

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

LANDUSE / MASTER PLAN
MOULVIBAZAR POURASHAVA
MOULVIBAZAR ZILA

1990

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02	Moulvibazar Pourashava, Existing Landuse Map	Original
03	Moulvibazar Pourashava, Proposed Landuse Map	Folder

Chapter One

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

This is the FINAL REPORT & PLAN (Report IV) of the project "PREPARATION OF LANDUSE/MASTER PLAN FOR MOULVIBAZAR POURASHAVA". It contains all the necessary informations in the form of written text, tables and maps required for the final report and plan. The report is arranged according to the instructions provided in the TOR.

1.1 Background Information

1.1.1 Project Justification

In 1982 the Government of Bangladesh 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". The aim of the ordinance was devaluation of power and decentralization of administration to the lower tier so as to :

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

It is also expected that apart from serving as administrative centers, the upazila and zila shahars should also serve as the economic and cultural center for the sub-region. In other words these shahars should be focal points of all activities for the whole upazila/zila. As activities of all sectors of life would be initiated, it would result in further concentration of population and as such would lead to physical expansion of the area. And it is of utmost importance that landuse plans are to be prepared for the centers so as to :

- have orderly development
- optimum and cost effective utilization of scarce natural and financial resources
- provide guidelines for all concerned agencies in their development endeavors.

Urban Development Directorate, with the help of private consultants, is entrusted with the job of preparing the landuse/master plan for 397 upazila shahars and about 44 newly created zila shahars in different phase.

The decision to prepare landuse plans for zila shahars along with upazila shahars, is a praiseworthy one for a number of reasons.

- As the focal point of all development activities within the zila administrative boundary, zila shahar has much more importance and responsibility than a upazila shahar.

- Development of a zila shahar will be complementary to upazila shahar development programme. The overall urban structure of the country is not an effective one as there is serious lack of medium and small size towns in the system. If the zila shahars are developed properly, they will form the missing link between the upazila shahars and large metropolises.

1.1.2 Project Objective

The main objective of the present project is to provide some kind of a guide plan, so that individual development projects/steps of all the parties - Public, Autonomous, Private - involve, leads to a meaningful whole. So basically it aims at -

- Knowing, with some confidence, what really exists now and
- What could be realistically achieved under the prevailing social, physical and economic conditions.

According to the TOR the principal objectives of the study programme to prepare land use/master plans for Pourashava are as follows :

- To provide a comprehensive and accurate data base of relevance to the planning of future development which will be required to serve the needs of the urban and nearby rural population until beyond the end of the country.

- To formulate appropriate service provision and locational and spatial guidelines for the physical-development of the Zila Shahar/Pourashava in respect of housing, administration, roads, services and utilities, community activities, and industrial and commercial undertakings.

- To prepare a land use/master plan for the Zila Shahar/Pourashava to cater for the future development of appropriate urban services - social, economic and infrastructural - within the urban area.

- To identify and prepare indicative design and cost estimates of priority projects that are regarded as an essential pre-requisite for the orderly development of the Zila Shahar/Pourashava.

- To suggest administrative or other procedures that may realistically be introduced to ensure that future developments are controlled so as to conform with the urban land use/master plan.

1.1.3 Scope of Services

The study will cover all major aspects related to the preparation of a land use/master plan for the Zila Shahar/Pourashava. Attention will be paid to the following :

- Regional Setting: Descriptive analysis of the Zila as a whole including population and settlement distribution, principal internal and external linkages, economic base and performance, topography and urban-rural relationships.

- Sector Studies: Studies and surveys of population, household formation, migration, employment, job creation, housing, land ownership and value, transport infrastructure, water supply, sanitation, drainage, power, health, education and other relevant socio-economic and physical characteristics of the Zila Shahar, to determine the needs of the population forecast to be dependent upon the Zila Shahar's services at the end of the century.

- Existing Landuse: Prepare map showing existing and committed land use in the Zila urban area at scale 1 inch = 330 feet. Land that is not at present used for urban purposes should be identified and indications of its proneness to flooding should be indicated. Contours with an interval of 5 feet should be included by reference to secondary sources, updated by field check (not detailed survey). Residential areas should be classified according to density.

- Opportunities and Constraints: From analyses of sector studies and existing land use formulate a concept plan for the urban area, indicating the likely directions of future development based on land availability, prospects for intensification of land use, physical constraints, and other relevant characteristics.

- Urbanization Strategy: Prepare and evaluate alternative land use development plans for the future expansion of the urban area, paying particular attention to appropriate space standards for the provision of urban services that are deficient in the area at present. Identify areas of 'urban deferred', i.e. land which will be reserved for future urban purposes beyond the end of the century. Recommend and justify the selection of the preferred alternative plan.

- Project Identification: Prepare descriptive analyses, with reasons for selection and indicative costs, of priority projects in the urban area that are regarded as essential to facilitate the planned and orderly development of the Zila Shahar/Pourashava.

It is envisaged that the consultants will identify one or more projects from the following sectors:

- Low Cost Housing
- Industrial Development
- Water Supply and Sanitation
- Flood Control
- Infrastructure related to Transportation

- Management: Describe, analyze and recommend realistic ways in which the Zila Shahar/Pourashava authorities may control development and monitor the progress of implementing the land use/master plan over time. Comments on prevailing institutional, legal and other procedures in respect of effective implementation of the plan.

1.2 Planning Methodology

1.2.1 Mobilization

The 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.

1.2.2 Information Collection

A large amount of information is required for the project and both secondary and primary data played important role. Table 01 at the end of this chapter provides the broad category information and their sources.

Secondary Information

A number of BBS publication contributed significantly in the collection of secondary information. Some of them are -

- Upazila Statistics of Bangladesh, 1988.
- Village Population Statistics, 1974, Sylhet District.
- 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 the concerned offices both in Dhaka and Moulvibazar. Zila Parishad, Municipality Office, DC Office provided important secondary information. Contour maps of the study area were collected from secondary sources.

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 about the project area and identify its general potentials and problems. During this visit discussion meetings were held with most of the high ranking Pourashava Officials and a tentative study area was selected for subsequent landuse survey, socio-economic survey etc.

Local Information Sources

Most of the zila level information sources are identified in the table 01. Apart from the administrative office like Pourashava, Zila Parishad, DC Office etc., all the public utility service offices has provided required information. But to ensure adequate amount of public participation in the landuse plan the consultant has conducted discussion with a cross section of local population. This has ensured reflection of their desire and expectations in the plan.

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 has 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.
- Land ownership 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 has tried to establish the mode of transportation, frequency of use, distance covered and type of service sought by the population.

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 employed to conduct the survey.

All the major landuse categories and their extent of use were identified. The contour maps available from secondary sources has been up-dated and cross-checked during landuse survey. The physical survey has also identified all the utility provision networks like electricity, water supply, telephone lines, gas supply etc.

Traffic Survey

A traffic survey has been conducted at different important focal points of the road network to identify the total character and volume of the traffic, within the study area and around.

1.2.3 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.

1.2.4 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 practical limitations to achieve such goals.

1.2.5 Preparation of Landuse Map

The landuse plan was 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 consideration were

- not to encroach into agricultural land unnecessarily and
- to protect/use the existing structure and road network as much as practicable so as to minimize the cost.

1.2.6 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.

Table 01: Broad Information Category and Their Sources for Moulvibazar Pourashava

Information	Possible Sources	
	Secondary	Primary
• Location & Major Physiographic Features of the Zila	BBS Publication District Gazetteers	Field Visits
• Population Characteristics of the Zila.	BBS Publication	
• Settlement Distribution within the Zila	BBS Publication Zila Parishad	Field Visits
• Economic Performance, Employment Situation of the Zila.	BBS Publication D.C. Office Zila Parishad	
• Productivity in all Sectors.	BBS Publication Zila Parishad BADC, BFDC, BFIDC ETC. D.C. Office	-
• Transportation & Communication	Roads & Highways Dept., Municipal Office, Zila Parishad, Upazila Parishads	Traffic Survey
• Existing Landuse Information within the Study Area.	-	Landuse Survey
• Topographical Feature & Drainage.	BBS Publication	Field Visit & Drainage Survey.
• Existing Infrastructure Situation	R&HD, BPDB BSCIC, BBS Zila Parishad Municipal Office.	Field Visits
• Socio Economic Condition of Population within the Study Area.	Zila Parishad Municipal Office BBS Publication	Socio-Economic Survey
• Future Programme of Development & Committed Landuses.	Zila Parishad Municipality Office D.C. Office.	-

Chapter TWO

SUMMARY OF SURVEY INFORMATION

To analyze the opportunities and constraints in the development of Moulvibazar Pourashava consideration of the regional setting of the Zila, the Pourashava, sectorial studies of the study area and physical considerations are very important and done in this chapter.

2.1 Regional Setting of the Zila

2.1.1 Background Information

History

Moulvibazar is one of the 44 newly created zilas due to the administrative decentralization programme in 1982. before that it was a sub-division under old district Sylhet. The settlement history of the place, now known as Moulvibazar Pourashava, date as far back as 1882. It is known that there lived an influential man named Syed Moulvi Kudratullah who set up a bazar in the present place. Subsequently the bazar was named Moulvibazar after his name. Afterwards when administrative establishments were located in this area, the boundary under the jurisdiction of these establishment was known as "MOULVIBAZAR".

Location

Moulvibazar Zila is located at the North-eastern corner of the country. It is also one of the boarder zilas with India on the eastern side. The Pourashava is located at the previous sub-divisional headquarters area. And it is about 61 km. (38 miles) from nearest important urban center - Sylhet Pourashava. Geographical co-ordinates of the zila's location is approximate between 24° 24' and 24° 38' north latitude, 91° 36' and 91° 51' east longitude. (National Setting/Figure 01).

In the regional setting the zila is bounded in the south by Tripura Rajjha of India, on the east by Assam State of India, on the North by Biyanibazar, Gopalganj, Fenchuganj and Balaganj Upazilas of Sylhet Zila, on the west by Naviganj, Bahubal, Chunarughat upazilas of Hobiganj zila. (Regional Setting/ Figure 02 & 03)

88°

89°

90° - 9 -

91°

92°

93°

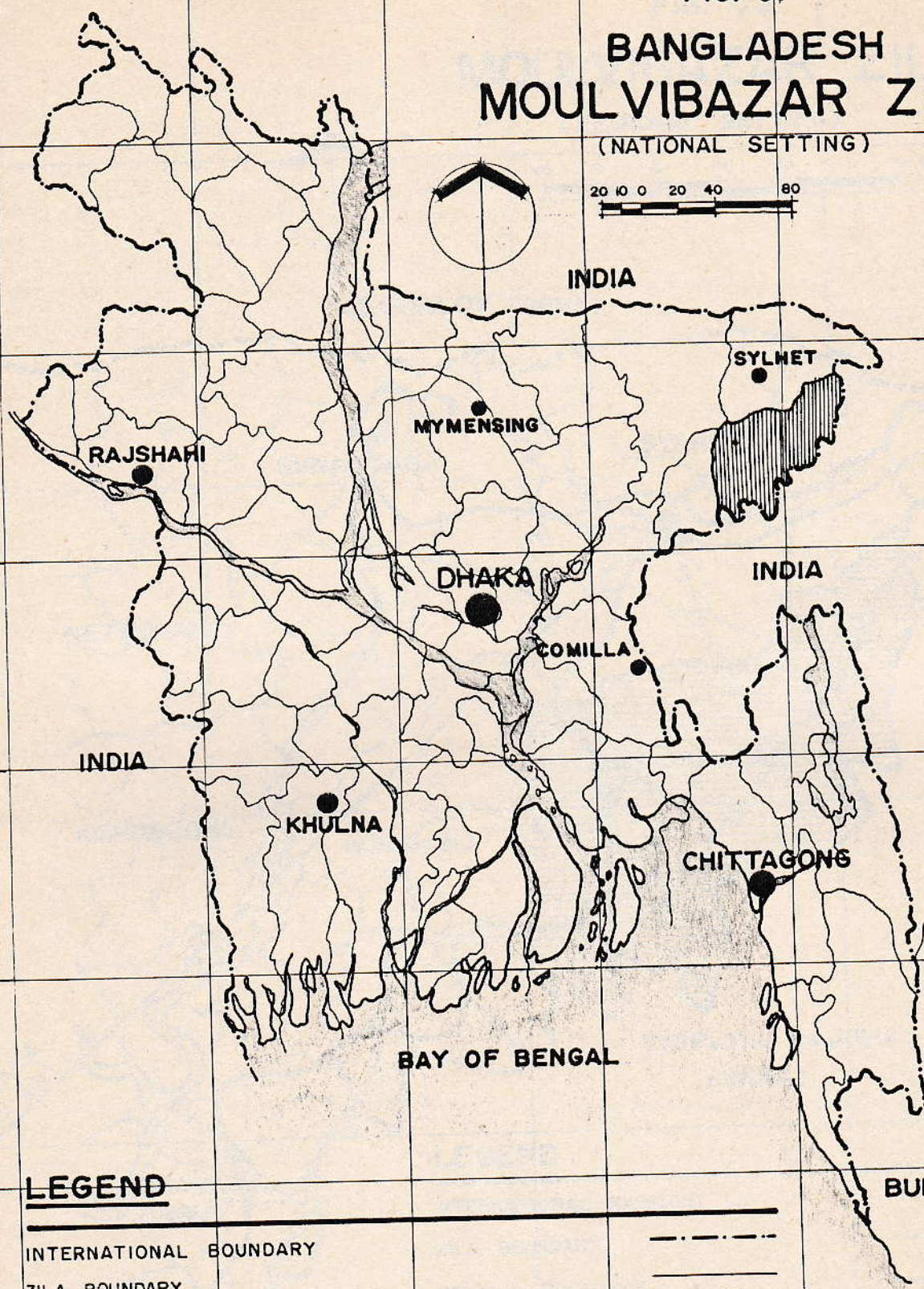
27°

FIG. 01

BANGLADESH MOULVIBAZAR ZILA

(NATIONAL SETTING)

26°



25°

24°

23°

22°

21°

20°

LEGEND

INTERNATIONAL BOUNDARY

ZILA BOUNDARY

RIVER

MOULVIBAZAR ZILA

MAJOR URBAN CENTRES
OF THE COUNTRY

30'

91°

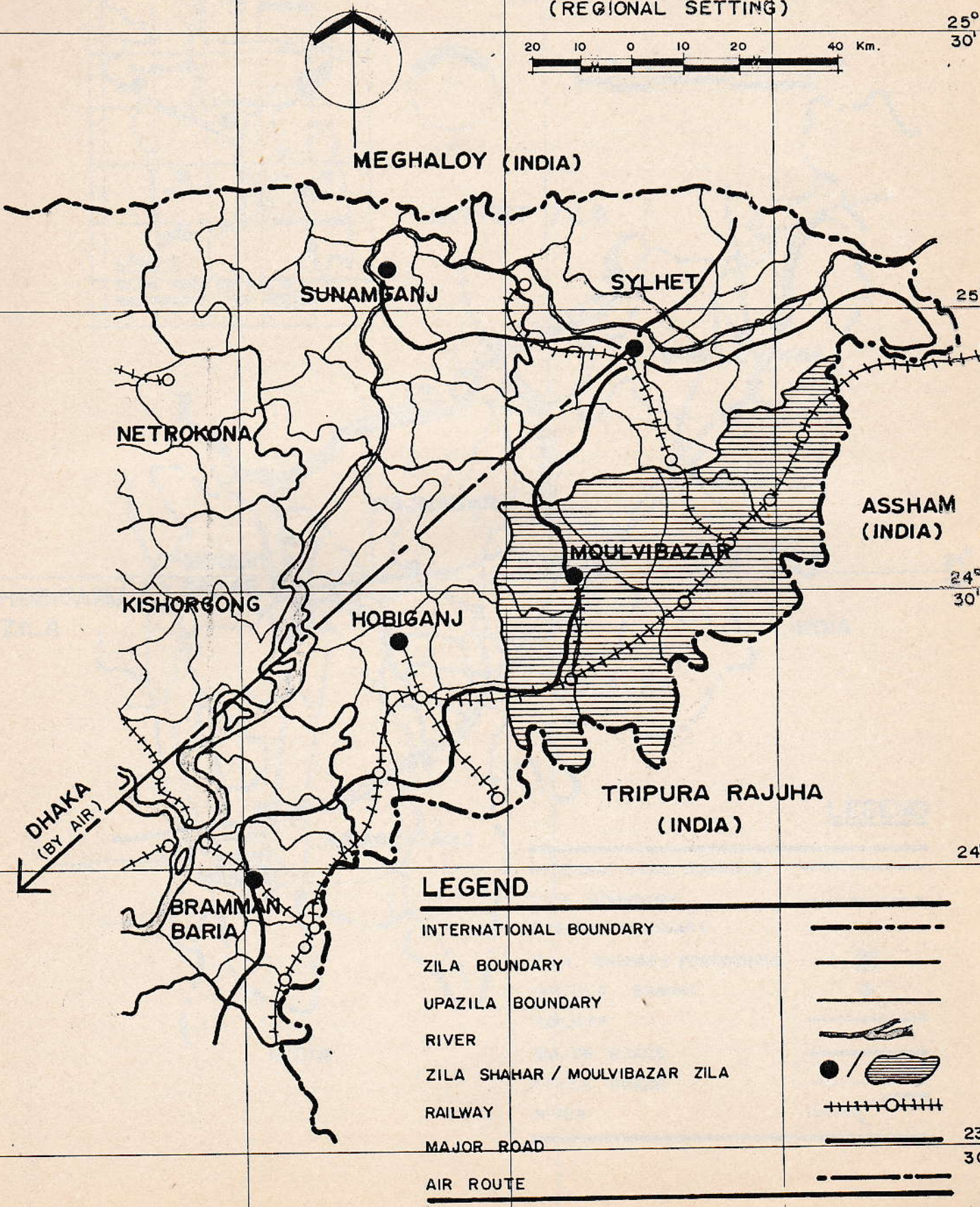
10 -
91° 30'

92°

FIG. 02

MOULVIBAZAR ZILA

(REGIONAL SETTING)



LEGEND

INTERNATIONAL BOUNDARY

ZILA BOUNDARY

UPAZILA BOUNDARY

RIVER

ZILA SHAHAR / MOULVIBAZAR ZILA

RAILWAY

MAJOR ROAD

AIR ROUTE



25°
30'

25°
30'

24°
30'

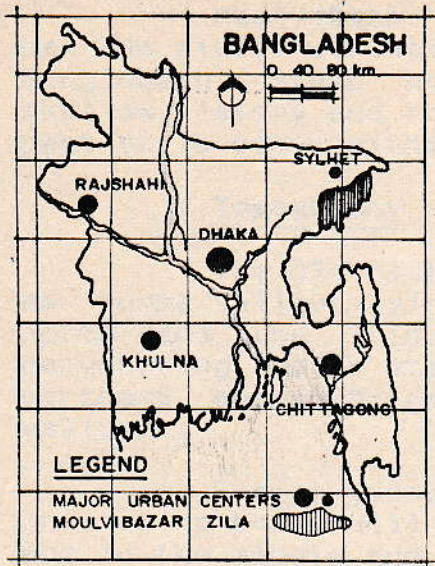
24°

23°
30'

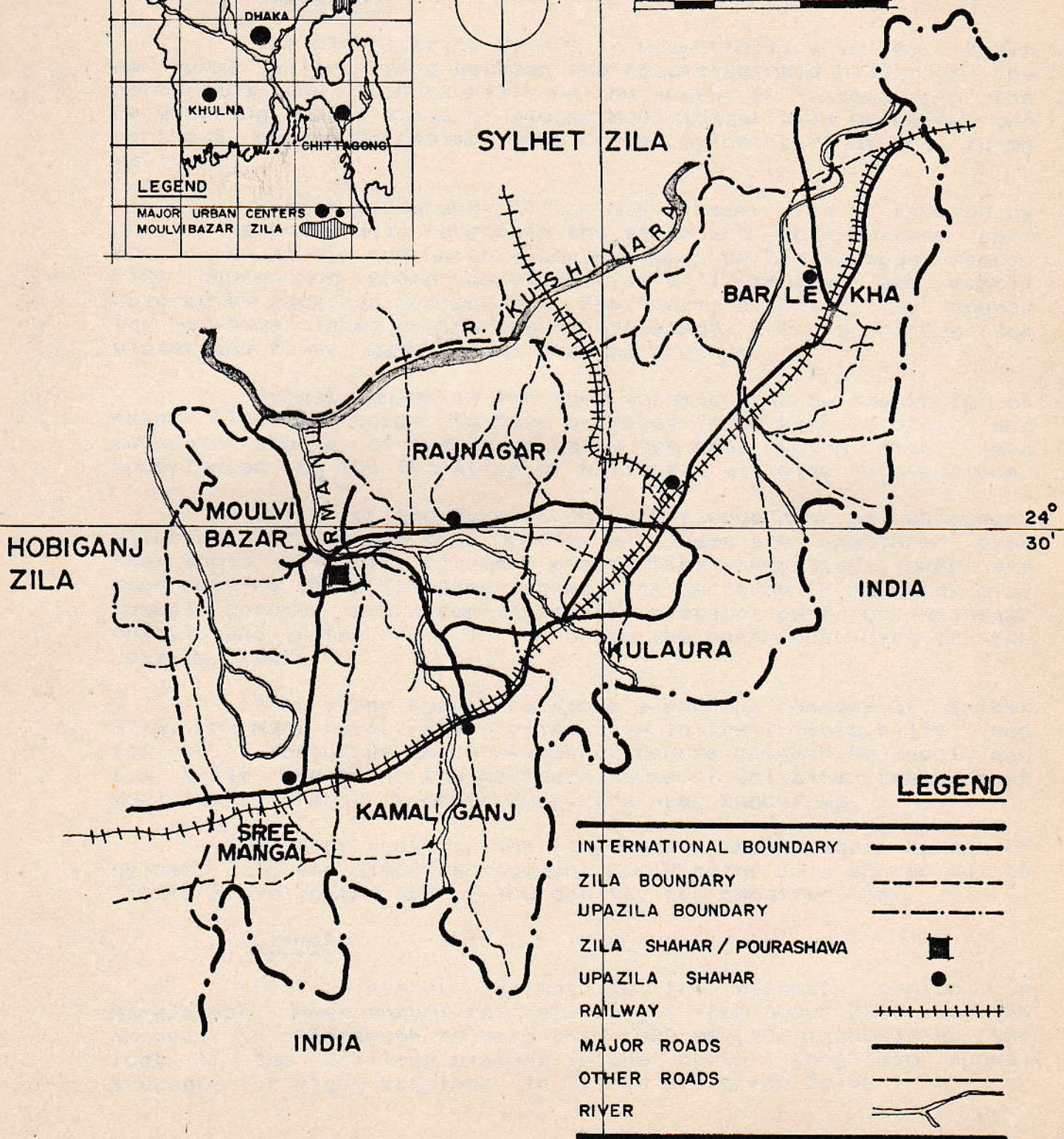
FIG. 03

MOULVIBAZAR ZILA

(PROJECT LOCATION MAP)



6 3 0 6 12 km.



Physiographic Condition of the Zila

Moulvibazar Zila, as part of the Old district Sylhet, has the widest variation in geomorphology and soils of the whole Bangladesh. Steep hills exceeding 1,000 feet in height with shallow, stony and rocky soils, and perennially wet basins with peat soils occur within a few miles from each other.

Topography

The old district Sylhet is essentially a valley, known as Surma Valley, lying between the Khasia-Jaintia hills on the north and the Tripura hills on the south. It extends in the neighboring Indian state of Assam. Moulvibazar zila occupies the northern and south-eastern part of the Sylhet part of the Surma valley.

Entire topography of the Moulvibazar zila is covered by undulating broad hill ranges in the south and south-eastern part and in the middle and north - northwestern part with huge saucer like depression known as HAORS. The hill ranges are mostly covered by numerous tea-gardens. The haors, although they appear to be huge lakes during the rainy season, dry up during the winter and forms magnificent grazing grounds.

Sylhet being in the same seismic area as the whole of Assam (India), seems to have suffered from both violent and moderate shocks of earthquakes in the past which might have contributed to the formation of hillockes and wide depressions.

Soils of the Surma-Kushiyara floodplains as subrecent alluviums in various type of clay and loams are scattered over the whole zila. The piedmont plains fine sandy clay loams are representing the pritimpasa series. The Barlekha (Fine sandy clay loams) Complex are occurring in the eastern part of Rajnagar upazila and in the hills in the south and north-east part of the upazila itself.

The river Kushiyara flows along the boarder of Sylhet Zila. The Manu river, which originates in the Tripura hills and follows a torturous north-western course between Rajkandi and Ita hills and along the northern faces of Balisira range past Moulvibazar shahar it meets Kushiyara near Bahdurpur.

Surface rocks in the ranges near the northern border of Sylhet Zila and almost throughout Moulvibazar Zila appear to be little consolidated and of low quality for construction.

Climate

Old district Sylhet is the wettest region in Bangladesh. Mean annual rainfall ranges from about 2250 mm (90 inches) in the south to more than 5000 mm (200 inches) at the foot of the Shillong plateau in the north. Long-term annual averages for eight stations in Sylhet are given below :

Table 02: Annual Average Rainfall in Different Meteorological Stations of Old Zila Sylhet

Center	Annual Average Rain-fall	
	mm	inches
Chandpur Bagan	2310	91
Sreemangal	2540	100
Langla	2769	109
Hobiganj	2972	117
Samanbagh	2997	118
Sylhet	3581	141
Sunamganj	5055	199
Lallakhal	5588	220

Source: Sylhet District Gazetteer, 1975

As Sreemangal Meteorological Station is within Moulvibazar Zila, the average annual rainfall in this zila could be taken as 2540 mm (100 inches).

Despite the higher rainfall, the climatic regime is similar to that of the remainder 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.

The zila is usually, not affected by the cyclones which periodically devastate costal districts of the country, but winds accompanying thunderstorms (nor-westerns) in March-May and in September-November cause damage to kutcha dwelling units regularly.

The climate is marked by extreme humidity. During the month June/July it is as high as 90-95 percent in the morning and about 45-50 percent in February/March around 12.00 noon.

During 1974-82 maximum temperature recorded was 31.7° C in June, 1981 and minimum was 12.1° C in January, 1979. But the mercury goes below 10° C in Sreemangal during winter.

2.1.2 Population Information

Population Distribution Within the Zila

According to the population Census in 1981, total population of the Moulvibazar Zila is 1171606 of which 601736 (51.4 percent) were male and rest 569870 (48.6 percent) were female. The inhabitants of the whole zila constitute about 13.5

percent of the total population of Bangladesh in 1981. The overall density of population in the zila is about 434 persons per sq. km. which is much below the national average of 605 persons per sq. km.

Table 03: Household, Population by Sex and Density in the Upazilas of Moulvibazar Zila, 1981

Upazila	Household	Population				Average Size of Household	Density per sq. km.
		Male	Female	Total	Ratio		
Barlekha	26417	85827	83688	169515	102.6	6.5	370
Kamalganj	28376	85678	82902	168581	103.3	6.0	348
Kulaura	51161	150799	142656	293455	105.7	5.8	432
Moulvibazar	33241	105782	98321	204103	107.6	6.1	602
Rajnagar	26942	79469	74799	154268	106.2	5.7	458
Sreemangal	33497	94181	87503	181684	107.6	5.4	450
Moulvibazar	199634	601736	569870	1171606	105.6	5.9	434

Source: BBS, Sylhet District Statistics, 1983.

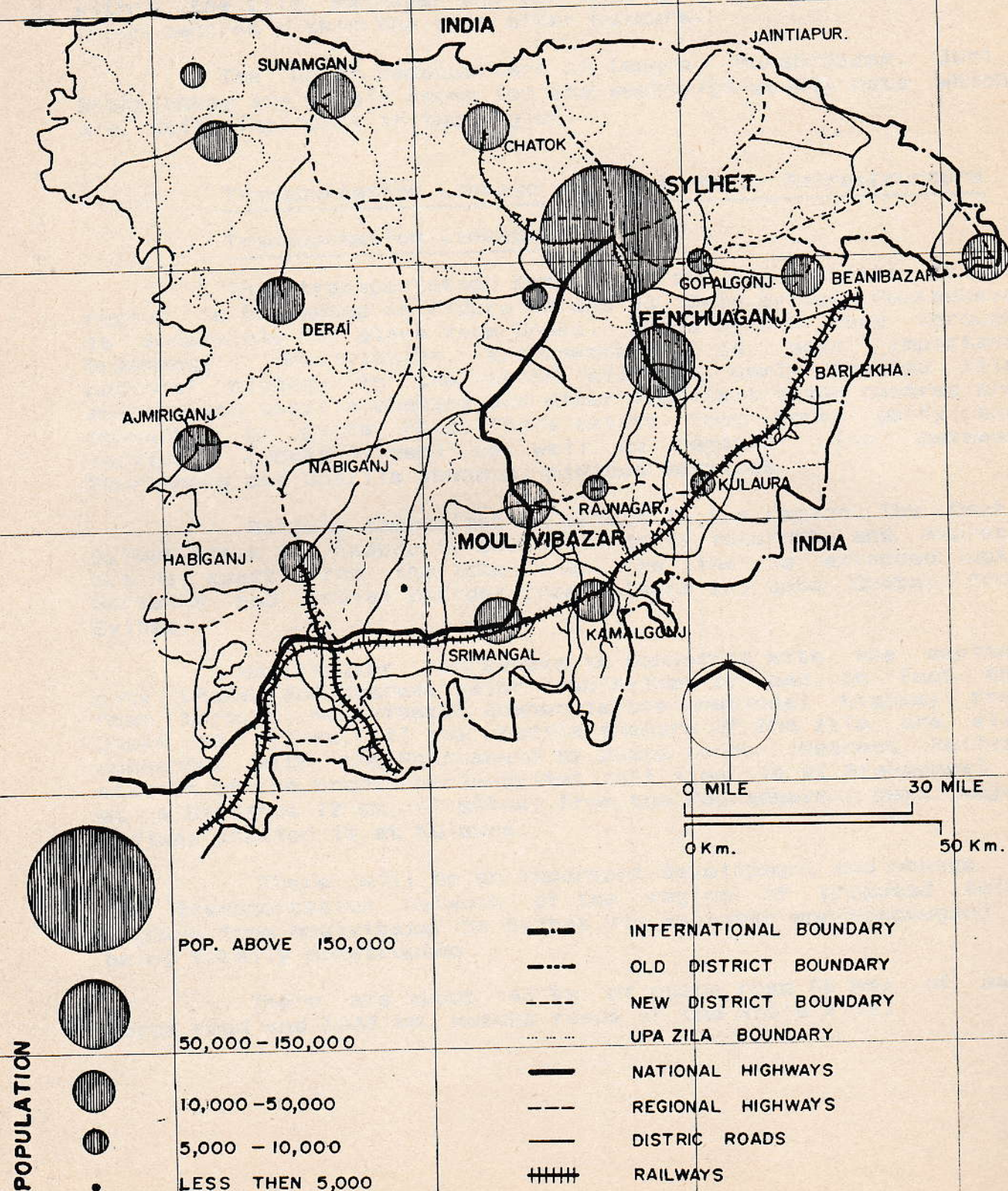
Overall sex ratio in the zila is 105.6 which means that there were about 105.6 male for every 100 female. The population of the zila in 1981 has increased by 57.88 percent and 18.13 percent over 1961 and 1974.

About 6.60 percent of the total population of the zila live in the urban areas as defined by Bangladesh population census 1981. These urban areas are Moulvibazar Pourashava and various upazila shahars.

2.1.3 Major Urban Centres in the Region

For the purpose of determining the relative position of Moulvibazar Pourashava among the major urban centres in the region, population size and areal extent of built-up areas are mainly considered. The major urban centres are shown in Figure-04. Old district headquarters Sylhet with a population size more than 150,000 is the highest ranking urban centre in the region. Fenchuganj, even though an upazila headquarters have a population between 50,000 to 150,000 and has also some industrial significance. It holds the 2nd position among the urban centres in the region. In the 3rd position, population range 10,000 to 50,000, there are a number of urban centres. Apart from the newly created zila headquarters like Moulvibazar, Hobiganj, Sunamganj, upazila headquarters like Sreemangal, Kamalganj, Beanibazar, Ajmiriganj Chatok are also included in this group. Most of other upazila headquarters are in 5,000-10,000 population group. The union parishad headquarters and hat/bazars are mostly rural in character.

FIGURE 04: MAJOR URBAN CENTRES OF SYLHET REGION.



Within Moulvibazar Zila the Pourashava and Sreemangal upazila shahar are about same in terms of population size, areal spread, type and nature of services available etc. Both have municipality for urban administration. Sreemangal is important for the service industries for the tea industry in the upazila and beyond. Kamalganj upazila shahar comes next in hierarchy within the zila. Rajnagar and Barlekha upazila shahars are next urban centres within the zila after Kulaura.

The union headquarters of Tengra, Munshibazar, Juri, Dhakhinbhadra are widely known for the weekly/bi-weekly hats which are quite important in the region.

2.1.4 Transportation Linkage and Other Major Infrastructure

Transportation Linkage

The transportation network in the old district Sylhet region is presented in figure 02 and 03. Only Sylhet Pourashava is accessible by plane from Dhaka. Dhaka-Sylhet road through Sreemangal, Moulvibazar, Brahmanbaria is most important national highway in the region. All the newly created zila shahars and upazila shahars and other important trade centres are connected by pucca road. There exists long route daily bus services (Dhaka-Sylhet) as well as regional (in between Pourashava and upazila shahars) minibus services.

Railway communication exists in the region. The Dhaka-Sylhet track via Akaura is busy with daily intercity and express trains apart from the local ones. The line is extended upto Barlekha and Indian Boarder from Kulaura and upto Chatok from Sylhet.

Moulvibazar Pourashava is connected with the capital city Dhaka and nearest major town Sylhet by Road. In fact the road through Moulvibazar shahar is the national highway from Dhaka to Sylhet. All the upazila shahars of the zila are also connected with the Pourashava by pucca roads. Nearest Railway station of the Brahmanbaria-Sylhet rail line is at Sreemangal - at a distance 12 km. (7 miles) from the Pourashava. Next major railway station is at Kulaura.

There will be an important development and change in the transportation network of the region if proposed Asian Highway from Moulvibazar to Sylhet via Rajnagar and Fenchuganj is being totally constructed.

There are about 143 km. of pucca road 35 km. of semi pucca road and 1043 km. kutchra roads in the whole zila.

Table 04: Length of Pucca, Semi Pucca and Kutcha Road in Moulvibazar Zila, 1982

Upazila	Road Length in Km.				Total (in mile)
	Pucca	Semi-pucca	Kutcha	Total	
Barlekha	6.40	9.60	48.00	64.00	40.00
Kamalganj	8.00	3.20	128.00	139.20	87.00
Kulaura	14.40	-	400.00	400.00	259.00
Moulvibazar	59.20	3.20	25.60	88.00	55.00
Rajnagar	6.40	-	241.60	248.00	155.00
Sreemangal	48.00	19.20	200.00	267.20	167.00
Moulvibazar Zila	142.40	35.20	1043.20	1220.80	763.00

Source: BBS, Sylhet District Statistics, 1983.

Other Major Infrastructure

Among other major infrastructure public health facilities, irrigation, drainage and flood protection schemes, educational facilities and any other facilities are discussed. Because of unavailability of information and also to give more concentration of the subject zila, only Moulvibazar zila is brought under discussion.

Public Health Facilities

Health facilities situation in Moulvibazar Zila is provided in the following table.

Table 05: Available Health Facility Institution in Moulvibazar Zila, 1982

Upazila	Upazila Health Complex		Charitable Dispensary	Missionary Hospital		Other Health Centers	
	No.	Bed		No.	Bed	No.	Bed
Barlekha	1	31	1	-	-	-	-
Kamalganj	1	31	2	1	-	-	-
Kulaura	1	31	3	1	-	-	-
Moulvibazar	1	50	5	-	-	-	-
Rajnagar	1	31	1	-	-	-	-
SreeMongal	1	31	2	-	5	-	-
Moulvibazar zila	6	205	14	2	5	-	-

Source: BBS, Sylhet District Statistics.

