Chapter- 2

CRITICAL PLANNING ISSUES

The critical planning issues are focused around the existing development pattern of the different land uses, land types, economic activities and the existing problems of flooding and drainage, water supply and sanitation, garbage disposal, and other environmental concerns.

2.1 Existing Development Pattern

2.1.1 General

The existing pattern of development shows concentration on the western side of the planning area. Development prior to 1990 occurred mainly along the sides of four main roads namely-Khilkhet-Nampara road, Kawla road, Ashkona road and Shahid Latif road. During the last decade and presently the development extended both the sides of the Khilkhet-Namapara Road in Joarshahara Mouza, the Civil Aviation Area and its extension along the Kawla Bazar Road in south Dakshin Khan Mouza, the Ashkona Road, the Shahid Latif Road, the Shah Kabir Road and the Fayedabad-Beriband Road, the built-up area extended northwards and eastwards, with heavy concentrations particularly in Purakar and Fayedabad mouzas and moderately in Mausair mouza.

2.1.2 Socio-economic Profile

The socio-economic information which have been placed in the sub clause 2.1.2 of the final report on the basis of direct field survey conducted by BETS in 2007, under the same project. So, due to long time gap, there might be some changes with respect to recent time frame. However, just to get an idea, about the socio-economic activities of the people of the project area, the previous data have been used.

The socio-economic aspects cover a wide range of issues. They include statistics on education and literacy, occupation and income, expenditure, savings and debts, land ownership and valuation, landuse and landtype, nature of construction of built up land, public utilities, roads and use of transport, drainage, sanitation and sewerage, flood situation, environmental pollution, problems encountered, duration and reasons of stay in the project area, and access to basic needs of urban life.

Our sampling Design for Socio-Economic Survey was based on the data and information provided by the Bangladesh Bureau of Statistics' (BBS), Bangladesh Population Census, Zila: Dhaka, 1991, particularly about the number of households within the aforementioned mauzas. The survey concentrated on residential households of all the six mauzas. A sample of five percent of the households was taken for the survey.

Table 2.1 - Mauza-wise sample frame

Mauza	Total Household In the Mauza	Area Involved (%)	Total Household within the Project Area	Sample (5 %)
Fayedabad	4,200	35.9	1,506	75
Dakshinkhan	7,152	74.4	5,320	266
Uttarkhan	2,961	30.4	900	45
Mausaair	98	100.0	98	5
Puraker	2,143	72.5	1,554	79
Joarshahara	3,328	40.3	1,340	67
Total	**19,882**		**10,738**	**537**

Source: Socio-Economic Survey Conducted by BETS in 2007

As apparent from Table 2.1, the total number of households according to the 1991 Census (Community Series for Dhaka, pp. 83, 151 & 152) in the six mauzas was 19,882. About 54% (10,744) of the total households were within the project area. A five-percent sample of the total households amounts to 537. So the nearest round number, 540, was chosen as the sample number and the three additional households were in Mausair.

To conduct the survey of the 540 households, the beginning of the main thoroughfare of each mauza was selected as the starting point of the survey. Survey of çvery $_1$th household at regular interval was done on the basis of random sampling. To collect the information through the approved questionnaire, formal fact-to-face-interview in presence of either head of the household or representative therefor was held. Since the information was collected through a pre-coded survey questionnaire, answers were written in figures and numeral to ensure brevity and secrecy. Considering the time limit and resources, an almost proportional simple random sampling technique was followed, making the sample systematically representative of the population.

It may be mentioned that the population of various portions of the different mauza under the project area was estimated in proportion to the area, which fell under the project area, based on Census Report, Dhaka, 1991 (Bangladesh Bureau of Statistics). Moreover, in estimating the population of a portion of a mauza, it was assumed that the density of population remained the same throughout the area. Therefore, density of population per acre in the mauza was first estimated and on that basis the population of the area which fell under the project was estimated.

a. Family Size

The number of sampled households in the project area is 540. The average number of members per household was 5.9, that for males being 3.2 and females, 2.7. To compare with the national level data, the household size of the project area is higher (by about 0.7) than the national average household size, which is 5.59 (1991 Census). The household size of the Dhaka Metropolitan Area stands at 5.52 for 1991 as per BBS: 1998 Statistical Yearbook of Bangladesh, 19th Edition, p.24 (Table 2.20).

Table 2.2: Mauza-wise distribution and size of sampled households

Mauza	No. of Household	Population	Household size
Fayedabad	75	416	5.5
Dakshinkhan	266	1,581	5.9
Uttarkhan	45	281	6.2
Mausair	8	44	5.5
Purakar	79	461	5.8
Joarshahara	67	407	6.1
Total	540	3,190	5.9
Dhaka Metropolitan Area	1,258,761	6,950,920	5.52
National average (1991 Census)			5.59

Source: Socio-Economic Survey Conducted by BETS in 2007

b. Age and Sex Structure

The total population of the sampled households was 3190. Out of the total population of 3190, 54.3 percent were males and 45.7 percent were females. Table 2.3 gives the population data of the six mauzas. The sex-ratio of the project area is higher (by 13) than the national average as shown in Table 2.3. It is highest in Dakshinkhan (124) and lowest in Joarshahara (109), the lowest also being higher than the national average.

Table 2.3 - Population of the sampled households

Mauza	Total		Male		Female		Sex Ratio
	#	%	#	%	#	%	
Fayedabad	416	13.0	226	13.0	190	13.0	119
Dakshinkhan	1,578	49.5	874	50.4	707	48.6	124
Uttarkhan	281	8.8	153	8.8	128	8.8	120
Mausair	44	1.4	23	1.3	21	1.4	110
Purakar	463	14.5	246	14.2	215	14.8	114
Joarshahara	408	12.8	212	12.2	195	13.4	109
Total	3,190	100	1,734	100	1,456	100	119
Percent	100		54.3		45.7		
Dhaka Metro-politan Area	6,950,920	100	3,892,848	56.0	3,058,072	44.0	127
National Total/Average	111,455,185	100	57,313,929	51.4	54,141,256	48.6	106

Source: Socio-Economic Survey Conducted by BETS in 2007

Age

The age distribution pattern of the sampled households show that about 42.1 % of the household members are below 20 years of age, and only 16.2% of household members are above 40 years of age. The rest (37.5%) are between 21 to 30 years (23.1%) and 31 to 40 years (14.4%). These figures suggest that the population in this project area is preponderantly youthful. This is clearly illustrated in the age-sex pyramid shown in Figure 2.1.

