

Urban Development Directorate
Ministry of Works
Govt. of the People's Republic of Bangladesh

**LAND - USE / MASTER PLAN
FOR UPAZILA SHAHAR
PATGRAM**

LALMONIRHAT ZILA

MAY • 1992

URBAN DEVELOPMENT DIRECTORATE
MINISTRY OF WORKS
GOVT. OF THE PEOPLE'S REPUBLIC OF BANGLADESH

**LAND-USE / MASTER PLAN
FOR UPAZILA SHAHAR
PATGRAM**

LALMONIRHAT ZILA

MAY— 1992

Submitted by :

P T A CONSORTIUM

A Consortium of :

**PROKALPA UPADESHTA LTD. TROPICAL CONSULTANTS LTD. AND
ASADUZZAMAN AND ASSOCIATES.**

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Acceptance letter and comments
of Chairman, Upazila Parishad.

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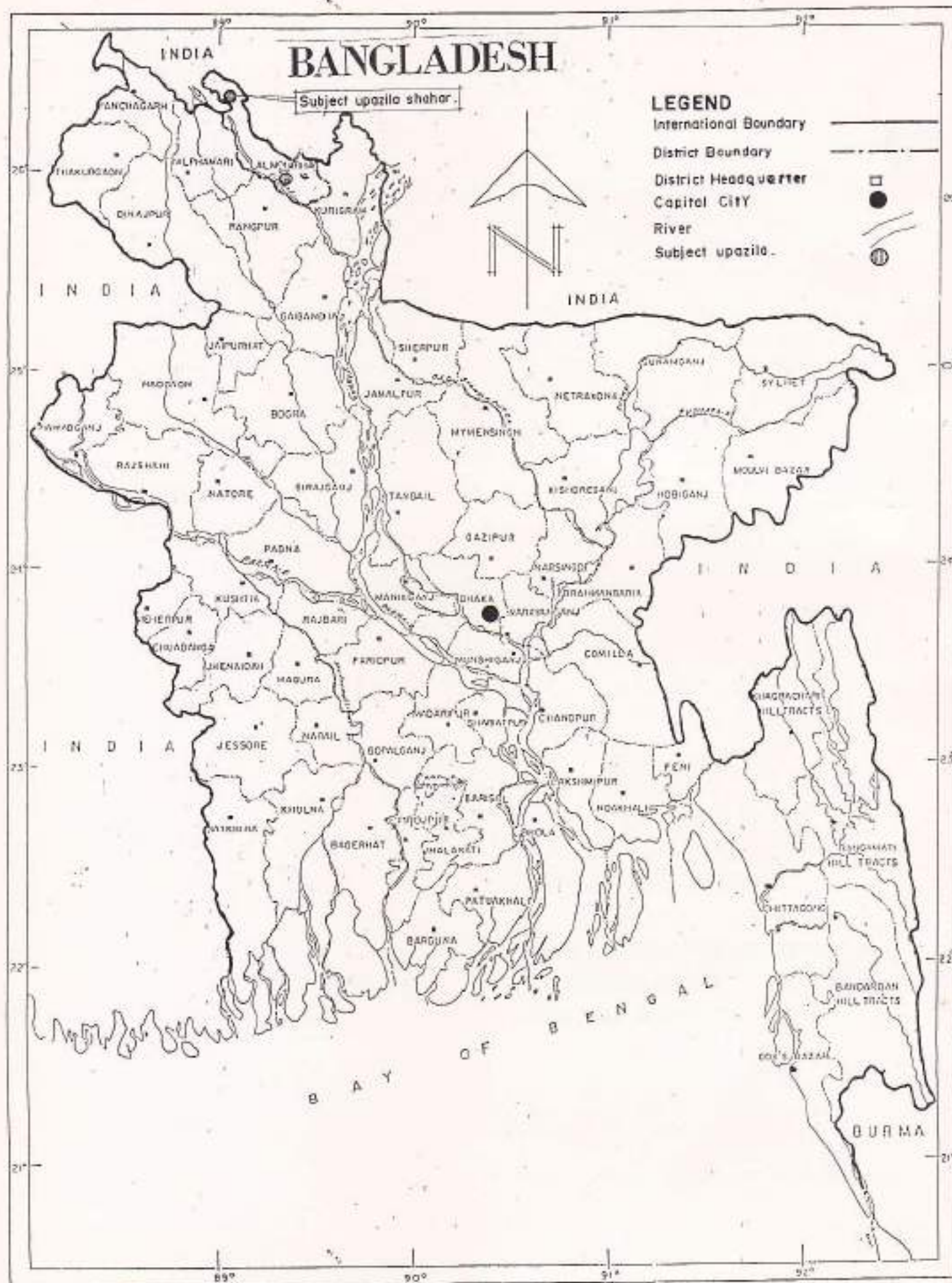
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CHAPTER— ONE

**BACKGROUND, OBJECTIVES,
METHODOLOGY
AND THE REPORT**

CHAPTER— ONE

1.0 INTRODUCTION

1.1 BACKGROUND

The objective of preparing land use Plan for Upazila Shahar is to feed Government policy of administrative decentralization and devolution of development activities at local levels to local Governments, which will accelerate infrastructural development at Upazila centre and promote development activities there. This will induce rapid growth of small scale industries mainly based on locally available resources and human settlements in and around Upazila Shahar. The main strategy of Physical Planning in this context will be to formulate complete Physical as well as Land use Plans for the Upazila Shahar and preparing the Land use/Master Plan is the partial fulfilment of the objective which will ensure national economic development.

Planned development is the prime objective of Land use / Master Plan of the upazila shahar. However, there is a common feeling that planning means a total development involving huge volume of fund, but such idea is not fully correct. On the other hand, planned development to a large extent can be ensured through effective enforcement of development control regulation. On the other hand, planning is a continuous process and the need for planning changes over the passage of time. Planning of upazila shahars may be termed as the first phase of a comprehensive planning and development programme in which other important settlements will be taken up for planning and development in course of time.

Attainment of planned development is the principal objectives of this land use plan & it is obvious that materialization of the proposal under land use plan will not be an easy task for the government to provide. Keeping this reality in view it is suggested to keep the plan provisions flexible so that, they can be modified from time to time to accommodate changing needs over time. Even if it becomes difficult to implement plan provisions enforcement of development contrary to the land use provisions of the land use plan, on the other hand it becomes difficult to implement plan provisions, the local authority can atleast check unplanned growth by enforcement of development control measures by not allowing any development contrary to the land use provisions of the land use plan. However, strong legal coverage will be necessary to enforce recommendations of the land use plan.

In the light of above circumstances if it is felt that, the upazila centre should grow up expeditiously and the preparation of land use plan for such centre is of utmost importance for better utilization of the whole region's land, people and national resources. With this end in view, the Government has planned to engage local consultants for the immediate preparation of Land use Plan / Master Plan for the different upazila headquarters of Bangladesh.

An offer was given by the urban Development Directorate under the Ministry of works, Govt. of People's Republic of Bangladesh to PTA CONSORTIUM to study the present Physical, Socio economic condition of this Upazila Shahar and surrounding areas as required for the study and as per Terms of Reference (TOR) with the eventual aim of preparation of Broad Land use/Master Plan for the Upazila Shahar 'PATGRAM'.

The 'PATGRAM' Upazila sub region is one of the Upazila of Lalmonirhat Zila of greater Rangpur region. It is located on the north-east and extreme border of Lalmonirhat Zila. This Upazila Shahar is located at a distance of 82 Km (5 miles) from Zila Shahar Lalmonirhat. Present Upazila Shahar is located in mouza Rasulganj of Patgram Union and surrounding unions are Jagelber and Kuchilabari respectively. This Upazila Shahar is basically a place, predominant rural in Character like other Upazilas of this Zila.

After the completion of the studies and compilation of the data and analysis of those findings and sectoral studies. A draft land use / Master Plan and report for upazila shahar (Report-III) were submitted to Urban Development Directorate for their acceptance. The UDD has accepted that report. Before that a through discussion about the land use / Master Plan held with the local officials and Chairman of the upazila parishad on 28th May 1991 and it was approved by the Chairman, Upazila parishad, authentication by the Chairman has been obtained and annexed in this report.

We must extend here our profound gratitude to the former Chairman, Upazila Parishad, Professor Md. Shahidullah Pradhan and Upazila Nirbahi officer, for their Co-operation since from study to formulate of this Draft land use/Master Plan. We also thank the officials and planners of the Urban Development Directorate for their active Co-operation and suggestions in this context. We sincerely desire that the local authority for whom the plan has been prepared, will implement this by using the land use guide line provided in this plan.

PURPOSE, SCOPE AND OBJECTIVES

1.2 Objectives :

The following are the major objectives of the present study :

- a) To prepare land use plan in order to serve as a spatial guideline for location and use of space for residential areas, place of work, services, social facilities for the socio-economic emancipation and welfare of the common man.
- b) Orderly growth of upazila township and to facilitate public and private development of the upazila shahar through physical planning approach.
- c) To formulate land use plan of the study area, programming and implementation of the plan period and also serve as technical backup for planning of human settlement in this upazila shahar, so that a significant segment of rural migrants are induced to work and live in this shahar.
- d) To enhance, capability of physical planning services in managing the urban environment to ensure a better living and working plan and recommendation for socio-economic development, administration, planning and development control in the upazila headquarters.

1.3 Methodology :

To achieve the objectives set in the Term's of Reference (TOR). The consultants carried out different surveys and studies adopting specific methodology. During the study period surveys were conducted by the surveyors and field investigator under the supervision of a Planner. The survey team carried out two different surveys namely : Physical Land use survey and Socio-economic survey :

a) Physical Survey :

A generalised land use survey were carried out on the Mouza Map in the scale 1" = 330' which were collected from D.L.R office covering the whole of study area. Plot to plot survey of present use of land were marked on the survey sheet. The survey findings were compiled and existing Land use Map were prepared. The topographical features has been obtained through field checking regarding the level of land. And also the present flood level has been obtained from the secondary sources. The survey findings of different land uses has been shown by different symbols as per TOR.

b) Socio- economic Survey :

This survey were conducted in two parts. Firstly an inventory of households to determine the actual demographic make up of the population. The second part of the survey includes random sampling of 5% households through pre designed questionnaire by numbers of enumerator to determine the existing socio-economic condition of the study area. Data collection has been done through two different sources and these are as follows :

(b-1) Secondary Sources :

Relevant published and unpublished documents and literature has been used for references. It includes :

- Bangladesh population census, 1981 thana series, December, 1985
- Bangladesh Bureau of statistics.
- Bangladesh population census, 1981. Analytical Findings and National Tables, August, 1984, National series, BBS
- Upazila statistics (1979-80 to 1982-83) Vol. 1. Basic Statistics, Land utilisation and Irrigation, Jan. 85 BBS.
- Health and Education statistics.
- Land records registration and Municipal records.

(b-2) Primary sources :

Through Physical Land use survey and Socio-economic survey through questionnaire method as stated in the earlier paragraphs.

