# A Study on Development Pattern of Dhaka city: A case study of Ward – 45, Mohammadpur, Bangladesh

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**Abstract:**

*It is nearly 450 years old forest, forest of buildings reaching for the sun like the mangroves of south western coastal area. Although its urban infrastructure is the most developed in the country, Dhaka suffers from urban problems such as pollution, congestion, and lack of adequate services due to the rising population. The civilized tenants now find it challenging to adopt with most of the parts of the city emerged in a quite natural way. Ward-45 of Dhaka Metropolitan city is a point charge taken into account for the predominating facts which now affects largely on living standards. Though it has become hard to cope up the growth of city with its limited resources, people aspires for the package of standard living with some relocations and renovations. This study has been conducted based on mainly primary data. This study will express the surveyed data on the socio-economic profile of*

*the population in Ward-45, perceptions and visions of residents regarding amenities, infrastructure, and redevelopment and of the upcoming future. Land use plan of a particular area is not only a design of an area, but also a comprehensive development approach. This approach integrates the development with environmental and transport planning, economic and culture development as well as community development. Development pattern of an area can promote sustainability through efficient use of urban space and resources for the improvement of living standard and infrastructure. To ensure a sound life in a sound area these problems should be solved with proper planning and maintenance.*

**Key words:** development pattern, Dhaka city, Mohammadpur, Bangladesh

## Introduction

### 1.1 Background of the Study:

Dhaka is the 19th mega city in the world with a small amount of area, 590 sq. miles. But for the absence of planning practice, the city is now facing enormous problems in utility and community facilities. Even the parts of Dhaka which were developed as planned areas are now going through severe problems. Mohammadpur is one of them and is situated at **Ward – 45** of Dhaka metropolitan. The area has neither catastrophic troubles nor it is free from planning flaws. So, Ward – 45 has been chosen as the study area to study the physical context and socio-economic condition and overall development trend and pattern and thereby to find out future development potential.

### 1.2 Objectives of the Study

To acquire a successful out-come from an activity, there should be certain goals and objectives. They are essential to run the study successfully. The objectives formulated for the study are given below:

➢ To study the physical and socio-economic context of the study area.

➢ To study development trend, pattern and future development potential of the study area.

## 1.3 Methodology

Methodology means the steps followed to execute the study and to achieve the objectives of the study.

### 1.3.1 Identification of the Project and Site selection :

First some of ideas from the students were invited by the course teachers. After that, a suitable project was identified and site selection was done by the teachers. Selected site were divided into sever areas. Each group consisting of four members was appointed at individual site.

### 1.3.2 Formulation of Objectives:

Certain objectives were selected to carry out the study successfully.

### 1.3.3 Collection of Base Map and Basic Data:

The base map and basic data formatted in ArcGIS (e.g. shapefiles, MXD files) were collected to identify the study area and to run the study.

### 1.3.4 Reconnaissance Survey:

Before collection of necessary primary data, a reconnaissance survey was conducted by all groups. Thus the over-all idea about the project was obtained. Information was collected to correct some of missing values of secondary data.

### 1.3.5 Preparation of Check-list:

Two types of check-list were prepared for the study. One kind of check-list was for organizing the secondary data, named "Check-list – A". Another was for collecting primary data,

named "Check-list – B". Checklists were prepared based on certain parameters.

### 1.3.6 Preparation of Questionnaire:

Keeping in mind the objectives, a standard questionnaire was prepared to collect data and run the study effectively.

### 1.3.7 Data collection

Two types of sources were used to collect data. They are primary data and secondary data.

### 1.3.7.1 Primary Data Collection:

➢ **Field Survey:** Field Survey is one of the most vital parts of such kind of study. To achieve the goals of the study, data was collected using questionnaire and checklists.

➢ **Taking Photographs:** Photographs of the existing condition of the study area were captured. Some of them were attached to Appendix.

### 1.3.7.2 Secondary Data Collection:

From ArcGIS formatted data, necessary data were collected. Again, for successful study, relevant documents, such as theses, reports, papers, books were reviewed.

### 1.3.8 Data Analysis, Findings and Preparation of Report

Collected data were analyzed to find out land use patter. Some data were compiled for comprehensive analysis. As well as, data were interpreted for proper understanding of the study. Formulation of major findings was made after analyzed and interpreted data. Again, some recommendations were suggested to solve the existing problems.

After analyzing and interpreting necessary data, power-point presentation was conducted.Finally, report on the "Study of Land Development Pattern in Ward – 45" was prepared.

## 2. Profile of the study area (Ward – 45)

The Ward – 45 is a prominent ward of DCC (Dhaka City Corporation). The profile of Ward – 45 is given below:

### 2.1 Location
Ward – 45 is located under the jurisdiction of Mohammadpur Thana. It is located at 23°45'0"North, 90°22'0" East. On the east, Tejgaon lies. On the South-east there are Dhanmondi. It is bounded by Shamoli and Adabor on the north.
- > **Total Area:** 46817(BBS 2001)
- > **Total Population:** 344 acres (BBS 2001)
- > **Density of population** (Per acres): 136 (BBS 2001)



**Map1: Location of Study is with land use**

## 2.2 History of the Area:

Area reminds the memory of Mughal Dynasty to some extent. Most of the roads are named after Mughal Emperors. Aorongojeb road.

