

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

**LAND USE/MASTER PLAN  
BERA PAURASHAVA  
PABNA ZILA**

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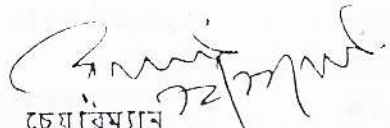
1990

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বেড়া উপজেলা পহরের/পৌর সভাষ্ট ভূমি ব্যবহার নক্সা/মাকীর প্রানের উপর  
অদ্য ১২ই নভেম্বর ১৯৮৮ সনে উপজেলা চেয়ারম্যানের কক্ষে এক আলোচনা সভা অনুষ্ঠিত হয়।  
উক্ত সভায় উপজেলা চেয়ারম্যান, উপজেলা নির্বাহী অফিসার, উপজেলা প্রদৌপলী ও অন্যান্য  
গন্যমান্য ব্যক্তিগণ উপস্থিত ছিলেন। সভায় উপজেলা চেয়ারম্যানের সভাপতিত্বে মাকীর  
প্রানটির উপর জোরালো আলোচনা হয় এবং সর্বসম্মতিএকমে উহা বাস্তবায়নের জন্য গৃহীত হয়।

  
চেয়ারম্যান  
উপজেলা পরিষদ, বেড়া, পাবনা।  
চেয়ারম্যান,  
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## CHAPTER - I

### 1. INTRODUCTION.

Under the Government's administrative decentralisation policy the upazila level has been recognized as the most significant tier of administration for bringing development, administration, judiciary and service facilities to the door step of the rural masses and to ensure better delivery of governmental services to the people. Being the focal point of all upazila level administrative, commercial and other activities the upazila centre will be planned and developed to accommodate all social, economic, administrative and infrastructural services for the upazila region. This calls for creation of physical environment at the upazila centre for planning, implementation and administration of the diversified activities to help sustain not only such centre itself but also to promote faster development of the upazila as a whole keeping it functional to the upazila region.

As such, it is felt that the upazila centre should grow up expeditiously and the preparation of landuse plan for such centre is of utmost importance to ensure an orderly development of the centre with better utilization of scarce land, people and natural resources. This is a part of the total planning process at the upazila level which will eventually include plans for remainder of the upazila. With this end in view, the government has engaged consultants for the preparation of landuse plan for some of the upazila centres of Bangladesh for their development in the period to the end of the century and beyond. A.M. Ahmad & Associates has been awarded with such an assignment for upazila shahar Bera by the Urban Development Directorate.



The report contains the landuse plan at the upazila shahar with briefs of forecasted population and land-uses including approach, concept, planning principles and description of the plan along with programming and implementation aspects with other requirements as mentioned in ANNEX-III of Terms of Reference.

The methodology as applied for the study in general included the major works of conducting the existing landuse survey on the study area, conducting socio-economic survey, identifying the hierarchy of settlements in the upazila and then the forecasting of population and landuses and finally the preparation of the landuse plan in the form of a report.

## THE UPAZILA IN ITS DISTRICT CONTEXT.

2.1. Location and physical characteristics of the upazila.

Upazila Bera earlier was the headquarter of a thana of the same name under sadar Sub-Division of Pabna district and later on was upgraded as the administrative unit of upazila under the same name and boundary. It is situated at a distance of 61 km (38 miles) towards east from the district headquarters of Pabna (The upazila headquarter is situated at the junction of the rivers Ichahmoti, Baral and Hurasagar near the Jamuna). The upazila lies between  $23^{\circ}48'$  and  $24^{\circ}06'$  north latitude and  $89^{\circ}35'$  and  $89^{\circ}44'$  east longitude. It is bounded in the north by Shahjadpur upazila, in the south by river Padma, in the east by river Jamuna and in the west by the upazilas of Sujanagar and Santhia. It comprises to a total area of 247.1 sq.km (95.4 sq. miles) including an area of 22.8 sq.km of river. The elevation of Bera upazila shahar is lying 39.02 ft. above mean sea level.

The special physical aspect of the upazila shahar is its location on the junction of three rivers and its situation on the Dhaka -Bogra highway for which it has developed as an important business centre for jute and other agricultural commodities in the region.

2.2. Population and settlement Distribution :

## (i) Within the Zila :

Pabna, a district of Rajshahi Division is located in the south east corner of this division. It is a wide low lying alluvial plains of the Ganges, Karatoya and the Jamuna. Pabna occupies a physical area of 2333 sq.km. (901 sq. miles) including the water area. The location of district is such that it is a gateway to Rajshahi Division and North Bengal from the capital city. According to Pabna district statistics 1983 Pabna district comprises of two pourashava, 8 Upazilas, 71 unions, 1291 villages and 243355 households.



According to 1981 population census the total population of the district is 15.45 lacs about 1.72% of the national total. The Sex ratio of the district is 106. The average size of household in the district is 6.10 against 5.7 for Bangladesh. The settlement distribution in respect of population, household and density for different upazilas of Pabna district is shown in the following table :

TABLE - 1.  
Household, population and density by upazila, 1981.