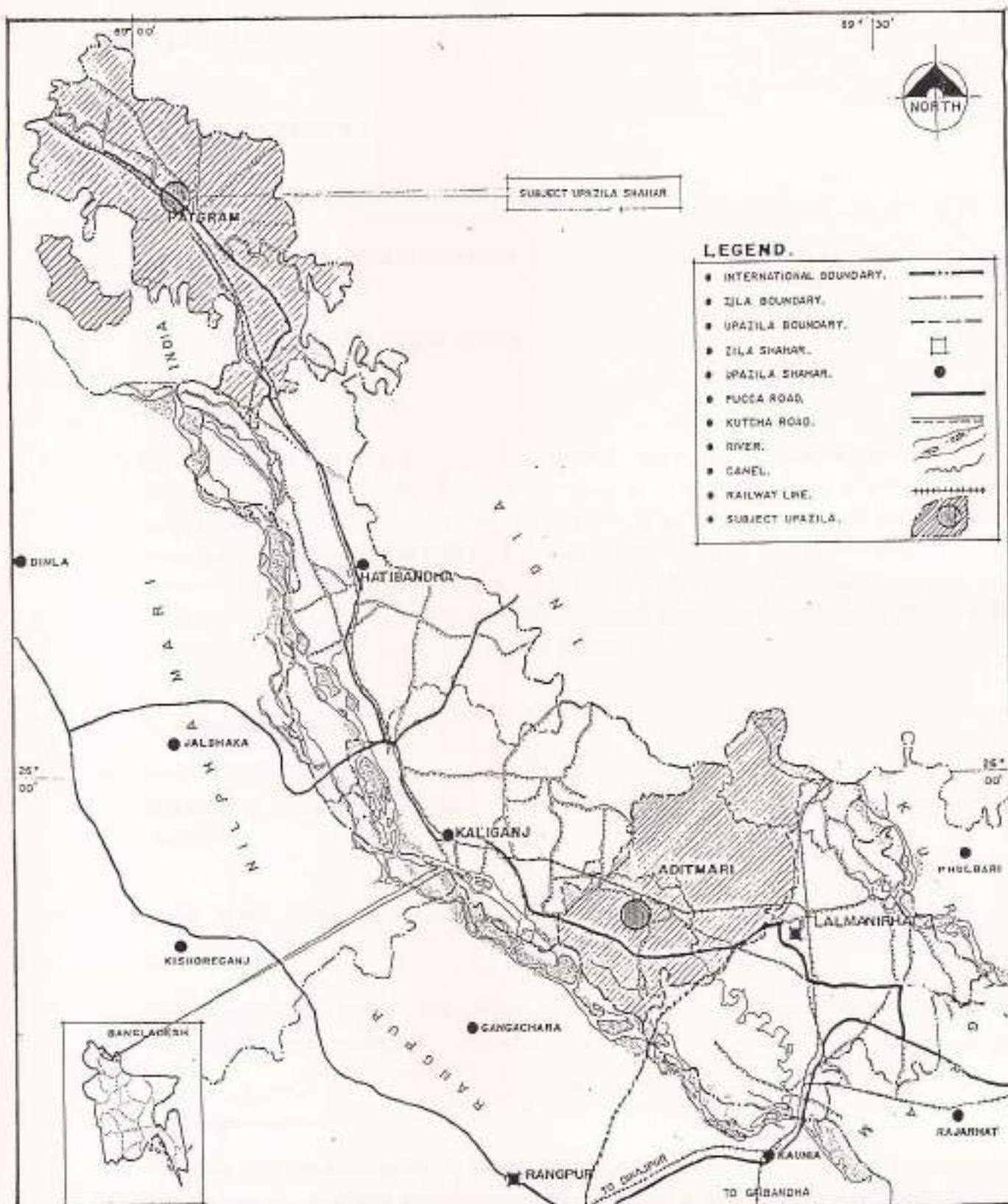
1.4 The Report :

In order to attain the principal objective and scope of services of the study programme to formulate a Land use / Master Plan for the upazila shahar Aditmari, Lalmonirhat Zila as set in the section 2 and 3 of the Terms of Reference (TOR), the consultants carried out the studies related to the preparation of Land use / Master Plan for the upazila shahar.

This report includes the following studies in formulating the Land use / Master Plan for the upazila shahar Aditmari of Lalmonirhat Zila. The Chapter- Two of this report describes the subject upazila in the zila context, the characteristics of the existing upazila shahar with particular reference to spatial aspects, forecast of population, labour force of shahar as well as catchment area, the land requirements of the Land use plan. The chapter- Three describes, approach concept, planning principal and Land use / Master Plan description and also programming and implementation.

CHAPTER— TWO

REPORT ON STUDIES



ZILA MAP - 1985

ZILA: LALMONIRHAT

UPAZILA: Patgram, Hatibandha, Kaliganj, Aditmari & Lalmonirhat.

RANGPUR REGION. DIVISION: RAJSHAHI.



URBAN DEVELOPMENT DIRECTORATE
SHEGUNBOGCHA, DHAKA.

LOCATION OF UPAZILA
AND TRANSPORT LINKAGES
WITHIN ZILA & SURROUND-
ING.

PTA CONSORTIUM.
43, HUFPIR ROAD, CHAMMUNDI, DHAKA.

CHAPTER— TWO

REPORT ON STUDIES

2.0 THE UPAZILA IN ITS ZILA CONTEXT

2.1. LOCATION AND REGIONAL SETTING

2.1.1. Location and Regional Setting

a. Location :

In the regional context, the Patgram Upazila sub-region is one of the Upazila of Lalmonirhat Zila of greater Rangpur region. It is located on the north-west and extreme border of Lalmonirhat Zila. The Upazila is at a distance of 108 km (69 miles) from Rangpur Zila Shahar and Zila Shahar Lalmonirhat is 71 km (44 miles). It lies between $26^{\circ}18'$ and $26^{\circ}33'$ north latitude and $89^{\circ}03'$ and $89^{\circ}21'$ east longitude. It comprises a total area of 261.6 km^2 (101.0 Sq.m). There are 6 unions, 48 mouza and 49 villages as administrative units in this Upazila.

b. Regional setting :

Patgram Upazila is bounded in the north by the Indian state of Assam, in the South by Hatibandha Upazila of Lalmonirhat Zila, in the East and West by the Indian state of Assam.

2.1.2 Physical Characteristics

a. Climate :

The climate of this Upazila sub-region stands within the transitory climate zone where hot summer, with moderate rainfall prevails.

b. Temperature :

Patgram Upazila sub-region of Rangpur region, where the temperature is maximum during the dry summer season ranges from 21.55°C to 33.39°C while that in the winter, range from 11.61°C to 27.16°C . The summer generally ends by September and in the months of October and November the weather remain pleasant. December to February are cold months and in March the climate becomes pleasant. In April, the days grow hot.

c. Rainfall :

The monsoon generally starts in June and ends in September. The maximum rainfall is generally in the months of July and August. On the other hand rainfall is minimum in November and December. In some years there is no rainfall in these months.

d. Prevailing wind.

The general wind direction are :

- i) Easterly during the period; January, July and August.
- ii) Westerly during the period; February, March and April.
- iii) South-Westerly during the period; December
- iv) North-Easterly during the period; November
- v) Southerly during the period; May, June and September.

e. Topography and Land form :

This Upazila sub-region of Rangpur region is a vast alluvial plain without any natural elevation. The surface gently slopes down from north-west to south-east as displayed by flow of the great rivers. Level of the firm land is 42% high, 55% medium and 3% low.

The Teesta older Mender flood plains of the pale brown or grey salty loam mostly of the Kaunia series are covering the whole Upazila. The types of soil are Dosan, sandy, Etel and Kankar and percentages of this soils are 80%, 15% and 5% respectively. The kankar type is not found in this Upazila.

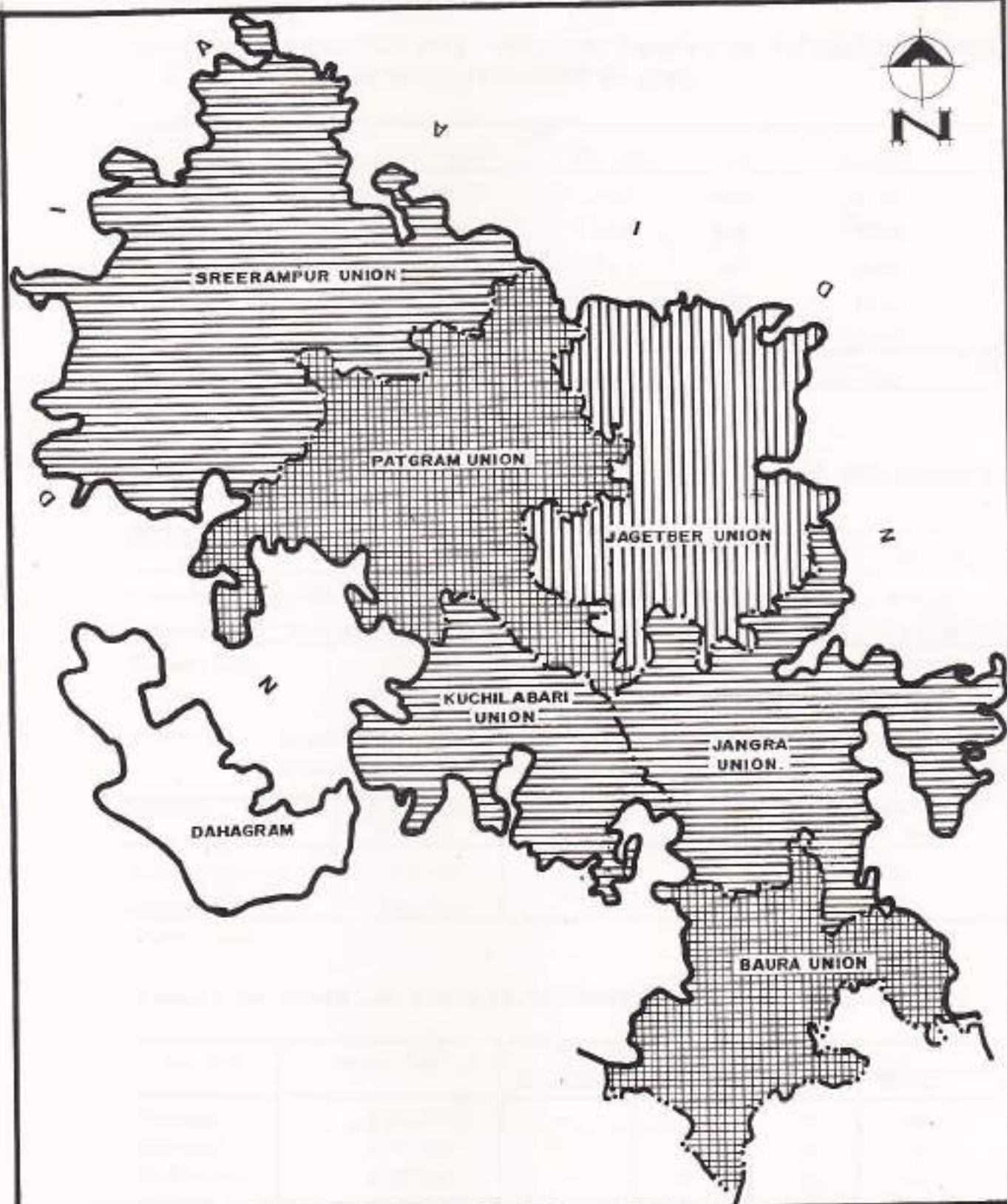
2.2 POPULATION AND SETTLEMENT DISTRIBUTION

2.2.1 Within the Zila :

Patgram Upazila is one of the five Upazila in the newly upgraded Zila Lalmonirhat of Rangpur region. According to 1981 population census, the population of the Zila, region is 7,47,278. There are 1,22,530 persons in the Patgram Upazila sub-region. Amongst the Upazila population there are 63,656 male and 58,874 female. Which is 51.95% and 48.05% respectively. There are 108 males for every 100 females as against 105 for the Zila region of Lalmonirhat. According to the population this Upazila ranks 5th within the Zila region.