There are altogether six Upazila Health Complex, one in each upazila, in Moulvibazar Zila. Each of these centres are equipped with 31 beds for in-patient care. As such it can be inferred that in Moulvibazar zila there is one hospital bed available for about 6300 population.

Other health facility institutions available are 14 charitable dispensaries, missionary hospitals with 5 beds.

Table 06: Number of Qualified Physicians in Moulvibazar zila, 1982

Upazila	MBBS	LMF	National	Homeopath	Total
Barlekha	8	2	-	6	16
Kamalganj	5	1	-	9	15
Kulaura	24	10	6	23	63
Moulvibazar	7	2	-	9	18
Rajnagar	5	-	-	3	8
Sreemangal	13	12	6	36	67
Moulvibazar Zila	62	27	12	86	187

Source: BBS, Sylhet District Statistics.

Considering all types of physicians as "qualified" there is one of them for about 6300 population. It is also interesting to note that Kulaura and Sreemangal upazilas have larger number of physicians then Moulvibazar Sadar Upazila.

Apart from all these there are a number of family planning clinics and personnel working in the zila.

Irrigation, Drainage and Flood Protection

There are some flood protection schemes and irrigation channels constructed and maintained by Water Development Board in different upazilas of Moulvibazar zila. Most significant are pertaining to our study is the Moulvibazar town protection scheme on the left bank of Manu river and Manu river right bank protection scheme.

There are about 27800 acres of land under various type of irrigation in the whole zila. Compared with other adjacent Zilas, Moulvibazar zila has very poor irrigation facilities.

Table 07: Irrigation by Means in Different Upazilas of Moulvibazar zila, 1982-83

Upazila	Area under irrigation means						Total
	Power pump	Tubewell	Doon	Swing Basket	Canal	Others	
Barlekha	8	-	15	-	1	2	26
Kamalganj	2	-	-	-	-	7	9
Kulaura	16	-	12	17	3	5	53
Moulvibazar	35	-	25	21	10	10	101
Rajnagar	22	-	50	-	-	-	72
Sreemangal	2	-	10	-	5	-	17
Moulvibazar Zila	85	-	112	38	19	24	278

Note: All the figures are in "00" acres.

Source: BBS, Upazila Statistics, Vol.-1, 1985

Educational Facilities

There are about 699 primary schools, 15 Junior high schools, 88 high schools, 6 college, 44 madrashas and 63 gono-shikhya Kendras in Moulvibazar zila.

On an average about 1670, 78107, 13314, 292900, 26627, and 18597 number of population were served by one primary school, Junior high school, high school, college, madrasa and gono-shikhya kendra respectively.

Table 08: Educational Facility Situation in Moulvibazar Zila, 1982

Institution	No.	Student	Teacher	Teacher/ Student Ratio	Facilities/ Pop. Ratio
Primary School	699	106288	2147	49	1676
Junior High School	15	1914	87	22	78107
High School	88	19879	900	22	13314
College	6	1678	77	22	292900
Madrasa	44	6531	158	41	26627
Gono-Shikhya Kendra	63	1305	64	20	18597

Source: BBS, Sylhet District Statistics, 1983.

Other Facilities

Summary of the main other facilities in Moulvibazar Zila are provided in the following table.

Table 09: Important Other Facilities in Different Upazilas of Moulvibazar Zila, 1982

Upazilas	Facilities						
	Mosque	Electricity		Cinema Hall	Post Office	Government Office	Tube Well
		Vill- age	House- hold				
Barlekha	249	27	2000	1	11	25	968
Kamalganj	222	35	450	2	9	22	1221
Kulaura	509	36	1561	2	34	47	1667
Moulvibazar	336	25	2410	2	40	35	1139
Rajnagar	232	15	750	-	11	22	992
Sree Mangal	148	17	184	3	15	43	455
Moulvibazar Zila	1696	155	7355	10	120	194	6462

Source: BBS, Sylhet District Statistics, 1983.

Out of the total 199634 households in the zila only 7355 has electricity which represents only 3.7 percent of the total. Electricity is mainly available in Moulvibazar Pourashava and all the upazila shahars. There are one mosque for about 690 population, one tube-well for about 180 population.

2.1.5 Economic Production and Employment

Agriculture

Whole Moulvibazar zila is basically an agricultural area. About 53.21 percent (356000 acres) of the whole zila (668800 acres) was under various type of agriculture in 1982-83 against 55.36 percent in Sylhet region and 60.26 percent in Bangladesh. Eventhough percent of land under cultivation is low compared to national statistics, Moulvibazar Upazila is part of the region which has surplus food production for a long time. In 1981-82 Moulvibazar Zila has produced 16100 tons of surplus food grain.

Out of the total land under cultivation about 20400 acres (about 57 percent) were single cropped, 134000 acres (38 percent) were double cropped and only 19600 acres (5 percent) were triple cropped. Intensity of cropping of Moulvibazar Zila was 148 same as Sylhet region, but lower than Bangladesh national figure (155).

Table 10: Land Utilization Statistics of Different Upazila of Moulvibazar Zila, 1982-83

Upazila	Total Area	Not* Avail-able	Curr-ent Fallow	Cropped Area			Net	Gross	Int. of Crop
				Sin- gle	Dou- ble	Tri- ple			
Barlekha	113	36	3	34	16	2	52	73	140
Kamalganj	120	29	5	30	26	2	58	89	153
Kulaura	167	50	5	47	32	7	86	133	155
Moulvibazar	85	23	2	30	22	3	52	80	154
Rajnagar	84	7	5	29	25	-	54	79	146
Sreemangle	100	27	4	34	14	3	51	71	139
Moulvibazar Zila	669	172	23	204	134	19	357	527	148
Sylhet Region	3062	833	207	960	650	85	1695	2514	148
Bangladesh	35308	6876	1278	11336	8520	1689	21276	32905	155

Note: All the figures are in "000" acres
* Not Available for cultivation

Source: BBS, Sylhet District Statistics, 1983

Out of the total land area about 135 sq.km. of land was under reserve forest which was about 5 percent of the total area. The reserve forest area are distributed in all the upazilas except Sadar Upazila.

Table 11: Area and Selected Major Crops of Moulvibazar Zila 1981-82

Upazila	Paddy		Wheat		Tea		Sugercane	
	Area	Pro-duction	Area	Pro-duction	Area	Pro-duction	Area	Pro-duction
Barlekha	45.73	21.53	0.20	0.17	8.18	3.10	0.20	3.38
Kamalganj	29.63	16.21	0.16	0.14	14.43	5.47	0.10	1.69
Kulaura	120.25	58.47	0.12	0.10	15.71	5.95	0.30	5.07
Moulvibazar	108.58	59.36	0.28	0.12	1.41	0.53	0.20	3.38
Rajnagar	66.86	35.09	0.17	0.12	6.45	2.44	0.20	3.38
Sreemangal	66.30	32.18	0.10	0.10	20.13	7.62	0.10	1.69
Moulvibazar Zila	437.39	222.57	1.03	0.75	66.31	38.30	1.10	18.59
Sylhet	2275.11	1186.12	10.36	8.13	66.31	38.30	6.00	99.12

Note: All 'Area' figures are in "000" acres and all 'Production' figures are in "000" tons

Source: BBS, Sylhet District Statistics, 1983

The important agricultural crops of the zila are paddy, tea, sugarcane with some wheat and jute.

While production of paddy is a common sight all over Bangladesh Moulvibazar Zila and Sylhet region is popularly known as tea-region. 97 percent of the total tea production of Bangladesh is produced in Sylhet with about 64 percent in Moulvibazar Zila alone.

Commerce and Industry

Commercial activity can be inferred from the number of different types of markets and banks operating in the zila.

It is interesting to note that Barlekha and Rajnagar, which are relatively undeveloped upazilas of the zila has the maximum number of daily bazars, 16 and 8 respectively. There are altogether 85 commercial banks operating in the zila.

In terms of industry Moulvibazar zila is famous for its tea gardens and production. Old zila Sylhet produces about 95 percent of total tea production in Bangladesh, and Moulvibazar zila continues 70 gardens of 117 in sylhet.

Table 12: Markets and Banks Operating in Different Upazilas of the Moulvibazar Zila, 1982

Upazila	Market		Bank		
	Daily	Weekly or Bi-weekly	Commercial	Krishi	Grameen
Barlekha	16	7	10	2	2
Kamalganj	3	5	10	1	-
Kulaura	4	26	17	3	3
Moulvibazar	4	31	27	3	-
Rajnagar	8	7	8	1	1
Sreemangal	3	15	11	1	-
Moulvibazar Zila	38	91	85	11	6

Source : BBS, Sylhet District Statistics, 1983.
BBS, Upazila Statistics of Bangladesh, 1988.

Moulvibazar zila is also noted for the production of Monipuri textiles goods. But there are hardly any large industrial establishments in the zila.

Table 13: Small Scale Industries in Different Upazilas of Moulvibazar Zila, 1982

Upazila	Establishment				
	Cottage	Rice Mill	Oil Mill	Saw Mil	Handlooms
Barlekha	676	20	-	-	332
Kamalganj	403	36	-	1	2193
Kulaura	1077	50	-	-	215
Moulvibazar	585	93	1	-	385
Rajnagar	510	39	-	-	24
Sree Mangal	548	27	-	5	57
Moulvibazar Zila	5707	265	1	6	3206

Source: BBS, Sylhet District Statistics, 1983

Employment

Labour Force and Broad Occupation

According to population census 1981, the total population 10 yrs+ were around 808498 out of total population 1171606 which is about 69 percent of the total. But labour force

(who are actively involved in earning activity) was only 354698, which is only 43.9 percent of the population 10 yrs+ and 30 percent of the total population.

Out of the total labour force (354698) majority 194600 +9500 and 57.5 percent) are engaged in agricultural related activities that shows that the total economy is basically agriculture based.

Table 14: Total Population, Population 10 years+ and Labour force in Moulvibazar zila, 1981

Upazila	Total Pop.	Population 10 Yr. +			Labour Force	Labour Force as % of	
		Male	Female	Total		Tot. Pop.	Pop. 10 yrs+
Barlekha	169515	58305	56130	114435	44089	26.1	38.5
Kamalganj	168581	60889	57857	118746	54032	32.1	45.5
Kulaura	293455	103602	95982	199584	90024	30.7	45.1
Moulvibazar	204103	75092	66958	142050	59497	29.2	41.9
Rajnagar	154268	54879	50351	105230	46730	30.3	44.4
Sreemangal	181684	67366	61087	128453	60326	33.2	47.0
Moulvibazar Zila	1171606	420133	388365	808498	354698	30.3	43.9

Source: BBS, Sylhet District Statistics, 1983.

Labour force engaged in different sectors are shown in the following table.

Table 15: Broad occupational classification of Labour Force in Moulvibazar Zila, 1981

Upazila	Agriculture		Non-Agri.			Total
	Cropping	Non-cropping	Manu-feature	Business	Others	
Barlekha	26308	1712	4011	3015	9043	44081
Kamalganj	30638	1058	4851	2938	9547	54032
Kulaura	49951	1834	13976	5592	18671	90024
Moulvibazar	36264	1764	1670	5658	14141	59497
Rajnagar	30074	1005	4867	2489	8295	46730
Sreemangal	21365	2127	12805	5252	18777	60326
Moulvibazar Zila	194600 (54.7)	9500 (2.7)	47180 (13.4)	24944 (7.1)	78474 (22.1)	354698 (100.00)

Source: BBS, Sylhet District Statistics, 1983.

Manufacturing and business sector is quite poor in this zila which engages about 13.4 and 7.1 percent of the labour force respectively.

2.1.6 Major Development Proposals

Development of Moulvibazar Pourashava is largely dependent on the Pourashava authority of the shahar. Maintenance and development of all the roads, cleaning and maintenance of all the drains, collection and disposal of garbage, supervision and monitoring of slow moving traffic within the pourashava area are the few of the many responsibilities of the authority. Apart from that all the public sector agencies have there own development programmes and they do it on their own initiative. But again Pourashava authority has the responsibility to co-ordinate all the development activities within the area.

Due to lack of adequate fund for development in the last few years development activities of Moulvibazar Pourashava has been restricted to maintenance of roads and drains, construction of small culverts only. Table 16 gives the list of works that are recently completed in the Pourashava area.

Table 16: Recently Completed Projects in the Pourashava Area of Moulvibazar Pourashava

Name of the Project	Total Cost (Taka)
1. Construction of Drain on Both Sides of Hospital Road	5,79,061/-
2. Bitumen Work on the Hospital Road	9,48,000/-
3. Construction of R.C.C. Culvert on Hospital Road	67,000/-
4. Construction of R.C.C. Culvert at Gobindhashree	31,900/-
5. Construction of Culvert on Bazar Link Road	14,000/-
6. Construction of Culvert on Club Road	14,000/-
7. Brick Soling Work on Shantibag Road	20,000/-
8. Earth Filling and Brick-bats Works on Gobindhashree Road	42,000/-
9. Construction of Ghat at Bari Lake Area	70,000/-

Source: Moulvibazar Pourashava, Description of Development Plan for 1987-88

Table 17 provides the list of some of the on going projects of Moulvibazar Pourashava.

Table 17: Some On-going Development Projects of Moulvibazar Pourashava, 1989

Name of the Project	Estimated Cost (Taka)
1. Construction of Drain on Both Sides of Central Road	6,76,188/-
2. Bitumen Work On Central Road	5,77,000/-
3. Bitumen Work on Moulvi Syed Kudratullah Road	2,05,000/-
4. Bitumen Work on Kazirghon Road	3,85,000/-
5. Consolidation Work on Central Road	3,24,000/-
6. Construction of Culverts on Kazirghon Road (Two Numbers)	70,000/-
7. Construction of Culvert on Mazorhati Road	20,000/-
8. Construction of Culvert in Gobindhashree Area	20,000/-
9. Development and Maintenance Work of Modern Park	30,000/-
10. Maintenance Work of Children's Park	15,000/-

Source: Moulvibazar Pourashava, Description of Development Plan for 1988-89.

2.2 Moulvibazar - The Pourashava

Based on the various information collected from secondary and primary sources, the catchment area and study area for the preparation of Landuse/Master Plan for Moulvibazar Pourashava has been identified. This part of the chapter describes the process and necessary information of these areas.

2.2.1 Area of Influence

For any development plan, it is important to know, with as much accuracy as possible, the people who are being benefited by the plan. For our case it will lead to appropriate identification of services, to be located at Moulvibazar Pourashava. But the process of identifying a "general" area of influence, taking into account all the services at the shahar, is a complicated and lengthy process. It involves the following consideration to name a few.

- A through analysis of the influence of the existing services on the surrounding region
- Effect of the prevailing transportation network and existing mode of communication on the Pourashava
- Effect of the other centres (both higher and lower order) in the vicinity on the Pourashava

Area of influence of different services are different. For example as a administrative centre population of whole zila totally depend on the shahar. While population of rest of the upazilas of the zila are partially depended. Again it would be unrealistic to assume that people will come to the centre for goods of primary need from beyond 3-5 mile limit. They will definitely go to a nearest local market or bazar. And if some of higher order services are not available at Pourashava, people will go to even bigger urban centres.

Having identified the problems in determining a general area of influence, the consultant undertook a survey at different places of Pourashava to have an idea of the area of influence of the existing Pourashava. Results of the survey are presented in the following descriptive form. (Sample of questionnaire in Appendix A).

1. More than 50 percent (62 out of 108) of the respondent came from with 8 km. zone. Rest were visiting from more than 16 km. areas.
2. Frequency of visit decreases with the increases of distance. Respondents residing within 5 km range visit Pourashava more than once in a day. Respondents residing within 5-10 km range visit Pourashava 3 to 5 times in a week. Respondents residing beyond that come to Pourashava 2 to 3 times in a month.
3. Respondents coming from 8 km range used mostly Cycle and Rickshaw with an small percentage by foot. Respondents coming from beyond mostly used bus or mini-bus with an small percentage using Auto-rickshaw or tempo.
4. People coming from 8 km range have all kinds of purpose for visiting Pourashava. While respondents coming from beyond are mostly visiting for administrative and shopping purpose.

5. A large majority of respondents (73 percent) do not go to another Pourashava or even bigger urban centre for any purpose. Among the 27 percent who visit such centres are mostly for business and better treatment of health. Frequency of visit is mostly (82 percent) 2 to 3 times in a month.

6. 83 respondents (76.77 percent) visit local bazars for goods of daily necessity instead of coming to Pourashava. They visit the local bazar at least once in a day. Most of all these respondents stay at least 5 km away from the Pourashava.

There was also a number of discussion sessions with the local officials about the areas from which people come to the centre. Having done all these the Consultant came to the following conclusion:

- The area within 5 km from the Pourashava, people are depended on the shahar for every thing and they visit the centre more than once in a day.

- The area within 5-10 km from the Pourashava people depend on the local bazars or hats for things of primary importance. For the things and services of secondary importance they depends on the Pourashava.

- People residing beyond the 10 km Zone, depend on zila shahar for administrative and judiciary services and things of tertiary importance and they visit Pourashava 2 to 3 times in a month.

All these efforts has resulted in a probable area of influence of Moulvibazar Pourashava, which extends in all directions and occupied an area of about 15681 areas or 63.48 sq.km. The name of the mouzas along with the area, population of the three last census years and household numbers are provided in the following table.

Table 18: Area and Population Statistics of the Catchment Area of Moulvibazar Pourashava

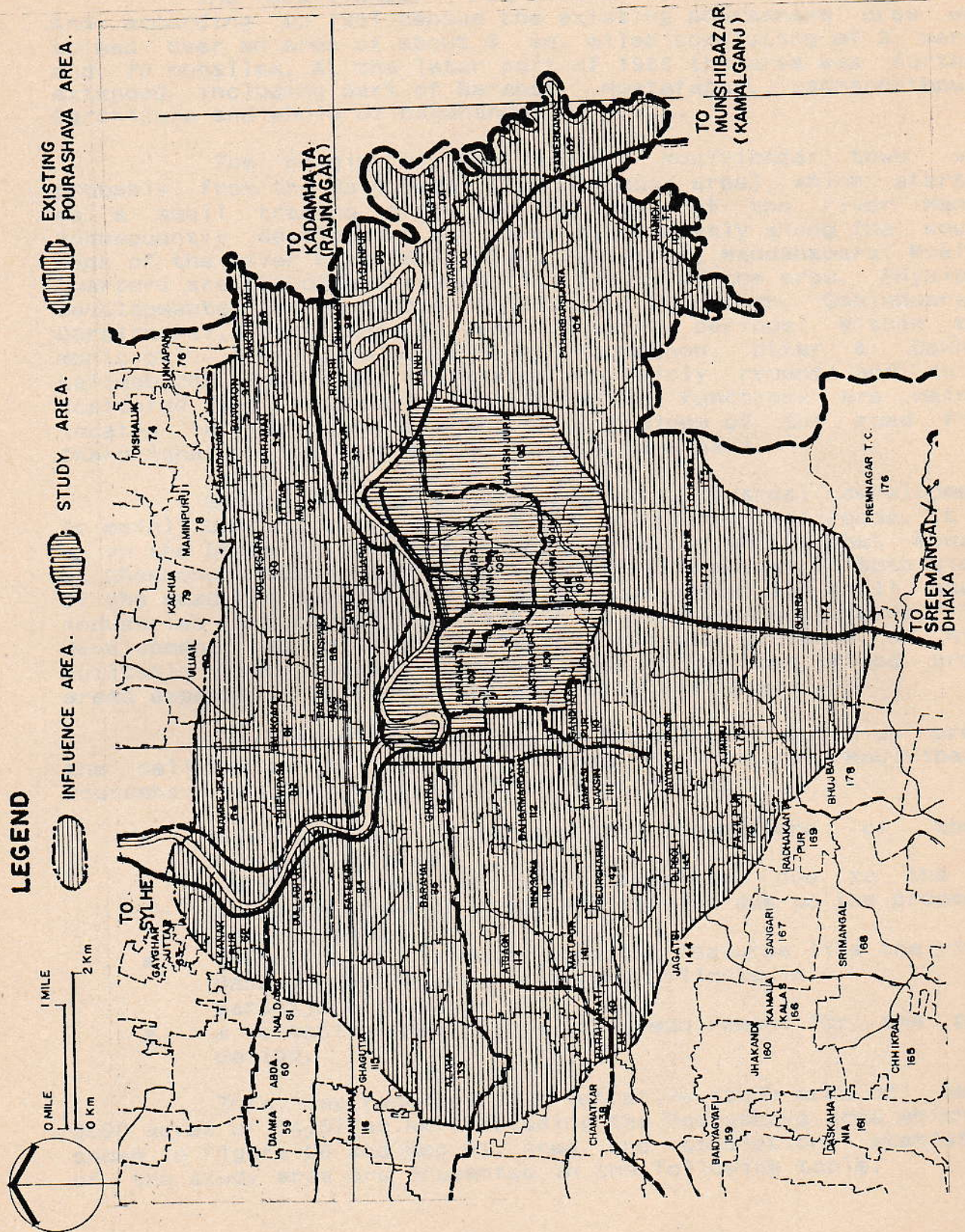
Mouza	Area(Hectare)		Population						Invold. HH'1981
	Total	Invold.	Total			Invold.			
			1961	1974	1981	1961	1974	1981	
Barshijura	344	69	1590	2637	4108	319	529	824	127
Jaghannathpur	618	599	1408	2045	3081	1365	1982	2986	503
Gandarbapur	114	97	257	398	407	219	339	346	72
Gharua	229	194	418	497	1624	354	421	1376	215
Baliarbhag	163	110	598	819	995	535	733	890	126
Mostafapur	141	42	920	810	6518	274	265	750	119
Dhanasri	123	119	290	394	426	281	381	412	70
Raysri	178	178	610	830	1940	620	830	1940	277
Baraman	84	84	580	571	765	380	371	765	111
Uttar Mulaim	107	107	536	687	854	536	687	854	96

Mallik Sarai	164	164	553	768	829	553	760	829	105
Islampur	100	100	110	398	698	110	398	698	104
Gujarai	70	70	706	700	6144	706	700	2144	363
Sabia	109	109	623	714	1101	623	714	1101	159
Athaispaika	75	75	359	462	519	359	462	516	82
Balikandi	127	127	1175	1544	1905	1173	1544	1905	264
Dhewpasa	145	145	533	704	830	533	704	830	134
Dullabpur	91	91	665	788	941	665	788	941	126
Fatepur	136	136	119	152	1385	119	152	1385	212
Barahal	181	181	300	303	1049	300	303	1049	161
Atgaon	219	219	565	720	1432	565	720	1432	232
Binasona	107	107	165	148	925	165	148	925	170
Baharmardan	92	92	368	511	598	368	511	598	82
Beurgharia	117	117	284	406	384	284	406	384	64
Sampasidaksin	108	108	380	618	871	380	618	871	115
Fazilpur	77	77	10	25	340	10	25	340	65
Gayghordaksin	66	66	743	711	595	743	711	595	129
Gumra	243	243	416	900	1008	416	900	1008	172
Paharbarsijura	554	554	482	876	1109	482	876	1109	205
Samerkana	238	48	1309	1656	1879	264	334	379	60
Matarkapan	305	305	1392	1799	3281	1392	1799	3284	390
Bastala	93	93	360	370	419	360	370	419	65
Hasanpur	212	212	321	375	477	321	375	477	81
Daksin Bali	104	78	407	533	1139	305	400	854	130
Bangaon	57	57	170	275	291	170	275	291	40
Gandehari	55	21	196	325	335	75	124	128	24
Uluail	200	90	731	875	1709	329	394	769	115
Mamrajpur	170	170	641	708	969	641	708	969	144
Abdulpur	155	23	593	930	1503	88	138	223	36
Kanakpur	236	117	577	682	1037	286	338	514	68
Naldaria	108	32	468	543	496	127	161	147	22
Alaha	282	254	884	940	2085	796	847	1878	348
Barahartilok	90	90	136	200	475	136	200	475	87
Jagatsri	120	120	263	29	458	263	29	458	83
Birbali	62	62	93	80	314	93	80	314	45
Ajmiru	96	96	255	381	892	255	381	892	155
Bhujbal	232	92	565	620	741	224	246	294	53
TOTAL	7657	6340	25092	32529	53884	19562	25177	42568	6612

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

The influence area of the Moulvibazar Pourashava extends 6 to 10 kms in different directions and it had a population of about 42189 in 1981 with a household size 6442. The population of the same area was 19562 and 25177 in 1961 and 1974 respectively. Figure 05 shows the influence area of Moulvibazar Pourashava along with study area & pourashava area. Map 01 (kept in the folder at the end of this report) shows the influence area and study area in the context of Moulvibazar sadar upazila.

FIGURE 05: MAP SHOWING INFLUENCE AREA, STUDY AREA AND EXISTING POURASHAVA AREA OF MOULVIBAZAR ZILA SHAHAR, 1989.



2.2.2 Delineation of the Study Area

The Moulvibazar Pourashava was established in 1930. And according to 1981 census the existing pourashava area was spread over an area of about 3 sq. miles consisting of 3 wards and 20 mohallas. At the later part of 1989 the area was further extended including part of Barahat, Mostafapur, Jaghannathpur, Barshijura and whole of Ragunandanpur mouza.

The origin of the present Moulvibazar town was probably from the Main bazar (Paschimbazar area), which started as a small trading place on the bank of the river Manu. Subsequently development has taken place mostly along the south bank of the river Manu. Shantibag, Sayeerpur, Maddahapara, Muslim Quarters are the oldest residential blocks of the area. Physical developments in Girjapara, Sultanpur, Kusumbagh, Gobindasree, Dargirmahal, Darghamahalla are of later periods. Within the municipal area developments in Kazirgaon, Uttar & Dakhin kalimabadh, Subuzbagh, Darkhapon are fairly recent and quite scattered and haphazard. Administrative functions are mainly located in the court area and on both sides of the road from Chandnighat bridge to the road towards Kamalganj.

Beyond the Pourashava boundary, physical development is mainly concentrated on both sides of the regional roads. It is so on the Dhaka-Sylhet road in Raghunandanpur and Barahat mouza, on Chowmohona-Samsernagar road in Barshijura mouza. On both sides of the road the development is mainly commercial and small scale industries and beyond the roads it is scattered homesteads. The development has also carefully followed the presence of high buildable land leaving large pockets of low and flood prone areas especially in Barshijura and Mostafapur mouza.

Apart from the analysis of the existing built up area, the delineation of the study area for future Moulvibazar Pourashava has been carried out by considering:

- topographical and physical conditions of the surrounding area
- possible areas of urban expansion due to the pressure of major roads and more so due to the proposed Asian Highway.
- influence of the major physical features like the river Manu on the northern side and hillocks in Barshijura mouza.
- a tentative idea of the land requirement for the plan period.

This has resulted in a tentative study area of about 3598 acres or 14.57 sq.km. including the Pourashava area which is shown in Figure 06 and Map 01. Area and population statistics of the study area are presented in the following table.

FIGURE 06: STUDY AREA OF MOULVIBAZAR ZILA SHAHAR, 1989.

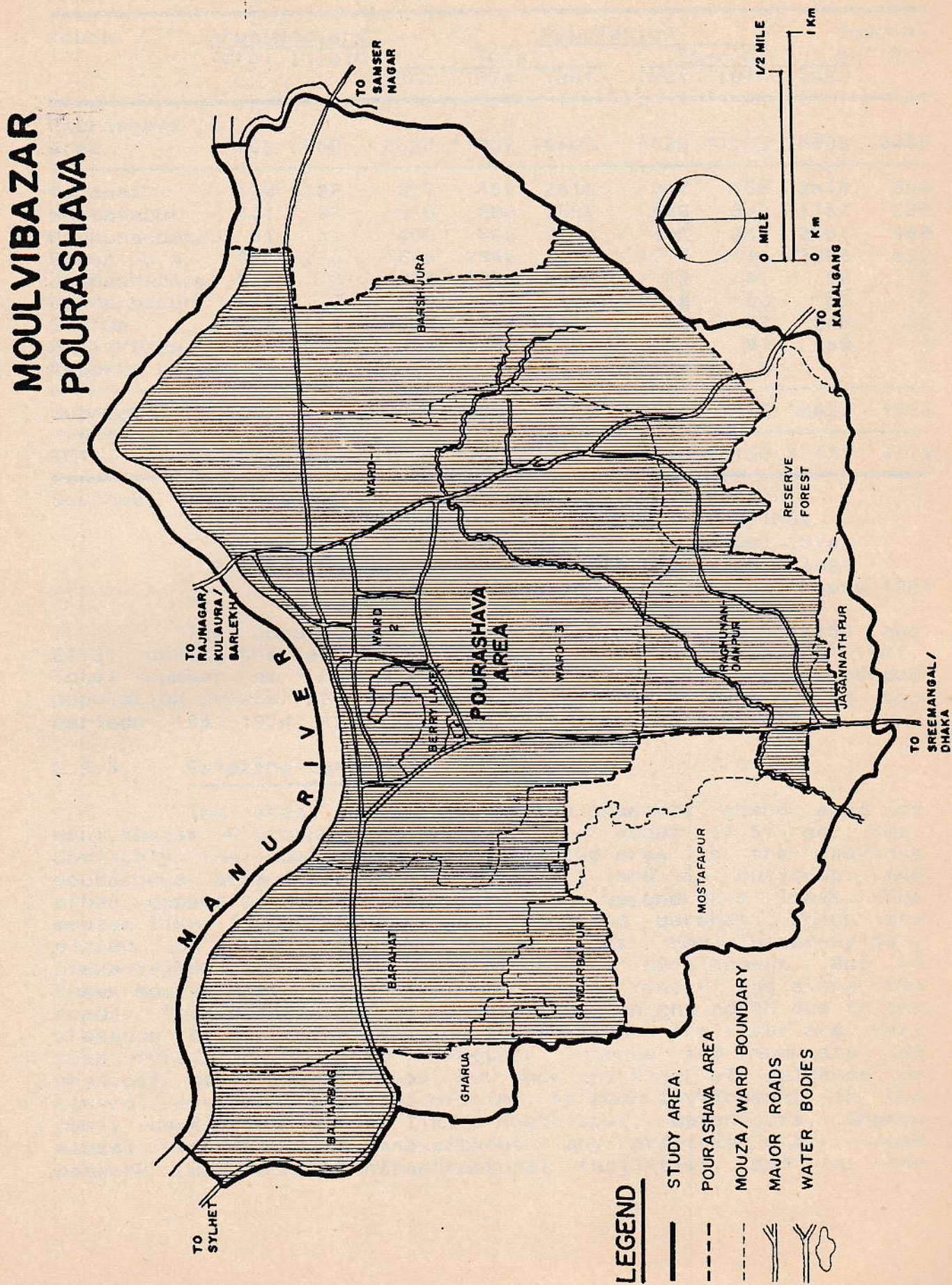


Table 19: Area and Population Statistics of the Study Area of Moulvibazar Pourashava

Mouza	Area(Hectare)		Population						Invol. HH'1981
	Total	Invol.	Total			Invol.			
			1961	1974	1981	1961	1974	1981	
Pourashava Area	769	769	6530	11032	16509	6530	11032	16509	2455
Barahat	139	139	317	465	2516	317	465	2516	388
Mostafapur	141	99	910	883	2502	638	619	1751	280
Raghunandanpur	61	61	400	542	2564	400	642	2564	466
Barshijura	344	275	1596	2645	4119	1277	2116	3295	509
Jaghannathpur	618	18	1394	2025	3078	42	61	92	16
Gandarapur	114	17	100	401	408	15	60	62	13
Gharua	229	14	1000	1194	1619	62	74	243	38
Baliarbhad	123	25	288	396	989	59	81	99	14
Reserve Forest	38	38	-	-	-	-	-	-	-
Sub-Total	1807	687	6005	8651	17795	2810	4118	10622	1724
TOTAL	2576	1456	12535	19683	34304	9340	15150	27131	4179

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

The population of this area were 9,340, 15150 and 27131 during the last three census years 1961, 1974 and 1981. Total number of households were 4179 in 1981. Inter-census population growth rate is 3.79, 5.48 and 8.68 percent during the periods 1961-1974, 1961-1981 and 1974-1981 respectively.

2.2.3 Existing Landuse

The area identified as the possible shahar area of Moulvibazar Pourashava is 3598 acres or about 14.57 sq. kms. Obviously the most intensely developed area is the previous pourashava area where about 81 percent land is built-up. And urban expansion has already taken place beyond this limit. The mouzas like (Ragunandanpur, Baliarbhad and Barahat) which are placed on the regional roads like Moulvibazar-Sylhet, Dhaka-Sylhet are next in terms of physical development. But in these mouzas most of the development are linear and along the roads. The urban expansion is restricted on the north due to the presence of the river Manu and mouzas across the river are very much rural in character. Whether intense and moderate the physical development does not show any kind of guidance or control over a long period of time. As such development in the newly developing areas like Mostafapur, Barshijura, Gharua mouzas are scattered and without any provision of road network and other infrastructural facilities. And in the

intensely developed areas incompatible land use exists side by side. However analyzing the existing built-up situation the following characteristics could be noted and should be considered for preparing future urban plan.

Mainbazar, running along the south side of the river Manu, is the main commercial block in the area. Wholesale and retail markets of all the commodities are located here. Next to that Chowmohona cross-road has the intense commercial development with TC Market and shops in both sides of the roads. There is a also small municipal market near the existing court house. Rest of the commercial use are rows of shops along the roads.

The amount of built-up area (land with any kind of construction and roads) is around 54.33 percent of the total study over. Obviously the intensity of development is the highest (81 percent) in the existing pourashava area and it is lowest (17.08 percent) in Barshijura mouza as it has large track of low-lying flood prone land and agricultural fields. A high proportion of agricultural land is found in the peripheral mouzas of the study area because of the semi-rural characteristics existing there.

Table 20 provides the summary of land uses in the Moulvibazar study area.

Table 20: Summary of Existing Landuse Within the Study Area of Moulvibazar Pourashava, 1989

Landuse Category	Area		% of the Total
	Acre	Hectare	
Agriculture & Forestry	1313.65	531.84	36.51
Commerce	41.60	16.84	01.16
Industry	18.50	7.49	00.51
Education	27.35	11.07	00.76
Health	11.10	4.49	00.31
Administration	70.55	28.62	01.96
Recreation	17.85	7.23	00.50
Socio-cultural	19.40	7.85	00.54
Urban Services	33.25	13.46	00.92
Roads			
- Major(Pucca)	- 72.40	- 29.31	
- Secondary(Semipucca)	- 9.80	- 3.97	
- Local(Kutcha)	- 34.00	- 13.76	
Residential	1601.65	648.44	44.51
Waterbody	73.30	29.68	02.04
Low-lying/Flood Prone land	218.25	88.36	06.06
Total	3598.00	1456.68	100.00

Source: Landuse Survey, 1989

Figure 07 provides the existing landuse map (A4 size) and the existing landuse map in 1:4000 scale is provided in Map 02. Mouzawise landuse statistics is provided in Table 21 (next page).

Residential landuse is the largest category with about half (44.51 percent) of the total land though about 95 percent of the residential area is within the pourashava area. Next important categories are agriculture and forests (36.51 percent) due to contribution of pheripheral mouzas as mentioned earlier. After that important landuse categories are low land (6.06 percent), roads (3.23 percent).

The general land elevation is that high land and hillocks occurring at north east corner. Except that most of other land is moderate elevation and due to flood protection embankment and wall along the north side of Manu river drainage flow is away from the river and by a canal (Kodali Chara) going south west direction (Figure 08). Specific contour lines are also shown in existing and proposed landuse map (Scale 1:4000). The general land elevation is shown in Figure 09.

Residential density is discussed in this chapter under the heading "Population Density". It appears that gross population density is the highest in Ragunandanpur mouza, not in pourashava area. Quality and quantity of housing units are also discussed in this chapter (housing sector studies). But overall poor quality of construction and over crowding is not as frequent as other urban centres in the country.