Upazila	Area in sq.km.	Popn.	H.H.	Av. H.H. Size	Density per sq.km.	Ranking by Dendty.
Atghoria	184.20	1,04,798	16,472	6.30	568.93	VII
Bera	247.10	1,63,124	26,914	6.00	660.15	III
Chatmohar	366.70	2,07,546	31,937	6.50	565.98	VIII
Faridpur	213.20	1,26,504	18,210	7.00	593.35	VI
Iswardi	244.20	2,04,845	32,256	6.20	838.84	I
Pabna	439.50	3,47,615	55,136	6.20	790.93	II
Santhia	353.30	2,13,454	33,705	6.30	604.17	V
Sujanagar	285.40	1,77,793	28,725	6.20	622.96	IV
Pabna District	2333.6	15,45,679	243355	6.10	723	

Source : Thana series, Bangladesh population census, 1981. B.B.S.  
(ii) Within the upazila :

According to 1981 population census the total population of the upazila Bera is 163124. The sex ratio is 104 as against 105 for the district. About 4.8% of the district population live in this upazila in an area of 5.2 % of the district. The population density of the upazila as calculated in 1981 census shows that there are 660 persons per sq. km. as against 723 persons for the district and 605 persons for the nation. About 47.9 % of the total population-belong to the ages less than 15 years, whereas 46.4 percent of the total population are above 17 years age. Dependency ratio for this upazila is found to be 107 for every 100 population of the age group of 15-64.



The upazila has 26,914 (1981) households with an average size of household of 6.00 persons as against 6.10 for Pabna District and 5.7 for the nation. The increase of population in 1981 over 1974 is 20.20% against 23.64% for Pabna District. Again the increase in population of the upazila in 1981 over 1961 is 40.97% as against 82.52% for Pabna District (Table-2).

According to 1981 census there are 8 unions, 171 villages in the upazila, out of which 75 (about 43.9%) are small villages with a maximum of 100 households, 92 (about 53.8 percent) are medium villages with more than 100 but less than 500 households and 4 (about 2.3%) are big villages having more than 500 households.

TABLE - 2.

Population in 1961, 1974, 1981 and percentage variations of Pabna District and of Bera Upazila.

UZ/Dist.	1961	1974	1981	Percent variation		
				1974 over 1961	1981 over 1974	1981 over 1961
Pabna District	850601	1255638	1545679	47.62	23.10	81.73
Bera Upazila	115285	135417	163124	17.46	20.46	41.50

Source: Bangladesh population census 1981 - B.B.S.

### 2.3. ECONOMIC PERFORMANCE AND TRANSPORT LINKAGE.

The main occupation of the people of the Upazila is cultivation. The net cropped area is 498480 acres. One cropped land 59.67 percent, two cropped land 39.86 percent and multi cropped land 0.47 percent of total cropped land.

The Upazila headquarters are well-known as business centre for rice, wheat, jute, sugarcane, chilli, onion, garlic etc.

The total yield of various category of rice in 1980-81 are 426624 maunds. The total yield of wheat is 47639 maunds, jute 15290 maunds and sugarcane 324682 maunds.

The total no. of persons employment in handloom industry is 5000 in 1981. Employment in education sector is 750 persons engaged in teaching in 1982. There are 12 persons employed in medical profession in M-Beta Upazila in 1982.

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

TABLE - 3.  
Broad in groups

Category	Yearly income in Taka	Income group	No. of Households
1.	Below 5,000	Lower income group	3
2.	5,000 to 9,999		
3.	10,000 to 14,999	Middle income group	40
4.	15,000 to 19,999		
5.	20,000 to 24,999		
6.	25,000 to above.	Higher income group	107

Total : 240

Source: Socio Economic Survey - 1986.



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

In respect to the economic activity, agriculture is main occupation of the district. There are 2333 sq. km. area and 1545697 population in Pabna district. The overwhelming majority of people is dependent mainly on agriculture for their earning and employment. The total number of farm holding in the district is 2.15 lacs occupying about 77% people of the district are farm population and 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 LINKAGE.

According to Pabna zila parishad source there are total 621 km road. Among these road there are 174 km pucca road, 60km semi-pucca road and 388km. 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 with Kushtia district in Ishwardi, Pabna district headquarters is also connected with Bogra via Bera Upazila and also connected with Rajshahi district through Ishurdi by national road. Pabna district headquarters is also connected directly by pucca road with Bera Upazila, Chatmohar & Satbaria and by feeder road connected Chatmohar to Faridpur Upazila.

Besides there are numerous semi-pucca & katcha roads which connect 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 statistica 1983 there are 11 railway stations, 2 steamer/launch ghats and 7 bus terminals and an Airport in Pabna district for average transport communications.

Bera Upazila is about 61 km. distance from Pabna district town. Bera is connected with Pabna district headquarter by road which passes through Kashinathpur. The basic means of transports available in the Upazila are bus & rickshaw. The Upazila headquarters is connected with most of Union parishads by kutcha roads. Country boats play a vital role in communication during rainy season. There are 36 km. metalled and 250 km. unmetalled roads in the Upazila.



## 2.4 Social Infrastructure

### Markets:

In every upazila headquarters there are established markets and in district headquarter Pabna there are big markets. In remote areas of the districts or upazilas there are common places locally known as hats/bazar 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 Bera upazila are 11 nos. of daily bazars and 12 weekly or bi-weekly hats.

### Commerce:

According to the Pabna district statistics 1983 there are 95 nos. of bank branches in Pabna district and among these there are 7 nos. established in Bera upazila.

### Education:

According to the population census 1974 the literacy rate in the district is 14.77% against 20.0% in Bangladesh. Same in Upazila Bera is 18.6%. 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 Bera Upazila is 63 primary schools, 14 high schools, 1 college and 13 Madrashas.

### Health:

In Pabna district there are 8 thana health complexes with 123 beds, 15 charitable dispensaries, 2 Missionary hospitals and 4 other health centres with 20 beds. In district there are 450 registered doctors, among them 79 are M.B.B.S. doctors. In Bera Upazila total No. of doctors are 12 and 5 are M.B.B.S. doctors. In the Upazila headquarters there are one thana health complex with 10 beds capacity & 3 dispensaries 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 of Bera Upazila are 11 post offices, 1 telegraph office and 1 dak bungalow /rest house.