It is known that Dhaka has emerged more or less spontaneously over four hundred years ago. Like other residential areas of Dhaka, Mohammadpur is grown as residential area. But with the passage of time, commercial and other land uses have been developed in the area. After the war of liberation, rapid urbanization has changed the pattern of the area. One thing should be mentoned that The Geneva Camp for "Bihari" (Origin: the state of Bihar in India) is situated in that area.. The Biharis have been living there since the end of the 1971 War of Liberation. Now, the ward – 45 is playing a significant role in the way of life of residents of the area as well as people of Dhaka.

## 2.3 Land Use Pattern

Land use identifies the accommodation and organization of different functions and activities of an area. It indicates the characteristics of the area. "Land use is the surface utilization of all developed and vacant land on a specific point, a time and space" (Islam, 1986). So, before any kind of planning decision making, land use pattern is very important to know. From the study, it is found that residential use is dominant in ward – 45. Around 1363 of the total land is in residential use.
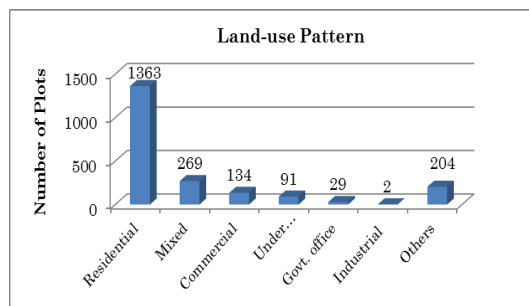


**Figure 2.1: Land-use Pattern (Source: Secondary Data)**

About 269 of land is in mixed use and 134 is in commercial use. 29 Government offices are also found in that area.

## 2.4 Structure Type

Structure type symbolizes physical and socio-economic scenario of an area. According to structure materials, generally four categories of structure were found in Ward – 45. Most of them are pucca, about 1538 structures. Among them, semi-pucca structures are 383 and kutch structures are 10 in number.
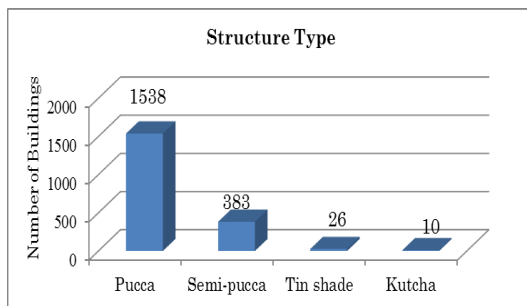


**Figure 2.2: Structure Type, Source: Secondary Data**

## 2.5 Structure Condition

Structure condition signifies the urban fabric. Among all structures, in good condition there are about 1382 buildings.
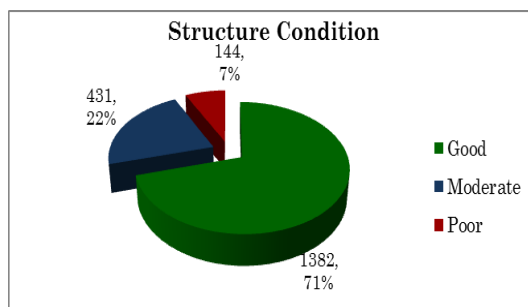


**Figure 2.3: Structure Condition Source: Secondary Data**

Again, there are 431 structures which are in moderate condition. It is a matter of regret that still a lot of structures, about 144 are in poor condition.

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## 2.6 Structure Height

Structure height is important to know to understand the urban
form and pattern of an area. After studying Ward – 45, it is
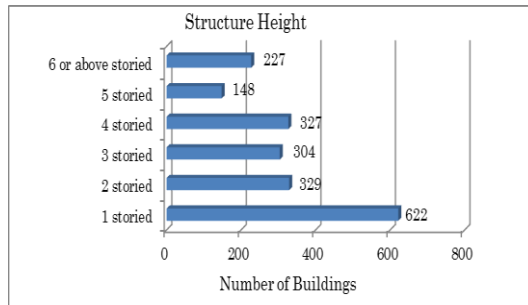obtained that majority of the buildings are 1 Storied,



**Figure 2.4: Structure Height Source: Secondary Data**

Amount of that is 622, 32% of total number of buildings. The
smallest numbers of buildings are 5 storied that are148 in
number and 8% of total buildings.
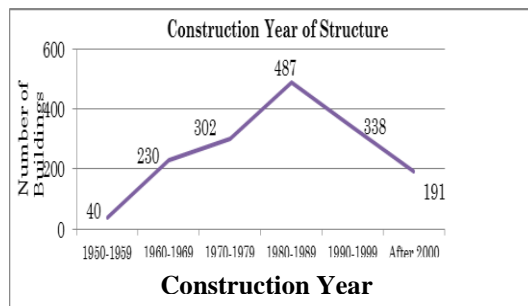
## 2.7 Construction Year of Structure



**Figure 2.5: Construction Year of Structure Source: RAJUK 2010**

With the passage of time, structure takes different significances
in different context. So, construction year is a significant tool to
know the urban fabric of an area. Most of the buildings were
constructed between 1980 – 1989 and 1990 – 1999.

