Analysis of Urban Slum: Case Study of Korail Slum, Dhaka

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Abstract—Bangladesh is one of the poorest countries in the world. There are several reasons for this insufficiency and uncontrolled population growth is one of the prime reasons. Others include low economic progress, imbalanced resource management, unemployment and underemployment, urban migration and natural catastrophes etc. As a result, the rate of urban poor is increasing inevitably in every sphere of urban cities in Bangladesh and Dhaka is the most affected one. Besides there is scarcity of urban land, housing, urban infrastructure and amenities which create pressure on urban cities and mostly encroach the open space, wetlands that causes environmental degradation. Government has no or limited control over these due to poor government policy and management, political pressure and lack of resource management. Unfortunately, over centralization and bureaucracy creates unnecessary delay and interruptions in any government initiations. There is also no coordination between government and private sector developer to solve the problem of urban Poor. To understand the problem of these huge populations this paper analyzes one of the single largest slum areas in Dhaka, Korail Slum. The study focuses on socio demographic analysis, morphological pattern and role of different actors responsible for the improvements of the area and recommended some possible steps for determining the potential outcomes.

Keywords—Demographic analysis, environmental degradation, physical condition, government policy, housing and land management policy.

I. INTRODUCTION

DHAKA is a metropolitan city with high density population. The major percentages of this population are migrant urban poor from rural areas for better economic opportunities due to various reasons. It is expected that this population will increase from 13.5 million in 2007 to 22 million by 2025 [33] though the fertility rate is declining. This rapid urbanization has taken place in last 25 years and the growth rate of the population is 6.9% [33] and 50% of these populations live below poverty level [2]. The major portions of this population are migrant urban poor from rural areas for better economic opportunities due to various reasons. In a 1996 survey for the Asian Development Bank and the Government of Bangladesh, CUS found 3,007 slums and squatter clusters with a minimum of 10 households and roughly 1.6 million slum dwellers (out of a population of 5 million) in the Dhaka Metropolitan area alone. In 2005, Dhaka had an estimated 3.4 million people lived in some 5000 slums and in 2010, the population of the city of Dhaka has been projected at 17.6 million people, with up to 60% in the slums [5], [13]. These poor people live in urban environments with significantly low living standards in terms of environmental, social, cultural and all kind of civic participations.

II. AIMS AND OBJECTIVES

The main focus of this research is to understand and identify the sustainable development strategy for urban poor. For this purpose, it is necessary to analyze the key reasons of urban poverty and their socio-economic conditions along with environmental state using a case study in the context of Dhaka city. Moreover, the land price is very high in the metropolitan Dhaka and it is difficult to accommodate the huge number of populations within the metropolitan boundary. Therefore, it is necessary to develop options to address the land use planning management. The main objectives of this research are: To understand the real-life context of slum dwellers to improve their livability and infrastructure condition and identification of the role and responsibilities of governments, private sector developer and NGOs.

III. METHODOLOGY

A. Research Methodology

The study used both qualitative and quantitative methods for data collection analysis. According to the objectives it was necessary to know the demographic character of the slum dwellers, monthly income, house rent, employment and mobility pattern, structure of houses and pattern etc. This study is concerned with the development strategy for the urban poor and to achieve the targeted goals and objectives the case study method was adopted. The objective of this study is to analyze the real-life context of slum dwellers in the context of Dhaka city. Also, the research will compare the study area with other two case studies with similar condition but has already upgraded. This approach will help understand the real-life situation of urban poor and identify the related issues that are barrier of redevelopment process of slum upgrading projects. On the other hand, this approach gives an opportunity to verify the differences between the theory and realities and underlying causes.

B. Selection of the Study Area

For the purpose of carrying out the research and to attain the objective, Korail slum area has been chosen as the study area. The selection is based on its prime location as it is located besides Gulshan and Banani posh residential area of the Dhaka city. Here the land price is high and the site has a potential for urban development. Moreover, the people of the

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study area served the surrounding neighborhood for many purposes. Most of them are maid, driver, care taker, garments worker and worked in the small retail store as helper. They are important part of the surrounding area and the city as a whole.