### Utilities:

In Pabna district water supply facilities are provided in Pabna district headquarters and Ishurdi 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 1171 are in Bera Upazila that provide drinking water to the people. In Pabna district 222 villages are electrified and in Bera 29 villages facilitated with electricity supply. In respect of recreational services there are 14 Cinema halls, 51 registered clubs and 10 public libraries in Pabna district. But the same is 1 Cinema hall and 1 registered club in Bera Upazila that provide recreational facilities.



## 2.5 Current development projects:

Many development projects have been taken up by the upazila parishad during last financial years under food for work programme and A.D.P. Most of the projects on infrastructural development works including roads, culverts and bridges. Other sectoral projects on agriculture, irrigation, fisheries and commerce have also been undertaken and are in progress.

Some infrastructural works (1987-88) as programmed are mentioned below :-

<u>Sl.No.</u>	<u>Name of Union.</u>	<u>Name of Schemes.</u>
1.	Dhalarchar UP.	Construction of Kukli to Dhorai Road.
2.	Ruppur UP.	Re-constn.of Aminpur Masumdia road.
3.	Masumdia UP.	Constn.of Furan Masumdia Kazarhat road.
4.	Bera UP.	Constn.of road from Nazim Bazar to Hospital.
5.	N/Bhearnga UP.	Constn.of Batiakhora Sonapadma road.
6.	Jatshakini UP.	Constn.of road from Nayabari to Atrai River.
7.	P/Bharenga UP.	Re-constn.of road from Mothura to Natakola.
8.	H/Nakalia UP.	Earth filling of Haturia Jannathpur play ground.
9.	N/Bhernga UP.	Re-constn.of road from Kushiara to WAPDA Bandh.
10.	P/Bharenga UP.	Exca. of canal from Jamuna river to Dharpara.
11.	Ruppur UP.	Re-constn.of road Dayrampur Natunpara.
12.	Dhalarchar UP.	Constn.of road Kukli Dhorai.
13.	Bera UP.	Brishlika WAPDA bandh Bangabaria road.
14.	Jatshakini UP.	Re-constn. of Mastia Sunduri road.
15.	Bera UP.	Brishhalika WAPDA bandh Bangabaria road.
16.	Ruppur UP.	Badher Hat at Kadamtala via Aminpur road.

After the creation of Bera paurashava in 1988 development works with the municipality are being planned by the Paurashava x

authority. These include development of the market areas & roads. Possible drainage, navigational and commercial development through the Ichhamoti river (recently blocked by BWDB embankment on the east and by a closure on the west) are also seriously being thought for by the paushava authority.

Table - 3.

Category	Sub-category
----------	--------------

## A. Regulation range of

1. 1000	1000
2. 500	500
3. 100	100
4. 50	50
5. 10	10

## B. Land use of

1. 1000

## C. Land use of

1. High school 2. 1000 3. 1000 4. 1000

## D. Land use of

1. 1000 2. 1000 3. 1000 4. 1000

## E. Land use of

1. 1000 2. 1000 3. 1000 4. 1000 5. 1000 6. 1000 7. 1000



## 2.6 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 with available services and facilities, transport link and other related characteristics. Mouza has been considered as the unit or centre to determine the hierarchy of settlements. In determining the hierarchy of settlement, the weightage method has been applied. Different weights have been given for various ranges of population, economic, social, transport and other services in respect of their degree of importance, extent of services rendered and impact produced on the development of the upazila. This is shown in the table - 4. The total weightage obtained for each mouza have been calculated and ranked in four categories. The rank according to weightage obtained is shown in table - 5.

TABLE - 4.

Category	weightage.
A. Population range of	
Upto - 500	1
501 - 1000	2
1001 - 2000	3
2001 - 3000	4
3001 - and above	5
B. Any one of	
1. Primary school 2. Mosque 3. Tube-well	1
C. Any one of	
1. High school 2. Hats 3. Post office	
4. Electricity.	2
D. Any one of	
1. Bazar 2. Health centre 3. BADC Office	
4. Bank 5. Police out post 6. Food godown.	4
E. Any one of	
1. Hospital 2. College 3. Police station	
4. Upazila complex 5. Telephone exchange & telegraph office 6. Bus station 7. Railway station 8. Lanch Ghat.	8

TABLE - 5.Ranking of hierarchy according to weightage obtained.

Total Weightage obtained	Rank in hierarchy
30 and above	I
20 to 29	II
10 to 19	III
9 and below	IV

According to the afforesaid method the mouzas obtaining the highest & 2nd highest rank with weightage obtained is shown in table

TABLE - 6.Ist and 2nd category of mouzas in the hierarchy of settlement.

Name of Mouza	Name of Union	Weightage obtained	Category
1. Banagram	Bera	20	II
2. Hatigara	Bera	38	I
3. Salikapatak	Bera	32	I
4. Safulla	Natum Bharenga	20	II
5. Pengua Nalkhola	Puran Bharenga	23	II
6. Natia Bari	Jatsakini	20	II
7. Mirzapur	Jatsakini	21	II
8. Pechakhola	Haturia Nakalia	20	II

It is observed from the above that only Bera union has two Ist category of settlements while other unions have one 2nd category settlement each except the unions of Masumdia, Ruppur and Dhalar char which have only III and IV category settlements. The mouzawise population and other services available in the I and II category settlements are shown in Annexure -I.



