

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

**FINAL REPORT
(REPORT 4)**

**LANDUSE PLAN
BISWANATH UPAZILA SHAHAR
SYLHET ZILA**

FEBRUARY, 1988

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

**FINAL REPORT
(REPORT 4)**

LANDUSE PLAN
BISWANATH UPAZILA SHAHAR
SYLHET ZILA

Submitted by :

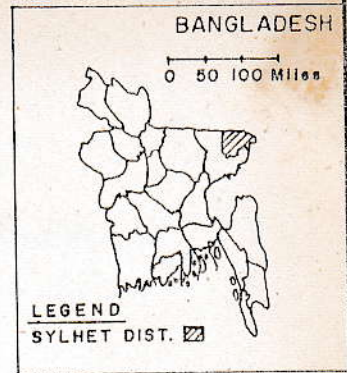
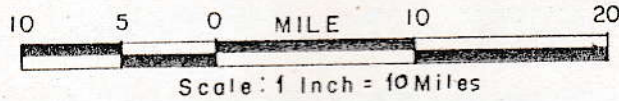
Engineering Science Limited

CONSULTING ENGINEERS • ARCHITECTS • ECONOMISTS

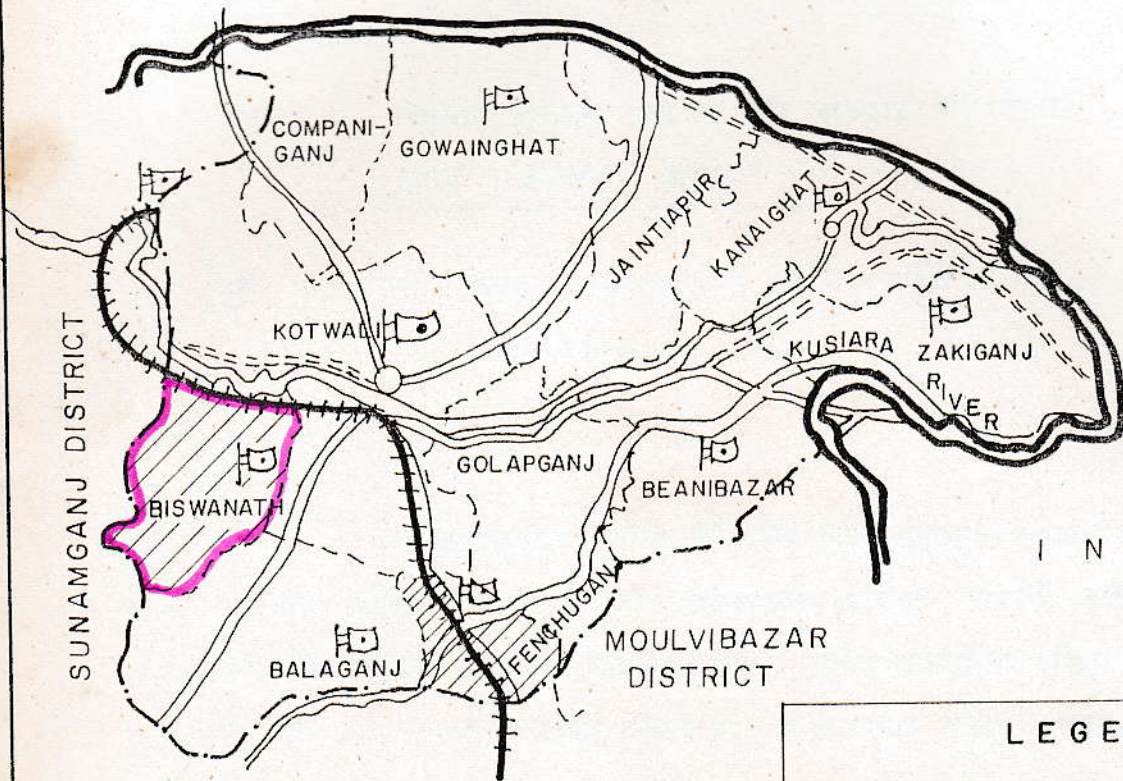
48, BIJOYNAGAR, DHAKA - 1000

FEBRUARY, 1988

DISTRICT SYLHET



I N D I A



I N D I A

LEGEND

International Boundary	====
District Boundary	- . - . - .
Upazila Boundary	- - - - -
Railway line	+ + + + +
Metalled Road	=====
Unmetalled Road	=====
River	~~~~~
Upazila H.Q.	[Symbol]
Study Upazila	[Symbol]



স্মারক নং ১৬ তারিখ ১০-৮-৬৬
২৭-১২-৬৪

প্রেরক : উপজেলা চেয়ারম্যান/নির্বাহী অফিসার, বিশ্বনাথ উপজেলা।

প্রাপক : পরিচালক, নগর উন্নয়ন অধিদপ্তর, ঢাকা।

বিষয় : বিশ্বনাথ উপজেলা শহরের ভূমি ব্যবহার পরিকল্পনার
নকশা ও প্রতিবেদন প্রসঙ্গে।

সূত্র : নগর উন্নয়ন অধিদপ্তরের স্মারক নং-ডব্লিউ - ৩৩০(২৬)/৮৬
৪৭৭ তারিখ- ২৮-০৩-৬৮ ইং।

ইন্সট্রুমেন্টারিং সাইন্স লিমিটেড কর্তৃক প্রস্তুতকৃত উপজেলা শহরের ভূমি
ব্যবহার পরিকল্পনার বিষয়ে উক্ত প্রতিষ্ঠানের প্রস্তুতকৃত নকশাটি দেখিলাম এবং
নকশাটির সম্বন্ধে তাহাদের পরিকল্পনাবীদের সহিত আলোচনা করিয়া বৃষ্টিতে পারিলাম
যে উহা এই উপজেলা শহরের উন্নয়নের জন্য প্রযোজ্য হইতে পারে।



চেয়ারম্যান,
উপজেলা পরিষদ, বিশ্বনাথ, সিলেট।

CONTENTS contd.

	<u>Page No.</u>
CHAPTER VI PROGRAMMING AND IMPLEMENTATION	62
6. PROGRAMMING AND IMPLEMENTATION	62
6.1 Priority Actions, Cost Implications	62
6.2 Phasing, Urban Deferred	63
6.3 Development Control ...	64
6.4 Monitoring Review ...	65

LIST OF TABLES

<u>Table No.</u>	<u>Title</u>	<u>Page No.</u>
2.1	Population within the Zila and Upazila, 1961-1981	3
2.2	Variation of Population in Zila and Upazila Shahar	3
2.3	Composition of Population of Zila Sylhet by Age and Sex 1981	4
2.4	Composition of Population of Upazila Bishwanath by Age and Sex 1981	4
2.5	Number of Mouzas and Villages, 1981	5
2.6	Lifetime net migrants by Upazila Bishwanath and old Zila Sylhet 1951-81	6
2.7	Utilization of Land for Agriculture, 1981-82 and 1982-83	7
2.8	Area and Production of Crops, 1980-81 and 1981-82 in Zila Sylhet	7
2.9	Area and Production of Crops in Upazila Bishwanath 1980-81 and 1981-82	7
2.10	Position of industries in Zila Sylhet and Upazila Bishwanath 1982	8
2.11	Composition of Population by Age and Sex 1981	9
2.12	Employment and Underemployment Situation by Unions of the Bishwanath Upazila (1981)	10
2.13	Annual average daily wage rate of workers by type in old Zila Sylhet, 1977-78 to 1981-82	11
2.14	Gross district product (old Sylhet) at current prices, 1977-78 to 1981-82	12
2.15	Transportation network, 1982 ...	14
2.16	Transportation Services in the Sylhet Zila and Bishwanath Upazila in recent years	15
2.17	Social infrastructure and Utilities, 1982	16
2.18	Priority Project in Upazila Bishwanath	18
2.19	Grading of important settlements in Upazila Bishwanath in 1981	20
2.20	Ranges of weightage for classification of Settlements in hierarchy	22
3.1	Sphere of influence of Bishwanath Upazila Shahar	24
3.2	Study Area of Upazila Shahar Bishwanath	26

LIST OF TABLES contd.

<u>Table No.</u>	<u>Title</u>	<u>Page No.</u>
3.3	Age of Population by Sex at Bishwanath Upazila	27
3.4	Occupational Status of Population by Sex at Bishwanath Upazila	28
3.5	Educational Status of Population by Sex at Bishwanath Upazila	28
3.6	Extent of Income of Household at Bishwanath Upazila	29
3.7	Extent of Expenditure of Households at Bishwanath Upazila	30
3.8	Distribution of Households by Source of Income at Bishwanath Upazila	30
3.9	Migration Pattern of Households at Bishwanath Upazila	30
3.10	Origin of the Migrated Households at Bishwanath Upazila	31
3.11	In & Out Migration of Population by Sex at Bishwanath Upazila	31
3.12	Accessibility to Communal Facilities at Bishwanath Upazila	32
3.13	Facilities for Source of Drinking Water of Household at Bishwanath Upazila	33
3.14	Facilities for Human waste disposal of Households at Bishwanath Upazila	33
3.15	Distribution of Households according to Bathing Facilities at Bishwanath Upazila	34
3.16	Whether Homestead subject to Flooding at Bishwanath Upazila	34
3.17	Existing land-use in Bishwanath Upazila Shahar Study Area, 1986	37
3.18	Services and their Utilization, 1986	42
4.1	Forecasted Population of the Influence Area ...	47
4.2	Household Structure by Size of Population, 1981-2000 AD	48
4.3	Density of Population, 1987	48
4.3(A)	Growth rate of population in shahar area ...	49
4.4	Forecasted Population of the Study Area ...	49
4.5	Household Structure in the Study Area, 1987 ...	50
4.6	Density of Population	50
4.7	Aspects of Migration, 1987	51
4.8	Existing Labour Force and Employment, 1981 ...	52
4.9	Forecasts of Labour Force (1981-2000 A.D.) ...	53
4.10	Land-Use Plan for proposed shahar area of Bishwanath Upazila	55

CHAPTER I
INTRODUCTION

1. INTRODUCTION

- 1.1 Report 4 is submitted in a series of four reports as per Contract Agreement signed with the Urban Development Directorate on 13th July 1986. The land-use plan has been proposed on the basis of the results of land-use survey of the study area and the forecasted population upto the design year 2000 AD.
- 1.2 The survey and assembled data have been presented in this report to bring into focus the general trend of growth of the upazila and its impact on the growth centres of the upazila including the upazila shahar. Although no economic model has been prepared to illustrate the incidence of development in spatial context, a general overview on the impact of upazila-wide economic growth and demographic trend have featured as a basis for the land-use plan of the upazila shahar.
- 1.3 A prima facie developmental position is non- or under-utilization of the energy resource endowment in Sylhet. There is abundance of natural gas and now-a-days mineral oil is also being produced in increasing quantity. Employment generation activities as one of the target objectives of the local government administration decentralization ordinance of 1982 is expected to be adhere to by the Upazila Parishad in the longer term.

