

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

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LANDUSE / MASTER PLAN  
BARLEKHA UPAZILA SHAHAR  
MOULVIBAZAR ZILA

1990

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BARLEKHA UPAZILA SHAHAR  
MOULVIBAZAR ZILA

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## Chapter One

### I N T R O D U C T I O N

This is the Final Report (Report-VI) of the project "Preparation of Landuse/Master Plan for Barlekha Upazila Shahar of Moulvibazar Zila". As indicated by the TOR this report contains background information & methodology of planning for conducting the project (this chapter), general upazila information and its regional context (chapter two), identification procedure and description of the study area and catchment area and description of the existing landuse (chapter three), forecast made on future population, household size, density level and labour force (chapter four), planning principals and detail description of the proposed landuse map (chapter five) and finally programming and implementation issues (chapter six). This whole report is prepared on the basis of:

- Secondary information collected from various sources,
- Recently conducted detail land use survey and socio economic survey of the project area.
- Instructions and guidelines provided in the TOR
- Information provided by the local level people's representatives and government officials and finally
- Consultant's visualization of the future Barlekha upazila shahar area

#### 1.1 Background Information

##### 1.1.1 Project Justification

The present Government of Bangladesh, after taking over in 1982, has formulated the "Local Government (Thana Parishad and Thana Administration Re-organization) Ordinance 1982" which was amended in 1983, (whereby the term "Thana" was substituted by "Upazila"). As a result the government has taken the most important programme to decentralize administration to the lowest tier - the upazila level. The principle aims of such an endeavor are to -

- bolster rural local bodies
- create an effective local government to take the administration nearer to the people
- facilitate target populations effective participation in administration and development.

Apart from the administrative responsibilities, the programme also proposes to provide public services and facilities so as to make them accessible to the rural mass and thus improving the living conditions in those areas.

Whole programme could be considered as a positive step towards changing the trend of development in the country for two main reasons -

- vast majority of the population in this country is deprived of most essential basic services which ultimately hinder national development.
- instead of providing services in a few large urban centers - thus drawing the population to those centers - it is better to bring those services close to the people within their easy reach.

The upazila programme also emphasizes that along with serving as administrative center, the upazila center should also serve as economic and cultural center for the sub-region. In other words it should be the focal point for all kinds of activities. As activities for all sectors would be initiated, it would lead to concentration of population and expansion of physical development at the center. In this situation,

"It is felt that upazila center should grow up expeditiously and preparation of landuse plan for such a centre is of utmost importance for better utilization of land, people and natural resources" (TOR).

As already explained upazila development programme is sound both in concept and principle. And preparation of landuse/master plan is also a pragmatic decision so as to have -

- orderly development at that level
- maximum utilization of scarce natural and financial resources
- appropriate structure of such a center with clearly defined zone of activities.

- as a whole, foundation for about 400 potential urban centers in the country which will serve as the lowest tier in an appropriate urban hierarchy.

Urban Development Directorate, with the help of private consultants, is entrusted with the Job of preparing the Landuse/Master Plans for 397 upazila shahars and 44 newly created zila shahars in different phases.

#### 1.1.2. Project Objectives

The main objectives of the present project is to provide some kind of a guide plan for the area, so that individual development attempts/projects of all the parties involve - government, autonomous, private - lead to a meaningful whole. So basically the project aims at -

- knowing, with some confidence, what really exists now and
- identifying what could be realistically achieved under the prevailing situation.

According to the TOR, the main objectives of the preparation of landuse/master plan of the upazila shahar are as follows:

- To bring about significant improvement in the quality of life in the rural areas through adequate provision of government services and facilities of the basic needs.
- To prepare the landuse/master plan in order to serve as location/spatial guidelines indicating places of work, residence and recreation.
- To facilitate public and private development at the upazila center through physical planning approach.
- To serve as technical backup for planned growth of human settlements in the country specially at the upazila level so that a significant segment of rural migrant to cities are induced to work and live there.
- To enhance the capability of physical planning services in the private sector in managing the preparation of landuse/master plan of the urban center.

### 1.1.3 Scope of Services

The TOR has identified in detail, the services and/or steps in preparing the landuse/master plan for a upazila shahar. Instead of going into in that kind of elaborate detail, the basic services expected from the consultant could be as follows:

- Identifying the study area for the shahar for detail landuse and socio-economic information survey.
- Gathering information on the general physical features of the upazila and detail existing landuse survey of the shahar area.
- Collection and extrapolation of socio-economic and demographic information.
- Compilation and analysis of the data and information collected from secondary and primary sources and forecasting future population and service requirements.
- Preparation of detail landuse plan for the shahar.
- Identification appropriate implementation strategy consisting of management and institutional arrangement, development control mechanism etc.

### 1.2 Planning Approach

This part of the chapter outline the process of conducting the various components of this project starting from the mobilization works to formulating implementation strategy. As instructed by the TOR and Agreement total work will be submitted in four reports. Flow diagram of activities along with time frame and output is provided at the end of this chapter (Figure 1).

#### 1.2.1 Mobilization

In fact mobilization work was initiated as soon as the work order was received from UDD. By the time agreement was signed the project was progressing. All the team members were assigned with individual responsibilities and were made aware of the time frame of submission of four reports. The intention was to finished the project not only within the stipulated time, but also efficiently and smoothly.

### 1.2.2 Information Collection

A large amount of information is required for the project and both secondary and primary data are going to play important role. Appendix A at the end of this report has identified the broad category information and their possible sources.

### 1.2.3 Primary Data

Field visits, socio-economic survey, existing landuse survey will provide the necessary primary data about the study area. Some of the primary data will not be quantitative at all. Like visual impression of the study area. Discussion with a selected number of target population will also provide important primary data regarding the development required in the area.

### 1.2.4 Secondary Information

A number of BBS Publication will contribute significantly in the collection of Secondary information. Some of them are -

- Upazila Statistics of Bangladesh, 1988.
- Village Population Statistics, Sylhet District, 1974.
- Bangladesh Population Census, 1981, Community Tables of All Thanas of Sylhet District, Part-II.
- Bangladesh Statistical Yearbook, 1986.
- Bangladesh Socio-Economic Indicators, 2nd Edition, 1986.
- Population Census, Sylhet District, 1961.

Most of the mouza maps were collected from GGLRS Office both in Dhaka and Moulvibazar. Upazila Parishad, Union Parishad will also provide important secondary information. Contour Maps of the study area are important requirement and have to be provided by BWDB. Regional road network, both existing and future programme has to be collected from local Roads and Highways Department.

### 1.2.5 Reconnaissance Survey

After the Agreement was signed with UDD and some preliminary information was arranged, a reconnaissance field visit was performed by some of the key persons of the project team. The idea is to familiarize with the project area and identify its general characteristics, potentials and problems. During this visit discussion meetings were held with most of the high ranking Upazila Officials and a tentative study area was selected for subsequent landuse survey, socio-economic survey etc.

### 1.2.6 Local Information Sources

Most of the upazila level information sources are identified in the Appendix A. Apart from the Upazila Parishad, all the public utility service offices have provided required information. But to ensure adequate amount of public participation in the landuse plan the consultant has conducted structured discussion with a cross section of local population. This will ensure reflection of desire and expectations of local population in the plan.

### 1.2.7 Socio-Economic Survey

To get the detail picture of the socio-economic condition of the population within the study area socio-economic survey was conducted on a representative sample of population. Among other things the survey looked for -

- Population characteristics in terms of age, sex, literacy situation,
- Household characteristics and income expenditure pattern of the household.
- Migration situation within last 20 yrs.
- Landownership and landuse change situation.
- Homestead and other related facilities etc.

A separate survey was conducted to identify the area of influence of the shahar. It tried to establish the mode of transportation, frequency of use, distance covered and type of service sought by the population.

### 1.2.8 Existing Landuse and Other Physical Features Survey

For the existing landuse survey and base map for the study area (Tentatively identified) has been prepared at a scale 1" = 330'-0" (1:4000). And a group of qualified and experienced surveyors were be employed to conduct the survey.

All the major landuse categories and their extent of use was identified. The surveyors were also required to identify all roads, walkways appropriately on the map.

The contour maps were not available from BWDB till the completion of this report. As such the Consultant prepared a general land elevation map of the study area identifying different co-related features.

The physical survey also identified all the utility provision networks like electricity, water supply, telephone lines, gas supply etc.

#### 1.2.9 Data Processing and Analysis

All these data and information gathered from primary and secondary sources were processed manually and relevant information was derived. Apart from the maps, presentation of information is mainly as written text and a large number of tables.

#### 1.2.10 Forecast and Future Requirement

Based on available relevant data certain assumptions were made on future population increase and forecast of population was made. For identifying the required services while the TOR has contributed significantly, the consultant has also considered what could be practically provided.

#### 1.2.11 Preparation of Landuse Map

The landuse plan is prepared on the basis of the guidelines and standards provided in the TOR and also taking care of the potentials and peculiarities of the shahar. Most important considerations are

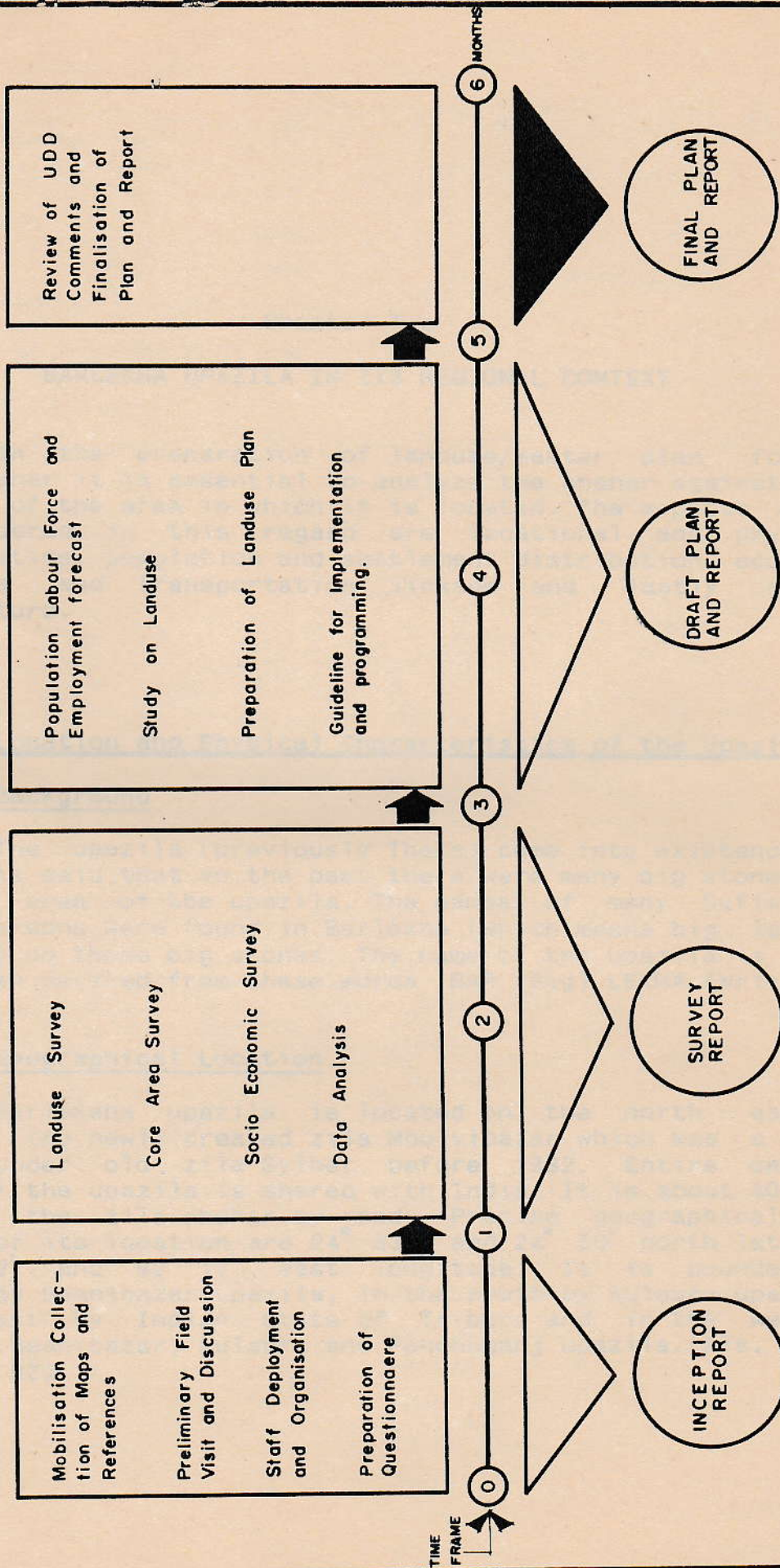
- not to encroach into agricultural land without strong reasons
- to protect/use the existing structure and road network as much as practicable so as to minimize the cost.

#### 1.2.12 Implementation Strategy

While it is beyond the scope of this project to outline detail strategy for implementing the proposals in the landuse plan certain guidelines are identified for development control, manpower and institutional arrangement.

FIG. 01

# WORK FLOW DIAGRAM WITH TIME FRAME & OUTPUT



## Chapter Two

### BARLEKHA UPAZILA IN ITS REGIONAL CONTEXT

In the preparation of landuse/master plan for an upazila shahar it is essential to analyze the shahar against the background of the area in which it is located. The aspects which are considered in this regard are locational and physical characteristics, population and settlement distribution, economic performance and transportation linkage and lastly social infrastructure.

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

##### 2.1.1 Background

The upazila (previously Thana) came into existence in 1940. It is said that in the past there were many big stones in the hilly area of the upazila. The names of many Sufis and saintly persons were found in Barlekha (which means big letters in writing) on those big stones. The name of the upazila is said to have been derived from these words "BAR (Big) LEKHA (Writing)".

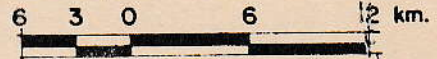
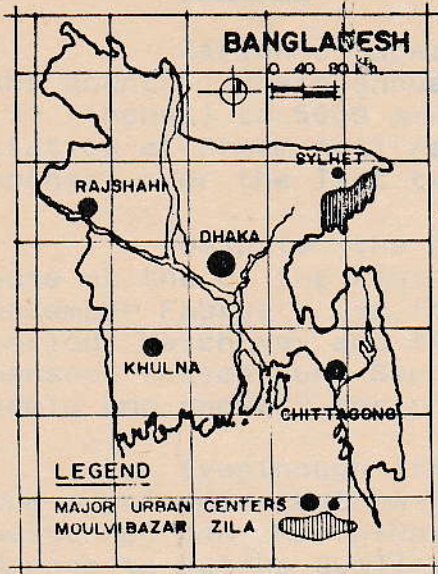
##### 2.1.2 Geographical Location

Barlekaha upazila is located on the north - eastern corner of the newly created zila Moulvibazar which was a sub-division under old zila Sylhet before 1982. Entire eastern boundary of the upazila is shared with India. It is about 40 kms away from the zila shahar by road. Precise geographical co-ordinates of its location are  $24^{\circ} 33'$  and  $24^{\circ} 50'$  north latitude and  $92^{\circ} 02'$  and  $92^{\circ} 17'$  east longitude. It is bounded in the north by Beanibazar upazila, in the south by Kulaura upazila, in the east by Indian state of Tripura and in the west by Golapganj, Beanibazar, Kulaura and Fenchuganj upazila. (Pls. refer to Figure 02).