On the other hand, this is very old and large slum settlements of city. This study area will help understand the reasons behind the barrier of redevelopment process both for the slum dwellers and for the city as a whole.
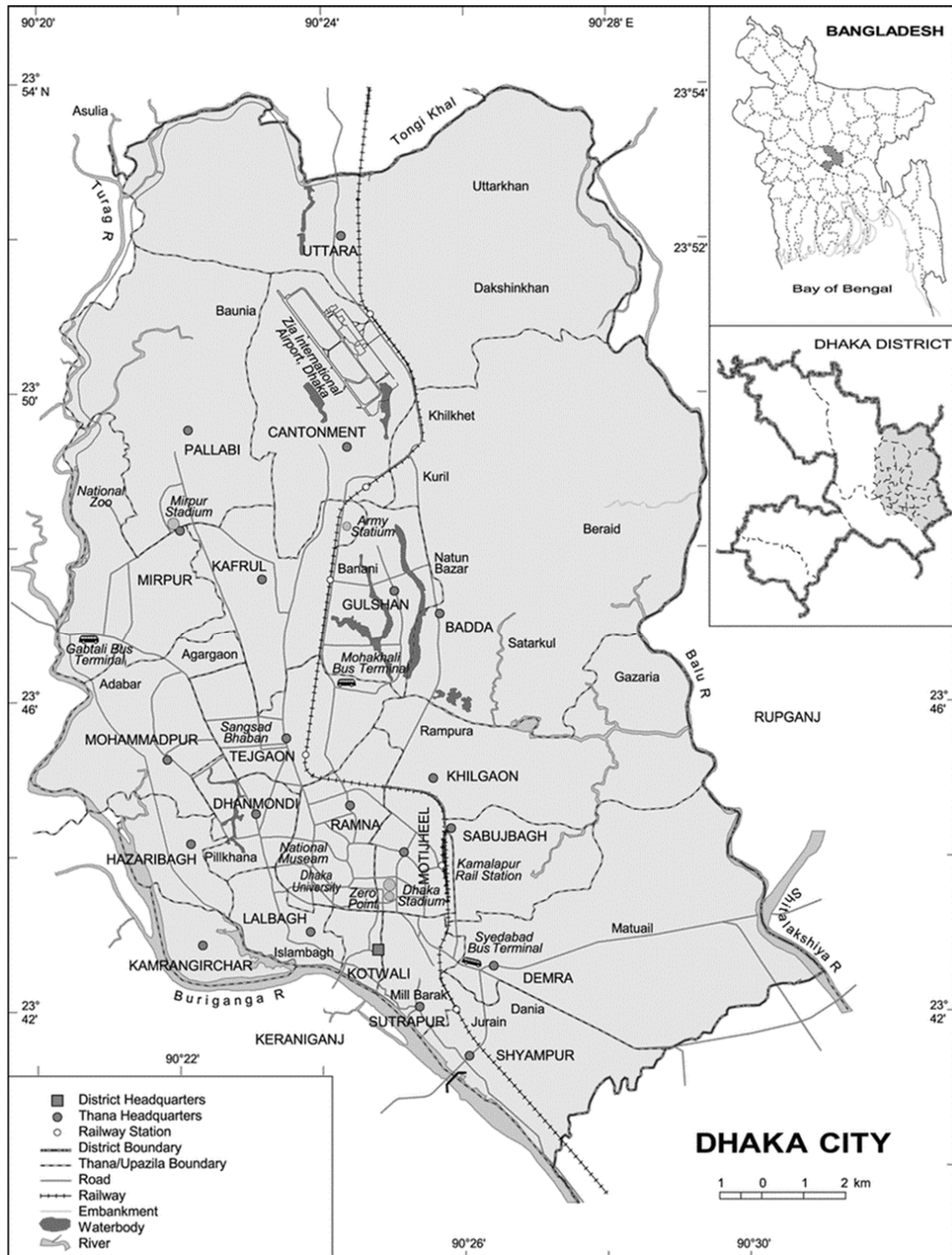

Fig. 1 Dhaka metropolitan area [24]

C. Extent of Study

This study will analyze the case study area in terms of socio demographic characteristics and such as age, gender, marital status, educational level, migration and residence patterns, household characteristics and poverty level of urban poor such as employment and income pattern, expenditure and consumption pattern. This study will also focus on urban morphology of the area such as house structure, pattern and urban quality, infrastructure and services, and environmental condition.