About 16.40% percent of the Zila population lives in this Upazila region in an area of about 26.6 km² (101 sqm) with a density of 468 persons per km² (1213 per sqm). The average household size in dwelling units is found to be 6.3 as against 5.74 for the Zila. The literary rate for all ages is 18.06% as per census year 1981. The urban population within this Upzila is 6,799 persons which is 5.5 percent. There are 6 unions and 48 mouza and 49 villages as against the 45 unions and 443 mouza for the Zila Lalmonirhat. In terms of number of unions this Upazila stands 4th and in terms of mouza it stands 2nd within the Zila.

The below table shows the population statistics for this Upazila sub-region as against Lalmonirhat Zila region.



**PATGRAM
UPAZILA**

ZILA: LALMONIRHAT
SCALE:

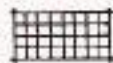


**POPULATION DENSITY
PERSONS PER Km²**

0-500



601-700



501-600



URBAN DEVELOPMENT
DIRECTORATE

MAP SHOWING POPULA-
TION DENSITY BY UNIONS

PTA CONSORTIUM
43, MIRPUR ROAD, DHANMONDI.

TABLE : 01 POPULATION SIZE, AREA AND DENSITY OF LALMONIRHAT ZILA REGION BY UPAZILA SUB-REGION— 1981.

Upzila	Population	Area		Density	
		Km ²	Sq. mile	Km ²	Sq. mile
Aditmari	1,34,567	195.0	75.3	690	1787
Kaliganj	1,57,067	234.9	90.7	669	1733
Hatibandaha	1,40,582	288.5	111.4	487	1262
Patgram	1,22,530	261.6	101.0	468	1213
Lalmonirhat	1,92,532	232.1	89.6	830	2150
Zila Total	7,47,278	1212.1	488.0	616.5	531

Source : BBS

TABLE: 02 VARIATION OF POPULATION FROM 1961—1981 OF THE SUBJECT UPAZILA AS AGAINST ZILA.

Upazila	Population			Variation Percentages		
	1961	1974	1981	1961—74	1974—81	1961—81
Patgram	59,787	1,02,318	1,22,530	71.28	19.41	104.52
Lalmonirhat	4,62,600	6,74,247	7,47,278	45.75	10.83	61.54

Source : BBS

TABLE: 03 HOUSEHOLD SIZE AND DENSITY PATTERN FOR THE UPAZILA THE SUB-REION AS AGAINST ZILA REGION.

Location	Households Number	Average size		Density per Sq. mile
		Average size	Km ²	
Patgram Upazila	19,601	6.3	74.93	194.0
Lalmonirhat Zila	1,30,459	5.74	110.73	286.72

Source : BBS

TABLE : 04 URBAN AND RURAL SETTLEMENT WITHIN ZILA LALMONIRHAT

Locality	Population	Urban/Rural Settlements			
		Municipal	Unions	Mouza	Village
Patgram	1,22,530	—	6	48	49
Aditmari	1,34,567	—	8	58	122
Hatibandha	1,40,582	—	10	62	63
Kaliganj	1,57,067	—	8	64	92
Lalmonirhat	1,92,532	1	8	99	131
Zila total	7,47,278	1	40	331	457

TABLE : 05 POPUTATION, AREA, SEX AND DENSITY FOR THE UPAZILA AS AGAINST ZILA.

Locality	A R E A		Population		Density		
	Km ²	Sq. mile	Male	Female	Total	Km ²	sq.m
Patgram Upazila	261	101.0	63,656	58,874	1,22,530	468	1213
Lalmonirhat-	1212.1	488.0	3,85,749	3,61,529	7,47,278	616.5	1531

Source : BBS

TABE : 06 LITERATE PERSONS (5 YEARS +) BY SEX AND PERCENTAGES FOR THE UPAZILA

Locality	Literate persons			Percentages
	Male	Female	Total	
Patgram Upazila	6,230	5,895	22,125	18.0
Lalmonirhat Zila	62,458	28,227	1,10,685	15.0

Source : BBS

TABLE: 07 LITERTE PERCENTAGES FOR URBAN & RURAL POPULATION BY UPAZILA & ZILA (5 YEARS +)

Population	Percentages	
	Patgram Upazila	Percentage Lalmonirhat Zila
Rural : Both sex	21.1	16.2
Male	29.9	23.5
Female	11.7	8.6
Urban : Both	37.5	33.1
Male	46.7	41.4
Female	24.5	23.4
Total : Both sex	22.1	18.01
Male	30.9	25.6
Female	12.3	10.2

Source : BBS

TABLE : 08 URBAN POPULATION BY UPAZILA & ZILA

Sex	POPULATION	
	Patgram Upazila	Lalmonirhat Zila
Male	3,881	36,513
Female	2,918	32,036
Total	6,799	68,549

Source : BBS

TABLE : 09 POPULATION BY AGE FOR THE UPAZILA

Locality	Age group				Total
	0 — 9	10 — 17	18 — 64	65+	
Patgram Upazila	45,220	21,519	52,969	2,822	1,22,530
Lalmonirhat Zila	2,60,511	1,38,935	3,28,011	19,821	7,47,278

Source : BBS

TABLE : 10 MARRIED WOMEN BETWEEN 15—44 YEARS AGE GROUP

Locality	Population		Married Women	
	Total	% over Zila Population	(15-40) years age group	Percent
Patgram Upazila	1,22,530	16.4	20,800	16.97
Lalmonirhat Zila	7,47,278	100	1,26,097	16.87

Source : BBS

2.2.2 Within Upazila :

There are six unions and forty eight mouza covering the Patgram Upzila. The population of this Upazila stands to be 1,22, 530 persons of which 51.95% male and 48.05% female.

In terms of population, Kuchilabari is the lowest populated union within the Upazila, where as Patgram union is the highest. Average population per union is 20.422 persons and per mouza is 2,553 persons. According to the Density of population per sq. mile. Patgram union stands as highest (1,453 persons/sq.m) and Kuchilabari union stands as lowest. Every unions of this Upazila have one bazar and that serves as the local service centre. Table- 11 below shows the population, density, nos. of mouza, union etc. of this Upazila .

TABLE : 11 POPULATION, AREA, DENSITY AND SEX BY UNIONS

Locality/ Unions	Area		Nos. of Mouza	Density per sq.m	Population		
	sq.m	Km ²			Male	Female	Total
Baura	13.15	34.06	4	1346	9,229	8,468	17,697
Jagatber	17.05	44.16	11	1151	10,109	9,509	19,618
Jangra	14.71	38.09	8	1103	8,387	7,844	16,231
Kuchilabari	11.44	29.63	6	993	5,810	5,549	11,359
Patgram	20.09	52.03	9	1453	15,440	13,757	29,197
Sreerampur	24.56	63.61	10	1157	14,681	13,747	28,428
Upazila	101.0	261.59	48	1213	63,656	58,874	1,22,530
Total							

Source : BBS (thana series/ Rangpur Dist. Part—II)

2.2.3 Migration :

The phenomena of migration is not prominent at the Patgram Upazila because of socio-economic and geographical factors influencing the area. The general population growth of the Patgram Upazila is less than the growth of Lalmonirhat Zila. Both pull and push factors affect the migration is not working in this Upazila and geographical and economic potentiality indicate that in the near future no significant change will take place in the Upazila centre which will attract the people to migrate there.

2.3. ECONOMIC PERFORMANCE AND TRANSPORT LINKAGES

2.3.1 Employment

Population over 10 years age group enter into Labour force according to Bangladesh standard. The active population group share little over 55% percent of the total Upazila population of which about 63.09% percent is Labour force Table—11 below shows the active population (10 years +) and the Labour force by the subject Upazila and the concerned Zila as per census year — 1981.

TABLE : 12 POPULATION AND LABOUR FORCE PATTERN

Locality	Total	population	Active population (10 years +)		Labour force	
	Nos.	% over Zila population	Nos.	% over total population	Nos.	% over Total population
Patgram Upazila	1,22,530	16.4	68,048	55.53	77,310	63.09
Lalmonirhat	7,47,278	100.0	4,12,032	55.14	4,86,767	65.14

Source : BBS

TABLE : 13 POPULATION AND LABOUR FORCE BY SEX.

Locality	Labour force (10 users+)					
	Male		Female		Total	
	Nos	%	Nos	%	Nos	%
Patgram Upazila	40,761	52.72	36,549	47.28	77,310	63.09
Lalmonirhat Zila	2,53,850	52.15	2,33,917	47.85	4,86,767	65.14

Source : BBS (community table— 1981)

The table above shows that distribution pattern of labour force by sex reveals that about 52.72% percent of the active labour force for the Patgram Upazila is male. Some is the case with the level as shown. The female labour force is similar for the Zila and Upazila.

TABLE : 14 LABOUR FORCE BY OCCUPATION

Locality	Not Working	House holds	Cultivation	Agri-culture Non crop	Manufacturing	Business	Others	Total
Patgram Upazila	9,268	31,922	28,781	84	58	1,617	5,580	77,310
%	11.99	41.29	37.23	0.11	0.07	2.09	7.22	100.00
Lalmoharhat Zila	74,735	1,95,372	1,70,573	1,112	1,582	11,767	31,62	4,86,767
%	15.35	40.14	35.04	0.23	0.33	2.42	6.5	100.00

Source : BBS community table— 1981

TABLE : 14 Clearly indicate the labour force by occupation. The agriculture labour force is about 37.23% and other occupation percentage is very low other than business which is only 2.09%.

2.3.2 Income and expenditure pattern

It is very difficult to ascertain income and expenditure pattern of the Upazila population. However, the survey team on observation has derived a generalised but consensus assumptions which expresses that the non-agricultural community income and expenditure pattern is distinctively higher than that of the agricultural community. Food is still the higher items for expenditure followed by clothing and housing in either communities. Average income of the agricultural community with the exception of few in the upper stratum is around TK. 7,000.00 to TK. 10,000.00 per annum. Average daily wages for unskilled labours is reported TK. 15.17 (base year 1982). Daily average wages rate for construction labours is TK. 110.00 Tk. 50.0 and TK. 100.00 for mason, Jogali (helper) and carpenter respectively according to the field investigators. At present the daily wages rate for unskilled agricultural labour has increased considerably and it is now TK. 35.00 to 40.00 per day.