CHAPTER II

2. BISHWANATH UPAZILA IN THE CONTEXT OF ZILA SYLHET

2.1 Location and Physical Characteristics of the Upazila

2.1.1 Locational aspects of the Upazila.

A. Geographic Location

Bishwanath belongs to Sylhet District in spatial point of view. It is at a distance of 20 km (13 miles) from the district headquarters. It is located roughly between $24^{\circ}44'$ and $24^{\circ}56'$ north latitude and $91^{\circ}50'$ and east longitude. It is bounded in the north by Kotwali Upazila in the south by Balaganj Upazila in the east by Sylhet Sadar and Balaganj Upazila and in the west by Jagannathpur and Chhatak Upazila. Map - 1 shows the zila with the study Upazila.

B. Administrative and Functional Location

Administratively this is one of the 11 Upazilas of the newly reorganized Zila of Sylhet. The Bishwanath Upazila was established first as a thana on the 10th January 1922. It is one of the commercial and trading estates of Bangladesh. It is connected with various areas of the country through the Sylhet-Moulvibazar highway and the river Kumarkhali. The Upazila Shahar is situated at about 3 miles west from the Sylhet Moulvibazar highway which is further linked with the Highway leading towards Kulaura Upazila through the famous tea growing Upazila Shreemangal (MAP-1).

2.2 Population and Settlement Distribution

2.2.1 Population : Population within the Zila Sylhet and Upazila Bishwanath is stated below in Table 2.1.

Table 2.1: Population within the Zila & Upazila, 1961-1981

Upazila/Zila	Population		
	1961	1974	1981
Upazila Bishwanath	90,541	1,22,208	1,46,043
Zila Sylhet	1,027,084	1,478,707	1,777,784
Upazila as % of Zila	8.82	8.26	8.21

Source: Bangladesh Bureau of Statistics; Sylhet District Statistics, 1983, P-6, Table 1.04.

The variation of population of the Zila and Upazila region is given in Table 2.2.

Table 2.2: Variation of population in Zila & Upazila Shahar

Zila/Upazila	Variation of population (%)		
	1974 over 1961	1981 over 1974	1981 over 1961
Upazila Bishwanath	34.98	19.50	61.30
Zila Sylhet	43.97	20.23	73.09

Source: BBS: ibid. P-6, Table 1.04

The composition of population by age and sex of the zila and upazila are given in Table 2.3 & Table 2.4, respectively.

Table 2.3: Composition of population of Zila Sylhet by Age and Sex 1981

Age Groups	Both Sex	Male	Female
0 - 4	935,427	467,693	467,734
5 - 9	902,153	450,873	451,280
10 - 14	747,903	395,539	352,364
15 - 19	505,961	262,113	243,848
20 - 24	427,321	202,515	224,806
25 - 29	421,411	200,037	221,374
30 - 34	350,986	169,447	181,539
35 - 39	320,732	170,863	149,869
40 - 44	257,251	133,030	124,221
45 - 49	189,972	106,955	83,017
50 - 54	177,730	96,157	81,573
55 - 59	96,960	56,935	40,025
60 - 64	128,671	70,861	57,810
65 - 69	53,288	32,106	21,182
70 +	139,777	83,105	56,672

Source: BBS 1981, Page XXXIV

Table 2.4: Composition of population of Upazila Bishwanath by Age & Sex, 1981

Age Group	Both Sex		Male		Female	
	Total	%	Total	%	Total	%
0 - 4	25,286	17.3	12,558	17.0	12,728	17.6
5 - 9	23,588	16.2	11,676	15.8	11,912	16.5
10 - 14	20,112	13.8	10,397	14.1	9,715	13.4
15 - 19	12,287	8.4	6,448	8.7	5,839	8.1
20 - 24	10,549	7.2	4,938	6.7	5,611	7.8
25 - 29	10,421	7.1	4,744	6.4	5,677	7.8
30 - 34	9,208	6.3	4,137	5.6	5,071	7.0
35 - 39	8,012	5.5	4,121	5.6	3,891	5.4
40 - 44	6,751	4.6	3,449	4.7	3,302	4.6
45 - 49	4,512	3.1	2,557	3.5	1,955	2.7
50 - 54	4,673	3.2	2,454	3.3	2,219	3.1
55 - 59	2,229	1.5	1,339	1.8	890	1.2
60 - 64	3,430	2.3	1,889	2.6	1,532	2.1
65 - 69	1,235	0.8	755	1.0	480	0.7
70 +	3,750	2.6	2,240	3.0	1,510	2.1

Source: BBS - 1981.

2.2.2 Settlement Distribution : The settlement distribution in Zila and Upazila areas may be expressed in terms of statistical and geographic distributive patterns. Statistically the number of mouzas and villages are presented in Table 2.5.

Table 2.5: Number of Mouzas and Villages, 1981

Upazila / Zila	Urban Settlements including Upazila Shahars	Rural Settlements	
		Mouzas	Villages
Upazila Bishwanath	1	115	432
Zila Sylhet	11 (Municipal Town 1)	1,672	3,469

Source : BBS; ibid, P-4, Table 1.02 (adopted).

The mouzas are the original settlements and the villages grow over time within the mouzas as new settlements.

Geographic Distribution : The geographic distribution of settlements has been influenced by the physiographic conditions imposed by low-lying areas, haors, rivers, and tila areas. Most of the areas within the district are low-lying and present Sylhet district has about 70 big haors. In the low-lying areas the villages are not clustered, they are scattered over raised mounds and surrounded by plantations of bettlenut, bamboo, pine-apple, cane and plantains. In the areas of a little higher elevation the settlements have somewhat cluster formation.

2.2.3 Migration : It is difficult to ascertain hard data on in-and out-migration from the Zila and Upazila. The comparative position

of Sylhet with other (old) Districts are given below in Table No. 2.6.

Table 2.6: Life time net migrants by Upazila Bishwanath and old Zila Sylhet : 1951-81

Upazila/Zila	Net migrants in different years		
	1961	1974	1981
Bishwanath	+ 2,507	+ 3,153	- 3,753
Sylhet	+ 96,813	+ 130,675	- 145,153

Source: Statistical Year Book of Bangladesh 1984-85, Bangladesh Bureau of Statistics, Government of the People's Republic of Bangladesh. Page 136, Table 2.66.

2.3 Economic Performance and Transport Linkages

2.3.1 Economic Performance : The economic performance of the Upazila has been illustrated in this report in terms of agricultural and non-agricultural activities together with employment situation and income levels per capita GDP. The data have been assembled from the sources of the Bangladesh Bureau of Statistics.

A. Agriculture : The following Tables 2.7, 2.8 & 2.9 indicate the present status of agriculture in the Upazila compared with the Zila.

Table 2.7: Utilization of Land for Agriculture, 1981-82 and 1982-83

Location	Total Area (Acres)	1980-81			1981-82					
		Cropped Area (Acres)			Cropped Area (Acres)					
		Single	Double	Triple Intensity	Single	Double	Triple Intensity			
1. Upazila Bishwanath	52,400	13,964	12,010	1,137	152.69	51,840	18,926	18,842	513	151.9
2. Zila Sylhet	827,310	204,750	175,528	17,763	153	832,640	245,377	195,920	14,934	149.49

Source: BBS; *ibid*; pp. 32-33, Table 3.02 and 3.03 (adopted).

Table 2.8: Area and Production of Crops, 1980-81 and 1981-82 in Zila Sylhet

Crops	1980-81		1981-82	
	Area	Quantity	Area	Quantity
	(Area in '000 acres and Production in '000 maunds)			
1. Aus rice	251	1,381	155	1,908
2. Aman rice	393	5,275	388	4,998
3. Boro rice	105	2,111	89	2,249
4. Jute	456	1,238	685	2,206 Bales
5. Tea	11,270	4,210 tons	-	-

Source: BBS; *ibid*, pp-77, 78, 81, 83, 86, 87, 110, 111.

Table 2.9: Area and Production of Crops in Upazila Bishwanath, 1980-81 and 1981-82

Crops	1980-81		1981-82	
	Area	Quantity	Area	Quantity
	(Area in '000 acres and Production in '000 maunds)			
1. Aus rice	12	119	15	116
2. Aman rice	27	364	46	597
3. Boro rice	9	174	7	863
4. Jute	-	-	-	-
5. Tea	-	-	-	-

Source: BBS; *ibid*; pp-77, 78, 81, 83, 86, 87, 110, 111.

B. Industries : Bishwanath Upazila has no such natural resource and energy endowment which have lead to the establishment of a number of vital industries of the country. There are a good number of consumer industries in Upazila Bishwanath. The following Table 2.10 shows the position regarding the consumer industries in the Zila and Upazila respectively.

Table 2.10: Position of industries in Zila Sylhet and Upazila Bishwanath 1982

Industries	No. of Units		Fixed Investment Cost (Tk '000)		No. of Employees	
	Zila	Upazila	Zila	Upazila	Zila	Upazila
1. Cottage	5,629	384	82,584	3,739	18,050	834
2. Rice Mills	457	80	15,893	2,463	910	101
3. Oil Mills	9	4	87	12	61	4
4. Saw Mills	53	1	5,129	63	281	4
5. Icecream	9	-	571	-	44	-
6. Biscuit/ confectionary	83	2	3,046	13	476	7
7. Tailoring workshop	916	73	7,030	454	2,489	147
8. Sweetmeat	72	-	1,032	-	269	-
9. Brickfield	9	-	623	-	99	-
10. Wooden/ furniture	1,949	89	15,413	406	5,777	253
11. Handloom (1978)	876	2	-	-	924	-

Source : BBS, ibid p.p-136 - 176.

C. Employment, Underemployment

Data on employment and underemployment are not available for zila and upazila regions. The BBS have computed composition of population by age and sex and economically active population (10 years and over) for the former district of Sylhet in the District Statistics, 1983.

In this report the estimates of economically active population of the upazila and zila have been prepared on the basis of the rates (percentages) of old Sylhet district. Although the rates of old Sylhet may not be applicable for the upazila and the newly reorganized zila, yet it is a good basis for the assumption. Census authorities have published the employment position by occupational classification. Table 2.12 presents the employment and underemployment situation by unions of the upazila.