IV. CONTEXTUAL ANALYSIS

A. The Growth of Dhaka city

Dhaka has a brief history from sixteenth century to the present day over six different periods of development and corresponding urban transformations that can be distinguished in the settlement patterns of the Dhaka city [1]: (1) The Pre-Mughal Dhaka before 1608 (2) Dhaka city under the Mughal period from 1608 to 1764 (3) Dhaka under the East India company from 1764-1858 (4) Dhaka under the British reigns from 1858-1947 (5) Dhaka as the provincial capital of east Pakistan (1947-1971) and finally (6) Dhaka as the capital of Bangladesh since 1971 [1]. Through this process the city has reached to its present situation where political instability, poverty, natural calamity are prime issues of development. The city now experiences crowding, environmental degradation, land speculation, corruption and mismanagement everywhere.
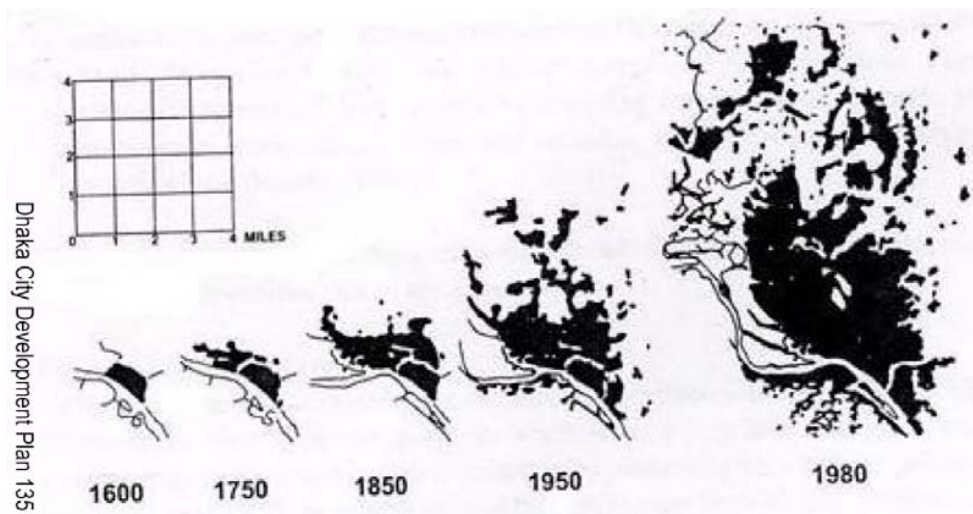

Fig. 2 The growth of Dhaka City (See Appendix A)

B. The Pressure of Urban Poverty and Slum in Dhaka City

Dhaka is the prime city in Bangladesh according for over 30% of the total GDP and 56% people migrated to Dhaka city for economic reasons [28]. Friedman writes that about 500,000 people move to capital city, Dhaka in every year from the banks of the Buriganga River mainly from coastal and rural areas [7]. According to International Organization for Migration (IOM), about 70% of slum dwellers in Dhaka experienced some kind of environmental shocks. Consequently, these poor migrants turn to slums and squatter settlements. Most of these people live in lower poverty line according to DCI (Direct calorie intake) method. The poor who takes 2,122 k.cal per day per person falls into poverty line 1 which is known as absolute poor and who takes 1,805 k.cal per day per person falls under poverty line 2 known as hardcore poor [9]. The major percentage of population below poverty line 1 and the percentage are higher in the urban areas (see Appendix B). These poor people do not have any proper housing structure, safe water and sanitary life. The most vulnerable situation is that they have little access to formal employment due to urban competition and lack of their ability to match with their capacity. Most of slum dwellers depend on informal and temporary job for living. Female adults and children are tended to work as housekeepers, laborers or in garment workers, while male adults and children tended to work as rickshaw pullers, laborers, brick breakers, drivers or carpenters. Moreover, they do not have any access to health care facilities [14].
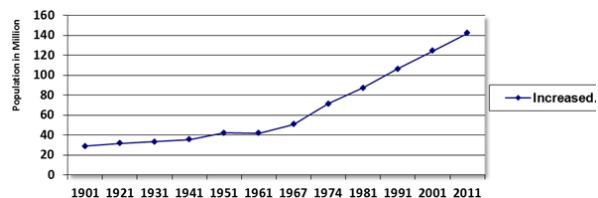