About487 buildings have been constructed in 1980–1989. There are 338 buildings built between 1990–1999. There are only 40 buildings which have been built between 1950–1959.

## 2.8 Present Condition of Land:

It is known to all that Dhaka is a densely populated country. But still a huge number of plots are not used up to its capacity. Considering up to ….storied as underused, it is found that 48% of total lands are underused.
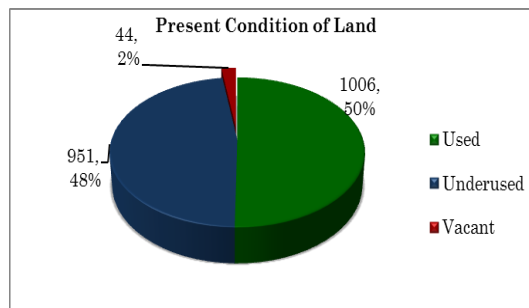


**Figure 2.6: Present Condition of Land Source: Secondary Data**

50% of them are used. Only 2% are vacant which can be used for future development.

## 2.9 Community Facilities Analysis:

In comparison with the standard, it is obtained that most of the facilities are adequate.

The table is given below:

| Existing Facilities | Area ( in Acres) | Percentage | Required Area (in Acres) |
|---|---|---|---|
| Educational institute | 9.278461 | 2.70% | 10.3 |
| Health facilities | 3.093954 | 0.90% | 7.95 |
| Religious center | 2.82625 | 0.82% | 1.87 |
| Open space | 50.65127 | 14.72% | 2.30 |
| Community Centre | 0.994507 | 0.29% | 0.94 |

**Table 2.1: Existing facilities and Comparison with the Standards**

## 3. Socio-economic Profile of surveyed population

A collection of primary level of socio-economic data of the residents of study area was carried out during the study. Those are the following types-

### 3.1 Family Size

According to questionnaire survey there were total 192 members in forty households. So the average family member is 4.8 or 5 members.
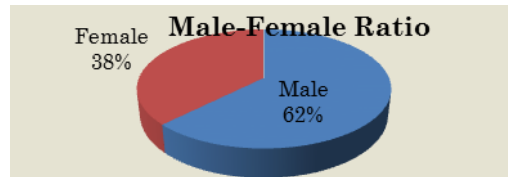
### 3.2 Gender



**Fig: 3.1 Male-Female Ratio of the residents Source: Field survey**

The standard is based on 1 acre primary school for 10,000 populations, 1.2 acres secondary school per 10,000 populations, 0.5 acres open space per 10,000, 0.2 acres mosques for 10,000 populations, 1.5 acres for 25,000 people. Health care centre is standardized at 0.6 acres for per 3000 households. There are total 120 male members and 72 female members among 192 members listed in the questionnaires.

### 3.3 Education

The percentage of the graduate and above people is much higher in the study area.
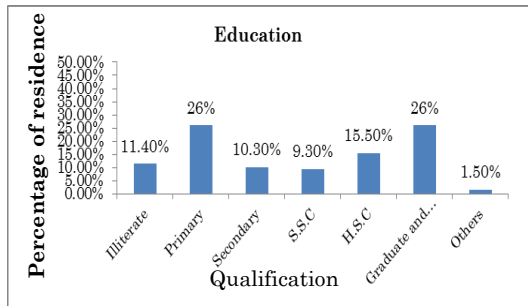
**Fig3.2: Educational backgrounds of the residents**

Source: Field survey

Here the percentage of the people in primary 26%(50) secondary is 10.30%(20), H.S.C.is 15.50%(30), illiterate 11.40%(22), including infant and servant) and S.S.C is 9.30%(18). It was noticed that, if the head of the family members are educated then rests of the family members are also educated.

## 3.4 Occupation
In this locality most of the people are student and private servant .Their percentage is 35.80% and 20.70% respectively.
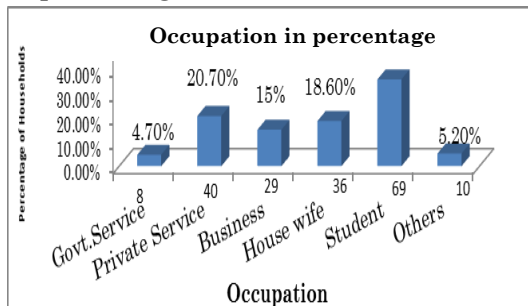


**Fig: 3.3 Percentage of different occupational groups**

Source: Field survey

The percentage of government service is less than businessmen, as beside the Mohammadpur area there is Dhanmondi which is one of the commercial areas of the Dhaka city. The percentage

of other is 5.20%.The lowest percentage (4.70%) is of the Govt.service.