### CHAPTER - III.

#### THE UPAZILA SHAHAR AREA.

##### 3.1 Definition of sphere of influence/attractiveness.

An attempt is made to identify the upazila shahar's socio-economic sphere of influence or catchment area through reconnaissance survey, landuse and socio-economic survey, informations from secondary sources and through personal interviews in the various socio-economic service centres, viz. markets, shops, educational institutions, health complex, govt. offices etc. Two spheres of influences viz. 'primary' and 'secondary' have been identified for the present shahar area. The primary influence spreads over approximately 59 sq.km. (about 23 sq.miles) with a population of 55488 excluding the shahar area. People from these places come to the shahar to perform a wide variety of functions and avail various services for their day to day life. As the shahar is situated very close to the northern boundary of the upazila, this sphere of influence also covers some parts of Shahjadpur and Santhia upazilas. The secondary sphere of influence spreads over the larger distances covering the whole upazila and even exceeds the upazila boundary. People from all over the upazila occasionally come to the shahar mainly for receiving health, administrative and judiciary services. People from Pabna, Shahjadpur, Chowhali and Santhia upazilas also occasionally visit Bera upazila shahar mainly for business purposes.

The catchment area has been determined according to the primary sphere of influence and has covered 21 nos. of full mouzas and 8 part mouzas from this upazila and from Shahjadpur and Santhia upazilas. The details are shown in Table-7, and in map no.-2.

TABLE - 7.

Area and population of the mouzas under  
the catchment area of upazila shahar Bera.

Sl. No.	Name of Mouza	J.L. No.	Total area in acres	Involved area in acres.	Total area Popn.			Involved Popn.		
					1961	1974	1981	1961	1974	1981
1.	Sarisha (P)	23	944	472	1337	1720	2259	669	860	989
2.	Talat	24	415	415	1108	1505	1714	1108	1505	1714
3.	Karanja	125	2031	2031	4930	4687	8898	4930	4687	8898
4.	Panisail	124	228	228	227	306	341	227	306	341
5.	Mangalgram (P)	127	200	133	221	342	1946	147	228	247
6.	Maukari	126	171	171	391	527	587	391	527	587
7.	Punduria	130	1034	1034	1702	1321	2801	1702	1321	2801
8.	Lochna (P)	46	840	420	718	970	1425	359	460	661
9.	Santosha	133	341	341	459	589	698	459	589	698
10.	Barnia (P)	134	600	240	1538	2369	3291	615	890	1026
11.	Datta Dorta	135	229	229	318	541	700	318	541	700
12.	Dortomehi	136	847	847	2555	2730	3532	2555	2730	3532
13.	Taratia (P)	143	682	136	1485	2130	2980	297	263	352
14.	Chak Paikhandhu	138	155	155	399	288	358	399	288	358
15.	Khas char pechakhola	137	60	60	Nil	-	-	-	-	-
16.	Paikhanda	139	228	228	552	319	448	552	319	448
17.	Brisalika (P)	1	205	21	1563	2102	2475	342	965	500
18.	Sainla (P)	8	266	213	947	1970	2512	741	1133	1445
19.	Chak Chakla	13	868	868	1005	1217	1776	1005	1217	1776
20.	Damdama	14	140	140	194	268	355	194	268	355
21.	Kalia Khaksara	15	536	536	566	560	640	566	560	640
22.	Barsila	12	791	791	332	544	573	332	544	573
23.	Haturia	18	1661	1661	6109	7894	8686	6109	7894	8686
24.	Panchuria (P)	16	753	301	966	1209	1399	386	484	560
25.	Paikhanda Duduliakul	22	224	224	1592	2441	2014	1592	2441	2014
26.	Char pecha khola	23	1326	1326	1164	2412	2058	1164	2412	2058
27.	Pechakhola	26	930	930	6924	5244	8152	6924	5244	8152
28.	Chak Narayanpur	27	179	179	1891	2243	2665	1891	2243	2665
29.	Char Nakalia	24	472	472	577	741	924	577	741	924
30.	Dakshin Sambhupur (P)	5	45	20	714	945	1103	-	-	-
31.	Uttar Sambhupur (P)	4	595	440	302	490	572	100	300	372
32.	Hatigara (P)	7	522	352	2331	2219	4280	1572	1429	2547
33.	Payna Teghari	6	528	528	1792	2412	2959	1792	2412	2959
34.	Bangabari	11	130	130	413	600	708	413	600	708
35.	Joradaha	10	210	210	404	637	752	404	637	752
36.	Tonghari Bananda	20	157	157	129	163	189	129	163	189
37.	Chalk Baradia	21	86	86	344	335	355	349	335	353
Total :			19036	16412	48397	56990	77023	41514	47534	61762



### 3.2 Definition of shahar area.

In addition to the existing built up urban area of the upazila shahar, the shahar area also includes some area which are expected to develop as urban area in the future. The existing built up urban areas are mostly covered by Banagram and Salikapatak mouzas on both sides of the main road running west to east from the Dhaka-Bogra highway towards the market centre and police station. The development trend is along this road and along the river banks and also in along the pucca road towards upazila complex. The areas between these main roads and rivers have road network for prospective development.

Administrative boundary of the upazila and the surrounding physical constraints have acted much in determining the boundary of the shahar area. The boundary of the shahar area has been limited on the west by the upazila boundary, on the north by BWDB embankment on the east by Hurasagar river and embankment and on the south by the part of mouzas Paynateghari and Hatigara.

The total shahar area thus determined (map no. 2) covers an area of 4.24 sq.km. ( 1.64 sq. miles ) or 1050 acres with a population of the shahar area have been shown in table-8.

TABLE - 8.

Area and population of the mouzas under the shahar  
area of upazila shahar Bera.