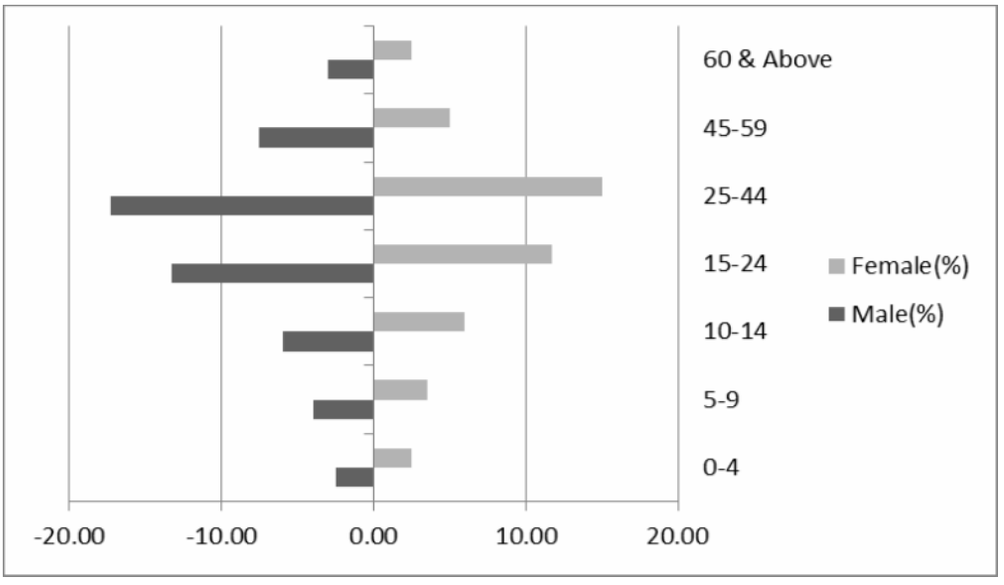


Figure 2.1 — Age-Sex Pyramid

Figure 2.2 shows the age-group population distribution of the mauzas of the project area. It is apparent that Dakshinkhan has the highest number of youthful population of age below 30 years and Mausair the lowest.

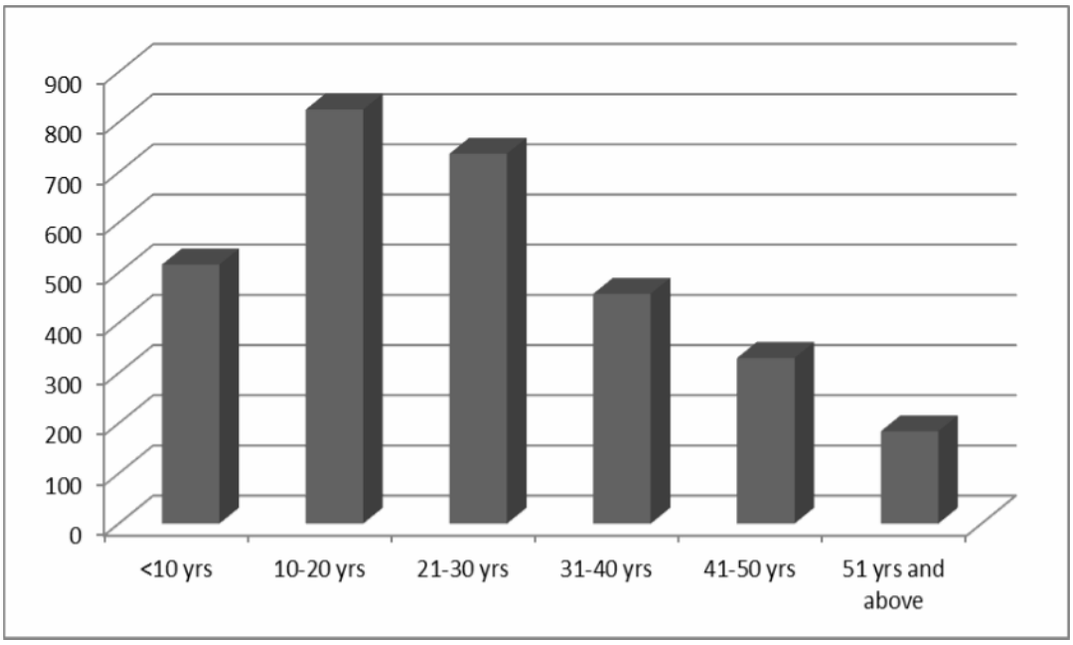


Figure 2.2 — Mauza wise age-group distribution

The average age of the sampled population is 27.36 years. Dakshinkhan has the highest percentage (39.6%) of population below 40 years and Mausair, the lowest 1.0.

Sex

The proportion of male population stands at 54.4% for the project area. Table 2.4 below shows the proportion of male and female population by mauzas.

Table 2.4 - Distribution of households according to sex

Mauza	Male			Female		
	No.	%	Proportion	No.	%	Proportion
Fayedabad	226	13.0	54.3	190	13.0	45.7
Dakshinkhan	874	50.4	55.3	707	48.6	44.7
Uttarkhan	153	8.8	54.4	128	8.8	45.6
Mausair	23	1.3	52.3	21	1.4	47.7
Purakar	246	14.2	53.4	215	14.8	46.6
Joarshahara	212	12.2	52.1	195	13.4	47.9
Total	**1734**	100	54.4	**1456**	100	45.6

Source: Socio-Economic Survey Conducted by BETS in 2007

c. Religious Group

Although Islam (Sunni Muslims) accounts for 99.8% of households, only one household (0.02%) was found to be of Christian religion. It may be mentioned here that 5% sample survey not always clearly reflect the religious group. To get an accurate picture cent percent survey is needed.

d. Educational Status

In terms of literacy, the project area has an extremely high literacy rate (90.0%). Even excluding the primary level of education, the literacy rate was found to be 68.7% from the sampled households. The graduates account for 12% of the population and post-graduates including professional degree holders account for 6.6%. On the contrary, illiteracy is only 9.8% (Table 2.5).