## 3.5 Income Level

Most of the households have their monthly income between the ranges 25,000-40,000 taka
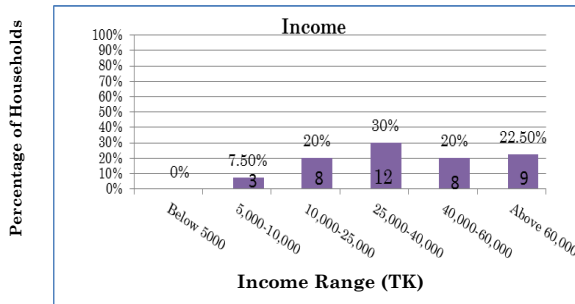


**Fig: 3.4 Level of income of different Households Source: Field survey**

The households that were surveyed, there was no family who's income was below 5000 taka. We have got nine families whose income was above 60,000 taka. So, it can be said that in ward 45 area most of the people are in middle class category.

## 3.6 Ownership of the Residence

In this locality the percentage of tenant is about 60%(24) of the total population surveyed households. Rests of the respondent are owners (40%).

## 04. Development Pattern of the Study Area

Development pattern of an area can promote sustainability through efficient use of urban space. Development pattern analysis are given below.
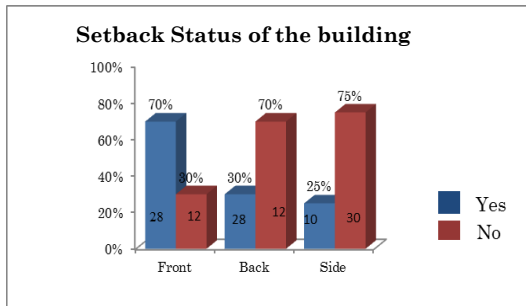
## 4.1. Setback Status of the building:



**Fig: 4.1 Percentage of setback status in different buildings Source: Field survey**

Setback is not followed properly in the buildings of the study area. 70% of the buildings follow the setback and 30 % of the buildings do not follow the setback at the front.30% of the buildings follow and 70% of the buildings do not follow the setback status at the rear.25% of the side buildings follow and 75% of the buildings do not follow the of setback at the side.

**Table: 4.1 Setback status maintained by households**

| Setback Status | No of Buildings | Percentage |
|---|---|---|
| Fully Followed | 10 | 25% |
| Partially Followed | 17 | 42.5% |
| Not Followed | 13 | 32.50% |

Table shows that the percentage of fully followed of building is 25% and partially followed is 42.5%. Among the forty buildings 32.50% totally do not follow setback rules and regulations.

## 4.2. Road condition and Road width:

Average road width of Humayun road is 20' which is tertiary road and condition of this road is moderate. Aurangajeb road have maximum road width which is 75' width and it is secondary road and its condition is good. Roads of our study area in ward 45 are generally good in condition. 50% of total roads are good in condition; these roads are made by bituminous. About 43% roads are moderate in condition and

made by bituminous but their qualities are deteriorating due to their age. Other 7% road are poor in condition and these type of roads are generally made by mud.

## 4.3. Ground coverage:

Table 4.1: Ground coverage in percentage

| Ground Coverege | Number of Plots | Percentage |
|---|---|---|
| >66%(Not followed) | 759 | 38.78% |
| <=66%(Followed) | 1198 | 61.22% |
| Total buildings | 1957 | |

In the study area there are 1957 plots. Among the 1957 plots, 38.78% plots do not follow the ground coverage rules and regulation.61.22% plots follow the rules and regulations of ground coverage.

## 4.4. Building to building gap:

Table: 4.4 Building gap in different orientations

| Orientation | No of building | Average building gap(ft) |
|---|---|---|
| East | 22 | 4.44 |
| West | 25 | 3.93 |
| North | 22 | 4.373 |
| South | 23 | 4.43 |

Out of 40, only 22 households have building gap in east and north side. Maximum 25 households maintain building gap in west side and average building gap in west side is 3.93 ft.

## 4.5. Apartment size:

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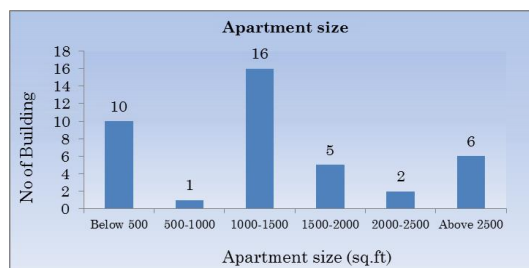city: A case study of Ward – 45, Mohammadpur, Bangladesh**

**Fig: 4.3 Apartment sizes of different buildings**

Maximum 16 household size is just between 1000-1500 sq.ft. 10
household are below 500 sq.ft. Only 6 household are above 2500
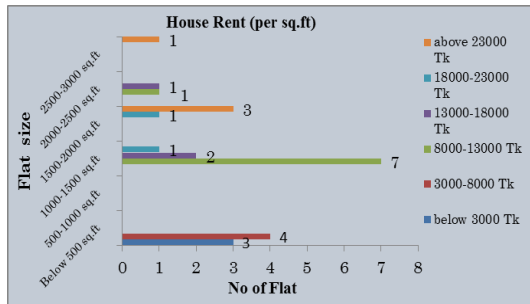sq.ft.