FIG. 02

# MOULVIBAZAR ZILA

(PROJECT LOCATION MAP)



SYLHET ZILA

BAR LEUKHA

RAJNAGAR

HOBIGANJ ZILA

MOULVI BAZAR

INDIA

24°  
30'

KULAURA

KAMALGANJ

SREE MANGAL

INDIA

## LEGEND

- INTERNATIONAL BOUNDARY
- ZILA BOUNDARY
- UPAZILA BOUNDARY
- ZILA SHAHAR
- UPAZILA SHAHAR
- RAILWAY
- MAJOR ROADS
- OTHER ROADS
- RIVER
- STUDY UPAZILA

### 2.1.3 Climate

Barlekha upazila is located in the wettest region of the country, where annual mean rainfall ranges from about 2250 mm (90 inches) to 5000 mm (200 inches). The nearest Meteorological station at Sreemangal recorded an average rainfall 2540 mm (100 inches) over the last two decades.

Despite the heavy rainfall, the climate is about the same as the of the rest of the country. The cool and dry winter, December-February is followed by a hot and showery pre-monsoon period March-May and then by the relatively cooler but very wet monsoon season June-September. This is followed by a transitional humid and showery period up to the beginning of winter.

Eventhough the upazila as a whole is not affected by the cyclones, but winds accompanying thunderstorms (north-westerns) in March-May and in September-November often cause damage to kutchha dwelling units.

The climate of the upazila is marked by extreme humidity. During the month June/July it is as high as 90-95 percent in the morning and about 40-50 percent in February March around 12.00 noon.

During 1979-82 periods maximum temperature recorded was 31.7°C in June 1981 and minimum was 12.1°C in January, 1979. But temperature in some places of old zila sylhet drops below 10°C during winter.

### 2.1.4 Physiographic Conditions

Entire topography of the Barlekha upazila is covered by undulating broad valleys in the east and south eastern part and in the east and north-east part by huge saucer like depressions known as 'HAORS'. The valleys are mostly covered by numerous tea gardens. The haors, although appear to be huge lakes during the rainy season, dry up during the winter and forms magnificent grazing grounds.

Subrecent alluvium of the Surma-kushiyara Floodplains as Goainghat (gray silty loams) or Phagu (gray firm clays) soils group are occurring in the upazila. The subrecent piedmont plains as gray sandy clay loams are dispersed in the center mainly along the axis north-east and south-west. The hills in the south and north-east are covered by the Barlekha soil association in the form of fine sandy clay loams.

The general composition of different types of soil are 46 percent doash, at 21 percent Bele, 15 percent Etel, 10 percent Kankhar and 8 percent others. General level of farm land is 45 percent High, 35 percent medium and 20 percent low.

2.2 Population & Settlement Distribution

2.2.1 Zila

Moulvibazar zila was a sub-division belonging to old zila sylhet before the administrative decentralization in 1982. Total area of the zila is about 2701 sq.km. (1003 sq.mile) which is about 1.83 percent of the total area of Bangladesh. The zila constitutes of 6 upazilas, 67 Unions/Wards, 893 mouzas/Mahallas. According to 1981 census, total population of this zila was 1171606 (about 1.35 percent of Bangladesh) of which 601736 (51.36 percent) were male and rest 569870 (48.64 percent) were female. About 6.60 percent of the population lived in the defined urban areas and rest in rural areas. The overall density was 434 persons per sq.km. Average household size is 5.9 which is less than Bangladesh figure 5.7. The population of the area, now under the administrative boundaries of this zila were 742081 and 991768 in the census years 1961 and 1974 respectively. The trend of population change, density within the last two decades is provide in the table below.

Table 01: Area and Population Statistics of Barlekha and Other Upazilas of Moulvibazar Zila

Upazila	Area Sq.km	Population			Density (1981) P/Sq.Km.	% Variation		
		1961	1974	1981		1974 over 1961	1981 over 1974	1981 over 1961
Barlekha	458	106005	145781	169515	370	37.52	16.28	59.91
Kamalganj	484	108001	143314	168581	348	32.70	17.63	56.09
Kulaura	679	185833	249008	293455	432	33.91	17.85	57.91
Moulvibazar	339	135732	170886	204103	602	25.90	19.44	50.37
Rajnagar	337	97290	127008	154268	458	30.55	21.46	58.57
Sree Mangal	404	109220	155771	181684	450	42.62	16.64	66.35
Moulvi- bazar Zila	2701	742081	991768	1171606	434	33.65	18.13	57.88

Source: BBS, Sylhet District Statistics, 1983

Population of Moulvibazar Zila has increased by 57.88 percent within 1961-81 period. Among the upazilas population density varies from 602 persons per sq.km. in Moulvibazar sadar upazila to 343 persons per sq.km. in kamalganj upazila. Density is highest in Moulvibazar Sadar upazila because it had the sub-division headquarters before and has the zila shahar now.

## 2.2.2 Within the Upazila

Both in area and population Barlekha is a medium size upazila of Moulvibazar zila. Divided into 12 unions, 156 mouzas and 304 villages the total area of the upazila is 458 sq.km. (177 sq.mile). According to 1981 population census, total population of the upazila was 169515 of which 85827 (50.63 percent) were male and 83688 (49.37 percent) were female. The overall density was 370 persons per sq.km. which is much lower than the population density of the zila (434 persons /sq.km.) and country (605 persons /sq.km.).

Total number of households lived in the upazila in 1981 was 26417 with an average size of 6.5 which is higher than the national average.

About 3570 (about 2.10 percent) population lived in the defined urban area of 2.6 sq.km. in the upazila.

Table 02: Area, Trend of Population Change, Density Among the Unions of Barlekha Upazila, 1961-81

Union	Area		Population			Household (1981)	Density P/Sq.Km. (1981)
	Acre	Ha	1961	1974	1981		
Barlekha	9490	3842	13884	18575	22203	3569	578
Borui	3776	1529	7775	13765	12433	1897	813
Doakshin- bag Uttar	4742	1920	5512	7442	8814	1337	459
Dhakshin- bag Dhakshin	8389	3396	12032	16647	19241	2949	566
Dasherbazar	5659	2291	7415	10493	11858	1919	517
Jurieast	5349	2166	7356	10362	11764	1848	543
Paschim Juri	7408	2999	7753	10316	12397	2172	413
Nijbahadurpur Uttar	6082	2462	8920	12743	14265	2127	579
Shahabajpur Dakshin	11073	4483	8507	1630	13604	2292	303
Shahapajpur	11214	4540	9294	12001	14862	2384	327
Suzanagar	5191	2102	9074	12902	14510	1974	690
Talimpur	18495	7488	8483	8483	13564	1949	181
<b>Barlekha Upazila</b>	<b>96874</b>	<b>39220</b>	<b>106005</b>	<b>145781</b>	<b>19515</b>	<b>26417</b>	<b>432</b>

- Source:
1. BBS, Bangladesh Population Census, 1981, Community Tables of All Thanas of Sylhet District, Part II, 1985.
  2. BBS, Village Population Statistics, Sylhet District, 1974.
  3. Population Census 1961, Sylhet District.

The population of this upazila in previous census years 1961 and 1974 were 106005 and 145781 respectively. The trend of population change, density within the last two decades is provided in table 02.

Within the upazila population is not evenly distributed. With an average of 432 persons per sq.km, population density varies from 181 person per sq. km in Talimpur Union to 830 person per sq. km in Borni union. Population density in Barlekha unions where present shahar area is located is 578 person per sq.km.

### 2.2.3 Migration

There is hardly any data regarding the migration situation of the population both for the zila and upazila. As such it is difficult to give any indication in this regard. Considering the general situation prevailing in the country, however, it can be reasonably assumed that some percent of the rural population of the zila migrate to the urban areas of the zila and to some other zila shahars also. Considering the prevailing situation in Moulvibazar zila as a whole, it would also be reasonable to assume that a small percent of population also migrates abroad. It is also possibility that some percent of rural population of Barlekha upazila will come to the shahar area in course of time.

For the study area of Barlekha upazila shahar it is possible to provide some indicative information about migration from the socio-economic survey data which is provided below.

The survey was carried out on 110 households and a population numbering about 740 representing 11.19 percent of the total population of the study area. It was assumed that households residing in the study area for more than 20 yrs. are permanent residents and those residing less than that are yet to be so. According to that definition about 75.46 percent of the respondent households are permanent residents and rest 24.54 percent have settled within the last 20 yrs.

Out of the people who have settled in the study area in the last 20 yrs. most are from the same upazila and majority of them settled here due to service.

Table 03: In-Migration Situation in the Study Area of Barlekha Upazila shahar, 1989

Category	Number	% of the total Respondent	
Permanent Resident	83	75.46	
Recently Settled	27	24.54	
<b>Origin</b>			
		% of the recently settled	
● Within same upazila	- 18	16.36	66.67
● From another upazila	- 3	2.73	11.11
● From another Zila	- 6	5.45	22.22
● From another country	- -	-	-
	27	24.54	100.00
<b>Cause</b>			
● Service	- 21	19.09	77.78
● Business	- 5	4.54	18.52
● Education of Children	- 1	0.91	3.70
	27	24.54	100.00
<b>Total</b>	<b>110</b>	<b>100.00</b>	

Source: Socio Economic Survey, Barlekha Upazila Shahar Study Area, 1989

Majority of the households (91.82 percent) do not have anyone in the family who has settled somewhere else permanently. Only 8.18 percent of the respondent households have someone settled some where else permanently. It could be inferred that out migration from the area is rather low and insignificant.

Table 04: Out migration Situation in the Study Area of Barlekha Upazila Shahar, 1989

Category	Number of Households	% of the total	
A. Without any family member settled somewhere else permanently	101	91.82	
B. With one or more family member settled somewhere else permanently	9	8.18	
<b>Location of Settlement</b>			
		<b>% of (B)</b>	
● Within the upazila	- 3	2.73	33.33
● Another upazila	-	-	-
● Another Zila	- 6	5.45	66.67
● Another Country	-	-	-
	9	8.18	100.00
<b>Cause</b>			
● Service	- 3	2.73	33.33
● Business	- 6	5.45	66.67
	9	8.18	100.00
<b>TOTAL</b>	<b>110</b>	<b>100.00</b>	

Source: Socio Economic Survey, Barlekha Upazila Shahar Study Area, 1989

Service and business seems to be the causes of people moving out of the study area.

It was also checked whether there is temporary migration among the population during any specific period of time. The results are provided in table 05.

It appears that most of these people who go out temporarily are agricultural labour and they move to another place within the upazila during cropping season.

Table 05: Temporary Out-migration Stitution in the Study Area of Barlekha Upazila Shahar, 1989

Category	No. of Household	% of the total	
A. Without any Temporary Out-migration	92	83.64	
B. With Temporary Out-migration	18	16.36	
<b>Location of Migration</b>			<b>% of B</b>
● Within the upazila	- 15	13.63	83.33
● Another upazila	- 3	2.73	16.67
● Another Zila	- -	-	-
	18	16.36	100.00
<b>Cause</b>			
● Agri. Labour	- 12	10.91	66.67
● Service	- -	-	-
● Non-Agri. Labour	- 6	5.45	33.33
● Business	- -	-	-
	18	16.36	100.00
<b>TOTAL</b>	<b>110</b>	<b>100.00</b>	

Source: Socio Economic Survey, Barlekha Upazila Shahar Study Area, 1989

#### 2.2.4 Settlement Distribution

As the western part of the upazila is occupied by haors and eastern boundary with tea gardens, human settlements are mostly located in the centre along a north south axis - along the railway line and pucca road from Kulaura to Beanibazar.

Even in these areas the development of human settlements are mostly scattered cluster of homesteads linked by kutcha paths/walkways or not at all linked with each other. Along the major roads development is to some extent dense.

2.3 Economic Performance and Transportation Linkage

2.3.1 Employment Situation

According to population census persons 10 years and above are considered part of the potential labour force. The number of such persons in Barlekha upazila and Moulvibazar zila were 114435 and 808498 respectively in 1981 which were 67.50 percent and 69.00 percent of their respective total population. But out of those potential Labour force only 38.5 percent (44089) and 43.9 percent (354698) were engaged in different earning activities. Rest of the potential labour force were identified as "Not Working" "Doing Household Work" and "Married Women". All these statistics indicate the under employment and lack of employment opportunities in Barlekha upazila and Moulvibazar zila.

Table 06: Population and Labour Force Statistics of Barlekha Upazila and Moulvibazar Zila, 1981

	Total Pop.	Pop. 10 Yrs+		Labour Force 10 Yrs. +			LF as % of Pop. 10 Yrs +	
		Total	Male	Female	Total	Male		Female
Barlekha	169515	114435	58305	56150	44089	28020	16069	38.5
Moulvi-bazar	1171606	808498	420133	388365	354698	316361	38337	43.9

Source: 1. BBS, Upazila Statistics, Vol One, 1985  
2. BBS, Sylhet District Statistics, 1983.

Eventhough the female population constitute nearly 50 percent of the potential work force, their participation in income generating activities was quite insignificant. Participation of women in labour force is 9.48 percent in the upazila and 10.81 percent in the zila. This could be one of the main reasons of underemployment situation in both upazila and zila.

Among the active labour force, different occupational classifications are provided in table 07.

As expected (59.67 percent in upazila and 55.86 percent in Zila) of the population were directly tied with agriculture. It also indicates that employment related with secondary agriculture (food processing etc.), manufacturing, business etc. are not very developed in both zila and upazila.

Table 07: Occupational Classification of Labour force in Moulvibazar Zila and Barlekha Upazila, 1981

	Total Labour Force	Occupational Classification				Others
		Agriculture		Non-Agri.		
		Cropp.	Non-Cropp.	Mafg.	Business	
Barlekha	44089 (100.00)	26308 (59.67)	1712 (3.88)	4011 (9.09)	3015 (6.84)	9043 (20.51)
Moulvi bazar	354698 (100.00)	194600 (54.86)	9500 (2.68)	47180 (13.30)	24944 (7.04)	78474 (22.12)

Note: Figures in parenthesis indicate the percentage of each category with total of zila/upazila.

Source: BBS, Upazila Statistics, Vol. One, 1985.

### 2.3.2 Agriculture/Non-agriculture

Moulvibazar Zila differs considerably from the rest of the country in terms of topography, rainfall, soil condition etc. As such agricultural production is different from other zilas. Eventhough it is part of Bangladesh production of Jute in this zila is not worth mentioning and production of wheat is nearly non-existent. But the zila is the core of tea production in the country. The administrative boundary of this zila contains 78 (60 percent) out of the total 130 gardens in Bangladesh. Total production of tea was 55330048 lb. in 1980-81 which was 63 percent of total production in the country. In the same year tea gardens have occupied 18.6 percent of total cultivable land in the zila. And if the proposed expansion has taken place, it now occupy 36.95 percent of total cultivable land. Table 08 provides the details of tea gardens and production in Moulvibazar zila.

Moulvibazar Zila was also part of one of the very few Old Zilas (Sylhet) which has surplus food production (rice + wheat) in 1981-82. In that year the cultivable land within the administrative boundary of this zila has produced 16100 tons of surplus food grain.

About 24771 acres of land is classified as reserve forest in the zila which is a significant portion of the total reserve forest of the country.

Table 08: Estimate of Tea Production in Moulvibazar Zila 1980-81

Upazila	Total Cultivable Land ('000 acre)	Tea Production			
		No. of Garden	Actual Area (acre)	Proposed Area (acre)	Production (in lb.)
Barlekha	52	14	8180	20760	6825719
Kamalganj	58	14	14434	32009	12044307
Kulaura	86	25	15705	25000	13104880
Moulvibazar	52	3	1408	3250	1174892
Rajnagar	54	10	6450	16329	5382138
Sree Mangal	51	12	20131	34186	16798112
Moulvibazar Zila	356	78	66308	131534	55330048
Old Zila Sylhet	669	117	101170	212159	84420295
Bangladesh	-	130	109000	-	87048000

Source: BBS, Sylhet District Statistics, 1983.

Out of the total area of 668800 acres in the zila 357119 acres (53.40 percent) were under cultivation against the national figure of 62 percent in 1981-82. The intensity of cropping is 151 percent about the same as Bangladesh average (154 percent). Out of the total land under cultivation only 7.73 percent were under different means of irrigation in 1982-83,

Modern industry of significant nature is not available in this zila. But it is noted for the production of Monipuri textile goods. Apart from that there are quite a large number of cottage and handlooms type small scale industries and a few rice mills.