Fig. 3 Population figure of Bangladesh since 1901 [33]

C. Slum Concentrated Area in Dhaka city

Slums have existed in Dhaka City for a long time but their growth accelerated after the liberation of the country in 1971. Slums and squatters are scattered almost all area of Dhaka city. They are not uniformly settled. Major concentrations of

these populations are found in the eastern fringe of the city along the border of the city corporation. A large concentration was found in Khilkhet, opposite to the Zia International Airport. Another settlement identified in the south of the khilkhet is Badda-Satarkul area, which is in the vicinity of the Gulshan and Baridhara residential areas. A third concentration can be spotted between Meradia and the Kamalapur Railway Station. The single largest concentration of slums was found in Kamrangir Char on the western fringe of the River Buriganga. There were several other agglomerations in the western fringe, particularly along the western embankment. Hazaribagh and west Mohammadpur contained large numbers of slum clusters. Mirpur had one of the largest concentrations of slums, mainly located on public land. In the central areas of the city, slum concentrations were relatively light compared with the periphery. The major concentrations there were along the railway line, which runs from Narayangonj to Tongi in the east central city. The largest single slum in Dhaka was Korail in Mohakhali near Gulshan, with more than 100,100 people. However, several large slum communities were evicted from the central city during the last few years, with the evictees relocating eventually to peripheral areas. They are now constantly moving towards the fringes of the city from center area due to high demand of land, services etc. According to Center for Urban Studies (CUS) mass amount of these slums is to be found in the privately-owned land around 42.2% and under multiple private ownership 34.8%. Only fewer percentage 21.4% lived in government or semi government owned land [10].

Fig. 4 Living condition of slum [35]

Fig. 5 Environmental condition of slum [35]

V. ANALYSIS OF KORAIL SLUM

A. History of Slum Establishment in Korail Area

In 1961, during Pakistani governance, the area was designated for the Department of Telegraph and Telephone Board of Bangladesh (T&T). That time it was under private tenure. The strict condition of the purchase of the land is that it could only be used by T&T. But in 1990, 90 acres of the land were allotted to the Public Works Division (PWD), breaching the original contract. When PWD started to develop the newly acquired land, the original owners take legal action against T&T for violating the contract. They demanded to return the land for their private ownership again. In order to avoid further legal complications, T&T reclaimed the 90 acres of land they had given to PWD. Moreover, they presented the previous development work begun by PWD as illegal. At this stage, three parties became clear stakeholders in today's Korail slum area- T&T, PWD and the former private landowners [14]. In 1990's, unoccupied pieces of land slowly became illegally captured by various T&T members, staff as well as gang leaders and —godfathers and city ward commissioners [22]. These individuals then began to rent out land and housing to low-income and impoverished populations at low rates. As a result of the growing demand for inexpensive housing, these inhabitants slowly expanded to create Korail slum as it is today. Presently, many of the inhabitants at Korail are becoming owners of their spaces by illegally purchasing from their current landlords, who initially seized the land unlawfully as well. This created a cycle of ownership issues and impacted the social structure of the slum, with slum dwellers living in constant anxiety of evictions.

B. Location of the Area

Korail slum is situated in some parts of Banani and Gulshan encircling 19 and 20 wards of Dhaka City Corporation and standing on 99 acres of land. The area of the slum is highly tentative among its residents as they claim it to be roughly between 180 to 220 acres [14]. The slum can be accessed by several roads from Gulshan, Banani and Mohakhali or by water across Gulshan Lake. There are main two units of Korail which is known as Jamaibazar (unit-1) and Boubazar (unit-2). There are four sub-sections within Boubazar known as Ka, Kha, Ga and Gha. In addition, Beltoli Bosti (Slum), T&T Bosti, Baidar Bosti, Ershadnagar and Godown Bosti are also part of greater Korail slum. The slums are gradually expanding across the lake by land reclamation and through the dumping of waste and soil.