## 4.6. House Rent (per sq.ft):



**Fig: 4.4 House rent (per sq.ft) in according to flat size**

There are different sizes of flats in our study area. Maximum
flat size in our study area is 2800 sq.ft and minimum is 80 sq.ft.
House rent of ward 45 also differ place to place due to position,
community facility and utility service etc. in Geneva camp
maximum flat size is less than 500 sq.ft and their rent lies
between 1500 to 4500 Tk. On the other side in Aurongojeb road
area most of the flat size is 1000 to 1500 sq.ft. Chart shows the
relationship between flat size, no of flat and the house rent.
There are 7 flats below 500 sq.ft, among these 4 flats rent are
between 3000 to 8000 Tk and rest of flats rent are below 3000
Tk.

## 4.7. Land value (per katha):

The land value is changing all residential areas of Dhaka city.
The land price of any area depending upon various factors such
as location, orientation, accessibility, communication facilities,
development trend and so on. Land price of Babor road in near
about 1 crore and land value of Sir Sayed road is more than
Babor road because of location and accessibility.
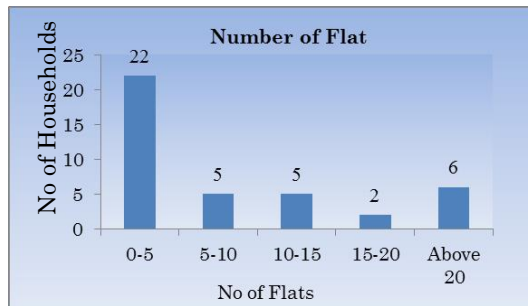
## 4.8. Number of flat:



**Fig: 4.5 Number of flats in different buildings**

During our survey, 22 households have upto 5 flats where 5-10 and 10-15 no of flats hold a constant value for 5 households. Study also shows that only 6 households can be considered high rise contrasting to the fact that they have more than 20 flats of own. However no of hoseholds fell sharply to the value of 2 to well under 15-20 no of flat category.
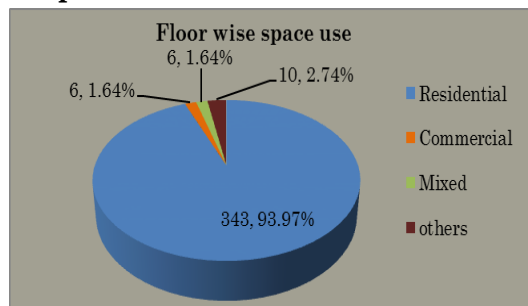
## 4.9. Floor wise space use:



**Fig: 4.6 Floor wise distribution of different buildings**

Just equally 1.64% of floors are used for commercial and multipurpose in our area of study. Floor wise distribution for residential purpose reached a peak value of 93.97% where the remaining 2.74% of the total no of floors had been occupied for other purposes to serve.

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# 5. Perception of respondent regarding amenities and infrastructure

## 5.1 Adequacy of light and air ventilation

About55 % of forty respondents said that air and ventilation of the buildings are available and 45% respondents said that they have no air and ventilation facility.
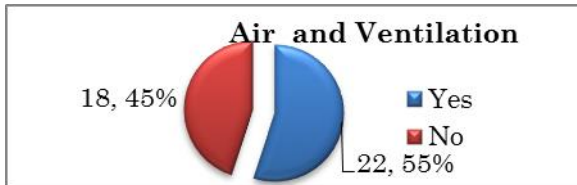


**Fig: 5.1 Air and Ventilation of the buildings**

## 5.2 Satisfaction level of utility services

Utility services are those services which are essential for the functioning of other services and that have the utility criteria. The major utility services for the survival of human being and proper functioning of the city are water supply, electricity, Sewerage, drainage system etc.The overall satisfaction level of utility services of the study area is given below:-
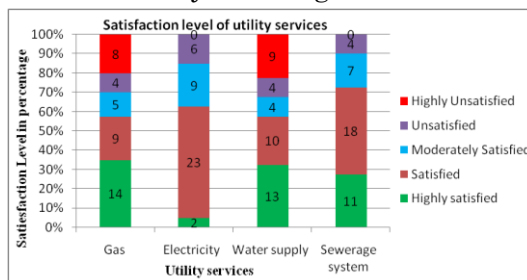


**Fig: 5.2 Satisfaction levels of utility services**

## 5.2.1 Gas Supply

Among the respondents, 35% have said that condition of Gas supply is high satisfied, 20% of the respondents said that highly unsatisfied. They have also said that, at present they cannot get gas regularly (Fig: 5.2).