Barlekha upazila is also a typical agriculture area. It has 14 tea gardens out of the total 78 in the zila with a production of 6825719 lb. (12.34 percent of the zila). Total area coverage of tea gardens (8180 acres) is about 16.54 percent of the total cultivable land in the upazila. Total land under cultivation is about 49444 acres which is 43.65 percent of the total area of the zila. Intensity of cropping was about 140 percent in 1981-82, which is much less than zila and national average. Amount of reserve forest is about 3966 acres which is nearly 16 percent of the total reserve forest in the zila.

Barlekha is a typical upazila of the country which can not produce enough food grain (rice + wheat) to meet its own demand. Shortage of food grain was 7200 tons in 1981-82.

Apart from the tea factories in the tea estates there is no industrial establishment worth mentioning in the upazila. Few cottage and handloom type small scale industries, some rice mills exists there.

Table 09: Land Utilization and Intensity of Cropping in Barlekha Upazila, Moulvibazar Zila and Bangladesh 1982-83

Upazila	Area	Not* Avail- able	Curr- ent Fel- low	Cropped Area				Inten- sity of Crop.	
				Sin- gle	Dou- dle	Triple	Net Gross		
Barlekha	113	36	3	34	16	2	52	73	140
Moulvibazar	669	172	23	204	134	19	356	527	148
Bangladesh	35308	6876	1278	11336	8250	1689	21276	32906	155

Note: \* Not available for cultivation  
All figures are in '000 acres

Source: BBS, Sylhet District Statistics, 1983.

### 2.3.3 Income Expenditure Pattern

It is difficult to analyze the income expenditure situation of the population in the zila and concerned upazila as there does not exist any secondary data. The situation in the study area could be analyzed from the socio economic survey data which is provided below.

Finding out about the income/expenditure pattern of the respondent population was a difficult one. There were many difficulties. Firstly the people were highly suspicious when asked about their income expenditure amount. It is usually not revealed easily, at least not to a unknown person. Secondly, most of the households have different heads of income, some of them are once in a year, some periodically, and some are not predictable. As such it is difficult for a households (especially poor ones) to keep track of income-expenditure pattern. However an attempt was made and findings are presented in Table 10.

The table indicates that the large majority of households have the monthly income and expenditure within the range of Taka 1500 only. For the case of income it is 46.37 percent and for the case of expenditure it is 43.36 percent of the total respondent households. The percentage of household decreases gradually as the range of income/expenditure increases. But it is interesting to note that percentage of households earning and spending more than Taka 5000/= (per month) is quite high in this area. Most of these households belongs to the large

business community or more likely have someone abroad - in U.K. or Middle East, which is rather a common phenomenon in this region. So it could be inferred that there are high percentage of households earning less Tk. 1,500/= per month and more than Tk.5000 per month, without much distribution in between. It could also be reasonable to assume that households with earning more than Tk. 4000 per month have fair chance to save some money.

Table 10: Monthly Income and Expenditure Pattern of the Respondent Households, 1989

Range in Taka	Income		Expenditure	
	Number of HH	%	Number of HH	%
Less than 1000	34	30.91	37	27.03
1000 - 1500	17	15.46	18	16.36
1501 - 2000	8	7.27	6	5.45
2001 - 2500	3	2.73	-	-
2501 - 3000	8	7.27	9	8.18
3001 - 3500	3	2.73	3	2.73
4001 - 4500	-	-	5	4.55
4501 - 5000	7	6.36	4	3.64
Above 5000	27	24.54	25	22.73
<b>TOTAL</b>	<b>110</b>	<b>100.00</b>	<b>110</b>	<b>100.00</b>

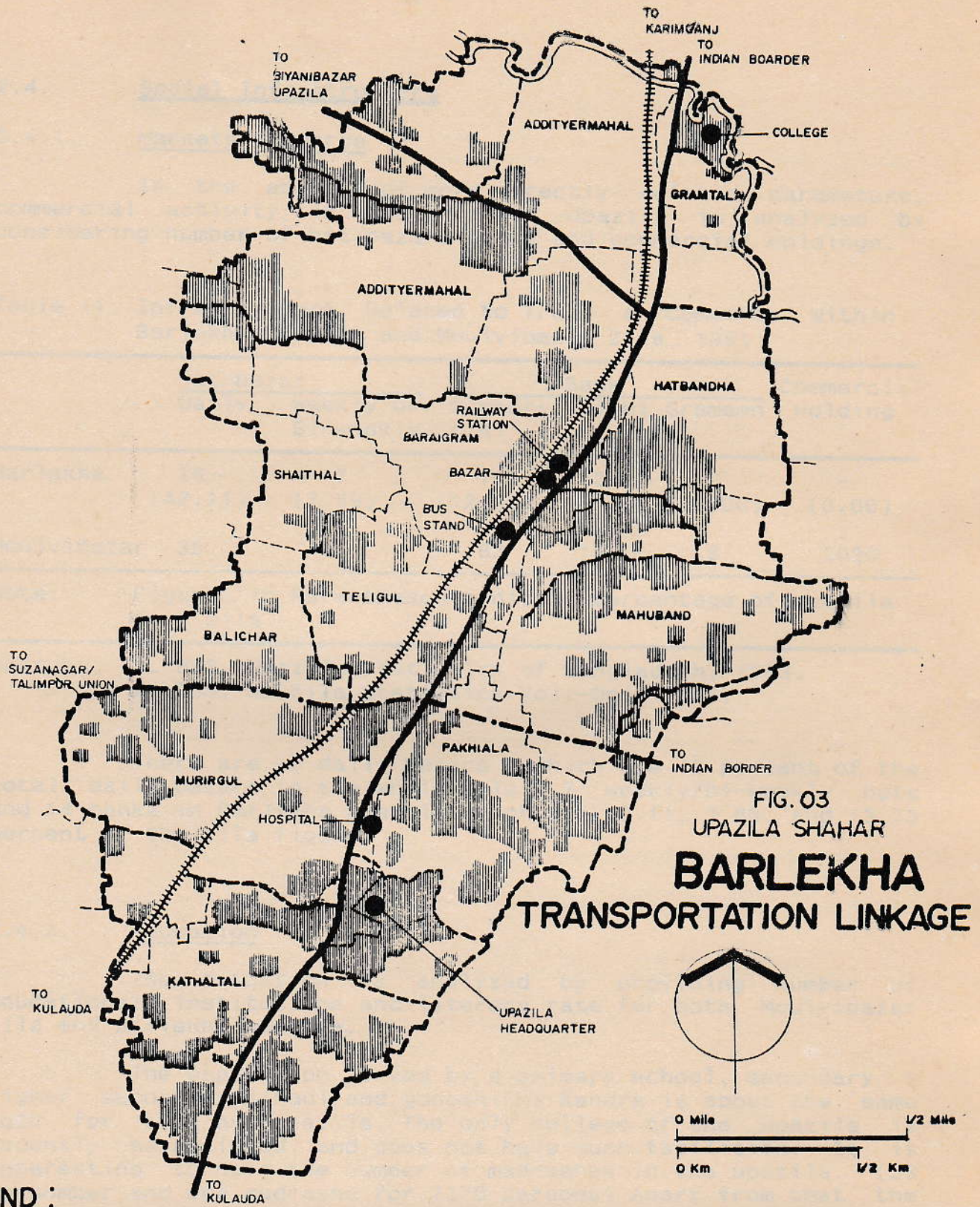
Source: Socio Economic Survey, Barlekha Upazila Shahar Study Area, 1989

#### 2.3.4 Transportation Linkage

Barlekha upazila shahar is located at a distance 40 kms. (approx.) from Moulvibazar zila shahar. The upazila shahar is approachable by road and rail from adjacent upazila Kulaura and beyond. Kulaura railway station is an important one as it connects capital city Dhaka with regionally important town Sylhet by rail. Beanibazar upazila shahar at north of Barlekha is accessible by pucca road. Apart from rail in inter-upazila communication bus/minibus play important role.

Within the upazila, the shahar is connected with most of the union parishads by kutchra roads. Country boats play a vital role in communication during the rainy season. Apart from buses most frequently used transports are rickshaws, by-cycles and some motor cycles.

There are about 10 km. metalled road and another 48 km unmetalled roads within the upazila. The transportation linkage of the study area with surrounding region is provided in Figure 03.



**LEGEND :**

- Pucca Road
- Semi Pucca Road
- Katcha Road
- Existing Builtup Area
- Study Area Boundary

Important Locations

2.4. Social Infrastructure

2.4.1. Markets/Commerce

In the absence of more directly related parameters, commercial activity in the zila and upazila is analyzed by considering number of hat/bazars banks and commercial holdings.

Table 11: Infrastructure Related to Trade & Commerce Within Barlekha Upazila and Moulvibazar Zila, 1981

	<u>Hat/Bazar</u>		<u>Bank</u>		<u>Commercial Holding</u>	
	<u>Daily</u>	<u>Weekly or Bi-weekly</u>	<u>Commer-</u>	<u>Krishi Grameen</u>		
Barlekha	16 (42.11)	7 (7.69)	10 (12.05)	2 (18.18)	2 (25.00)	- (0.00)
Moulvibazar	38	91	83	11	8	2020

Note: Figures in Parentheses indicate percentage of upazila over zila.

Source: 1. BBS, Upazila Statistics of Bangladesh, 1983.  
2. BBS, Upazila Statistics Vol.-One, 1985.

There are 16 daily bazars ( which are 42 percent of the total daily bazars in the whole zila), 7 weekly/bi-weekly hats and 14 banks in Barlekha upazila which are 42.11, 7.69, and 13.73 percent of the zila figure.

2.4.2. Education

The situation is analyzed by providing number of educational institutions and literacy rate for both Moulvibazar zila and Barlekha upazila.

The population served by a primary school, secondary & higher secondary school and gonoshikha kendra is about the same both for zila and upazila. The only college of the upazila is recently established and does not have much facilities. It is interesting to note the number of madrashas in the upazila. (23 in number and one madrasa for 7370 persons) Apart from that the number of other institution in each category seems fine. What really needs appropriate facilities in these institutions so that they can serve the population better by accommodating more students and providing appropriate educational services.

Table 12: Number of Educational Institution Number of Students and Population Served by Each Institution in Barlekha Upazila and Moulvibazar Zila, 1981

Institution	Barlekha Upazila			Moulvibazar Zila		
	No.	Student	Pop./Inst.	No.	Student	Pop./Inst.
Primary School	122	15583	1389	699	106288	1676
Secondary & Higher Secondary School	13	2673	13040	103	21793	11375
College	-(1)	-	-	4(2)	1678	292901
Madrasha	23	2700	7370	44	6531	26627
Gonosikha Kendra	12	300	14126	63	1305	18597

Source: BBS, Sylhet District Statistics, 1983

Literacy rate, considered among the population 5 Yrs.+, in Barlekha upazila is lower than Moulvibazar Zila considering total population and female population, but it is same considering male population. Literacy rate in the upazila is lower than national figures in all three categories.

Table 13: Situation of Literacy in Barlekha Upazila and Moulvibazar Zila, 1981

	Barlekha Upazila	Moulvibazar Zila
Total Population	169515	1171606
Literarte Person (5 years +)	Total	222738
	Male	151581
	Female	71157
Literacy Rate (%)	Total	22.5
	Male	29.7
	Female	14.5

Source: BBS, Upazila Statistics, Vol. One, 1985.

### 2.4.3. Health/Welfare

Position of Barlekha upazila against Moulvibazar Zila considering provision of health facilities is being analyzed by the information provided table 14.

Table 14: Health Facility Situation in Barlekha Upazila and Moulvibazar Zila, 1981

Facility	<u>Barlekha Upazila</u>		<u>Moulvibazar Zila</u>	
	No.	Pop./Fac.	No.	Pop./Fac.
Upazila Health Complex	1	169515	6	195268
- Bed	31	5468	186	6299
Charitable Dispensary	1	169515	14	83686
Qualified Doctor	10	16951	89	13164
Family Planning Clinic	5	33903	38	30832

Note \* Qualified Doctors include L.M.F., MMBS & above

Source: BBS, Sylhet District Statistics, 1985

Without going into the qualitative aspects of the existing health facilities, the statistics like 1 health complex for 169515 population, 1 bed for about 5500 population, 1 qualified doctor for 17,000 population, indicates a very grim picture of the situation. The situation in the whole zila is also not very encouraging.

### 2.4.4. Urban Services & Utilities

The situation is compared and analyzed by considering some of the commonly available services and facilities in those areas of Bangladesh.

Taking into account the fact that, without qualitative standard it is difficult to say what kind of facility should serve what number of population, it is still possible to conclude that facilities available in Barlekha upazila and Moulvibazar zila, are quite inadequate and not serving the population properly.

Table 15: Urban Services and Utilities in Barlekha Upazila and Moulvibazar Zila, 1981

Service & Utilities	Barlekha Upazila		Moulvibazar zila	
	No.	Pop./Fac.	No.	Pop./Fac.
Post Office	11	15411	120	9763
Telegraph Office	1	169515	6	195268
Cinema Hall	1	169515	10	117160
Dak Bungalow/ Rest House/ Hotel	4	42379	19	61663
Other				
Govt. Office	25	6781	194	6039
Public Library	1	169515	4	292901
Shallow Tubewell	968	175	6462	181
Village with Electricity	27	-	150	-

Source: 1. BBS, Sylhet District Statistics, 1983  
2. BBS, Upazila Statistics, Vol. One, 1985

## 2.5 Current Development Projects

During the financial year 1988-89 Barlekha upazila Parishad has undertaken Annual Development Programme (ADP) amounting to Tk.85,84,328/= with a total number of 107 projects from various sectors. Table 16 provides the sectors wise allocation of the ADP.

Table 16: Sectorwise Allocation of Development Fund and Number of Projects in the Financial year 1988-89

Sector	% of Allocation	No. of Projects	Total Project Cost (Tk.)	Allocation During 1988-89 (Tk.)
Agriculture, Irrigation Fisheries & Livestock	20	26	30,72,400/=	16,46,864/=
Small & Cottage Industries	5	3	4,11,716/=	4,11,716/=
Transportation & Communication	30	18	59,31,876/=	24,70,298/=
Housing, Physical Infrastructure, including Maintenance of Buildings	15	20	18,93,768/=	15,85,150/=

Sector	% of Allocation	No. of Projects	Total Project Cost (Tk.)	Allocation During 1988-89 (Tk.)
Health & Social Welfare	5	9	4,11,716/=	6,17,575/=
Physical & Mental Development of Children	7.5	5	6,17,575/=	6,17,575/=
Socio-Economic Infrastructure (Education)	12.5	18	12,12,828/=	10,29,291/=
Sports & Culture	2.5	3	2,05,850/=	2,05,858/=
Relief & Miscellenious	2.5	5	2,05,858/=	2,05,858/=
<b>Total</b>	<b>100</b>	<b>107</b>	<b>1,39,63,595/=</b>	<b>85,84,328/=</b>

Source: Upazila Parishad Annual Development Programme, 1988-89, Barlekha, Moulvibazar.

Among the 107 projects some of the projects have significant and direct bearing on the physical development of the upazila as a whole. Some of them are mentioned in Table 17.