VI. SOCIO DEMOGRAPHIC CHARACTERISTICS OF THE AREA

A. Locality and Habitation Type

Korail slum has falling under the administrative units of Gulshan Thana thus become a toxic boil for city's posh Gulshan-Banani high society. The total percentage of urban poor in this area is 38.5%. According to the statistics 31.2% is high income residents and the rest of the people are middle income and higher middle-income people [2]. The housing tenancies of 80.5% inhabitants of urban poor are rented. On the other hand, 46.1% residents of high-class population owned the house [2]. In this study area the inhabitants live in

jhupri, tin shade and semi pucca/ pucca dwellings [5]. On the other hand, the neighboring area of this locality which is posh living area of Dhaka city, is mainly six or higher levels of luxurious apartment building. Now a day there is few two-level individual residences in this area.
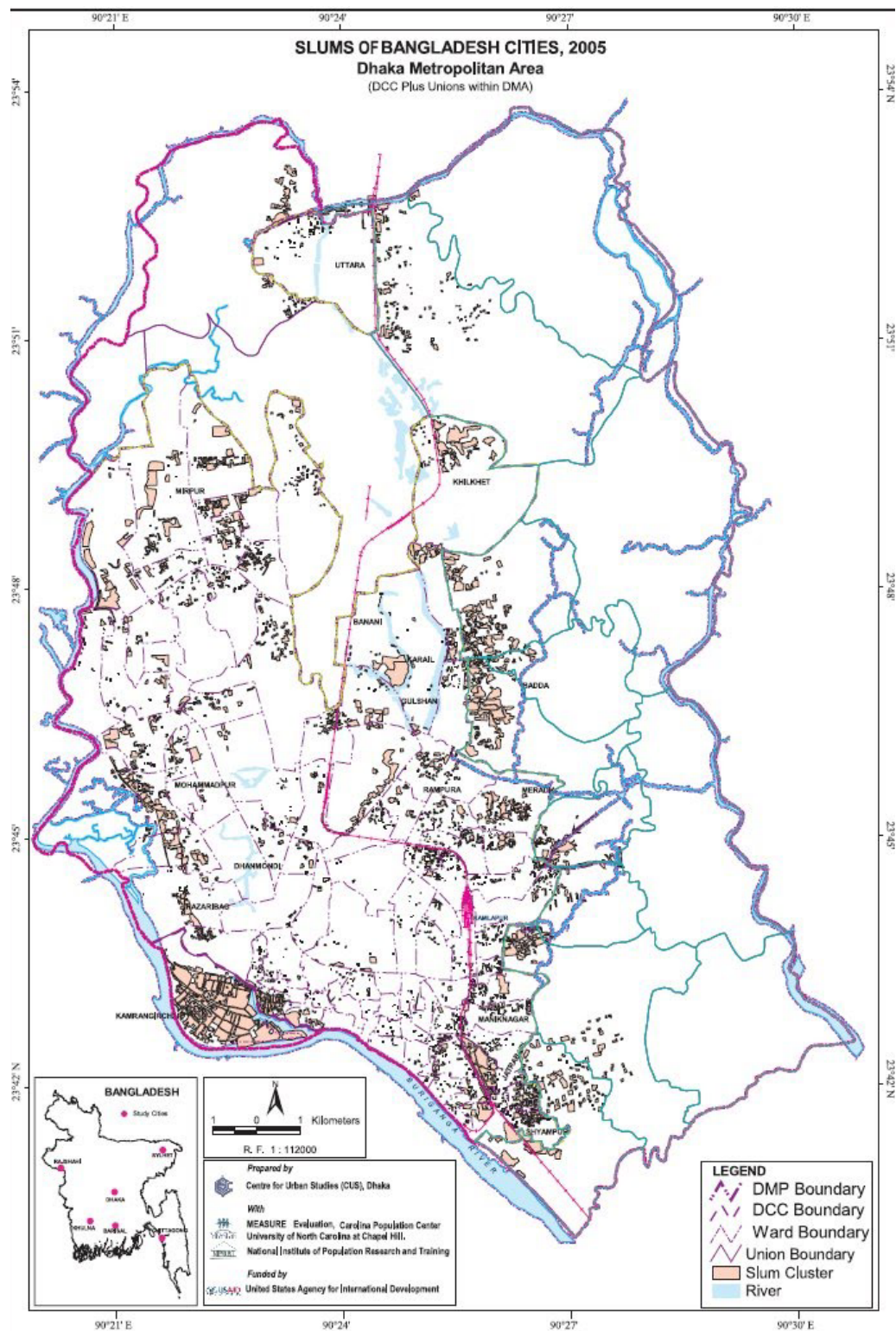