Most of the administrative offices are located around court area on court road. Circuit house, court building (both new and old), zila parishad, D.C. Office etc. are locate in close proximity so as to make a rather administrative zone. Rest of the govt. office are scattered in ward 1 and 2.

Socio-cultural facilities are also grouped on court road, opposite pourashava office. Religious facilities are scattered all over the study area. Same is the case with recreational facilities but they are mostly located within pourashava area.

With a group of three higher secondary schools and five KG and primary school in very close proximity there is mini educational zone on court road near the bridge on the canal. College for man and woman are further down the court road after the old court building. The other two higher secondary school are in Ward 2 and rest of the primary schools are scattered all over the study areas.

There is no particular industrial zone in the study area. Workshop type industries are located on both sides of Dhaka-Sylhet road. Rest of the industries are scattered, but at close proximity from the major roads.

FIGURE 07: EXISTING LANDUSE MAP OF MOULVIBAZAR STUDY AREA 1989.

MOULVIBAZAR POURASHAVA

— STUDY AREA BOUNDARY
- - - POURASHAVA BOUNDARY

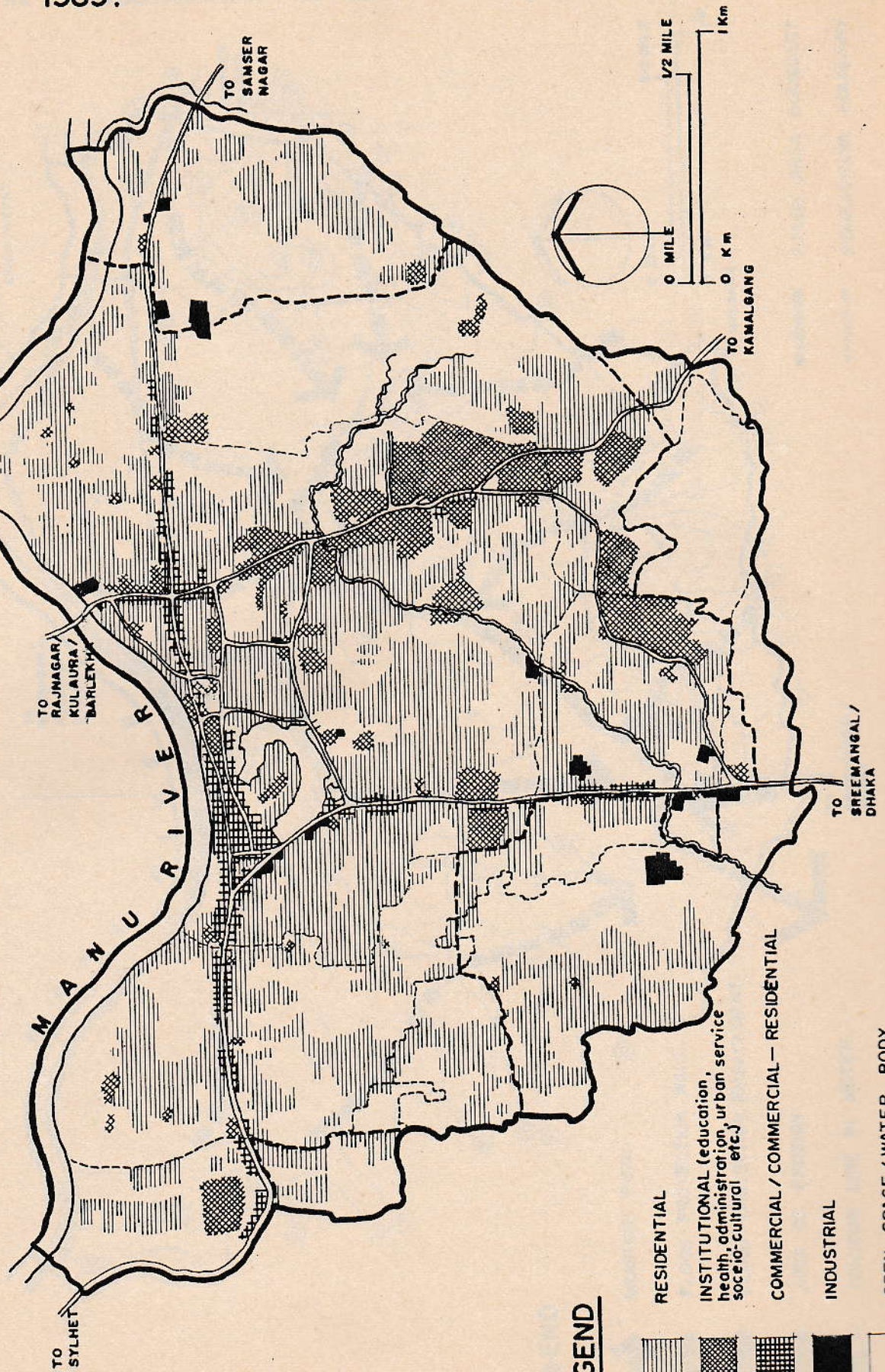


FIGURE 08: DRAINAGE PATTERN, FLOOD PROTECTION SCHEMES IN MOULVIBAZAR STUDY AREA, 1989.

MOULVIBAZAR POURASHAVA

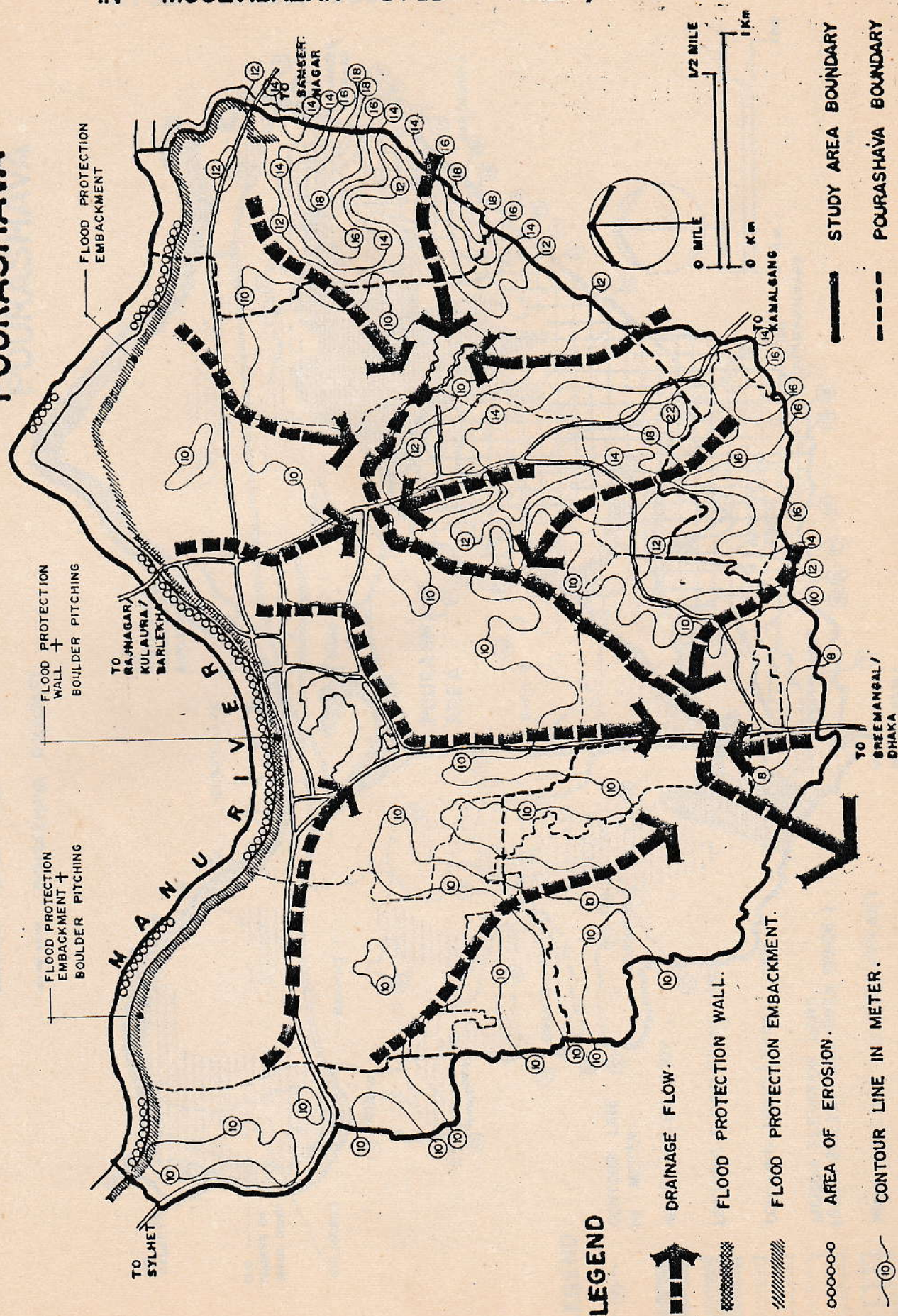


FIGURE 09: GENERALIZED LAND ELEVATION MAP OF MOULVIBAZAR STUDY AREA, 1989.

MOULVIBAZAR POURASHAVA

— STUDY AREA BOUNDARY
- - - POURASHAVA BOUNDARY

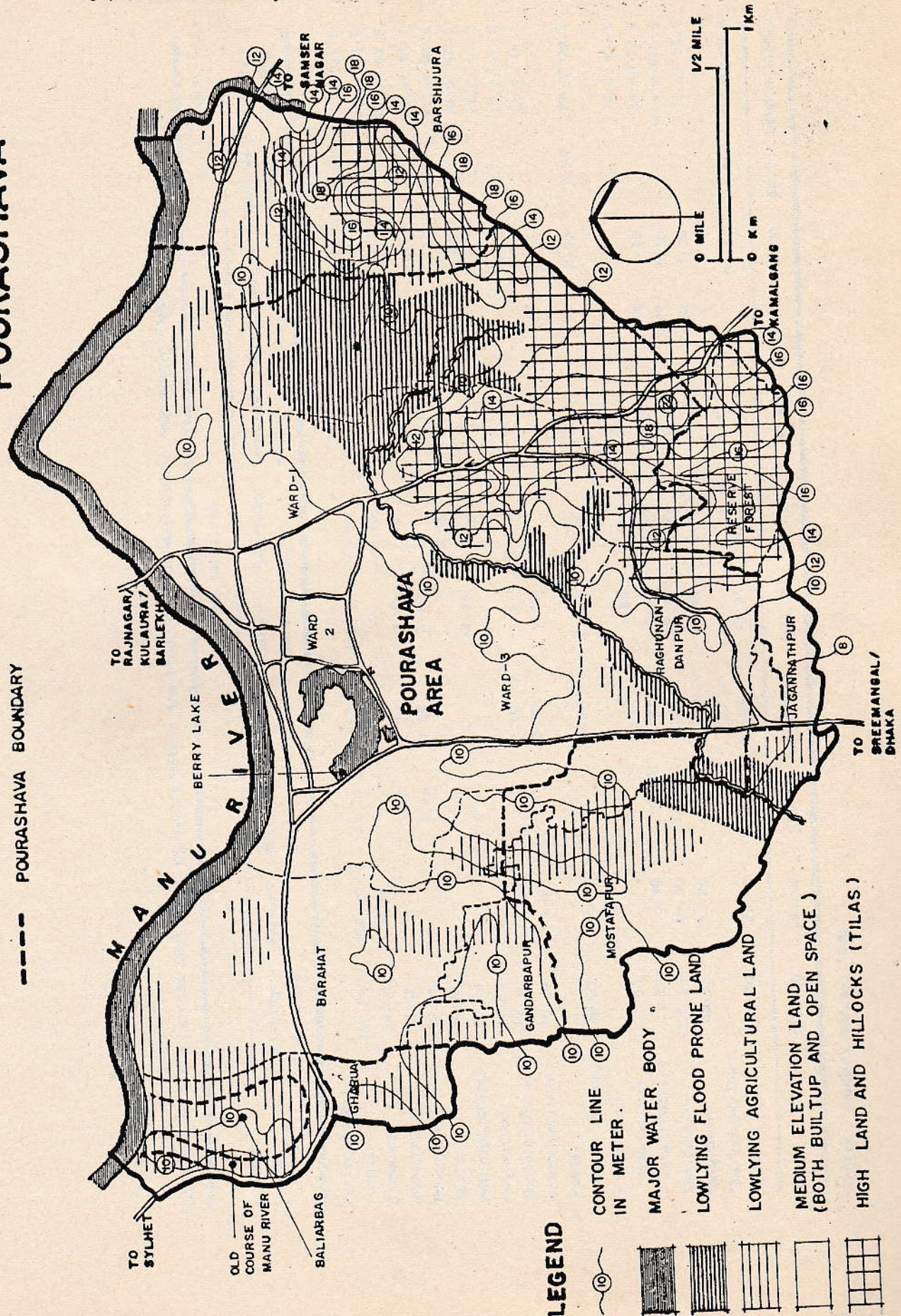


Table 21: Existing Landuse Statistics By Mouzas Within the Study Area of Moulvibazar Pourashava, 1989

Landuse Category	Existing Pourashava	Areas (Acre) in							TOTAL AREA	
		Barahat	Mostafa-pur	Ragunandan-pur	Barshi-jura	Jagannath-pur	Gandarba-pur	Gharua bag	Reserve Forest	(Acre/Hectare)
Agriculture & Forestry	265.50	205.90	173.75	60.30	470.75	15.05	19.65	26.25	16.75	89.75 1313.6/531.8
Commerce	29.10	6.35	-	5.75	-	0.40	-	-	-	- 41.6/ 16.8
Industry	3.95	-	3.10	6.30	3.90	1.25	-	-	-	- 18.5/ 07.5
Education	22.95	-	0.45	0.35	3.60	-	-	-	-	- 27.4/ 11.1
Health	10.25	-	-	-	-	0.85	-	-	-	- 11.1/ 04.5
Administration	41.70	-	-	-	17.85	-	-	3.00	-	- 70.6/ 28.6
Recreation	17.85	-	-	-	-	-	-	-	-	- 17.8/ 07.2
Socio-cultural	15.60	2.80	-	1.00	-	-	-	-	-	- 19.4/ 07.8
Urban services	15.20	1.30	-	15.90	0.85	-	-	-	-	- 33.3/ 13.5
Roads	30.20	1.80	-	4.80	21.30	6.55	-	-	2.50	5.25 72.4/ 29.3
- Major (Pucca)										
- Secondary	7.75	-	-	0.45	1.60	-	-	-	-	- 9.8/ 04.0
(Semipucca)										
- Local (Kutcha)	11.20	5.80	10	1.35	3.80	0.50	3.95	2.15	1.15	- 34.0/ 13.8
Residential	1325.65	85.30	47.20	43.25	62.50	13.25	16.25	3.25	8.15	- 1601.6/648.4
Waterbody	38.50	10.35	3.25	1.30	10.40	3.95	2.15	1.35	1.85	- 73.3/ 29.7
Low-lying/Flood										
Prone land	50.40	23.40	12.15	10.25	83.25	4.20	-	-	28.60	- 218.3/ 88.4
Total	1900.00	343.00	244.00	151.00	680.00	46.00	42.00	35.00	62.00	95.00 3598.0/1456.7

Source : Landuse Survey, 1989

There are about 90 acres of low lying flood-prone land in the study area which are marked in Figure 09. These land are about 6 percent of the study area.

Apart from all these the existing landuse map takes care of requirements mentioned in the TOR. Such as

- Names of principal features
- Roads and Buildings of pucca standard

2.3 Sector Studies of the Study Area

2.3.1 Demographic Studies

To get a general idea of the socio economic situation a questionnaire survey has been carried out by a team of investigators and data for all sectors were collected from relevant authorities. A sample of the questionnaire for the survey is presented at the end of the report (Appendix B). The survey was carried out by the application of random sampling method and it was done on 185 households and a total 1351 population representing 4.98 percent of the target population.

The survey was directed towards getting first hand information about the population characteristics (age, sex, dependency, education etc.) household size, migration, labour force and employment, etc.

Population Structure

The population of the study area was 9340, 15150, 23131 in the census years of 1961, 1974 and 1981 respectively. With a inter-census growth rate of 3.79, 5.48 and 8.68 percent during the periods 1961-74, 1961-81 and 1974-81 respectively. (Please refer to the Table 29).

The number of population covered by questionnaire survey was 1351 out of which 54.08 percent were male and 45.97 percent female.

There are significant difference in the population structure of Moulvibazar study area with that of Bangladesh. For example, percentage of population in the below 10 years age group is about 10.95 percent, which is far below Bangladesh national average of about 16 percent. The percent of active population (population within age group 15-59 years) is quite high - about 73 percent and it is much above national average.

Table 22: Composition of Population Among the Respondent Households in the Study Area of Moulvibazar Pourashava, 1989

Age Group (Years)	Male	%	Female	%	Total	%
Below 5	42	5.76	36	5.80	78	5.77
5 - 9	33	4.52	37	5.96	70	5.18
10 - 14	68	9.31	62	9.98	130	9.62
15 - 19	108	14.79	91	14.65	199	14.73
20 - 24	124	16.98	93	14.97	217	16.06
25 - 29	92	12.60	77	12.40	169	12.51
30 - 34	54	7.40	49	7.89	103	7.62
35 - 39	30	4.11	42	6.76	72	5.33
40 - 44	22	3.01	37	5.96	59	4.38
45 - 49	22	3.01	39	6.28	61	4.52
50 - 54	39	5.34	22	3.54	61	4.52
55 - 59	37	5.07	17	2.74	54	4.00
60 - 64	28	3.84	13	2.09	41	3.03
Above 64	31	4.27	6	0.97	37	2.74
	730	100.00	621	100.00	1351	100.00

Source: Socio Economic Survey, 1989

FIGURE 9B: AGE-SEX PYRAMID OF MOULVIBAZAR STUDY AREA AND BANGLADESH 1989.

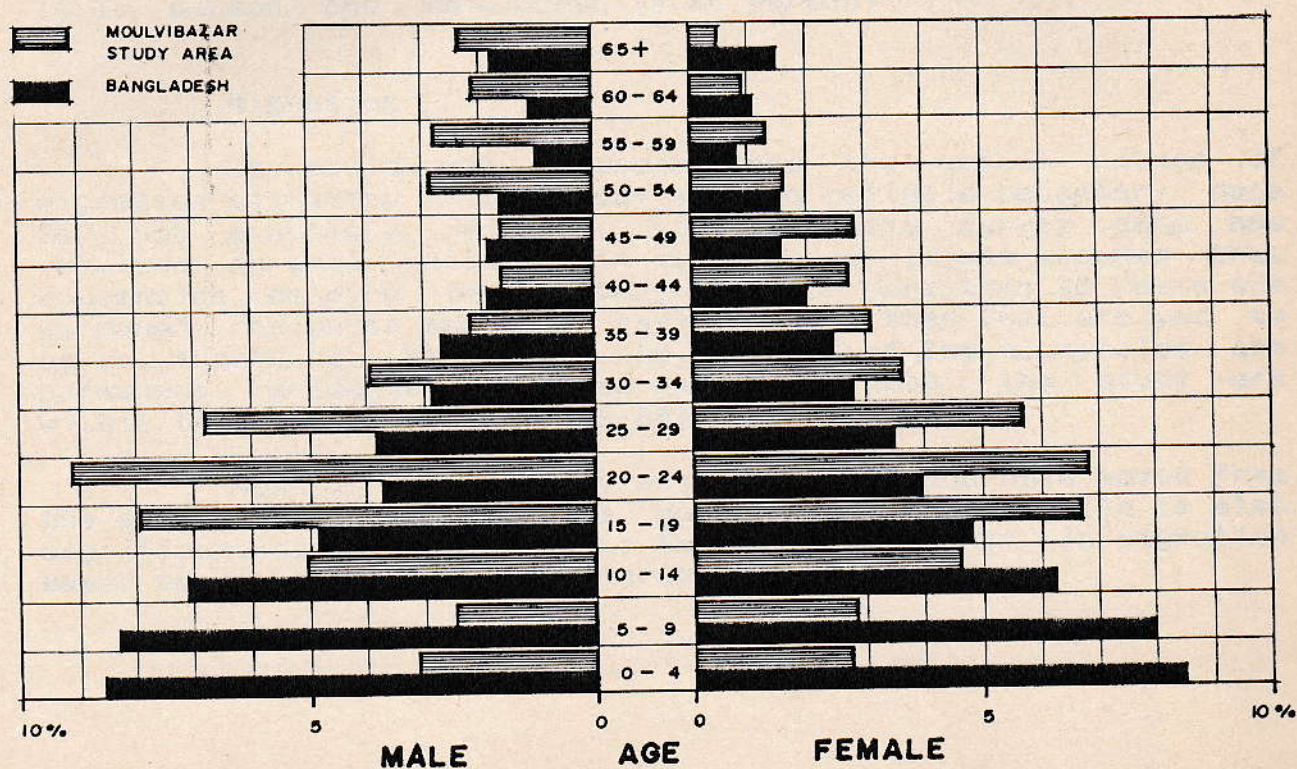


Table 23: Dependency Ratio of Population in the Study Area of Moulvibazar Pourashava, Old District Sylhet, Bangladesh, 1989

Area	Population in Age Group			Dependency Ratio			Male in
	0-14	15-59	60+	Child	Old	Total	15-59, as % of Total
Bangladesh	40600000 (46.6)	41600000 (47.81)	4900000 (5.6)	97.5	11.8	109.3	24.46
Old District Sylhet	2784600	2959000	221600	94.1	7.5	101.6	24.70
Moulvibazar Study Area	5581	19909	1641	28.03	8.24	36.27	39.08

Note: Figures for Bangladesh & Sylhet are from 1981 census.

Source: Analysis from Socio Economic Survey Data

High percentage of population in the active age group has resulted in a very low dependency ratio, which is about 36.27 percent only. But a lower dependency ratio is a common factor in urban areas of Bangladesh because of the presence of a higher proportion of economically active males.

Total number of households surveyed in the study area were 185. The average household size is 7.30 persons which is quite high considering whole zila (5.90 persons), Sylhet region (6.10 person) and Bangladesh (5.80 person).

Migration

It could not be ascertained the actual nature of migration situation in the study area as reliable secondary data is not available. However, socio-economic survey data has resulted in some indication in this regard. It was assumed that households residing in the study area for more than 20 years are permanent residents and those residing less than that are yet to be so. According to that 80 percent of the households are permanent residents and rest have moved into the study area within the last 20 years (1969-89).

Most of the recently settled households have moved from the same zila. But households moved from another zila is also significant-about 40 percent. The main cause of in-migration seems to be education of children.

Table 24: In-Migration Situation Among the Respondent Households in the Study Area of Moulvibazar Pourashava, 1989

Category	Number	% of the total	
A. Permanent Resident	148	80.00	
B. Recently Settled	37	20.00	
Origin		% of B	
● Within Sadar Upazila	13	7.03	35.13
● From Another Upazila	9	4.86	24.32
● From Another Zila	15	8.11	40.55
● From Another Country	-	-	-
	37	-	100.00
Cause			
● Service	6	3.24	16.22
● Business	9	4.86	24.32
● Education & Children	22	11.90	59.46
● Others	-	-	-
	37		100.00

Source : Socio-Economic Survey,

About 35 percent households have some one who is residing away from them permanently. And a majority of them (84 percent) are residing in another country. And almost all of them are engaged in service. Since a lot of people from Sylhet area reside in United Kingdom and Middle East - it is not at all surprising.

Table 25: Out-Migration Situation Among the Respondent Households in the Study Area of Moulvibazar Pourashava, 1989

Category	Number	% of Total
A. Without Any Family Member Settled Somewhere else Permanently	120	64.86
B. With one or more Family members Settled Somewhere else Permanently	55	35.14

Location of Settlement		% of B	
● Within Sadar upazila	-	-	-
● Another Upazila	-	-	-
● Another Zila	9	4.87	16.36
● Another Country	46	24.87	83.64
	55		100.00
Census			
● Service	52	28.11	94.54
● Business	1	0.54	1.82
● Education & Children	2	1.08	3.64
● Others	-	-	-
Total	185	100.00	-

Source: Socio-Economic Survey, 1989

Level of Education

The study area shows a remarkably higher number of educated people even if we consider the fact that urban areas in Bangladesh has a higher literacy rate than rural areas. While national average is only about 23 percent, the study area has a literacy rate as high as 80 percent. As usual, the male population has a higher average (85 percent) than the female (73 percent). But it is interesting to note that percentage of female population (31 percent) going for primary education is higher than that of male population (19 percent).

Table 26: Level of Education & Literacy Rate in the Study Area of Moulvibazar Pourashava, 1989

Level	Male		Female		Total	
	Number	%	Number	%	Number	%
Pre-School Age Children	42	5.75	36	5.80	78	5.77
Primary	140	19.18	195	31.40	335	24.80
Secondary & Higher Secondary	382	45.48	215	34.62	547	40.49
Graduate & above	151	20.69	45	7.24	196	14.51
Illiterate	65	8.90	130	20.94	195	14.43
Total	730	100.00	621	100.00	1351	100.00
Literacy Rate	85% (Male)		73% (Female)		79.79%(Total)	

Source : Socio-Economic Survey, 1989.

Occupational Structure and Labour Force

About 62 percent of the target population are classified as "DO NOT WORK". This group of people include unemployed, housewives, students and children. Among the population who work for a living 11.25 percent are engaged in service and 12.36 percent in business. Dependency ratio is 1:1.63. Population engaged in agriculture is quite low- only 5.70 percent.

Table 27: Occupational Structure of Respondent Population in the Study Area of Moulvibazar Pourashava, 1989

Occupation	Number	% of the Total	
Agriculture	77	5.70	
Service	152	11.25	
Business	167	12.36	
Professional (Lawyer, Doctor, Rickshaw Pullar, Potter, Iron smith etc.)	48	3.55	
Labour	70	5.18	
- Non-Agriculture	56	4.14	
- Industrial	14	1.04	
Do not work	837	61.95	
- Unemployed	86	6.37	
- Housewife	302	22.35	
- Student	371	27.46	
- Children	78	5.77	
	1351	100.00	

Source: Socio Economic Survey, 1989

Household Income And Expenditure

It was difficult to have an idea of the income-expenditure situation of the population. Generally people are quite reluctant to reveal their earning. And a lot of households specially the poor really do not keep tract of earnings and expenditure. For some it is a day to day existence. And there again, is the tendency to lower income and exaggerate expenditure. So the consultant likes to point out that finding about income-expenditure pattern might be quite different from reality. The households in the study area seems to be quite well off considering the general situation in Bangladesh. A large majority of population (66 percent for income and 57 percent for expenditure) have their income-expenditure more than Tk. 5000 per month. The interesting point to note is the absence of any household in the less than Tk.1000 group. For the generalized information it appears that all the households have income more than expenditure - a situation generally found in higher-middle or high income group households in Bangladesh.

Table 28: Monthly Income Expenditure Pattern of the Respondent Households in Moulvibazar Study Area, 1989

Range in Taka	Income		Expenditure	
	Number	%	Number	%
Less than 1000	-	-	-	-
1001 - 2000	6	3.24	4	2.16
2001 - 3000	9	4.86	28	15.13
3001 - 4000	13	7.03	20	10.81
4001 - 5000	35	18.92	28	15.13
More than 5000	122	65.95	105	56.74

Source: Socio Economic Survey, 1989

Past Population Growth Characteristics

It has been found that the population of the designated study area of Moulvibazar Pourashava was 9340, 15150 and 27131 in the census years 1961, 1974 and 1981 respectively. In the last 20 years (1961-81) average growth rate of population was 5.48 percent annually and the rate is quite high (8.68 percent) in later years 1974-81.

Table 29: Past Population Growth Characteristics by Mouzas in the Study Area of Moulvibazar Pourashava, 1989

Mouza	Area (acre)	Involved Population			Growth Rate (%)			Density per Acre		
		1961	1974	1981	1961-74	1961-81	1974-81	1961	1974	1981
Pourashava										
Area (ex) 1900		6530	11032	16509	4.12	4.75	5.93	3.43	5.81	8.69
Barahat	343	317	465	2516	2.99	10.91	27.28	0.92	1.36	7.33
Mostafapur	244	638	619	1751	0.23	5.18	16.04	2.62	2.54	7.18
Raghunan-danpur	151	400	642	2564	3.71	9.73	21.87	2.65	4.25	16.9
Barshijura	680	1277	2116	3295	3.96	4.85	6.53	1.88	3.11	4.85
Jagannath-pur	46	42	61	92	2.91	3.99	6.05	0.91	1.33	2.00
Gandarbapur	42	15	60	62	11.25	7.35	0.47	0.36	1.43	1.48
Gharua	85	62	74	243	1.37	7.07	18.51	0.73	0.87	2.86
Baliarbag	30	59	81	99	2.47	2.62	2.91	1.97	2.70	3.30
Reserve Forest	95	-	-	-	-	-	-	-	-	-
Total	3598	9340	15150	27131	3.79	5.48	8.68	2.30	4.21	7.54

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

While population growth is rather steady in the previous pourashava area, the adjacent mouzas have registered a very sharp increase. Population increase in Barahat, Mostafapur, and Raghunandanpur mouzas were 27.28 percent, 16.04 percent 21.87 percent per year respectively.

Population Density

The population of the 3598 acre study area was of 27131 in 1981 with a gross density of 7.54 (18.62p/Ha) persons per acre which has increased from 2.30 persons per acre in 1961 and 4.21 persons per in 1974.

Table 29 provides the population density in different mouzas in three census years which gives an overview of the density change in 20 years. Figure 10 provides the density level in the Moulvibazar study area in 1989. Obviously it is not expected that the whole study area will show even distribution of population. The pourashava area has 8.69 persons per acre population density. Highest density is found in Raghunandanpur mouza which is about 16.90 persons/acre. But even the highest available density is far below than what is expected of an urban area in Bangladesh.

About 61 percent of total population of the study area in 1981 were residing within the previous pourashava area. Within which population density is highest in Ward No 2 followed by Ward 1 and 3.

Population Forecast

As sufficient and reliable data on migration is not available it is difficult to forecast future population with a degree of precision. In such a situation it probably would be wise to analysis the existing trends in last 20 years and evaluate them in the context of regional and national issues.

The growth rate of the population in the study area for the last three inter-census years were 3.79 percent, 5.48 percent and 8.68 percent in 1961-74, 1961-81 and 1974-81 respectively. The growth rate of the population within the previous pourashava area was rather consistent - 4.12 percent, 4.75 percent and 5.93 percent during the periods 1961-74, 1961-81 and 1971-81 respectively. Considering that growth by natural increase is about 2.5 percent, rest are immigrants to the area and most of them have settled outside the previous pourashava area - in the newly developing areas.

The three growth rate 3.79 percent in 1961-74, 5.48 percent in 1961-81 and 8.68 percent in 1974-81 give a range of 57092 to 143368 population in the horizon year 2001.

FIGURE 10 : DENSITY LEVEL IN THE STUDY AREA OF MOULVIBAZAR ZILA SHAHAR , 1989.

MOULVIBAZAR POURASHAVA

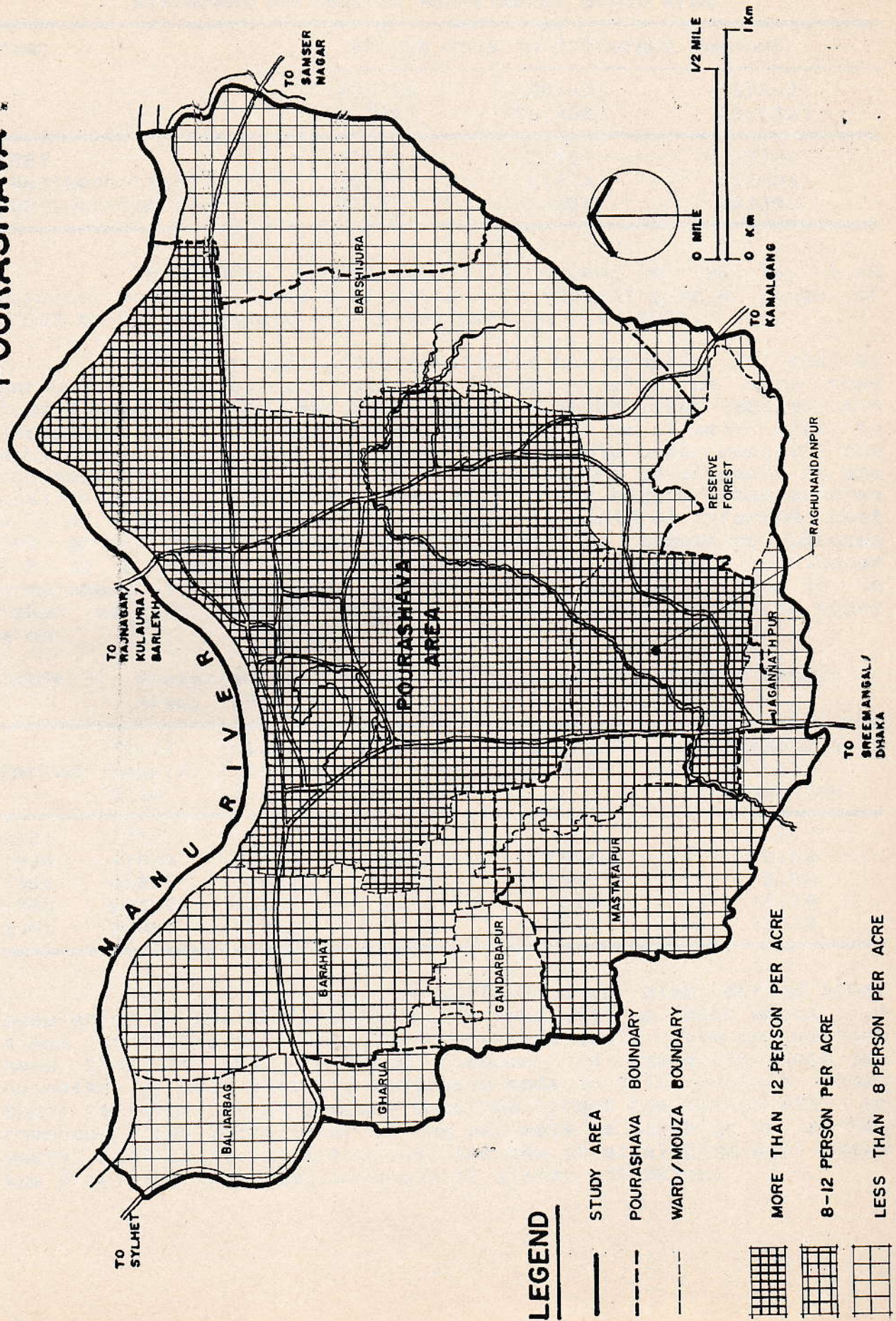


Table 30: Population Forecast With Existing Growth Rates in Different Periods in Moulvibazar Study Area

Year	Growth Rate in Different Periods		
	1961-74 (3.79%)	1961-81 (5.48%)	1974-81 (8.68%)
1981	27131	27131	27131
1989(Base Year)	36535	41574	52803
2001(Horizon Year)	57092	78861	143368

The three growth rate 3.79 percent in 1961-74, 5.48 percent in 1961-81 and 8.68 percent in 1974-81 give a range of 57092 to 143368 population in the horizon year 2001.

The national urban population has trebled in 1961-81 period. At the current rate of increase it will be more than double again by the year 2000. While in major urban centres the increases will be more than double, it is likely that in Moulvibazar pourashava - a rather lower middle order centre - the increase will not be that much. Again with the development at the upazila centres, the flow of migrants to the bigger urban centres will be less than what exists. As such it could be inferred that the growth of Moulvibazar Pourashava will be something between 1.5 to 2 times than what exists now. And our conclusion complement with the growth rate of 1961-81 period. As such it is taken as the average growth rate of population for the study area.