Table 17: Important Development Projects in Barlekha Upazila During the Financial year 1988-89

Sector/Project	Estimated Project Cost (Taka)
<b>A. <u>Transportation &amp; Communication</u></b>	
1. Construction of 40'-0" R.C.C. Bridge on Chatar River near Gilasanggon Village (Nizbahadur pur)	6,66,779/=
2. Construction of 15'-0" Culvert on Pakshail Pra.B. Munshiganj Road near Pakshail Village	2,20,912/=
3. Construction of 20'-0" wide Culvert on the Darang Nala near Barlekha Railway Station Bazar on Dasher Bazar Road	2,31,358/=
4. Construction of 6'-0"x6'-0" box culvert near Jongimna village on Dasher Bazar Road	82,308/=
5. Construction of 30'-0" R.C.C. Box Bridge on Bardamai Road near Eidgah Bazar (East Juri)	3,90,290/=

Sector/Project	Estimated Project Cost (Taka)
6. Construction of 50'-0" R.C.C. Bridge on Sawran Ray Nala (West Juri)	4,21,036/=
7. Construction of 10'-0" R.C.C. Box culvert on Madapkmdha Road, east of kamalabari (Dhankin Bug).	1,17,571/=
8. Construction of 40'-0" wide R.C.C. Box Bridge on Hakalaki School Tila Road near Munshibari (Talimpur)	8,65,049/=
9. Construction of 25'-0" wide R.C.C. Bridge on Jamir-Suzanagar Road near Samsuddin Member's Residence (Barlekha)	2,63,687/=
10. Construction of 25'-0" wide Bridge on Dapna Chara west of Ratua (Shahbazpur)	3,88,633/=
11. Construction of 10'-0" wide Culvert on Changram-Taradram Road north of Mubasshar Ali's Residence (Shabazpur)	1,44,932/=
12. Construction of 40'-0" wide Brdige on Kuchir Khal near Vahal Charia.(Mizbahadurpur)	3,88,633/=
13. Construction of 60'-0" wide Bridge on Shankarpur-Mahmudnagar Road and on Baliachara near Shekandar Ali's Residence (Daserbazar)	5,19,286/=
14. Brick-soling (Hearing bone) of the first one mile road from Suzanagar to Rathuli (Suzanagar)	8,50,000/=
<b>B. <u>Housing &amp; Physical Infrastructure</u></b>	
1. Reconstruction of Office cum Community Centre in East Juri Union	3,28,580/=
2. Reconstruction of Office cum Community Centre in Barui UP Office	81,976/=
3. Providing shallow tubewell in the flooded Areas of the upazila	1,99,920/=
4. Construction of Drain in Chandgram Bazar	2,64,638/=
5. Construction of Tinsheed in Fakirbazar	2,19,956/=
6. Repair works at Barlekha Hospital Building	1,55,598/=

Sector/Project	Estimated Project Cost (Taka)
<b>C. <u>Health &amp; Social Welfare</u></b>	
1. Construction Sanitary latrine & one Tubewell at Barlekha old hospital area	40,000/=
2. Extension of Hakakuli Health sub-centre	1,00,000/=
<b>D. <u>Children Welfare</u></b>	
1. Establishing a library, music school, sports equipment, physical education training etc. for the children	1,52,575/=
2. Construction of Shishu Academy in the Upazila Complex	1,80,000/=
3. Construction of sealed latrin and supplying pure water in the primary school	10,000/=
<b>E. <u>Socio-Economic Infrastructure (Education)</u></b>	
1. Extension of Daser Bazar Govt. Pry. School	90,052/=
2. Construction of roof slab of Suzanagar Govt. Primary school	75,495/=
3. Construction of roof slab of Antail Govt. Primary School	48,556/=
4. Extension of Barlekha Govt. Primary School	68,920/=
5. Development of Siddeque Ali High School	1,50,000/=
6. Development of Hazi Yunus Ali Memorial Junior High School	2,16,000/=
7. Development of Barlekha College	1,63,440/=
8. Reconstruction of Bardamai Primary School	1,50,000/=
<b>F. <u>Sports &amp; Culture</u></b>	
1. Construction of Pavalion at NCM High School Play Ground	70,000/=
2. Construction of pavalion at Barlekha PC High School	70,858/=

Source: Upazila Parishad Annual Development Programme, 1988-89, Barlekha Upazila, Moulvibazar.

2.6 Synthesis: Identification of Hierarchy of Settlements Within Barlekha Upazila

Determining hierarchy of settlements within the upazila poses some problem as almost all the "settlements" do not have generally acknowledged physical boundary. As such it was decided the mouzas - which has established boundaries according to valid documents - will represent settlement in identifying the hierarchy of settlements within the upazila.

A number of facilities - representing different sectors were identified for the purpose and a format was prepared to collect data against each mouza. Also each service was assigned with an score point depending on its importance on the settlement. Table 18 provides the list of services and score points assigned against each of them.

Table 18: Indicators for Determining Hierarchy of Settlements Within Barlekha Upazila

Sector/Facility	Score Point
<b>Population</b>	
● Less than 1000	10
● 1000 - 2000	20
● 2001 - 3000	30
● 3001 - 4000	40
● 4001 - 5000	50
● 5001 - 6000	60
<b>Commerce</b>	
● Daily Bazar	05
● Weekly/Bi-weekly Hat	10
● Bank	10
<b>Industry</b>	
● Large	50
● Small & Cottage	05
<b>Education</b>	
● College	30
● High School	20
● Primary School	10
● Vocational Training Institute	20
● Madrasha	05
<b>Health</b>	
● Hospital/Upazila Health Complex	50
● Clinic/Doctor's Chamber	10
● Dispensary	05

Sector/Facility	Score Point
<b>Other Facilities</b>	
● T & T Establishment	20
● Post Office	20
● Electricity	25
● Mosque/Mandir/Church	05
● Bus/Rail Station/Ghat	20
● Park/Play Field	10
● Cinema Hall	10
<b>Road</b>	
● Pucca	20
● Semi Pucca	10
● Kutcha	05

During the field visit existing facilities of each mouza were identified and listed in the format (Table 20). It was also identified the centrality score of each mouza after assigning score points for each of the existing facilities (Table 21). Table 20 and 21 are provided at the end of this chapter.

After the total score against each mouza have been derived, mouzas categorized into different hierarchy classes according to following guidelines.

Score Range	Hierarchy Class
More than 175	A
175 to more than 135	B
135 to more than 75	C
75 and less	D

As there exists 156 mouzas in the upazila and it was found unnecessary to mention more than 25 mouzas in the hierarchy class as after that there does not exist much significant difference among them. Table 19 provides the hierarchy of major settlements within Barlekha upazila.

Table 19: Hierarchy of Major Settlements Within Barlekha Upazila

Settlement (Mouza)	Total Score Obtained	Hierarchy Class
Dhakkinbagh	200	A
Baroil Gram	190	A
Shabibns Pur	155	B
Kathal Tali	145	B
Pakhiala	145	B
Uttar Bhabanipur	145	B
Murshibad Kura	145	B
Suja Nagar	135	C
Gram Tola	135	C
Bashirpur	135	C
Chand Gram	125	C
Lagatia	125	C
Nijbahadur Pur	120	C
New Sanambagh	125	C
Sujaul	90	C
Muraul	90	C
Sunarupa	90	C
Hat Bandh	90	C
Dhamai TE	80	C
Mouhuban	75	D
Pura Damlotpur	55	D
Maijh Gram	45	D
Barkhola	40	D
Shridharpur	35	D
Nandua	30	D

The location of these mouzas are marked on the map (Figure 04) along with their hierarchy class.

TABLE:20: POPULATION AND AVAILABLE SERVICES IN DIFFERENT SELECTED MOUZAS OF BARLEKHA UPAZILA, 1989

NAME OF MOUZA	POPULATION '81	COMMERCE			INDUSTRY		EDUCATION				HEALTH			OTHER FACILITIES							ROAD				
		DAILY BAZAR	WEEKLY/BI-WEEKLY	BANK	LARGE	SMALL	COLLEGE	HIGH SCHOOL	PRIMARY SCHOOL	VOCATIONAL TRAINING INSTITUTE	MADRASHA	HOSPITAL / UPAZILA HEALTH COMPLEX	CLINIC / DOCTOR'S CHEMBER	DISPENSARY	T & T	POST OFFICE	ELECTRICITY	MOSQUE	BUS / RAIL STATION / GHAT	PARK	CINEMA HALL	PUCCA	SEMI PUCCA	KUTCHA	
GRAMTALA	780																								
BARAIGRAM	1248																								
KATHAL TALI	874																								
PAKHIALA	991																								
UTTAR BHABANIPUR	1736																								
BASHIRPUR	2090																								
DHAKKIN BHAG	3416																								
SUJA NAGAR	3406																								
MURSHIBAD KURA	3727																								
CHAD GRAM	2673																								
SHABUSPUR	1350																								
SUJAUJUL	1742																								
LAGATIA	1654																								
MIGBAHADUPUR	3614																								
NEWSONAMBHAG	5425																								

SOURCE: 1. Upazila parishad, Barlekha Upazila, 1989

2. Field Survey, 1989

TABLE-21: SCORE POINTS OBTAINED AGAINST EACH SERVICE BY DIFFERENT SELECTED MOUZAS OF BARLEKHA UPAZILA.

NAME OF MOUZA	POPULATION '81	COMMERCE			INDUSTRY		EDUCATION				HEALTH				OTHER FACILITIES							ROAD			TOTAL SCORE
		DAILY BAZAR	WEEKLY/SI-WEEKLY HAT	BANK	LARGE	SMALL	COLLEGE	HIGH SCHOOL	PRIMARY SCHOOL	VOCATIONAL TRAINING INSTITUTE	MADRASHA	HOSPITAL / UPAZILA HEALTH COMPLEX	CLINIC / DOCTOR'S CHEMBER	DISPENSARY	T & T	POST OFFICE	ELECTRICITY	MOSQUE	BUS / RAIL STATION / GHAT	PARK	CINEMA HALL	Pucca	SEMI Pucca	KUTCHA	
GRAMTALA	10	10			5	30		10		5							25	5				20	10	5	135
BARAIGRAM	20	5	10		5		20	10							20	20	25	5	20			20	10	5	190
KATHAL TALI	10	5	10	10				10		5					20	25	5	20				20		5	145
PAKHIALA	10							10			50			20	25	5						20		5	145
UTTAR BHABANIPUR	20	5	10	10			20			5				20	25	5	5	20				20		5	145
BASHIRPUR	30							10						20	25	5		20				20		5	135
DHAKKIN BHAG	40	5	10	10			20	10						20	25	5		20				20	10	5	200
SUJA NAGAR	40	5	10	10			20	10		5				20	25	5						20		5	135
MURSHIBAD KURA	40	5	10				20	10		5				20	25									5	145
CHAD GRAM	30	5	10	10				10		5					25	5		20						5	125
SHABASPUR	20	5	10	10			20	10		5				20	25	5	5	20						5	155
SUJAUL	20		10					10		5				20	25	5						10	5	5	90
LAGATIA	20		10	10			20	10						20	25	5								5	125
MIGBAHADURPUR	40		10					10										20						5	125
NEWSONAMBHAG	60	10						10							25	5								5	120

SOURCE: Analysis by Assoconsult Ltd. 1989.

## Chapter Three

### THE UPAZILA HEADQUARTERS

On the basis of information on existing demographic structure, socio-economic situation, landuse pattern, collected from both secondary and primary sources, landuse pattern, collected from the survey, the study area of the future Barlekha upazila shahar and its sphere of influence have been identified. This chapter elaborates the process and detail statistics of these areas.

#### 3.1 Sphere of Influence/Attractiveness

It is needless to mention the importance of knowing, with some confidence, the target population and identifying their various characteristics, in any development plan. In the case of landuse/master plan for an upazila shahar it will lead to proper identification of nature and extent of services required at the centre. But the process is rather lengthy and complicated one. On the one hand there is the problem of adequate, reliable data and on the other there are many factors which can not be over looked. Some of the factors which will greatly effect the influence area of a centre are :

- The nature of the services (both qualitative and quantitative) available at the centre.
- Prevailing transportation network and existing mode of communication.
- Presence of other centers (both higher and lower order) around the centre and available services at those centers.

Again the term "Sphere of Influence" is a variable one when consider against each specific service. The services which the upazila programme intends to provide at the centre is of different type and nature. As such each of them will influence a different area and target population. For example for the administrative and judiciary services population of the whole

upazila will be coming to the centre. But for any other service people will think about their own convenience like distance, mode of communication, quality of service, choice and price of goods etc. It would not be unrealistic to assure that people will be going to Zila shahar or even bigger centers for higher order goods and services. And for the goods and services of primary nature like daily perishable food stuff, daily household necessity people will definitely prefer nearest small trading place rather than upazila centre if it is far off.

Again some of the services dictate their own sphere of influence depending on the travel time to avail them and beyond that they become unattractive to the users. For example a primary school or an open space should be within 25-30 minutes walk in a rural area like Bangladesh.

But most important difficulty in identifying the catchment area of an upazila centre is to foresee an improved situation - improved in terms of quality and quantity of services at the centre, in terms of transportation system in the sub-region which will definitely attract more people and business to the centre.

Having discussed the problems identifying the catchment area of a centre, it was done in the case of Barlekha upazila shahar considering the following factors.

- The services which are available now
- Proximity of other growth centers within the upazila and available services at those centers as analyzed by hierarchy of settlement.
- Existing regional and within the upazila transportation and communication network.
- The information gathered from discussion with upazila officials, a cross section of population at the centre during field visit.
- The upazila shahar is also foreseen with improved services and transportation system in future as is the goal of the landuse/master plan.
- A questionnaire survey has been carried out at the different busy location of the upazila shahar to find out the distance people have covered, purposes for which they have come to the shahar and mode of transport they have used. Format for the survey is provided in Appendix C.

All these efforts has resulted in a probable catchment area or influence area of the Barlekha upazila shahar in all directions from the centre of the existing shahar area which in this case is the bazar and railway station area. Area, population, household Statistics of the mouzas come within the catchment area are provided in table 22 and the area is marked in the Map (Figure 04).

Table 22: Area and Population Statistics of the Catchment Area of Barlekha Upazila Shahar

Mouza	Involved Area Acre/Hectare	Population			Involved Household 1981
		1961	1974	1981	
Muraul	422/171	516	776	868	127
Bhagadahar	217/88	232	256	268	40
Gramtala(p)	442/179	184	256	376	125
Gulshar	944/382	1063	1577	1808	277
Maijgram(P)	297/120	321	451	475	71
Kulaura	321/130	155	671	740	94
Rashargram(P)	164/66	421	657	869	111
Dattar Mahal	447/181	39	71	47	7
Adityer Mahal(P)	718/291	313	415	1869	378
Badarmala	162/65	115	185	229	39
Galgata	119/48	125	285	365	50
Tekahalia	234/95	362	546	633	100
Mahadikona	513/208	769	1296	1573	251
Shaithal(P)	101/41	72	98	200	29
Bhagadahar	217/88	182	256	268	40
Balichar	75/30	128	164	321	57
Murirgol(P)	21/08	56	81	99	16
Jagduba	261/106	112	143	139	24
Ajmir	135/55	119	708	687	117
Dakshinbag(P)	506/205	221	495	2220	342
Kataltali(P)	47/19	138	125	212	35
Madabgul	231/94	154	275	295	46
Gangkwl(P)	236/96	445	560	719	95
Rukampur	511/207	704	779	923	140
Muchegoi	139/56	85	161	282	39
Amadpur	229/93	397	498	641	105
Mahuband(P)	148/60	272	412	676	99
Kechrigul(P)	541/219	382	518	781	133
Jafarpur	289/117	245	440	441	66
Hatbandha(P)	106/43	20	209	276	48
Gangajal	271/110	309	449	532	79
Taradarang	169/68	96	226	279	44
<b>TOTAL</b>	<b>9233/3738</b>	<b>8355</b>	<b>13815</b>	<b>19844</b>	<b>3194</b>

- Source: 1. Population Census, Sylhet District, 1961  
2. BBS, Village Population Statistics, Bangladesh Population Census, 1974.  
3. BBS, Community Tables of All Thanas of Sylhet District, Part-II, Bangladesh Population Census, 1981.