Table 2.5 - Education level of sampled household

Mauza		Illiterate	Primary	S.S.C	H.S.C	Bachelor Degree	Master's Degree & Above	Total
Fayedabad	No.	41	89	136	80	41	27	414
	%	1.3	2.8	4.3	2.6	1.3	.9	13.2
Dakshinkhan	No.	147	325	489	274	201	116	1552
	%	4.7	10.3	15.6	8.7	6.4	3.7	49.5
Uttarkhan	No.	39	53	79	51	37	17	276
	%	1.2	1.7	2.5	1.6	1.2	.5	8.8
Mausair	No.	11	0	15	8	8	2	44
	%	.4	.0	.5	.3	.3	.1	1.4
Purakar	No.	57	79	138	97	54	26	451
	%	1.8	2.5	4.4	3.1	1.7	.8	14.4
Joarshahara	No.	19	123	154	53	31	18	398
	%	.6	3.9	4.9	1.7	1.0	.6	12.7
Total	No.	314	668	1011	563	372	206	3135
	%	10	21.3	32.2	18	11.9	6.6	100

Source: Socio-Economic Survey Conducted by BETS in 2007

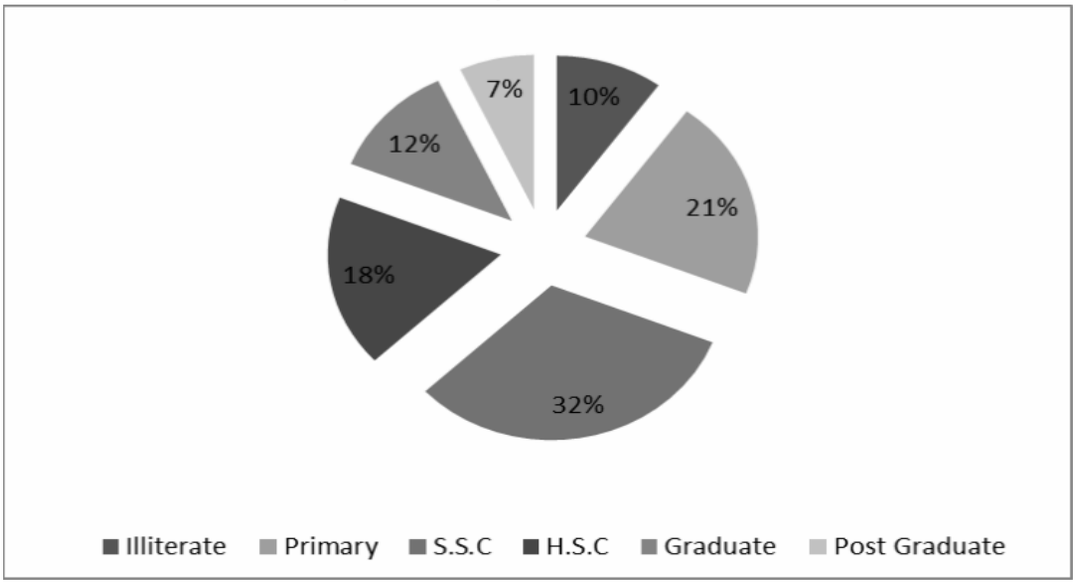


Figure-2.3: Mauza Wise Educational Status

About 21.3% (666) had primary education, 32.2% (1011) had passed S.S.C. and 18.0% (563) had passed H.S.C. The percentage of literacy was found to be 90.0% in the sampled households. The highest and lowest concentrations of illiterate households were at Dakshinkhan (4.7%) and Mausair (0.4%). The formally educated group (S.S.C and above) accounts for 68.7%. The percentage of formally educated households was highest at Dakshinkhan (34.4%) and lowest at Mausair (1.2%). The percentage of population who had completed the S.S.C. level of education was found to be highest at Dakshinkhan (15.6%) and lowest at Mausair (0.5%). The percentages of population who had completed their Bachelor's and Masters degree were highest at Dakshinkhan and lowest at Mausair as is apparent in Table 2.6.

e. Income and Expenditure Level

Income

The average monthly income of the sampled households was Tk. 14,424.72. For analyzing the socio-economic condition of the households and for detailed investigation and analysis, the households have been categorized into 5 groups based on monthly income as follows:

1. Very low Income =Having monthly income upto 1k. 3,000
2. Low Income =Having monthly income between Tk. 3,000 - 1k. 5,000
3. Lower middle Income =Having monthly income between 1k. 5,000 - Tk.10,000
4. Middle Income =Having monthly income 1k. 10,000 - 1k. 20,000
5. High Income =Having monthly income above Tk 20,000

Table 2.6 below shows the number and percentage of households under different income categories.

Table 2.6 - Distribution of households according to different categories of income

Category	Income group (in Taka)	Household		Average monthly Income (Taka)
		No.	%	
Very Low Income	Up to 3,000	9	1.7	2,766,00
Low Income	3,555-5,000	46	8.5	4,587.00
Lower Middle Income	5,000-10,000	222	41.1	7,894.00
Middle Income	10,000-20,000	163	30.2	15,150.00
High Income	Above 20,000	100	18.5	33,315.00

Source: Socio-Economic Survey Conducted by BETS in 2007

Dakshinkhan ranked highest among the six mauzas in monthly average income of the households. This would confirm that Dakshinkhan is the “richest” mauza. Purakar occupied the second position though by a wide margin. Fayedabad and Joarsahara enjoyed the third and fourth position, respectively.

Dakshinkhan had the highest number of income groups of all the categories i.e. 266 households (49.3%), followed by Purakar, having 79 households (14.6%). Fayedabad and Joarshahara had 75 (13.9%) and 67 (12.4%) households, respectively, of different income categories. Dakshinkhan also had the highest number of household (55) who earned more than Taka 20,000 per month whereas Mausair had only one such household out of a total of 100 households in this category. Figure 2.4 shows a graphical presentation according to different income groups.