## 5.2.2 Electricity Supply

According to the statement of 57.50% of the respondents of the study area, electricity supply is satisfied and 15% have said that electricity supply is unsatisfied (Fig: 5.2).

## 5.2.3 Water Supply

Among 40 respondents 32.5% of them said that water supply is highly sufficient while 22.5% said that the water supply is highly unsatisfied (Fig: 5.2).

## 5.2.4 Sewerage System

Among the respondents, 45% have said that condition of sewerage system is satisfactory and 10% opposed that there are overflowing manholes and others have specified the manholes as open and also said that condition of drainage system is unhygienic (Fig: 5.2).

## 5.3 Satisfaction level of community facilities

There are some facilities which should be provided in the residential area for well functioning of the community life and maintain living with comfort. For a well planned residential there should have space for educational institutions such as school, college, Madrasha, etc, should have space for recreational facilities such as parks, playground, playfields, playfields, walkways etc and other facilities. The overall condition of community facilities of the study area are given below:-
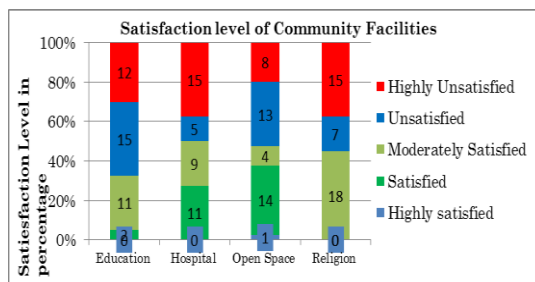


**Fig: 5.3 Satisfaction levels of community facilities**

### 5.3.1 Educational Institutions

Educational facility is the prime requirement for a residential area. There are number of schools, colleges, universities and other educational institutions. But maximum of the respondents are unsatisfied with educational facilities and only 5% respondents are satisfied. The private educational institutions are established in residential areas does not fulfill the needs of the residents (Fig: 5.3).

### 5.3.2 Health Facilities

Health Facility is one of the basic needs of human being for survival. But health facilities are inadequate in the study area. There are number of government and private hospitals in the study area. Among the 40 responses 27.5% of them are satisfied and 37.5% of them are highly unsatisfied (Fig: 5.3).

### 5.3.3 Open Space

The recreational facilities that are available in the study area are parks, playground, and walkways etc.There are some plots in this area which are left vacant. The chart shows that most of the residents have agreed in the issue of existence of sufficient open space and among the respondents, 20% have said that the open space is highly unsatisfied (Fig: 5.3).

### 5.3.4 Religious Facilities

Among the respondents, 45% have said that religious facility is moderately satisfied and 37.5% of the residents said that religious facilities are not sufficient (Fig: 5.3).

### 5.4 Major Problems of the study area

Through the survey of the study area it was found that, about 45% of the residents do not face any problem within their locality. The rest of them face various types of problem. Majority of the respondents face the lack utility services (45%) mainly as water and gas supply. A very embarrassing problem

was found in the study area, lack of security (32%) due to Geneva Camp. There are some addicted people in Geneva Camp; they are involved in various crimes
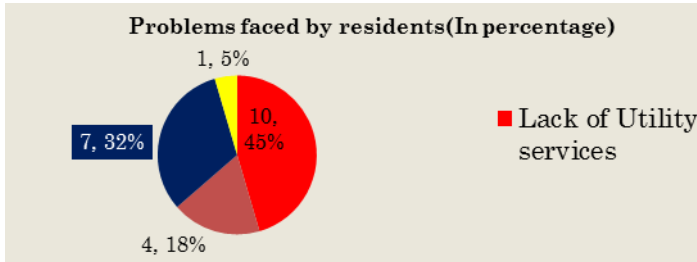


**Fig: 5.4 Problems faced by respondents in the study area**

They also disturb the residents. If there are teenage girls in those houses, they feel awkward to go out from houses as they can have unexpected situations to face which surely makes their comfort hampered. Many residents detected water logging (18%) as a serious problem in the study area. Whenever a heavy rainfall occur the area become flooded and the lives of the residents become tough.

## 5.5 Floods in the study area

Majority of the respondents said that they saw flood in their area in 1988.They also said that they faced many problems during the flood in 1988.The water level varied from place to place during the flood..The average water level was 1 feet to 4 feet. They also said that flood occurs when there is heavy rain in rainy season

## 6. Vision of redevelopment

Visions regarding redevelopment of the respondents are one of the important focus in our survey. Below we show the opinions regarding the vision of redevelopment.

## 6.1. Expected type of redevelopment:
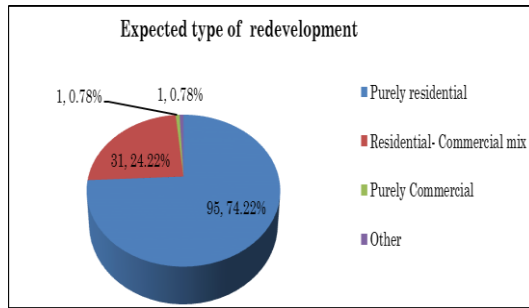


**Fig: 6.1 Expected type of redevelopment in our study area**

About 74.22% owners want to see their community as purely residential and another 24.22% owners wanted to see their area as residential and commercial mixed use.