Sl. No.	Name of mouza	J.L. No.	Total area in acres	Involved area in acres	Total population			Involved		
					1961	1974	1981	1961	1974	1981
1.	Banagram	2	151	151	4912	4382	5859	4912	4382	5859
2.	Salikapatak	3	412	412	2531	3939	5267	2531	3939	5267
3.	Dakshin Sambhupur(P)	5	45	25	714	945	1103	714	945	1103
4.	Uttar Sambhupur(P)	4	595	55	302	490	572	202	290	572
5.	Hatigara(P)	7	522	170	2331	2219	4280	759	790	1733
6.	Sainla (P)	8	266	53	947	1970	2512	547	837	1067
7.	Brishhalika(P)	1	205	184	1521	1940	2475	1214	1139	1975
TOTAL:			2196	1050	13258	15885	22068	11163	12322	17576

(P) Means part of the mouza.

### 3.3. Existing Landuse, facilities & utilization characteristics.

The study of existing landuse with a view to landuse planning has got prime importance in planning. The total shahar area covers 1050 acres or 1.64 sq.miles of land. This includes agricultural, commercial, educational, recreational, residential etc. categories of land. The table below shows the broad landuse of the total projected area.

TABLE NO.- 9.

Distribution of landuse type on the study area-1986.

Sl. No.	Landuse type	Area in acres	% of the total shahar area.
1.	Agricultural	446.25	42.5
2.a)	Commerce	16.80	1.60
b)	Industry	16.45	1.57
3.	Education	17.38	1.65
4.	Health	11.60	1.10
5.	Administrative, Govt. & Autonomous departments etc.	37.06	3.53
6.	Recreation	6.75	0.65
7.	Socio-cultural	9.25	0.88
8.	Urban services	2.20	0.21
9.	Roads	43.19	4.11
10.	Residential	417.88	39.80
11.	Reserve	25.2	2.40
Total:		1050.0	100.00



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 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, colleges, and Madrasahs and Gonasikha kendras.

Health facilities:

Health facility consists of Upazila health complex and veterinary service and occupies 11.60 acres of land.

Administration and govt. departments:

About 3.04 percent land of total study area is used for administrative purposes.

The respective landuses has been presented in Table below.

Land use.	TABLE-10	Area in acre
Upazila complex		17.50
Dak Bunglow		1.50
Union Parishad office		1.80
Govt. Quarters		0.50
Sub-registry office		2.38
BWDB office		10.80
Food godown		3.38
		<u>37.06 acres.</u>

Landuse in socio-cultural aspects:

In these categories of landuse there are Mosque, Eidgah, Mandir, Graveyard etc. existed. The total land under these uses is 9.25 acres.

Roads:

Existing 4.11 percent land of study area is used for road network. These roads are classified into three categories like Major, secondary and local roads on the basis of its width. About 9.10, 21.57 and 12.50 acre lands are covered by Major, secondary and local roads respectively.

Recreation:

About 0.65 percent land of study area is used for recreation purpose which is covered with play ground, pond and open space.

Residential:

Total residential landuses has been distributed according to the different category of houses and occupy 418 acres of land which is 39.80 percent of the total land.



### 3.4 Physical opportunities and constraints:

The existing built up area is of unplanned development. The present growth area is mixed up with commercial, residential, and administrative area. The pattern of settlement is linear along the main roads of upazila shahar and cluster in between roads. The trend of development is east-west. Important trading communication of Dhaka-Bogra highway passing through the side of upazila shahar and for river Ichhamati & Hurasagar the shahar has developed as an important trading centre in the region. But the southern side due to the low agricultural land development is not feasible. Similarly towards northern side due to the WDB embankment a great obstacle lies for development. A new landuse opportunity has been created due to the establishment of the upazila complex. So in the planning view, the proposal would be made for a better guide line of development.

## CHAPTER - IV

### FORECASTS

#### 4.1 Forecasting of Population, Household structure & Density :

Natural increase and migration - the two major components of urban growth have been taken into consideration in the forecasting of population for the upazila shahar planning work. The rate of natural increase has been estimated on the basis of past trend and the government's achievements and targets to reduce the growth rate in the future years. The rate of rural urban migration has been estimated on the basis of past and current trend as obtained from secondary sources and socio-economic survey findings (1986). Again the expected migration due to induced attraction effect of the governments upgrading achievements and commitments in the upazila shahar - which is expected to occur during the late part of the plan period has also been taken into account. Growth rates and the forecasted population for the ranges of low, medium and high projections upto year 2000 A.D. as well as the corresponding house-hold structure and density for the catchment area and shahar area have been found accordingly.

##### i) Within sphere of influence.

Table-11 below shows the forecasted population of catchment area of Bera upazila shahar.

**TABLE - 11**

Forecasted population of catchment area of Bera upazila shahar.

Level of projection.		1974	1981	1985	1990	1995	2000
High	Population	47554	61590	73602	92338	115892	123981
	Growth rate		3.715	4.64	4.64	4.64	3.94
Medium	Population	47554	61390	71033	85245	102300	119460
	Growth rate	-	3.715	3.715	3.715	3.715	3.15
Low	Population	47554	61390	71034	82949	94676	108061
	Growth rate		3.715	3.715	3.15	2.68	2.68



The table shows that the population in 1981 is expected to increase by 95% within 20 years i.e. by the year 2000 on medium projection, while the increase will be 100% and 76% on high and low projection respectively.

Considering an average house-hold size of 7.62 as stands for the upazila in 1981, the following table no.12 shows the forecasted population, house-hold structure and density in the catchment area upto year 2000 A.D. on medium projection. The catchment area as calculated approximately covers 14588 acres of land.