Table 31: Preferred Population Forecast for Moulvibazar Study Area, 1990-2001

Period	Total Population	Total Increase (5.48%)	Natural Increase (2.5%)	In-migrants (2.98%)	In-migrants as % Total Population
1981	27131	-	-	-	-
1989	41574	14443	6589	7854	18.89
1991	46255	4681	2135	2546	5.50
1996	60396	14141	6451	7690	12.73
2001	78860	18464	8423	10041	12.73

It is expected that at the end of plan period total population in the Moulvibazar study area will be 78860 about 1.9 times of 1989 population. The consultant would like to mention here that if the preferred forecast is wrong, it does not necessarily mean that the proposals made in this project loose their validity. It only means that the target population will be reached a few years later if the estimate is too high or a few years earlier if it is too low. And the physical plan will have the provision to adjust with any of either situation.

2.3.2 Housing Sector Studies

Characteristics of the Main Housing Areas

Out of the total 3598 acres of the study area about 44.43 percent (1598.65 acres/647.23 Ha) are under residential use. Obviously the previous pourashava area has got the most of these residential land - 1325.65 acres. In the non-pourashava study areas residential use is really scattered. Homestead construction was mainly guided by accessibility by Kutchha roads and relatively high land. And these areas are still similar to settlements in rural areas of the zila in terms of pattern and conditions. Main housing areas of Moulvibazar study area are located within the previous pourashava boundary. Out of 20 defined areas or 'paras' - as is popularly known - it is difficult to find any one absolutely or purely residential. Probably they have started as residential area but increasing urban function have crowded out the residential use - specially on the both sides of the main roads. However Shantibag, Sayeerpur, Maddahapara, Muslim Quarters, Sultanpur are still predominantly residential paras. They are the oldest ones also. Second phase of residential development has occurred in Dargir Mahal, Dargha Mahal, Gobindasree, Girjapara. New residential development is occurring in Dakhin and Uttar Kalimabdh, Kazirgaon and Sabuzbag. Figure 11 provides the general distribution of residential areas in Moulvibazar study area.

Table 32: Homesteads by Type of Structure in the Study Area of Moulvibazar Pourashava, 1989

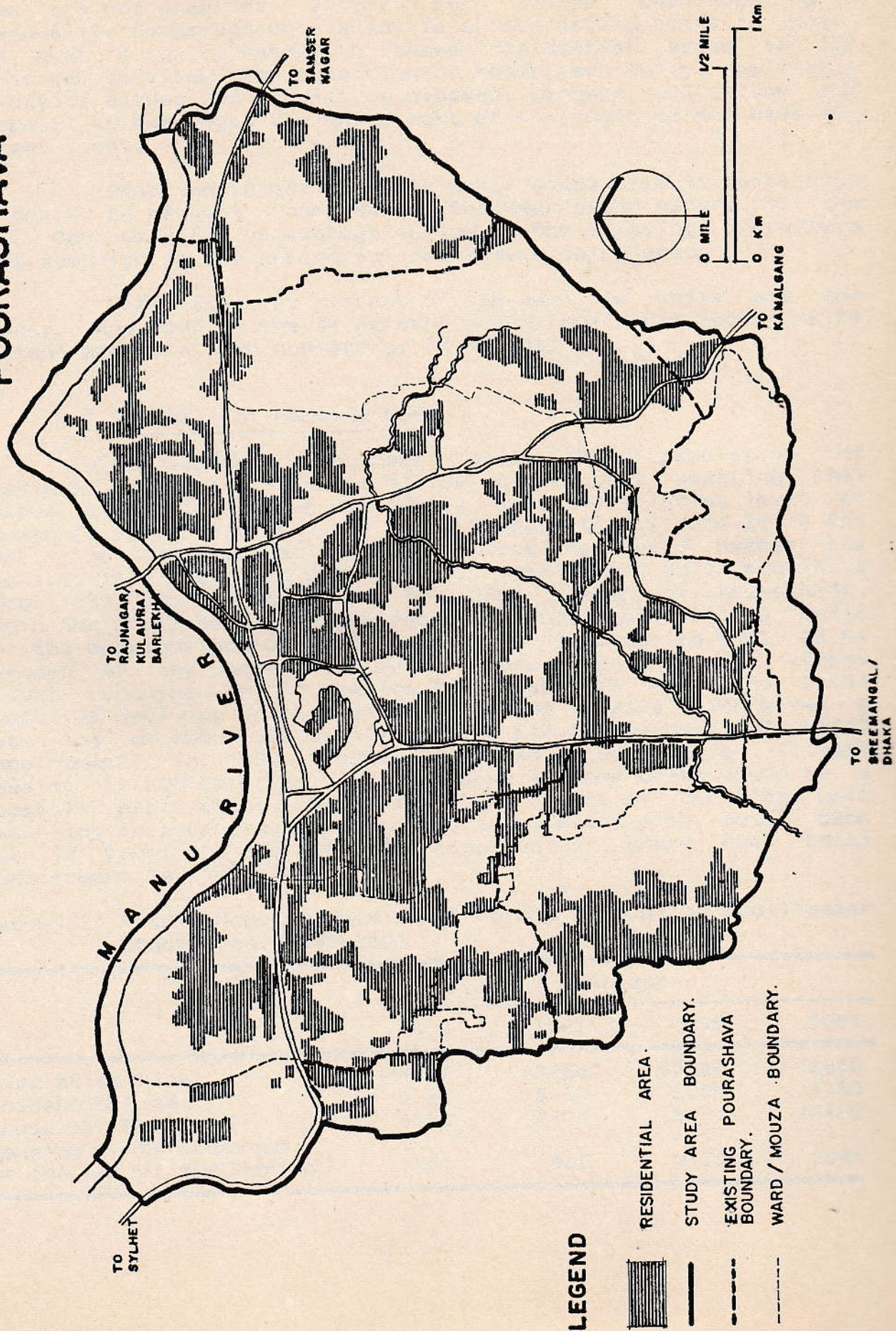
Type of structure	Study Area		Pourashava Area	
	Number	%	Number	%
Pucca	44	23.78	979	35.30
Semi-Pucca	75	40.54	1084	39.12
Kutchha	66	35.68	709	25.58
	185	100.00	2772	100.00

Source: 1. Socio Economic Survey, 1989
2. Moulvibazar Pourashava, 1989

The housing stock in the Moulvibazar study area is marked by a high percentage of pucca structure. Compared to other medium size urban centres like Rangpur (25%) or Narshingdi (7%) the proportion of pucca structures in Moulvibazar is quite high (about 35 percent). As much as the nearest major urban centre Sylhet 36 percent. As long as the material and construction is considered the dwelling units in the core are could be termed as "good" in relation to the socio-economic condition of the country. Some really "high class" buildings are scattered all over the plan area. Most likely they belong to people residing outside the country. Slums or slum like

FIGURE II : DISTRIBUTION OF RESIDENTIAL AREAS IN MOULVIBAZAR STUDY AREA, 1989.

MOULVIBAZAR POURASHAVA



area are not observed except few kutcha dwellings with low-quality construction - which is a interesting point to note. But what is really needed in these residential areas is the municipal services. The condition of roads, are quite deplorable - drains either don't exist or clogged, garbage collection and disposal is not upto the mark, most of the roads do not have any street light.

Owner occupancy in Moulvibazar study area is quite high - about 84 percent - considering the near urban nature of the area. Obviously the percentage is low in the existing pourashava area and high in the periperial newly developing areas.

More than 90 percent of the dwelling units are one storey. And out of the 44 percent pucca buildings about 38.64 percent are more than one-storey in height.

Estimate of Housing Need

Pourashava document shows that population of previous pourashava is about 40,000 in 1989. But updating 1981 census population (which was 16509) with the existing level of growth (5.93 percent/1974-81) gives a population figure 26174 for 1989. The 1981 population size and total household number has resulted in a household size of 6.72. Considering this household size 1989 population results in a 3894 number of households. Again the pourashava document shows the number of dwelling units in the previous pourashava area is 2772. Considering that 38.64 percent of the pucca building which are more than one storey height contains on an average 2.5 households each the total number of dwelling units available in 1989 is 3339 which gives a back log of about 555 dwelling units (14.25 percent of total requirement) in 1989. Since wide spread squatting or illegal housing is not observed, over crowding in some units could be a possible explanation. Referring these figure of dwelling unit back log in pourashava area to the total study area, total back log is found to be 881 dwelling units. Where the total requirement is 6186 units.

Table 33: Future Housing Need at Different Periods in Moulvibazar Study Area, 1990-2001

	Periods			
	1989	1991	1996	2001
Population Size	41574	46255	60396	78860
Household Size	6.72	6.50	6.50	6.50
Household Number	6186	7116	9291	12132
Housing Units Required at the end of the Period	881	930	2175	2841

Housing in any urban centre in Bangladesh is a private initiative. It is more so for a lower middle order urban centre like Moulvibazar. While there exists certain housing facilities for the Govt. and Semi Govt. employees, there does not exist any programme to provide housing to the general public.

It is difficult to assess the future housing need as the reliable data on replacement needs, existing backlog and degree of overcrowding do not exist. A lot of assumptions has to be made like the existing backlog calculation - to use all these factors. However some indicative quantities have been evolved based on a very simple assumption of a constant urban household size (6.5 persons per household) and population expected at different places.

So at the end of the year 1991 at least 1811 housing units are required to offset the current backlog and requirement at the end of that period. At the end of the plan period (2001) the study area should have 6827 units or at the rate of 569 units per year - a task quite big no doubt. While most of these units will be provided by private initiative through market mechanism. It is essential that public incentive / initiative should be there to improve low and middle income housing and related facilities.

Land Requirements and Implications

Estimating land requirements and analyzing the implication leads to the consideration of residential density of the area. There are a number of factors related with the computation of residential density like - cost of infrastructure, and other services, land and accessibility of school and other facilities. Above all there is the consideration of local factors. Instead of going into such lengthy and confusing process, we can consider the existing density levels, what exists in the higher order urban centres and what should be achieved against the prevailing condition in the country.

Table 29 provides the net residential density of population in 1989 in different mouzas of the study area which varies from 5.85 persons per acre in Gandarbapur to highest 90.84 persons per acre in Raghunandanpur mouza. The density in the previous Pourashava area is 19.08 person per acre. The TOR for the upazila landuse plan preparation prescribes that net residential area density should be 100 persons/acre.

If we take a even more conservative figure of 80 persons/acre there are enough scope for densification of the existing residential areas. While population of the study area will increase by a factor of 1.9 by the year 2001, the density of highest figure in 1989 (90.08 persons/acre) will be about 172.32 persons/acre and average density will be about 50 persons/acre which shows that population increase in the study area should be conveniently accommodated by densification of existing residential areas. It is true that densification will not occur

as the arithmetic says but on an average if we can achieve 50 persons/acre net residential area density we reach the target. Probably the previous Pourashava area will be more dense than the average for the whole area and some other mouzas currently showing higher density will fall back.

Table 34: Accommodation of Population Increase in the Existing Residential Area of Moulvibazar Study Area

Area	Population 1989 (adjusted)	Residen- tial Area Acre/Ha	Existing Density, 1989 P/Acre	Expected Density 2001 P/Acre	Expected Population in 2001
Pourashava					
Area (ex)	25297	1325.65	19.08	36.19	47985
Barahat	3855	85.30	45.19	85.72	7312
Mostafapur	2683	47.20	56.84	107.82	5089
Raghunandanpur	3929	43.25	90.84	172.31	7452
Barshijura	5049	62.50	80.78	153.23	9577
Jaghannathpur	141	13.25	10.64	20.18	267
Gandarapur	95	16.25	5.85	11.10	180
Gharua	372	5.25	70.86	134.41	705
Baliarbag	152	8.15	18.65	35.38	288
Reserve Forest	-	-	-	-	-
	41574	1601.65	25.96	49.24	78860

It would be wise and practical to say that no new land will be encroached for future residential area development, but construction of dwelling units by a household can not be enforced by regulations so strictly. There are a lot of factors (availability of own land/nearness of work place etc.) that guide the decision of a household construction own dwelling unit. So there will be some areas where new residential construction will occur. All the physical plan can do is indicate where that might happen. The authorities responsible should come up with appropriate regulations and incentive to see that population increase is accommodated, as much as possible, in the existing areas without deteriorating the environment. Encroachment in the new land has to be discouraged considering the land-man ratio in the country.

It is expected that a gross residential area density of 200 persons/acre will be achieved for higher order urban centres like Rajshahi, Khulna or even nearest higher order centre Sylhet. Compared with that 40 persons/acre seems too conservative. But if this could be achieved within the current plan period, further scope remains for the densification in future plan periods.

2.3.3 Industry and Commerce Sector

Industry

In the study area there does not exist any large scale industrial establishment. In fact apart from Tea Factories in Sreemangal and Barlekha upazila, no industry of significant nature is available in whole Moulvibazar zila. In the study area medium and small scale industries available are brick fields, agro-based enterprises like rice mills, flour mills, bakeries etc. machine shops like bus/truck body making, repair shops like grill, door/window frames making, saw mills and furniture making shops. Location of these industries are shown in the Figure 12. Most of the small scale establishments like machine shops, saw mills, furniture shop are located on both sides of Dhaka-Sylhet road.

Cane and bamboo making and other cottage industries for which Sylhet was so popular - are absent in the study area. BSCIC has recently established an industrial estate (15 acres with 95 plots) about 4 kms. away from Moulvibazar on Dhaka-Sylhet road towards Sreemangal. But no industry is yet to be established there.

All the industries mentioned above produce finished consumer goods and they mainly serve the population of the study area and near vicinity. Total land occupied by the industrial uses are about 18.50 acres (7.49 ha) which is only 00.51 percent of the study area.

Within the study area there are 3 food godowns (two owned by Ministry of Flood and one by Upazila parishad) which stores rice and wheat. Food Ministry godowns are located opposite Kusumbag Cinema Hall and Upazila godown is located in Baliarbag mouza. Apart from that there is one potato and seed storage godown belonging to BADC on Sayeerpur Road.

Table 35: Storage and Warehouse Facilities in Moulvibazar Study Area, 1989

Storage items	Number	Ownership	Capacity
Grains (Rice/Wheat)	3	Ministry of Flood (2)	-
		Upazila Parishad (1)	-
Potato and Seed	1	BADC	-

Source: Field Survey, 1989

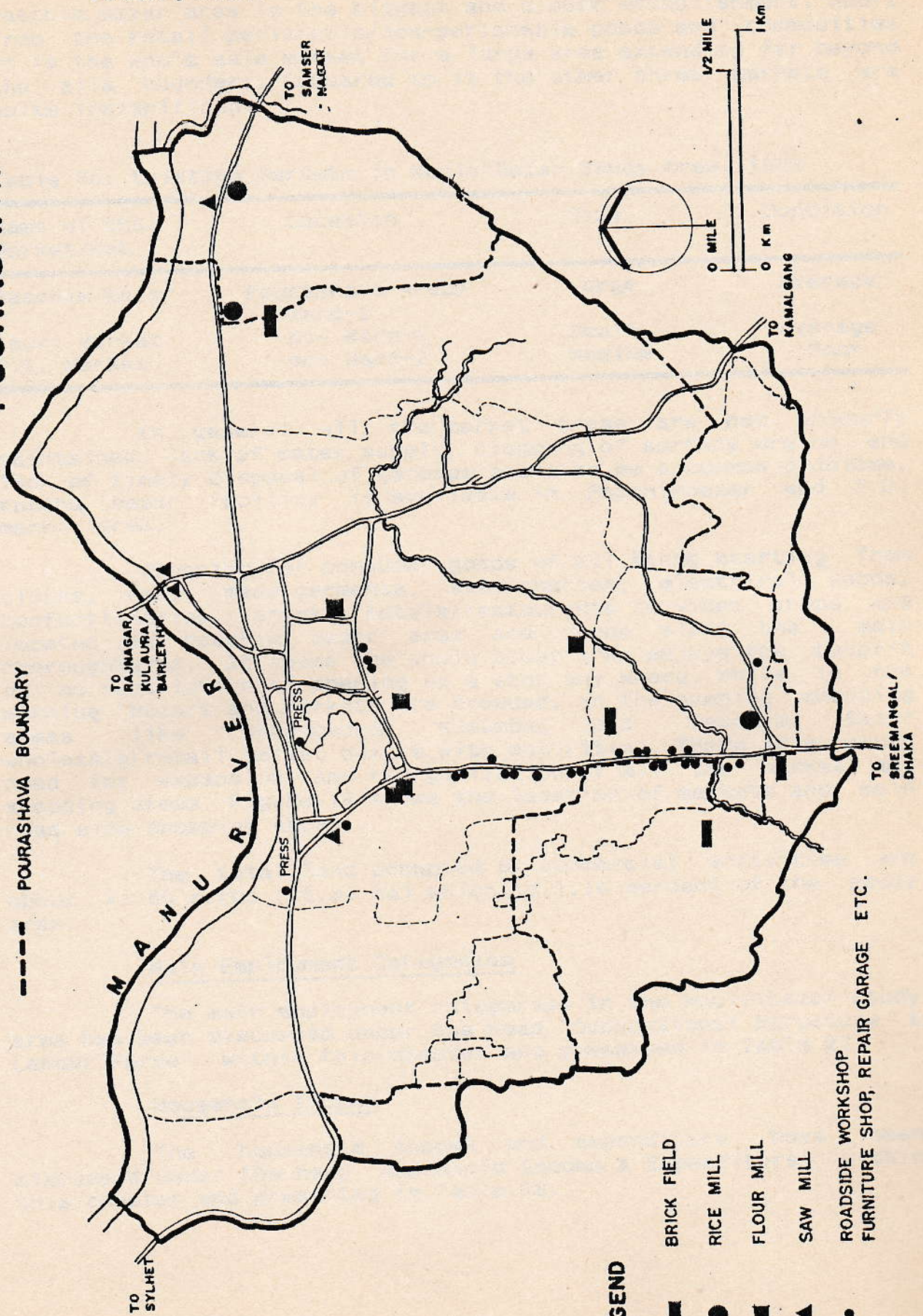
Commerce

In Moulvibazar study area commercial land use comprises of 4 markets and about 1250 shops (1138 within pourashava area) mainly located on both sides of the main roads. All the markets are within existing Pourashava boundary. Among the markets

FIGURE 12: LOCATION OF INDUSTRIES IN MOULVIBAZAR STUDY AREA, 1989.

MOULVIBAZAR POURASHAVA

— STUDY AREA BOUNDARY
- - - POURASHAVA BOUNDARY



Paschim Bazar area is the biggest and oldest establishment. Apart from the retail perishable/non-perishable goods and commodities it is the whole sale market for a large area extending far beyond the zila boundary. Compared to it the other three markets are quite insignificant.

Table 36: Existing Markets in Moulvibazar Study Area, 1989

Name of the Market/Hat	Location	Size	Condition
Paschim Bazar	Pourashava Area/ Ward-2	Large	Average
Court Market	-do- Ward-1	Small	Average
T.C. Market	-do- Ward-2	Medium	Poor

In general all the market areas are not properly maintained, lack of water supply, clogging of surface drains and lack of timely disposal of garbage seems to be a common problems. Kutcha bazar facility is available in Paschimbazar and T.C. market area.

Shopping for consumer goods of all kinds starting from cloths, ready made garments, stationeries, electrical goods, confectioneries, drugs, hotels/restaurants to video shops are located in paschim bazar area and shops along the main thoroughfares. It seems the whole study area enjoys the benefit of no restriction on opening up a shop any where. While in the morning bazars and markets are crowded, in the evening shopping areas like Chowmohona, Kusumbag and Paschim Bazar wholesale/retail market bustle with activities. There is a acute need for expansion and reorganization of all the market and shopping areas. Figure 13 shows the location of markets and main road side shopping areas.

The total land occupied by commercial activities are about 41.60 acres (16.84 ha) which is 1.16 percent of the study area.

Main Employment Categories

The main employment categories in the Moulvibazar study area has been discussed under the head "Occupational Structure & Labour Force" within this chapter and presented in Table 27.

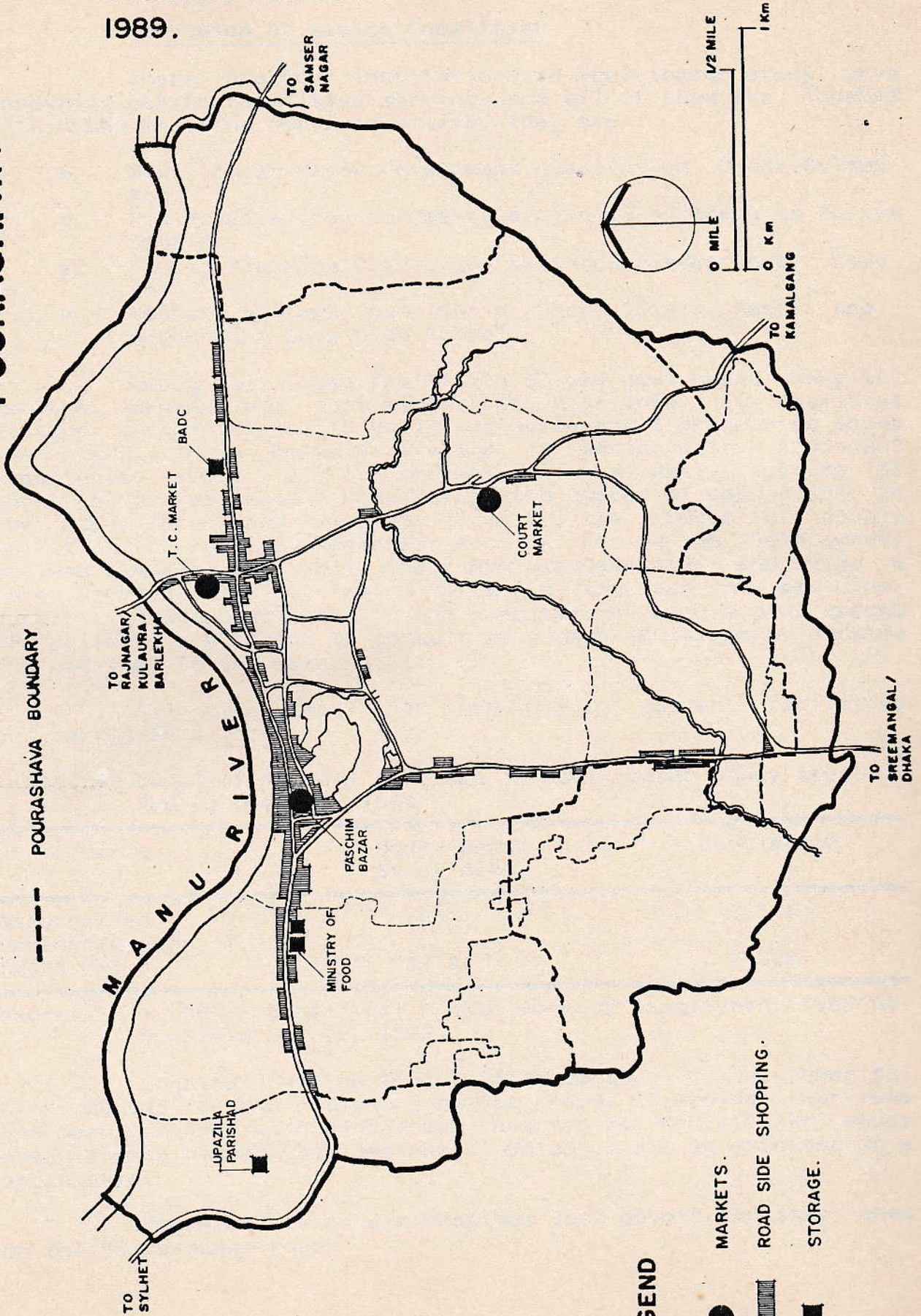
Household Income

The household income and expenditure have been discussed under the head "Household Income & Expenditure" within this chapter and presented in Table 28.

FIGURE 13: LOCTION OF MARKETS, ROAD SIDE SHOPPING AREA AND STORAGE FACILITIES IN MOULVIBAZAR STUDY AREA, 1989.

MOULVIBAZAR POURASHAVA

— STUDY AREA BOUNDARY
- - - POURASHAVA BOUNDARY



LEGEND

- MARKETS.
- ▨ ROAD SIDE SHOPPING.
- STORAGE.

2.3.3 Social Services Sector Studies

Provision of Health Facilities

There are four institutions in Moulvibazar study area rendering health facilities services and all of them are located within the existing pourashava area. They are

- Moulvibazar Sadar Government Hospital on Dhaka-Sylhet Road
- Old Hospital(now serves as a clinic) adjacent to Police Station
- Family Planning Clinic on Sayeerpur-Samsernagar road and
- Mother Welfare and Child Care Clinic near the Government Boys High School

Among all these facilities 50 bed government hospital is the largest and most recent. It has total 11 qualified doctors, 3 technicians, 15 qualified nurse and 3 pharmacist among the staff. On a monthly average it deals with 1100-1200 inpatients, about 1250 out patients (with a daily average of about 50 out patients). Considering the number of population in the study area and immediate vicinity, the number of people utilizing the facility seems far too low. During the field survey it was revealed that while there are adequate staff and quite a large compound exists there is acute shortage of medicine, supplies, instruments etc. in the hospital. As such a good amount of patients are forced to consult private practitioners outside the hospital in the evening.

All other facilities have only out patient facilities and serves as clinics.

Table 37: Level of Medical Services in Moulvibazar Study Area and Bangladesh, 1989

Criteria	Moulvibazar Study Area	Bangladesh
Persons/Bed	851	3,334
Persons/Doctor (MBBS only)	3779	7,368

Sources: 1. BBS, Statistical Pocket Book of Bangladesh, 1983-84
2. Field Survey, 1989

Considering the 11 qualified doctors in the hospital with 50 bed for in- patient services, level of medical services has been compared with Bangladesh. Average for Moulvibazar study area is much higher than national - which is not an expected in a urban area.

There exists an eye hospital just beyond the study area on the Samsernagar road.

Almost all the doctors in the hospital do private practice in the evening. Including them total number of medical practionners in Moulvibazar study are as follows:

Allopathic Doctor	17
Paramedics	52
Homeopath	20
Kabiraji and other traditional medicine	10
Total	99

Total land occupied by health facility institutions are about 11.10 acres (4.49 ha) and it is only 0.31 percent of the study area.

Provision of Educational Facilities

Statistics available from Zila Education Office shows that there are 14 primary schools, 5 secondary & higher secondary schools (2 for girls, 3 for boys). 1 College for Men and 1 for Women, 1 Vocational Training Institution and 7 Madrashes in the study area (Figure 14).

Table 38: Education Facilities in Moulvibazar Study Area, 1989

Type of Institutions	Total Number of			Teacher Student Ration	
	Institute	Student	Teacher	Moulvibazar	Bangladesh
Kinder Garden & Primary School	14	4676	91	51	52
Secondary & Higher Secondary School	5	2478	89	28	27
College	2	1673	38	44	30
Vocation Training (PTI)	2	-	-	-	-
Madrasha	7	-	-	-	-

Note: Information For Vocational Training and Madrasha are not available during the time of Survey

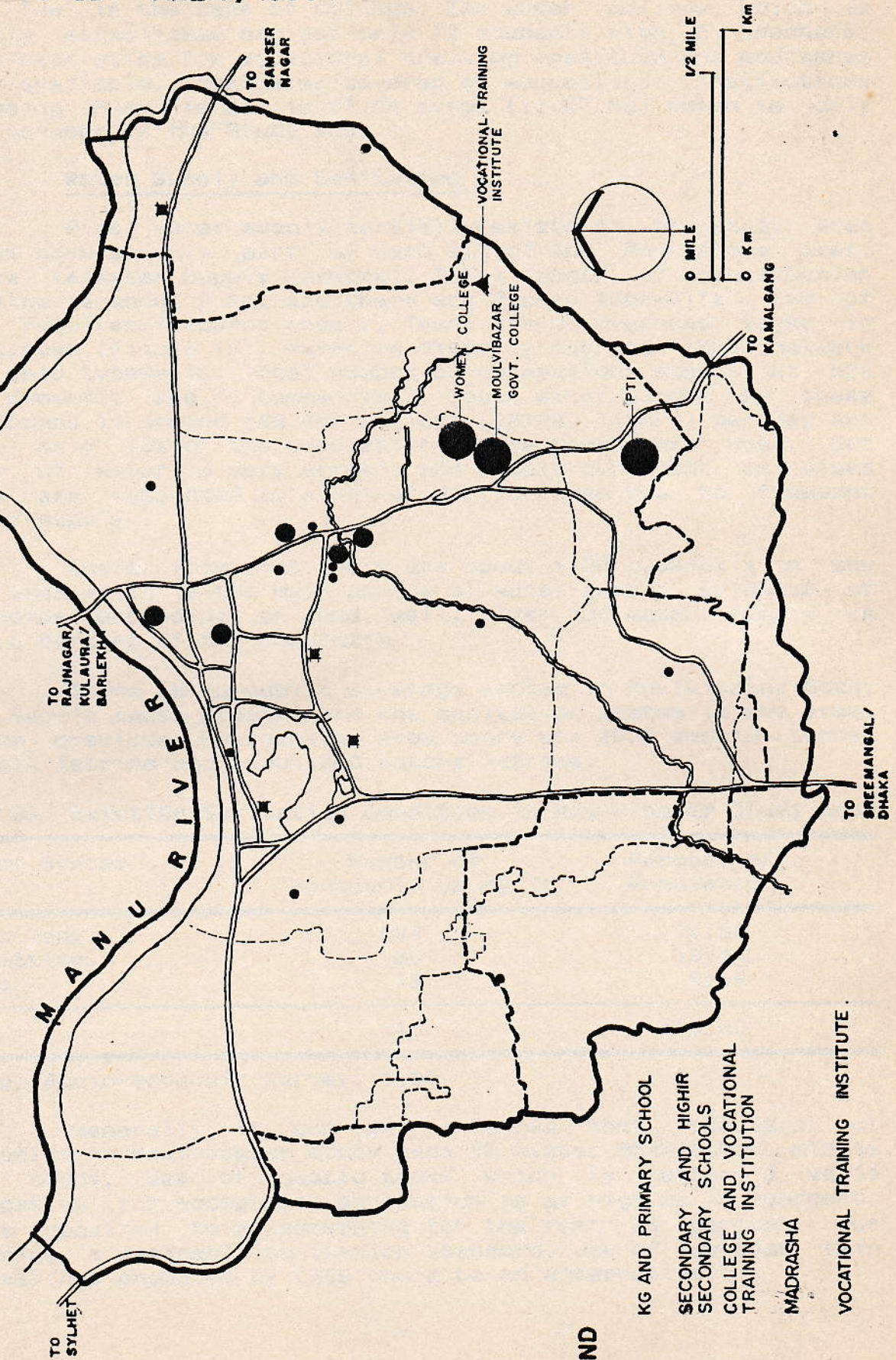
Source: Zila Education Office, Moulvibazar, 1989

Total number of students in primary schools, secondary & higher secondary school and colleges are 8827 which is about 21.23 percent of the total population in the study area. While built-up area in this institutions seems adequate there is serious lack of other facilities. Most of the educational institutions do not have play field or open space, the buildings need maintenance and repair. Overcrowding and higher demand for schools persists. Teacher-student ratio in schools in the study area is about same as Bangladesh national average, but it is

FIGURE 14 : LOCATION OF EDUCATIONAL INSTITUTIONS IN MOULVIBAZAR STUDY AREA, 1989.

MOULVIBAZAR POURASHAVA

— STUDY AREA BOUNDARY
- - - POURASHAVA BOUNDARY



LEGEND

- KG AND PRIMARY SCHOOL
- SECONDARY AND HIGHER SECONDARY SCHOOLS
- COLLEGE AND VOCATIONAL TRAINING INSTITUTION
- MADRASHA
- ▲ VOCATIONAL TRAINING INSTITUTE

quite low in the case of college. The women college which is recently established has got only 72 students with 8 teachers. Detail statistics for vocational training institute and madrasahs is not available. Total area covered by educational institutions (excluding Play Fields) is 27.35 acres (11.07 ha) which is only 00.76 percent of the Study Area.

Water Supply and Sanitation

Pipe water supply partially exists in the study area and it covers only part of Ward 2/3 of the Pourashava Area. (Figure 14/Water Supply Network). Total length of distribution pipe line is about 9 km. and there are 3 deep tubewells - two of which requires frequent repair. There are no overhead tanks in the system (Figure 15). Water is directly put into the network from deep tubewells. Total number of connections stands at 529 (512 domestic and 17 commercial). Total water pumped by these three pumps is around 128,000 gallons (581920 liters) per day and serves only 10% of the population in the pourashava area. But supply of water is very erratic and people dependent on piped supply are subjected to a lot of difficulties due to frequent lack of supply.

Apart from that there are about 1100 tubewells in the study area which is the main source of water supply. Evidence of households depending on pond, well, river for water supply is about 5 percent of the population.

There is no public sewerage system in Moulvibazar Study Area. Septic tanks predominate the sanitation system in the area. In the previous Pourashava Area there are 2000 septic tanks, 400 pit latrine and about 200 kutcha latrine.

Table 39: Existing Sanitation Condition in Moulvibazar Study Area

Type of System	Number of Household Using it	Percent of Population
Septic Tank	137	74.05
Pit Latrine	36	19.46
Kutcha	12	6.49
Total	185	100.00

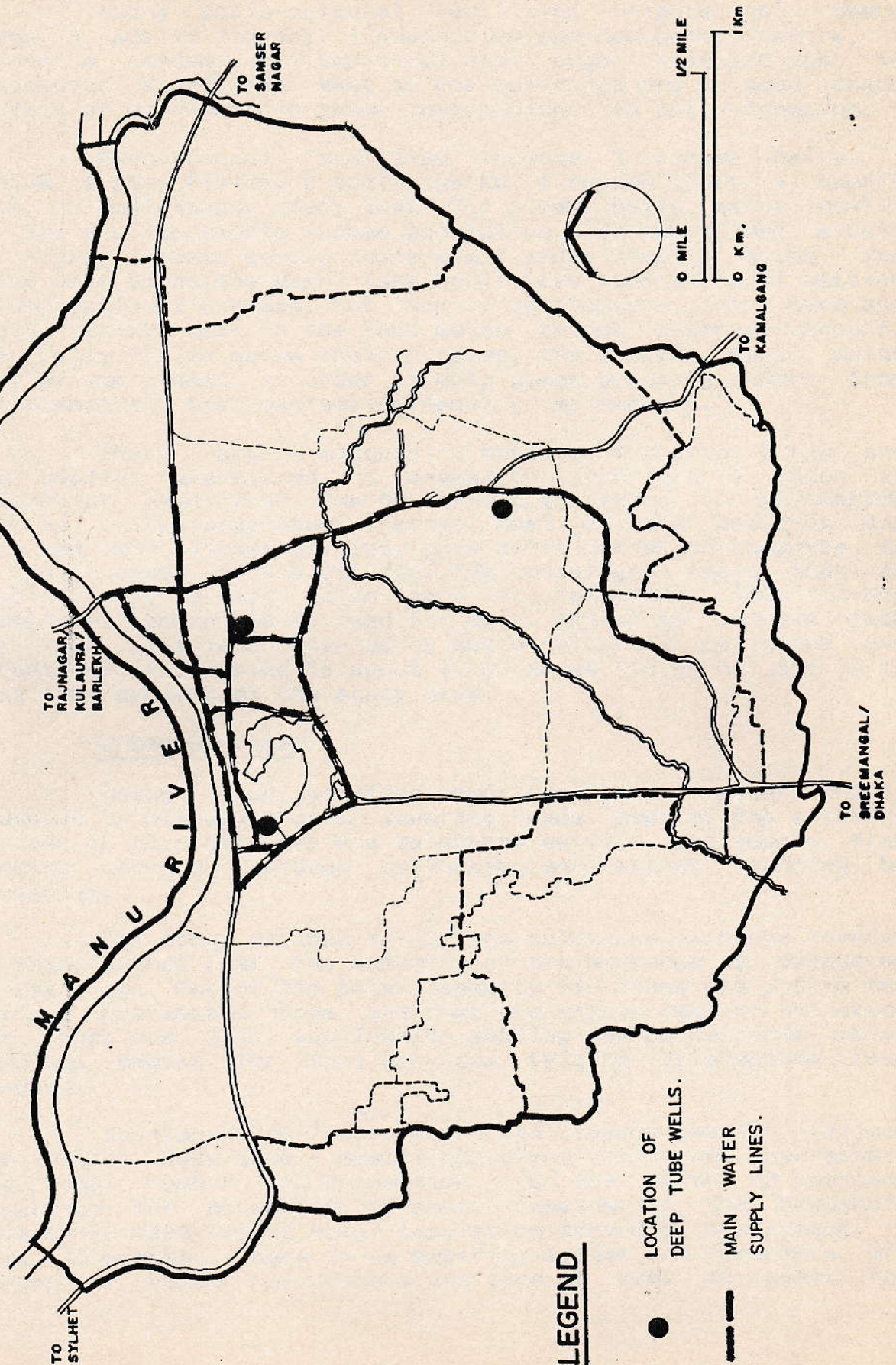
Source: Socio-economic Survey, 1989

Generally it can be inferred that standard of sanitation in Moulvibazar study area is higher than other middle order towns. Use of septic tanks which is rather a valid alternative for acceptable sanitation is as high as 75 percent. It is required to do something for the rest 25 percent for attaining a desirable sanitation standard. Use of low-cost twin pit latrines promoted by LGEB could be an alternative.