TABLE: 15 MAJOR AGRICULTURAL PRODUCT BY UPAZILA AND ZILA (1981-82)
(Area in acres production in mands)

Items	Zila		Upazila	
	Area	Production	Area	Production
Aus	143010	1378105	17395	167915
Amon	200.574	3082619	45871	588282
Boro	111050	304738	445	12215
Tobacco	18860	217400	4000	48000
Wheat	24146	284147	555	11772
Jute	28215	454605	1375	21560
Sugarcane	1226	1103571	9	3418
Potatoes	1614	138903	49	4209
Mung	242	1983	17	153
Masur	600	5244	15	90
Kheshari	590	4836	90	395
Motor	60	455	5	35
Mash Kalai	421	3350	140	1108
Cillies	1874	16497	66	511
Onion	259	14226	167	9024
Garlic	258	10989	100	5000
Cauliflower	139	9551	41	2460
Cabbage	142	12430	10	800
Beans	83	5280	15	900
Banana	802	146980	100	16000
Pineapple	75	3750	—	—
Jack fruits	469	43149	223	2484
Mango	575	47565	120	9600
Litchu	117	7140	35	2100
Papay	140	8610	35	2100

Source : BBS Dist. Statistics — 1983

From the above Table No. 15 it is found that Amon rice is the main agriculture production followed by Aus and tobacco in this Upazila. About 19.08% of Amon rice production of the Lalmonirhat Zila is in this Upazila.

In the case of wheat production only 4.14% of the total Zila production. Tobacco is the 2nd largest production of this Upazila. Which is about 22.08% of the Zila region. Out of the total production of Jute within the Zila only 4.74% was produced in this Upazila according to BBS (Dist. statistics- 1983). Average 11.11% of the Zila production for mung, masur, Kheshari, motor and mash Kalai are produced in this Upazila during 1981—82. Above table— 15 reflects a clear picture of all the major agricultural production of this Upazila compare to the Zila production.

2.3.3 TRANSPORTATION ROAD, RAIL, WATER AND AIR

Patgram is the border Upazila of Lalmonirhat Zila and it is also the northern border Upazila of Bangladesh. It is well connected with the Zila headquarter by a metaled road and stands on the national grid of railway transportation. It is 71 Kilometer (44 miles) from the Zila headquarter. Patgram Lalmonirhat road is a part of national road network of northern region.

There are 174 Kilometer Kutchu roads within the Upazila and the union council headquarters of this Upazila are well connected by these Kutchu road. There are 31 kilometer rail road within this Upazila. This rail-line is apart of the National grid of railway transportation. This Upazila have four railway station. At present there are several bus stoppage with the improvement in the road sector. There is a bus service from Rangpur Via Lalmonirhat, hence the Zila headquarter is well connected by road and rail.

According to the 1981 census there is no trucks, autorickshaws. Only one rickshaw is identified. But recently with the improvement of metaled road and few Kutchu road a few rickshaws are seen within the Patgram Upazila centre and also some trucks are found for transportation between Lalmonirhat Zila Shahar. There is no river system of transportation. The air transportation system is not available at present. However this Upazila along with other region is connected by air from Saidpur. At present there is a air strip at Lalmonirhat maintained by the BAF can be used for air transportation in near future. The basic means of transports available at present in this Upazila are train rickshaw, Bi-cycle and cart. Bullock-carts play a vital role in communication during the dry season.

All type of total road net-work within the Zila, Patgram Upazila Shares only 6% percent of this road net-work Table-16 clearly shows :

TABLE : 16 ROAD NET-WORKS BY UPAZILA REGION WITHIN ZILA REGION-1981

Upazila	Metaled Road			Kutchu Road			Total Road		
	Km	Mile	Km ²	Km	Mile	Km ²	Km	Mile	Km ²
Aditmari	3.2	2	0.02	946.3	588	4.85	949.5	590	4.87
Hatibandha	16.1	10	0.06	498.9	310	1.73	515.0	320	1.79
Kaliganj	9.7	6	0.04	1054.1	655	4.49	1063.8	661	4.53
Patgram	—	—	—	173.8	108	0.66	173.8	108	0.66
Lalmonirhat	80.5	50	0.35	329.9	205	1.42	410.4	255	1.77
Zila Total	10.5	68	0.19	3003.0	1866	2.63	3112.5	1934	2.72

Source : District Statistics — 1981

2.4. SOCIAL INFRASTRUCTURE

2.4.1. Market and commerce

According to the census- 1981 there are 135 Hats/Bazar, the commercial establishment within the Zila Lalmonirhat. Out of this total there are 14 nos. Hat/Bazar in the subject Upazila and it indicates that there is one hat/bazar for every 8,752 persons in the Upazila, which is 5,535 for the Zila region. There is at least one hat/bazar located in each union.

2.4.2. Education

There are one College, eight high School, sixty three Primary School and three Madrasha in this Upazila out of Zila total. Four College, seventy two high School, three hundred twelve Primary School and eighty seven Madrasha respectively within the Zila. There is one College one high School, one primary School and one Madrasha for every 20,968 persons (15—24 years) 1,865 persons (10-14 years), 19,603 persons (5-24 years) and 364 persons (5-9 years) respectively. In the Zila context, this subject Upazila is 25% , 11.11%, 20.19% and 3.45% for College, high school, Primary school, and Madrasha respectively. Table 16 below shows a clear and comparative picture for this Upazila and Zila.

TABLE : 17 EDUCATIONAL INSTITUTION BY SUBJECT UPAZILA AND ZILA LALMONIRHAT - 1982

Educational Institution	Patgram Upazila	Lalmonirhat Zila	Upazila over Zila in %
College	1	4	25.0
Secondary school	8	72	11.11
Primary school	63	312	20.19
Madrasha	3	87	3.45

Source : BBS (Dist. Statistics — 1983)

2.4.3. Health

In the health sector, there is one health complex, 4 dispensaries, one family planning clinic and 2 paramedic in this Upazila. This shows that there are one doctor one paramedic and one clinic available for every 40,843, 61,265 and 30,633 persons respectively. At present there is no sufficient health facilities available at the Zila headquarter but in near future a Zila hospital is going to be established there.

2.4.4. Other urban services

In Patgram Upazila the urban area covers an area of 2.4 Km² as Urban area where urban services are poorly available. Most of the present Urban facilities are available within the Upazila centre except three villages where electricity are available. 9 Nos. post office, one telegram office, one Duck Banglow and bank branches are located within the urban centre of this Upazila. Out of the 49 Villages of this Upazila only three villages have so far been provided with electricity.

2.5. CURRENT DEVELOPMENT PROJECT :

The current development project could not be identified in the Upazila centre, however there are some NGO's project and US aid projects of construction of Road and bridge in the Upazila level but the detail information could not be gathered from the secondary sources.

2.6 SYNTHESIS : IDENTIFICATION OF HIERARCHY OF SETTLEMENTS IN THE UPAZILA.

In the context of the Upazila, human settlements pattern, hierarchy of settlements have been studied mainly focussing on identification of potential settlements within the Upazila in a hierarchical order. settlement concentration, growth of social and physical service facilities are the principal aspect of study in identifying hierarchy of settlements in the Upazila in an order of importance, available socio-economic service facilities, population concentration has been taken into consideration and graded.

In grading, we have covered 100% settlements within the Upazila and on the basis of total grade achieved by a particular settlement, their ranking was made. In Patgram Upazila four level of settlements have been made with an weight of more than 90=A, 61=B, 31-60 = C and 0-30= D respectively. But the settlements having less than 500 persons have not been considered in identifying the hierarchy. Mouza Rasulganj of Patgram Union stands to be the top graded settlements within the Upazila and located within the study area. Hierarchy of settlements in terms of population and service have been shown in a chart and annexed in this report. Hierarchy of settlement by weight, level and number are shown in Table— 19. The hierarchy map mouza has been prepared and also annexed. Changes of human settlements hierarchy based on population size from 1961 has been presented in the Table No.—18.

TABLE: 18 CHANGES OF HUMAN SETTLEMENT HIERARCHY BY POPULATION SIZE
FROM 1961 — 1981

Classified hierarchy	No. of Settlements					
	1961		1974		1981	
	Nos.	%	Nos.	%	Nos.	%
501 — 1000	8	36.36	10	23.80	6	13.95
1001 — 1500	1	4.54	7	16.66	6	13.95
1501 — 2000	2	9.09	2	4.76	6	13.95
2001 — 2500	1	4.54	5	11.90	4	9.30
2501 — 3000	3	13.63	5	11.90	6	13.95
3001 — 3500	-	-	6	14.28	2	4.65
3501 — 4000	2	9.09	-	-	5	11.62
4001 — above	5	22.72	7	16.66	8	18.60
Upazila Total	22	100.00	42	100.00	43	100.00

Source : BBS

From the table 17 above it is clear that number of settlement having more 4000 have been increased form 1961 to 1981. In terms of total grade four level has been identified and shown in the Table No. 18 below. In the "A" level there is only one settlement. In "B" level there are 3 nos. settlement, in the "C" level there are 15 nos. and in the "D" level there is 24 settlements.

TABLE: 19 HIERARCHY OF SETTLEMENTS, WEIGHT, LEVEL AND NUMBER.

Weight (Score)	level	No. of Mouza
91— +	A	1
61 — 90	B	3
60— 31	C	15
up to 30	D	24

Source : BBS

Note: pl refer Annexure-1 For the name of Mouza.