TABLE - 12.

Forecasted population, household and density in the area of influence of Bera upazila shahar.

Year	Population	No. of Household	Density	
			acre	per sq.km.
1974	47554	6241	3.26	806.62
1981	61390	8056	4.21	1041.30
1985	71033	9322	4.88	1209.87
1990	85245	11187	5.85	1445.94
1995	102300	13425	7.02	1735.23
2000	119460	15677	8.20	2026.30

ii) Within upazila shahar area.

Table-13 below shows the forecasted population in the upazila shahar area on high, medium and low projection over the years upto 2000 A.D. The growth rate of medium projection have been assumed to be same as

the growth rate of shahar area of 1974 to 1981 i.e. 5.2 and the growth rate for high and low projection have been assumed to be 25% higher and lower respectively for the years 1981 to 1985. Diminishing by 15% upto year 1995 and an increase of 10% upto year 2000 for each respective growth rate has been assumed.

TABLE - 13.

Forecasted population of Bera upazila shahar area.

Year		1974	1981	1985	1990	1995	2000
High	Population	12322	17576	22611	29552	39640	54719
	Growth rate		5.20	6.5	5.5	6.05	6.66
Medium	Population	12322	17576	21527	26724	33880	42953
	Growth rate		5.20	5.2	4.42	4.86	4.86
Low	Population	12322	17576	20482	24115	27712	32282
	Growth rate		5.20	3.9	3.32	2.82	3.10

The table shows that the population in 1981 is expected to increase by 144% on medium projection, 211% on high and 83% on low projection by the year 2000.

Considering the average size of household as 7.00 in for the upazila shahar in 1986 (as obtained from socio-economic survey 1986), the following table shows the forecasted population, household structure and density in the shahar area upto year 2000 on medium projection. The total shahar area covers about 1050 acres of land.



TABLE - 14.

Forecasted population, household and density in Bera  
upazila shahar

Years	Population	No. of household	Density	
			Per acre	Per sq.km.
1974	12322	1760	11.74	2903
1981	17576	2511	16.74	4136
1985	21527	3075	20.5	5066
1990	26724	3818	25.45	6289
1995	33880	9840	32.27	7974
2000	42953	6136	40.91	10109

#### 4.2 Forecasting of labour force and employment:

On the basis of socio-economic survey (1986), and some assumptions on the availability, rate of participation of male and female labour forces, employment opportunities and development activities the forecasting labour force and employment have been done both for zone influence and for the shahar area upto 2000 A.D. The following table shows the labour force and employment projection for the area of influence on medium projection.

TABLE - 15.

Forecasted labour force for area of influence of Bera  
upazila shahar on medium projection.

	Projected population in the year			
	1985	1990	1995	2000
1. Total population	71033	85245	102300	119460
2. Total population (10-59 years age group total 71.41%)				
Male (38.32%)	27220	32616	39201	45777
Female (33.09%)	23504	28207	33851	39579
3. Economically active popn.				
Male (50% of above 2)	13610	16333	19600	22889
Female (7% to 15% of above 2)	1645	2539	2156	5929
4. Total labour force.	15255	18872	21756	28818

The projection shows an employment - population ratio of 1:4.15 for which employment opportunities should be created for about 28,818 workers support about 119460 persons expected to be living in the area or influence by the end of plan period.

The following table shows the labour force and employment projections shahar area on medium projection.

TABLE -16

Forecasted labour force for Bera upazila shahar  
on medium projection.

	Projected population in the year			
	1985	1990	1995	2000
1. Total population	21527	26724	33880	42953
2. Total population(10-59 years age group)total 71.41%				
Male : (38.32%)	8249	10240	12983	16960
Female : (33.09%)	7123	8843	11211	19213
3. Economically active popn.				
Male (65% of above 2)	5362	6656	8439	9238
Female(7% to 15% of above 2)	499	1120	1458	2132
4. Total labour force	5861	7782	9897	11370

The projection shows employment population ratio of 1:3.77 which says that to support a population of 42953 employment opportunities should be created for about 11370 workers in the shahar area by the end of the plan period.



#### 4.3 Land requirements, provision standards :

Guidelines have been laid out for provision standard and land requirement in Annex-2 of Terms of Reference (TOR). Assuming 45% of total landuse as residential and the rest 55% for other landuses as per TOR the total area comes to 1600 acres for the year 2000 A.D. But in practice while preparing the landuse plan the total area has been reduced and the area allocated for different landuses have been varied (increased or decreased) due to main following reasons :-

- i) Sharp rise of growth in the future cannot be expected when compared to the slow & gradual growth in the past for some landuses viz. commerce, industry, etc.
- ii) Due to presence of some facilities and services in the area of influence only a part of the population of this area will only use these facilities from the shahar area. These landuses include markets, high schools, open spaces, religious facilities, cemeteries, post offices, etc.
- iii) Upazila shahars being becoming the focus of decentralized administration of the government, the Upazila complex and other government establishments may require more areas than anticipated in the TOR.
- iv) Some facilities and services will only be used occasionally and by a part of the people of the area of influence. These include hospital, police station, telephone exchange, bus station, stadium, etc.
- v) The no. of units as specified for most of the landuses can be reduced to lesser number by providing good circulation and communication system within the shahar area. Thus allowing lesser total area for the respective type of landuse.
- vi) The specified net residential density may not be

achieved within the plan period due to the horizontal and spaced expansion trend of the residences in the shahar area - thus increasing the percentage of residential landuses as anticipated in the TOR.