Table 2.11: Composition of population by age and sex, 1981
(Based on old zila percentages)

Age Group	Rates (%)	Zila Sylhet			Upazila Bishwanath (assumption)		
		Total	Male	Female	Total	Male	Female
0-4	16.53	16.5	16.1	17.0	17.3	17.0	17.6
5-9	15.96	16.0	15.6	16.4	16.2	15.8	16.5
10-14	13.24	13.2	13.7	12.8	13.8	14.1	13.4
15-19	8.95	8.9	9.0	8.8	8.4	8.7	8.1
20-24	7.56	7.6	7.0	8.1	7.2	6.7	7.8
25-29	7.45	7.5	6.9	8.0	7.1	6.4	7.8
30-34	6.21	6.2	5.8	6.6	6.3	5.6	7.0
35-39	5.68	5.7	5.9	5.4	5.5	5.6	5.4
40-44	4.56	4.5	4.6	4.5	4.6	4.7	4.6
45-49	3.36	3.4	3.7	3.0	3.1	3.5	2.7
50-54	3.15	3.1	3.3	3.0	3.2	3.3	3.1
55-59	1.71	1.7	2.0	1.4	1.5	1.8	1.2
60-64	2.26	2.3	2.4	2.1	2.3	2.6	2.1
65-69	0.95	0.9	1.1	0.8	0.8	1.0	0.7
70+	2.27	2.5	2.9	2.1	2.6	3.0	2.1

Source: BBS, *ibid*, p-16; Table 1.20 (percentages calculated).

D. Income levels : The Bangladesh Bureau of Statistics have assembled data on old zila in terms of annual daily wage rate of workers by types and gross district product at current prices. The following tables have been prepared on the basis of BBS source.

Table 2.12: Employment and Underemployment Situation
by Unions of the Bishwanath Upazila, 1981

Name of Union	Total Popula- tion	Not work- ing	House- hold	Culti- vation	Agri. non- crop	Manufac- ture	Busi- ness	Others
Bishwanath	20,317	3,930 (27.1)	5,023 (34.6)	3,010 (20.7)	10 (0.06)	122 (0.8)	694 (4.8)	1,717 (11.8)
Daulatpur	19,863	3,389 (25.2)	5,044 (37.5)	3,245 (24.1)	343 (2.5)	5 (0.03)	368 (2.7)	1,066 (7.9)
Deokolash	13,375	2,393 (25.1)	3,339 (35.0)	2,061 (21.6)	276 (2.9)	20 (0.2)	363 (3.8)	1,080 (11.3)
Dasghar	13,911	2,541 (18.3)	3,682 (26.5)	2,363 (16.9)	4 (0.03)	8 (0.06)	194 (1.4)	802 (5.7)
Khazanchi	18,926	3,022 (24.0)	4,613 (36.6)	3,373 (26.7)	107 (0.84)	19 (0.15)	353 (2.8)	1,123 (8.9)
Lamakazi	16,249	2,232 (18.5)	4,962 (41.1)	2,555 (21.2)	865 (7.2)	32 (0.26)	344 (2.8)	1,070 (8.8)
Rampasha	20,659	2,605 (18.9)	5,720 (41.6)	2,229 (16.2)	630 (4.6)	20 (0.14)	837 (6.1)	1,697 (12.4)
Total	1,23,300	20,112 (23.5)	32,383 (37.8)	18,836 (22.0)	2,235 (2.6)	226 (0.3)	3,153 (3.7)	8,555 (10.1)

Source: BBS, ibid, Page 408-424.

Note : Figure in the parenthesis indicates percentage.

Table 2.13: Annual daily wage rate of workers by type in old Zila Sylhet, 1977-78 - 1981-82

		(In Taka)				
Type	Skilled Unskilled	1977-78	1978-79	1979-80	1980-81	1981-82
Agricultural Labour	Skilled	11.51	15.98	23.08	24.36	25.18
	Unskilled	9.71	11.00	13.47	15.27	16.63
Fisher-men	Skilled	11.90	17.17	30.00	35.00	37.72
	Unskilled	9.76	11.00	14.36	15.18	21.54
Bakery worker	Skilled	15.00	16.95	20.00	20.42	22.73
	Unskilled	11.00	11.70	12.00	12.25	15.91
Dipping machine man	Skilled	-	-	-	-	22.50
	Unskilled	-	-	-	-	19.00
Filler	Skilled	17.00	20.80	25.00	27.33	35.41
	Unskilled	11.30	13.75	16.00	16.33	19.45
Turner	Skilled	17.24	20.02	27.00	28.83	35.00
	Unskilled	10.62	17.73	20.00	20.00	22.00
Line-man	Skilled	11.70	16.56	20.00	20.00	27.54
	Unskilled	9.65	11.31	12.00	12.27	15.00
Forestry labour	Skilled	18.83	20.50	31.66	39.25	42.27
	Unskilled	12.73	15.23	18.50	23.25	26.27
Casual worker	Skilled	-	22.00	-	-	-
	Unskilled	-	14.00	-	-	-
Casual labour	Skilled	13.00	17.50	24.00	25.00	24.73
	Unskilled	9.00	10.80	15.00	15.00	16.64
Compositor	Skilled	15.00	17.85	20.00	21.45	22.55
	Unskilled	9.50	11.96	12.00	12.00	16.64
Book binder	Skilled	14.00	16.56	20.00	21.44	22.73
	Unskilled	10.00	11.18	12.00	12.66	16.54

Source: Bangladesh Bureau of Statistics.

Table 2.14: Gross district product (old Sylhet) at current prices,
1977-78 - 1981-82

Sector	1977- 78	1978- 79	1979- 80	1980- 81	1981- 82	Bangladesh 1981-82	Old Sylhet Dist. as% of Bangladesh
1. Agriculture	5,310	5,654	7,222	8,054	8,682	121,689	7.13
i) Crops	4,475	4,611	6,000	6,832	7,334	94,798	7.74
ii) Forestry	151	176	180	217	241	6,502	3.71
iii) Livestock	529	713	885	848	939	12,713	7.39
iv) Fisheries	155	154	157	157	172	7,676	2.24
2. Mining & quarrying	6	6	5	2	4	6	66.66
3. Industry	660	735	909	1,060	1,193	25,702	4.64
i) Large scale	346	399	483	574	640	14,728	4.35
ii) Small scale	314	336	426	486	553	10,974	5.04
4. Construction	412	657	633	890	1,079	15,863	6.80
5. Power, gas, water & sanitary service	24	29	34	40	47	959	4.90
6. Transport, storage and communication	574	612	748	1,205	1,472	22,858	6.44
7. Trade services	802	913	1,315	1,438	1,480	22,083	6.70
8. Housing services	737	873	1,070	1,205	1,331	19,575	6.80
9. Public administration & defence	227	234	278	528	613	9,442	6.49
10. Banking and insurance	104	165	224	298	303	4,191	7.23
11. Professional & miscellaneous service	596	778	1,027	1,236	1,514	22,626	6.69
12. G. D. P. at current market prices	9,452	10,656	13,465	15,956	17,722	264,994	6.69
13. Indirect tax, net of subsidies (-)	471	585	680	874	897	13,824	6.49
14. GDP of current factor cost	8,981	10,071	12,785	15,082	16,825	251,170	6.70
Population (in million)	5.51	5.62	5.75	5.83	5.95	91.60	6.50
Per capital GDP at factor cost/Tk	1,630	1,792	2,223	2,587	2,828	2,742	-

Source: Bangladesh Bureau of Statistics.

Although the income tables presented above may not reflect the position of the Upazila and the newly reorganized Zila, such levels of information, if assembled, may be of use in the analysis of household and macro-economic features.

2.3.2 Transport Linkages : The transport linkages have been described in this report in terms of transportation network and services.

A. Transportation Network : Sylhet is one of the fast growing cities of Bangladesh and the greater district is located on the Sylhet-Chittagong-Dhaka axis of growth. The transportation network in this region has been developed historically especially from the British period when tea, wood and other forest products in Sylhet and the hilltracts together with jute and rice became important trading commodities. The role of the port of Chittagong had been increasing consequent upon the economic growth. After the termination of British period in 1947, industrial developments together with exploitation of natural gas reserves in Sylhet and Comilla and hydroelectric power generation at Kaptai further contributed to economic growth. In recent years employment opportunities in overseas countries have also augmented it.

However, the following table shows the present position of rail, road and waterways transportation establishing physical linkages to the economic growth. It may be mentioned here that the intra-Upazila and inter-Upazila (Zila-wide) transportation developments are seriously constraints due to the peculiar physiographic conditions imposed by heavy rainfall, low-lying areas, depression and haors.

Table 2.15: Transportation network, 1982.

Modes	Zila	Upazila Bishwanath
I. <u>Roads (miles)</u>	2126	68
a) Pucca	224	13
b) Semi-pucca	33	-
c) Kutcha	1470	55
II. <u>Waterways</u>		
No. of Steamer/ Launch Stations	36	-
III. Railway Stations	4	2

Source : BBS (adopted from tables 7.01 and 7.07, and field investigation).

B. Transportation Services : The following table describes the public services provided in recent years.

Table 2.16: Transportation Services in the Sylhet Zila and Bishwanath Upazila in recent years

Mode	Zila	Upazila Bishwanath
1. <u>Ghats/Stations etc.</u>		
- Railway Station	4	2
- Steamer/Launch stations	36	-
- Bus stoppage	87	5
2. Buses & Microbuses	442	50
3. Trucks	785	13
4. Auto-rickshaw	1,507	35
5. Rickshaws	7,555	250
6. Boats	5,130	100
7. Bullockcarts	476	-

Source: BBS; adopted from tables 7.08, 7.09, 7.13, 7.14 & 7.16

2.4 Social Infrastructure

2.4.1 Markets : The existing social infrastructural services and utilities are described below.

Table 2-17: Social infrastructure and utilities, 1982.

Category of services	Zila	Upazila Bishwanath
1. Education		
- No. of primary schools	1,077	77
. Teachers	2,976	187
. Students	161,784	13,423
- Secondary	119	10
. Teachers	1,384	125
. Students	31,223	1,665
- Colleges	8	-
. Teachers	205	-
. Students	4,473	-
- Madrasa	127	12
. Teachers	968	92
. Students	17,581	7,420
- Gano Shikhya Kendra	170	-
. Teachers	258	-
. Students	11,947	-
2. Health		
- Upazila Health Complex	10	1
. No. of Beds	310	31
- Charitable Dispensary	23	2
- Missionary Hospital	-	-
- Other Health Centre	5	-
- No. of qualified doctors	361	33
- Family Planning Clinics	11	1
- No. of family planning personnel	6	1
3. Trade Centres		
- No. of daily bazar	35	2
- Weekly/Bi-weekly hats	245	31

Table 2.17 contd.