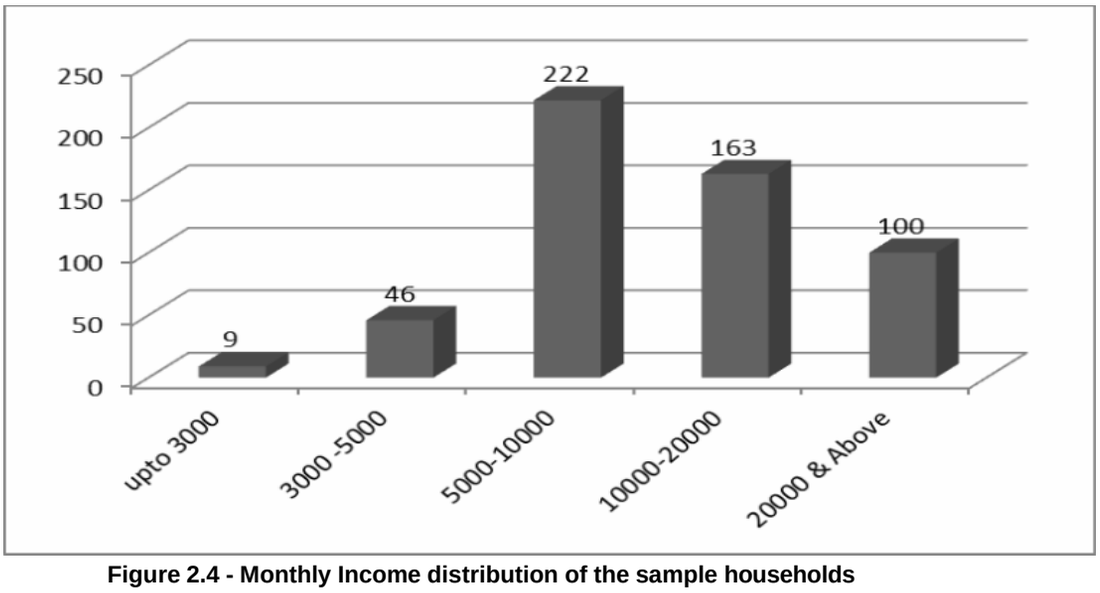


Figure 2.4 - Monthly Income distribution of the sample households

The average monthly expenditure on major heads under different primary occupations of the households were calculated and provided in Table 2.7 and their percentage distribution in Figure 3.4. Household expenditure has been categorised under eight heads. Expenses on food account for about 49.3% of the total household expenditure. The other significant heads of expenditure were education, conveyance, and utility services (including fuel) which account for about 15.62%, 11.48% and 7.15%, respectively.The average monthly household expenditure of the project area is Tk. 10,532.19. The percapita household expenditure of the project area stands at 1k. 1785 or about US $ 33, which gives an annual percapita expenditure at US $ 396.7. To compare with national and urban statistics, the project area is in a better position in terms of spending. The monthly percapita household expenditure of Bangladesh is Tk.779 or US $ 14.4, which gives an annual expenditure of about US $ 173. The monthly percapita expenditure for urban households stands at 1k. 1372 or US $ 25.4, which gives an annual expenditure of about US $ 305.

Table 2.7 - Expenditure pattern of the sampled households

Expenditure head	% of Total expenditure	Average Monthly Expenditure (Tk.)
Food	49.32	5,194.94
Education (including tuition, book and tutor fees)	15.62	1,645.52
Conveyance	11.48	1,210.14
Utility (gas, electricity and water)	7.15	753.80
Medical Expenses	5.38	567.64
Recreation	4.45	459.54
House Rent	1.22	128.64
Others	5.33	561.97
Total	**100**	**10,532.19**

Source: Socio-Economic Survey Conducted by BETS in 2007

It appeared that most of them had their own houses and did not have to pay for housing. Only a few households had to pay for house rent. The percentage of expenditure on major heads claimed by households of different Mauzas had been estimated and their percentage distributed in Figure 2.5.

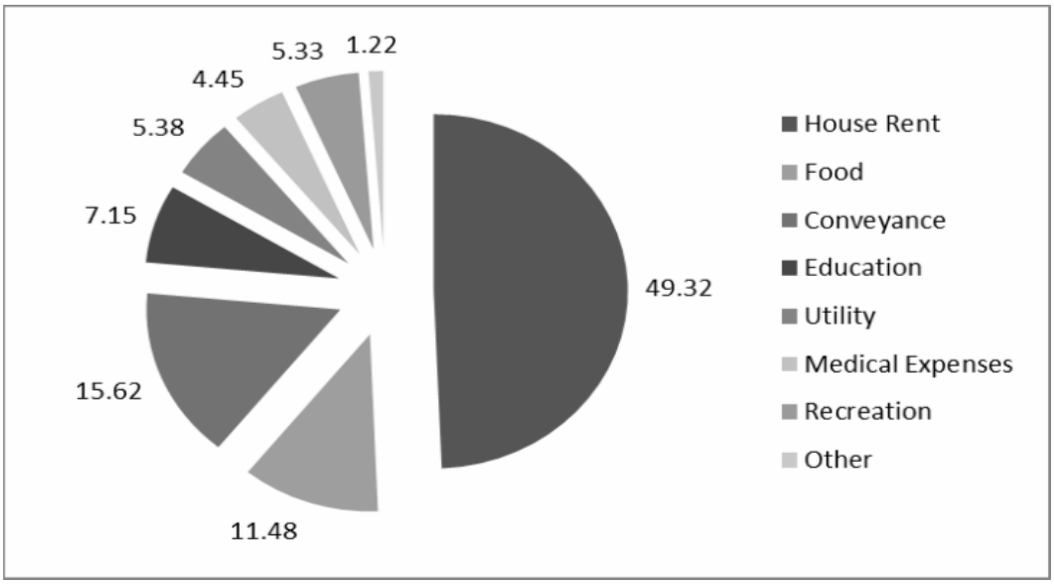


Figure 2.5 - Expenditure pattern of the sampled households

At Uttarkhan 9 1.1% of the households spent 49.1% and above of their total expenditure on food whereas Joarsharara had the lowest percentage in this respect. The percentage for Fayedabad, Mausair, Dakshinkhan and Purakar were 88.0%, 75%, 62.4%, and 59.0%, respectively. Regarding the other expenditure, it revealed that nearly 1.9% (9) of the households spent between 39.01 to 49% of their total expenditure on education. The expenditure on transport was highest at Daskinkhan (49.3%) and lowest at Purakar, followed by Fayedabad (13.9%) and this was slightly less at Joarsahara (12.5%).

f. Source of Income

The sources of income of the people of Airport-Demra by pass area (location-6) are as many as seven or more different types which are as follows:

- Cultivation or land based source
- Services in Govt./Semi-Govt./Autonomous/Corporation source
- Services in Private Firms/Bank source
- Business (Trade/Commerce) source
- Labouring source
- Household work source
- Miscellaneous sources.

g. Migration

The project area is inhabited by more than half percent people are migrated while less than half percent are local people. Mostly in the urban section of the project area migration has taken place. As result it is found that 40 percent of the people are local while 60 percent people have migrated in the project area.

h. Occupation/Ownership Pattern

Various types of occupation of the people have been found from the household survey. Table 2.8 shows the different types of occupation of the people of the project area. Household work seems to be the most important means of livelihood of the people of the area. The household members which depend mainly upon the income from cultivable land in village home and leasing out landed property as absentee farmers/landlords are grouped under the household work category. They account for 21.2% of the total responses. Other than that, the predominant occupation is business, trade or commerce (20.2%), which is followed by services in the private sector including banks (15.4%). Services in government and semi-government organizations occupy the fourth position (5.2%). The 'other' occupation category comprises a large group, which accounts for 32.2% of the total employed persons in the sample households. This group includes doctors, lawyers, teachers, private technicians, drivers and people engaged in jobs other than those mentioned above.

Table 2.8- Occupational structure of the households

Categories of Occupation	**Number of persons**	%
Household work	379	21.2
Business (Trade / Commerce**)**	361	20.2
Services in Private Firms / Bank	275	15.4
Services in Govt./Semi-Govt./Autonomous Corporation	93	5.2
Unemployed	68	3.8
Cultivator	22	1.2
Labourer	14	0.8
Others	577	32.2
Total	**1,789**	**100**

Source: Socio-Economic Survey Conducted by BETS in 2007

Cultivators comprise 1.2% and labourers only 0.8% of the total number of responses. The reasons for the small percentage of cultivators and labourers might be attributed to the absence of industrial enterprise and cultivable land in the project area. Table 3.2 above shows the occupational structure of the households of the project area and Figure 2.6 below illustrates the percentage composition of occupation of the household members.