- vii) The determination of the boundary of the Upazila shahar has been mainly governed by the physical opportunities and constraint, existing trend of growth, space available for future landuses etc. Unnecessary carriage of wider area as required by TOR has been avoided.
- viii) A certain percentage of the total area have been allocated as urban deferred which, however, will take care of any additional areas if required for the landuses in the future.

The details of proposed landuses have been shown in Annex. no.2.  
( Landuse Plan )



## CHAPTER FIVE

### 5. LANDUSE PLAN

#### 5.1 Approach, concept, planning principles

The methodological approach as adopted towards the preparation of the landuse plan of Bera upazila shahar includes - firstly, a reconnaissance survey undertaken by the planning team to determine the study area. Secondly, a landuse survey made through C.S. map to identify the existing landuse character. Simultaneously, a socio-economic survey is undertaken to have socio-economic condition of the people. Determination of catchment area is made on the basis of direct or primary socio-economic influence of the shahar area. Population forecasting is made for both of shahar area and catchment area. Finally, land allocation 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 and article 4.3 of chapter- IV of this report.

The concept behind the preparation of landuse plan for the upazila shahar can be traced principally from the government's policy of decentralization of administration and the recognition of the upazila level as the most significant tier of administration for bringing development, administration, judiciary and service facilities to the door step of the rural masses. This is a part of the total planning process at the upazila level which will eventually include plans for remainder of the upazila. Conceptually, landuse plan does not deal with detailed planning - rather it can be called as landuse zoning plan identifying suitable location for social, administrative, economic, circulatory and other appropriate landuses. Broad landuse zones have been identified only. Detailed planning would be done under zonal plan.

Effort is made for maximum utilization of the scarce land. The existing landuse pattern, land level, on site physical opportunities and constraints have been duly considered for planning of the upazila shahar. As a policy to retain existing urban landuses as far as practicable the existing urban landuses have been incorporated in the planning proposals

in a way that maximum possible facilities and services can be provided with minimum disturbances to the existing landuse pattern. The existing development trend have been given much importance in selecting the probable direction of expansion of the shahar area with proposals of new landuses.

## 5.2 Plan description :

The land use plan of Bera upazila shahar will make accommodation of 42953 people upto the year 2000 A.D. The total proposed area is 1050 acres or 4.25 sq.km. (1.64 sq.miles). The proposed broad land allocation with percentage to total planning area has been shown in table-18.

Comparatively dense and widely clustered settlement is observed in the shahar. Due to the construction of embankment and closure on the river Ichhamati the northern bank of it has become flood-free and has been connected with the main shahar through a newly built road across the river. This area has been included in the shahar area. On the southern part the agricultural land beyond the upazila complex stretching towards west upto BWDB canal has also been taken into the shahar to accommodate for new land use proposals. The settlement situated on the western part of the Dhaka-Bogra highway is also included in the planning area for its potentiality on future development. The land use proposals of the shahar are briefly described separately as follows:

### Commercial land use :

The CBD of the upazila shahar situated along the river Ichhamati has little space for its expansion. The CBD with its present characteristics should be retained for its importance as a vital trade centre and river port in the region. The embankment closing the flow river Ichhamati has produced an adverse effect on its functional activity and even becoming a threat to its existence. For the CBD to survive with its full operational and economic activities as before, the Ichhamati should be recycled to its flow



again through opening a navigation channel through a lock-gate or suitable structure connecting with the main stream of Hurasagar.

Alternative proposals to shift the present CBD, trade centre and port to the other side of the embankment on the north might turn out to be very ambitious and expensive and could jeopardise its functioning as trade centre. Considering the flow of Ichhamati to be revived, a new commercial area is proposed on the other bank of it on an area of 9.75 acres with land development by dredging from the Hurasagar river. It is important that the Ichhamati should be retained as drainage and navigational channel for the survival and development of Bera Paurashava as well.

The present CBD being far away from some residential areas and from southern part of the shahar some new commercial land uses have been proposed in these areas to serve the community with their day to day needs.

#### Industrial land uses:

New industrial areas have been proposed on either side Dhaka-Bogra road providing good communication facilities with other parts of the country. An area of 6.35 acres has also been proposed on the north bank of Ichhamati for industrial purposes. Small industrial units now operating in the shahar should not be allowed to expand in their places but should be asked and allowed to shift or establish new industries in these proposed areas in future.

#### Educational land uses :

The proposals for educational land uses are as follows:

1. Extension of primary schools on their adjacent land for play grounds.
2. One more Boys' high school and a girls' high school have been proposed.

Health :

The upazila health complex being situated on the western part of the shahar, a health centre has been proposed on the eastern region as an attempt to provide balanced facilities to the people.

Administrative land use :

The newly established upazila complex and all govt. and autonomous bodies have sufficient land to their requirement and no addition to these have been proposed.

Recreational land use :

Proposals are :-

1. Extension of the stadium to make it as a full fledged one.
2. Extension of the play fields of high school to the north of health complex.
3. New play grounds adjacent to the proposed new high school.
4. Attachment of play grounds to primary schools.
5. An open space of 13.4 acres with lake on the closed out part of river Ichhamati.

Socio-cultural land use :

A new community centre and extension of land to the existing eidgah near upazila complex have been proposed.



### Urban services :

New locations for post office, Telephone office, fire station, bus station and police station have been proposed as these are either totally absent or are with limited spaces functioning in the shahar uptill now. A heli-port has also been proposed.

### Roads :

The existing road network mixed with kutcha and pucca roads if developed will provide the shahar with good communication and transportation facilities. The proposals are as follows :-

1. Widening to 60 ft. and improvement of the road from bus stand to the market place and to upazila parishad.
2. Widening to 40 ft. wide and connecting to similar type cross roads.
3. A new east-west 40 ft. wide ring road connecting the upazila complex to the police station and to the irrigation canal on the west.
4. Some other 40 ft. wide new inter-connection roads.