Category of services	Zila	Upazila Bishwanath
4. <u>TubeWells</u>		
- For drinking water	10,161	1,030
5. Villages electrified	319	11
6. Post offices	160	17
7. Telegraph offices	20	1
8. Dak-Bangalow	11	1
9. Bank Branch	156	14
10. Government offices	261	33
11. Cinema Halls	5	-
12. Registered Clubs	59	9
13. Public Library	9	-
14. Orphanages	3	-
15. Sheba Asram	2	-
16. Mosque	3,876	346
17. Food Godown	32	1
- Capacity	52,800 tons	500 tons
18. Fertilizer Godown	21	-
- Capacity	5,323 tons	-
19. Cold Storage	3	-
- Capacity	2,200 tons	-

Source: BBS
(Sylhet District Statistics 1983, P-181-220)

2.5 Current Development Projects

2.5.1 The current development projects which are held to be priority projects of different agencies in respect of the Zila Sylhet and Upazila Bishwanath. These are listed below in Table 2.18.

Table 2.18: Priority Projects in Upazila Bishwanath

Projects	Duration (Months)	Estimated Cost		Donar (if any)
		Total (Tk)	P.E. (if any)	
1. Irrigation and Agricultural Development	1987-88	435,000/-		ADP
2. Small and Cottage industry	1987-88	145,000/-		ADP
3. Transport and Communication	1987-88	870,000/-		ADP
4. Housing and Community Development	1987-88	57,500/-		ADP
5. Educational infrastructures	1987-88	145,000/-		ADP
6. Health and Social Welfare	1987-88	420,500/-		ADP
7. Sports & Culture	1987-88	87,000/-		ADP
8. Unionwise Rural Works programme	1987-88	217,500/-		ADP
9. Maintenance of existing infrastructures (Upazila Complex)	1987-88	300,000/-		ADP
10. Miscellaneous	1987-88	217,500/-		ADP

Source: Upazila Parishad Bishwanath.

2.6 Synthesis : Identification of Hierarchy of Settlements in the Upazila.

2.6.1 Criteria Adopted : The Upazila like all other Upazilas of Bangladesh have predominant rural characteristics in terms of status of economic pursuit and development of human settlements. Most settlements in the Upazila have, however, varying degree of developments. Most of them do not have any other activity other than agriculture. Taking these settlements at the bottom line the upper level settlements are having expansion of services, e.g. hats, secondary schools, banks etc. These settlements at higher levels of those at the bottom line only have been classified to indicate the growth points which would perform the role of absorbing increment population and provide expanded services to the bottom line settlements. In order to identify the growth points and to classify them into levels in the hierarchy, initially such settlements have been identified as prominent places or hats and then these have been graded according to marking allocated per item of selected services. The Table No.2.19 shows these settlements with grading.

2.6.2 Hierarchy of Settlements Identified : According to the criteria adopted (ref : paragraph 2.6.1) important settlements rendering one or more number of socio-economic services in the rural area have been classified. Under each category a number of settlements have been grouped.

Table 2.19: Grading of important settlements in Upazila Bishwanath in 1981

Sl. No.	Category of Services (Total Weightage)	Weightage	Important Settlement (Mouza)							
			Mosula	Purbo Jania	Ahamadabad	Chanshirkafan Kadipur Khurma				
1.	Population Size									
	Upto 2000	5	-	-	-	5	-	-	-	-
	2001 - 5000	10	10	10	10	-	-	-	10	-
	5001 - 10,000	15	-	-	15	-	-	-	-	-
	10,000 +	20	-	-	-	-	-	-	-	-
2.	College	9	-	-	9	-	-	-	-	-
3.	High School	6	6	-	-	-	-	-	-	-
4.	Primary School	4	4	-	4	-	-	4	-	-
5.	Hats	5	5	5	-	5	-	-	5	5
6.	Daily Bazar	7	7	7	7	-	-	-	-	-
7.	Hospital	10	-	-	-	-	-	-	10	-
8.	Dispensary	4	4	4	4	-	-	-	-	4
9.	Vocational Institution	4	4	-	-	-	-	-	-	-
10.	Banks	6	6	6	6	-	-	-	-	-
11.	Electricity	7	7	7	7	-	-	7	7	-
12.	Any Industry	6	6	6	6	-	-	6	6	-
13.	Administrative Services	12	12	12	12	-	-	-	-	-
		100	71	57	53	37	33	19		

According to the marking in the above table settlements are classified in terms of hierarchy by ranges of weightage allocable to each settlement. The ranges are shown in Table 2.20.

Table 2.20: Ranges of Weightage for classification of Settlements in hierarchy

Ranges	Category in hierarchy
55 and above	A = Highest Category
38 - 54	B = Upper middle category
25 - 37	C = Middle category
Upto 24	D = Lower category

According to Table 2.20, the following settlements emerge as A, B, C and D categories.

<u>Category</u>	<u>Name of Settlements</u>
Category A	Mosula, Purbo Jania
Category B	Ahmadabad, Daulatpur, Kalijuri
Category C	Chanshirkafan, Kadipur, Kamalpur, Naogaon, Tengra
Category D	Senergaon, Tajpur, Khurma, Madhupur.

In course of time the settlements classified above may change their characteristics due to intensification of development.

CHAPTER III

THE UPAZILA HEADQUARTERS

3. THE UPAZILA HEADQUARTERS AND ITS SPHERE OF INFLUENCE

3.1 Definition of Sphere of Influence/Attractiveness

- 3.1.1. The sphere of influence of the Upazila Shahar is identifiable in respect of administrative and socio-economic context. In other words, the Upazila Shahar as an administrative centre has the whole of the Upazila as its catchment area, but as a growing urbanism it has economic linkage with areas around it and the areas may also include parts of other Upazilas. But for the purpose of land-use planning for the Upazila Shahar, the immediate hinterland which consume all services of the Upazila Shahar except housing may be considered as the most appropriate sphere of influence. Because population base of this hinterland actually would influence requirement of land for services other than housing. The mouzas which are attracted towards other centres generally are excluded. The criteria for delineation of the boundary of the sphere of influence is to draw a line on map around the Upazila Shahar, the boundary line should be laid equidistant between the Upazila Shahar and the adjoining centres/hats. The boundaries are also to be adjusted in an alongated manner along roads. Based on this criteria the boundary and mouzas are shown on Map 2 and Table 3.1.

Table 3.1 : Sphere of influence of Bishwanath Upazila Shahaar

Name of Mouza	Total Area		Involved Area		Total Population			Involved Population		
	Acre	Hectar	Acre	Hectar	1961	1974	1981	1961	1974	1981
1. Nosula	1,144	462.95	858.0	347.49	129	357	1,927	33	90	482
2. Purbo Jania	462	186.96	120.12	48.61	282	1,615	2,028	74	419	528
3. Ahammadabad	100	40.46	30.0	12.14	(NA)	1,401	2,326	(NA)	421	698
*4. Kadipur	216	87.20	54.17	21.80	167	177	528	42	45	70
5. Chandshikafan	587	234.80	135.01	54.0	494	692	2,845	114	160	654
*6. Mirerchar	844	337.6	152.0	60.7	985	2,341	2,398	178	304	360
*7. Kaulpur	729	292.0	94.7	38.0	954	1,328	2,338	124	173	200
Total:	4,084	1,641.97	1,444.0	582.74	3,011	7,911	14,390	565	1,612	2,992

Source: Area and population of 1961, 1974 & 1981 are census figure of BS.

* All areas are not included in the catchment area.

3.2 Definition of Study Area

3.2.1 Criteria for Determination of the Study Area : There are several considerations for determination of the Study Area as follows :

- . According to the general guidelines of the National Implementation Committee for Administration Reorganization (NICAR) the Study Area should be located within a radius of one mile from the centre of the Upazila Headquarters.
- . The guidelines of the TOR suggests that an area should be defined for the Upazila Shahar which will be or likely to be densified to a sufficient level by which per capita investment cost would be reasonably at a lower level.

3.2.2 Bearing on these considerations the Upazila Study Area has been determined in order to include the urban and semi-urban activities in and around the Headquarters. In doing so conservation of agricultural land, natural barriers and transportation network have also been kept in view.

The spread of urban and semi-urban activities together with natural barriers are shown on sketch map attached. These aspects were examined in more details during survey works. The mouzas shown in Table 3.2 are included in the Study Area, partially or fully.

3.2.3 The Study Area has been marked on Map 3 and Table 3.2.

Table 3.2 : Study Area of Upazila Shahar - Bishwanath

Name of Mouza	Total Area		Involved Area		Population Total			Population Involved			
	Acre	Hectare	Acre	Hectare	1961	1974	1981	1961	1974	1981	
PURBA JANAIYA	462	186.96	140.12	56.75	282	1615	2028	208	1,196	1,500	
MOSULA	1144	462.95	484.00	196.02	129	357	1927	324	267	1,445	
CHADSIKAPAN	587	234.80	133.88	54.22	494	692	2845	380	532	2,191	
AHAMMADABAD	100	40.46	70.00	28.35	-	1401	2326	-	980	628	
TOTAL	=	2293	925.17	828.00	335.34	905	4065	9126	912	2,975	5,764

Source: Original data is taken from Census Documents for Area and population of 1961, 1974 and 1981 of Bangladesh Bureau of Statistics.

3.2.4 Socio-economic condition of the Study Area

In order to find out the existing socio-economic condition of the study area a sample household survey (5% of the total households) was conducted. The results are given below in terms of Tabulated Information and Analysis.

Table 3.3: Age of Population by Sex at Bishwanath Upazila

Age Group	(Frequency)			
	Sex	Male	Female	Total
0.01 - 9.00 years		129 (29.32)	91 (26.60)	220 (28.14)
9.01 - 17.00 years		83 (18.86)	85 (24.85)	168 (21.48)
17.01 - 30.00 years		107 (24.32)	73 (21.35)	180 (23.02)
30.01 - 45.00 years		64 (14.55)	57 (16.67)	121 (15.47)
45.01 - 55.00 years		18 (4.09)	15 (4.39)	33 (4.22)
55.01 and above years		39 (8.86)	21 (6.14)	60 (7.67)
Total = 83		440 (100)	342 (100)	782 (100)

Source: Field Survey, 1987.

The parenthesis figures are indicating percentage.

Table 3.4 : Occupational Status of Population by Sex at Bishwanath Upazila

Occupation \ Sex	Male	Female	Both (Total)
Agriculture	78 (17.73)	0	78 (9.97)
Business	48 (10.91)	0	48 (6.14)
Service	58 (13.18)	1 (0.29)	59 (7.54)
Day-Labour	12 (2.73)	0	12 (1.53)
House-wife	0	138 (40.35)	138 (17.65)
Student	137 (31.14)	100 (29.24)	237 (30.31)
Others	107 (24.32)	103 (30.12)	210 (26.86)
Total = 83	440 (100)	342 (100)	782 (100)

Source: Field Survey, 1987.