3.0 THE UPAZILA HEADQUARTERS

3.1 DEFINITION OF SPHERE OF INFLUENCE/ATTRACTIVENESS

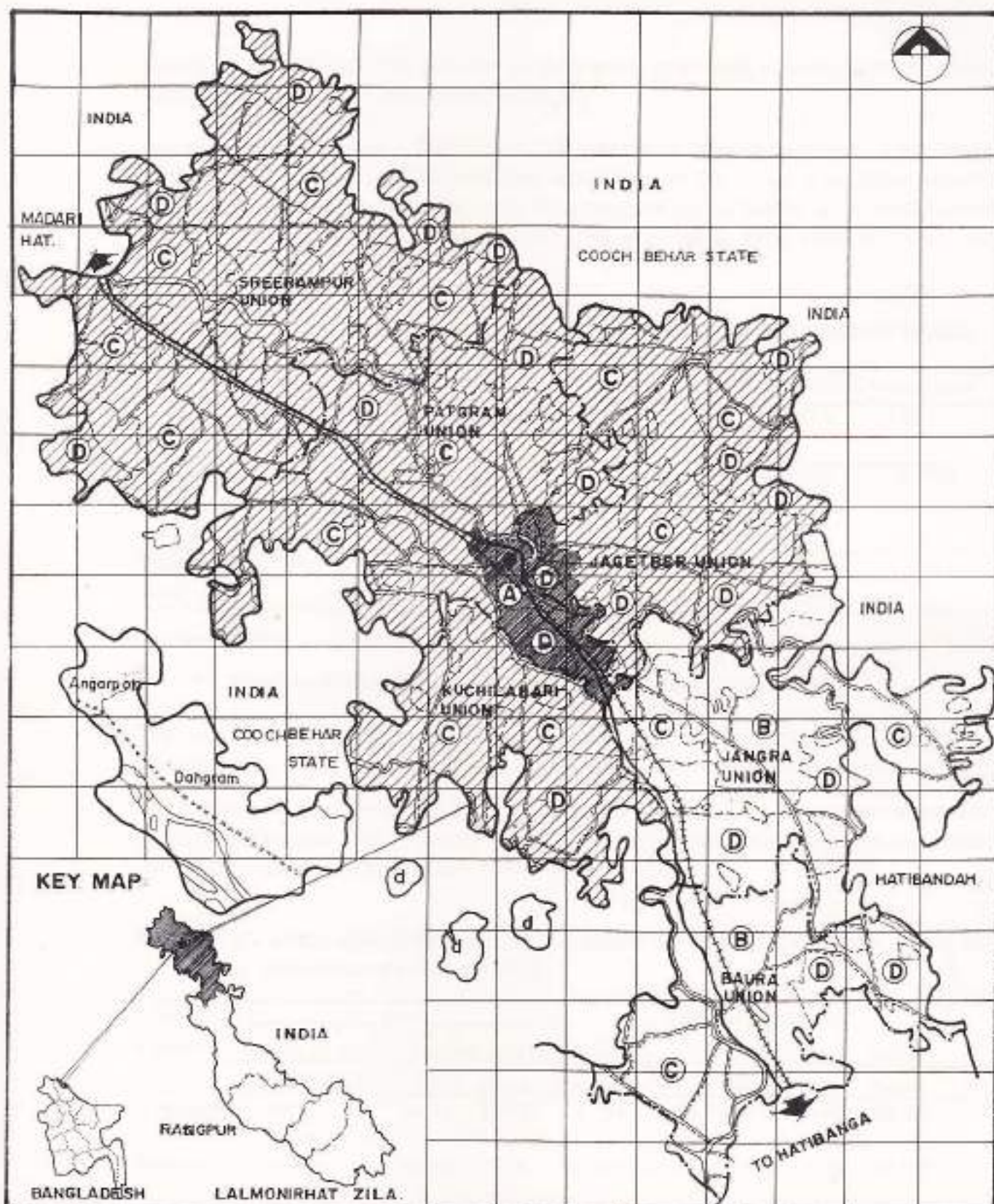
Patgram Upazila Shahar, being the border Upazila of Lalmonirhat Zila has a different type of catchment area. Sphere of influence/attractiveness of an urban centre like the Upazila Shahar varies or likely to vary for different functions of different service such as administrative, social, economic and cultural.

The subject Upazila "Patgram" is at present a sit of Upazila administration. In this perspective the Population for the whole of Upazila depends on the Upazila Shahar for their administrative reason. On the other hand for their day to day activities the population of Sreerampur union, Patgram union, Jagetber union and Kuchilabari union depends on the Upazila centre. Because these unions are surrounded by the Indian state of Assam. For the reason stated, the population of these area are fully dependent on the Upazila centre for their day to day activities.

On the above mentioned facts the "Sphere of Influence" has been delineated covering about 80% of the Upazila area. In delineating Patgram Upazila Shahar is centrally located within the Upazila. The Upazila Administrative complex located in the mouza of Rasulganj with other present facilities. Mouza Rasulganj, Shohagpur and Mirajot have been identified as the study area.

The Upazila Shahar is about 71 Kilometer (44 mile) from Lalmonirhat Zila and this Upazila Shahar is the boarder Upazila of the Zila. The Upazila Shahar is connected with all of its administrative units by Kutcha road.

In the absence of demarcated boundary for the Upzila Shahar, the entire study area has been designated as Shahar area. It occupies an area 8.07 Km² (about 3.12 sq.m)



**STUDY AND CATCHMENT
AREA MAP OF PATGRAM
UPAZILA SHAHAR
ZILA: LALMONIRHAT**

SCALE: 1" = 1 Mile or 1:63360

SCORE RANGE

0-30 (D) 61-90 (B)
31-60 (C) 91-100 (A)

LEGEND

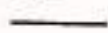
STUDY AREA

SPHERE OF INFLUENCE/
CATCHMENT AREA

UPAZILA BOUNDARY

UNION BOUNDARY

MOUZA BOUNDARY



URBAN DEVELOPMENT DIRECTORATE
MINISTRY OF WORKS
GOVT. OF THE PEOPLES REPUBLIC
OF BANGLADESH, DHAKA.

**STUDY AREA, CATCHMENT
AREA AND HIERARCHY OF
MOUZA BY POPULATION &
SERVICES.**

PTA CONSORTIUM

43, MIRPUR ROAD, DHANMONDI.

having a population 10,940 persons as per census year 1981 resulting a gross density 1.354 persons per Km² and 3,506 per sq. m.

According to the census— 1981 about 5.5 percent is urban population of the entire Upazila. 8.93% of the total Upazila population lives in the study area within Upazila Shahar. In terms of the area the study area occupies about 3.08% of the total Upazila acreage. Table - 20 below show the involved population 1961-1981 the area and involved mouza.

TABLE: 20 INVOLVED AREA, AND POPULATION FOR THE STUDY AREA BY MOUZA

Locality	Total area					Total involved population		
	Km ²	sq. m	Acres	Hecta- res	Perc- entage	1961	1974	1981
Rasulagonj	2.38	0.92	589	238.36	100%	*—	402	6,799
Shahagpur	2.02	0.78	499	201.94	100%	8351	4836	1,660
Mirjakot	3.67	1.45	933	377.58	100%	*—	1946	2,481
Study area Total	8.07	3.15	2021	817.88	100%	8351	7184	10,940

Source : BBS

* Population of year 1961 is not available in the village statistics.

The sphere of influence we consider other influence zones within the Upazila by identifying the hierarchy of settlement on the basis of service facilities available.

The catchment area covers, 168.51 Km² (65.06 sq.m) with a population of 88,602 persons in the year 1981 (census year). Table- 21 shows more clear picture about area and involved population from 1961—1981.

TABLE : 21 AREA AND INVOLVED POPULATION OF THE CATCHMENT AREA OF PATGRAM UPAZILA SHAHAR.

Locality Unions	Area				Involved population					
	Total Area in		Involved area in		1961		1974		1981	
	Km ²	/Sq.m	Km ²	Sq.m	Popn.	%	Popn.	%	Popn.	%
Sreerampur	58.38		58.38	22.54	14,714	35.29	21,583	29.15	28,428	
	32.08									
Patgram	46.80		46.80	18.07	12,385	29.71	22,092	29.84	29,197	
	32.95									
Jagatber	38.93		38.93	15.03	9,438	22.64	15,832	21.38	19,618	
	22.14									
Kuchilabari	24.40		24.40	9.42	5,149	12.35	14,516	19.60	11,359	
	12.82									
Catchment area total	168.51		168.51	65.06	41,686	100.0	74,022	100.0	88,602	100.00

3.2 DEFINITION OF SHAHAR AREA

Shahar area for a Upazila headquarter can be defined as the urban centre within the Upazila where :

- O Administrative offices of the Upazila are located :
- O Other institutional activities are functioning such as :
 - Educational Institution
 - Cultural and Religious Institutions
 - Health Complex
 - Line service facilities
 - Police, fire station
 - Bus and Railway station
 - Commercial Establishment
- O Residences for Govt. and private sector

3.3 EXISTING LAND USE FACILITIES AND UTILISATION CHARACTERISTICS.

The present "Patgram Upazila Shahar" is basically a place, predominant rural in character. This Upazila is one of the five Upazila Shahar of Lalmonirhat Zila.

The Upazila complex of this Upazila Shahar are located on the mouza Rasulganj and near the railway station. Some other Govt. institution of Upazila level are also located on the eastern side of the Upazila administrative complex and on the northern side of the Railway station.

A physical planning survey was conducted in order to assess the existing land utilisation for different uses of this Upazila Shahar. The survey findings have been mapped and shown on the existing land use Map as per TOR, land use analysis has been prepared and presented in a tabular form and shown in the Table- 21.

The survey information reflects that agricultural land occupies about 76% of the total Upazila Shahar (Study Area) land acreage. About 5% of the land acreage are occupied by river, tank, low lands and canal. The net build-up acreage is therefore, accounts for little over 19% percent (76.91 hectares or 190.19 acres) of the total area of the Upazila Shahar.

Excluding agricultural land, the net Kurban buildable acreage has been identified as 493.25 acre (199.61 hectares). Out of the net land acreage, a major land percentage is occupied by Upazila staff quarter and scattered home stead. About 38.56% percent of net land acreage are covered by the residential use. Tanks, canals and other water bodies (20.88%). Railway station rail line and station yard occupies (10.76%). Road of both Kutcha, brick-sold and Kutcha occupies about (8.59) Areas identified as such uses as, administrative, commerce education, socio-culture, health, urban service and recreation occupy relatively low percent of the total net urban land acreage.

Patgram Upazila Shahar is connected by rail and road with the Zila Shahar. Population pressure and the economic activities are almost nil. Most of the internal roads are Kutecha and few are brick-sold. Major activity areas are located near the Upazila complex and on the north of the railway station. A trunk road connecting Zila Shahar and bisects the present shopping area of the Upazila Shahar and connects other activities on the north. A cancel is located on teeasta of the main Shahar area, but on the other side of the cancel no Shahar activities could be identified.

Table- 22 below shows the different land use, a quantum of land occupied for such uses and the gross and net land use percentages within the Upazila Shahar (Study Area). A detailed land use survey of an area of 230 acres for the town centre was conducted in order to show the location of different structures within the town centre. The town centre map is annexed in this report.