FIGURE 15: EXISTING WATER SUPPLY NETWORK IN MOULVIBAZAR STUDY AREA, 1989.

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— STUDY AREA BOUNDARY
- - - POURASHAVA BOUNDARY



Socio-Cultural, Religious and Recreational Facilities

Among socio-cultural facilities (Figure 16) there exists 2 public library, 1 Auditorium-cum-Community Centre, 1 Shilpakala Academy, 11 Socio-cultural organizations/Clubs, in Moulvibazar study area. Most of the buildings are in good shape but lack of equipment in these institutions are quite pressing.

Recreational facilities include 2 cinema halls, 1 stadium, 2 play fields, 2 public parks, 1 squash court, 1 tennis court in Moulvibazar study area. The cinema halls serve mostly the low and low-middle income population. For the higher middle and higher income people there are 8 video renting shops. The public park along the Berry lake could have been an ideal setting for recreational purpose. But lack of maintenance of the park and people taking bath in the lake makes things otherway around. While play fields serve their purpose, the stadium needs quite a bit of improvement in order to hold games properly. Apart from that almost all the institution require improvement.

There are 15 mosques, 2 monidirs, 1 church, 2 big and some smaller graveyards, 1 cremation yard and 2 edgah in Moulvibazar study area. The Pourashava graveyard in Kalimabadh area is quite large-about 7 acres. Most of the building are pucca and well maintained. They grow and flourish in response to the felt needs of the citizen. The consultant feels that as community has always taken care of religious institutions themselves, there is no need for Govt. trying to improve such facilities. The land occupied by socio-cultural, religious and recreational facilities is about 37.25 acres (15.08 ha) and it is about 1.04 percent of the study area.

Urban Services

Among urban services power supply and water supply situation is discussed under separate heads. Rest of the existing services in this category are telephone service, gas supply, fire fighting service, garbage collection and street lighting by Pourashava.

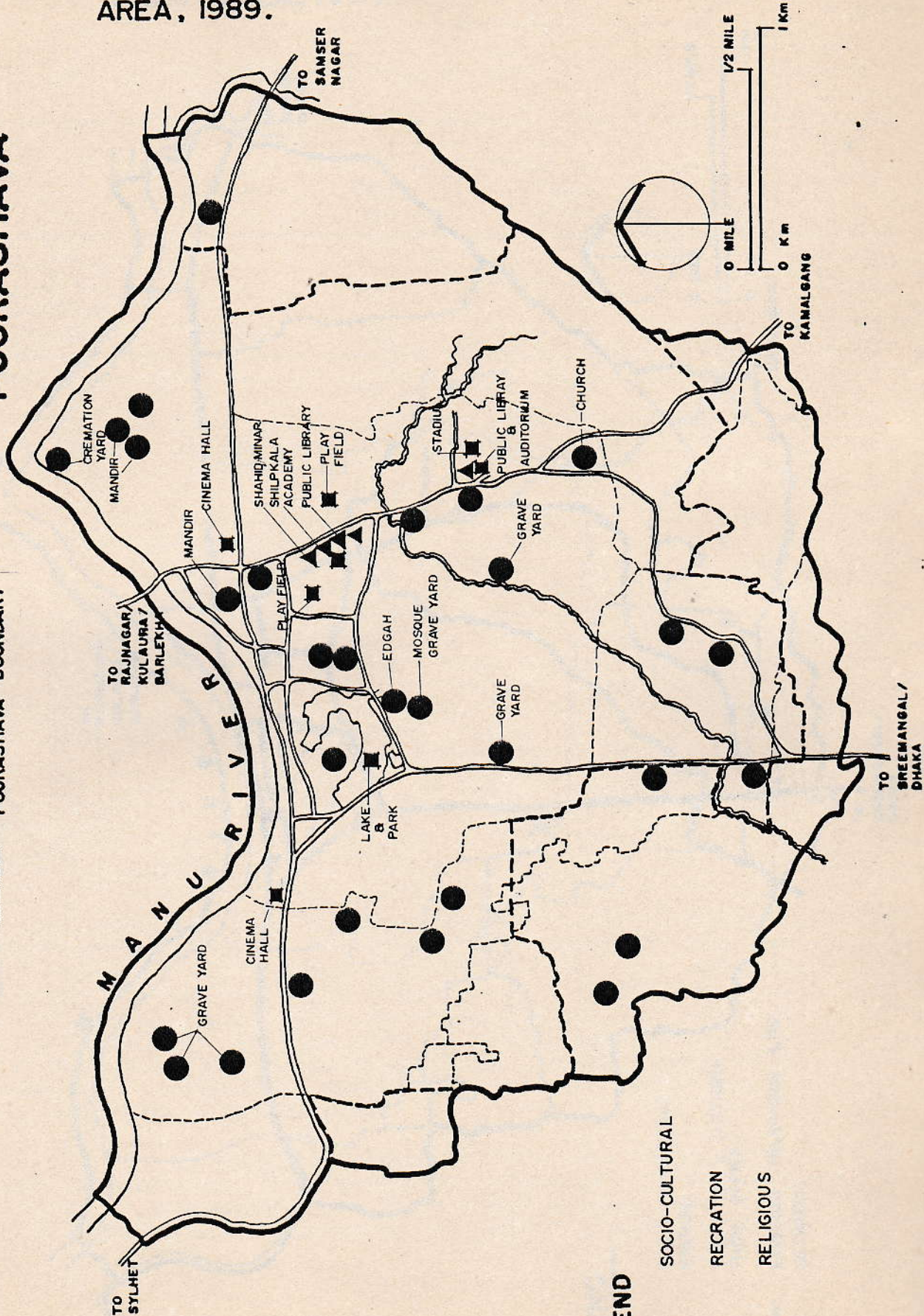
The study are has a 700 line telephone exchange located on Dhaka-Sylhet road. The capacity of the exchange is exhausted two years ago. Out of the total capacity 540 lines are within the previous pourashava area and rest are within rest of the study area. There are 2000 application seeking new connections which shows the demand for this services. (Figure 17/Telephone Line Network).

Jalalabad Gas Transmission Ltd. supply gas for various uses in the study area - mostly operating within the pourashava area. Total number of connection is 999 with 80 percent connection for household purpose. Considering the household numbers in 1989 (6396) total population served by the system is about 15 percent. There is no metering system and consumers are charged by number of burners and type of use. It seems the

FIGURE 16 : LOCATION OF SOCIO-CULTURAL, RECREATION AND RELIGIOUS FACILITIES IN MOULVIBAZAR STUDY AREA, 1989.

MOULVIBAZAR POURASHAVA

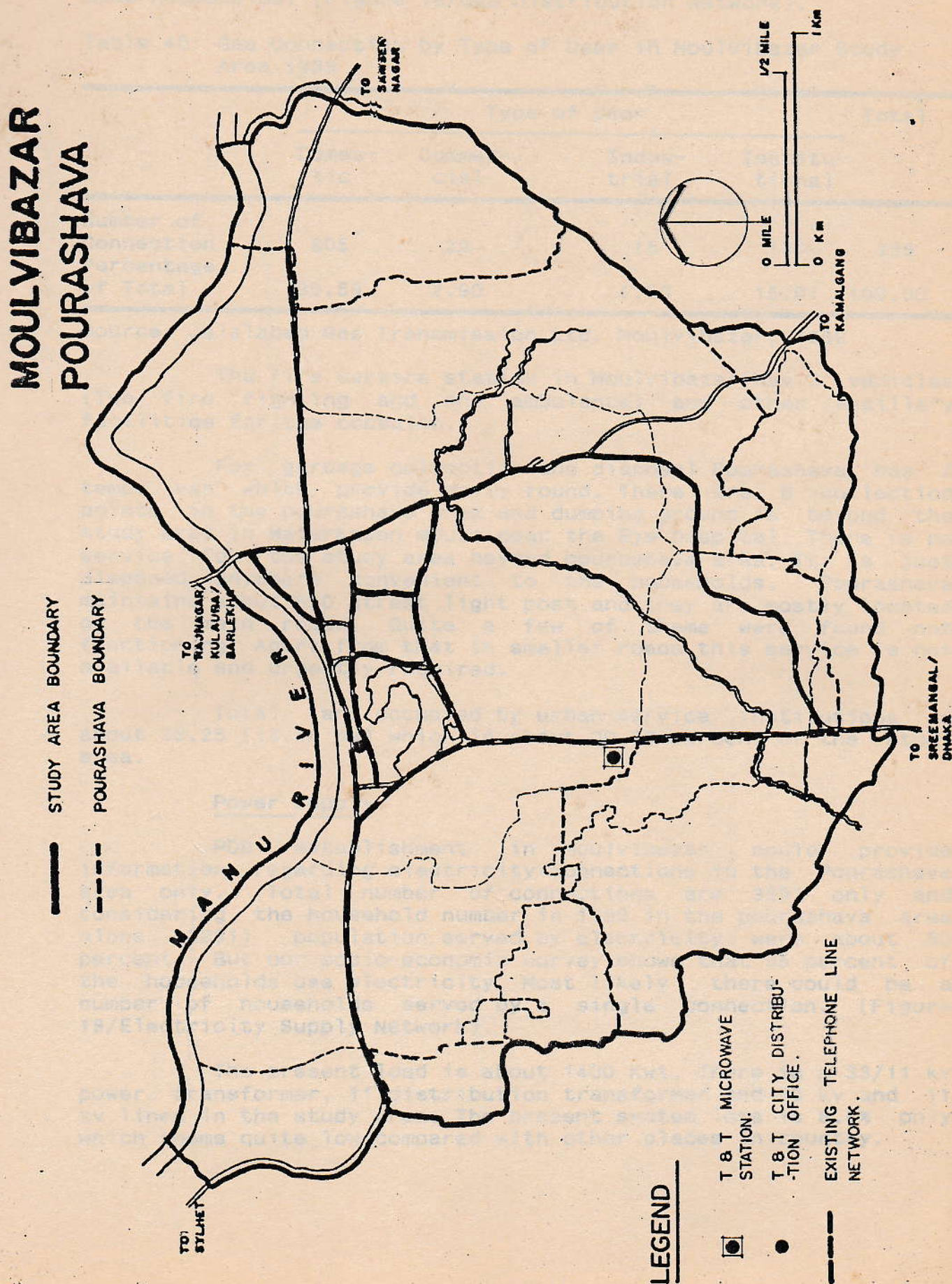
— STUDY AREA BOUNDARY
- - - POURASHAVA BOUNDARY



LEGEND

- ▲ SOCIO-CULTURAL
- RECREATION
- RELIGIOUS

FIGURE 17: TELEPHONE LINE NETWORK IN MOULVIBAZAR STUDY AREA, 1989.



present network can take care of much more new connections. But incidental expenses for a new connections is not affordable to most households. (Figure 18/Gas Distribution Network).

Table 40: Gas Connection by Type of User in Moulvibazar Study Area 1989

	Type of User				Total
	Domes- tic	Commer- cial	Indus- trial	Institu- tional	
Number of Connection	805	29	15	150	999
Percentage of Total	80.59	2.90	1.50	15.01	100.00

Source: Jalalabad Gas Transmission Ltd. Moulvibazar, 1989

The fire service station in Moulvibazar has 3 vehicles (Two fire fighting and one ambulance) and other ancillary facilities for the occasion.

For garbage collection and disposal Pourashava has a tempo van which provide daily round. There are 8 collection points in the pourashava area and dumping ground is beyond the study area in Matarkapon mouza near the Eye hospital. There is no service for the study area beyond pourashava area. It is just disposed anywhere convenient to the households. Pourashava maintains about 650 street light post and they are mostly located on the main roads. Quite a few of theme were found not functioning. Apart from that in smaller roads this service is not available and urgently required.

Total land occupied by urban service institutions is about 33.25 (13.46 ha) which is about 00.92 percent of the study area.

Power Supply

PDB establishment in Moulvibazar could provide information regarding electricity connections in the Pourashava area only. Total number of connections are 3391 only and considering the household number in 1989 in the pourashava area alone (3891) population served by electricity were about 50 percent. But our socio-economic survey shows that 95 percent of the households use electricity. Most likely there could be a number of households served by a single connection. (Figure 19/Electricity Supply Network).

The present load is about 1400 Kwt. There is a 33/11 kv power transformer, 11 distribution transformer and 33 kv and 11 kv lines in the study area. The present system loss is 8.6% only which seems quite low compared with other places in country.

FIGURE 18 : GAS DISTRIBUTION NETWORK IN MOULVIBAZAR STUDY AREA , 1989 .

MOULVIBAZAR POURASHAVA

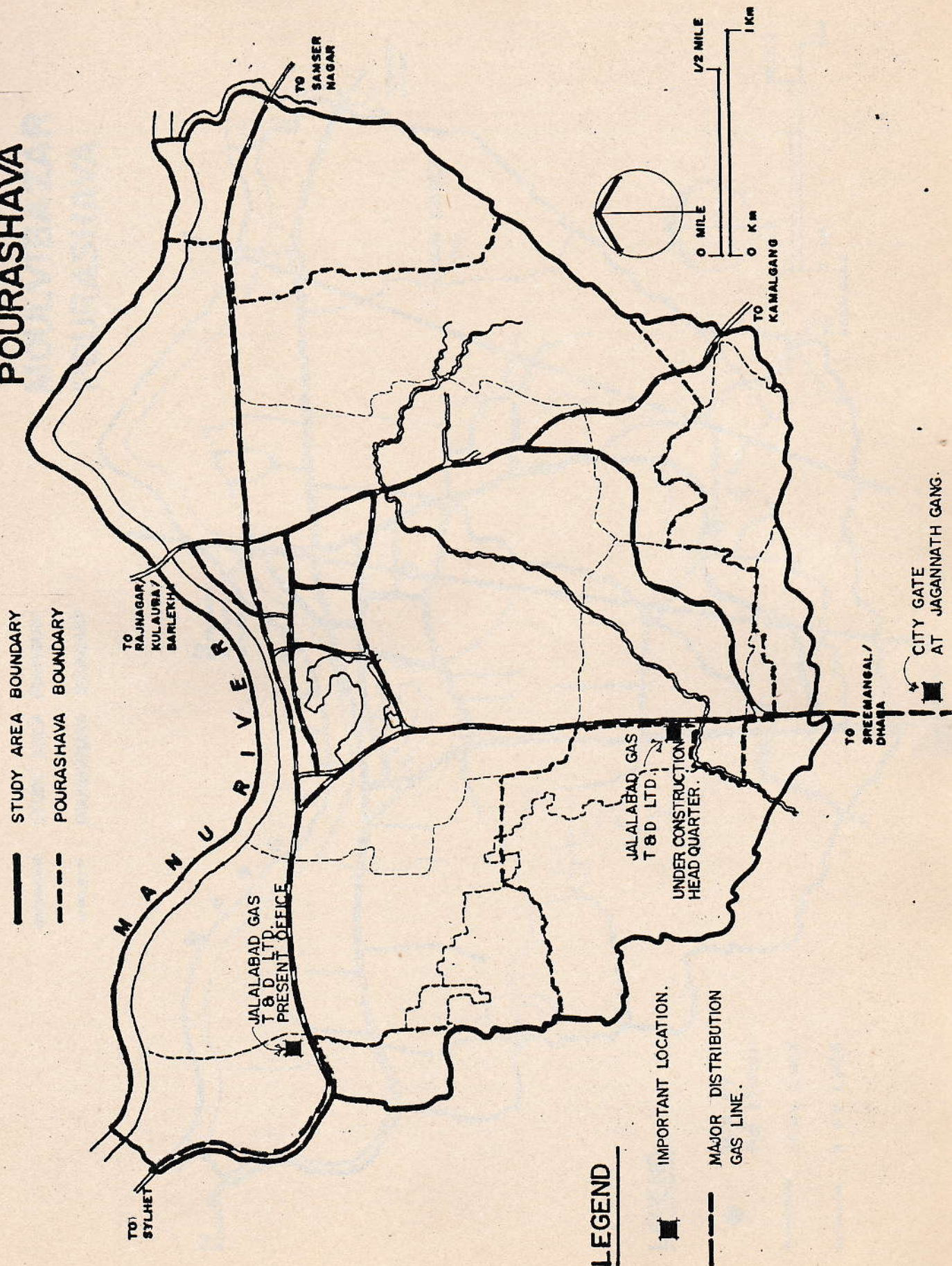


FIGURE 19 : EXISTING ELECTRICITY SUPPLY NETWORK IN MOULVIBAZAR STUDY AREA, 1989 .

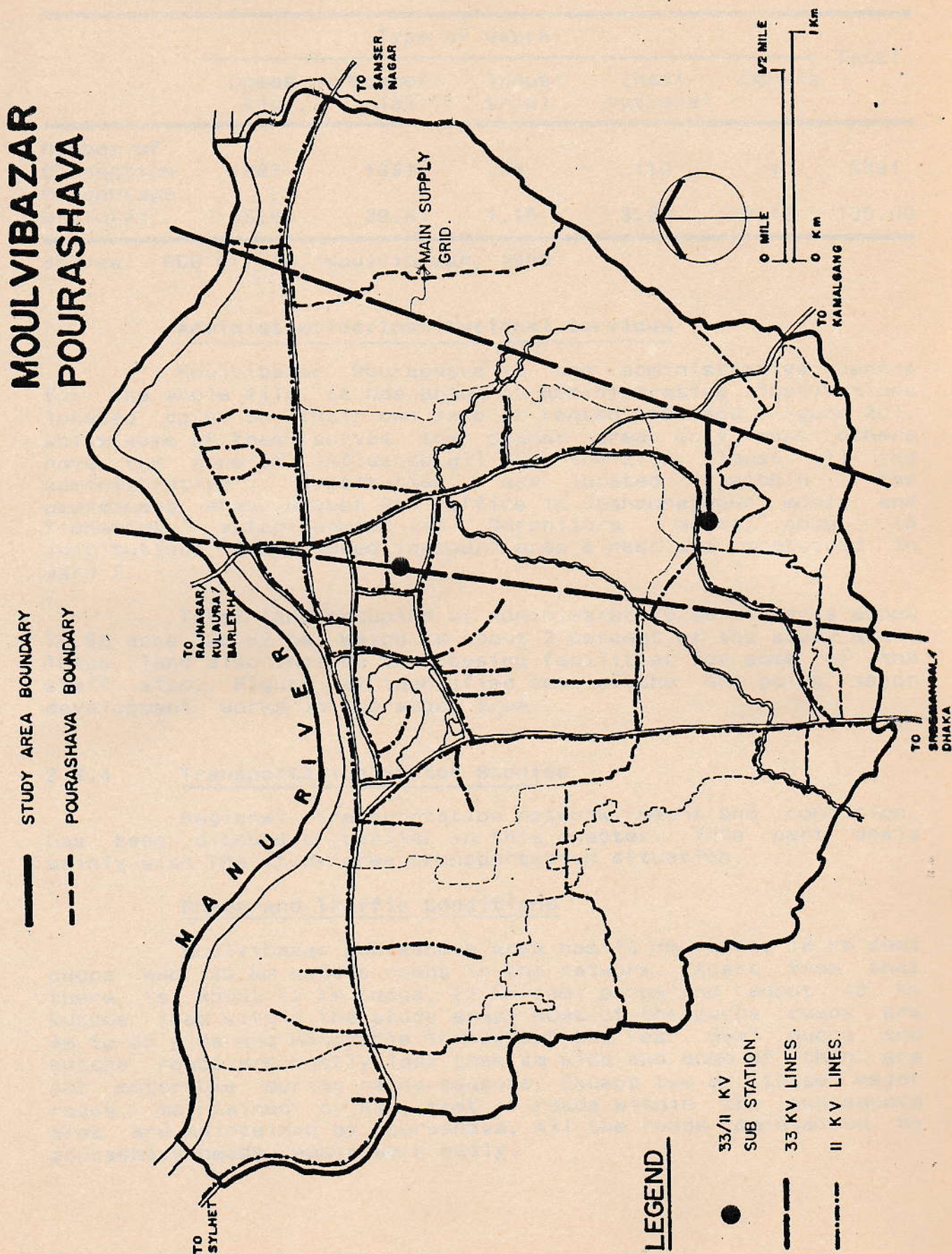


Table 41: Electricity Connection by Type of Users in Moulvibazar Pourashava Area, 1989

	Type of Users					Total
	Domes- tic	Commer- cial	Indus- trial	Insti- tutional	Others	
Number of Connection	1887	1351	39	110	4	3391
Percentage of Total	55.65	39.81	1.15	3.24	0.12	100.00

Source: PDB Office, Moulvibazar, 1989

Administrative/Institutional Services

Moulvibazar Pourashava is the administrative centre for the whole zila. It has about 40 administrative institutions located both on their own land or rented premises (Figure 20). While some of them serves the shahar area only, most others have the zone of influence all over the zila. Almost all the administrative institution are located within the pourashava area except R&H office in Jaghannathpur mouza and fisheries establishment in Barshijura mouza. About 15 institutions are crowded in court area & rest are scattered in ward 2.

Total land occupied by administrative services is about 70.55 acre (28.62 ha) which is about 2 percent of the study area. These land also include the housing facilities for some of the staff also. Figure 21 identifies some of the on going major development works in the study area.

2.3.4 Transportation Sector Studies

Regional transportation network, means and condition, has been discussed earlier in this chapter. This part deals mainly with the study area transportation situation.

Roads and Traffic Conditions

Moulvibazar pourashava area has 18 km pucca, 18 km semi pucca and 30 km kutcha roads in the network. Apart from that there is about 12 km pucca, 22 km semi pucca and about 40 km kutcha road within the study area. Most of the pucca roads are 4m to 6m wide and motorable throughout the year. Semi pucca and kutcha roads are mostly less than 4m wide and some of them are not motorable during rainy seasons. Except two or three major roads, maintained by R&H, rest of roads within the pourashava area are maintained by pourashava. All the roads maintained by pourashava needs repair work badly.

FIGURE 20: LOCATION OF ADMINISTRATIVE & URBAN SERVICE INSTITUTIONS IN MOULVIBAZAR STUDY AREA, 1989.

MOULVIBAZAR POURASHAVA

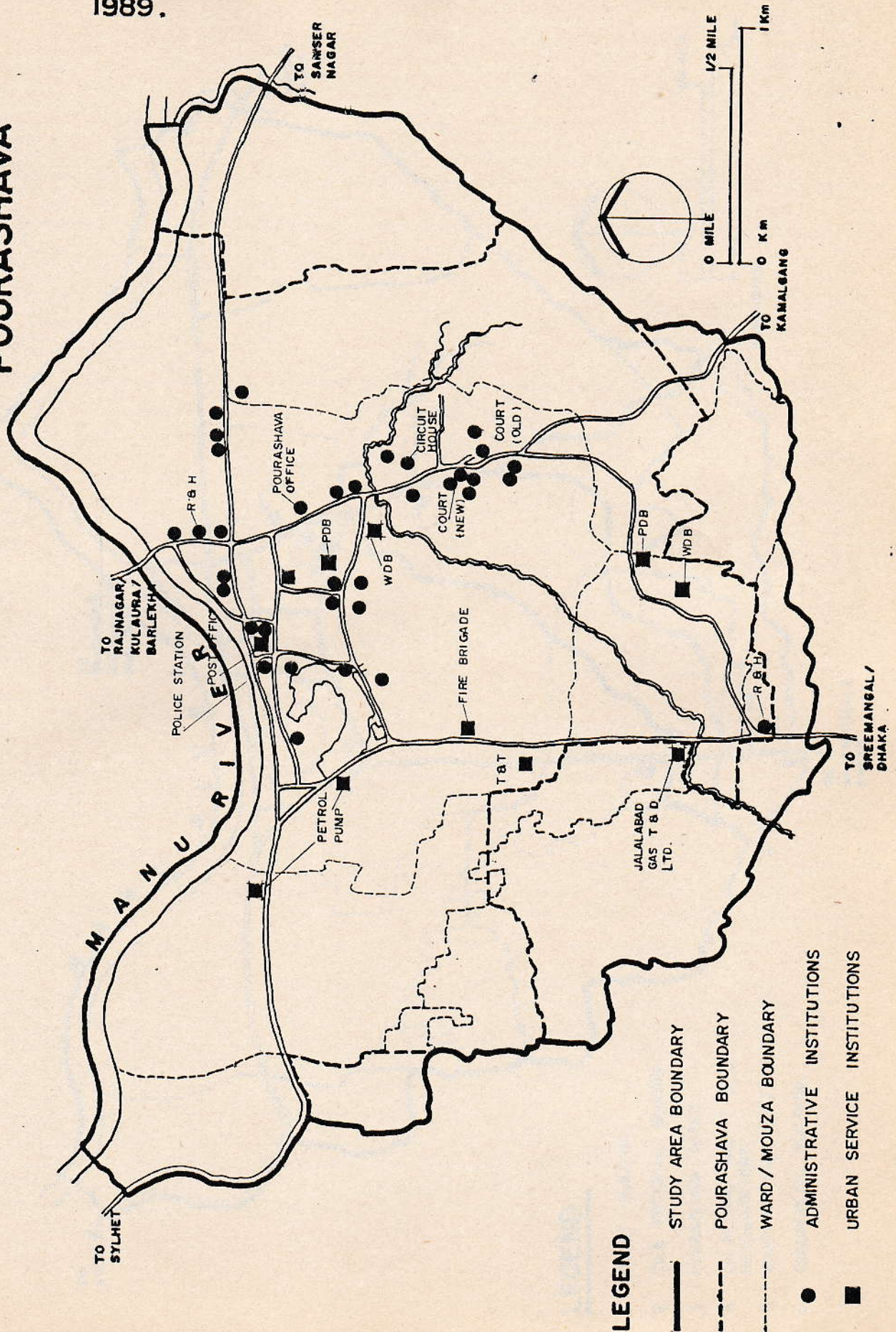
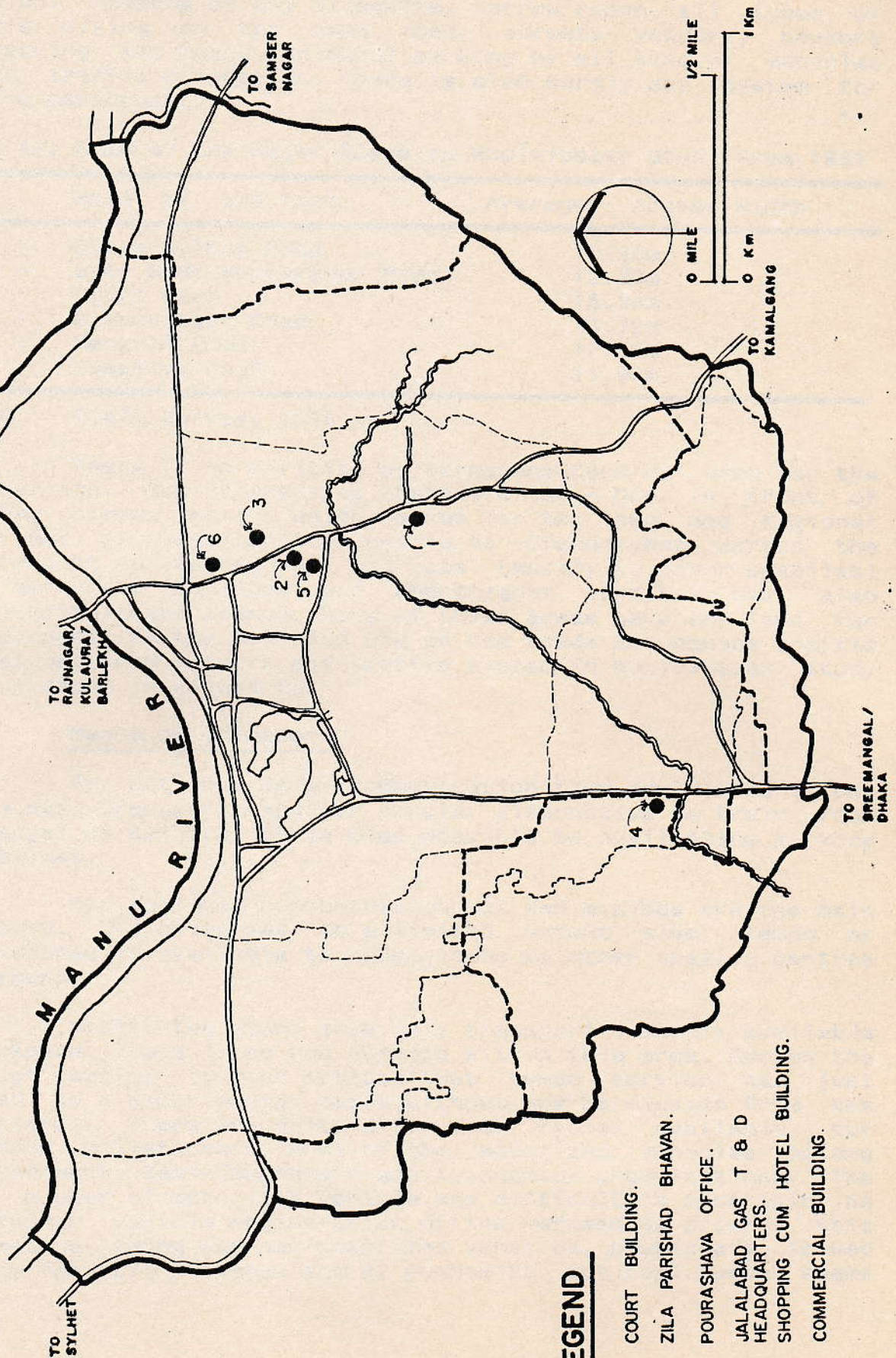


FIGURE 21: ONGOING MAJOR DEVELOPMENT WORKS (MAJOR JOBS) IN MOULVIBAZAR STUDY AREA, 1989.

MOULVIBAZAR POURASHAVA

———— STUDY AREA BOUNDARY
----- POURASHAVA BOUNDARY



LEGEND

1. COURT BUILDING.
2. ZILA PARISHAD BHAVAN.
3. POURASHAVA OFFICE.
4. JALALABAD GAS T & D HEADQUARTERS.
5. SHOPPING CUM HOTEL BUILDING.
6. COMMERCIAL BUILDING.

Traffic congestion occurs in three specific locations - Kusumbag bus stoppage area, paschim bazar area and in Chowmohona junction. Absence of any sidewalks, narrow roads, all types of vehicle plying on the same road, streets vendors, hawkers encroaching the roads, unlawful parking by all kind of vehicles causes traffic congestion. There is also hardly any system for traffic management.

Table 42: Some of the Major Roads in Moulvibazar Study Area, 1989

	Name of the road	Average	Access Width
-	Dhaka-Sylhet Road	18.30m	
-	Syed Shah Mostafapur Road	12.20m	
-	Court Road	15.24m	
-	Samsernagar Road	13.72m	
-	Central Road	12.20m	
-	Hospital Road	11.90m	

Source: Field Survey, 1989

There is no official or permanent terminal area for the bus service. But in practice there are two - One in front of Kusumbag cinema hall - which serves for the long and regional route bus services, another one is at Chandnighat across the river and it serves regional and local (mostly to other upazilas) bus services. Kusumbag and Chandnighat terminal has also autorickshaw/tempo stands. None of these areas have any land for this purpose. So the vehicles ply on the roads and causes traffic congestion. Road network and traffic system in Moulvibazar study area is shown in Figure 22.

Means of Transport

For national level communication from Moulvibazar, bus is the main transport. Another popular alternative is train from Sreemangal or Kulaura. It is also possible to avail plane service from Sylhet.

For regional communication bus and minibus are the main transport. Train serves to a limited extent also. Tempo or autorickshaw is available to communicate to other upazila centres and around.

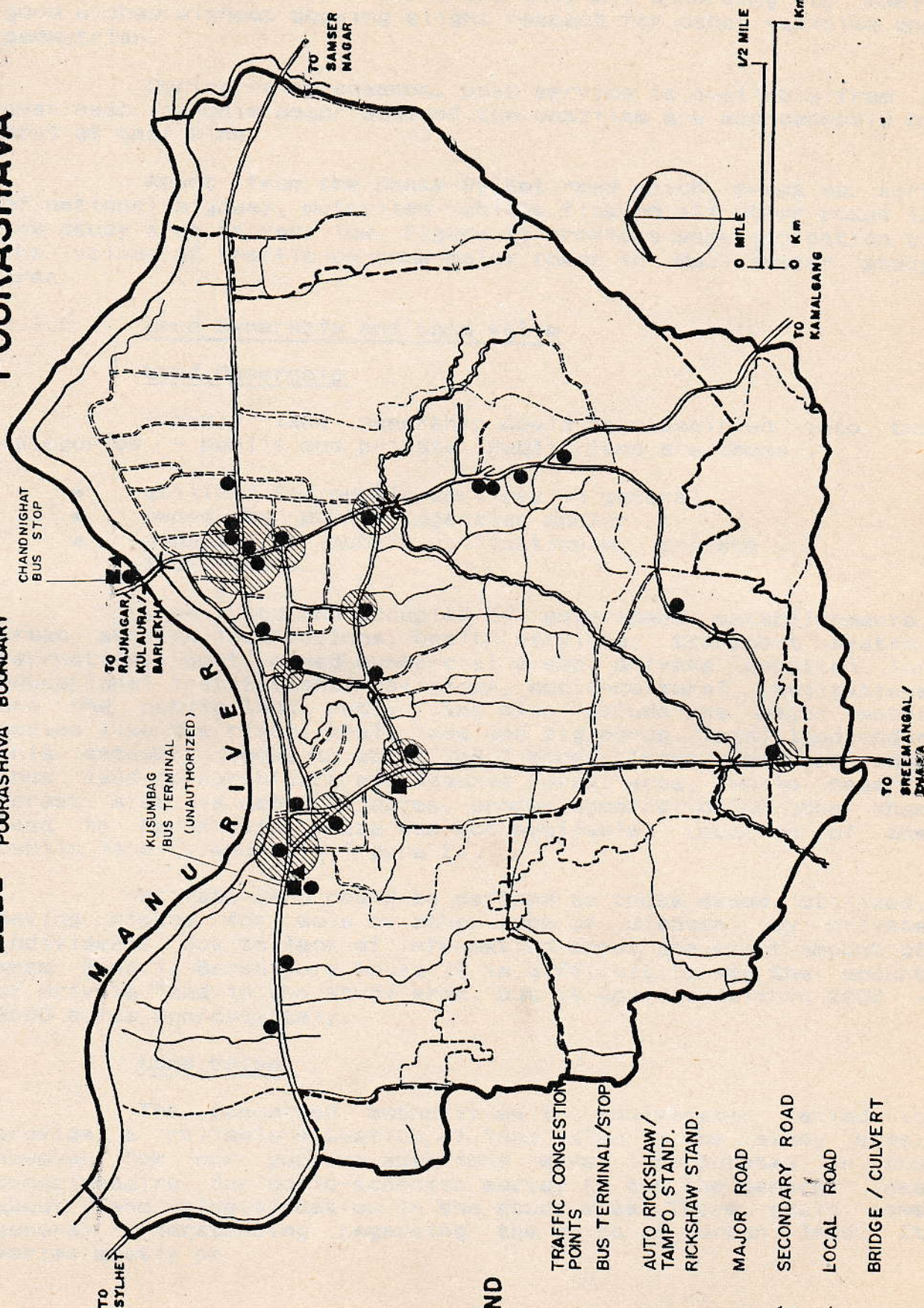
Within the study area only transport commonly available is Rickshaw. There is no bus service within this area. During the time of survey it was noticed that tempo service has just started on a experimental basis without any permission from the authorities. There are quite a few motor cycles available, but not much private cars. Most of the motorized vehicles belong to Government, Semi-Government and Autonomous organizations. The exact number of motorized vehicle are difficult to ascertain as Moulvibazar vehicle registration office refused to provide this information. Among the non-motorized vehicles, pourashava issued license for 1271 Rickshaw and 52 pushcarts. But real number seems

FIGURE 22: ROAD NETWORK & TRAFFIC SYSTEM IN MOULVIBAZAR STUDY AREA, 1989.