Table 3.5: Educational Status of Population by Sex at Bishwanath Upazila

Educational Status \ Sex	Male	Female	Both
Child	56 (12.72)	39 (11.40)	95 (12.14)
Illiterate	92 (20.91)	132 (38.60)	224 (28.65)
Class I to Class V	158 (35.91)	128 (37.43)	286 (36.58)
Class VI to Class X	90 (20.46)	34 (9.94)	124 (15.86)
S. S. C. or H. S. C.	33 (7.50)	8 (2.34)	41 (5.24)
Degree or above	11 (2.50)	1 (0.29)	12 (1.53)
Total	440 (100)	342 (100)	782 (100)

Source: Field Survey, 1987.

Table 3.6: Extent of Income of Households at Bishwanath Upazila

Income in Taka	Frequency	Percentage
0 - 10,000	3	3.61
10,000 - 20,000	-	-
20,000 - 30,000	11	13.25
30,000 - 40,000	6	7.23
40,000 - 60,000	13	15.66
60,000 - 80,000	8	9.64
80,000 - 1,00,000	4	4.82
1,00,000 & above	38	45.78
Total	83	100

Source: Field Survey, 1987.

Table 3.7: Extent of Expenditure of Households at Bishwanath Upazila

Expenditure in Taka	Frequency	Percentage
0 - 10,000	1	1.21
10,000 - 20,000	1	1.21
20,000 - 30,000	17	20.48
30,000 - 40,000	13	15.66
40,000 - 60,000	11	13.25
60,000 - 80,000	12	14.46
80,000 - 1,00,000	11	13.25
1,00,000 & above	17	20.48
Total	83	100

Source: Field Survey, 1987.

Table 3.8: Distribution of Households by Source of Income
at Bishwanath Upazila

Source of Income	Frequency	Percentage
Have only Agricultural Income	12	14.64
Have only Non-Agriculture Income	35	42.68
Both have Agril. & Non-Agril. Income	35	42.68
Total	82	100

Source: Field Survey, 1987

Table 3.9: Migration Pattern of Households at Bishwanath Upazila

Extent of years of coming	Frequency	Percentage
Before 5 years	1	1.20
5 years - 10 years ago	4	4.82
10 years - 15 years ago	2	2.41
15 years and above	2	2.41
Inherintently	74	89.16
Total	83	100

Source: Field Survey, 1987

Table 3.10: Origin of the Migrated Households at Bishwanath Upazila

Origin	Frequency		Percentage	
	Male	Female	Male	Female
From Village	9		100	
From Town	-		-	
Total	9		100	

Source: Field Survey, 1987.

Table 3.11: In and Out Migration of Population by Sex at Bishwanath Upazila

Origin of Migration	In-Migration			Out-Migration		
	Male	Female	Total	Male	Female	Total
From within Upazila	2 (0.26)	3 (0.38)	5 (0.64)	-	-	-
From outside Upazila	2 (0.26)	2 (0.26)	4 (0.52)	3 (0.38)	-	3 (0.38)
Total population migrated	4 (0.52)	5 (0.64)	9 (1.16)	3 (0.38)	-	3 (0.38)
Total population	440 (56.27)	342 (43.73)	782 (100)	440 (56.27)	342 (43.73)	782 (100)

Source: Field Survey, 1987.

Table 3.12: Accessibility to Communal Facilities at Bishwanath Upazila

Distance in km	Main Road	Service place	Primary School	High School	Bazar/ Hat	Hospital	Post Office	Bus/Train
0.00 - 0.50	41 (49.40)	40 (63.49)	43 (51.80)	12 (14.46)	13 (15.66)	4 (4.82)	11 (13.25)	12 (14.46)
0.50 - 1.00	18 (21.69)	4 (6.35)	18 (21.68)	10 (12.04)	8 (9.64)	5 (6.02)	9 (10.85)	7 (8.43)
1.00 - 1.50	11 (13.25)	4 (6.35)	4 (4.82)	4 (4.82)	11 (13.25)	3 (3.62)	6 (7.23)	6 (7.23)
1.50 - 2.00	10 (12.04)	13 (20.64)	16 (19.28)	46 (55.43)	42 (50.60)	36 (43.38)	45 (54.22)	32 (38.56)
2.00 - 2.50	2 (2.41)	-	1 (1.21)	7 (8.43)	6 (7.23)	5 (6.02)	7 (8.43)	5 (6.02)
2.50 and above	1 (1.21)	2 (3.17)	1 (1.21)	4 (4.82)	3 (3.62)	30 (36.14)	5 (6.02)	21 (25.30)
Total	83 (100)	63 (100)	83 (100)	83 (100)	83 (100)	83 (100)	83 (100)	83 (100)

Source: Field Survey, 1987.

Table 3.13: Facilities for Source of Drinking Water of Household at Bishwanath Upazila

Sources	Frequency	Percentage
Well	3	3.62
Pond (Neighbour)	7	8.43
Pond (Own)	46	55.42
Tubewell (Neighbour)	12	14.46
Tubewell (Own)	15	18.07
Total	83	100

Source: Field Survey, 1987.

Table 3.14: Facilities for Human waste disposal of Households at Bishwanath Upazila

Type	Frequency	Percentage
None	33	39.76
Buccet Latrine	3	3.61
Pacca pit Latrine	47	56.63
Others	-	-
Total	83	100

Source: Field Survey, 1987.

Table 3.15: Distribution of Households according to Bathing Facilities at Bishwanath Upazila

Type of Facilities	Frequency	Percentage
Pond (Neighbour)	13	15.67
Pond (Own)	65	78.31
Canal/River	3	3.61
Well	-	-
Tubewell	2	2.41
Total	83	100

Source: Field Survey, 1987.

Table 3.16: Whether Homestead subject to Flooding at Bishwanath Upazila

Reply	Frequency	Percentage
Yes	31	37.35
No	52	62.65
Total	83	100

Source: Field Survey, 1987.

Analysis of Tables

3.2.5 Demography : (Table 3.2, 3.3, 3.4 & 3.5) : The demographic situation in the study area has already been illustrated in Table 3.2. It may be seen that the total population of the study area increased from 912 in 1961 to 2975 in 1974 and 5764 in 1981.

As shown in Table 3.3 the total sample population is 782 of which 440 male and 342 female. This indicates that (a) there are 772 female per thousand male and (b) dominance of male population is an indication of urbanisation. Unbelievably large family size (9.42) is seen in this area. It is due to the consequence of joint family. In this area most of the household heads have more than one wives. 28.14% population of the sample households falls below 9 years of age and dominate the other age group. It is expected that the growth rate of population will continue to be accelerated.

Table 3.4 represents that the participation of female population in service is very negligible (0.29%) and no participation in manual labour. On average 7.54% of total population is in service of which 13.18% of the male populations has agricultural occupation while 10.91% has business though 24.32% categorised as 'others'.

As shown in Table 3.5, the female literacy rate is lower than that of the male population. On an average 28.65% population are illiterate and for the rest 36.58% has education below the mark, 15.86% has below secondary level and only 1.53% has degree or above education.

3.2.6 Income and Expenditure : Table 3.6 reveals that 36.14% and 14.46% of sample households are lower middle and upper middle income groups respectively against 45.78% of high income groups. Comparatively lower income groups are negligible. The reason of a sizeable number of high income groups may be the association with remittance of money from overseas countries by the wage earners of Greater Sylhet.

In comparing Table 3.7 with 3.6 it is salient that though 3.62% of sample households has income of Tk 0 - Tk 20,000 and 13.25% has income of Tk 20,000 - Tk 30,000, 20.48% household has to incur expenditure of Tk 20,000 - Tk 30,000. It reveals that some households are

bound to expend more than their income even it is reported by selling land. 20.48% has expenditure more than lac but in comparing with their income they may be treated as affluent groups.

Table 3.8 indicates that 14.64% of the sample households has only agricultural income while 42.68% has both agriculture and non-agriculture income and 42.68% has only non-agricultural income. It may be concluded that non-agricultural income dominates the agricultural income in this sample area.

3.2.7 Migration : Out of migrated households all appear to have migrated from village (Table 3.10). 44.44% of migrated households has come within 5 - 10 years while 22.22% has come 10 - 15 years ago. The figures reveal that the trend of in-migration is increased after declaration of Upazila (Table 3.9). As shown in Table 3.11 the in-migration of population is being prominent that the out-migration and the female dominates the male. It is probably due to the shifting through marriage.

3.2.8 Consumption of services and facilities : There are some social facilities like school, bazar, post office, hospital and facilities like drinking water, waste disposal, sanitation etc. But except social facilities most people do not have adequate access to safe drinking water. Tables 3.12, 3.13, 3.14, 3.15 and 3.16 are also represents that, 55.42% of households are to depend on pond for drinking water while only 18.07% has own tubewell. 56.63% of households has pucca pit latrine and 39.76% has katcha pit latrine.

Most of the sample households (78.31%) are to depend on pond for bathing against 2.41% on tubewell. 37.35 of homestead subject to flooding while the rest households have no possibility for flooding (Table 3.12, 3.13, 3.14, 3.15 and 3.16).

3.3 Existing Land-Use, Facilities & their Utilization Characteristics.

3.3.1 Existing Land-Use : Land-use survey of the study area has been carried out with mouza maps (Scale 1" = 330') recently. The following Table 3.17 and Map 3 show the existing land-uses.

Table 3.17 : Existing land-use in Bishwanath Upazila Shahar Study Area, 1986

Sl. No.	Land-uses	Symbol on Map	Area		Percentage of total study area
			Acre	Hectare	
1.	Agriculture		680.29	275.50	82.17
2.	Commerce	1A	6.08	2.46	0.73
2.1	Industry	1B	0.38	0.15	0.04
3.	Education	2	5.25	2.13	0.63
4.	Health	3	0.30	0.12	0.04
5.	Administration Govt. Deptts., Cantonment etc. (with name)	4	9.46	3.83	1.15
6.	Recreation and open area	5	-	-	-
7.	Socio-Cultural	6	1.16	0.47	0.14
8.	Urban Services	7	1.53	0.62	0.18
9.	Residential	8	68.00	27.54	8.21
10.	Roads		21.55	8.73	2.60
11.	Water-bodies		34.00	13.77	4.11
			<u>828.00</u>	<u>335.34</u>	<u>100.00</u>

Source: Land-Use Survey, 1987.

It will be seen from the Table above that utilization of land for Agriculture constitute the highest percentage (82.17%) of the total area followed by Residential uses (8.21%). Brief description of the different categories of land-uses have given in next pages.