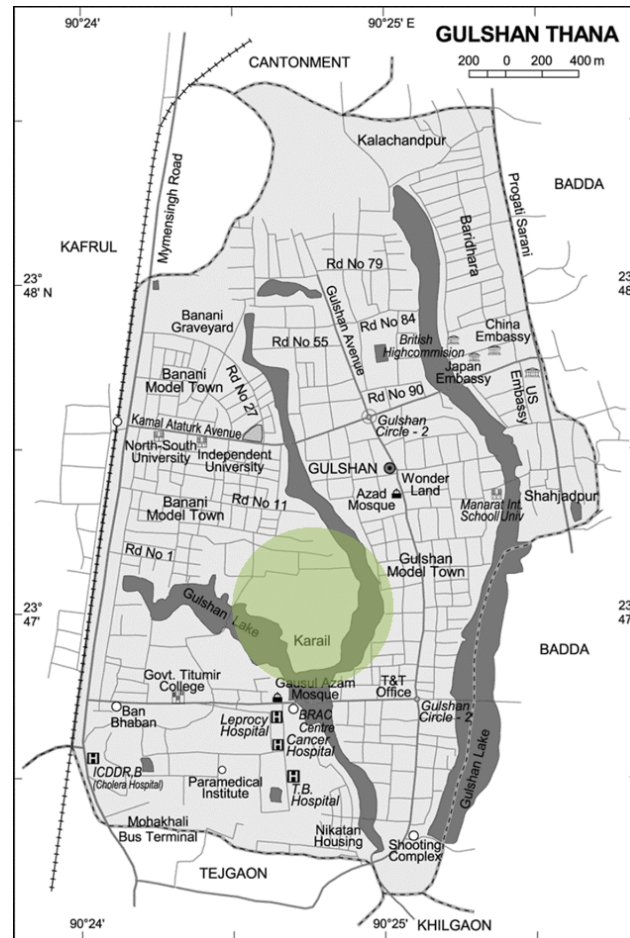Fig. 6 Slum of Dhaka metropolitan area [5]

Fig. 7 The map of Gulshan Thana and location of Korail slum [30]

B. Demographic Characteristics

Gender and Age group: The range of total population as mentioned by the slum dwellers is 86,200-115,000. According to the slum people who claimed the total population to be 86,200, asserted there are 31, 950 males; 37,050 females; and, 17,200 under five children [14]. The study shows that there are 20.7% are people less than 30 years old and 21. 9% people are spread between 40 to 49 years old. Most of the people distributed between 30 to 39 years of age almost 41.2%. The remaining percentage is in the age group of 50 years and above [22].
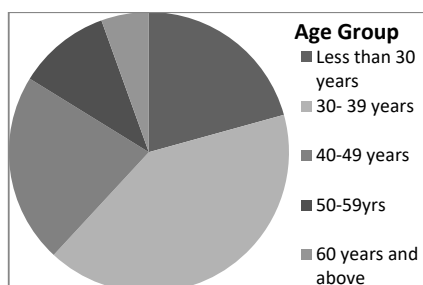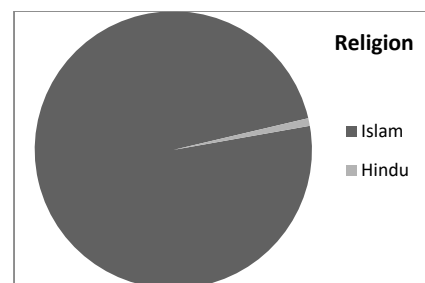

Fig. 8 Distribution of Age

Fig. 9 Distribution of Religion

Religion: Most of the people live here are Muslims by religion almost 99.1%. The rest of the population is Hindu [31].