## 6.2. Response to the redevelopment:

**Table: 6.1 Response regarding redevelopment**

| Response to the redevelopment | No of Owners | Percentage |
|---|---|---|
| Yes | 80 | 62% |
| No | 48 | 38% |

In redevelopment process, 62% household owners are willing to redevelop the area and another 38% are not interested in this process.

## 6.3. Type of redevelopment:



**Fig: 6.2 Types redevelopment in our study area**

Single plot redevelopment seemed to be a leading choice of the owners as the percentage hits 46.57%. joint plot redevelopment

is the second best option holding 31.39% of the total owner where the study end up with 3.4% of owners with other options in their mind.
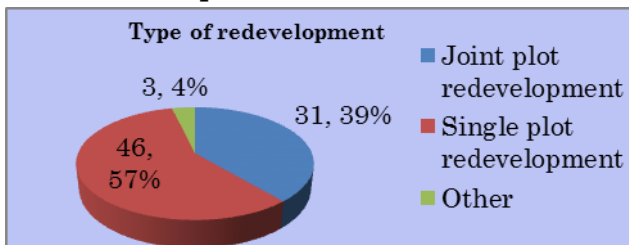
## 6.4. Development providing authority:
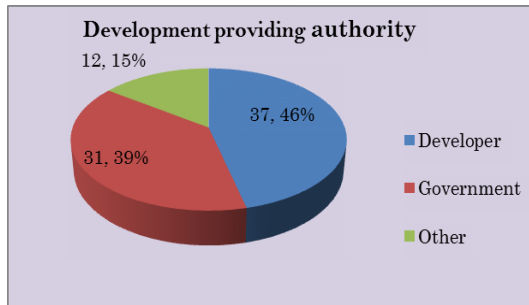


**Fig: 6.3 Development providing authorities for redevelopment of study area**

Either by developer or the government, choices for development providing authority are well under 40%. Development provided by the government is far less to 39%.

## 6.5. Future perception of the respondents:

The cumulative result of the seven groups who worked on the study is sorted out in a nut shell below. After completing the questionnaire by the peoples the sum leads to the fact that the tenants of ward-45 have a wider perception about their future.

- ➢ Wider roads
- ➢ More open space
- ➢ Developed sewerage system
- ➢ Reconstruction of dilapidated buildings
- ➢ Sufficient parking facilities
- ➢ Improvement of Security
- ➢ Relocation of Geneva camp
- ➢ All the facilities of the digital Bangladesh
- ➢ Lesser house rent
- ➢ Clean and healthy environment

## 7. Major Findings, Recommendation and Conclusion

### 7.1 Major Findings

From the study, some notable findings are obtained. Those are given below:

#### 7.1.1 Major Findings on Ward – 45

➢ Most of the lands are used for residential purpose. About 65% of the total lands are in residential use. 13% of total lands are in mixed use and 6% are in commercial use.

➢ Majority of the buildings are pucca, about 78%.

➢ Major portion of the buildings are in good condition, around 71%.

➢ Majority of the buildings are 1 to 4 storied, about 81%

➢ Most of the buildings are built after 1980.

➢ There are 48% of total lands are underused.

➢ Community facilities are adequate according to the standard.

#### 7.1.2 Major Findings on Socio-economic Profile of Surveyed Population:

➢ 11.40% are still illiterate.

➢ Most of the household incomes are above 10,000 TK.

#### 7.1.3 Major Findings on Development Pattern of Study Area:

➢ In only 25% of the buildings, set-back are fully followed.

➢ 50% of the roads are in good condition.

➢ In 61% of the buildings, the ground coverage rule is followed.

➢ 40% of the buildings are just between 1000-1500 sq.ft

➢ In Geneva camp maximum flat size is less than 500 sq.ft and their rent lies between 1500 to 4500 Tk.

➢ Last 5 years it becomes double than the previous years.

➢ 55% of the total buildings have up to 5 flats.

### 7.1.4 Major Findings on Perception regarding Amenities and Infrastructure:

➢ 45% respondents said that they have no air and ventilation facility and most of them live in Geneva Camp.

➢ Though there are many schools in that area, only 5% residents are satisfied.

➢ 37.5% of residents are highly unsatisfied with health-care facilities.

➢ About 74.22% owners want to see their community as purely residential area in future.

➢ 62% household owners are willing to redevelop the area and most of them want single plot development.

### 7.2 Recommendation

From the major findings, the following recommendations are made:

➢ Geneva Camp is one of the oldest physical structures of the ward – 45.The present condition of the structures of Geneva Camp is not well and strong. They cannot get available utility facilities and community facilities. To ensure proper life to the residents of Geneva Camp it is essential to provide enough utility and community facilities. It is also essential to reconstruct the low earthquake structures.