Agriculture:

Agricultural area has occupied as major part of the upazila Bishwanath. The total agricultural area of this proposed shahar is 680.29 acre and which is about 82.17% of the urban area. These arable lands stand surrounding the existing heart of the shahar. The river Bashai also passing through the shahar area and divided it in to two parts such as northern and southern segments. Most of the part of agricultural area at the southern part of the river have been frequently affected by flood.

Commerce and Industry:

Table 3.17 has represents the total area for commerce and industries in the urban area of Bishwanath upazila. Out of total 828 acre of urban land, area for commerce and industrial uses occupy about 6.46 acre or 0.74 percent. The commercial area has been growing along both the banks of river Bashai. Such areas are provided various retail and wholesale shops, daily and weekly bazars, hats etc. Recently new shops and small markets have been build up along the main road/^{which} passes through this shahar area. The area only covered by such trade and commercial functions are 6.08 acre or 0.73 percent of total shahar area. While about 0.38 acre or 0.04 percent of shahar area has covered by different small factories like grill manufacturing, ice plant, biscuit factory etc. Therefore very insignificant part of shahar area has still been used to set up of industries. No major industry yet been developed in this urban periphery.

Education:

Various educational institutions like nursery primary, secondary schools, madrasha, cocational institutes and college etc. have covered some area known as landuse for educational purposes. Such land for this urban area is 5.25 acres (i.e. 0.63 percent of proposed shahar area is served by two primary school, one boys' high school, one girls' high school, two madrashas and one college. Any vocational

institute and nursery school is not present in study area.

Health:

The health care facilities for the people of this upazila have been distributed through dispensaries, maternity and child care center, health center and public hospital etc. The central public hospital at upazila area is now known as Upazila Health Complex. In case of Bishwanath upazila the spatial location of the existing upazila complex is about three miles north-west from upazila parishad. Only one sub-centre is present in the shahar. This sub-centre has covered 3 acre of land or about 0.04 percent of the urban area which is serving the population of the shahar and its catchment area.

Administration & Govt. Deptts. etc.:

The lands have been using by various organizations of the government to set up of their functional and infrastructural establishment on it through the ownership of the land by the government is recognised as land for administrations and government departments. The various agencies of the government like upazila and union parishad bhaban, revenue office, sub-register office, and different other public institutions have been covered a significant part of the proposed urban area. Table 22 represents, about 9.46 acre or 1.15 percent of the shahar area have been use to provide such institutions. Out of this 9.46 acre, about 9.00 acre is covered by upazila parishad complex which is stand at the north-east corner of the bridge on river Bashai.

Recreation & Open Areas:

Any recognised open area and recreational place for the inhabitants of this shahar is not present. Occasionally the play field of boys high school is used. But this is inadequate. The small open areas

at the upazila parishad complex has been used only by the employees and staff of the same parishad.

Socio-Cultural Area:

The areas have been use for socio-cultural functions like community centre, public library, cinema hall, public auditorium, communal graveyard etc. are covered a insignificant part of the shahar area. Out of total 828 acre of proposed shahar area, only 1.16 acre or 0.14 percent area has been used to perform such activities. Park, community centre, public library and communal graveyard are completely absent from this shahar. Only eight mosques are visible in this urban area.

Urban Services:

Urban services included such facilities like, railway station, bus stopage, launch or steamer ghat, post office, police station etc. Total area covered by such infrastructures is 1.53 acre or 0.18 percent of proposed area of shahar. Single police station, one post office and bus stopage, has covered 0.95 acre, 0.33 acre and 0.25 acre of land, respectively. No recognised launch ghat is found in the shahar area.

Residential Area:

Residential area is scatteredly grown at surrounding the central area of the upazila shahar. The existing shape of residential area is not easy to define. Which has developed spontaneously but along the Sylhet-Bishwanath link road as well as along the bank of river Kumarkhali.

The total area covered by the residential areas are 68.00 acre, and which is about 8.21 percent of total area. It is also found that

37.35 percent of homesteads in shahar area are frequently subjected to flooding. In this regard about 4.5 percent of the residential areas are frequent affected by flood.

Roads:

Within the proposed boundary of Bishwanath upazila shahar the length of the primary pucca road is about 1.34 miles and its average width is about 40 feet. So the total area covered by this road is about 6.49 acre or 0.78 percent of proposed shahar area. This road is connected with Sylhet-Moulvibazar highway. In addition to this number of secondary and access roads with metallic surface are present in shahar area. The average width of those roads is 15 feet and their length is about 2.31 miles. Therefore the total area covered by such roads is 4.20 acre or 0.51 percent of shahar area. Moreover a number of semipucca and katcha roads are also exist in this shahar. Total area covered by semipucca and katcha roads is 10.85 acre and which is occupy about 1.31 percent of total study urban area.

Waterbodies:

River Bashai has been flowing through the heart of the Bishwanath upazila. The length of the river fallen in the proposed shahar boundary is about 1.87 miles and its average width is about 135 feet. Therefore the area covered by this river is about 30.60 acre or 3.70 percent of shahar area. Several types of water bodies like tanks, ponds and ditches are also present in this shahar. The number of such water bodies are 23, and those are covered about 3.40 acre of shahar area. So the total area covered by different type of water bodies are 34.0 acre or 4.11 percent of proposed urban area of upazila Bishwanath.

3.3.2 Facilities and their Utilization Characteristics : The facilities appeared to be under-developed and undeveloped. These mean some facilities are still not available or inadequate. The local Union Parishad is known to be the authority to provide Urban services and their maintenance. But the income and expenditure are not balanced and in many cases, grants from central government are indispensable. The services, therefore, are subsidised for which expansion of services are severely constrained. But the pressure of population on services are increasing. This has not yet been closely examined in terms of potentials and problems of services provision by the authorities. The following table shows the comparative position between the services and population.

Table 3.18: Services and their Utilization, 1986.

Name of Services	Present State of Utilization	Municipal Revenue in Tk
1. Residential	Density of population is 34.73 per Acre	Has no Municipal Revenue System, But union parishad Tax is @ 7% of assessment amount for individual homestead.
2. Water Supply	120 tubewell have been serving for all population of upazila.	
- Tubewell	600 household covered by tubewell facilities	
- Tapped	25 nos. of household served only at upazila parishad complex.	
3. Sanitation	400 nos. of pucca latrine found in upazila. 100 nos. of katcha latrine found in upazila shahar area.	
4. Electricity:		
- Household connection	209 nos.	Charges as per PDB rule.
- Industry	" 48 nos.	Charges as per PDB rule.
- Commerce	" 372 nos.	Charges as per PDB rule.

Table 3.18 contd.

Name of Services	Present State of Utilisation	Municipal Revenue in Tk
5. Gas		
- Household connection	0	
- Industry	"	Nil
- Commerce	"	
6. Social Facilities:		
- Play ground		Not available
- Park		Not available
- Community Centre		Not available
- Public Library		Not available
- Graveyard		Has no communal ground.
- Mosque	8 nos.	
- Shops	350 nos.	

Source: Upazila Parishad, Upazila PHE Office, PDB Office and Union Parishad Office.

It will appear from the table above, the following services e.g. water supply, sanitation, recreational facilities and fuel for domestic consumptions are inadequate in this Upazila Shahar area.

3.4 Physical Opportunities and Constraints

3.4.1 Scattered Settlement Pattern

The Upazila Shahar's existing land-use map shows clusters of settlements scattered all around the Upazila Complex. In between these clusters are vast areas under agriculture. It is difficult to include many clusters of settlements because, in this way, the limits of the township will spread out and a large area compare to possible growth of population would be included in the planning area: this is not justifiable because of extremely low density which would not be conducive for cost effective urban development. Therefore, a sizeable area for urban development has been earmarked as planning area on either sides of the road leading to Sylhet.

3.4.2 Areas Liable to Flooding

There is a river passing through the Upazila Shahar almost parallel to the Sylhet Road. This road and river have been attracting housing and other developments from the past. Flooding is not a hazard normally.

3.4.3 Areas of High Yielding Agriculture

Almost all areas under agriculture are high yielding especially the areas between the river and its tributary in mouza Chandsirkafan. These areas have been excluded from urban development.

3.4.4 Other Constraints

The size of base population (1981) is rather small, numbering only 5764 persons. So, the total urban area would also be small.

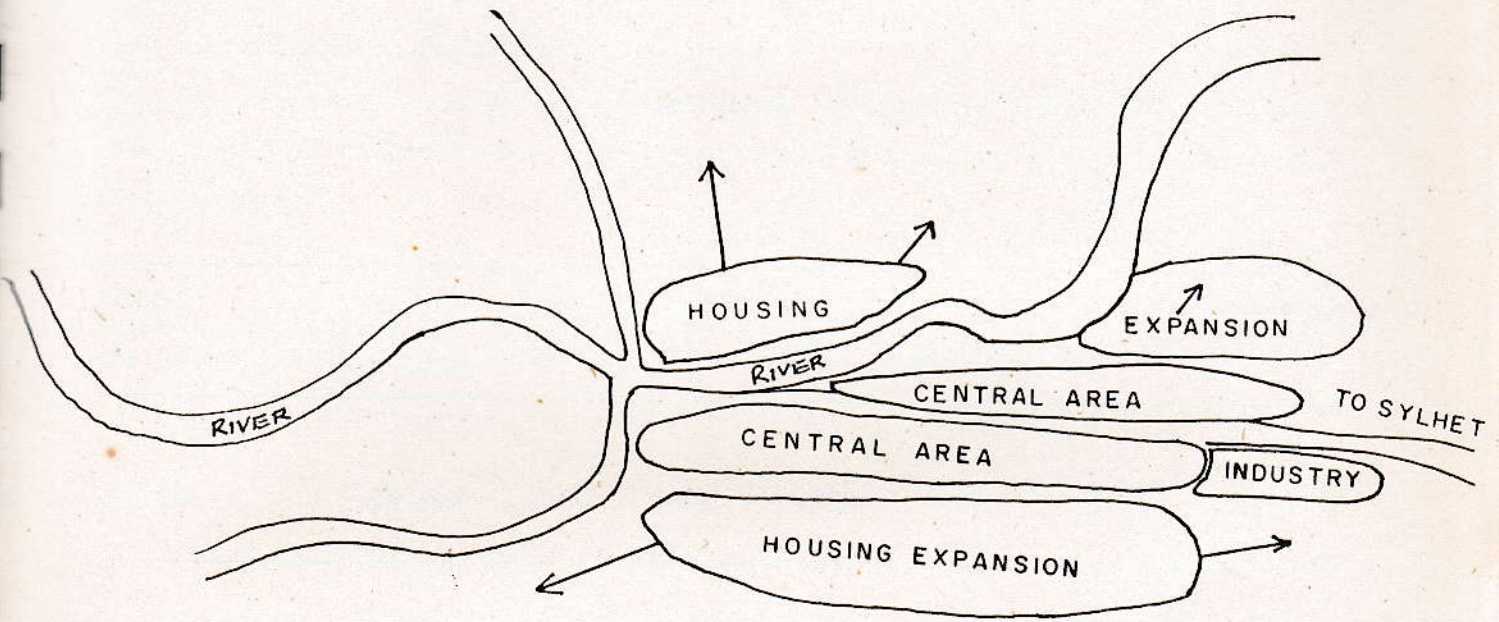
B. Opportunities

Although there are so many constraints against the growth of the Upazila Shahar as discussed above, there are opportunities provided by the Sylhet-Road and the river. All central functions are localized on this road and the river. Behind this road and riverside development are open areas which may be utilized for residential developments according to needs of the growing population. This will somewhat established residence/work place relationships.