Service oriented occupations, both government and private, were most concentrated at Dakshinkhan, 2.6% being in the government sector and 7.2% in the private sector (see Annex C for detailed mauzawise distribution). These were least concentrated at Mausair, 0.1% in the government and 0.4% in the private sector. On the other hand, trade and commerce as an occupation was most prominent at Dakshinkhan (9.2%) and Joarshahara (4.8%) and least at Mausair (0.1%). Dakshinkhan had the highest percentage of persons depending on cultivation (5%). This group is absent in Mausair and Purakar.

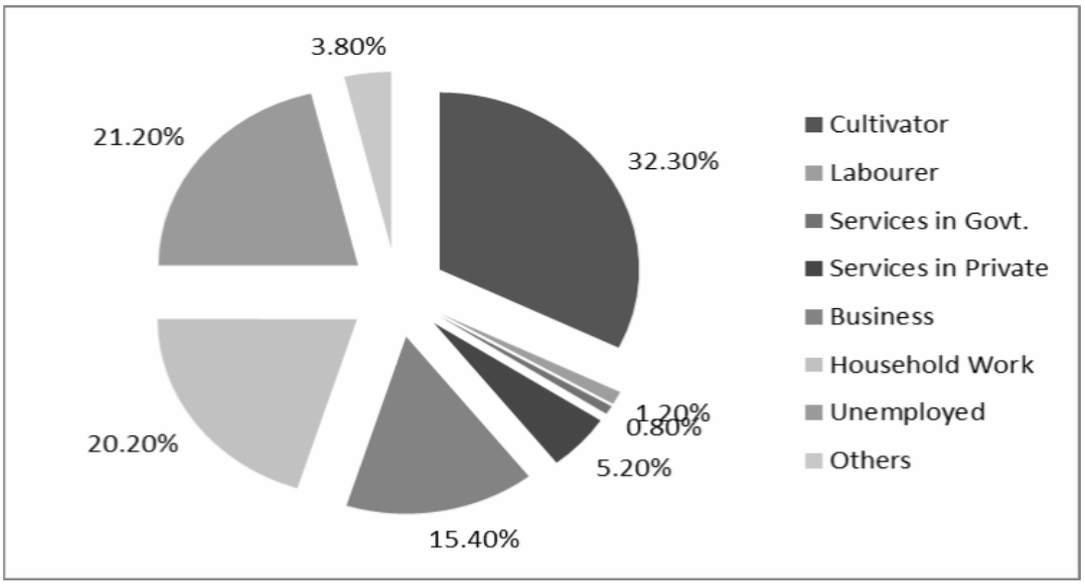


Figure 2.6 - Occupational structure of the sample households

Ownership

The main process for the acquisition of landed properly was, in order of importance, purchase, inheritance, and possession of property likely to be inherited. Of the 540 households, 285 (52.8%) acquired their property through purchases while 208 households (38.5%) acquired through inheritance. Only 36 households (6.7%) were living in rented houses while 3 households (0.6%) were living in government houses. Five households (0.9%) did not given any information about the acquisition of their property.

The household survey revealed ownership of only private land. It is needless to say that household members cannot own public land, although slum dwellers can illegally squat on public property. The distribution of private land, acquired by inheritance or by purchase, according to size classes, has not been done since it has been seen that plots acquired by purchase are usually below 10 kathas. This is comparatively a small size for an urban fringe area as compared to planned areas with high residential densities having smaller sized plots. Agricultural lands, which are acquired by inheritance, are usually medium to large size plots, and are above 10 kathas.

Purchase, as a means of acquiring ownership was most prominent at Fayedabad (62.2%) and least prominent at Uttarkhan (28.9%). On the other hand, inheritance was most visible at Uttarkhan (71.1 %), perhaps the oldest settled area, and least visible at Mausair, the most recently settled area.

2.1.3 Existing Land Use

a. Residential Areas

Residential development accounts for most of the built up area, although it covers about 41.70 percent of the total planning area **(Map 2.1-**Existing Land use**).** Variations in residential land use occur across mauzas. It is found to be heaviest in Fayedabad (64.08% of the total land of the mauza) and lowest in Uttar Khan. Variations in residential development may be due to the availability of build able land and road facilities. With respect to residential density, medium to high residential density (> 30 to < 106 persons per acre occur on the western half of the planning area and low residential density (up to 30 persons per acre) appear on the eastern half. The most important factor in residential development is the land type, particularly land level, which influence construction of roads and buildings. So, the availability of flood-free highland is a critical issue in planning for built up areas.

b. Industrial Areas

Industrial area covers only a parcel of the project area. There is a great demand for this activity in this area, especially for providing employment opportunities to the growing population. The existing vacant lots can be used not only for new residential development, but also for expanding industrial activities.

c. Commercial Areas

Commercial area covers a portion of the project area. It has been observed that commercial areas/activities are mixed with mainly residential areas. For providing employment opportunities to the growing population the existing vacant lots can be used not only for new residential development, but also for some mixed commercial - residential activities.

d. Amenities and Urban Facilities

Recreational facilities of the project area were considered to be very insufficient. Planned active and passive recreational facilities for children and elderly people were very rare. The active recreation is confined to few play fields only but there is no cinema hall or park for passive recreational facility.

e. Non-Urbanized Areas

The non-urbanized areas are mostly the agricultural areas, the vacant lots and the low lying water bodies. Together they cover 40.75% of the total planning area, the agricultural land use accounting for 14.55% and the vacant lots 0.01%. Vast stretches of agricultural land use lie in the southern half of the planning area and is more flood prone than those lying in the northern part. Small, discrete scattered agricultural areas appear in the northern part of the planning area. In course of time these will apparently be encroached by new development and form a continuous built-up area. So these areas are of concern for planned development.

2.1.4 Infrastructure

With respect to infrastructure development, new roads with proper drainage system should be provided. The existing road network is not adequate for the population and not built in a planned manner. Keeping in mind the long-term increase in population and the optimum number that the land can support, and applying planning principles with regard to transport and traffic planning, this sector needs special attention. Services like surface and underground drainage, sewerage, and utility lines (gas, electricity, telephone, etc.) can all be provided together as underground lines. This will require collaboration and coordination of the different GOB departments for funding and provision.