TABLE: 22 EXISTING LAND USE ANALYSIS FOR DIFFERENT USE OF PATGRAM UPAZILA SHAHAR (STUDY AREA) 1989

Land-use category	Area		Percent	
	Hectares	Acres	Percentage of of land including agricultural land	Excluding agricultural land
1. Agricultural	618.28	1527.75	75.59	—
2. Commerce	3.23	7.98	0.39	1.62
3. Industry	0.08	0.21	0.01	0.04
4. Education	7.54	18.65	0.92	3.78
5. Health	1.78	4.41	0.22	0.89
6. Administrative Govt. Instt.	7.73	19.12	0.96	3.88
7. Recreation	2.79	6.90	0.35	1.39
8. Socio-cultural	5.89	14.56	0.73	2.96
9. Residential	76.91	190.19	9.41	38.56
10. Urban Service	13.29	32.84	1.62	6.65
11. Roads (Pucca/Ku	17.15	42.38	2.09	8.59
12. Railway line	21.45	53.01	2.62	10.76
13. River Tank cancel and low land	41.68	103.00	5.09	20.88
Total	817.8	2021.00	100.00	100.00

a. Residential

The above table reflects that 38.56% of net land acreage is used for residential purpose. The residential areas within study area includes the Upazila staff quarter and the sectored hime stesad area. Most of the residential houses are of semi pucca and few are kutecha type except the Govt. housing. The existing homestead area of this Upazila Shahar reflects a very strong village characteristics. Only the houses within the Upazila complex are of sanitary system and electrical connection.

b. Commerce

Commercial uses occupies about 3.23 hectares (7.98 acres) of land, which is only 1.62% of the net land acreage. There is a daily bazar and bamboo built shops have been identified within the Upazila Shahar. These shopping area are found along the main approach to the Shahar area. Commercial banks and ware houses are identified within this Shahar area.

c. Industry

There is no significant industrial establishments are located in this Upazila Shahar, however there are rice mill and saw mill are located within the Shahar area. The land area occupies for this use is 0.08 hectares (0.21 acres). Which is 0.04% of the net land acreage.

d. Education

There are some educational Institution. The land area occupies by this activities are 7.5 hectares (18.65 acres). Which is 3.78% of the net land acreage. There is a college, high school and primary school to serve the present population of the Upazila Shahar. Some Madrasha also located in this Upazila Shahar. All these Institutions are located within Upazila centre.

e. Health

An Upazila health complex is located near the Upazila complex. A land area of 1.78 hectares (4.41 acres) has been identified for this use which is 0.89% of the net land acreage.

f. Administration and Govt. Institution

Present Upazila Administrative complex is located on the north of Railway station and approachable from Lalmonirhat- Patgram highway. A land area of 7.73 hectares (19.12 acres) has been covered by this use which is 3.88% of the net land acreage. Few other Govt. offices including BDR camp are also located on the eastern side of the Upazila complex.

g. Recreation

There is no planned park stadium, football ground or a club in this Upazila Shahar. However there is a cinema hall and a playground with open space. A land area for this use is about 2.79 hectares (6.90 acres) which is about 1.39% of the net land acreage.

h. Socio-cultural

Socio- cultural activities of this Upazila Shahar is very insignificant in nature. however mosques, mondir and other religious activities are located within the Upazila Shahar.

An area of 5.89 hectares (14.56 acres) has been covered by this use, which is 2.96% of the total land acreage.

i. Urban "Service

In this Upazila Shahar no significant urban service is available. However railway station with yard, a telephone and telegram office and a power sub-station have been identified in this Upazila.

A total land area of 13.29 hectares (32.84 acres) has been covered by this sector which is 6.65% of the net land acreage.

j. Road and Railway

Present road system within this Upazila Shahar is very poor. Patgram Lalmonirhat is the only metaled road available within this Shahar. There are some bricksold road and rest of the roads are Kutcha. A land area of 17.15 hectares (42.38 acres) has been covered by these roads. The net land acreage is 8.59%.

The railway line occupies an area of 21.45 hectares (53.01 acres) which is 10.76% of the net land acreage.

k. River, cannel and low-lands

River, tanks, and low- lands occupies about 41.68 hectares (103.0 acres) of land which is 20.88% of the net land acreage.

3.4. PHYSICAL OPPORTUNITIES AND CONSTRAINTS

a. Present built- up area and opportunities

Present build- up area of the Patgram Upazila Shahar have been identified on the north east of the railway station. The Upazila administrative complex, institutional, commercial and other available facilities are located within these built up area. Patgram Lalmonirhat trunk road and the railway line connects the other unions of this Upazila Shahar. A river branch of Teesta located on the northern side of the railway line and trunk road and act as a physical barrier and also serves the drainage purpose of the present built up area.

The present development activities are functioning on the both side along the railway line the trunk road. The river branch remains dray through out the year except monsoon season. The present net built up area within the study area is 493.25 acres. Which is only 24% of the total average. The agriculture use is 1527.75 acres. Which is 76% of the total land acreage.

Vacant land within the built up area in and around the present infrastructural facilities are the potential areas for future urban development.

During the physical survey, it has been identified that the land level of the Upazila centre are almost flat in nature, but in some area there are depressed land which

requires 2'-3' filling to bring land formation up to the present flat level. The whole area is above the general flood level. The land level of the present built up area are gradually sloped towards the northeastern part of the river bank.

b. Potential area for future urban expansion, and agricultural production.

Potential area for urban expansion are available within the vacant land presently used for agricultural production in Rasulganj mouza on the south of the railway line and station.

These area starts from the location of the Patgram college up to the north western end of Rasulganj mouza. The expansion area for future development including planned housing should be limited within 200-250 acres of land on the part of railway station.

Economically the Upazila centre has no potentiality for urban expansion due to high dependency on agriculture isolated location of the Upazila and boardering two third of its boundary with Indian state of Assam. These factors will discourage both public and private sector for any economic investment.

It has been observed that only the required administrative expansion along with its infrastructural facilities will be future scenarios of the urban expansion in future.

An opportunity and constraints map could not be drawn and presented in the absence of BWDB map however on the basis of physical verification and the land use survey, the land level, opportunities and constraints have been identified and described in the earlier paragraph.

4.0 FORECAST :

4.1 POPULATION HOUSEHOLD STRUCTURE & DENSITY :

a. Population

After the data processing and synthesis, population forecast has been made. The projection of population has been done in respect of total Upazila, sphere of Influence of Upazila Shahar. Before performing that it is necessary to provide some basic information of the present situation.

TABEL: 23 POPULATION HOUSEHOLDS STRUCTURE AND DENSITY WITHIN PATGRAM UPAZILA SHAHAR :

Mouza	Area		Population	No of House holds	Average Households size	Density of Population per Hectares
	Hectares	acre				
Rasulganj	238.36	589	6799	1234	5.50	28.52
Sohagpur	201.94	499	1660	326	5.09	8.22
Mirjakot	377.58	377	2481	302	8.21	7.57
Total	817.88	2021	10940	1862	5.87	13.33

Source : BBS

In terms of households size Mirjakot stand at the top with 8.21 persons per households, whereas Sohagpur is the 5.09 person per households. In case of density of population per hectares Mirjakot stands at the bottom, and Rasulganj at the top. In our study area overage household size is 5.87 and density per hectare is 13.33. Above table will reflect a more clear comparative picture.

TABLE : 24 POPULATION HOUSEHOLDS STRUCTURE & DENSITY WITHIN SPHERE OF INFLUENCE OF PATGRAM UPZAILA SHAHAR 1981

Unions	Area		Population	No of House holds	Average Households size	Density of Population per Km ²
	Km ²	Sqm				
Sreerampur	58.38	22.54	28.428	4295	6.61	487
Patgram	46.80	18.07	29.197	4564	6.39	624
Jagatber	38.93	15.03	19.618	3338	5.87	504
Kuchilabaria	24.40	9.42	11.359	2024	5.61	465
Total	168.51	65.06	88.602	14221	6.23	526

Source : BBS

In case of population characteristic of the sphere of influence table 26 indicates that density of population with 624 person per km² (1616 person per sqm.) in Patgram Union stands at the top within the sphere of influence Kuchilbari union with 465 person per km² (1205 person per sqm) is the lowest in terms of density of population. Table also provide some more information about the population of the catchment area.

TABLE : 25 PATTERN OF GROWTH RATE OF PATGRAM UPAZILA, CATCHMENT AREA, AND UPAZILA SHAHAR 1961 TO 1981

PERIOD	GROWTH RATE		
	UPAZILA AS A WHOLE	CATCHMENT AREA	UPAZILA SHAHAR
1961—1974	5.48	5.96	—
1974—1981	2.77	2.81	7.46
1961—1981	5.22	5.62	—

After the data processing and synthesis, Population Projection have been made this projection has been done in respect of total Upazila, catchment or sphere of influence of Upazila and the Upazila Shahar (Headquarter). The population projection has been done on certain assumption and consideration of past trend growth rate and those are as under.

- O Past trend of population growth from 1961 to 1974 was 5.48 and 5.96 for Upazila as a whole and for the catchment area. Growth rate of Upazila Shahar can not be determined because of unavailability of statistics for that area of that during period. During these periods growth rate within the catchment area was high in comparsen with total Upazila.
- O Form the year 1974 to 1981 the growth rate was 2.27, 2.81 and 7.46 for total Upazila catchment area and Upazila Shahar area (study area) respectively. During Shahar (study area) was higher than then of the total Upazila and catchment area. Growth rate of the Upazila during that period is low.
- O For the period of twenty year (20 years) from 1961 to 1981 the growth rate (per annum) was 5.22 and 5.62 respectively for the total Upazila and catchment area. Grow that for the Upazila Shahar area can not be calculated due to the unavailability of statistics but it can be assumed that growth rate in the Shahar area must be high during that period because of the different socio-economic factors. Considering the above dynamics of population changes in the study area, catchment area and Upazila as a whole we left it was logical for the planning purpose to consider the medium growth rate that for the catchment area and some for the study area. Trend of the population growth seems to be low for the Upazila and high for the study area due to the factor of location and growth potential of the Upazila Shahar and favourable infrastructural impact for in migration.

The growth rate from 1974 to 1981 in the Patgram Upazila Shahar (study area) is high because of different socio-economic and physical factor with its special aspect of location. It seems to us that due to the concentration of agricultural land in the hands of rural elite who prefer to have big families and live in a place nearer to the main urban area of the region, is a cause of high population concentration in the study area.

In view of the aforesaid consideration of high growth rate (7.49) and medium growth rate (5.96) during the period of last 20 years. We have considered the medium growth rate in considering the exputed national urban growth rate for Upazila Shahar by the end of the century.

The following table reflects the population projection from the base year 1981 to 2001 AD on the basis of medium, high and low growth rates for the Upazila Shahar and Catchment area.

TABLE : 26 PROJECTED POPULATION OF THE CATCHMENT AREA OF PATGRAM UPAZILA :

PROJECTION RATE	PROJECTION YEAR				
	BASE 1981	1986	1991	1996	2001
High (5.96)	88602	115005	149276	193760	251500
Medium (5.62)	88602	113499	145392	186247	238582
Low (2.81)	88602	101050	115247	131439	149906

The above table indicate the projected population of Catchment area and this projection has been made on the basis of the three different growth rate (per annum) as found from the past trend of growth during the year 1961-1974, 1974-1981 and 1961 to 1981 respectively. Considering the trend of growth, the medium growth rate (5.62) has been taken into consideration and on the basis of that growth rate projected population of the catchment area will be 238582 persons by the end of the

TABLE : 27 POPULATION PROJECTION FOR THE UPAZILA SHAHAR PATGRAM (STUDY AREA)

TREND OF GROWTH RATE [Projection]	PROJECTION YEAR				
	Base year 1981	1986	1991	1996	2001
High (7.46)	10904	15020	20622	28314	38875
Medium (5.96)	10904	14153	18370	23844	30949
Low (2.81)	10904	12436	14183	16175	18447
National Target 1.9 Growth Rate	10904	11939	13073	14314	15673

According to the census of 1981, population of the Upazila Shahar (study area) was 10904 persons. On the basis of three different trend of growth for the study area and catchment are the population of projection has been shown in the above table. Considering the three different growth rates, we have taken the medium growth rate (5.96%) as a basis for planing and the estimated population will be 30,949 persons by the end of the century and on that basis LAND-USE PROPOSAL has been prepared.

b. Aspect of Migration

Patgram Upazila Shahar is located in the extreme within the Upazila with some infrastructural facilities and the boarder Upazila Shahar of Lalmonirhat Zila Shahar. The national growth rate of the Upazila was 2.77 in the year 1974 to 1981 wheres it was found in the study area that the growth rate of that particular period was 7.46% which indicates a positive form of migration, the reason of migration to this particular urban Upazila is not clear to us but it seems that locational aspect and different socio-economic characteristic of this Upazila Shahar has an impact on migration.