It appears that the expected zone of influence of the Barlekha upazila shahar is 9233 acres or about 37.38 sq.km. In the year 1981 about 19844 number of population lived in this area. This population has increased by 137 percent and 43.64 percent over 1961 and 1974 population of the area. The rate of population growth in 1961-74; 1974-81 and 1961-81 periods were 3.94 percent, 5.31 percent and 4.42 percent respectively. The total number of household in the catchment area in 1981 was 3194 resulting in an average household size of 6.21.

### 3.2 Definition of the Planning Area

According to Bangladesh Population Census conducted in 1981 the urban area of Barlekha upazila was 2.6 sq.km. with 3570 population and overall density of 1373 persons per sq.km. But during the field visit and survey and subsequent field analysis it has revealed that an small area around the existing bazar and railway Station area have that kind of density and some urban character. At the some time the physical development of this upazila shahar on the both sides of only pucca road from kataltali mouza to Gramtala mouza. Almost all the existing commercial, educational, administrative services are located within this ribbon type of development. Beyond this area most are scattered homestead areas located within the agricultural fields. Apart from taking into account the existing situation of the built-up area, the task of determining the planning area for Barlekha upazila shahar was done by considering:-

- trend of future development
- potential area that could be converted into urban areas
- topographical condition and drainage channels

All these efforts have resulted in preliminary study area of 1516 acres. After analyzing the landuse survey, socio economic survey, establishing future land requirements, topographical situation etc. final headquarters area was established to be the same.

The preliminary shahar area of Barlekha upazila consists of total 11 (eleven) mouzas (nine of them partially) with a population 6615 in 1981. The population of this area were 2748 and 4296 in the year 1961 and 1974 respectively. Total number of household living in this area in 1981 was 1064 resulting in an average household size 6.22. Area and detail statistics of the study area is provided in the following table.

Table 23: Area and Population Statistics of the Study Area of Barlekha Upazila Shahar

MOUZA	Area(Ha)		Total Pop.			Involved Pop.			Invol. HH 1981
	Total	Invol-ved	1961	1974	1981	1961	1974	1981	
Adityer									
Mahal(P)	1026	308	446	593	3108	134	178	933	166
Gramtala(P)	921	50	423	589	866	23	32	47	8
Hatbandha(P)	212	106	40	418	552	20	209	276	48
Shaithal(P)	183	82	131	178	366	59	80	164	22
Barigram	139	139	442	922	1248	442	922	1248	222
Balichar(P)	136	61	234	299	586	105	134	263	47
Teligul	88	88	177	279	333	177	279	333	58
Mahuband(P)	329	181	605	916	1503	333	504	827	121
Pakiala	171	171	530	853	991	530	853	991	129
Murirgol(P)	210	189	567	812	998	510	731	898	141
Kataltali(P)	188	141	553	499	847	415	374	635	106
<b>Total</b>	<b>3603</b>	<b>1516</b>	<b>4148</b>	<b>6358</b>	<b>11398</b>	<b>2748</b>	<b>4296</b>	<b>6615</b>	<b>1064</b>

- Source:
1. Population Census 1981, Sylhet District.
  2. BBS, Village Population Statistics, Bangladesh Population Census, 1974
  3. BBS, Community Tables of All Thanas of Sylhet District, Part-II, Bangladesh Population Census, 1981.

### 3.3 Existing Landuse, Facilities and Utilization Characteristics

For the purpose of preparing the landuse/master plan for Barlekha upazila shahar, an area of 1516 area (614 Hectare) has been identified as described in the earlier part of this chapter. The existing use of this area has been surveyed upto each individual plot as desired by the TOR. Existing landuse statistics are presented in table 24 and different landuse are shown in figure 06 following the guidelines provided in the TOR. Apart from that detail landuse of 200 acre core area (Town Service Centre) is also presented in figure 07.

As can be imagined most of the land within the study area are under agricultural use (80 percent). Next important category of landuse are homesteads areas (11.45 percent). As there are some cannels/Khals within the study area waterbody (2.28 percent) rank third in landuse hierarchy.

The facilities exists within each landuse category and their utilization characteristics are discussed in the following paragraphs.

### 3.3.1 Agriculture and Forest

At present about 80 percent (1204.60 acre) of the study area is under agricultural use. Most of these land are fertile and at least 2 crops per year is possible. There are no reserve forest in this area, but most of the homestead area are blanketed with a lot of mixed fruit and utility trees.

### 3.3.2 Commerce and Industry

Commerce: Market/bazar area, group and/or individual shop and commercial bank areas are considered within the commercial use. Total area covered by these uses are about 9.85 area and it covers only 0.65 percent of the study area. Existing bazar area with shop areas (7.25 areas) occupy highest landuse in this category.

Industry: There is no industrial establishment either big or small and cottage type. Two very small saw mills and one saw mill occupy about 1.15 acres of land which is only 0.46 percent of the total study area.

### 3.3.3 Education

All the educational institutions like primary school, secondary school, college, madrasa etc. are included in this category and they occupy about 7.35 acres of land and constitute 0.48 percent of the study area. It may be worthwhile to mention that play fields and student hostels attached with the institutes are also included in this category of land use.

### 3.3.4 Health

Hospitals, dispensary and doctor's chamber, maternity and family planning clinic etc. are included in this type of landuse. Total land occupied by this type of use is around 5.20 acres and it consists only 0.34 percent of the study area. It also include veterinary hospital area of 2.00 acres.

### 3.3.5 Administration

According to the TOR administration type of landuse includes upazila complex, other government, semi-government and autonomous offices. There are about 15.50 acres of land in this

category with upazila complex occupying 14.90 acres. Total land occupied by administration is about 1.02 percent of the total study area. Residential quarter of the government personnel are also included in this category.

### 3.3.6 Recreation

Recreation facilities in Barlehka upazila shahar include a play field adjacent to west side of the Railway station platform. There exist no other facility for the recreation of the population. Total land occupied by this type of use is only 2.75 acres which is 0.18 percent of the study area.

### 3.3.7 Socio Cultural

Religious facilities, graveyard, cremation yard, public library, club, auditorium and community hall etc. are considered in this category of landuse. Total area covered by this category of landuse is 8.30 acres and it is 0.56 percent of the study area.

### 3.3.8 Urban Service

Existing facilities in this category include post office, T&T, food godown, rest house, railway station etc. All these facilities occupy an area of 39.30 acres only which is 2.59 percent of the total study area. Some of the most essential urban service facilities like garbage collection and disposal are not available in this upazila. Condition of the existing ones are not good at all. Among the urban services railway station along with its track occupy 34.60 acres of land.

### 3.3.9 Residential

Homestead areas, either in group and /or alone, are scattered all over the study area with main concentration around the bazar and railway station area. Eventhough it shows that 173.50 acres of land, constituting about 11.45 percent of the study area, occupy homestead areas infact they are of very low density. Most of the dwelling units are from semi-pucca (brick wall with C.I. Sheet roof) to kutchha (thatch/mud wall with/without C.I. Sheet roof) in construction. And around each group of homestead a good amount of land is covered by a lot of vegetation mostly mixed fruit trees and utility trees. The consultant feels that a good amount of residential accommodation could be achieved by densification of existing homestead areas and it is possible by keeping the existing vegetation somewhat intact. This will reduce the possibility of converting agri-land for homestead expansion.

Table 24: Existing Landuse Information of the Study Area of Barlekha Upazila Shahar, 1989

Category of Landuse		Area	
Broad	Detail	Acre/Ha	%
Agriculture	Agriculture	1204.60/487.69	79.46
Commerce	Market/Bazar	9.85/3.99	0.65
	Group of Shops	7.25/2.94	
	Bank	1.95/0.79	
Industry		0.65/0.26	
	Large	1.15/0.46	0.08
	Small & Cottage type	-	
Education		1.15/0.46	
	Primary School	7.35/2.97	0.48
	Secondary School	1.15/0.46	
	College	2.35/0.95	
	Madrasha	3.25/1.32	
Health		0.60/0.24	
		5.20/2.11	0.34
	Health Complex	2.35/0.95	
	Veterinary Hospital	2.00/0.81	
	Clinic/Dispensary	0.85/0.34	
Administration		15.50/6.27	1.02
	Government Establishment	14.90/6.03	
	Semi Government & Autonomous Office	0.60/0.24	
Recreation		2.75/1.11	0.18
	Play Field	2.75/1.11	
	Cinema Hall	-	
	Park	-	
Socio Cultural		8.30/3.36	0.56
	Mosque/Temple/Church	1.95/0.79	
	Graveyard/Cremation Yard	5.70/2.31	
	Public Library & Auditorium	0.65/0.26	
Urban Services		39.30/15.91	2.59
	Post Office	0.20/0.08	
	Food Godown	1.00/0.41	
	Rest House(R&H)	0.25/0.10	
	T&T	1.00/0.40	
	Railway Station	34.60/14.0	
	Police Station	2.25/0.91	
Residential	Residential	173.50/70.24	11.45
Waterbody	Tank/Pond/Canal /River	34.75/14.07	2.28
Road		22.05/8.94	1.45
	Pucca	6.35/2.57	
	Brick-Soling	1.95/0.79	
	Kutchra	13.75/5.57	
TOTAL		1516.00/613.76	100.00

Source: Landuse Survey, 1989

### 3.3.10 Waterbody

There are quite a few drainage channels/khals within the study area. These waterbody along with a lot of small ponds occupy an area of 34.75 acres, constituting 2.28 percent of the total study area. The consultant feels that any physical development effort should keep the drainage channels/khals intact so that natural drainage is not disturbed in any way.

### 3.3.11 Road

There exists all three types of roads within the study area. In fact the present built-up area is on the both side of the only pucca road in the study area. Together all three type of roads occupy about 22.05 acres, constituting 1.45 percent of the study area.

## 3.4 Physical Opportunities and Constraints

While the preparation of master plan/landuse plan deserves careful consideration of various issues/factors. Most important consideration could be advantages/problems associated with physical development. During the landuse survey and subsequent field visit to the area, efforts were made in this regard. The following paragraphs discuss the opportunities and constraints situation in the study area.

### 3.4.1 Physical Opportunities

The most important advantage in Barlekha upazila shahar study area is the general land elevation which is above the general land elevation in the country. As such most of the land stay flood free even during the monsoon period. But attempts for physical development must retain the natural drainage channels intact otherwise it might lead to stagnation of water during heavy rain. Leaving the natural drainage channels intact there will be sufficient high land for physical development. General land elevation situation of the study area is shown in figure 07.

Barlekha upazila shahar is the only trading place in the sub-region. And it serves rather a big area. But due to lack of all weather/year round road communication with kulaura and beyond and also between the cluster of villages which the centre serves, it can not function and flourish properly. So if the remaining kutchha portion of the between Kulaura and Barlekha could be matelled and communication between the centre and surrounding villages could be established, the centre could pick

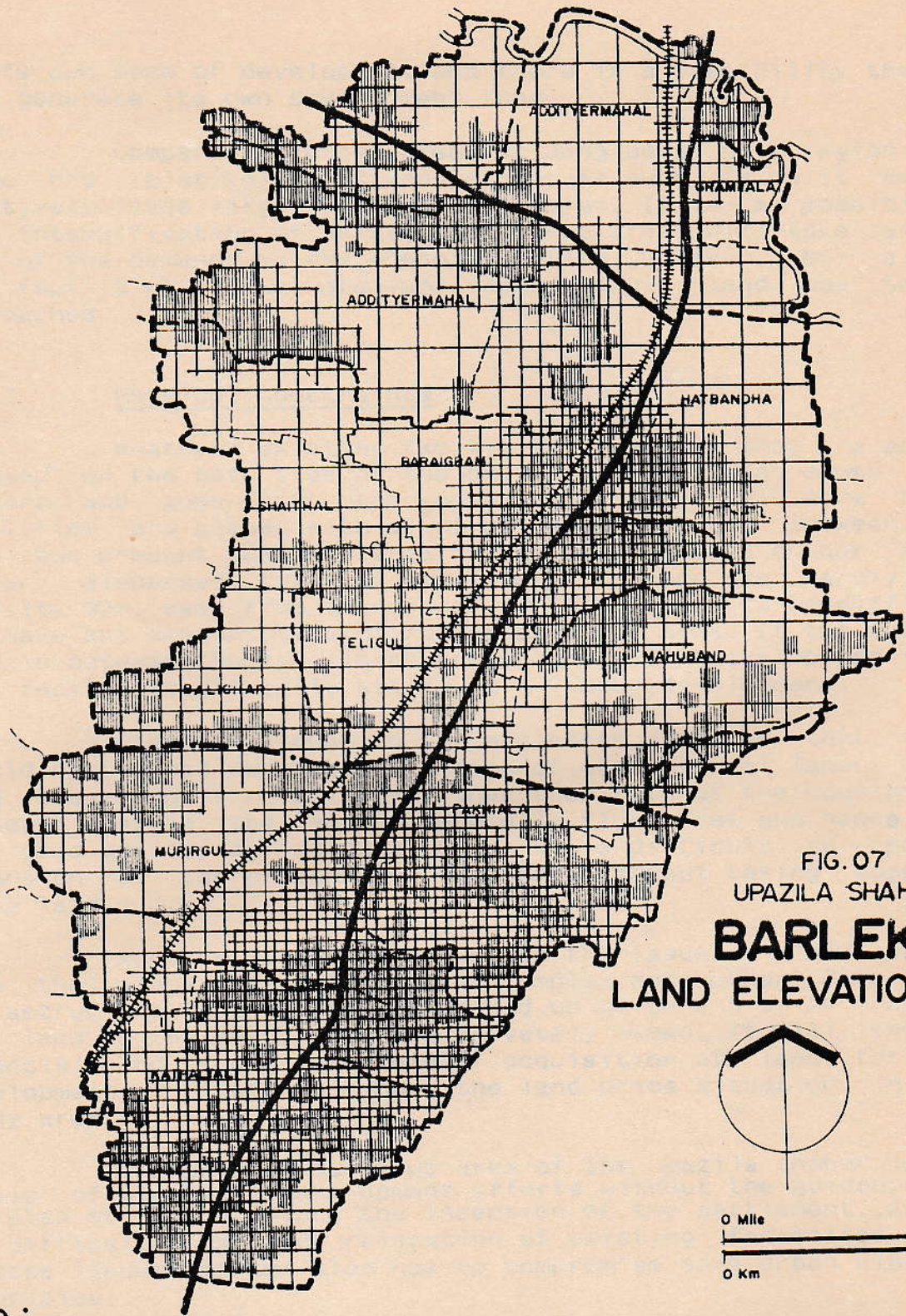
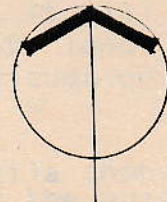


FIG. 07  
UPAZILA SHAHAR  
**BARLEKHA**  
LAND ELEVATION MAP



**LEGEND :**

Pucca Road



Semi Pucca Road



Katcha Road



Existing Builtup Area



Study Area Boundary



High Land



Medium Elevation Land



Lowlying Flood Prone Land



up its own pace of development and there is a possibility that it will generate its own development fund.

Compared to other areas of Bangladesh this region as a whole has relatively less population. As such it will demand relatively less virgin land for expansion. It is a possibility that intensification of existing built-up areas will take care of most of the demands in the planning period. However, for a few new facilities (like stadium) some virgin land has to be encroached.

#### 3.4.2 Physical Constraints

Whatever existing facilities available they are mostly located on the both side of the only pucca road that comes from Kulaura and goes upto the Indian boarder. Even more these facilities are placed with a lot of vacant land in between. As such the present built-up area of Barlekha upazila shahar is a linear, dispersed track of development. There are hardly any facility 30m. away from this road. So it is going to be difficult to have any compact type of future built-up area. If the vacant land in between the facilities are proposed for development with new facilities, it will, still, be a linear development.

Present situation in Bangladesh dictates that there should not be any unnecessary damage of agricultural land. Since land elevation is relatively higher then rest of the country in Barlekha upazila, the land is generally flood free and hence they are good quality agricultural land. It is difficult to propose expansion of the present built-up area without taking some of these land.