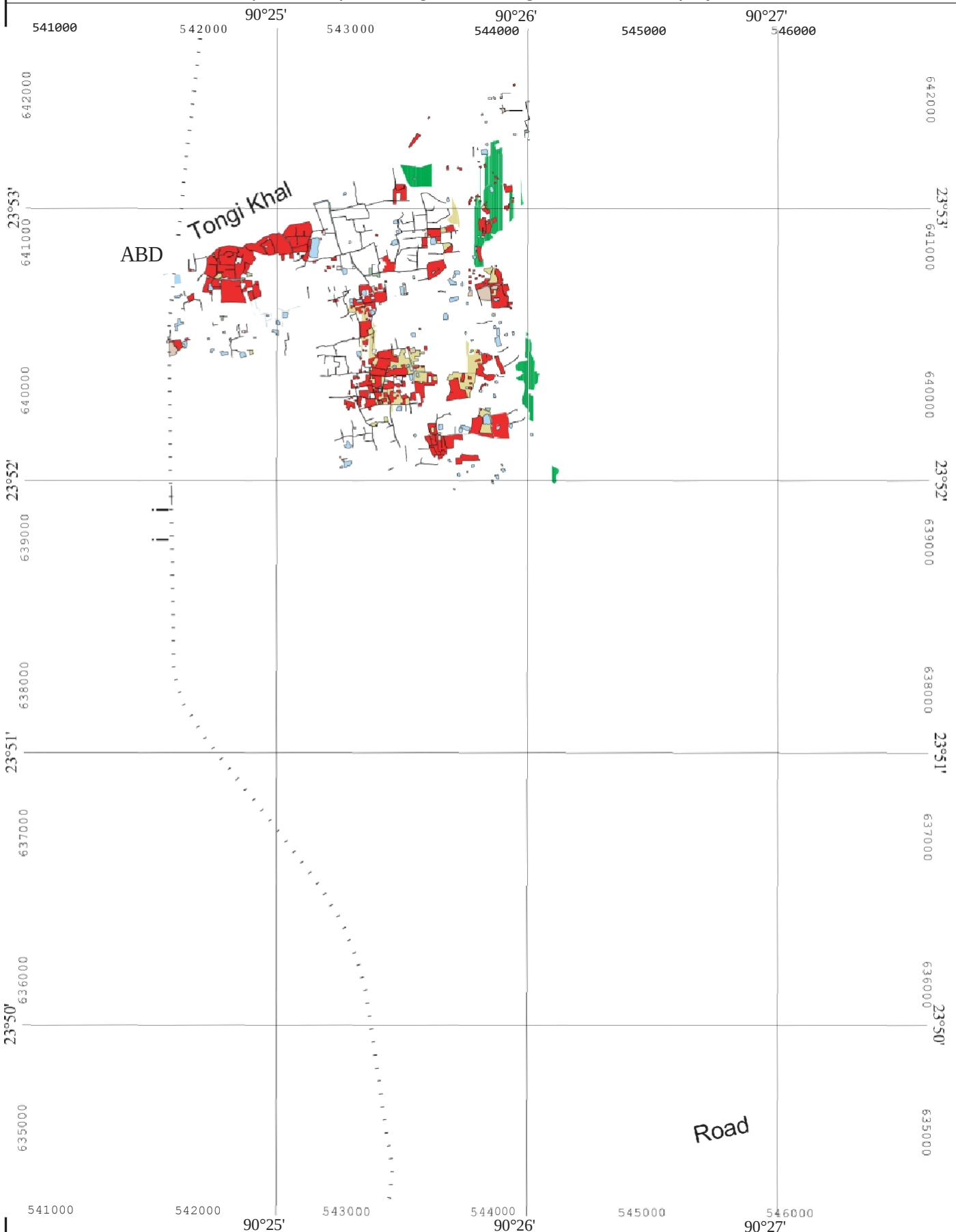
a. Circulation Network

The circulation network of the project area confined in to only road. The road network serve for only the project area . There is no Regional or National highway passes through the project area

b. Utility Services

Utility services include a wide range of urban facilities and utilities like water supply, drainage, sewerage, street lighting, garbage disposal, electricity, gas, markets, bus & truck terminals, rickshaw & tempo stands, and many more. Many of these services are lacking in the planning area. So there is a lot of scope with respect to provision of planned service delivery in the area. Map 2.2 shows the existing road network. Majority of the planning area are served by piped water supply and gas lines.

Map 2.1: Map showing the existing landuse of the project area



Legend:

Project Boundary

Land Use
- AGRICULTURAL
- CIRCULATION NETWORK
- COMMERCIAL
- EDUCATION AND RESEARCH
- LOW LAND
- MANUFACTURING AND PROCESSING ACTIVITY
- MISCELLANEOUS
- MIXED USE
- OPEN FIELD
- RECREATIONAL FACILITIES
- RESIDENTIAL
- SERVICE ACTIVITY
- TRANSPORT AND COMMUNICATION
- VACANT LAND
- WATER BODY

Index Map

Data Source

Topographic, physical feature and landuse survey conducted by BETS Consulting Services Ltd.

Reference Bench Mark (BM)

Horizontal: SOB (JICA)-303, SOB (JICA)-3407 and SOB (JICA)-3469 for Latitude/ Northing & Longitude/Easting Vertical: SOB-342 and SOB-9639 for Reduce Level (RL) adjustment

Projection Parameters

Projection System	:	Bangladesh Transverse Mercator (BTM)
Spheroid	:	Everest 1830
Scale Factor	:	0.9996
Central Meridian	:	90 degree East
False Easting	:	500,000 Meter
False Northing	:	-2000,000 Meter
Latitude of Origion	:	0 degree (Equator)
Seven parameters for User Defined Datum	:	283.729,735.842, 261.143, 0.0, 0.0, 0.0, 1.0

200 0 200 400 600 800 1000 Meters

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CONSULTAV

BETS Consulting Services Ltd.

2.1.5 Landownership and Values

The sample household survey that was conducted by BETS in 2007as a prerequisite for the DAP, revealed that 80% of the households (private) owned some habitable land (fit for settlement) and had already erected some structures, mainly for residential purposes. Since people prefer to settle and dwell on land above flood level and also along transport routes like roads or navigable rivers and khals. So there is a direct relationship between land level and settlement and similarly between settlement and proximity to services. It is for these reasons that land values are high where the land level is above flood-level and infrastructure present. Land values are high in the northern part of the planning area, especially along its western side, with average values rising to as high as Tk. 4, 00,000 per katha. The low-lying areas with frequent and regular inundation have low values and are usually around average Tk. 1,00,000 per katha. Speculations in the land market increase the price of land especially when there is an expected development. Land acquisition for infrastructure development also increases land values at a spiraling rate.

2.2 Expected Development

As discussed earlier, expected development is going to take place firstly where land level is high and above the normal flood height. Secondly, new development will take place along existing roads and where services and utilities are already provided by the concerned authorities and in potential places. However, planning and development depend upon population and their economic activities.