4.2 LABOUR FORCE AND EMPLOYMENT :

a. Labour Force :

Labour force includes population of age 10 years and above who are engaged in agriculture and non-agricultural production, market oriented activities, including the female sex. However about 30% of the total population of the study area has been considered as the labour force in the base year 1981. Projection of Labour force has been made on the basis of the same criteria used for population projection. On that perspective in the year 2001 AD the labour force in the study area will be 11611, 9283 and 5532 on the assumption of 7.46%, 5.96% and 2.81% growth rate (per annum) respectively. For our planning consideration we have taken medium growth rate of 5.96% per annum.

TABLE : 28 LABOUR FORCE PROJECTION OF THE UPAZILA SHAHAR (STUDY AREA)

PROJECTION (Trend of Growth)	PROJECTION YEAR				
	Base year 1981	1986	1991	1996	2001 AD
High (7.46)	3271	4491	6166	8465	11622
Medium (5.96)	3271	4245	5510	7152	9283
Low (2.81)	3271	3730	4254	4851	5532

b. Employment

It is very difficult to assume the areas of concentration of employment in the absence of long range investment plans at the level of small size Shahar or growth centres. For the employment of the labour force in the urban areas, sufficient land use area for shops, Commercial establishments and agro-based Industrial establishments have been proposed in the LAND-USE PLAN. But it is doubtful, whether the total projected labour

force can be employed effectively by those commercial and Industrial establishments by the end of the century. It is presumed that major part of the labour force will be employed effectively in agriculture, industry, Commerce, shops, trades, administration and other service facilities like transport, Restaurant and hotel business.

4.3 LAND REQUIREMENTS & PROVISION STANDARD :

Land requirement for various activities stated before has been calculated as per the standard recommended by the Government in the TOR. But according to the findings, physical opportunities and constraints and prevailing socio-economic needs and requirement of the projected population for the subject Upazila Shahar (Study Area). The LAND-USE PLAN has been prepared according to this standard. These Land requirements have been made with the objectives to make the plan practical and functionally suitable for generating overall development at the Upazila level.

In case of Land requirements for residential uses, Consultant considered the projected population inclusive of labour force. But for other socio-economic facilities 5% percent of the gross projected population of the Catchment area have been taken into consideration.

It is expected that 1% of the forecasted population of the catchment area by 2001 AD will constantly stay in the Shahar area for their commercial & Industrial needs and activities. Considering the stated realities, land formation and trend of infrastructural growth, Land provision has been made for the Upazila Shahar.

Table : 29 GROSS LAND USE REQUIREMENT FOR THE UPAZILA SHAHAR PATGRAM BY 2001 AD
ESTIMATED POPULATION BY 2001 AD : 30949

Land use	Estimated Population	Requirements as per Standard (TOR)		
		Persons per Hecares.	Proposed Land use	
			Area in Hectare	Percentage
Residential	30949	254	121.41	35.60
Commerce and Industry	42878	2354	18.21	5.32
Social, Admin. Cultural and urban services	42878	616	69.60	20.40
Roads and Railway	30,949	676	45.74	13.40
Urban Deferred	30,949	1043	29.68	8.70
Reserve	30,949	2086	14.83	4.35
Ponds/Low land & Water bodies	30,949	742	41.69	12.23
Total land requirement	—		341.16	100.00

CHAPTER— THREE

CONCEPT FORMULATION AND LAND USE PROPOSAL

CHAPTER— THREE

CONCEPT FORMULATION AND LAND USE / MASTER PLAN FOR THE UPAZILA SHAHAR

5.0 LAND USE PLAN PROPOSAL

5.1 APPROACH

The planning approach is related to the Government policy of Administrative decentralization, which calls for the establishment of Upazila Parishad with a mandate to service facilities to the newly created Urban centre as well as for the hinterland around the Upazila Shahar.

In this way, there is a commitment to carryout different Socio-economic activities related to land utilization and space maximisation. The approach here cannot be confined only to the need of Physical survey of existing land use and the spot verification of that use but also the essential needs of contour survey to find the gradients for planning and locating the physical infrastructures and utilities such on housing, drainage, roads, water supply and sanitation system etc.

Apart from this a survey has been conducted in order to find out the present land-use economic condition of the area, social infrastructure available and the income structure of the community. Study has also been conducted to estimate the future potential and possibilities.

Besides, the hierachy of settlements within the Upazila Shahar and influence Zone need to be determined from the result of the demographic, economic and social surveys. In short the approach to planning for the subject Upazila Shahar should be:

- o Collection of base C.S. Map (Mouza), thana map, Zila map, and other concern maps from different sources like U D, Director of land Records & survey of Bangladesh, Deputy commissioner's office, Upazila Parishad and other agencies.
- o Physical survey of present land utilization and investigation of the land use use pattern of the Upazila Shahar.
- o Conducting the socio-economic survey and the demographic survey from both primary and secondary sources and also on sample basis.
- o Identification of constraints and opportunities.
- o Assessment of future land requirements within the Upazila Shahar in respect of Administrative, Housing, Employment and other Socio-economic Infrastructural needs.
- o Analysis of Data and present land forms and land-use pattern for future requirements.
- o Delineation of Development control area on the basis of logical utilization of valuable agricultural land.

- o Formulation of objectives and concept plan on the basis of estimated population for the study area and its zone of influence and discussed with UDD and concern authority of the Upazila if necessary before finalization. Planning approach and process has therefore been framed keeping in view of the above mentioned observation.

a. Concept Formulation

For the over all development of the urban centre as the functional aspect is concerned it has assumed that the Upazila centre will function as:

- o Seat of Administration

The Upazila Urban headquarter, in its full sense and entity as the seat of administration and economy.

- o Service Centre:

The centre of the Upazila will function as a service centre not only for its catchment area and hinter land, but also for the Upazila as a whole.

- o Seat of Commerce & Industry:

This will function as a main marketing centre for the Agricultural & cottage industrial products for the total Upazila.

- o Socio-Cultural Function Health Services :

The centre will be the main focal point in respect of higher Education, Recreational facilities, upgrade Medical, Family planning and Health services for the Upazila Shahar and its hinter land. Zone of influence and the total Upazila in fact. The Upazila Shahar will be an urban centre of the nature of an AGROVILE where agricultural labour and agricultural economy will be predominant factors for the sustenance of the society.

b. Planning Principles

No sieve map has been prepared for this Upazila Shahar buildup area but a constraint and opportunity map on the basis of contour map (BWDB MAP) has been drawn showing the grades of land which are buildable and unbuildable (high or low), drainage etc to facilitate the work of plan preparation. Three cardinal principles of LIVE, WORK and PLAY i.e.

- a place of residence, education, health and religion etc.
- b Place of jobs and employment.
- c Place of social & Recreational facilities. These principles have been followed in planning and the principles adopted are that the plan should be:

L Economocally viable :

The urban area may be able to sustain within the economy generated within the area and in the Upazila for the maintenance of the population and the establishment set up

here as far as practicable and with a minimum Govt. assistance. The Industrial, Commercial and shopping centres for the economic activities have been proposed according to the standard as given in the TOR to provide job opportunities and employment of the labour force and people.

II. Socially Acceptable :

The proposal should be socially acceptable by its users local inhabitants of the proposed Shahar and its environ and that of the surrounding regions. Social facilities required as per standard suggested in the TOR for the communities have been provided for the development of the area and the community. Appropriate spatial allocations have made for education, recreation, entertainment and religious facilities etc.

III. Functionally Suitable :

To make the urban centre functionally suitable and physically attainable, attention has been given to the following land-uses and points:

- o High buildable land, existing builtup area.
- o Free from flood erosion and land subsidence
- o Grouping of land uses for Commercial, administrative, industrial activities in their appropriate location.
- o Tendency of the direction of growth and maturity of the area for development.
- o Communication and transportation system.
- o Existing Road alignment
- o Locational aspect of present residential area.

5.2 PLAN DESCRIPTION :

Urban land-use plan for Patgram Upazila Shahar has been prepared on the perspective of future population, present land use and land formation. Future requirements for its administrative, residential, socio-cultural, health, education, urban service and other service facilities. The present Upazila administrative complex has no delimited boundary However for the preparation of land-use proposal an area of about 4.82.80 Km² (1.86 sq.m) has been delimited as the proposed Upazila Shahar Planning area to serve the population of the study area, Catchment area and the total Upazila. THE LAND-USE PLAN is comprehensive in nature and it contains different land-use functions. This is also a synthesis showing all the future land-use proposals of different items represents on a base map of cadastral survey (Mouza) and in a scale as per TOR. The following paragraphs will provide detail description of different land-use items in accordance with the plan proposal, Land-use analysis of the different items is also given in a tabular form. These are as under :

a. Commerce and Industry

In respect of commercial use of land an area of 6.07 hectares (15 acres) has been proposed and location of the same uses has been kept along with the existing uses and other new places to facilitate the neighbourhood area. This land allocation is approximately 1.77% of the net land-use area. At present only 3.22 hectares (7.98 acres) of land is used in this sector.

In the case of industrial use of land an allocation of 12.14 hectares (30 acres) has been proposed to serve the population and hinterland area of the Upazila. This area is about 3.55% of the net land-use which will serve the estimated population with 2549 per hectares by the turn of the century.

b. Education

An area of 12.95 hectares (32 acres) of land has been provided for this sector, considering the population of the catchment area and study area which is 3.80% of the net land use area. Provision with two high school and a college and necessary primary school for the study area 5% of the a catchment area population has been taken into consideration for the land use proposal and this mean 3311 person per hectares will be serve by this sector.

c. Health

4.45 hectares (11 acres) of land provision has been made for this purpose which will serve the Government policy of health for all by the year 2000 AD. The area for land allocation for this purpose is 1.30% of the net land use area and will serve the population of the study area, catchment area and Upazila as a whole.

d. Administration

The present land use for administrative purpose is inadequate to serve the future administrative need of the Upazila by the end of the century. In view of that a land allocation of 14.16 hectares (35 acres) of land has been allocated in the land use proposal to serve the Administrative function smoothly at the Upazila level and the allocation of this sector will be 4.15% of the net land use area by 2000, AD.

e. Recreation

About 2.79 hectares (6.90 acres) of land is used at present for recreation purpose which is inadequate and in our land use proposal Consultant propose 13.76 hectares (34 acres) of land for recreational purpose which include, stadium, play ground, Cinema hall park ect.. In case of providing recreational facilities projected population of the study area has been taken into consideration and 2250 persons per hectares will be serve by this land use which is 4.03% of net land use.

f. Socio-Cultural

Socio-cultural land-use for the Upazila Shahar (study Area) includes land allocation for mosque, grave-yard, temple, orphanage, exhibition etc. and for this purpose a land area of 8.09 hectares (20 acres) have been provided in the land use plan and this allocation as 2.38% of the net land use with 3825 person per hectares will be served by this sector.

g. Urban Services

One of the main objectives for the creation of Upazila Shahar is to provide urban facilities at the Upazila level, to develop the previous thana as an urban centre to serve the rural masses. At present 13.29 hectares (32.84 acres) of land has been used for this sector to serve the present population. A land area of 16.18 hectares (40 acres) has been allocated in the proposed land use plan to serve the projected population which mean 1912 persons per hectares will avail urban facilities which is 4.74% of the net land use.

h. Residential

A comprehensive land use proposal for residential uses has been provided in the plan with the objectives of providing residence for different Govt. officials and residential area for the neighbourhood population to serve this specific purpose of land use an area of 121.41 hectares (300 acres) of land has been provided in the land use proposal which will give an approximate density of 254 person per hectares (103 persons per acre). The net land area is about 35.60% of the total net land utilization.

j. Major & Distributor Roads & Railways

In the land use proposal attention has been given to the existing metaled and semi pucca road net. works of the Upazila Shahar to bring a conformity with the present use and trend provision of widening and linkages for smooth traffic flow in the future have been proposed. Major vehicular road proposed in the land use plan are 60'-0" width and distributor road has been proposed, feeding the major road with a width of 40' to 30'. Most of the road has been proposed on the existing road net-work. A by-pass road has also been proposed connecting the Tinbigha road on the south of Rail way line to avoid future traffic jam. This is proposed as desired by the Upazila authority. A land area of 45.74 hectares (113 acres) including the existing Railway line and Rail station, which stands at 13.40% of the net land use area.