### Residential land use:

In addition to the existing 417.88 acres of residential areas another 121.80 acres of land have been proposed to be included in this category. The additional areas include pocket spaces and attachment of agricultural land into the existing residential areas. Some new areas have also been proposed with good communication and service facilities. The gross density as expected will be 41 persons per acre while with net density of 78 persons per acre for the year 2000 A.D.

TABLE - 17  
LAND REQUIREMENTS

Forecasted Population of Planning Area :- 42,953  
" " of Area of Influence:- 1,19,460

S1. No.	Landuse type	Land requi- red as per TOR	Land under exist- ing use	Addl. area pro- posed.	Total area provi- ded.	% of total area provided
1a.	Commerce	244.5	16.80	15.65	32.45	3.09
1b.	Industry	244.5	16.45	20.25	36.70	3.50
2.	Education:-	58.0	17.38	12.00	29.38	2.80
	- Primary school	18.0				
	- Secondary school or college	40.0				
3.	Health:-	73.0	11.60	1.00	12.60	1.24
	- Dispensary	33.0				
	- Hospital	40.0				
4.	Administrative/Judiciary	12.0	37.06	-	37.06	3.53
5.	Recreation:-	191.0	6.75	10.40	17.15	1.63
	- Park, open space	163.0				
	- Cinema, closed space	4.0				
	- Sports stadium	24.0				
6.	Socio-cultural:-	64.50	9.24	3.80	13.04	1.25
	- Community centre	8.0				
	- Religious facility	16.50				
	- Cemetary	40.0				
7.	Urban Services:-	32.00	2.20	27.5	29.70	2.83
	- Heli Port					
	- Post office	4.0				
	- Telephone exchange	4.0				
	- Police station	16.0				
	bus/ghat/rail station					
	- Others (Fire stn.etc.)	8.0				
8.	Residential		417.88	121.80	439.68	51.39
9.	Urban deferred		-	131.86	131.86	12.56
10.	Roads:-					
	- Major		9.10	50.60	59.70	5.68
	- Secondary		21.59	-	21.59	2.05
	- Local		12.50	28.29	40.79	3.88
11.	Reserve		25.20	23.10	48.30	4.60
Total:			603.75	446.25	1050.00	100.00



Urban deferred :

12.50% of the planning area i.e. 131.86 acres have been earmarked as urban deferred for future urban expansion if any or more land use proposals become inadequate during the plan period or beyond. The locations have been proposed in different parts mostly in the peripheral regions of shahar area for even development.

Reserve :

Some of the areas in the planning area will not be used for any further development proposes and will remain as reserve. The types proposed in the shahar area are BWDB irrigation canal and river Ichhamati.

TABLE -18 .

Landuse Planning Area of Bera Upazila shahar.

Sl. No.	Landuse type	Existing area in acres	Additional area provided in acres	Total area provided in acres	% of total area provided
1a.	Commerce	16.80	15.65	32.45	3.09
1b.	Industry	16.45	20.25	36.70	3.50
2.	Education	17.38	12.00	29.38	2.80
3.	Health	11.60	1.00	12.60	1.24
4.	Admin./Judiciary	37.06	-	37.06	3.53
5.	Recreation	6.75	70.40	17.15	1.63
6.	Socio-cultural	9.24	3.80	13.04	1.25
7.	Urban services	2.20	27.50	29.70	2.83
8.	Residential	417.88	121.80	439.68	51.39
9.	Urban deferred	-	131.86	131.86	12.56
10.	Roads: 40'-0" & above	9.10	50.60	59.70	5.68
	25'-0" to 39'-0"	21.59	-	21.59	2.05
	Upto 24'-0"	12.50	28.29	40.79	3.88
11.	Reserve	25.2	23.10	48.30	4.60
Total:		603.75	446.25	1050.00	100.00

## CHAPTER - VI.

## PROGRAMMING AND IMPLEMENTATION

6.1. Priority action, cost implication.

Growth of the upazila shahar will depend on the extent of development activities to be occurring within the upazila by 2000 A.D. The landuse plan is a guide line for the orderly growth of the upazila shahar. All the landuses cannot, rather should not be developed or all the services cannot be provided at a time. Priority actions are to be selected carefully for the sequential and balanced development of the shahar. Revenue earning landuses should be given first priority. For example, market, commerce, etc. which will help increasing revenue for government expenditure and at the same time will provide day to day services to the people. Production and employment oriented landuses such as industry may be given next priority. Side by side infrastructure development should be made to facilitate the functioning and operation of the above said landuses. Urban services, health and education will come next. Provision of housing facilities for the people arrived in the shahar by induced attraction effect may receive next priority. Recreational facilities may be provided at the last stage.

On the basis of priority the projects should be identified and cost of the same should be worked out accordingly for implementation. The cost generally includes the cost for acquisition of land, land development (if required) cost, cost of construction & infrastructure development, operational and maintenance cost etc. The cost should be worked out prior to the time of implementation by the respective implementation authority and finance to be arranged accordingly. Side by side to public sector, private sector should also be encouraged and allowed for implementation of some projects of the plan.

## 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 12% 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 control. 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 Boro Paurashava 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 Paurashava 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 changed in future. So to cope up with the changing conditions the plan should be revised after every three to five years.

A. MOJZA WISE POPULATION AND OTHER SERVICES AVAILABLE IN THE 18 II CATEGORY SETTLEMENT IN THE UPAZILA BERA

SOURCE: FIELD SURVEY 1986.