Another critical factor is the issue of land price. With the establishment of upazila complex and other Government infrastructure land prices has soared up quite a bit. As most of the land in the study area are privately owned, it will lead to financial and social problems of acquisition of land for the development. Figure 08 shows the land price situation in the study area.

The present built-up area of the upazila shahar is the result of piecemeal development efforts without the guidance of any plan or thought since the inception of the settlement. As it is difficult to propose relocation of existing facilities, the propose landuse/master plan has to compromise some urban planning principles.

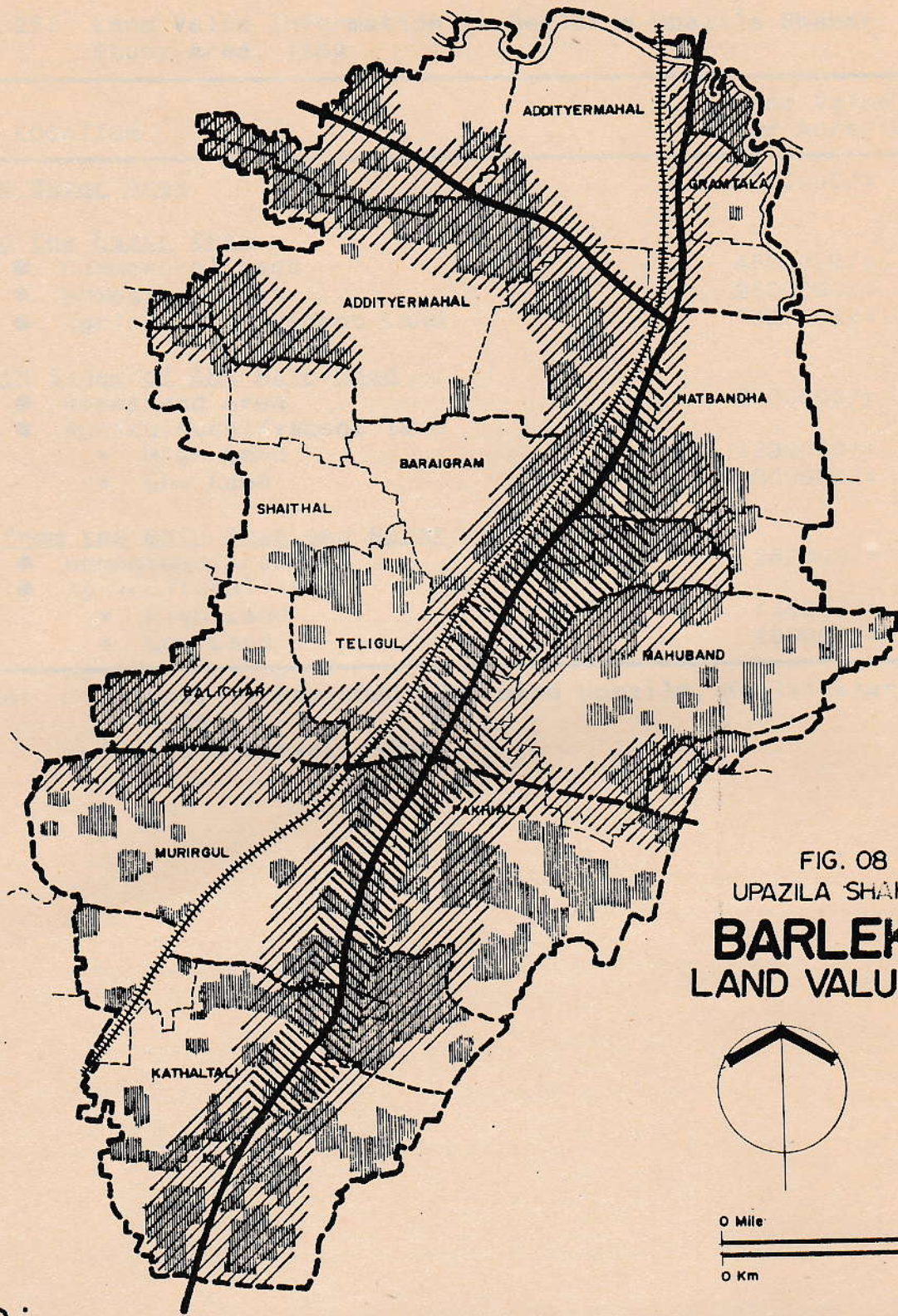
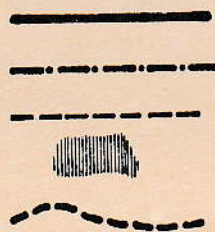


FIG. 08  
UPAZILA SHAHAR  
**BARLEKHA**  
LAND VALUE MAP

**LEGEND :**

Pucca Road  
Semi Pucca Road  
Katcha Road  
Existing Builtup Area  
Study Area Boundary



High Value Land  
Medium Value Land  
Low Value Land

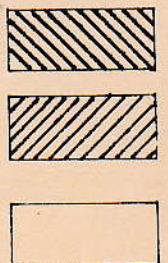


Table 25: Land Value Information in Barlekha Upazila Shahar Study Area, 1989

LOCATION	Land Value Per Acre/Taka
<u>In the Bazar Area</u>	6000000/=
<u>Around the Bazar Area</u>	
● Commercial Land	4500000/=
● Homestead Area	2500000/=
● Agricultural/Vacent Land	1500000/=
<u>On Both Sides of the Main Road</u>	
● Homestead Area	2000000/=
● Agricultural/Vacent land	
* High Land	1200000/=
* Low Land	800000/=
<u>Away from the Main Road and Bazar Area</u>	
● Homestead Area	250000/=
● Agricultural land	
* High Land	150000/=
* Low Land	100000/=

Source: 1. Upazila Parishad, Barlekha Upazila, Moulvibazar, 1989  
2. Field Survey, 1989

## Chapter Four

### F O R E C A S T S

This chapter describes the considerations/assumptions made with the population growth and consequent future population size, household size and number, density level and labour force both for the catchment area and study area of Barlekha upazila shahar.

#### 4.1 Population, Household Structure, Density

A vital element of any strategic urban plan is to identify the number of target population it aims to serve. So it is necessary to forecast the future population both for the shahar area and its catchment area. Even though it is important that forecast should be as much realistic as possible, it is difficult for Barlekha upazila shahar as reliable data on birth rate, death rate and migration is not available. Only base information that is available are the population figures for three census year 1961, 1974 and 1981. Based on that inter-census growth rate were identified. And population forecast are made on the basis of certain assumptions considering the past growth rates.

As demanded by the TOR low, medium and high projections are made. For the high projections a combination of

- slow decline in fertility rates (which exists now),
- low mortality rate from the existing level and
- higher migration to the planning area and catchment area are assumed.

For the low projection it is assumed that

- fertility rates will fall up to the level expected in Third Five Year Plan taking into account the positive effect of family planning programme of the government and also

- the area will experience a lower migration flow because of improved employment opportunities in the rural areas.

The medium projection is taken in between the two projections thus made.

#### 4.1.1 Sphere of Influence

The population of the area that has been identified as the catchment area of the Barlekha upazila shahar was 8355, 13815 and 19844 in the census years 1961, 1974 and 1981 respectively. The growth rates of 1961-74, 1961-81 and 1974-81 were 3.94, 4.42 and 5.31 percent respectively. The rate of growth shows a gradual increasing trend over the last 20 years or so. On the basis of these growth rates and also considering different level of migration flow to the catchment area, high, medium and low growth rates are assumed to be 4.00, 3.25 and 2.50 percent respectively. The base population for all the forecasts is taken to be the population in 1989 which was being updated from 1981 population size with existing growth rate of last 20 years.

Table 26: High, Medium and Low Population Projections For the Barlekha Upazila Shahar Catchment Area, 1990-2005

Base Year For Projection Population at the End of Base Year	Population at the End of Year			
	1990	1995	2000	2005
- 1989 - 28047				
<b>HIGH</b> Projection with Growth Rate 4.00%	30116	36641	44579	54237
<b>MEDIUM</b> Projection with Growth Rate 3.25%	28958	33979	39871	46785
<b>LOW</b> Projection with Growth Rate 2.50%	28748	32526	36800	41636

The growth rates for all three projections exceed the expected national rate of growth because of inclusion of an assumed percentage of migrants to the catchment area from the surrounding areas. Even though the growth rates will change over

the 20 years plan period an average growth rate is assumed for the same of simplicity. The three projections - high, medium and low - results in a population size varying from 54237 to 41636 in the year 2005. The population of the catchment area - which is the immediate hinterland of the upazila shahar - is not going to increase as fast as the shahar area. While the population of the shahar area is expected to be double by the year 2005 (according to forecast for national urban population) the population of the catchment area is more likely to increase by one and half times. And according to medium projection it is going to be 1.62 times of the population in 1989 which justifies our assumption of the growth rates.

Considering the medium rate of projection gross density level within the catchment area has been established.

Table 27: Gross Density of Expected Population Within Barlekha Upazila Shahar Catchment Area, 1990-2005

	At the End of				
	1989	1990	1995	2000	2005
Total Area(Acre)	9233	9233	9233	9233	9233
Population Size With Medium Projection	28047	28958	33979	39871	46785
Expected Level of Density(p/Acre)	3.04	3.14	3.68	4.32	5.07

In the horizon year 2005 the population density of the catchment area is expected to be around 1252 persons per sq.km. The size of household was found to be 6.21 in the year 1989. It is assumed that household size in the catchment area will slightly decreases over plan period as it will still retain a very much rural character and some member of the household will migrate to urban areas for earning opportunities. On the basis of that it is assumed household size will also decrease in Barlekha upazila shahar catchment area.

Table 28: Expected Household Size and Resultant Household Number in Barlekha Upazila Shahar Catchment Area 1990-2005

	At the End of				
	1989	1990	1995	2000	2005
Population Size With Medium Projection	28047	28958	33979	39871	46785
Expected Household Size (Existing)	6.21	6.20	6.15	6.10	6.00
Resultant Household Number	4516	4670	5525	6536	7798

It is expected that in the horizon year 2005, the catchment area of Barlekha upazila shahar will have around 7798 households.

#### 4.1.2 Upazila Shahar

The population of the area identified as the future shahar area of Barlekha upazila was found to be 2748, 4296 and 6615 in the census years 1961, 1974 and 1981. The growth rates in the periods 1961-74, 1961-81 and 1974-81 were 3.50, 4.49 and 6.36 percent respectively. The growth trend is more or less same over the last 20 years.

Forecasting future population for the Barlekha upazila shahar needs special consideration because of the fact that one of the main objectives of upazila programme is to hold city-wide migrants at upazila level. If economic activity is really geared up at the centre, it will create employment opportunities. So a major component of the future population increase will be the migrants to the shahar area. Since it is difficult to visualize the extent of economic activities at the centre, it leads to the difficulty of estimating the migrants.

However, considering migrants will be a major component of the future population and based on the growth rates of inter-census periods high, medium and low growth rates for Barlekha upazila shahar are assumed which are 5.25, 4.50 and 3.50 percent respectively. The base population for all three forecasts is taken to be the population in 1989 which is being up-dated from 1981 population size of the same area using existing average population growth rate (last 20 years).

Table 29: High, Medium and Low Population Projections for Barlekha Upazila Shahar 1990-2005

	Population at the end of the Year			
	Population at the end of the Base Year			
	1990	1995	2000	2005
Base Year For Projection	-	-	-	1989
Population at the end of the Base Year	-	-	-	9400
<b>HIGH</b> Projection With Growth Rate 5.25%	9893	12777	16502	21313
<b>MEDIUM</b> Projection With Growth Rate 4.50%	9823	12241	15255	19010
<b>LOW</b> Projection With Growth Rate 3.50%	9729	11555	13724	16299

It is expected that for all three projections natural growth rate will decrease over time due to the effects of Government's family planning programme. But on the other hand migration flow to the shahar area is expected rise due to increase economic activities at the centre. Resultant population growth rate is an average one throughout the plan period.

All the three projections - high, medium and low - result in a population size varying from 21313 to 16299 for the Barlekha upazila shahar. Considering the forecasts made for the national urban population which is expected to be three times by the end of this century and also considering the share of an lowest order urban centre like Barlekha it would be appropriate to assume that population of Barlekha upazila shahar should be around 2 times than what exists now. According to medium projection population of Barlekha increase from 9100 in 1989 to 19010 in 2005 - an increase by about 200 percent which fits our assumptions.

Considering medium rate of growth, gross density of population for the shahar area is being calculated.

Table 30: Expected Gross Density Level of Resident Population Within Barlekha Upazila Shahar 1990-2005

	At the end of				
	1989	1990	1995	2000	2005
Total Area(Acre)	1516	1516	1516	1516	1516
Population Size With Medium Projection	9400	9823	12241	15255	19010
Expected Level of Density (P/Acre)	6.20	6.48	8.07	10.06	12.54

It is expected that at the end of plan period population density should be 3097 persons per sq.km. in the study area.

In 1989 the number of households in the planning area was found to be 1511 with an average size of 6.22. It might look strange but all over Bangladesh household size in urban areas is bigger than that of rural areas. This is due to the presence of active males in the household in the urban areas as there exists greater opportunity of making a living in an urban area than in a rural area. So it is assumed that household size in Barlekha upazila shahar will increase over time - rather than decrease. Considering that the household number in the planning area is assumed and calculated.

Table 31: Expected Household Size and Resultant Household Number in Barlekha Upazila Shahar 1990-2005

	At the end of				
	1989	1990	1995	2000	2005
Population Size With Medium Projection	9400	9823	12241	15255	19010
Expected Household Size (Existing)	6.22	6.25	6.30	6.40	6.50
Resultant Household Number	1511	1572	1943	2384	2925

It is expected that Barlekha upazila shahar will have 2925 households in the horizon year 2005.

#### 4.1.3 Aspects of Migration

Even though it is understood that migrants to the shahar area will be an important element of future population increase, it is very difficult task to find out the number of migrants to the shahar area. Main reason is the lack of any kind of secondary data about migration. The data on migration which is obtained from the socio-economic survey is insignificant to rely on. But it is a reasonable assumption that migration rate will considerably increase with the increase of investment in different sectors. Inter regional labour migration may take place in that case. In such a situation it is assumed that out of the total increase of population by 4.5 percent per year, about 2.2 percent (which is the current national growth rate) will be due to natural increase and rest 2.3 percent will be migrants to the study area.

Total population increase within the plan period (1990-2005) will be 9610 and out of that 4912 will be migrants to the study area - which will be 51.11 percent of total increase.

Table 32: Expected Number of Migrants Within Barlekha Upazila Shahar 1990-2005

	At the end of				
	1989	1990	1995	2000	2005
Medium Projection of Population	9400	9823	12241	15255	19010
Total Increase (4.5 Percent)	-	423	2418	3014	3755
Natural Increase (2.2 percent)	-	207	1182	1473	1836
Increase Due to Migration	-	216	1236	1541	1919
Total increase of population in plan period (1990-2005)					= 9610
	Due to Migration				= 4912

4.2 Labour Force and Employment

Employment and labour force are co-related at any stage of economic development. Since a co-relation factor is not available for any areas of Bangladesh an assumption is made on the basis of existing trend. In Barlekha upazila only 26.00 percent of the total population and 38.52 percent of the population 10 years+ were engaged in earning activities. We have assumed 35 percent of the total population will constitute the labour force for the catchment area with the consideration that due to added investment and economic activities participation in earning activities will rise.

Table 33: Estimate of Future Labour Force in Barlekha Upazila Shahar Catchment Area 1990-2005

	At the end of				
	1989	1990	1995	2000	2005
Medium Projection of Population	28047	28958	33959	39871	46785
Expected Labour Force (35 percent)	9816	10135	11892	13955	16375

For the upazila shahar the situation is little bit different. Apart from resident labour force of the shahar area, there will be commuter labour force from the surrounding areas. Commuter labour force is taken to be 10 percent of the labour force in the catchment area.