C. Concept Plan

Keeping in view the physical constraints, opportunities and demographic trends a schematic plan has been prepared diagrammatically.

SCHEMATIC PLAN
NOT TO SCALE



CHAPTER IV

FORECASTS

4. Forecasts

4.1 Population, Household Structure and Density

A. Within Sphere of Influence

i) Forecasting of Population

The populations of the sphere of influence in 1961, 1974 and 1981 were 565, 1612 and 2992 respectively. The growth rate of population has shown in Tabular form :

Total Number of Mouzas	Involved Area (in acre)	Involved Population			Growth rate of population in %		
		1961	1974	1981	1961-74	1974-81	1961-81
Seven	1,444.00	565	1,612	2,992	8.39	9.23	9.11

The growth rate of population in 1974-81 is 9.23% and which is highest among other two rates. It also appear that urbanization growth pattern of the shahar area not been justified with such high growth rate of population. On this consideration the growth rate of population in shahar area like Bishwanath upazila would be lower than those have found in the above Table. Therefore the realistic trend of growth of population may be considered as 6%, 4% and 3% respectively for High, Medium and Low rate. Table 4.1 also shown the projected population of the Influence area.

Table 4.1 Forecasted Population of the Influence Area

Range of Projection	1981 (Base year)	1985	1990	1995	2000
High forecasted = 6%	2,992	3,777	5,054	6,763	9,050
Medium forecasted = 4%	2,992	3,500	4,258	5,180	6,302
Low forecasted = 3%	2,992	3,367	3,903	4,524	5,244

(ii) Household Structures

Bishwanath is a rural upazila centre and the average size of household of the upazila in 1981 was 6.4 persons. This holds good for the Area of Influence which is also predominantly a rural area. However, the average sizes of household have been assumed to be on lower side as shown in the Table below.

Table 4.2 : Household Structure by Size of Population, 1981-2000
(Medium percentage of population)

	1981 (base year)	1985	1990	1995	2000
Population	2992	3500	4258	5180	6302
Household size	6.4	6.00	5.75	5.25	5.00
No. of household	467	583	740	986	1260

(iii) Density of Population

The density of population per hectare and acre are shown in Table 4.3 below.

Table 4.3 : Density of Population, 1987

	1981 (base year)	1985	1990	1995	2000
1. Area : acre	1444				
hec	582.74				
2. Population	2992	3500	4258	5180	6302
3. Density / acre;	2.07	2.42	3.00	3.60	4.36
/ hec	5.13	6.00	7.31	8.89	10.81

B. Within the Upazila Shahar Area

i) Forecasting of Population

The growth rate of Population in the shahar area has been given in Table 4.3(A).

Table 4.3(A) Growth rate of population in shahar area

Name of Mouzas	Involved Area (in acre)	Involved Population			Population growth rate		
		1961	1974	1981	1961-74	1974-81	1961-81
Purba Janaiya	140.12	208	1,196	1,500	14.40	3.30	10.38
Mosula	484.00	324	267	1,445	- 1.50	27.30	7.76
Chadsirkafan	133.88	380	532	2,191	2.62	22.41	9.15
Ahmadabad	70.00	-	980	628	-	- 6.56	-
Total	828.00	912	2,975	5,764	9.52	9.91	9.66

The growth rates of population have found about 9.00 percent. Like growth rate of population in influence area growth rate in shahar area is also unrealistic. According to the population growth trend in other upazila shahars like Bishwanath upazila we may consider the high, medium and low growth rate as 6.5%, 5.0% and 4.0% respectively. Therefore the projected population in shahar area is given in Table 4.4.

Table 4.4 Forecasted Population of the study area

Range of Projection		1981 (Base year)	1985	1990	1995	2000
High	(6.5%)	5,764	7,415	10,159	13,918	19,068
Medium	(5.0%)	5,764	7,006	8,941	11,411	14,563

ii) Household Structure

The household structure has been estimated in terms of size of population. In 1981, the size of household was 6.4 in the upazila. In future the size of household has been assumed a gradual reduced rate.

Table 4.5 : Household Structure in the Study Area, 1987

	1981 (base year)	1985	1990	1995	2000
Population	5764	7006	8941	11411	14563
Size of household	6.4	6.00	5.75	5.5	5
No. of household	900	1167	1555	2074	2912

(iii) Density of Population

The following Table shows the density of population in the study area upto 2000 AD.

Table 4.6 : Density of Population of Study Area, 1987

	1981 (base year)	1985	1990	1995	2000
Area : Acre	828				
hec	335.34				
Population	5764	7006	8941	11411	14563
Density /acre	6.96	8.46	10.79	13.78	17.58
/hec	17.20	20.89	26.66	34.00	43.43

C. Aspects of Migration

A large number of people of old Sylhet district work as wage earners in the overseas countries. Almost all the upazilas have some overseas employments. There are in-migrants to Dhaka, Chittagong, Khulna and other towns and cities of the country. There are also in-migrants from the rural to the urban areas and now-a-days the upazila shahars like Bishwanath are attracting various income groups from the rural areas.

It is difficult to estimate to measure the in- and out-migrants from the upazila shahar because of data problems. Employees in the public sector at the upazila shahar are estimated to be 212 persons. But there is no reliable information on other sectors unless development and economic activities are stabilized within the next few years.

For the time being the position regarding in- and out-migration from Upazila Bishwanath is reproduced in Table 4.7 from the source of field survey.

Table 4.7 : Aspects of Migration, 1987

Name of Upazila	Total Sample	In-migration	Out-migration
Bishwanath	782	9 (1.15%)	3 (0.38%)

Source : Computed from Table 3.11

Note : Figures in bracket represents percentage.

4.2 Labour Force and Employment

The labour force and employment position of the study area are estimated for each involved mouza. The 1981 Census document shows details of each mouza in terms of population engaged in different categories of occupation.

Table 4.8 : Existing Labour Force and Employment, 1981

Name of Mouza	Total Population (Involved)	Total Household (Involved)	Not working	Household works	Cultivation	Labour Force			
						Agri. non-crop	Manufacture	Business	Others
1. Purba Janaiya	1500	214	277	408	177	1	1	23	106
2. Mosula	1445	299	219	318	92	1	25	160	245
3. Chandsirkafan	2191	333	504	397	210	1	58	118	220
4. Ahmadabad	628	90	118	149	69	-	1	22	90
Total	5764	936	1118	1272	548	3	85	323	661

Source: Computed from Community Tables of All Thanas of Sylhet District, July 1985.

Table 4.9 : Forecasts of Labour Force (1981-2000)

Name of Mouza	Total population involved in 2000 AD	Not working	Household works	Cultivation	Agri. non-crop	Manufacture	Business	Others
Purba Jaina	3790	700	1031	447	3	3	58	268
Mosula	3651	553	803	232	2	63	404	619
Chandsirkafan	5536	1273	1003	530	2	147	298	556
Ahmadabad	1586	298	376	174	-	3	56	228
Total	14563	2824	3213	1383	7	216	816	1671

Source: Computed from Community Tables of all Thanas of Sylhet District, July 1985, BBS.

4.3 Land Requirements, Provision Standards

In pursuance of the Terms of Reference (TOR), the land requirements for various land-uses have been estimated. In some cases a minimum requirement of land deemed to be sufficient for the forecasted population has been proposed instead of the standards proposed in the TOR. Design population for residential land-uses, parks and primary schools is the forecasted population (medium range) of the study area, i.e., 14563 and the design population for another uses is the forecasted population of study area plus catchment area upto 2000 AD i.e. 6302.

Table 4.10 : Land-Use Plan for proposed Shahar Area of Bishwanath Upazila 1981 and 2000 A.D.
(Projected population in Shahar Area is 14,563 and in influence area is 6,302).

Land-Use Category	Standard as per TOR	Population	Land Re-quired as per TOR	Existing Area (Acre) 1981	Proposed Area (Acre)	Planning Area (Acre)
1. Residential	60 persons/ac	14,563	243.00	<u>68.00</u>	<u>197.68</u>	<u>265.68</u>
2. Education				<u>4.56</u>	<u>4.08</u>	<u>8.64</u>
- Primary	5,000/2 ac	14,563	6.00	0.15 (1 unit)	0.85 (2 units)	1.00 (3 units)
- B.High School	20,000/5 ac	20,865	5.00	0.60 (1 unit)	0.43	1.03 (1 unit)
- G.High School			5.00	0.53 (1 unit)	0.70	1.23 (1 unit)
- College	20,000/5 ac	20,865	6.00	1.28 (1 unit)	0.55	1.83 (1 unit)
- Madrasha	-	20,865	6.00	2.00 (2 units)	0.80	2.80 (2 units)
- Vocational	-	20,865	-	-	0.75 (1 unit)	0.75 (1 unit)
3. Health					<u>5.53</u>	<u>5.53</u>
- Health Complex	20,000/5 ac	20,865	5.00	-	3.80 (1 unit)	3.80 (1 unit)
- Maternity	5,000/1 ac	20,865	4.17	-	1.73 (1 unit)	1.73 (1 unit)
4. Commerce				<u>10.03</u>	<u>6.15</u>	<u>16.18</u>
- Market/Shops	1,000/1.5 ac	20,865	31.30	-	-	-
5. Industry	1,000/1.5 ac	20,865	31.30	-	<u>17.33</u>	<u>17.33</u>
6. Administration	12 acres	20,865	12.00	<u>7.65</u>	<u>3.43</u>	<u>11.08</u>
7. Recreation				-	<u>6.72</u>	<u>6.72</u>
- Park/Open area	1,000/1 ac	14,563	14.56	-	1.60	1.60
- Cinema Hall	20,000/0.5 ac	20,865	0.52	-	0.45	0.45
- Stadium	20,000/3 ac	20,865	3.12	-	4.67	4.67

CHAPTER V

THE LAND-USE PLAN

5. The Land-Use Plan

5.1 Approach, Concept and Planning Principles

Provisions are made for 14,563 people (medium forecast) in the land-use plan. Various categories of services will be required for this population and the township as a growing urbanism upto the year 2000 AD. The services are to be localized in a hierarchical order as follows :

- I. Lowest level of community of about 5000 people which usually demand a primary school, a mosque, a few shops and playing field;
- II. A city centre with urban facility locating administrative services, high school, cultural activities and health services.