MOULVIBAZAR POURASHAVA

STUDY AREA BOUNDARY

POURASHAVA BOUNDARY



LEGEND



TRAFFIC CONGESTION POINTS



BUS TERMINAL/STOP



AUTO RICKSHAW / TAMPO STAND.



RICKSHAW STAND.



MAJOR ROAD



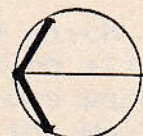
SECONDARY ROAD



LOCAL ROAD



BRIDGE / CULVERT



to be much more than that - as much as double. Rickshaw stands are available on all junctions and they ply according to their good wishes without showing slight respect for other vehicles and pedestrian.

During rainy seasons, boat service is available from a ghat near paschim bazar some of the upazilas are approachable by boat at that time.

Apart from the Dhaka-Sylhet road which seems as sort of national highway, motorized vehicle flow on all other roads in the study area is very low. Figure 23 provides some indication of the volume of traffic on some major roads in Moulvibazar study area.

2.3.5 Land Ownership and Land Value

Land Ownership

Broadly land ownership could be classified into two categories - public and private. Public land are those

- utilized for public services in general
- owned by public agencies and/or
- donated for public utilization by private individuals.

Land used and occupied by government establishments, urban service institutions, health services, transport system, recreation, govt. owned commercial areas, private donation for educational institutions, religious, socio-cultural institutions are the public land. Public land also include the major water bodies like the river, khal, lake and big ponds. Total land under this category comes to about 345.7 acres. There are also some khas land in Barshijura and Reserve Forest area, while reserve forest area is about 95 acres, proper demarcation of the khas land in Barshijura mouza was not available. Location of the public land is shown in Figure 24.

Private land could be defined as those owned utilized, having rights for sale or other type of disposal by private individuals. Due to lack of information about the exact amount of khas land in Barshijura mouza it is difficult to say the amount of private land in the study area. But it would be within 2800 - 3000 acres approximately.

Land Value

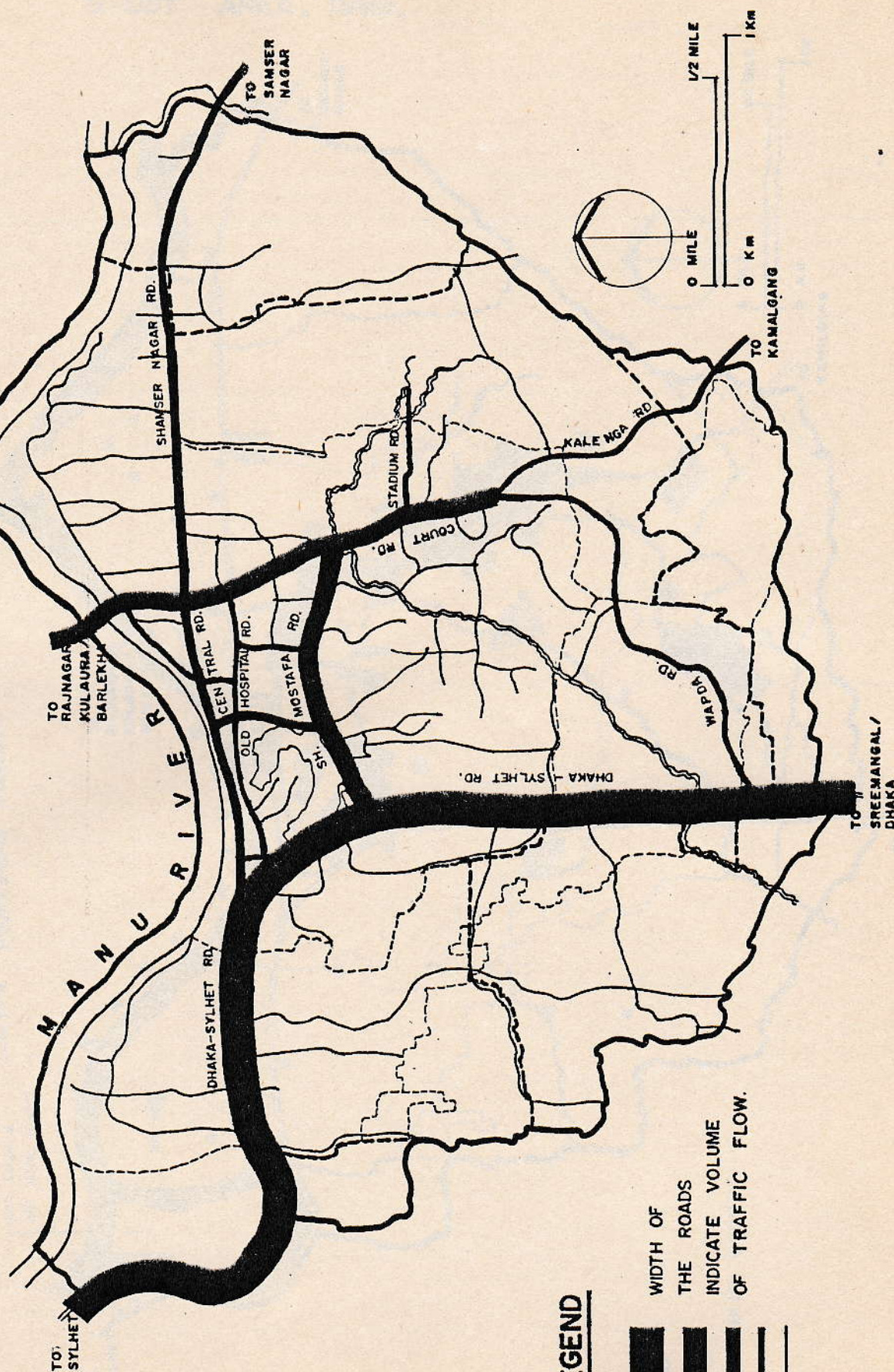
The concerned authorities in Moulvibazar failed to provide a reliable situation of land value in the study area. However for our purpose questions were incorporated in the questionnaire for socio-economic survey to get the general idea about land value situation in the study area. There could some general understanding regarding the price of urban land. It varies mostly on

FIGURE 23 : TRAFFIC FLOW MAP OF MOULVIBAZAR ZILA SHAHAR, 1989.

MOULVIBAZAR POURASHAVA

STUDY AREA BOUNDARY

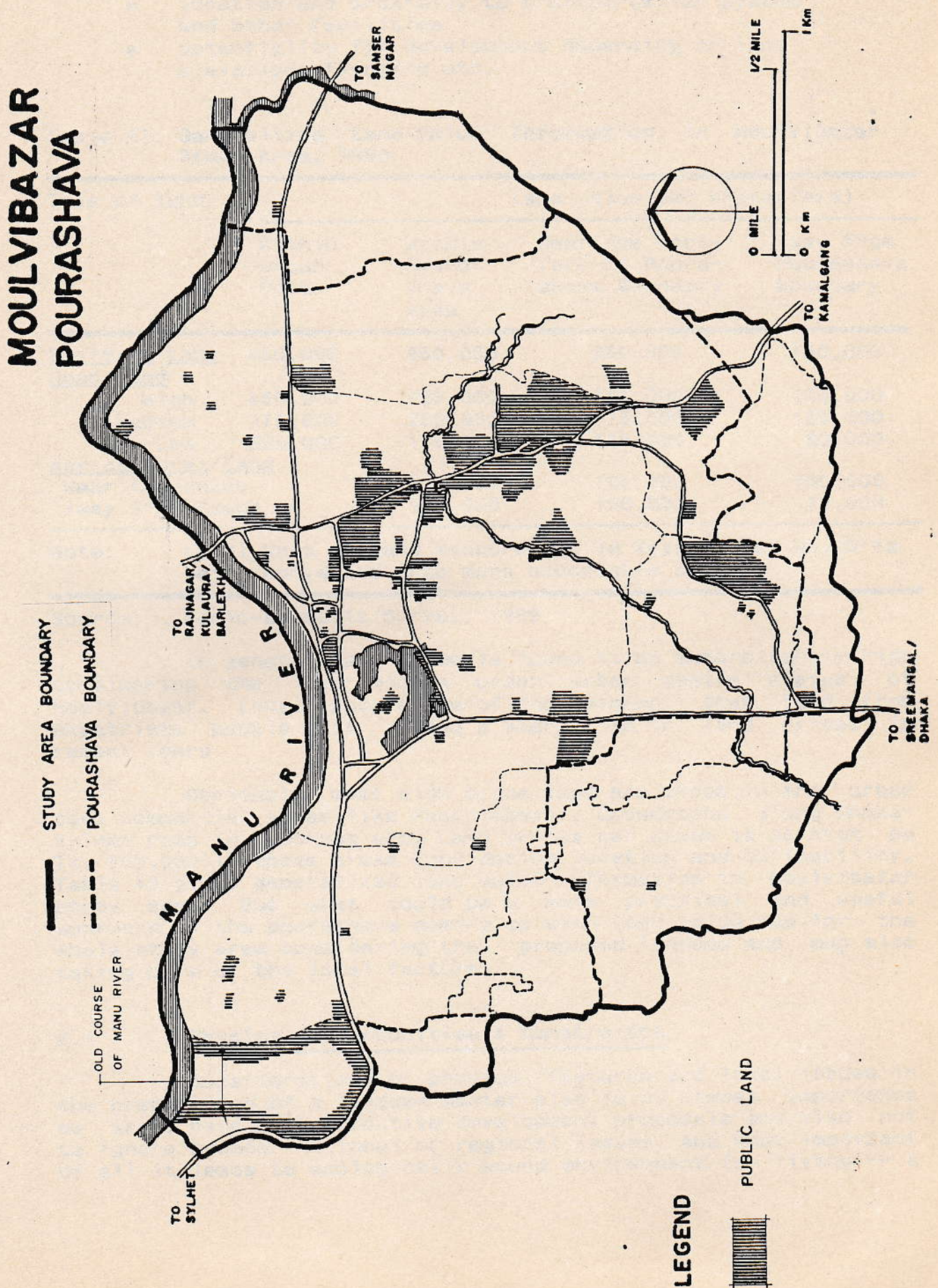
POURASHAVA BOUNDARY



LEGEND

WIDTH OF
THE ROADS
INDICATE VOLUME
OF TRAFFIC FLOW.

FIGURE 24: MAP SHOWING PUBLIC LAND IN MOULVIBAZAR STUDY AREA, 1989.



- type of use allowed
- location and proximity to transportation system and other facilities
- potentiality for development depending on land elevation, flooding etc.

Table 43: Generalized Land Value Information in Moulvibazar Study Area, 1989

Type of land	Land value per Khata(Taka)			
	Within Urban Core	Within Pourashava Area	Near the Periphery of Pourashava Boundary	Away from Pourashava Boundary
<u>Built-up Land</u>	450,000	250,000	250,000	150,000
<u>Open Land</u>				
High	450,000	225,000	185,000	135,000
Medium	375,000	200,000	175,000	125,000
Low	225,000	145,000	125,000	50,000
<u>Agricultural Land</u>				
Near the roads	-	175,000	150,000	100,000
Away from roads	-	125,000	100,000	75,000

Note: Local Unit of Land Measurement is Keyar/Kedar which is being converted into more acceptable units.

Source: Socio-Economic Survey, 1989

In general land value is found to be exorbitantly high considering the lower-middle order urban centre status of Moulvibazar. Local people are of the opinion that fund from expatriate people has caused a sharp rise in land prices in recent years.

Obviously most high price land are those in the urban core commercial areas like Paschimbazar, Chowmohona, along Dhaka-Sylhet road in Kusumbag etc. Land prices per khata is as high as Tk. 500,000 in these areas considering location and builtability. Table 43 gives generalized land value information in Moulvibazar study area. But what could be a more practical and useful approach is the pourashava coming up with land value map for the whole study area considering the proposed landuse and map also taking care of the local factors.

2.4 Physical Opportunities & Constraints

Considerations of physical features and local issues in the preparation of a landuse/master plan is of utmost importance so as to have cost effective development proposals and also not to ignore broader national or regional issues. And most important of all it leads to ecologically sound environment for living -- a

prerequisite which is a global concern now. In this part of the chapter physical advantages and limitations for the preparation of landuse/master plan for Moulvibazar Pourashava has been discussed. (Pls. refer to Figure 25)

2.4.1 Physical Opportunities

Potential Areas for Urban Development

The existing trend of urban development is as follows:

- New Development are occurring in Ragunandanpur mouza, Uttar and Dhakkin Kalimabad area and along the main regional roads.
- In the absence of any master plan the developments are mostly scattered and according to the convenience of the developer(s).
- This new developments are basically following the relatively high land. But due to the higher land price in the existing pourashava area, some of the not so advantages plots are being developed. These developments are most likely going to effect the natural flow of drainage in future.

The locations mentioned above has a good amount of vacant land in small, dispersed parcels (some of them are still in agricultural use) which could be available for urban land. The logic behind is the existing trend and also because a lot of development has already takes place there.

There are about 265 acres of land in small, dispersed parcels in the existing pourashava area as vacant land or under agricultural use. Most of these land should be the first one available for urban development.

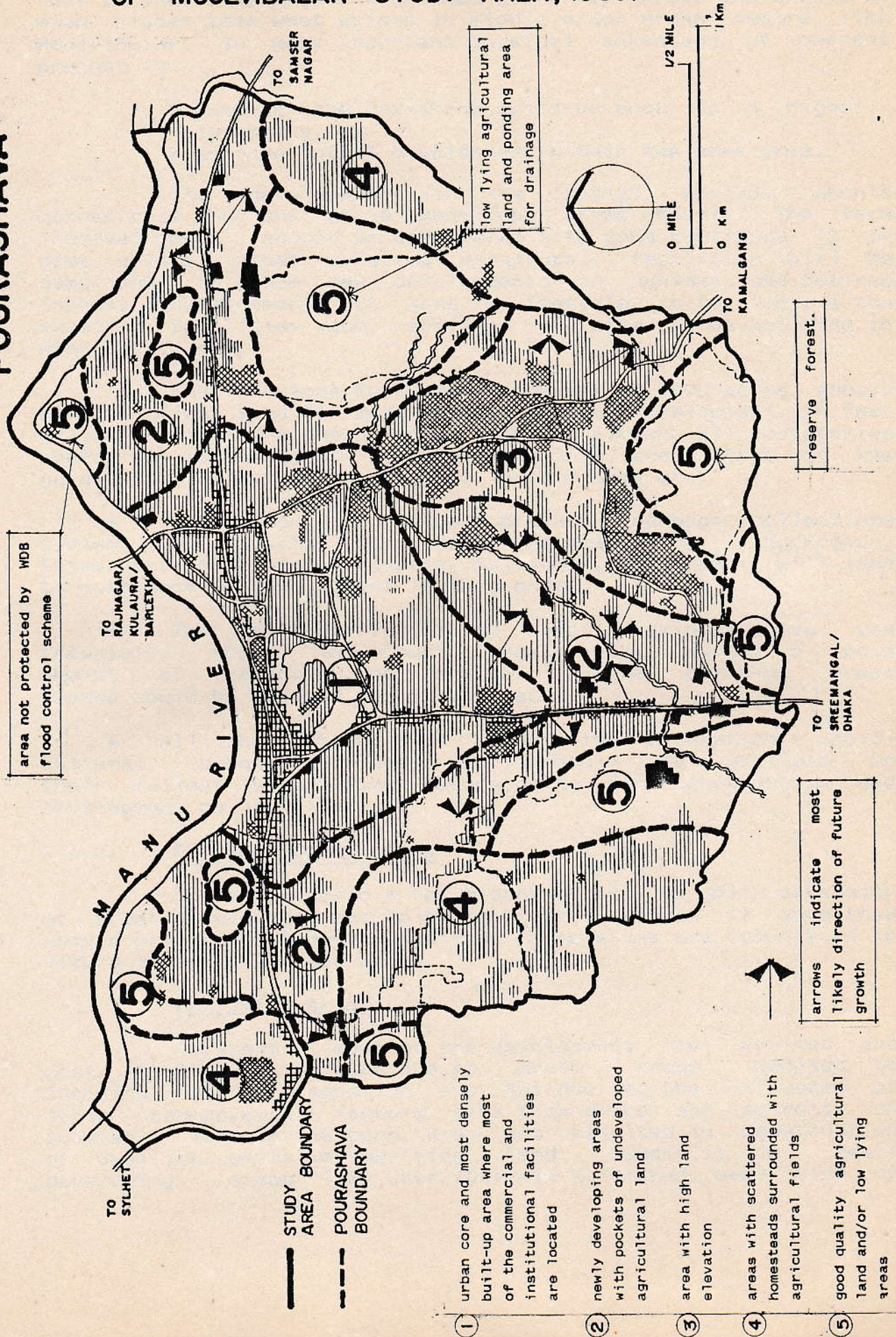
Due to the advantage of accessibility the land on both sides of the major roads "qualify" for urban development. And that is generally the existing trend. Since it is difficult to offset the existing trend - no matter how inappropriate this might be - some of these land most likely will be designated for urban development with some restriction and control.

Potential Areas for Urban Development/Densification

Urbanization in Bangladesh is rather a recent phenomenon and according to 1981 census only 15 percent of the total population living in "Urban" areas. But the process is an accelerating one and it is expected that by the turn of the century one third of the 140m to 150m people will be living in the urban areas. This factor coupled with the fact that land-man ration in Bangladesh is currently the lowest in the world dictates a rather high intensity of use of urban land. Giving any kind of indication to what extent this intensity should be is beyond the scope of this project - but it can be fairly stated

FIGURE 25 : PHYSICAL OPPORTUNITIES AND CONSTRAINTS MAP OF MOULVIBAZAR STUDY AREA, 1989.

MOULVIBAZAR POURASHAVA



that it should be higher than what currently exists and should be much higher than what exists in middle order urban centre like Moulvibazar. So most important physical advantage of current project is:

- putting the existing built-up area to a higher intensity.
- to have infill development within the core area.

The developments in the initial periods should concentrate in the above mentioned areas mostly. The term "redevelopment" should be considered with some caution. It is most unlikely that existing structures, facilities will be demolished to have new developments to achieve the desired intense development. But what is feasible is to improve the existing facilities and services - in other words building on what exists now.

The previous Pourashava boundary of 1900 acres should be the first area for more intense urban development. In fact major share of the future requirement in almost all categories could be accommodated by densifying this area. Some of the guidelines for future development in this area are:

- Improvement of roads, drains, garbage collections system in Muslim Quarters, Darghamahalla, Kazirgaon, Sayeerpur, Shantibag, Girjapara, Sultanpur, Dargirmahal will lend to more housing development in this areas.
- The existing facilities under administrative use (specially those in Court Area) have quite a good amount of vacant land around. Future built-up areas needed could be located within this area.
- All the institutional facilities (education, socio-cultural, urban services etc.) should be utilized to their fullest extent first before going for construction and development on new sites.

2.4.2 Physical Constraints

There are quite a few blocks of land on which extension of urban development has to be restricted or even if permitted should have special considerations. These areas are identified in Figure 25 and discussed below.

Low lying Areas

Apparently most of the development has avoided and most likely will continue to avoid areas subject to flooding, water stagnation etc. But due to the influence of other non-physical factors like high price and scarcity of buildable land in the core area has resulted in construction of dwelling units in low-lying land specially in newly developing areas like Uttar/Dhakkin Kalimabad, east side of

Girjapara, Baliarbag mouza etc. But considering the high cost of construction in this kind of land and also to keep the natural flow of water unobstructed extension of urban development in these areas has to be restricted. There is a big chunk of low lying land in Barshijura mouza - east of Girjapara and Court Area. In winter these land is usually dry and used for cultivation but in rainy season it usually is under two-three feet water. Not only that it also serves as sort of a ponding area for the run off water from nearby high land of Pahar Barshijura mouza.

An small run off corridor is also located on the southern side of Dhakkin Kalimabad area. While this corridor has to be kept unobstructed, it could be used for aforestation purpose which will help in preventing soil erosion.

There are also few patches of land along the sides of the only drainage canal (kodali chara) which are inundated during heavy rain. The filled up portion of the old course of Manu river should have been protected from buildings or roads etc. But indiscriminate construction is on. The consultant purpose that the rest of the area should be protected.

Reserve Forest & Agricultural Land

Urban development at the expense of agricultural land is theoretically wrong at the prevailing situation in Bangladesh. Land-man ratio (0.21 acre) in Bangladesh is the lowest in the world and it is deteriorating fast with the increase of population. But it is difficult to foresee any other alternative where it is necessary to have some land for urban or non agricultural uses. This is a precarious situation and it dictates that existing built-up areas should be utilized at their fullest capacity. At the same time, the areas where scattered homesteads outnumber the disintegrated patches of agricultural land should be considered for development at the later phases. This kind of areas exists along the boundary of previous pourashava boundary and along the regional roads. The logic is with the construction of dwellings all around small parcels of agricultural land do not remain as "good quality". However there are some sizable (20-30 acres) parcels of agricultural land in Mostafapur, Barshijura, Barahat mouzas which should be defined and if not required should be protected from urban development. Not only that any kind of garbage disposal, waste water discharge should be restricted on this land. Most probably we have to define this land as urban agricultural land and have to accept them around. The Consultant feels this kind of land will provide some open space and will help in keeping the environmental quality of the area.

The study area includes a 95 acre parcel of reserve forest area, which is part of the Louraga mouza, the location of the proposed Asian Highway has promoted to include this land. The area is included in the study area, to protect it from urban development rather than to have some development there.

Lack of Accessibility

Except the previous pourashava area and areas along the main and middle order roads, the rest of the study area is ill served by roads. There are a large number of homestead areas in Gandarbapur, Mostafapur, Barshijura, Barahat mouzas served by kutchra roads which becomes non-operative during rainy season. And in some of these homesteads there does not have any approach road at all. People use demarcation lines of agricultural land to commute. Providing some all weather approach roads (at least brick soling) to all these land needs huge amount of fund. As such it is difficult to propose expansion and development of these kind of areas in the early phases. These areas will be restricted to there present limits and the consultant will find ways of connecting them with the transportation network of the shahar. But the implementation will be only attempted when other pressing priorities have been taken care off.

Special Development Approach for High Undulating Land

The south east corner of the study area (Uttar/Dhakkin Kalimabad, Mission Area, Court Area of pourashava area, Reserve forest, East and South-east part of Barshijura Mouza) is entirely different from rest of the study area in terms of land elevation and contour. While rest of the study area is flat monotonous terrain, these area with small hillocks (tilas) is high and undulating. Because of high elevation of land the area has attracted a lot of development efforts. And in the absence of any development control there is a tendency of rampant cutting of hillocks so as to make development cost "cheaper". But how beneficial it might be for an individual, it shows high degree of insensitivity to the environment and also destroy much of the natural beauty of the area. Cutting of some part of the area results in erosion in the surrounding and also clogging the drain with sand.

Because of scarcity of buildable land, it is not possible to suggest altogether protection of the area, but there has to be some special development approach for this particular area so that destruction of natural contours and leveling of hillocks could be avoided. Probably the density level and intensity of development would not be as much as desired. Most likely high income housing areas, administrative and institutional buildings could be located here who will be more willing to follow the development guidelines. Construction of buildings and roads should avoid as much as possible, the natural fauna and funa of the area. This kind of efforts no doubt, will provide handsome dividend in later years.

Chapter Three

THE CONCEPTION PLAN

3.1 Policy Guidelines

The development of Moulvibazar Pourashava has to be considered according to its position in the administrative system and national urban centre hierarchy. As the zila headquarters it serves the upazila and links them with other zila shahars and the national capital. As the most important urban centre within the administrative boundary of the zila it serves the upazila shahars and links them with the regional urban centres like Sylhet, Comilla, Chittagong and ultimately most important urban centre in the country, Dhaka. The proposals for the development of Moulvibazar Pourashava must ensure that it could perform its role most effectively.

Another aspect is the increase of urban population in the country and the role expected from Moulvibazar Pourashava. The population of the study area designated for Moulvibazar Pourashava rose from 9340 in 1961 to 27131 in 1981. While only 15 percent of the population in the country lived in towns in 1981, it is expected that by the turn of century about one third (50m out of total 140m) population will be living in towns and cities.

As a lower middle order urban centre Moulvibazar is going to have its due share of such incredible transformation and accompanied problems like inadequate and over crowded housing insufficient public services and facilities, traffic congestion etc. etc. For Moulvibazar Pourashava it is expected that about 80,000 people will be accommodated in the year 2001. The development proposals must consider this most unfavorable future and prepare itself accordingly.

The development proposals must look at overall problems and key issues, at the general factors affecting development, by physical, financial, administrative capacity or land availability, at the target or standard which has to be adopted for the plan period and investigate the different ways to achieve them and recommend the best policies.

All the urban centres in Bangladesh suffer from a range of common problems and these fundamental considerations should

shape the guidelines for any development effort. Some of these are worth mentioning here.

- A large segment of the population has very limited access to the basic needs of shelter, urban services, health, sanitation and education etc. Social as well as economic issues need to be addressed in any action, which has to be concerned with increasing the proportion with access to these services, or at the very least ensuring that proportion does not decrease any further. Much of these needs can only be met through public sector action.

- Given current and future levels of unemployment and under-employment, any development action should try to foster economic growth and provide more jobs. The current project has very limited scope in this respect, but it can reduce any hindrance to such development, and should propose which areas should best be developed for such purpose.

- Any development plan should also recognize the severe limitation of financial resources for investment. And it is unlikely that it would be different for Moulvibazar Pourashava. While maximum utilization of the existing facilities have to be done, it is also required that affordable standard for provisions, cost-effective approaches have to be undertaken.

- Public ownership of land suitable for development is limited, fragmented and dispersed. Public acquisition under current procedure is time consuming and costly. Maximum utilization must thus be made of land already in public ownership and development will usually have to be located in desired locations by guidance rather than through land purchase prior to development.

- Shortage of adequate administrative, technical and professional capability is exacerbated by lack of co-ordination and unwieldy bureaucracy and poor organization. Current legislation for implementation is often inappropriate or unused and any strategy has to recognize these limitations and act appropriately.

Apart from all that the "Dhaka Urban Strategy Plan", prepared by Shankland Cox partnership in 1981 has proposed a number of policy guidelines derived from the proposed overall strategy and recognizing the constraints. Which are equally appropriate for other urban centre in Bangladesh. Some of them are mentioned below.

- No proposals should have long gestation periods, rely on large capital amounts, advanced technology or precisely scheduled programming.
- Self-help activities employing labour-intensive techniques should be emphasized whenever possible.

- Maximum use should be made of existing physical and social infrastructure. Thus as much of future developments as possible should be absorbed in areas already developed or partly developed.
- Development standards should be at more appropriate levels, capable of replication, progressive improvement and wider coverage.
- Public sector investment should ensure that the basic needs of the mass of the urban poor have priority.
- Employment initiatives should encourage and assist the informal sector and concentrate on availability of serviced land for more formal activities.
- Increased participation of community groups in local development initiatives should be encouraged.

These guideline should be adopted as an integral part of the strategy for the development of Moulvibazar Pourashava.

3.2 The Planning Standard

Before estimating the future land requirements for the future Moulvibazar Pourashava, it is necessary to establish the size of the catchment area population and the viability of the standards for the specific situation.

The population of the identified catchment area of Moulvibazar Pourashava has found to be 19562, 25177 and 42189 in census years 1961, 1974 and 1981 respectively. Which gives the growth rates 1.96 percent, 3.92 percent and 7.65 percent in 1961-74, 1961-81 and 1974-81 period respectively. The recent growth rates (1974-81) is too high to be realistic and it should not go on for a long period of time. At the growth rate for last 20 years (1961-81) seems appropriate and fits closely with natural growth rate and migration statistics. As such it is taken as the growth rate of population increase in the catchment area of the Pourashava. According to that by the end of the planning year 2001, population of the catchment area of Moulvibazar Pourashava will be 91029.

The TOR for the preparation of landuse/master plans for upazila shahars provides the planning provision standards. It has identified that for housing only shahar population and for rest of the services catchment and shahar population has to be considered. The consultant likes to point out that there are some services (other than housing) which if provided in the shahar area will not draw total catchment area population. It is due to the inherent catchment area of an individual service/facility.

For example a primary school, a medium size park or a neighborhood mosque should not be more than 15 minutes walk from a persons homestead. Providing those services within the shahar area considering all the catchment population, some of them residing as far as 3-5 kms away, will lead to under utilization of those services.

It is difficult to co-relate accurately urban services like post office, telephone exchange, police station and sports stadium etc. with the population size. In other words a post office to serve 100,000 population will not be double the size of the one which serves 50,000 population.

The planning provision standards also fail to take care of the utilization characteristic and built-up facilities of existing use. For example if a semi-pucca structure of a school is demolished and multistorey building is constructed or expansion is done within the existing boundary it will definitely provide much more improved facility without taking more land. Furthermore some of the facilities could be utilized two or three fold (double shift in schools/colleges) or multifold (community education, adult literacy in the educational facilities in the evening) etc. So the final landuse provisions should not be what the estimates say according to the standards.

It would be difficult to achieve residential density of 100 persons per acre net of road and other facilities beyond the core area where most of the structure would still be semi-pucca/kutchra low rise dwellings. While in the core areas the density could be 100 persons/acre or even more the average might be less than that.

The TOR proposes these types of roads with 60'-0", 40'-0" and 24'-0" reserve or access way. But for some of the areas it is not necessary to have 24'-0" wide access. They could be 15'-0" or 12'-0" access with 6' to 8' carriage way.

Land provision of 12 acres for administrative and judiciary service (including staff housing) for a zila shahar is grossly under estimates. It might be appropriate for an upazila shahar, but as the zila shahar is administrative centre of the whole zila it needs much more land and facilities for such services.

For the sake of calculating the future land requirements the total target population is divided into shahar population (78861 and designated as A) and catchment population (91029, and designated as B). The design population for each services is a combination of A & B. But considering the issues mentioned above, the final provisions would be different from the estimates.

Table 44: Information of Existing Landuse and Estimate of Future Requirement for Moulvibazar Pourashava

Item of Landuse	Provision Standard Acre/Pop	Design Pop.	Existing Area ** Acre/Ha	Land Requirement (Acre/Ha) (Including Existing)
COMMERCE	1.5/1000	A+B	41.60/16.84	254.83/103.17
INDUSTRY			18.50/07.49	
EDUCATION			27.35/11.07	
KG & Primary School	2/5000	A+1/6B		37.61/15.23
Secondary & Higher Secondary School	5/20000	A+1/3B		27.30/11.05
College & Vocational Training	5/20000	A+B		42.47/17.19
HEALTH			11.10/04.49	
Dispensary, Maternity Child Care, Family Planning Clinic	1/5000	A+1/2B		24.87/10.07
Health Centre/Hospital	5/20000	A+B		42.47/17.19
ADMINISTRATION/JUDICIARY	12/Zila	Zila Pop.	70.55/28.62	12.00/04.86
RECREATION			17.85/07.23	
Park/Open Space	1/1000	A+1/6B		94.02/38.07
Cinema/Covered Space	0.5/20000	A+B		04.25/01.72
Play Field & Sports Stadium	3/20000	A+B		25.48/10.32
SOCIO-CULTURAL			19.40/07.85	
Community Centre & Public Library	1/20000	A+1/2B		06.22/02.52
Mosque/Temple/Church	0.5/5000	A+1/6B		09.40/03.81
Grave Yard/Cemetery /Cremation Yard	5/20000	A+1/6B		23.51/09.52
URBAN SERVICES			33.25/13.46	
Post Office	0.5/20000	A+1/2B		03.11/01.26
Telephone Exchange	0.5/20000	A+B/2B		03.11/01.26
Police Station	2/20000	A+B		16.99/06.88
Bus/Railway Station/Ghat	1/20000	A+B		08.49/03.44
ROAD	5-10% of Study Area	-	116.20/ 47.04	-
RESIDENTIAL	1/80	A	1601.65/648.44	985.76/399.9
URBAN DEFERRED	10 % of Study Area	-	-	-
RESERVE	-	-	291.55/118.04	-
AGRICULTURE	-	-	1313.65/531.80	-
TOTAL			3598.00/1456.68	-

** Source: Landuse Survey, 1989

3.3 The Plan Outline

Figure 26 in the next page shows the concept plan for Moulvibazar study area and the structure of the future pourashava area which has emerged out of such considerations. The whole area is divided into five zones where development has to be different in order to have the desired environment.

Zone 1 consists of the existing urban core and most intensely build-up area. But the existing density and intensity of development is not upto the desired level. As such this zone will under go further intensification and all efforts by the public sector agencies should be directed so that private efforts are concentrated in this area.

Zone 2 is the immediate surrounding of the existing core area where physical expansion is going on, but there are a lot of vacant lands still available where future development will be encouraged.

Zone 3 is the area where land elevation is higher (and undulating) than the general elevation of land in the study. This is due to small hillocks or tilas and the area deserve special development approach so that environmental quantity is retained.