Table 34: Estimate of Future Labour Force in Barlekha Upazila Shahar 1990-2005

	At the end of				
	1989	1990	1995	2000	2005
Resident Population With Medium Population	9400	9823	12241	15255	19010
Resident Labour Force (40 percent of the Population)	3760	3929	4896	6102	7604
Commuter Labour Force (10 percent of the Labour Force in the Catchment Area)	981	1013	1189	1395	1637
<b>Total Labour Force in the Shahar Area</b>	<b>4741</b>	<b>4942</b>	<b>6085</b>	<b>7497</b>	<b>9241</b>

#### 4.3 Land Requirements and Provision Standards

Amount of land needed for different services and facilities depend on the service population and pre-fixed provision standard. While the TOR provides the standards for various provisions future population estimated for Barlekha upazila shahar is 19010 and for the catchment area it is 46785 in the horizon year 2005. Even though the TOR has identified that for housing ONLY shahar population and for rest services BOTH catchment area and shahar area population should be considered, the consultant feels that design population have to be different for different services depending on their nature and catchment population of those services. As such total target population is divided into shahar population 19010 (A) and catchment population 46785(B). Land provision for different functions and services are estimated on the basis of different combination of A and B and provided in the following table.

Table 35: Information of Existing Landuse and Estimate of Future Requirement for Barlekha Upazila Shahar

Item of Landuse	Provision Standard Acre/Pop	Design Popula- tion	Existing Area** in Acre/Ha	Land Requirement Acre/Ha
Commerce & Industry	1.5/1000	A+B	9.86/3.99	98.69/39.96
Education			0.70/0.28	
KG. and Primary School	2/5000	A+1/6B	6.90/2.79	10.72/4.34
Secondary & Higher Secondary School	5/20000	A+1/3B		17.30/7.00
College & Vocational Training	5/20000	A+B		16.45/6.66
Health			5.20/2.11	
Dispensary, Maternity Child Care, Family Planning Clinic	1/5000	A+1/2B		8.48/3.43
Health Centre/ Hospital	5/20000	A+B		16.45/6.66
Administration	12/	Upazila	21.75/8.81	12.00/4.86
Judiciary	Upazila	Pop.		
Recreation			0.75/0.30	
Park/Open Space	1/1000	A+		19.01/7.69
Cinema/ covered Space	0.5/20000	A+B		0.86/0.35
Play Field & Sports Stadium	3/20000	A+B		9.87/3.99
Socio-Cultural			8.30/3.36	
Community Centre & Public Library	1/20000	A+B		2.12/0.86
Mosque/Temple/ Church	0.5/5000	A+1/6B		2.68/1.08
Grave Yard/Cemetery				
Cremation Yard	5/20000	A+1/6B		6.70/2.71
Urban Services			19.45/7.87	
Post Office	0.5/20000	A+1/2B		1.06/0.43
Telephone Exchange	0.5/20000	A+B		1.06/0.43
Police Station	2/20000	A+B		6.58/2.66
Bus/Railway Station/Ghat	1/20000	A+B		3.29/1.33
Road	5-10% of Study Area	-	22.05/8.96	-
Residential	1/100	A	173.5/70.24	190.1/76.96
Urban Deferred	10 % of Study Area	-	-	-
Reserve	-	-	-	-
Total (Excluding Agriculture)			311.40/126.07	

\*\* Source: Landuse Survey, 1989

## Chapter Five

### T H E L A N D U S E P L A N

In the last four chapters, the ground work for preparing landuse plan for Barlekha upazila shahar has been evaluated and presented. The chapter explains the process of preparing the physical plan itself.

#### 5.1 Approach, Concept, Planning Principles

Perhaps at this stage there should not be any misconception about the landuse plans for upazila centres which are broad guide plans rather than a series of detail plans for individual schemes. Once the main criteria and basic guidelines for development approach are set, individual area development schemes have to be detail out according to the guiding principles of the plan and phases of development. It is important that landuse plans for the upazila centres have to be visualized accordingly.

Some of the issues that has played important role in the preparation of landuse plan for Barlekha upazila shahar are discussed below.

- Eventhough the Government is allotting much more fund for the development at upazila level now than before, it is still far from bearest minimum for the type of development envisaged. As a result the most primary consideration was to keep the existing development intact as far as practicable to bring the development cost at most reasonable minimum. So some of the proposals might not be ideal, but will be cost effective enough to be implemented.
- In the development of upazila shahar, it is also important that existing growth trend should be considered. Suggesting altogether a reverse trend might be unacceptable to the target population and costly to implement.
- Land is the most scarce resource in an agrarian society of ours. Land/man ratio is the lowest in the world and

per capita agricultural land is only 0.2 acre (1898). The situation is deteriorating fast. In such a situation, it goes beyond saying that utmost care was taken throughout planning process to convert as little agricultural land as possible. The approach was proper utilization of the existing built-up area first and conversion of agri-land if it is absolutely necessary.

Some of the specific issues which are considered for Barlekha upazila shahar landuse plan preparation are discussed below:

- Whatever build-up area existing in the study area - apart from homestead areas - rest are located on both sides of the only main road. Even that is not continuous. Development is grouped in as many as five locations - the most intense and crowded in Railway Station and Bazar area. Along the roads development is in most places 15-20 feet deep. So the future non-residential facilities are most likely to be located on the vacant lots on both sides of the main road. So as to have a continues built-up area. It might lead to a rather elongated built-up area in the plan period. The consultant is aware that it is not a desirable shape for an urban centre. But what the present plan period could achieved is to bring some order in the area so as to have ideal landuse plans in future plan periods.
- Away from the main road the development is mainly scattered cluster of homesteads connected by brick-soling or kutcha roads. What could be done here is grouping the scattered clusters in some defined area. So the residential areas might be isolated blocks separated by agricultural land and connected by at least brick soling (12'- 0" wide access with 8 feet carriage lane ) roads.
- As it is mentioned earlier the existing provisions are really scattered and located without any regard or relation to each other and also it is not possible to relocate most of them it would be difficult to have zoning in a ideal sense. But in locating future provisions it is always considered to see the compatibility with neighboring use(s) as far as possible.
- Land which are not suitable for development (existing waterbody, drainage channels, lowlying areas, important current use etc.) are noted properly and marked on the plan.

## 5.2 Plan Description

The landuse plan that has been conceptualized, taking into account the considerations mentioned in the above paragraphs will hopefully accommodate a target population of 19010 and will spread on an area of 1516 acres. Apart from the major activities like commercial and industrial, educational, administrative, recreational, socio-cultural and residential, the study area will accommodate other minor functions and activities also, so as to meet most of the needs of the catchment population. Proper spatial organization of all these activities and functions is attempted as far as practicable to attain desired healthy, livable environment. Landuse proposed for different activities are discussed in the following paragraphs. Summary of the proposed landuse are provided in table 36 and the plan is presented in figure 09 kept in the folder at the end of this report.

### 5.2.1 Commercial & Industrial

#### Commercial

Amount of land used for commercial purpose is significant in Barlekha upazila shahar considering its location close to Indian boarder. But all these land needs proper layout, improvement of roads/paths and drainage system, which will increase the capacity without further land requirement in the bazar area. Apart from that following are proposed.

- 1.15 acre of land is earmarked for establishing a kutcha bazar adjacent to the present bazar area. The structure should not be a pucca one - but rows of platform with shade and also with proper drainage and maintenance.
- A small piece of plot is also marked for commercial use in Kataltoli mouza along the main road. There is a tendency of opening roadside shops here. These land will have these kind of retail shops.
- Opening shops anywhere along the main road should be controlled - not only for having some order in the area - but also to create enough demand for the designated commercial land.

Total land under commercial use stands at 11.85 acre.

### Industrial

Existing two saw mills and one rice mill occupies about 1.15 acres of land. It is very difficult to foresee any significant industrial development in Barlekha upazila shahar in the plan period. However, due to Government's policy of industrialization at upazila level and also it is possible to have some cottage and small industries with proper incentive, an area of about 11.75 acres is marked for industrial use. It is located at the junction of railway track and the road to Biyanibazar upazila.

All the existing small scale industries (Rice mills, saw mill and workshops) - having semi permanent structure should be moved to this area. Any kind of service industries required for the shahar has to be established there. In the 1st phase 5 acre of land should be acquired and 2nd phase will only be initiated if 1st phase is exhausted.

#### 5.2.2 Education

Proposals for the development of educational facilities are as follows:

- Existing primary schools have to be improved interms of build-up area and services.
- Two new primary schools - one in Addityarmahal mouza and another in Kataltoli mouza - are proposed to be established.
- Area of the existing boys and girls high schools are proposed to be increased so as to have further built-up areas and other facilities. Both these institutions should have vocational training facility and outdoor sports facilities for respective sex within the campus. In the evening and during school holidays the institution and its facilities could be utilized for adult education and other community development programmes, cultural functions, recreation and sports activities.
- College campus is further extended upto the canal on the east. The college needs more built-up space and standard play field. Facilities in the college could also be utilized for the same purposes mentioned for the high schools.

Total land under this categories is 15.05 acres.

### 5.2.3 Health

In the existing health facilities, recently established hospital has sufficient space and personnel to be a modern health institution. But what it badly needs is more equipment, medicine and other necessary supplies. Due to the lack of these essential elements the existing facilities are under utilized and population are deprived of much needed health care service.

Apart from that considering governments family planning efforts a seperate clinic is proposed to be established in Additermahal mouza.

All these facilities and a veteriniary hospital has resulted in 5.40 acre land for health services.

### 5.2.4 Administrative

Existing 15.50 acre of headquarters area have enough land to accommodate much more facilities then what exists now. All the Government and semi-government organization could be located here. Even the police established could be moved inside this campus. But if it is not done so - police station could be located to a new site in Kataltoli mouza on the main road. Relocation of police station is essential for an ideal setting of the park. CO Office, PDB, R&H establishment should be moved within the upazila headquarters area.

After final adjustment of the proposed landuse map the the amount of land in the headquarters area is found to be 17.50 acres.

### 5.2.5 Recreation

There is hardly any facility that could be included under the category "recreation". There is a play field on railway land opposite the station building and an open field within the college premises. Facilities that are proposed for the study area are:

- The consultant feels that "park or open space" sort of recreation is not required in a urban centre like Barlekha. There are enough open space all around. But to be in order with the TOR, a park space is provided. The location is opposite present hospital building upto the railway track. The site includes the Vet. hospital and Thana area now. But since the location - with its undulating landform and drainage channel- is ideal for such a place, and also the existing structures are quite old and delepiated - they could be moved to other locations. (21.25 acres).

- Almost all the educational facilities are proposed to be expanded to have small play fields and play lots for the students and in the late afternoon and during school holidays for general public also.
- A full-fledged stadium with galleries and all is not required at the centre. What is necessary is a play field where all standard games could take place. The expected crowd could be arranged around the site in two or three rows. The consultant feels that any thing more than what is proposed is going to be under utilized. The 7.25 acre "stadium" is located in Mahuband mouza very near the main road.
- An small piece of land (0.65 acres) is located on the north side of present Food Godown for a small size cinema hall. This facility seems a big necessity.

Total land occupied by recreation facilities within the study area stands at 29.15 acres.

#### 5.2.6 Socio-Cultural

The religious component of the socio-cultural facilities (mosque/temple, graveyard/cremation yard etc.) are always provided by community effort or benevolence of individuals. In our rural areas it is a common site to see "high quality" religious building in relation to the surrounding dwellings. So the consultant proposes that these kind of facilities be best left to the community itself, rather than the government trying to provide and improve them. But the landuse plan must impose some restriction and guideline about the graveyards. It is found that there are quite a number of very small graveyards in the study area. In most cases a group of households have created one nearby. There should not be any further physical expansion of the present ones. But a medium size graveyard is created by joining two small ones in Addityarmahal mouza. Together with other numourous small lots it should serve the purpose.

1.65 acres of land is proposed on north side of hospital area and along the main road for establishing a community centre cum public library cum auditorium. It should be the nerve centre for all kind of socio-cultural activities. Some indoor game facilities could be incorporated in the complex,

A Shahid Miner could be incorporated within the college campus. Apart from observing "Ekushe February" an small place could be created around the Shahid Miner to observe other outdoor cultural functions there.

### 5.2.7 Urban Services

Among the basic urban services post office- which is really small and the structure is not in a good condition - should be relocated on a nearby lot (area 0.45 acre) on the west side of Boys high school on the main road.

Existing T&T office is within upazila complex and should be relocated to make it more accessible for the general public. Area 0.55 acre.

Bus stand is located on the main road and near the bazar and railway station area. This slightly elongated plot of about 0.75 acre should also have a refilling pump within the area.

The railway station area have a lot of vacant land without any purpose. Some of them on the east side has already been encroached by shops and bazar area. Considering the significance of the station and establishing the requirements in the station land has to be earmarked. Rest of the land should be released for other use. But presently there has to be some improvement in the station building facilities.

### 5.2.8 Road

The main road of the network is the north-south running pucca road which connects all the major facilities. The next important road is the one which branches out of the main road and goes towards Biyanibazar upazila. Rest are semi-pucca or kutchra roads. The future road network, as conceived by the Consultant, looks like the following:

- 60'-0" wide north-south running main road and
- 40'-0" wide road that goes towards Biyanibazar upazila, towards Suzanagar and Talimpur Union and on the opposite side of that which goes toward Indian boarder.
- Rest of the roads are tertiaries the main ones being with 24'-0" wide access and rest 15'-0" to 12'-0" Wide access and all these tertiaries are branched out from previously mentioned main roads. The tertiaries may not be of pucca standard - but needs brick soling to facilitate movement in rainy season.
- While there is nothing to be done about the main roads, the tertiaries are to be aligned and connected as far as feasible. And it is not possible to identify all the tertiaries - as the landuse plan is not detail enough as yet.

Total land occupied by road network system is about 58.25 acres (or 21.01 ha).

#### 5.2.9 Residential

According to medium level of forecast the future shahar area of Barlekha upazila will have 19010 population. And according to the TOR the residential density should be 100 person per acre, which means we need about 190 acre of land for residential use. And we already have about 173.50 acres of land under residential use. So mathematically we need another 16.50 acres of land for this purpose. But the consultant like to pointout that it would be difficult to achieve 100 person/acre residential area density with the kind of low rise structures prevailing in the study area. There is hardly any private dwelling unit which is more than one storey. Assuming that Government would provide some incentive (House Building Loan, Lower Interest Rate etc.) for constructing multistoried residential buildings and with a mixture of this kind of structure and traditional low rise structures it would be possible to have around 75 persons/acre density at the end of plan period. This gives us a residential land requirement of about 253.50 acres. As such we need further 80 acres of land for residential use. For optimum utilization all the areas should be planned and executed accordingly, which seems rather difficult for upazila parishad as it does not have fund and skilled manpower.

The scattered homestead areas are consolidated and brought under some defined blocks. And some new areas which are most likely to become built-up are taken for residential development. Together they form about 275.00 acres of residential land. The new residential area in front of proposed stadium will be mainly utilized for Government housing estate and allotment to households whose homestead land are being acquired for public purpose.

#### 5.2.10 Urban Deferred

To accommodate the fluctuations in the projection and reality, there are about 172.75 acres of urban deferred land, properly marked and shown in the map, are provided. These land are mostly located at the phariphery of proposed built-up area. So that if not utilized, they would not form pockets of land without any purpose. The existing use (mostly agriculture) of these land should continued as long as they are not required for development.

5.2.11 Reserves

All the existing waterbody (tank, pond, canal, drainage channels) are proposed to be "reserve" and should not be subjected to any kind of physical development. The canals and drainage channels need excavation and alignment for speedy disposal of rain water. The tanks and ponds need excavation and should be used for fish and duck farming.

There are about 37.80 acres of land in ponds/tanks/canals etc.

Apart from that all the agricultural fields which are no way effected by the planning proposal but within the study area are also needed to be protected from urban encroachment. So they are shown seperately as "Agriculture".