2.2.1 Population

Planning for any area is for the people, by the people and of the people. So, population is the primary concern while preparing a DAP. Any long-term plan should be based on projected population based on estimated growth rates calculated from existing trends (10.77% per annum). It can be estimated that the population of the planning area has nearly doubled over the past decade. The calculated population from the total number of structures and number of persons per structure stands at 140852 in 2001 and which will be expected to 589420 in 2015. Density controls, by fixing plot sizes, floor sizes, and occupancy rates should be applied and strictly enforced.

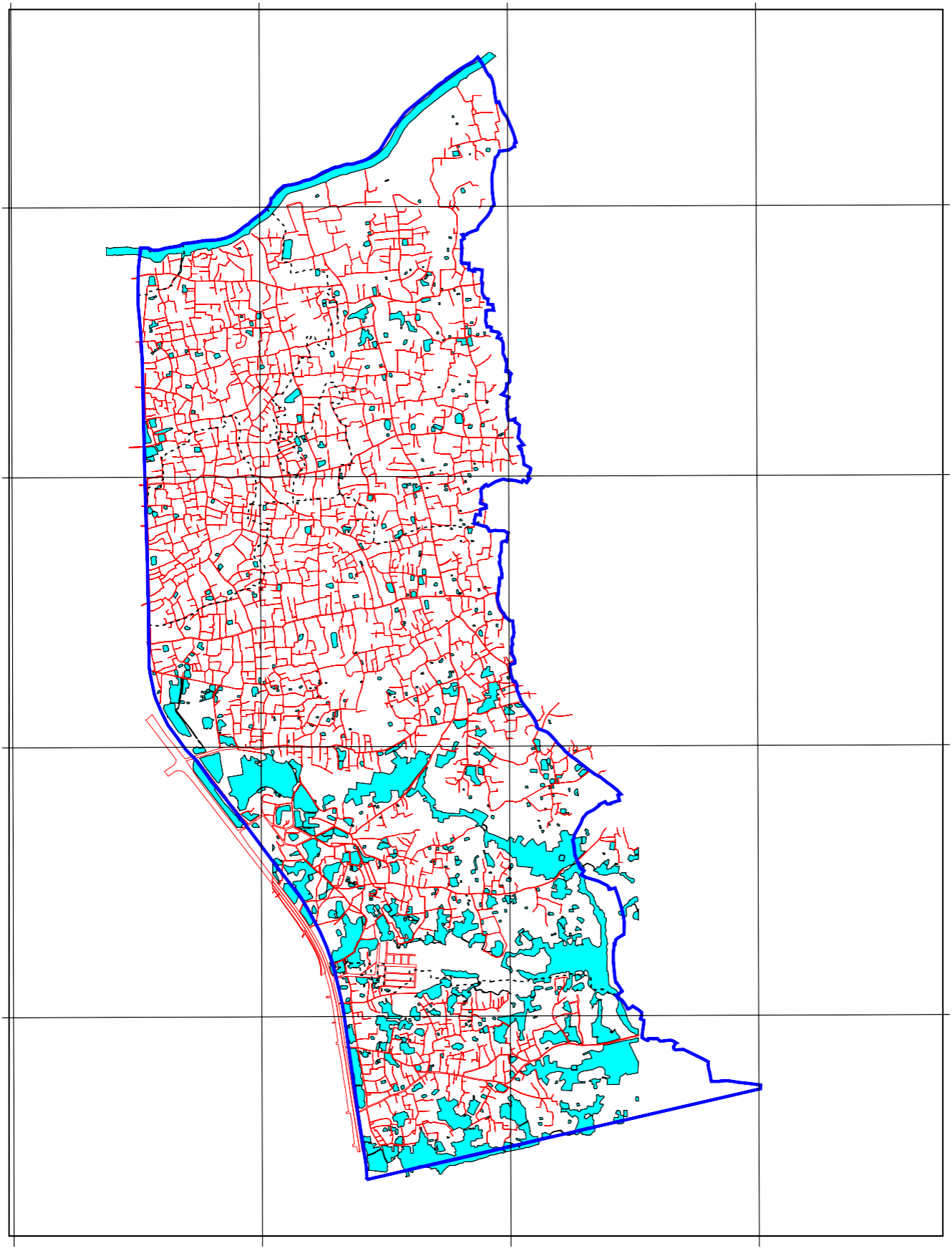
2.2.2 Economic Activities

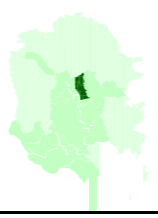
With the progress of urbanization, economic activities shift from primary to secondary and tertiary. As agricultural lands are encroached upon by new developments, the primary activity decreases and on the other hand, secondary and tertiary activities increase. The secondary activities include manufacturing and industries and the tertiary includes commerce, trade and services. A DAP should focus more on the secondary and tertiary sectors for increasing employment opportunities for the future population.

2.3 Development Problems

The development problems of the planning area are grouped under the following heads:

- Hydrology (Flooding and Drainage)
- Geology and Soil
- Infrastructure and Services
- Environmental Concerns
- Shelter and Settlement





2.3.1 Hydrology (Drainage and Flooding)

Hydrological problems, such as flooding and lack of drainage, are the major concerns for planned development. From the household survey conducted for the socio-economic study as part of the DAP requirement, it has been found that about 50% of the households were affected by the 1998 flood. However, this problem can be resolved partly if in future any embankment along the Tongi KhaI is built and partly by the construction of the Eastern Bypass and the Airport-Demra Bypass roads. Besides, proper drainage will help to mitigate problem. Introduction of raising the plinth level up to a certain level (i.e., above the flood level) could be included as part of the building codes (BNBC).

2.3.2 Geological Fault

Since tectonic disturbances have taken place in the recent past resulting in faults and lineaments in the planning area, it calls for strict enforcement of building codes. The geological and geomorphological units show areas of Mixed High and Low lands (AM), where landfill can be done for future development when no high land is left vacant for development. .

2.3.3 Spontaneous Development Leading to Conflicting Use

Development control function is very poor in the project area. With present capacity RAJUK cannot over see or pro-act to guide and steer development in desired areas of urban expansion. This result in:

- Invasion of agricultural land by urbanization.
- Mixed Land uses are found every where (Residential with Commerce).
- The development pattern is haphazard, incompatible and unhealthy.

2.3.4 Transportation

a. Road

The project area road network consists of only Local roads. There are as many as 6 (six) East-West roads but there is no such North-South roads. The local roads of the project area are narrow and lack sufficient interconnection. The urbanized area occupied all over the project area and specially the northern half. The project area suffers from North-South connector roads.

b. Transportation Problem versus Urban Land Use

As described earlier that there is no National or Regional road that passes through the project area. The local access road network of this part is narrow and insufficient which cannot bear the growing demand. There should be sufficient roads to facilitate the movement in any urban area.