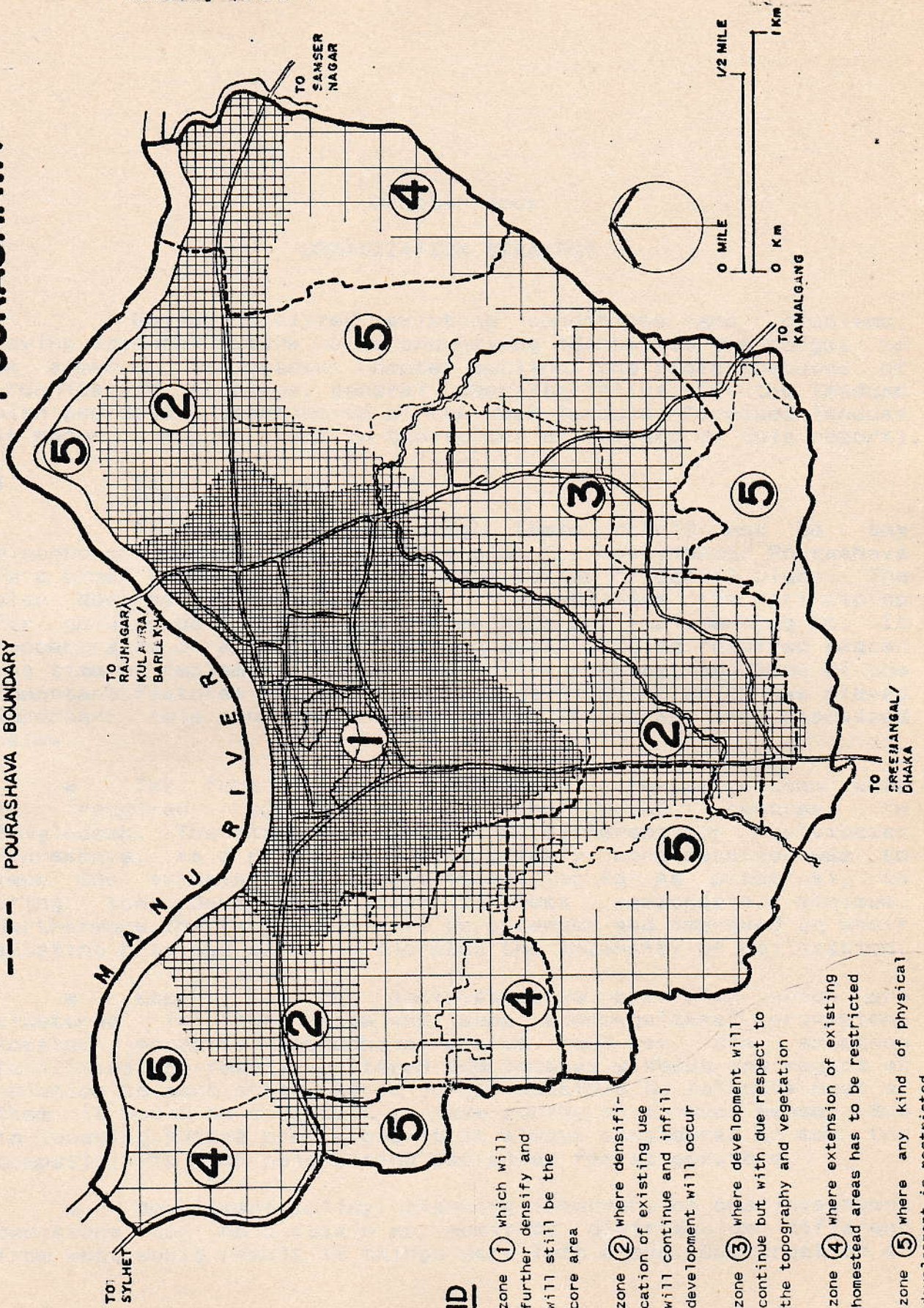
Zone 4 is the area where mostly scattered homestead areas exists and the areas resemble rural environment. For the service of the pourashava area urban expansion in this areas are not required during the project period. Construction of dwelling units in these areas is due to low price of agricultural land and as such indiscriminate destruction of agri-land is occurring while there are vacant parcels of land in more buildable areas. As such it is proposed that expansion of homesteads areas are to be restricted in these areas.

Zone 5 is the area where any kind of physical development has to be restricted. This zone includes good quality and big parcel agri-land, low land which is inundated every year and which serves as ponding area for drainage, reserve forest area, a parcel of land north of Sayeerpur which is not protected by WDB flood control schemes. Existing use and efforts to increase agricultural productivity of these areas has to be maintained.

FIGURE 26: THE CONCEPTION PLAN FOR MOULVIBAZAR STUDY AREA, 1989.

MOULVIBAZAR POURASHAVA

— STUDY AREA BOUNDARY
- - - POURASHAVA BOUNDARY



LEGEND

zone ① which will further densify and will still be the core area

zone ② where densification of existing use will continue and infill development will occur

zone ③ where development will continue but with due respect to the topography and vegetation

zone ④ where extension of existing homestead areas has to be restricted

zone ⑤ where any kind of physical development is restricted

Chapter Four

URBANIZATION STRATEGY

Having analyzed existing conditions and problems, having assessed future needs and having identified the target to be aimed at, the present chapter outlines the basic features of urbanization strategy, general characteristics of the landuse plan and detail description of the each landuse. Porposed landuse is shown in Map 03 (kept in the folder at the end of this report).

4.1 Basic Features

Perhaps at this stage there should not be any misconception that landuse/master plan for Moulvibazar Pourashava is a broad guide plan rather than a series of detail plans. The plan does not attempt precision but establishes the principles for guiding development and the methods for implementing it. It concentrates on essentials, leaving details to be resolved nearer the time of implementation by respective authorities. Some of the important features of the process of development which has played important role in the preparation of the plan are discussed below.

- The fund for urban development is far below than what is required considering all the urban centres in Bangladesh. The situation can not be different for Moulvibazar Pourashava. As a result the most primary consideration was to keep the existing development intact, as far as practical, to bring the development cost to most reasonable minimum. Furthermore the facilities will be extended and improved on their existing premises so as to increase the intensity of utilization.

- Except for the administrative provision which are clustered in Court Area and some socio-cultural provisions located opposite Pourashava office rest of the existing facilities are really scattered and located without any regard or relation to each other. As 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.

- Government policy, planning intervention and investment decisions can help attain an activity distribution different from what would result if things were left alone. But creation of

opportunities and incentives necessary to divert growth from existing nodes involves resources and skills to which local authorities have little access. Perhaps it would be better to guide the natural process of population and activity distribution to a desirable future state.

- Among all of the public sector intervention, the provision of infrastructure could possibly play most effective role. The pattern of services is a prime determinant of the pattern of settlement. Roads, electricity, and water supply are the three services which will positively affect the location of development. Drains in most cases will follow the road alignment and though the presence of drains might not by itself attract development, their absence can prevent development from taking place. The administering authorities have to co-ordinate the provision of such services so as to guide/control development.

- In order to prevent undesirable development public agencies can deny providing these services to any project not confirming to the proposed landuse plan and building construction regulations. But to act in such a manner needs consensus of all parties involved and the decision has to be taken at a higher level.

4.2 Plan Description

COMMERCIAL

The development and growth of Moulvibazar Pourashava will continue to be influenced by the existing commercial and commercial-residential areas. As such development of existing facilities is of utmost importance and future provisions have to be located so as to serve the population appropriately. The existing kutcha bazar areas are in deplorable state. There is no covered facility, no drainage system, paths/walkways are not defined and garbage collection and disposal is not done properly. The Consultant proposes for their immediate improvement. Few new kutcha bazar areas will be required during the plan period. One could be easily established at the court yard of Court Market. Another two will be required at Barahat and Ragunandanpur Mouza.

There is a tendency of constructing rows of pucca shops on both sides of all the major roads especially Sylhet Road, Sreemangal Road, Sayeerpur Road etc. Even feasibility of such construction in most cases ignored. As such a large number of vacant shops are found on both sides of Sylhet road in Barahat Mouza. There has to be some kind of restriction on this kind of indiscriminate construction of shops. There is an acute demand for shops in the core area. As such three locations are earmarked for organized shopping areas. They are:

- the triangular space on west side of Paschim Bazar
- the R&H premise in Chowmohana
- the Moulvibazar Sreemangal bus stand on Court road

These shopping areas could be developed either by Pourashava or by private developers. Since shopping activities are only restricted to ground floor areas, these shopping areas could be multi-use centres. The upper floors could be used for hotels, offices, or even for residential purposes with separate/protected entry. These centres should have adequate parking facilities for cars, motor cycles and bicycles. Restriction on opening shops any where else is required for the success of these centres. Small cluster of shops could be allowed considering distance of the neighborhood from these shopping areas and kutchha bazars, but no way they should be located on the major roads.

INDUSTRIAL

Moulvibazar study area do not have any industry of significant nature. What it has are small scale industries which serves the shahar area and its immediate vicinity. The Consultant does not foresee establishment of any large or medium size industry here. If any medium size cottage type industry is being set up, it could be accommodated on the BSCIC estate which is 4 km away on Sreemangal road. But the service industries (Brick Fields, Saw mills, Rice/Flour mills, Truck/Bus Body Making, Furniture shops, Ice Factory, small Mechanical shops, Grill & Shutter shops etc. etc.) are going to grow as the population of the shahar increases. Some kind of discipline on there locations is required.

Bricks fields are seasonal industries and have a tendency of establishing any place favorable, usually in the middle of good quality agricultural fields. The Consultant proposes that future brick fields should be located on north side of Sayeerpur on the land which is not protected by WDB flood embankment/wall. Since this area gets flooded during rainy season it will have deposit of soils which could be utilized for brick making during dry season.

The saw mills are also eye sores and quite noisy. They could be located on north side of Barahat Mouza along Manu River. It will be easier to transport the logs and timber by the river. Development of the area and giving financial assistance to the persons moving to this areas will be BSCIC,s responsibilities.

Apart from these two categories of industries, some of the establishments like two rice mills, two/three floor mills will be costly to remove and reinstalled. As such they should stay in their original locations. But small scale industries like Bus/Truck body making, furniture workshops, small machine workshops, Ice factory, metal shops could be relocated on "Mini Industrial Estate" created on Sreemangal road. This is the area where most of these kind of industries are located. BSCIC should take care of acquisition, land development and layout and financial incentive for the industries willing to move to these

area. There has to be strong restriction on opening of any sort of industry beyond these identified zones. The number of Mini Industrial Zone should be on the basis of performance of the first one in phase one.

EDUCATION

Considering existing level of enrollment and attendances in all educational institutions, there would be demand for more school places at all level of education due to the large population increases. National policy of education for all by year 2000, will lead to even greater increase in demand provision of which seems inconceivable. To be more realistic there will be increase in attendance due to governments certain policies and incentives. (Free education for girls students upto class VIII). So educational facilities should be improved not only to meet the existing level of demand, but also greater attendance level. For the development of educational sector following are proposed:

1. Maximum utilization has to be made of existing educational institutions so as to reduce the need for land purchase and new construction. The Third Five Year Plan intends to "optimize the use of existing capacity in existing educational institutions." In fact a good share of the future school places could be met by expanding and improving facilities in existing institutions. This will be considerably cheaper than construction of new schools of the same capacity on new sites.

2. All the Primary, Secondary and Higher Secondary Schools could be converted into double shifts to ensure maximum use of existing facilities.

3. Despite all these there has to be some new school facilities as most of the existing ones might be away from newly developing areas. These should be located in relation to population distribution on a neighborhood basis, with children attending the school coming from immediate surrounding area. But priority should be to those areas which are badly served.

4. Given land costs, the need to retain land in agricultural production and frequently wasteful nature of public sector land allocations, it is necessary to keep school sites to a minimum. But all the primary school should have at least some play lots, if not a play field, while all the secondary schools should have a play field. And to put these sort of facilities into maximum utilization, they should also be open for public recreational use outside school hours. Similarly school buildings should be available for community use outside school hours and during holidays.

5. In improving or for new provision, emphasis should be on access to books and equipment, teacher-student ratio rather than physical facilities. It is not essential that all school/collage buildings should be of pucca construction. Semi-

pucca or even kutcha structure if properly built should serve the purpose as well. The top roof of any multistoried (pucca) structure or that of any single storied structure (could be kutcha) should be of tiles/thatch/C.I. Sheet etc. which would definitely reduce the cost.

6. Private initiative and donation plays a significant role in providing education in this country. The local administration and peoples representative should recognize and encourage this trend.

The proposed Landuse/Master Plan for Moulvibazar Pourashava has resulted in expansion and improvement of all the educational institutions, establishment of 5 new primary schools, 3 secondary and higher secondary school (1 for boys, 2 for girls) and double shift in all the schools.

HEALTH

As a policy guideline what was proposed about education sector was equally true for health sector. Most relevant ones are:

1. All the existing facilities should be utilized to their fullest extent, before going for new centres on new sites.
2. Emphasis should be on equipment, doctors, medicine and other related services rather than expensive hospital buildings. Low cost buildings properly equipped are better than high cost structures with poor facilities.
3. All the existing facilities like hospital, health centres must be properly equipped and staffed. Priority must be given to preventive programmes and creation of public awareness of personal hygiene and cleanliness.
4. Health facilities should be extended to those areas where this kind of facilities are lacking.
5. The role of private sector health services should be recognized and encouraged. But private practice by Govt. doctors and related staff should be monitored so that it should not effect public services.

The existing hospital in Moulvibazar Pourashava is a recently established one and has a in-patient facility of 50 beds. Since the hospital does not serve only the shahar area but to some extent whole zila these facility is needed to be improved. It is proposed that in the plan period the in-patient facility should be extended to 250 beds (100 in each phase). The present premises has the capacity to absorb much more facilities. But this kind of expansion must accompany adequate supply of medium equipment, staff so as to have optimum utilization.

All the existing health facilities (including the hospital) should be attached with Primary Health Care and Family Planning Programmes. This is an urgent requirement because of the general health situation and also due to the urgent need to control population boom.

Apart from improving the services of all the existing facilities, five new primary health care centres has to be established in different locations. This centres will be similar to Union Health and Family Welfare Clinics and should be equipped to encourage immunization, preventive programmes, counseling and treatment of minor and common ailments and also serve as family planning clinics. Hospital should treat patient if they are referred from these centres and other primary health facilities.

The Eye hospital which is located outside the study area boundary should be improved too, as it serves the population of the areas as well.

ADMINISTRATION

It has been already emphasized that the plan should safeguard the shahars role as District capital and foster its expansion. As Moulvibazar is a newly created district it might need a number of facilities which were not required when it was a sub divisional headquarters. With upgradation some of the required service were attempted but yet to be completed. Construction work of court building, DC's residence, O/C are stopped halfway due to lack of fund. On the other hand construction work of police line is yet to be started.

Most important advantage of administrative service is that they are located in court area within close proximity of each other. Thus creating a some sort of administrative zone. And there are some vacant Government land within and around which could be utilized for future expansion. But before that all the existing facilities should be put into maximum utilization. They are also to be improved upon in order to increase their capability. The consultant feels that if

- the existing facilities are utilised properly
- the existing facilities are improved upon and
- the under construction facilities are completed,

it will take care of future administrative needs adequately.

The Pourashava which has the maximum responsibility in the implementation of this plan is ill equipped with physical facilities. Condition of the under construction part of pourashava building and renovation/repair of the old building is an urgent necessity. Further expansion of work space will be required but could be deferred to phase Two. Most of the other buildings needs repair and maintenance and appropriate layout of each floor space is required which would help in optimum

utilization. PWD with its Architecture Department could undertake the job. They will release some floor space which could be utilised for other administrative purposes. The jail occupies valuable land in the administrative zone and also the facilities there are no way adequate. It may be relocated on less valuable land on the out skirt of the town.

RECREATION

Due to the acute demand for funds in more important sectors like education, health, physical infrastructure it is unlikely that major new initiatives could be undertaken for recreational facilities. As such development and improvement of existing facilities could be only option left with.

Berry lake is an unique feature for Moulvibazar Pourashava. This water body, if properly maintained, could contribute significantly in the environmental and aesthetic quality of the shahar area. As such it is proposed that Berry lake and the existing park on the south side should be preserved, developed into a recreational area. Unfortunately this wonderful waterbody is being inappropriately utilised now. Out let of few surface drains of paschim bazar area, bathing and washing cloths by quite a large number of people continuously pollute the water which has to be stopped. If fund permits few water recreational facilities, like small row boats, paddle boats could be provided here, which could be utilised against some fee by general public.

Existing play fields, play lots attached with different schools needs development. And to maximize their utilization, the use of these fields and Edgah for public recreation should be encouraged.

The reserve forest area could be developed into a natural park without destroying environmental quality of the area. Small picnic spots with toilet and water supply facility and sheds with traditional materials for resting could be developed which on the one hand will not require huge expenditure, but on the other will lead to earning opportunities. The shishu park in front of the pourashava office deserve immediate repair and improvement. An small park could be developed in front of shahid minar by relocating the hostel for blind and temporary shops. The area around shahid minar could be developed in such a way that out-door functions could be organized here.

The squash court seems to be in good condition and with some repair of the tennis court, both could be put into use. And the people who are going to use these facilities could most likely afford some fees for their maintenance.

The development of stadium is required and construction of galleries and other improvement is going to need some fund. The natural slopes on west and south side of the stadium could be utilised for constructing galleries which will be cost less.

SOCIO - CULTURAL

Whatever was said of recreational services is probably more true about the socio-cultural services. Due to demand for development in the priority sectors, it would be difficult to divert much fund for socio-cultural services. But it is interesting to note that some of the socio-cultural facilities (like religious facilities, graveyards, cremation yards, clubs, social welfare organization) are usually initiated and maintained by the generosity and benevolence of private individuals.

It is better to leave them as it is, and pourashava should only see that such future provisions are in accordance with the proposed plan. But Government and public sector initiative are necessary for services like Community Centres, Public Library, Auditorium etc.

Considering the problem of investing in socio-cultural facilities the following are proposed.

1. All the existing facilities should be improved and put into fullest utilization as far as possible.
2. There should be more positive encouragement of maximum public utilization of existing facilities, whether open space or covered, irrespective of whether their primary use is for a different purpose.
3. Where no existing facility can be so used, multi-purpose community centres should be constructed which should be used for a wide variety of cultural, recreational, welfare, health, education or any other community purpose or private hire. It is not necessary for each individual organization to have its own individual premises.
4. Use of school building as centres for community interaction is nothing new. This practice is quite common even in the developed world. As educational activities and community functions normally take place at different times, using schools/colleges for community services is a feasible proposition. Such practice should maximize use of facilities and benefit both the institutions and the community.
5. Location of socio-cultural facilities should be sites accessible to the community and which have infrastructure investment and usable Government land. Such provision, insofar as possible, should be concentrated in neighborhood centres.
6. While public funds should not be used to provide facilities for special interest groups, such groups should be encouraged to use existing provision. The pourashava should thus ponder whether it is necessary to purchase land for a police parade ground or whether the stadium could not be used for this

purpose. The purchase of land for a children's park is a similar single use purchase which could best be incorporated with an existing or proposed school site.

Specific projects to be undertaken in two phases are mentioned in chapter five and marked on the plan.

URBAN SERVICES

Urban services or infrastructures have a major effect on the living standards of the population. Not only so, it also directly influence the future direction and location of growth. On the other hand provision of urban services is the most important cost component of the development of any urban area. Actually due to shortage funds for these kind of service most of the urban areas in this country are ill-served. The analysis of infrastructure provisions (chapter Two) showed variations in existing service levels and in future needs, as such different sectors have to be considered separately. However overall urban services provisions have

- to cater for the anticipated population increase and the jobs needed to sustain this increase.
- to allow improved access to basic services by both present and future inhabitants.

Which means that appropriate standards of provision must be adopted, standards which can in practice be met while allowing most people to be served. The standards adopted influence the chances of attainment. Thus, if standards are set too high, too few will benefit because financial restraints make replication impossible.

Water Supply

Some portion of the core area is provided with piped water supply from 3 deep tubewells. But the system does not operate 100 percent most of the time. Repair and rehabilitation of existing system is a priority work.

DHV Consultant (Netherland) has recently undertaken "18 District Town Water Supply and Sanitation Project" in association with three local firms (BATES, AQUA, DPC). Moulvibazar Zila shahar is included in this project. The design phase of the project is yet to be completed. And fund for implementation of the schemes will most likely be provided by Netherland Government and local implementation agencies will be Directorate of Public Health Engineering (DPHE) and concerned Pourashava. This project is an integral part of this plan.

If the project recommendations are being implemented in different phases, it most likely, will provide piped water supply to about 75 percent of the future shahar population by the year 2001. But the rest of the 25 percent of the shahar population (mostly living in peripheral semi-rural areas) has to be served

with private/public shallow tube wells. So that shallow wells and unsanitary water sources such as ponds, tanks, or rivers are not used for drinking and household requirements.

Repair and maintenance of the total system is essential to minimize wastage and continuous supply.

Drainage

The proposals of DHV Consultants should be implemented for the improvement of drainage system in Moulvibazar Pourashava. However some of the general observations of the consultant could worth mentioning here.

Moulvibazar Pourashava is not effected by flooding due to the flood protection embankment/wall on the south side of Manu river. But the river does not help in the drainage of waste water, rain water as well. The present system is mainly dependent on the Kodali Chara which discharges in the Hyal Haor. Drainage system is mostly clogged in Paschim bazar, Shantibag, Sayeerpur areas, because it is not properly linked with the operational system. Moreover the width and breadth of Kodali chara does not permit it to drain rain water sufficiently quickly during the monsoon period. As such a large part of Barshijura mouza has become some sort of ponding area for the system. Therefore the plan proposes the following:

1. The existing drainage system has to be improved and that the different parts linked into an overall system. This will require clearance of blockages, construction of new drains where required, conversion of kutchra drains with brick line ones, widening of some of the main ones etc.

2. Improvement of drain should be located in area where needs are pressing, most likely areas with higher density.

3. It will need higher amount of effort and planning to fit Barahat, Balirbag, Mostafapur, Garua areas into the system dependent mainly on Kodali Chara. Most likely drains with sufficient width have to be constructed with the proposed improvement of roads.

4. The future urban areas should also drain into this system. New drains should be provided at the same time as development/road construction takes place. This should be cheaper than improving the system where development has already occurred.

Sanitation

Due to the absence of any sewerage network and also that of a night soil collection service by the Pourashava domestic sanitation is an individual responsibility for the most families in Moulvibazar. Though socio-economic survey data shows that there are 75 percent of the households using septic tanks, the consultant feels that considering the peripheral semi rural

areas it should not be more than 40 percent and most of the remaining ones are kutcha latrines. The standard of sanitation in Moulvibazar is better than in most of other middle size towns. But it is necessary to improve the situation by doing something about the kutcha or bucket type latrines and those who use fields, rivers, canals for that purpose. Because except the septic tank and DPHE twin pit latrines rest are potentially hazardous to public health and will become increasingly so as densities increase. These types of latrines are not acceptable and should be completely phased out. And in doing so only lower cost alternatives have to be considered as low income families forming the majority of the shahar's population. It is no use saying that all the households must have septic tanks.

About 3700 existing service or kutcha latrine have to be replaced, assuming that same percentage of households (40 percent) continue to provide their own acceptable sanitation. By the year 2001 another 7300 acceptable low cost sanitation have to be provided for 100 percent coverage. Considering all the features among the low cost options, twin-pit latrine advocated by LGEB seems a valid alternative. (Appendix C) it is already tested in various parts of Bangladesh. The advantages are it is:

- Smell and flyfree
- User responsible and easy maintenance
- Waste harmless, when removed needs no further treatment, can be used on or off site as fertilizer
- Initially only 1 pit needs to be provided
- Construction and installation is very simple. And if the household provides their own labour, the costs are substantially reduced.

Nevertheless, despite a subsidies in the components, installation of even the twin sealed pit involves some cost, either to the individual or to the Pourashava. The funds needed to permit the widespread adoption of this improvement throughout shahar area will not be available. The Pourashava with the assistance of DPHE should concentrate on:

1. The advantages of the twin-pit latrines and that the components are locally available should be made known to general public. People are also encouraged to put their own labour in the installation and use of burnt clay rings instead of concrete rings, so as to reduce the cost further.

2. Possibility of making some loans available to the households in order to enable those on very low income to be able to afford improved sanitation should be explored.

3. Making provision of improved pits in public buildings such as schools, offices and in public areas of highest intensity use such as the markets, the bus station etc. In these instances costs can be reclaimed from the users fees and this will also help proper maintenance.

Garbage Disposal

The main reason for garbage collection and disposal is to keep up public health as it is also a potential health hazard. But efficient garbage collection improves the drainage as it presently blocks drainage channels.

Whatever garbage disposal system (1 tempo van only) exists now has to be improved and the service has to be extended in the new areas to cater for the shahar's growth and to improve the services. The main constraints at present are shortage of collection vehicles, workers, collection bins and infrequent garbage collection. In such a situation following has to be done:

1. The present method of collection of garbage be continued, but that more provision of communal refuse bins be located, particularly in the markets, commercial areas, the bus station and public buildings. In residential areas communal bins should be provided on the major road intersections.
2. More vehicles, rickshaw van containers and operators be hired to allow an improvement and extension of services into new areas. In the more congested areas manually operated push carts should also be used with the operators responsible also for ensuring the efficient operation of the drains. A marginal increase in market stall rents should allow the Pourashava to cover the costs of such an improved service.
3. There should be more frequent and regular garbage collection with emphasis on daily collection in the commercial areas, kutchha bazars, bus station and with residential areas being emptied every other day.
4. A new site be selected on the west side along Sylhet road for garbage disposal. This site should not be located too close to residential areas but should not be too far as to require long journeys by the garbage collectors. Further study be needed for allocation of the site.
5. Inhabitants in the peripheral and low density areas should be encouraged to organize their own garbage collection and disposal (bury or burn) their refuse.

Energy

The existing power supply network (2.5 MVA Main transformer with 10 transformer of various capacity) is very much inadequate. Specially at the pick hour (evening) the voltage is rather low.

Fortunately ADB Financed "18 Town Power Distribution Project" is under going implementation at this moment. It proposes to increase the existing 2.5 MVA main transformer to TWO 10 MVA, 33/11 KV transformers. For

distribution the renovation of the existing low voltage lines and construction of new lines (from 2 fedder 11 kv to 4 fedder 11kv/.4) are constructed. New precast poles and wiring are being installed. According to local PDB sources after the completion of the project, there would be surplus power supply for a few years to come. The improvement in the electricity supply will effect productivity, job creation and ultimately the size of the shahar area.

Eventhough gas supply network is available in Moulvibazar Pourashava, traditional fuels are still prevailing. But the use of fire wood for cooking and industrial uses cannot be encouraged. Alternative source of energy such as bio-gas should be considered. Bio-gas generation is a possibility in the scattered semi-rural areas where it would be very costly to extend the natural gas network.

The existing gas network has only about 1000 connections, while it has a much more capacity. The network is spread over a large area and can be extended to inner cores with small extension. Most likely incidental expanses for gas connection is beyond the means of most of the households. As such the authorities could explore the possibilities of payment by installments or arranging some bank loans for their clients.

With the growth of Moulvibazar, more gas then the present will be used for industrial, residential and commercial uses. The need for upgrading existing distribution lines and expansion of distribution into new areas is evident and must be planned for.

Communication

The existing 700 line telephone exchange is already exhausted and there is waiting list for about 2000 new connections. At present work is on to increase the capacity of the existing exchange to 900 lines. But in view of the expected increase in population, Moulvibazar's importance as a zila shahar and also considering the number of household with a connection in UK, provision for a new exchange has to be made. If the waiting list of applicants (2000) is any indicate of demand there is an immediate need for a 2000 line exchange. The additional telephone requirement by the end of the plan period will be at least as much, if not more, then the present.

The need for post and telegraph offices too will be increase. Existing only post office is in an old structure which can hardly take care of the services. It is proposed that a new GPO will be constructed on Government land north of D.C. colony and two new smaller size sub-post offices has to be constructed in new areas while the existing one will continue serving as sub-post office.

New post and Telegraph offices where possible should be located in existing or future public buildings or on land under public ownership and both the services may be satisfactorily integrated in the same premises.

Transportation

There is not much of a traffic circulation problem in Moulvibazar study area now. But anticipated growth of the shahar area and its link with other zila shahars and upazila shahars make transportation a high priority.

1. Making best use of existing roads by maintenance, better traffic management, and limited improvement to overcome specific problem.

- Traffic management require the co-operation of the police, the Pourashava and the users. Formulation, promulgation and enforcement of rules are difficult to without mutual consent and understanding.

- Trades and business should not be allowed to encroach on Roads or sidewalks (specially in Paschimbazar, Kusumbagh and Chowmohana) and it should be ensured that road reserve stays in public use at least during pick hours.

- There has to be some discipline in the rickshaw traffic. It should not be allowed to park any where (specific parking stand) and should be restricted to specified lanes on the main roads.

- No Bus/Mini bus/Tempo/Rickshaw stands or stops should be allowed at a distance of less than 50 meters from major inter-sections.

- Though the secondary roads are narrow, the core area of Moulvibazar Pourashava has the advantages of having small "block" accessible from all directions. With the increase in future traffic a system of single direction flow can be devised without sacrificing accessibility to urban functions. However, the direction and roads in which this should be affected will depend on local conditions, needs and the authority.

- Most of the important functions are served by roads or most likely the functions are located considering good accessibility. The traffic on court road, Bejbari road, Sayeerpur road are relatively thin. But in time when traffic volume increases, these roads might require widening. The Pourashava should keep this in mind and any kind of pucca structure on both sides of this roads should have sufficient setback.

- Rickshaw is the only means of public transport, as the shahar is yet to be big enough to have within city bus service. But introduction of Tempo service on some important routes will lessen pressure on rickshaws now.

2. Construction of New facilities anticipating the growth of shahar area and better service to the future population.

- Road widening, alingment and building new roads are associated with many problems, while it requires huge financial cost, there are social and legal cost also. While the plan does not propose any major road, some of the twisting small roads or paths are straightened and widened to have an efficient road network system. The Pourashava and R&H requires Government assistance in all respect in doing so.

- Different roads have different functions and need to be built to different standards. Any standard has to be replicable and has to be realistic in terms of cost. The standards proposed in the Appendix (D) are meant to be practical and appropriate in the sense that they are affordable, can be improved upon and are based on likely use to be make of them.

- Chandnighat Bridge was damaged during the war of liberation in 1971, it is yet to be repaired properly. The bridge is vital for the communication with Rajnagar, Kulaura and Barlekha Upazilas. Recently the survey work for design of a new bridge has been initiated. The plan proposes that if possible the bridge should be completed within the first phase.

- Construction of Bus Terminal is an urgent necessity. At the moment inter-zila buses ply on the main road near Kusumbagh cinema creating a chaotic situation. About 3 acre of land has been earmarked in Jagannathpur mouza south of proposed Asian Highway. It is proposed that development and construction work (in phases) should start now.

- Temporary bus stand across the Chandnighat bridge serves the mini-buses, tempo service with Kulaura, Rajnagar and Barlekha Upazila. With the development of Chandnighat bridge the buses and tempos can not be allowed to ply on the road. So an small land of about half an acre should be located nearby and the stand should shift there.

HOUSING

In most likelihood Moulvibazar Pourashava will have about 78,000 population by the year 2001, some 35,000 more of the population in 1989. Most of the these increase should be absorbed by further intensification of existing built-up areas, but remaining percentage are likely to reside in areas still undeveloped or scatteredly developed. The authorities responsible for this plan should recongnize these facts and should come up with regulations, incentives to facilitate so. Action is needed to improve conditions in existing housing areas, which as migrants move in, are likely to have more than double the densities by the end of the country. In addition to that some minimal provision will also have to be made for the population who will be residing in newly developed site.

In the existing built-up areas, there should be concentration on:

- Improving infrastructure - roads, water supply, sanitation and drainage - at the appropriate standards indicated in foregoing sections.
- Identifying community grouping and encouraging the development of such groups through which publicity, education, technical aid and assistance can be routed.
- Preferential treatment of house building loan application to these areas.
- Distribution of public provision of infrastructure through the developed area in relationship to the anticipated population but giving precedence to these areas where there is greatest deficit in existing provision, most poor people and most dense development, that is, where actual or potential public health problems are most acute.

For the families likely to reside in new areas, the plan indicates the most likely zones after considering the factors which influence the location of growth. In addition to the residential areas land for non-residential provisions has to be required. In these new areas, some rudimentary infrastructure and services will be needed. With road in the highest priority. It has been observed that with the construction of new road, adjacent areas develop more quickly. Development thus be guided to preferred areas and private investment fostered through very limited public investment. In these new areas:

- Infrastructure provision, aiming at standards already identified, should be related to the number of population anticipated.
- Land should be reserved for social provision at the standards affordable. Where possible land already in public ownership should be reserved for such use. Social facilities should be grouped together rather than dispersed, so as to gain maximum advantage from any infrastructure investment.
- Land for commercial development to serve new areas should also be reserved. The suggested location of such sites are shown in the plan.

Regarding the development of housing sector few other issues are relevant and they are mentioned below:

Public Sector Policy Change: Official housing standards should be drastically reduced and related to the ability of households to pay for them. Building to lower standards mean that

more families can benefit from the same amount of money and what would otherwise be spent on subsidies can be spent on assisting more people. Such reduced standards should also apply to plot size with the allowance for gradual improvement and extension to homes as income increase. The general focus of housing programme should be to assist groups who cannot obtain accommodation through normal market mechanism. There is no easy answers to the difficult question of housing the homeless or nearly so. Ingenuity, skill and good intentions are primary requirements of a viable programme.

Housing for public sector employees in particular needs to be at more appropriate standards of construction, to use much less land and to achieve higher densities. It should also seek to restrict such provision to officers and staff posted away from their home base or whose jobs necessitate frequent transfers between stations.

Increased Private and Community Participation: Housing development is overwhelmingly a private sector activity. Direct public investment can only solve a tiny fraction of the country's housing problems and benefit a fraction of the urban poor. Helping the poor to help themselves can benefit a much greater proportion and publicizing what can be done through self-help and organizing such activity brings improvements more cheaply. Local community leaders and groupings should be identified and technical assistance, and advice given to them to make their own improvements. The Third Five Year Plan notes that programmes to facilitate credit to co-operatives and groups should be developed. Small loans, guaranteed by groups, have been successful in other sectors and could bring significant improvement in housing sector.

Ensuring Maximum Impact of Public Investment: Housing conditions and likelihood of investment by an individual for a dwelling unit depends on space and services. Public investment should be in areas where individuals cannot, without assistance, help themselves with sanitation, water supply, access to land and security of tenure having priority. Or on the other hand public investment to provide these services should be located at the areas where the authorities desire to have private investment in housing. Construction of dwellings is something households can do for themselves. Government funds should be concentrated on space and services leaving individual families to concentrate on shelter.

URBAN DEFERRED

To accommodate the fluctuations in the projection and reality, there are about 246.75 acres of urban deferred land, properly marked and shown in the map. These land are mostly located at the periphery of proposed built-up area and in between the scattered cluster of homesteads. In most likelihood

these land will not be required for urban development. The existing use (mostly agriculture) of these land should continued as long as they are not required for development.

RESERVE

All the existing waterbody (tank, pond, canal, lake etc.) are proposed to be "reserve" and should not be subjected to any kind of physical development. The canals 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 73.30 acres of land as waterbody.

Apart from that about 218.25 acres of low lying and flood prone land are included in the "reserve" category so as to protect them from physical development. In the winter these land are used for agriculture which should be continued.

The portion of the reserve forest area which is included in the study area is also proposed to be "reserve". These area will be developed as a natural park and picnic spot without destroying the environmental quality of the area.

Table 45: Summary of Existing and Proposed Landuse Information Within Moulvibazar Pourashava Study Area, 1989

Landuse	Existing* Area Acre/Ha	According to the TOR** Acre/Ha	Proposed	
			Acre/Ha	Area %
01. COMMERCE & INDUSTRY	59.90/24.25	254.83/103.17	108.75/44.03	3.02
A. Commerce	41.40/16.84	-	55.25/23.37	1.54
B. Industry	18.50/07.49	-	53.50/21.66	1.48
02. EDUCATION	27.35/11.07	107.38/43.47	38.75/15.69	1.08
03. HEALTH	11.10/04.49	67.34/27.26	18.50/07.49	0.51
04. ADMINIS- TRATION	70.55/28.62	12.00/04.86	75.25/30.46	2.09
05. RECREATION	17.85/07.23	123.76/50.11	42.40/17.17	1.18
06. SOCIO- CULTURAL	19.40/07.85	39.13/15.84	27.75/11.23	0.77
07. URBAN- SERVICES	33.25/13.46	31.70/12.83	35.60/14.41	0.99
08. RESIDEN- TIAL	1601.65/648.44	1576.00/638.06	1782.50/722.06	49.54
09. ROADS	116.20/47.04	5-10% of the study area	135.40/79.11	5.43
10. URBAN DEFERRED	-	10% of the study area	246.75/99.90	6.86
11. RESERVE	291.55/118.04	-	-	-
12. AGRICUL- TURE	1313.65/531.84	-	630.05/225.08	17.51
TOTAL	3598.00/1456.68	-	3598.00/1456.68	100.00

NOTE: 1. Play fields attached with school/college are considered as "Recreation".
2. Berry Lake and Reserve forest area used for Recreational purpose are considered as "Reserve".
3. The low lying flood prone land of about 218.25 acres are included in "Reserve", though in dry season these land used for agriculture.

** Detail statistics in Chapter Two.

Source: * Landuse Survey, 1989.