K. Urban Defferd & Reserves

To accommodate the urban expansion in the future an area of 29.68 hectares (73.33 acres) of land has been earmarked as an urban deferred. An area of 14.83 hectares (36.65 acres) of land have been proposed as a RESERVE LAND for specific land use. 8.70% and 4.35% of net land use has been kept in the proposed master plan as urban deferred and Reserve respectively. This land should be utilized according to the need requirement of the inhabitant of the Upazila Shahar

TABLE: 30 GROSS LAND USE PROPOSAL FOR PATGRAM UPAZILA SHAHAR—1989

ESTIMATE POPULATION BY : 2001 AD. 30,940 persons.

STUDY AREA : 2021 Acres (817.90 hectares) / 3.15 sq.mile

Land-use	Existing land use		Proposed land allocation		Proposed land use percentage	Additional land use
	Area		Area		%	Area in Acres
	Acre	Hectares	Acre	Hectares		
1-A Commerce	7.98	3.22	15.00	6.07	1.77	7.02
1-B Industry	0.21	0.08	30.00	12.14	3.55	29.79
2. Education	18.65	7.54	32.00	12.95	3.80	13.35
3. Health	4.41	1.78	11.00	4.45	1.30	6.59
4. Administrative Govt. Instt.	19.12	7.73	35.00	14.16	4.15	15.88
5. Recreation	6.90	2.79	34.00	13.76	4.03	27.10
6. Socio-cultural	14.56	5.89	20.00	8.09	2.38	5.44
7. Urban services	32.48	13.29	40.00	16.19	4.74	7.16
8. Residential	190.19	76.97	300.00	121.41	35.60	109.81
9. Urban deferred	-	-	73.33	29.68	8.70	73.33
10. Reserve	-	-	36.65	14.83	4.35	36.65
11. Major Roads and existing internal kutchra roads and railway and rly. station.	95.39	38.60	113.00	45.74	13.40	17.61
12. Ponds/Waterbodies	103.00	41.69	103.00	41.69	12.23	-
Total land	493.25	199.62	843.00	341.16	100.00	349.73
Agriculture land	1528.00	618.38	1178.00	141.64		
Grand Total	2021.00	818.00	2021.00	818.00		

6.0 PROGRAMMING AND IMPLEMENTATION

6.1 PRIORITY ACTION. AND COST IMPLICATION

a Priority Action :

Priorities have been given for establishment of administrative structure for economic activities within the Upazila urban centre as administrative decentralization has been the prime factor in setting up of the Upazila Shahar. While the economic activity such as marketing, Shopping, commercial activities and job opportunities and other income generating sectors like agriculture, commerce, and horticultural plantation of fruit orchards etc and the provision of communication facilities within the urban complex

as well as for linking other union sub-centre. Upazila Shahar and Zila headquarters have been proposed. This will activate the pace of development of the subject Upazila Shahar and movement of goods to and from the areas. Therefore, the key development in every area should be taken up and other priorities depending upon the situation as necessary should be given importance in according to the prevailing condition of the time.

b. Cost Implication :

So far land value is concern to develop the Upazila Shahar according to the guide-line of the LAND—USE—PLAN and it is found that the Lands within the Master Plan area are mostly privately owned by the local people or absentee owner and cost of the land would be around Tk. 75,000 to Tk. 1,00,000/- per acres. In preparing the land-use plan, we consider the maximum utilisation of high buildable land but it was not possible to avoid land filling as the characteristic of the land needs filling. However, cost effective nature has been maintain in the plan. Road net-work, have been proposed on the existing alignment with some linkages and widening as desired to make it cost effective and functionally suitable.

To implement any development project according to the land use plan (guide-line) a detailed development plan is necessary in addition to land filling as per requirements and acquisition.

6.2 PHASING AND URBAN DEFFERD

a. Phasing :

The future proposal for development has been framed into three phases starting from 1991. Therefore, the phases hereby are termed as follows;

From 1991 to 1994 as First Phase.

From 1994 to 1997 as Second Phase.

From 1997 to 2001 AD as the Third Phase of development.

Land use plan has been developed on the basis of the requirement and was phased in the above mentioned time frame. In the first phase, the proposal for the development has been concentrated mainly on administrative and service facilities with necessary land allocation for residential need of the officials and people of the locality with detail development plan while the second and third phase ending in 1997 to 2001 AD respectively and those phases require attestation according to the need of the projected population. According to the phases land requirement has been made. In each phase in addition to the principal route alignment, location of appropriate educational institutions, housing and shopping, commercial & industrial, religious areas, health facilities, place for entertainments and open space and the net work of services has been calculated.

b. Urban Deferred:

An area of 29.68 hectares (73.33 acres) of land has been earmarked as deferred area for future urban requirement. This land is about 8.70% of the net land-use area by the end of the century, detail of which has been given in plan description.

6.3 DEVELOPMENT CONTROL :

For the purpose of development control of the Upazila Shahar in the perspective of Upazila Land-use plan as an Urban centre, consultant have proposed a development control boundary indicating the area of development for the projected population by the beginning of the new century under different phases.

This development control will prevent an undesirable land uses which may occur in near future. A land area of 483 hectares (1193 acres) has been proposed as a planning area for the population of 30949. Some green land surrounding this planned area has also been proposed to avoid undesirable urban growth.

Present Building Construction Act applicable to the Municipality should be applied to the subject Upazila Shahar with an objective to control the all types of construction activities irrespective of Govt., and private to insure orderly development of the Upazila Shahar in accordance with the land-use proposal. Before implementing the land-use proposals a detailed survey according to the priorities of the different zones should be done and controlled as per Master plan provision.

It is desirable to constitute a "DEVELOPMENT CONTROL BODY" comprising local peoples representative, Upazila Chairman, UNO, Upazila Planner, Upazila Engineer, Local Engineers from different Govt. organisations, functioning at the Upazila level such as R&H Dept, PWD, PHE and BWDB etc. This committee will be called as "UPAZILA SHAHAR DEVELOPMENT COMMITTEE".

An enabling legislation should be framed in the Parliament by the Government in order to implement this Upazila Shahar Land use Plan for the proper development of the Upazila Shahar. as a planned development.

6.4 MONITORING AND REVIEW :

The proposed land use plan of the Upazila Shahar should be monitored and reviewed. From time to time each phase of development should be reviewed after the completion of that phase to evaluate the progress and direction of development according to the necessity of the area. If any correction and modification in the alignment are required, the plan should be modified thereafter before under-taking the implementation of the next phase. This feed-back process will act as a corrective processes of the plan proposal and alignments.

ANNEXURES

Chart for Hierarchy of Settlements

Town Centre Map

Land-use / Master Plan for Upazila

Shahar 

S E R V I C E S												
Population and Services with weight	Popula- tion	Primary school	High school	colle- ge	Union council	Bank	Hat/ Bazar	Post Office	Health clinic/ Hospi- tal	Rly/ Bus Station	Total score	Grade
Name of Mouza	25	7	10	10	6	8	10	6	8	10		
Jhalangi	* 15	7	-	-	-	-	-	-	-	-	22	d
Khengti	* 15	7	-	-	-	-	-	-	-	-	22	d
Burimari	* 20	7	10	-	6	8	10	6	-	-	67	b
Sreerampur	25	7	-	-	6	-	-	-	-	-	38	c
Islampur	25	7	-	-	-	-	-	-	-	-	32	c
Azizpur	25	7	-	-	-	-	-	-	-	-	32	c
Upaharmara	25	7	-	-	-	-	-	-	-	-	32	c
Jangra Union												
Kharija Jongra	15	7	-	-	-	-	-	-	-	-	22	d
Islambad	20	7	-	-	-	-	-	-	-	-	27	d
Maminpur	25	7	-	-	-	-	-	-	-	-	32	c
Jongra	25	7	10	-	6	-	10	6	-	-	64	b
Dhabalguri	25	7	-	-	-	-	-	-	-	-	32	c
Baura Union												
Rasulpur	15	7	-	-	-	-	-	-	-	-	22	d
Hosenabad	20	7	-	-	-	-	-	-	-	-	27	d
Jamgram	25	7	-	-	-	-	-	-	-	-	32	c
Nabinagar	25	7	10	-	6	-	10	6	-	-	64	b

S E R V I C E S

Population service	Popula- tion	Primary School	High School	College	Union Council Upazila Office	Bank Kat/ Bazar	Post Office	Health Clinic/ Hospi- tal	Rly/Bus Station	Total	Grade
Name of Mouza	25	7	10	10	6	8	10	6	8	10	
<u>Patgram Union</u>											
Rahmatpur	15	7	-	-	-	-	-	-	-	-	22 d
Ghanabari	15	7	-	-	-	-	-	-	-	-	22 d
Mirjarkot	20	7	-	-	-	-	-	-	-	-	27 d
Tepurgari	20	7	-	-	-	-	-	-	-	-	27 d
<u>Dhabalsari</u>											
Dhabalsari	20	7	-	-	-	-	-	-	-	-	27 d
Beugkanda	25	7	-	-	-	-	-	-	-	-	32 c
Rahmanpur	25	7	-	-	-	-	-	-	-	-	32 c
Rasulganj	25	7	10	10	6	8	10	6	8	10	100 a

NOTE : Weight as per population size

Range :		Score ranges :	
500 - 1000 Nos.	= 10 PTS.	0 - 30	= d
1001 - 2000 "	= 15 "	31 - 60	= c
2001 - 3000 "	= 20 "	61 - 90	= b
3001 +	= 25 "	91 +	= a