The transportation network provided by the Dhaka-Sylhet Highway and the river Kumarkhali bind together the land-uses. The internal road system would have a hierarchy linking the primary communities with the city centre and thereby with the highway and the river route.

5.2 Plan Description

A. Urban Structure: The future township would be a river-cum-highway based urban centre with residential developments of all income groups and employment activities. The functional relationship between places of residence, places of work, recreational and community facilities would be established. The requirement of land for the forecasted population has been laid out on either sides of the river Kumarkhali.

The central functions like the upazila administration, markets, industries, stadium etc. are proposed to be localized on the left and right banks of the river.

B. Residential Areas: 265.68 acres of land has been proposed to accommodate the population of 14,563. The gross density is a little over 60 persons/acre. Leaving out at least 25% of the residential land for internal roads, drains, ditches and line services the net residential density (NRD) would be around 95 persons per acre. This is the minimum density that should be attained in order to bring down per capita cost of development.

About housing development care should be taken to provide housing for the low-income groups including squatting population that may grow in the town in future. A comprehensive housing project should be undertaken by a concerned government agency. It is recommended that standards should be rationalized according to the levels of affordability of the low-income groups and cost should be minimized. An area is earmarked in mouza Mosula.

C. Educational Facilities: The educational facilities existing at present are not just adequate to meet the demands of the increasing number of population. At present there are one primary school, one high school, one college and two madrasas. In view of the increasing number^{of} population the following educational facilities are proposed (these include the existing ones):

- (a) Primary school : One at (existing) mouza Ahmadabad, on the river side; one at mouza Mosula on a road linking the proposed Govt. Housing Estate; and one at mouza Ahmadabad on the Sylhet Highway.

- (b) Secondary schools : At present there is a high school for boys on the river side in mouza Ahmadabad and one girls high school at mouza Masula near the Upazila Complex. These two schools should be developed further to serve the increasing number of students.
- (c) College : A college is existing at the eastern periphery of the planning area. Students from the catchment area and beyond may be receiving the graduate level education facilities from this institution.
- (d) Madrasha : The two units of existing Madrashas, one located in mouza Chansirkafan and the other adjacent to the Upazila Complex on the river side, will be sufficient.
- (e) Vocational Training : For skills development a vocational training institute has been proposed to be established on the southern end of the proposed Shahar.

D. Health Services: The upazila health complex of 31 beds is present at a distance of about 3 miles from upazila shahar area so the following health services have been proposed in the plan :

- (a) Upazila Health Centre in mouza Ahmadabad, and
- (b) Maternity and Child Care Centre in the same area.

E. Commercial Facilities: Commercial facilities are existing along the left bank of the river in mouza Chandsirkafan and Ahmadabad. Small size shopping areas are also existing near the Upazila Complex. Local shops have been proposed near about schools and along the Rampasha road.

F. Industries: An industrial area of 17.33 acres has been proposed in mouza Masula on Rampasha road.

G. Administration: The administrative services have already been located on the right bank of the river. The total area is 11.08 acres.

H. Recreational Facilities: There is no adequate recreational facility at Bishwanath. Even a cinema hall is not present in Upazila. In view of this provisions have been made for the following facilities:

- (a) Parks, open space : A stadium has been proposed in mouza Ahmadabad on the Sylhet Highway. Play grounds have been proposed along with the primary and secondary schools.
- (b) Closed recreation : The proposed cinema hall on the Chandshirkafan is considered to be sufficient.

I. Socio-Cultural Facilities:

- (a) Religious : All the newly proposed school sites would have separate mosque. A central Eidgah has been proposed at the south-west part of Mouza Ahmedabad.
- (b) Community Centre : The community centre is proposed at mouza Chandshirkafan.
- (c) Graveyard : Two graveyards exist in Chandsirkafan. Two more graveyards have been proposed, one in mouza Mosula and the other at mouza Chandshirkafan.

J. Urban Services: The following urban services have been proposed.

- (a) Post Office : Two units
- (b) Telephone Exchange : One unit
- (c) Police Station : One unit
- (d) Fire Service : One unit
- (e) Bus Station : One unit

(f) Ghat : Two units of launch ghats are proposed to be further developed to handle the inland water transport requirements.

K. Roads: Transportation network provided by the inland waterways transport and Sylhet Highway will provide the inter-district travel and cargo facilities. Existing roads emanating from the highway on the south side of the river have been retained and developed. On the northern side of the river the existing road leading towards Rampasa the west would be the main transportation route towards the west.

Another road connects the Upazila Complex with this road. There is another existing road which connects the Upazila Complex runs towards the north the proposed government housing estate is situated on this road.

In developing the various housing areas new streets and accesses will have to be proposed and developed. The major internal link roads may be 40' wide and the streets should vary from 20' to 30' in width.

L. Urban Deferred: 39.93 acres of land have been proposed as urban deferred. One of them is located between the Upazila Complex and the proposed government housing estate. This area may be used either for the expansion of administration area or for the development of housing areas. Another urban deferred area is an enclave of land between the river and the stadium. This area may be used for development of park.

CHAPTER VI

PROGRAMMING AND IMPLEMENTATION

6. Programming and Implementation

6.1 Priority Actions, Cost Implications

A. Priority Actions : The proposed land-use plan seeks to achieve ordered development of social and physical infrastructure for the welfare of the people. The plan serves as a document for the local authorities to develop the township gradually in a planned manner. This, however, is an instrument for the authorities. For the people dispensation of welfare measures are important. These are housing, water supply, sanitation, education, recreation and employment. It is important for the local authorities to develop these facilities on priority basis.

In this regard the local authorities should make a choice of priority projects out of the proposals made in the plan (ref : paragraph 4.3). For the time being the following priority projects are identifiable.

(1) Employment generation: Government may like to develop the industrial estates to provide employment to the people. Vocational Training should be undertaken for skills development.

(2) Housing: Government should acquire the area earmarked for housing estate and develop housing facilities considering affordability of the low-income population and recovery of costs.

(3) Roads development: All the arterial roads should be developed and the lands on both sides of the roads required for their widening should be acquired.

(4) Sanitation programme: The local authorities should take immediate steps to improve the physical environment and to expand water supply, sanitary latrines and other related services.

B. Cost Implications : In general the local authorities like the Paurashava experience acute shortage of financial resources. The Paurashava finds it extremely difficult to maintain the services. Expansion of services are hardly possible. There are various reasons underlying the problems. There are lack of institutional capabilities to estimate the potential revenue incomes and their realisation. The plan presupposes a break through. It will be seen from the report and the plan that a reasonable level of density of residential areas, standards and locations of services have been proposed. The recommended density must be achieved so that the per capita cost of development is within the reasonable range and affordable to various income groups.

Locations of higher level non-residential land-uses have been proposed in central areas where the cost of land due to this location factor is also higher than in the peripheral areas. It is, therefore, recommended that the locational factors should be considered to be important by the concerned authorities.

It is further recommended that the cost of development and maintenance services should be recovered. The local authorities are advised to maintain all land and property records and update them with newer developments. Based on these land records rates and taxes should be reviewed from time to time and collect the rates and taxes accordingly.

6.2 Phasing, Urban Deferred

A. Phasing : The plan may be implemented within the next 13 years, i.e. by 2000 AD. Participation of private and public sector would be necessary. Local authorities and government agencies should prepare detailed survey and designs for expansion of all physical and social infrastructure. Private sector should be encouraged to develop the housing and services individually and/or collectively. For this purpose the pivotal elements of urban growth should be energised in the first phase (5 yrs). These are acquisition of land and development

of the industrial estates, roads, central areas and intensive developments of the housing estates to be sponsored by the government. Thereafter the housing areas, away from the central area, should be taken up in the successive stage. The agricultural areas should be under intensive use from the beginning. Instead of giving priority to cereal crops production of vegetables, milk dairy and poultry should be encouraged.

In the last few years, i.e. 5 years before the end of this century, should be devoted to review of the plan and further intensified use of land and property should be ensured.

B. Urban Deferred : Nine areas have been earmarked as urban deferred. This is in view of fulfilling the requirement of additional lands beyond the quantum of lands allocated for various uses at present in the plan. It appears from the projected population that lands for housing developments seem to be adequate. Therefore, the local authorities may use the deferred lands for other purposes, e.g. administrative services and parks etc.

6.3 Development Control

At present relevant Ordinance of 1982 does not fully cover administration of development control measures. It is, however, important to note that the Upazila Parishad may find the proposed land-use plan as a legal document to prevent non-conforming use of lands by any private individual or a group or any agency.

But in order to make use of this opportunity certain specified legal measures are to be undertaken. The following steps are suggested,

A) The proposed land-use plan should be given a legal status through approval by a competent authority, viz, Ministry of Works under whose supervision the urban land-use plans are being prepared.

B) Unless and until a Paurashava is instituted and the planning areas of the proposed plan are brought under its control, the local

Upazila Parishad may be designated as the local authority to prepare the detailed plans, review of plan and to prepare building codes.

C) Unless and until a suitable enactment is made for non-municipal towns Building Construction Act of 1953 may be adopted. Detailed building codes comprising locational analysis and set-back of buildings and land-uses should be prepared. In giving planning permission and to control non-conforming uses of lands and haphazard constructions the building codes should be the guiding principles. The legal measures should apply to all private and public sector agencies.

Appellate jurisdiction should lie with the District Judge Court.

6.4 Monitoring, Review

A. Monitoring : The designated local authority will monitor the progress in respect of implementation of the land-use plan. This relates mainly to expansion of physical and social infrastructure by different agencies. The progress of work should be charted according to 5-year phases split into yearly annual development programmes (ADPs). Concerted efforts must be made to achieve the phased targets. Delay in project implementation will bring about the problems of unnecessary upward revision of project costs and complications in the expansion of services.

B. Review of Plan : The town is still a small sized urban area. Social and physical problems in terms of acute shortage of housing and services, especially for the poorer section, have not yet emerged. But as the time goes on, the population of the township would be increasing possibly with greater number of low-income groups. The costs of services especially of serviced lands may be beyond the reach of the low-income groups. There may be squatters and floating population.

On the other hand, government's programme of providing adequate housing, services and employment opportunities may not be at par with the swelling number of population.

Considering all these institutional and demographic conditions the local authority should review the plan and recast it, if needed, after every 5 years.