Chapter Five

PROJECT IDENTIFICATION

As mentioned earlier total project period 1990-2001 is divided into two phases. Phase ONE being 1990-1996 and phase TWO is 1996-2001.

The TOR for the project has mentioned to identify the priority projects from the one or more of the following categories:

- Low Cost Housing (New Construction or Upgradation of existing)
- Industrial Development
- Water Supply and Sanitation
- Flood Control
- Infrastructure related to Transportation

However identifying one or two projects from above mentioned categories and their implementation will lead to improvement in those categories only. It might not lead to overall balanced development. The objective of the present project is to aim at overall development and general improvement in the quality of life rather than sharp improvement in a particular sector. Furthermore preparing a very detail project proposal for a particular project is beyond the scope of work of a consultant engaged in preparation of a Landuse/Master Plan. Moreover some of the components of such a project is difficult to forecasts beforehand without doing some real investigation or without formulating some preliminary work. As such the consultant has identified a series of projects for each sector to be implemented in either of the two phases. The projects are also listed in terms of their priorities along with the agency responsible for its implementation.

PHASE ONE (1990-96)

SECTOR	DEVELOPMENT PROJECTS	IMPLEMENTATION AGENCY
COMMERCIAL	1. Improvement of Existing Kutcha Bazars (Paschim Bazar, T.C. Market)	Pourashava
	- Construction of shades and platforms	
	- Improvement of Paths & Drains	
	- Collection of Garbage & Disposal	
	2. Construction of New Kutcha Bazar in Court Market Premises	Pourashava
	3. Construction of a planned shopping + Mixed Used centre at Chowmohana R&H Premises	Pourashava/ Private Developer
	4. Construction of a Cattle Market on the west side of Fisheries Establishment	Pourashava
	5. Restriction on opening of Roadside shops or any other commercial venture	Pourashava
INDUSTRIAL	1. Relocation of all the saw mills on the designated land on the north side of Barahat	BSCIC/ Pourashava
	2. Restriction of Establishing Brick fields in the study area except on the designated area.	BSCIC/ Pourashava
	3. Small Scale Industries like Bus/ Truck Body Making, Ice Cream Factory Furniture, Machine shops, Automobile repair shops on Mini Industrial Area.	BSCIC
	4. Small Scale Industries like Bakery etc. should function with all other commercial shops	
	5. Restriction on establishing any industry without Pourashava approval	
EDUCATION	1. Double shift in all primary schools	Director of Education
	2. Double shift in One Girls High School and in One Boys High School	-do-

	3. Vertical and Horizontal expansion of all institutions on the existing premises	-do-
	4. Improvement Facilities in all Primary & Secondary Schools	-do- Private Donation
	5. Construction of Primary Schools in New Areas 2 Nos.	-do- Private Donation
	6. Expansion of Vocational Training Institute	Director of Education
	7. Establishment of One Girls High School in New Areas (Barahat Mouza)	-do-
HEALTH	1. Improve Access to medicine and equipment in Existing Health Facilities and support preventive programme	Ministry of Health
	2. Attach Primary Health Care and Family Planning Programme in All Existing Facilities	-do-
	3. Expansion of 50 bed Hospital into 150 bed with related facilities	-do-
	4. Establishment of Two New Primary Health Care Centres	-do-
ADMINISTRATIVE	1. Completion of Under Construction Building of the Pourashava	LGRD
	2. Renovation of Existing Old Building of Pourashava	-do-
	3. Renovation of Existing Buildings	PWD/Ministry of Works
	4. Completion of under construction Court Building	-do-
	5. Completion of Zila Parishad Bhavan	LGRD
RECREATION	1. Improvement of Berry Lake and existing park on the south side into a total Recreational Park	Pourashava

- | | |
|---|---|
| 2. Renovation of Shishu Park in front of Pourashava office | -do- |
| 3. Renovation and part expansion of Gallery in the existing stadium | Ministry of Sports and Cultural Affairs |
| 4. Establishment of Recreational Park and picnic sports in Reserve Forest Area | Bangladesh Parjaton Corporation |
| 5. Development of Govt. Boys High School Play field | Ministry of Sports and Cultural Affairs |
| 6. Development of an small park around shahid Minar by relocating Hostel building and shops | Pourashava |
| 7. Development of Play Fields and play lots in existing schools | Ministry of Sports and Cultural Affairs |
| 8. Improvement of Squash and Tennis Court for the use of general public. | Pourashava |

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- | | | |
|----------------|--|---|
| SOCIO CULTURAL | 1. Expansion and Improvement (more books + Audio/Video Facilities) for both Public Libraries | Ministry of Sports and Cultural Affairs |
| | 2. Expansion of Shilpa Kala Academy (should have an Auditorium/ Performance Hall) | -do- |
| | 3. Improvement of Auditorium-cum-Community Centre | -do- |
| | 4. Appropriate demarcation and land development around Shahid Minar (should have a small platform for staging outdoor functions) | Pourashava |
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URBAN SERVICES

Water Supply	1. Repair of Rehabilitation of existing Pourashava water supply system	
	2. Part Implementation of Dutch Financed proposed water supply scheme	DPHE Pourashava
	3. Tubewell sinking (about 50) in the areas where piped water supply is not available	UNICEF Pourashava
Drainage	1. Maintain and Improvement of existing Drainage system	Pourashava
	2. Part Implementation of dutch Financed proposed Drainage network	Pourashava DPHE
Sanitation	1. Restriction on service or kutcha Latrines in the whole planning area	Pourashava
	2. Upgradation of existing service or kutcha Latrines into twin pit latrine	DPHE/ Pourashava
	3. Installation of twin pit public toilets in existing bazar areas Kusumbag area, Court area	-do-
Garbage Disposal	1. Upgradation and maintenance of existing refuse collection systems	Pourashava
	2. Procure two Tempo Vans, 10 push cart for collection and disposal of refuse	Pourashava
	3. Establishment of some more refuse collection bins at appropriate locations	-do-
Energy	1. Full implementation of the undergoing scheme for improvement of electricity supply in the shahar area	PDB
	2. Improve and expand the distribution and encourage the use of natural gas both for industrial and domestic uses	Jalalabad Gas T&D Ltd.
	3. Encourage the use of bio-gas and improved cooking stove in the areas where piped gas is not available	Pourashava Ministry of Energy

Communication	1. Expansion of the existing 700 line exchange in 900 line capacity	T&T
	2. Installation of another 2000 line exchange	T&T
	1. Improvement of services in the existing Post Office	Postal Department
	2. Construction of a New General Post Office (GPO) on designated site	-d0-
Transportation	1. Improvement of Pucca Roads in the core area	R&H/ Pourashava
	2. Improvement and Brick soling of three 40'-0" wide link road connecting - Sreemangal road and Sylhet Road - Sreemangal road and Bejbari Road - Shah Mostafa Road and Shapla Flour Mill	R&H
	3. Carpeting of 40'-0" wide link road connecting Sreemangal Road and Bejbari Road	R&H
	4. Initiate carpeting of some important Brick Soling Roads	Pourashava
	5. Establish Rickshaw stands at various locations of the core area	-do-
	6. Initiate Tempo service connecting various important locations of the area and established define Tempo stands	-do-
	7. Alignment & brick soling of some of the Kutcha roads	-do-
	8. Alignment of all the kutcha roads	-do-
	9. Design and part construction of Bus Terminal at the out skirt of Planning Area on Sreemangal Road	-do-
	10. Design and part construction of Chandnighat Bridge	R&H

HOUSING

- | | |
|---|---|
| 1. Upgrade Pourashava services in existing dense settlements | Pourashava |
| 2. Provide housing for the public sector employees | PWD |
| 3. Design and part Implementation of the Land Pooling Project for low & Middle Income and Rehabilitation Housing in Ragunandanpur Mouza | Housing & Settlement
a n d
Pourashava |
| 4. Encouragement and Incentive for Improvement expansion and New Dwelling construction in the core areas | Pourashava
HBFC/Banks |
| 5. Restriction on expansion of present built-up area in semi-rural and pheripheral areas | Pourashava |

PHASE TWO (1996-2001)

SECTOR	DEVELOPMENT PROPOSAL	IMPLEMENTATION AGENCY
COMMERCIAL	1. Construction of New Kutcha Bazar opposite R&H office in Jagannathpur	Pourashava
	2. Construction of planned shopping + Mixed use centre at Kusumbag Area at Shah Mostafa Road and Court Road junction	Private Developer
	3. Total restriction on road side shops	Pourashava
INDUSTRIAL	1. Based on the success of the Mini Industrial Zone established in the previous phase, establish one or two more in appropriate locations	BSCIC/ Pourashava
	2. Restriction on establishing any industry without BSCIC and Pourashava approved	BSCIC/ Pourashava

EDUCATION	1. Establishment 3 more primary schools in New Areas	Directorate of Education
	2. Double shift in remaining secondary schools	-do-
	3. Continue improvement and repair of all educational institutions	-do-
	4. Establish one Secondary School for Boys in Jagannathpur Mouza beside R&H office and One Girls High School in the same area	-do-
	5. Expansion of facilities in Mohila College	-do-
	6. Introduction of Vocational Training Facilities in all Secondary Schools	-do-
	7. Expansion of Facilities in Moulvi-bazar Government College	-do-
HEALTH	1. Expansion of the hospital into 250 bed capacity with related facilities	Ministry of Health
	2. Establish remaining three Primary Health Care Unit in New areas	-do-
	3. Improvement and expansion of Eye Hospital	-do-
ADMINIS- TRATION	1. Horizontal and vertical expansion of Pourashava Building	LGRD
	2. Shifting of the Jail to the out skirt of the Pourashava area. The present premises could be used for administrative purpose	PWD
	3. Accommodation for future administrative needs by expansion on the existing premises	PWD
RECREATION	1. Completion of the improvement programme of the Stadium	Ministry of Sports and Cultural Affairs

Sanitation Garbage Disposal	2. Improvement of facilities and establishment of some more picnic spots in reserve forest area	Parjaton Corporation
	3. Establishment of play fields with all New Secondary Schools and play lots with new primary schools	Ministry of Education/ Private Donation
	4. Introduction of boats and other recreational facilities in Berry lake	Pourashava
SOCIO- CULTURAL	1. Further expansion of built-up area and improvement of facilities for the public library	Ministry of Cultural Affairs
	2. Establishment of a Community Centre cum public library in Barahat Mouza on Sylhet road	-do-
	3. Use of school facilities for socio-cultural functions and community development programme in holidays and beyond school hours	-do-
URBAN SERVICES		
Water Supply	1. Continue repair and maintenance of existing system	Pourashava
	2. Total Implementation of Dutch Financed Water Supply Scheme	DPHE/ Pourashava
	3. Continue sinking Tubewell (another 50) in the areas where piped water supply is not available	-do-
Drainage	1. Maintenance of the existing system	Pourashava
	2. Total implementation of Dutch Financed Drainage scheme	Pourashava/ DPHE
	3. Joining the new areas, which are not served by the drainage network, of the system	Pourashava DPHE

Sanitation	1. Continue upgradation of remaining service or kutcha latrine into twin pit latrines.	Pourashava/ DPHE
	2. Installation of twin pit public toilets in the Bus stand and 5 more appropriate locations	-do-
Garbage Disposal	1. Procure one truck, two more tempo van and 10 more push carts for refuse collection and dumping	Pourashava
	2. Establishment of a second refuse dump in the outskirts on the west side	-do-
	3. Establish 10 more refuse collection bins in new areas	-do-
Energy	1. Further improvement in the electricity supply of the area considering the demand at that time	PDB
	2. Further expansion in the distribution network of natural gas both for industrial and domestic uses	Jalalabad Gas T&D Limited
	3. Continue encouragement in the use of bio-gas in semi-rural and peripheral areas	Ministry of Energy
Communication	1. Installation of a New Telephone Exchange of 2000 lines	T&T
	2. Establishment of Two new Post Office cum Telegraph office on designated	Postal Dept.
Transportation	1. Maintenance and Repair of all existing roads in the area	R&H/ Pourashava
	2. Carpeting of 40'-0" wide link roads between - Sreemangal Road and Sylhet Road - Shah Mostafa Road & Shapla Flour Mill Road	R&H
	3. Completion of Chandnighat Bridge	R&H
	4. Development of small Bus and Tempo stand across the Chandnighat Bridge	Zila Parishad
	5. Completion of Central Bus Terminal in all respect	Pourashava

6. Alignment and brick soling of all tertiary roads locations

-do-

HOUSING

1. Continue improvement in services in around the core area and where most private sector residential development has occurred Pourashava
2. Completion of the land pooling project for Low and Middle income and Rehabilitation housing in Ragunandanpur Mouza Pourashava/
Housing &
Settlement
3. Encouragement and Incentive for high rise walkup dwellings for low and middle income families HBFC/Banks
Pourashava
4. Continue maintenance of service in all residential areas Pourashava

Administrative Set-up

Existing Provision

The Pourashava should be the most important contributor in the development of the Pila cluster both in terms of participation and administration. But unfortunately, it is not well prepared to perform both. Government contribution and collection of local taxes are main source of fund for the Pourashava and it contributes very insignificantly to the local financial resources required for development. For a Pourashava at present serving 35,000 resident population, expenditure on development works were only about Tk. 2,500,000 in the financial year 1988-89. Almost entire amount has been provided for the maintenance of roads. There were no new development of any other facilities.

There is also a serious lack of qualified administrative staff in monitoring the development works. At present, an Assistant Engineer (B.Sc./Civil) is in-charge of the Engineering section of the Pourashava with two Sub-Assistant Engineer and few other related staff which is grossly inadequate in managing the development works.

Chapter Six

MANAGEMENT & IMPLEMENTATION

It will be appropriate to mention here that physical plans are useless documents if proper strategy is not identified for their implementation. As a matter of fact identification of appropriate and effective implementation procedure is as much important as preparing the plan itself. It is more so under the prevailing situation in Bangladesh. The programme to develop the Pourashavas along with nearly 400 upazila shahars is really a huge task for the Government. Availability and mobilization of funds, administrative structure and skilled manpower, appropriate legislation etc. are a few of too many big problems. In such a situation analysis of the implementation problems, identifying unavoidable limitations and the areas where improvement is possible could contribute positively in the plan preparation process. So that whatever is planned will have a better chance to get implemented. This chapter discusses the various issues and possible measures for implementation.

6.1 Administrative Set-Up

6.1.1 Existing Provision

The Pourashava should be the most important contributor in the development of the Zila shahar both in terms of participation and administration. But unfortunately it is most ill prepared to perform both. Government contribution and collection of local taxes are main source of fund for the Pourashava and it contributes very insignificantly to the total financial resources required for development. For a Pourashava at present serving 45,000 resident population, expenditure in development works were only about Tk. 2,500,000/= in the financial year 1988-89. Almost entire amount has been provided for the maintenance of roads. There were no new development of any other facilities.

There is also a serious lack of qualified administrative staff in monitoring the development works. At present an Assistant Engineer (B.Sc./Civil) is in-charge of the Engineering section of the Pourashava with two Sub-Assistant Engineer and few other related staff which is grossly inadequate in managing the development works.

Another problem of the administration is that many organizations with over lapping functions and outside the administrative control of the pourashava are operational in urban development and administration. Zila Parishad for whole Zila, Upazila Parishad for Moulvibazar Sadar Upazila, the Pourashava for the area under Pourashava boundary. While it is not clearly defined "who controls what", there is a serious lack of co-ordination between the urban services organizations. It is a common sight in Bangladesh that T&T or Water Supply Authorities digging the roads few days after they were newly carpeted (bituminous) by R&H or the Pourashava. According to the administrative set-up the Deputy Commissioner of the Zila is supposed to a co-ordinating the development efforts, but recently conducted studies have found that the arrangement has not been satisfactory at all.

6.1.2 Measures for Improvement

It is beyond the scope of this project to suggest administrative re-organization and reforms because it involves much more broader issues rather than administration of the physical plan. But there has to be certain clearly defined measures so that some one is responsible and capable of administering the implementation of development proposals.

As the Pourashava is the authority to work within the specified boundary of the organization it should have absolute power to control, guide and co-ordinate development within the specified zone.

Any other organization which has a role to contribute in the development of Pourashava area (the zila parishad, all the urban service organizations) must seek prior permission for their projects so as to confirm them with the proposed landuse/master plan and also to co-ordinate with the efforts of other organizations.

The Upazila Parishad (Sadar Upazila) should not have any role to play within the Pourashava boundary. They should concentrate on the area beyond the Pourashava boundary.

The Zila Parishad should not have any administrative role for the development within the Pourashava area. It should formulate project according to the proposed landuse/master plan and implement them with prior approval from the Pourashava - just like other urban services agencies.

The Pourashava should equip itself for appropriate implementation of the project proposals and monitoring of the development efforts. At the present moment a supervising staff for each ward or locality to inspect and report development works is an urgent need. Furthermore involvement of trained and skilled personnel and working out effective procedure for approval and supervision of execution etc. are most important in this regard.

Most important of all there has to be strong administrative power and legislative support to enforce the land use and building construction regulations. Considering the situation in Dhaka and other big metropolis/cities where unacceptable environment has been created due to lack of enforcement of building control regulations, it is imperative that strong emphasis should be given in the case of medium and low category urban centres so that this kind of situation could be avoided.

6.2 Development Control

6.2.1 Existing Legislation and Applicability

Existing legislation relating to building and land use control for Moulvibazar exists in the form of the East Bengal Building Construction Act 1952, the Pourashava Ordinance 1977 and the recently formulated, Building Construction Regulations, 1984 applicable to all urban areas of Bangladesh.

The East Bengal Building Construction Act 1952

The act provides the power to regulate construction of new structure and to dis-continue non-conforming uses. Within any area to which the Government extends application of the act all construction shall have the previous permission of an official, designated as the authorized officer.

Building Construction Regulation 1984

The Building Construction Regulations (BCR), 1984 was formulated by the Ministry of Works, Government of Bangladesh, under the powers vested by the EBBC Act, 1952.

The BCR, 1984 outlines the procedures of obtaining approval for construction of buildings, excavation of tanks or cutting of hills. It prescribes setback regulations for different plot sizes and uses, specifies a maximum of 2/3 of site coverage for residential construction and mandates parking provision for commercial facilities. (Appendix E). While the regulations on building coverage and set-back requirements may be adopted in most urban areas with or without modifications, parking requirements are too high even for major cities such as Dhaka or Chittagong.

Pourashava Ordinance 1977

In addition to more specific powers such as construction of drains, streets, markets, the Pourashavas have the power to prepare master plans and site development schemes, with control taking the form of a ban on construction without permission unless it conforms to such plans or schemes. Another provision authorizes the adoption of development plans to identify projects, sources of funds and institutions capable of carrying them out.

However, the planning and control powers have seldom been used by the Pourashavas partly because of lack of trained personnel and partly because adoption of such plans will require all construction to conform to such a plan -- a thing which Pourashavas are presently ill-equipped to enforce.

6.2.2 Some Specific Suggestions

Plan formulation, must be matched by legislation directed to fulfill the objectives of the plan. Building codes, regulations and bye laws should be initiated locally not just to prevent the "un-desirable" but to promote the "desirable" elements of the environment as well.

Certainly, action is needed to curb rising land prices, discourage land speculation, control un-suitable uses and arrange land to be available for development at the right time, price and place. The draft Physical Planning (Land Use) and Development Control Ordinance 1985 is currently being considered by the Government. The ordinance seeks co-ordination and collaboration amongst Government agencies in the use of power influencing planning and to provide a flexible formula, for assigning to any public agency at any level of Government, for any area of jurisdiction, such planning responsibilities or controlling powers as seen desirable.

The draft needs to be circulated amongst the various Ministries and decisions have to be taken on its final form before promulgation and notification of the planning and development control agencies. In the longer term therefore, Moulvibazar Pourashava is likely to be designated as such an agency and have appropriate powers for controlling land use. In the short term however it is more likely that guidance of development will be effected by decisions on the location of public infrastructure and services.

There are three types of zones where development efforts will be different.

The urban core and existing built-up area where infill and further intensification will happen. This area could be designated as "Development Promotion Area" where all kind of development will be preferred and encouraged. It might be in the form of improvement of infrastructure and public utilities, preferential treatment of loan application for development etc.

The area around the existing built-up area where substantial urban development has occurred and at present going on should be next in line for preferential treatment and public sector improvement. Landuse and building construction regulations has to be enforced most strongly in these areas.

The areas along the study area boundary where physical expansion of present built-up area is not required and where infrastructure provision will not be cost-effective should be treated as "Development Control Area" where premature urban development has to be restricted.

Development control efforts in these three types of areas should be different and zones has to be specified accordingly.

Assuming that all public sector development efforts would be in confirmation with the norms and standards of the proposed landuse plan, they would only be subject to prior discussion and normal approval from the Pourashava. Supervision during execution should be the responsibilities of the concerned agency which they have to do anyway.

6.2.3 Monitoring and Review

The proposals made for the expected physical expansion and improvement of Moulvibazar Pourashava are guidelines with identification of some specific projects. The proposals are based on the expected population figure at the end of 2001 and areas where these population could be comfortably housed and served. But obviously growth of population depends on lot many factors like Government fund allocation and other regional and national policies. As such factors and policies could not be ascertained at this moment there hangs certain amount of uncertainty. Which makes it necessary to monitor and review the plan very closely. It is just to make the plan tailored to the changing situation and circumstances.

It is recommended that the progress in the implementation of the proposed Landuse/Master Plan or any change or deviation should be noted and marked on the plan by Pourashava authority. The authority should seek advice, consultation from Urban Development Directorate in case of difficulty in the implementation of the plan.

The total project period 1990-2001 is divided into two phases 1990-1996 and 1996-2001. And individual projects to be implemented in each phase has been identified and listed in Chapter Seven.

It would have been wise to say that on the basic of yearly monitoring reports, the landuse/master plan should be reviewed in every two years. But review, revision and updating is as cumbersome and time consuming process as the new one. Since there is a acute shortage of qualified physical planners to do so, it is suggested that revision and updating of the proposed plan should be done at the end of first phase that is at the end of the year 1996.

APPENDIX A

Questionnaire No: _____

Landuse/Master Plan for MOULVIBAZAR POURASHAVA
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 _____ Ward, _____ Mouza,
_____ Union, _____ Upazila, _____ Zila.
3. Homestead is _____ Km. away from the place of discussion.
4. Transportation Mode:
_____ Walking. _____ Cycle/Rickshaw.
_____ Bullock Cart. _____ Bus/Minibus.
_____ Autorickshaw/Car. _____ Boat.
5. Purpose of Visit
_____ Business. _____ Service. _____ Education.
_____ Administration. _____ Recreation. _____ Shopping.
_____ Health. _____ Others.
6. 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 bigger town or other Zila Shahar.
_____ Yes. _____ No.(If NO go to question 10.)
8. Purpose of visit. _____
9. Frequency of Visit.
_____ Almost Everyday _____ Two/Three times per week
_____ Two/Three times per month _____ Several times in a year
10. Besides this pourashava, do you go to upazila shahar or local bazar.
_____ Yes. _____ No.(If NO conclude the interview.)
11. Reasons for going to upazila shahar/bazar. _____
12. Frequency of Visit.
_____ Almost Everyday _____ Two/Three times per week
_____ Two/Three times per month

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

APPENDIX B

Questionnaire No:_____.

Landuse/Master Plan for MOULVIBAZAR POURASHAVA
Socio Economic Survey - 1989
A S S O C O N S U L T L T D.

Investigator's Name:_____.
Date:_____.

1. Information Regarding the Respondent

- 1.1 Name: _____
1.2 Age: _____ Yrs 1.3 Sex: _____ Male _____ Female
1.4 Institutional Education: _____ No _____ Primary
_____ Secondary/Higher Secondary _____ Graduate/P.Graduate
_____ Technical Education
1.5 Profession _____ Main _____ Secondary

2. Information About the Family

- 2.1 Type: _____ Nuclear _____ Joint. 2.2. Member in the Family _____
2.2 Information about other family members:

No.	Relationship With the Respondent	Sex Male Female	Age Yrs.	Education (1)	Occupation (2)	
					Primary	Secondary
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						

- (1.) A = Illiterate B = Primary C = Higher Secondary
D = Graduate/Post Graduate F = Technical Education
(2.) A = Service B = Business C = Professional
(Doctor, Lawyer, Tailor etc.)
D1 = Industrial labour D2 = Non-Industrial labour
D3 = Agri-labour E = Agriculture(self)

3. Information Regarding Permanent Migration
- 3.1 You/your family have been residing here for ____ years.
(If more than 20 years go to Question 3.4)
- 3.2 From where you have migrated:
 ____ Another location of this Zila
 ____ Another Zila. ____ Another Country.
- 3.3 Reasons: _____
- 3.4 Did anyone from the family has permanently settled somewhere else?
 ____ Yes. (Relationship with the respondent)
 ____ No. (If NO go to Question No 4.)
- 3.5 Since how long He/She has gone? ____ Years.
- 3.6 Where has He/She settled now?
 ____ Another location of this Zila
 ____ Another Zila. ____ Another Country.
- 3.7 Reasons: _____

4. Information Regarding Income/Expenditure of the Family

- 4.1 No. of Earning members in the family _____
- 4.2 Monthly Family Income from different heads

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

4.3 Monthly Family Expenditure in Different Heads

Heads	Monthly Expenditure (Tk.)
Food	
Clothing	
Health Care	
Education of Children	
House Rent/Maintenance of Dwelling	
Cost of Services (Power, Gas, Water etc.)	
Transportation	
Recreation	
Others	

5.0 Informations About Homestead and Related Facilities

5.1 Total number of dwelling Units.

☐ Owner occupied ☐ Rented
☐ One roomed one unit. ☐ Two/Three roomed one unit.
☐ One several unit. ☐ Several roomed 2/3 unit.

5.2 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							

5.3 Source of Drinking Water

☐ Tap/Pourashava Supply ☐ Tube Well ☐ Well
☐ Pond ☐ Others

5.4 Sanitation

☐ No definite Arrangement (Next Question 5.5)
☐ Exclusive for the family ☐ Shared with other families
☐ Enclosed form all sides ☐ Enclosed Ditch
☐ Sanitary Latrine

5.5 Source of Light

☐ Electricity ☐ Hurricane ☐ Hassock ☐ Lamp
☐ Others

6. Information About Land Ownership

6.1 Total amount of land possessed by the family and its market value.

Type	Amount (Acre)	Market Value (Taka)
------	---------------	---------------------

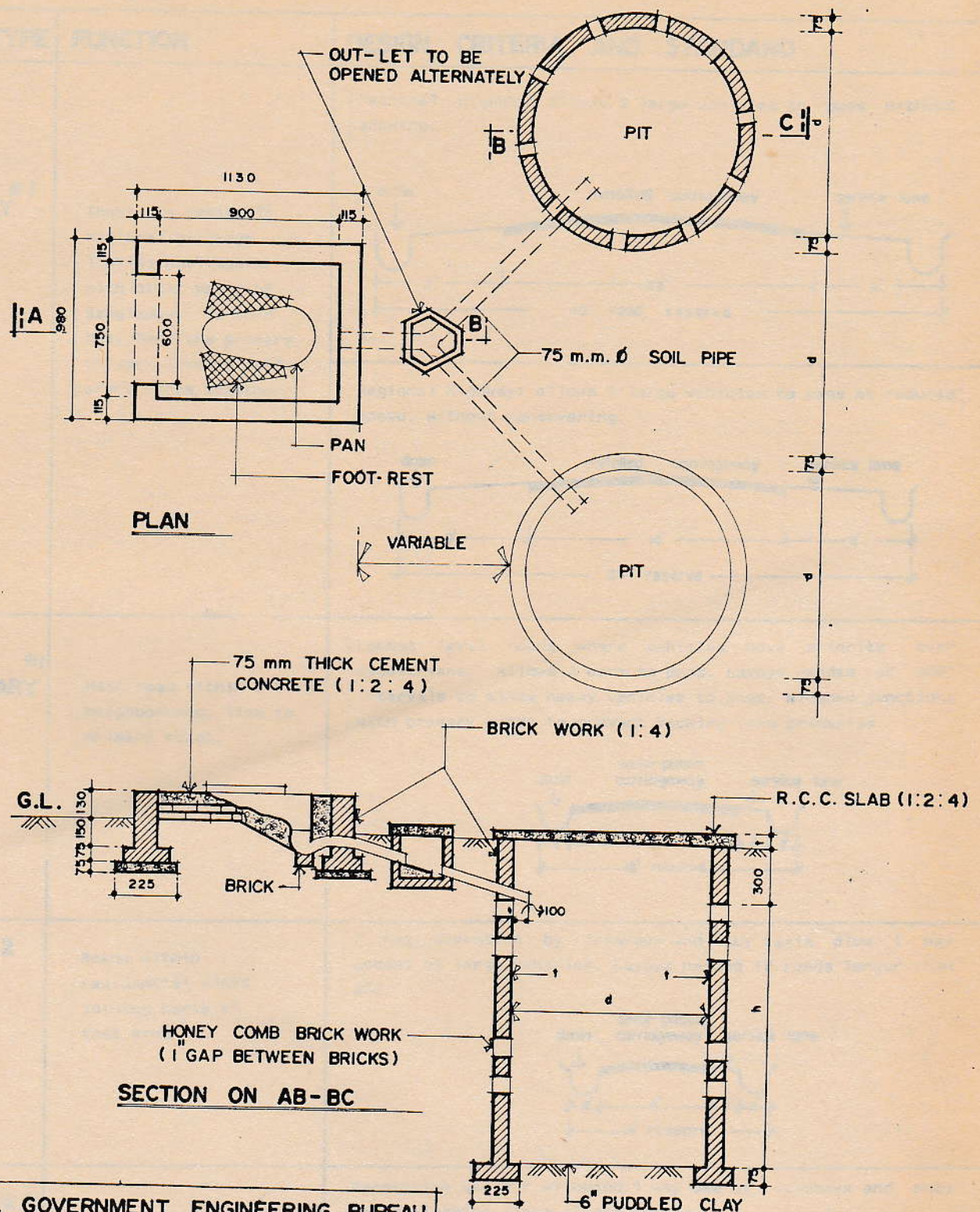
Homestead
 Other land with building (shops, godown etc.)
 Pond, orchards, vacant, low land etc.
 Agricultural Land

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

☐ Same. (Finish Interview) ☐ Agricultural
☐ Low/Fallow Land ☐ Orchard/Vegetable Garden
☐ Others (Please Specify)

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

APPENDIX C : TWIN PIT WATERSEAL LATRINE IN SANDY ZONES.



LOCAL GOVERNMENT ENGINEERING BUREAU

UNDP-BANGLADESH PROJECT
(BGD/85/004)

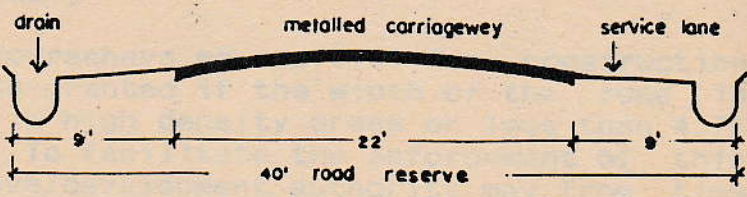
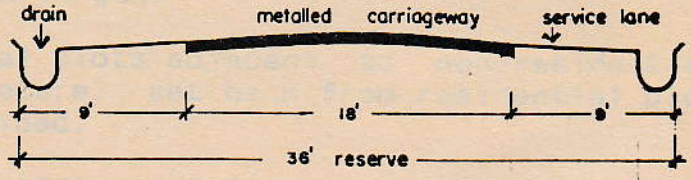
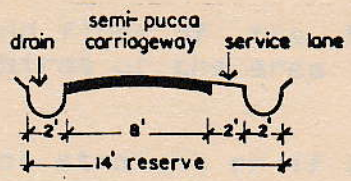
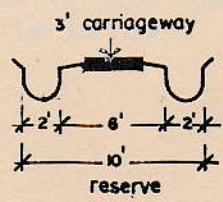
ON LOW COST SANITATION

DESIGN OF POUR FLUSH WATER-SEAL LATRINE
FOR PITS LOCATED IN MEDIUM AND COARSE SAND

ALL DIMENSIONS IN m.m.
SCALE: 1:30

USERS	DIAMETER	HEIGHT	THICKNESS
	d	h	t
6	900	1100	50
10	1100	1400	60
15	1250	1600	75

APPENDIX D : DESIGN CRITERIA & STANDARDS - ROADS.

ROADTYPE	FUNCTION	DESIGN CRITERIA AND STANDARD
PRIMARY ROADS *1	These are national/regional highways linking Moulvibazar with other parts of Bangladesh. In town they form the primary network linking different parts together.	National Highway: allows 2 large vehicles to pass without slowing. 
		Regional Highway: allows 2 large vehicles to pass at reduced speed, without maneuvering. 
SECONDARY ROADS *1	Main road within a town neighborhood, link to primary roads.	Lowest level roads where vehicles have priority over pedestrians. Allows 2 cars to pass. Laybys needed at 300' intervals to allow heavy vehicles to pass. Widened junctions with primary roads to prevent backing into primaries 
LOCAL ROADS *2	Roads within residential areas joining parts of that area	2 way operation by rickshaws and baby taxis plus 1 way access by large vehicles. Laybys needed if roads longer than 300' 
FOOTPATHS *2	Access to individual majority of plots.	Pedestrian use but allowing 1 way use by rickshaws and baby taxis. Turning space at end needed. 

*1 National Roads & Highway Standards

*2 Standard derived from Dhaka plan & those adopted for Mirpur Resettlement Project

APPENDIX E

RELEVANT SECTIONS OF BUILDING CONSTRUCTION REGULATIONS 1984 (Translated from the original)

16. In areas within the Pourashava no approval for construction of buildings shall be granted if the width of the road is less than 3.5 meters in high density areas or less than 4.75 in low density areas. To facilitate the enforcement of this bye-law the pourashave/development authority may from time to time issue notice/notices designating area/areas as high and low density zones.
17. No dead-end road shall be less than 2.5 meters in width and more than 100 meters in length.
19. In case of residential plots adjacent to non-residential plots, at least 1.5 meters set back from residential plot boundary shall be provided.
20. For non-residential buildings of 5 or more storeys an areas equal to at least the plinth area of the building shall be provided for car parking.
21. Buildings of 7 or more storeys shall have lifts and fire escape .

Article 5(2): Conditions for Construction of Building

1. Residential Building

- a. Residential buildings shall be set back at least 4.5 meters from the centre of the road or 1.5 meter from the property line whichever is greater.
- b. The covered area of the ground floor of the building shall not be more than two thirds of the area of the plot.
- c. If the plot boundaries are not straight or if the plot is of irregular shape the average setback shall be considered.
- d. The setback regulations for the front, rear and sides shall be as shown in the schedule below:

Schedule

Serial	Size of plot (khatha)*	Setback on the rear (meters)	Setback on the sides (meters)
i.	Upto 2	1.50	-
ii.	Upto 3	1.50	1.25
iii.	Upto 3	1.75	1.25
iv.	Upto 5	2.50	1.25
v.	Above 5	3.00	1.25

One khatha equals 720 sq.ft.

2. Commercial and Other Buildings

- a. Commercial buildings shall have a setback of at least 4.5 meters from the centre of the road or 1.5 meter from the plot boundary whichever is greater.
- b. Cinema halls, Auditoriums, Shopping Centres, Indoor sports facilities or any other similar buildings shall have provision for car parking at the rate of 1 car for every 20 persons and 23 sq. meters for every car.

3. Educational Buildings

- a. Educational buildings shall have a setback of at least 4.5 meters from the centre of the road or 1.5 meter from the plot boundary whichever is greater.
- b. Such buildings shall have appropriate provision for disposal of wastes.
- c. Such buildings shall have appropriate fire safety precautions.

4. Garages

Garages may be constructed within the areas provided by setback regulations but:

- a. The total height of the structure shall not exceed 2.5 meters from the centre of the nearest road.
- b. No windows/doors shall be provided on the side of the adjacent property.
- c. No entry for car/cars shall be provided directly from the road.