Table 36: Existing & Proposed Landuse Information Within Barlekha Upazila Shahar Study Area

LANDUSE	Existing*	According to	Proposed Area	
	Area Acre/Ha	the TOR** Acre/Ha	Acre/Ha	%
01.COMMERCE & INDUSTRY	11.00/4.45	98.69/39.96	23.60/9.55	1.56
A. Commerce	- 9.85/3.99		- 11.85	
B. Industry	- 1.15/0.46		- 11.75	
02.EDUCATION	07.35/2.97	44.47/18.00	15.05/6.09	0.99
A. KG & Primary School			- 04.35	
B. Secondary & Higher Secondary School			- 04.85	
C. College & Vocational Training			- 05.25	
D. Madrasha/Maktab			- 00.60	
03.HEALTH	05.20/2.11	24.93/10.09	5.40/2.18	0.36
A. Mother Welfare, Childcare & Family Planning Clinic			- 00.85	
B. Upazila Health Complex			- 03.25	
C. Veterinary Hospital			- 01.30	
04.ADMINISTRATION	15.50/6.27	12.00/04.86	17.50/7.08	1.15
05.RECREATION	2.75/1.11	29.74/12.04	29.15/11.80	1.92
A. Park/Open Space			- 21.25	
B. Stadium/Play Fields			- 7.25	
C. Cinema/Closed Space			- 0.65	
06.SOCIO-CULTURAL	8.30/3.36	11.50/4.65	10.55/4.27	0.70
A. Community Centre/Public Library/Auditorium			- 1.65	
B. Mosque/Church/Temple			- 1.95	
C. Grave Yard/Cremation Yard			- 6.95	
07.URBAN SERVICES	39.30/15.91	12.00/4.86	40.20/16.27	2.65
A. Post Office			- 0.45	
B. Telephone & Telegraph			- 0.55	
C. Police Station			- 2.60	
D. Bus Station/Petrol Pump			- 0.75	
E. Railway Station including Track			- 34.60	
F. Rest House (R&H)			- 0.25	
G. Godown			- 1.00	
08.ROAD	22.05/8.96		58.25/23.58	3.84
09.RESIDENTIAL	173.50/70.24	190.10/76.96	275.0/111.34	18.14
10.URBAN DEFERRED			172.75/69.94	11.40
11.RESERVE			32.75/14.07	2.16
12.AGRICULTURE	1204.60/487.69	-	835.80/337.57	55.13
Total			1516.00/613.75	100.00

Note: \* Landuse Survey 1989

\*\* Detail Calculation is in Chapter Four

## Chapter Six

### PROGRAMMING & IMPLEMENTATION

It might be worthwhile to mention that development plans are useless if proper strategy is not identified for their implementation. The Consultant feels that identification of appropriate and effective implementation procedure is as much important as preparing the plan itself.

The most important issue that arises is the magnitude of the whole programme. Development at about 400 upazila centres throughout Bangladesh is a monumental task for the government. Mobilization of funds, skilled manpower, administrative set-up are a few of many problems. So it is necessary that each individual consultant should recognize the limitations associated with the factors, give due consideration during plan preparation, and should also come up with suggestion to implement the proposals. This chapter highlights some of the suggestions for Barlekha upazila shahar.

#### 6.1 Priority Actions and Cost Implication

##### 6.1.1 Priority Actions

Though total work that has to be done is monumental some of it needs priority actions.

- Earmarking all the land for public uses and restricting any kind of further development on those lands by private individuals. But the present use of these land must continue as long as they are not physically developed.
- The existing main roads is comparatively in good shape, while it will need further widening most useful endeavor will be to develop the secondary and local roads as suggested in the plan under preparation, it is important to improve the communication from Kulaura to Barlekha. Making a well weather road will stimulate the development in Barlekha upazila shahar and will ensure the proper utilization of land in the study area.

- Detail layout of the various proposed zones within the existing built-up area. So as to put them in use to their fullest capacity before encroaching into virgin land.
- Detail layout and development of commercial area and establishment of kutchra bazar should get priority as it might lead to earning opportunities for upazila parishad.
- Residential areas within the proposed built-up area, will be developed gradually, following the specified priorities and blocks. At this instance the Consultant like to suggest that instead of acquiring the specified areas and upazila parishad developing them by itself, which is the normal practice, it is better to develop these areas, also industrial areas, in collaboration with existing land owners. This attitude will reduce the problem of public acquisition and compensation, re-settlement of evicted landowners etc. One of the most widely regarded technique of such approach, LAND POOLING/RE-ADJUSTMENT, is worth mentioning here.

#### 6.1.2 Cost Implication

Most uneasy component of the upazila development programme is the magnitude of financial resource needed. It is really a big question weather it will be possible to finance urban type development in such a large number of centres. It is very difficult to pinpoint the exact amount of financial resources needed for a upazila centre from a conceptual landuse plan like this one. Most important component missing at this stage is the percentage of covered area in each type of land. So it is felt that any attempt to quantify the cost will be too much assumption to serve any practical purpose. But it is suggested that development authorities should look for least costly development approaches than the existing ones.

#### 6.2 Phasing, Urban Deferred

The target or horizon year for Barlekha upazila shahar landuse plan is the year 2005. As such it has about 15 years programme period to implement the proposals. But the time period or target year should not be taken too rigidly as the landuse plan is a mere guideline for self-generated development activities at the centre.

Tentatively the programme period can be divided into five yearly phases and various services can be quantified (in terms of percentage) so as to give some phase-wise indication.

Table 37: Phase-Wise Development Activities for Barlekha Upazila Shahar

	Phases			TOTAL
	1990-95	1995-2000	2000-2005	
Commerce	30	40	30	100
Industry	20	30	50	100
Education	40	40	20	100
Health	40	40	20	100
Administration	60	30	10	100
Recreation	30	40	30	100
Social-cultural	30	45	25	100
Urban Services	50	30	20	100
Roads	60	30	10	100
Residential	55	35	30	100

Note: All the figures indicate percentage.

Again the Consultant likes to caution that development initiatives for each phase will mainly be on the basis of performance of the previous phase and they have to be adjusted accordingly.

Urban deferred lands are properly marked on the landuse plan. These land are placed in such a way that even if the forecast and estimates are totally accurate, there would not be any vacant or "without purpose" land within the proposed built-up area.

### 6.3 Development Control

Before suggesting any development control mechanisms for the upazila shahar, the following facts are worth mentioning:

- As all the upazilas are beyond the administrative boundaries of existing metropolitan and municipal shahars, there does not exist any development control measure.

- "The Local Government (Upazila Parishad and Upazila Administrative Re-Organization) Ordinance-1983" does not provide statutory backing to the upazila landuse plans and any provision to take preventive measures/actions against contrary, unauthorized development both by private and public sector.

In such a situation, most general suggestion that can be made is the provision of appropriate development control mechanism for the upazila centres. But it would not be wise to impose the existing urban regulation at upazila level. A set of more appropriate regulation should be formulated considering the socio-economic situation and enforcement problems at the upazila level.

Some specific suggestions could be made regarding development control.

- The area around the existing built-up area could be designated as "Development Promotion Area" where all kind of development will be preferred and encouraged. And rest of the study area should be regarded as "Development Control Area" where premature urban development has to be restricted.
- Within the development promotion area, all development are controlled by regulations and all the measures are enforced by law.
- Assuming that all public sector development would be in confirmation with the norms and standards of the proposed landuse plan, they would only be subject to normal approval from upazila parishad.
- In case of private development effort only pucca or semi-pucca construction will be under prior approval and supervision during construction. It would be wise to leave temporary construction alone.
- Any kind of conversion of the agriland or tank/pond lowlying areas should be with prior approval and supervision during construction.
- There should be at least one person in the upazila parishad, who understands the preliminaries of development control like understanding the plan, evaluating proposals, field check during execution etc. As the upazila engineer is partially qualified in this respect, he/she should be given two months intensive training by Ministry of Works/LGRD.

- UDD should extend its establishment upto first for each of the old districts and later for two or three districts, in order to provide technical advice to upazila parishads.

#### 6.4 Monitoring/Review

The proposals made for the physical improvement and extension of Barlekha upazila shahar are guidelines rather than rigid set of rules. The proposals are based partly on the present Governments development efforts at upazila level and greatly on the expectation that private sector activities will be geared up due to government's efforts. As the private sector activities can not be forecasted accurately there hangs certain amount of uncertainty. Apart from the expected trend of growth, future projection and estimates, this main criteria may make it necessary to monitor the plan closely. And a periodical review is also necessary.

It is recommended that the progress in the implementation of the proposed plan or any change or deviation should be noted and marked on, the plan by the upazila parishad. The upazila parishad should seek advice, consultation from UDD in case of difficulty in the implementation of the plan.

It would have been wise to say that on the basis of yearly monitoring report, the landuse plan should be reviewed in every five year. But review, revision, updating is as cumbersome and time consuming process as the new one. Since there are acute shortage of qualified planners to do so, for Barlekha upazila shahar, it is suggested that review, revision of the proposed plan should be done after 10 years, i.e. in the year 2000.

## APPENDIX A

### BROAD INFORMATION CATEGORY AND THEIR POSSIBLE SOURCES FOR BARLEKHA UPAZILA SHAHAR LANDUSE/MASTER PLAN PREPARATION

Information	Possible Sources	
	Secondary	Primary
* Location & Major Physiographic Features of the Upazila	BBS Publication District Gazetteers	Field Visits
* Population Characteristics of the Upazila	BBS Publication	
* Settlement Distribution within the upazila	BBS Publication Upazila Parishad	Field Visits
* Economic Performance, Employment Situation of the Upazila.	BBS Publication Upazila Parishad Union Parishad	
* Transportation & Communication	Roads & Highways Dept., Upazila Parishad, Union Parishads	Traffic Survey
* Existing Landuse Information within the Study Area.	-	Landuse Survey
* Topographical Feature & Drainage.	BBS Publication	Field Visits & Drainage Survey.
* Existing Infrastructure Situation	R&HD, BPDB BSIC, BBS Upazila Parishad	Field Visits
* Socio Economic Condition of Population within the Study Area.	Upazila Parishad BBS Publication	Socio- Economic Survey
* Future Programme of Development & Committed Landuse.	Upazila Parishad	-



3. Information Regarding Income/Expenditure of the Family

3.1 No. of Earning members in the family \_\_\_\_\_

3.2 Monthly Family Income from different heads

Source	Monthly Income (Taka.)
Agriculture	
Poultry	
Cattle and Dairy	
Pisciculture	
Business	
Service	
Profession related (Tailor, Carpenter etc.)	
Other	

3.3 Monthly Family Expenditure in different heads

Heads	Monthly Expenditure (Tk.)
Food	
Clothing	
Health Care	
Education of children	
Maintenance of dwelling	
Others	

4. Information Regarding Migration

4.1 Are you a permanent resident of this area?

\_\_\_\_\_ Yes. \_\_\_\_\_ No.  
(If YES go to Question 4.5.)

4.2 How many years you have settled here? \_\_\_\_\_.

4.3 From where you have migrated:

\_\_\_\_\_ Another location \_\_\_\_\_ Another Upazila.  
\_\_\_\_\_ of this Upazila.  
\_\_\_\_\_ Another Zila. \_\_\_\_\_ Another Country.

4.4 Reasons: \_\_\_\_\_

\_\_\_\_\_.

4.5 Did anyone from the family has permanently settled somewhere else?

\_\_\_\_\_ Yes. \_\_\_\_\_ No.  
(If NO go to Question No 4.9.)

4.6 Since how long He/She has gone? \_\_\_\_\_ Years.

4.7 Where has He/She settled now?

\_\_\_\_\_ Another location \_\_\_\_\_ Another Upazila.  
of this Upazila.  
\_\_\_\_\_ Another Zila. \_\_\_\_\_ Another Country.

4.8 Reasons: \_\_\_\_\_  
\_\_\_\_\_.

4.9 Does anyone from the family migrate to another place for some time of the year?

\_\_\_\_\_ Yes. \_\_\_\_\_ No.  
(If NO go to Question No 5.)

4.10 What time of the year?

From \_\_\_\_\_ to \_\_\_\_\_ (Months)

4.11 Where does he/she go?

\_\_\_\_\_ Another location \_\_\_\_\_ Another Upazila.  
of this Upazila.  
\_\_\_\_\_ Another Zila. \_\_\_\_\_ Another Country.

4.8 Reasons: \_\_\_\_\_  
\_\_\_\_\_.

## 5. Information About Land Ownership

5.1 Total amount of land possessed by the family

Homestead \_\_\_\_\_ Acre.  
Agricultural Land \_\_\_\_\_ Acre.  
Other (Pond, Orchards etc.) \_\_\_\_\_ Acre.

5.2 What was the use of present homestead land 5 years before?

\_\_\_\_\_ Same. \_\_\_\_\_ Other Use.  
(If same go to Question No. 6.)

5.3 What was it if other use.

\_\_\_\_\_ Paddy field. \_\_\_\_\_ Low lying fallow land.  
\_\_\_\_\_ Orchard. \_\_\_\_\_ Others.

6. Information About Homestead and Related Facilities

6.1 Total number of dwelling Units.

- One roomed one unit.       Two/Three roomed one unit.  
 One several unit.       Several roomed 2/3 unit.

6.2 Construction aspect of the dwelling unit

Material component of the unit	Earth	Bamboo	Wood	C.I. Sheet	leaves Straw Hay	Brick Cement Sand	Others
Roof							
Wall							
Floor							
Door & Windows							

6.3 Sanitation

- Exclusive for the family       Shared with other families  
 No definite Arrangements       Enclosed form all sides  
 Enclosed Ditch       Sanitary Latrine

6.4 Source of Drinking Water

- Tap       Tube Well       Well  
 Pond       Others

6.5 Source of Light

- Electricity       Hurricane       Hassock  
 Lamp      Others

(Please thank the respondent for his/her time and co-operation)

APPENDIX C

Questionnaire No: \_\_\_\_\_

Landuse/Master Plan for BARLEKHA Upazila Shahar  
Survey for Determination of Catchment Area, 1989  
A S S O C O N S U L T L T D.

Investigator's Name: \_\_\_\_\_  
Date: \_\_\_\_\_ Location: \_\_\_\_\_

1. Name: \_\_\_\_\_
2. Homestead Located in \_\_\_\_\_ Mouza, \_\_\_\_\_ Union
3. Homestead is \_\_\_\_\_ Km. away from the place of discussion,
4. Transportation Mode:  
\_\_\_\_\_ Walking. \_\_\_\_\_ Cycle/Rickshaw.  
\_\_\_\_\_ Bullock Cart. \_\_\_\_\_ Bus.  
\_\_\_\_\_ Autorickshaw/Car. \_\_\_\_\_ Other.
5. Purpose of Visit  
\_\_\_\_\_ Business. \_\_\_\_\_ Service. \_\_\_\_\_ Education.  
\_\_\_\_\_ Administration. \_\_\_\_\_ Recreation. \_\_\_\_\_ Shopping.  
\_\_\_\_\_ Health. \_\_\_\_\_ Others.
5. Frequency of Visit.  
\_\_\_\_\_ Several times daily. \_\_\_\_\_ At least once in a day.  
\_\_\_\_\_ At least once in a week. \_\_\_\_\_ At least once in a Month:
7. Do you need to travel to Zila or other Upazila Centers,  
\_\_\_\_\_ Yes. \_\_\_\_\_ No.  
(If NO go to question 10.)
8. Purpose of visit. \_\_\_\_\_.
9. How many times in a month you visit other centers. \_\_\_\_\_.
10. Besides Upazila Center, do you go to other local bazar.  
\_\_\_\_\_ Yes. \_\_\_\_\_ No.  
(If NO conclude the interview.)
11. Reasons for going to the bazar. \_\_\_\_\_.

(Please thank the respondent for his/her time and co-operation).