2.3.5 Utility and Services

As per household sample survey of the project area it has been observed that, the essential utility and services has not yet fulfilled. The waterborne sewerage system, disposal of garbage facilities and condition of drainage network are not satisfactory. Under the above circumstances few development proposals have been recommended below:

a) Electricity

Dhaka Electric Supply Authority (DESA) is responsible for electric supply to the project area. All most all households of the project area have access to electricity. But load-shedding, breakdown, a period of limited or no supply and system losses are very common.

So for the improvement following have been recommended:

- — Load shedding should be minimized
- — Low voltage should be improved
- — Poor wearing should be improved

— Unplanned poles to be re-arranged
— Uncovered wearing should be replaced
— The existing system should be reinforced rather than major extensions
— Adequate line clearance will be necessary
— Location of transformers to e re-arranged
— Street lighting arrangement to be improved.
— Communal arrangement to be provided for low income neighborhoods.

b) Telecommunications

The T&T Board operates a telephone network based on underground primary enables throughout project area. Demand considerably exceeds supply and the T&T Board cannot install surplus capacity to meet further growth.

Adequacy of trench sizes and clearances for underground line installations with suitable clearances to poles and wires are recommended. Besides, a cellular network should also be provided as early as possible.

c) Gas supply

The nationalized Titas Gas Company supplies gas in the project area. The existing supply failed to cover the total households. There also exists a low pressure in the supply. The major consumption is by large non-domestic users. It became difficult for the poor to obtain bio-mass supplies for domestic cooking. So, recommendation have been made in the DAP to increase the community cooking facilities together with extension of lines in the growing parts of project area.

d) Water Supply

The water distribution system of the project area is operated by DWASA. The existing supplies are less than demand. The system suffers from high leakage and poor maintenance. Meter tempering and non-billing are also prevalent.

The present major source of water is aquifers, but ground water abstraction is increasingly straining aquifer resources. Abstraction by private users is to be controlled by DWASA, but effective control is hardly possible. Private developers should be encouraged to connect to the municipal system where possible. The extraction of water from the existing piped network by pump, as is presently done in many places, has to be addressed as this endangers the health quality of the supply. Specific one-way meters might help to solve the problem. The pollution of sub-soil with untreated waste from pit latrines and leaking of septic tank/sewerage should be prevented.

e) Drainage

There is no any complete drainage network in the project area yet, an on- going process of construction have been going on. The main concern should be to collect household sewage and surface run-off of storm water to be discharge into main water sources. For street drainage, converted box drains are recommended for the built up part.

f) Sewerage and sanitation

Dhaka sewerage is under the jurisdiction of DWASA since 1963. The water borne sewerage system of Dhaka WASA covered only a part of built up portion of the project area. Urban growths outside DCC area are not linked to the system. The system is not designed for sludge and storm water. The flow is from north to south to Pagla treatment works, which is currently running at full capacity.

Remaining households are depends on septic tank and most of which are imported type. In absence of such water borne sewerage systems, these tanks overflowed into the adjacent yards, kutcha drains and roads during rainy season.

The dependency on or-site sanitation measures to be reduced and sewer lines & sewer connections in the peripheral fringe areas are to be increased.

g) Solid Waste

DCC manage the solid waste collection, and disposal works. The community bin system of collection is used. Insanitary land fill by dumping of solid waste is the general practice. It seems that solid waste is considered simply as a resource of land filling material, of value in a low-lying area. It has been always overlooked the adverse environmental and public health implications of insanitary land filling.

It has been estimated that, per capita solid waste generation rate is 375 g / capita / day. So, it is difficult to carry for the inhabitants to the location of community bin. Instead of community bin covered bucket in front of individual households should be introduced. Besides, the existing community bin system also need improvement, location on of coactions point, case of collection vehicle access, adequate space around containers for emptying and clearing and generally an open location visible to the public to minimize misuse of the container.

2.3.6 Amenities and Urban Facilities

a. Active and Passive Recreation

Recreational facilities of the project area were considered to be very insufficient. Planned active and passive recreational facilities for children and elderly people were very rare. The active recreation is confined to few play fields only but there is no cinema hall or park for passive recreational facility.

b. Educational Institutions

The Educational Institutions of the project area are limited to Primary School, Secondary Schools, Collages and Madrashas only both for the girls and boys. Those institutions were distributed scatteredly and not fully served the entire project area. Considering the existing population the educational facilities are very meger.

c. Market Facilities

Market facilities in the project area are also limited. The inhabitants of that locality depends mainly on the linear shops developed besides Fayedabad-Beriband road, Shah Kabir road, Shah Latif road, Askona road, Kawla bazaar road and Khilkhet –Namapara road. Besides a concentration exist in the Kawla bazaar. Due to the necessity of locality few inner road sides and nodal points also commercially developed.

d. Community Facilities / Structures

Community centre

For socio-cultural and religious necessity the importance of community centres are increasing day by day. There are very few community centres in the project area. Considering the growing demands their service should be improved.

Religious Facilities

The religious institutions were mosque, eidgah and graveyard in the project area The mosques and eidgahs were scatteredly distributed all over the project area where settlements were existed. The number of graveyard also insufficient in the project area.

e. Urban Facilities

Job opportunity, Education facility, Commercial & marketing facility, Recreational facility, Health facility e.t.c. can be considered as Urban facilities. Besides, health facility is also considered to be a vital urban facility were not satisfactory.

2.3.7 Environmental Concerns

The main environmental issues are related to flooding, water logging and garbage littering. Flooding erodes the roads and affects sub-surface structures also. Water logging caused by the lack of drainage facility affects the environment and

health of the people. Water brome diseases are caused and spread rapidly. Apart from these, littering of garbage on roadsides and on vacant lots stenches the area and in turn, the health of the people of the surrounding area. So proper drainage and garbage disposal should be planned.

2.3.8 Shelter and Settlement

Shelter is one of the primary and basic requirements of a human being. So, any planning calls for providing shelter and planned settlements with the necessary infrastructures will be laid out.

2.4 Current Investment Program

As we stated earlier, that a densely developed has been taken place the project area during the last decades. There is very minimum scope over here for any development scheme.

Only the south – east part of project area where the land level is comparatively low and possess water bodies have some scope for development.

However, the current annual development plan gives an idea about the type and nature of scheme of the project area.

2.5 Stake Holders' Wish List of Project

From several discussion with the stake holders it appears that the stakeholders wishes Airport- Demra by pass area as a healthy urban center where every urban facilities for the inhabitants will be available as follows:

- To Provide Recreational Facilities
- Road Network Improvement
- To Provide Health Facilities
- Less Affect of Their Valuable Urban Land
- To Provide Educational Facilities
- To create job opportunity