➢ There should be available air and ventilation of the buildings.

➢ Open space should be safe for children.

➢ To ensure proper education in the study area need more educational institutions than before.

➢ To ensure a safe area the Geneva Camp should be relocated from the study area.

➢ To avoid water logging it is essential to develop a good drainage system. The drainage should be clean and

maintained properly. It is also important to reduce the undulation of the open space to reduce water logging.

➢ According to the demand of the residents, the area should be maintained as purely residential areas.

➢ Proper educational facilities should be provided.

## 7.3 Conclusion

To develop a region demographic and socio-economic condition should be at a good state. If the demographic and socio-economic conditions remain good, the region develops gradually. Ward – 45 is a progressive site of Dhaka City Corporation. Since 1971, it is playing a vital role in the life of the residents of Dhaka. With the passage of time, residents are facing problems in their day-to-day activities because of planning constraints. To ensure a sound life in a sound area these problems should be solved with proper planning and maintenance.

## REFERENCES:

1. Bangladesh Bureau of Statistics (BBS), 2007. *Bangladesh Population Census 2001 (Zilla Series).* Bangladesh: Ministry of Planning, Government of People's Republic of Bangladesh
2. RAJUK, 2010. *Preparation of Detailed Area Plan for Dhaka Metropolitan Development Planning (DMDP) area", Group B; Final Plan.* Dhaka, Bangladesh: Engineering and Planning Consultants Ltd.

# Appendix

## Questionnaire
### Department of Urban and regional planning, BUET
### (A study on land use type of ward 45, Mohammadpur)

(All the information provided here will be kept confidential and will only be used for research work.)

Questionnaire No.:

Name of the interviewer: ………………………… Date: ……………….

Address: …………………………………………. Time: ………………

**General information:**

1. Total No. of family member: …………..
2. Information relating to the family:

| Member | Gender | Education | Occupation | Income |
|--------|--------|-----------|------------|--------|
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| 4 |  |  |  |  |
| 5 |  |  |  |  |
| 6 |  |  |  |  |

Codes:

| Gender | Education | Occupation | Income |
|--------|-----------|------------|--------|
| 1= Male | 1= Illiterate | 1= Govt. services | 1= below 5000 |
| 2= Female | 2= Primary | 2= Private services | 2= 5000-10000 |
|  | 3= Secondary | 3= Business | 3= 10000-25000 |
|  | 4= S.S.C | 4= House wife | 4= 25000-40000 |
|  | 5= H.S.C | 5= House servant | 5= 40000-60000 |
|  | 6= Graduate or above | 6= Student | 6= above 60000 |

7= Others

3. Ownership of the residence:
   i)      Owner      ii)      Tenant      iii)      Others

4. What is the size of your apartment?
   ………………………..

5. Please fill up the following information:

| Time period | Rent | | Price/ sq. ft | | Price/ katha |
|---|---|---|---|---|---|
| | Residential | Commercial | Residential | Commercial | |
| Present | | | | | |
| Before 5 years | | | | | |

**Study of major problems:**

6. Do you have adequate light and ventilation in your house?
   i)      Yes      ii)      No

7. Are you satisfied with presence of utility services?

| Utility services | Highly satisfied (5) | Moderately satisfied (4) | Satisfied (3) | Unsatisfied (2) | Highly unsatisfied (1) |
|---|---|---|---|---|---|
| Gas supply | | | | | |
| Electricity supply | | | | | |
| Water supply | | | | | |
| Sewerage system | | | | | |

8. Are you satisfied with community facilities?

| Community facilities | Highly satisfied (5) | Moderately satisfied (4) | Satisfied (3) | Unsatisfied (2) | Highly unsatisfied (1) |
|---|---|---|---|---|---|
| Educational institute | | | | | |
| Hospital | | | | | |
| Open space | | | | | |
| Religious | | | | | |

| centers | | | | | |
|---------|---|---|---|---|---|
| | | | | | |

9. Do you face any problem in your locality?
   i)      Yes       ii) No

10. If yes, what type of problem do you face?
……………………………………………………………………………………………
……………………………………………………………………………………………

11. Is this locality ever been flooded?
   i)        During 1988
   ii)       During 1998
   iii)      During 2004
   iv)       During 2007
   v)        Never

12. What was the depth (anticipated) of water during the flood?
…………………

**Vision:**

13. From your point of view, do you think that this area should be developed as-

i) Purely Residential  ii)Residential - Commercial mix    iii)Purely Commercial iv) Other

14. Do you want the redevelopment of the area?
   i)   Yes                  ii)       No

15. If yes, which type of redevelopment do you want?
   i)        Joint plot redevelopment
   ii)       Single plot redevelopment
   iii)      Other

16. By whom do you want the redevelopment?
   i)        Developer      ii)   Government          iii) Other

17. How do you want to see your area 15 years from now?

………………………………………………………………………………...............

……………………………………………………………………………………………