Educational level: Studies have shown that education is one of the major socioeconomic factors that influence a person's behavior and attitudes. Majority of the urban poor approximately 50.6% of total population is illiterate, 23.7% knows the alphabet or can sign their name and rest of the 26.9% never attended school. Another 31.3% and 11.9% population attend primary and secondary level but never completed the school certificate degrees. Very small amount

of people completed secondary and higher secondary school certificate [31].

Marital status: 50.3% of the population is married and 46.8% are never married. The rest of the population is either unmarried or widow, separated and divorced. Interestingly, most of the unmarried population is women [31].
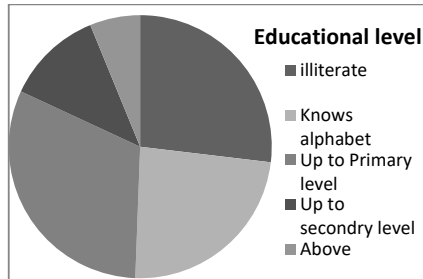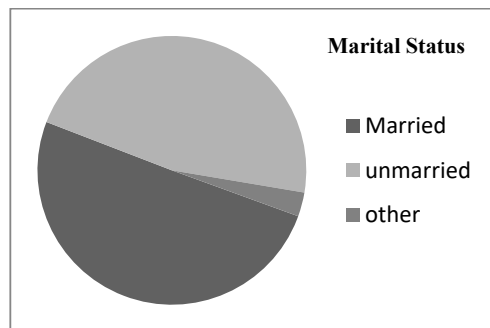

Fig. 10 Distribution of Educational Level

Fig. 11 Distribution of Marital Status

C. Resettlement Reason and Pattern

The slum communities came to the city from different districts of the country. The study found that the earliest inhabitants came from Comilla district. Day by day, communities from other districts began to arrive including Barisal, Bhola, Sherpur, Barguna, Chandpur, Jamalpur, Mymensingh, Kishoreganj, Faridpur etc. These communities also have different groups according to the districts and live collectively in a cluster throughout the Korail slum. The poor communities migrate from their rural area for diverse socio economic and environmental reasons such as scarcity of land, river erosion, climatic disaster etc. The study shows that approximately 71% of the total population living in this area for last ten years. The minimum length is 3 years and maximum length is 18 years [14].

D. Household Characteristics

The average household size is 5-6 members but there is a variation in the household size among poor. According to study 69% have 5-8 members in their households and 24% have more than 8 members in their family. Remaining 7% have 3 to 5 members more than 8 persons [4]. The more the number of households the income level is higher among those groups due to multiple earners [14].
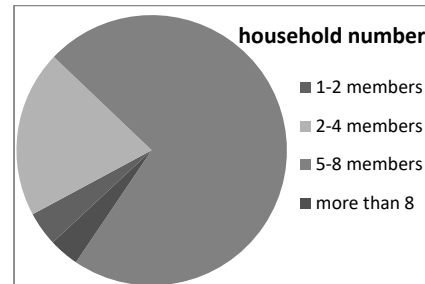

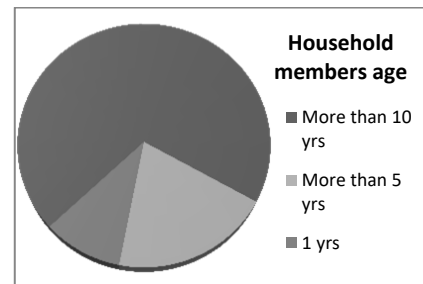Fig. 12 Distribution of the members in household

Fig. 13 Household members age distribution

VII. SOCIO ECONOMIC PATTERN

In Dhaka city majority of the urban poor are occupied in a range of employment mostly in urban informal sectors; for the reason that they do not have proper education and employment training to get access into the competitive market of urban employment. However, the rate of unemployment among the urban poor communities is low due to the high rate of female participation in the urban workforce. The main survival strategy of the urban poor is sending as many household members as possible into the workforce; even the children also contribute to the monthly income of the households. According to study hard work or high-risk jobs are done by male and domestic or garments services are carried out by female.

