name of the family members.	Sex	Age	Relation with the head of the family	Marital status	Education	Main occupation	Subsidiary occupation
-----	-----------------------------	-----	-----	--------------------------------------	----------------	-----------	-----------------	-----------------------

1.

2.

3.

4.

15.

4. Yearly agro-based income and landuse information.

Categories of land	Land in acres	Amount in Tk.
--------------------	---------------	---------------

Household

Cultivable

Uncultivable

Single cropping

Double cropping

Multi cropping

Pond/ditch

Others

Total :

5. Yearly Non-Agro-based income

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

6. Household expenditure.

Major items	Yearly expenditure in Taka
a) Food	
b) Clothing	
c) Education	
d) Fuel and light	
e) Social function	
f) Other expenses	

7. Solvency of the family.

- a. Expenditure.
- b. Saving.
- c. Loans.

8. 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 wall	
i) Others	

9. Housing problem

a) Construction Materials problem :-	Yes/No
Type of problem :-	1)
	2)
	3)
b) Accommodation problem :-	Yes/No
Type of problem :-	1)
	2)
	3)

10. Migration

Are you a permanent inhabitant in this area : Yes/No

From where and why you have migrated ?

a. Reason-----

b. Place-----

c. Year/month -----

Do you have any plan to leave this upazila ?

If yes, why, where and when will you leave ?

a. Reason

b. Place

c. Year/month

11. Sources of water

a) Supply of water

b) Pond

c) Tube well

d) River

e) Other

12. Sources of light

a) Electricity.

b) Kupa

c) Harican

d) Others (if any)

13. Suggestion regarding the development of Upazila.

LANDUSE SURVEY INSTRUCTION SHEET
FRACTIONAL CODE SYSTEM

The following lists almost all the features that you are liable to come across in your field survey. However, if in the course of your work you come across some unlisted features devise your own symbols.

Numerator of the fraction Code
(Man made aspects)

First Digit

(Landuse class)

1. Agriculture, Forestry
2. Commerce and industry (a. Daily bazar, b. Weekly bazar, c. bank, d. Heavy industry, e. Small industry etc.)
3. Education : (a. Primary school, b. High school, c. College and d. Madrasa).
4. Health : (a. Hospital, b. Health centre).
5. Administration, Govt. Dept.
Cantonment etc. :- Name - (a. Thana Headquarter, b. Upazila Headquarters, c. Food godown, d. Tahsil office, e. U.P. Office).
6. Recreation open : (a. Park, b. Playground etc.)
7. Recreation closed: (a. Cinema hall, b. Club etc.)
8. Socio-cultural (Mosq e, Eidgah etc.)
9. Urban services (a. Electric supply with location of pole, b. Water, supply, c. Tubewell, d. Tank etc.)
10. Roads : Major : 40'-0" & above. (with dimension).
Secondary: 25' 0" & ..
Local : 20'-0" & ..

11. Residential : a. Pucca (I), (II)
 b. C.I.P.W.
 c. C.I. roof
 d. Mud house
 e. Tarja & thatched roof.
12. Urban deferred
13. Reserves (Khas land & other acquired land by Government)
14. a. Union boundry
 b. Upazila boundry
 c. District boundry

Second Digit

(Agriculture)

- A. Single cropping
 B. Double cropping
 C. Multiple cropping
 D. Inter culture

Third Digit

(Irrigation intensity)

- a. Regular
 b. Infrequent
 c. Not paratised

4th Digit

- i. Land value per Bigha.

Denomitar of the code

(Physical character)

1st Digit

(Land levels)

- | | |
|------------------------------------|---------|
| 1. Highest level (Use local name | - Vity. |
| 2. 2nd ,, ,, | - Danga |
| 3. 3rd ,, ,, | - Nama |
| 4. 4th ,, ,, | - Bila |
| 5. 5th ,, ,, | - Jala |
| 6. | |

2nd Digit

(Flood ability)

- A. Flooded regularly
 B. Flooded in frequently
 C. Not flooded

3rd Digit

(Soil fertility)

- a. Good
 b. Medium
 c. Bad