A. Employment Pattern of the Area

The study shows that most of the people, approximately 38.3% of respondents, are rickshaw pullers who do not have any education and formal training. The other major groups are 21% who work in garments factories due to boom of this sector in our country. Another 17% people are street hawker and small business owners and majority of them do not have any government formal registration. According to study 13.8% are drivers of various types of vehicles such as personal car driver and CNG/taxi driver. Unfortunately, it has found that they do not have any original driving license mostly who are personal car driver. The remaining 10.9% respondents are involved in variety of job like masons, day laborers, office peon, carpenters, wheelbarrow or van pushers, boatmen, low grade employee in private, government or semi government organization. In this study area, housewives are involved in domestic work. They utilize domestic space for income-generating activities like preparing food, sewing and

embroidery, etc. with the assistance of other family members. Most of the female are involved in garments factory and domestic maid both in houses and in offices respectively. Very small number of women is engaged in other kind of employment. The employment catchment areas of these people are mostly Gulshan, Banani, Mohakhali, Badda and the mode of transport they used by and large is walking and public transport [14], [22].
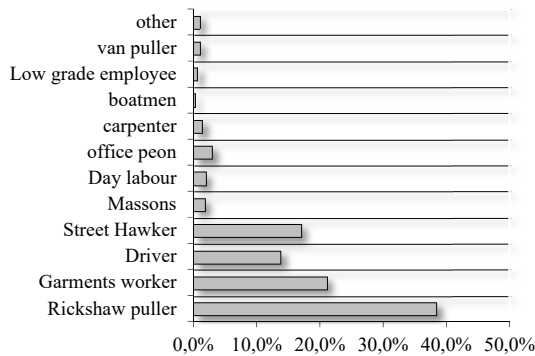

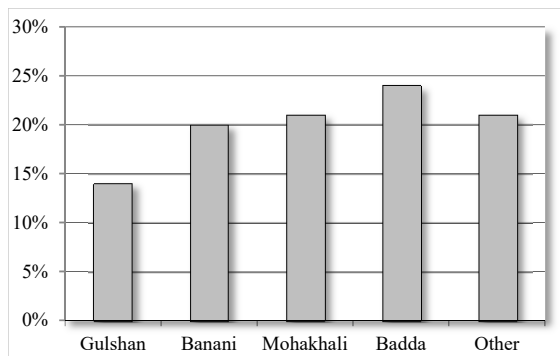Fig. 14 Distribution of Occupation (male)

Fig. 15 Employment catchment area

B. Income Statistics

The monthly income level of the inhabitants living in this area is low. The study shows that almost 42.67% households have income around TK 3001-4500. 28% have income only TK 2001-3000. The income bar is similar between TK 1001-2000 and TK 4501-6000. Very few households' income is more than TK 6000. The remaining households' incomes are below TK 1000 [31]. The rates of income are higher among male group than female workforce. The wages are very low among the urban poor women as they are involved in self-employed, low paid jobs in informal sectors of work. The majority of women earn monthly TK 1000 or more [22]. In recent days the involvement of children in works reduced due to various NGO's organizational effort and the parents are more interested to send them school rather than income source. Children who belong to hardcore poor are occupied in various types of work such as domestic work, scavengers, and office or restaurant employees. Begging is a popular livelihood for children as well [14].
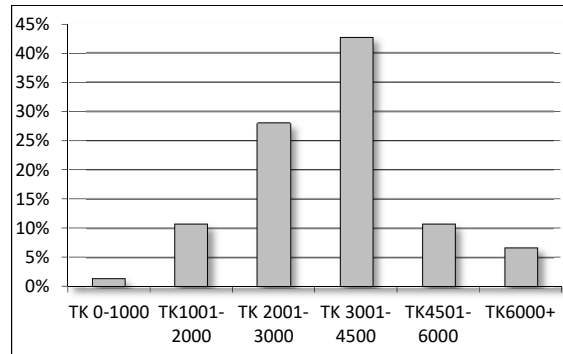

Fig. 16 Household income pattern

C. Expenditure Pattern

The maximum income of the poor is spent in food as Dhaka is very expensive to live. The study found that the minimum food expenditure is TK 600-1500 and maximum food expenditure is TK 8000 [10]. The second most important source of expenditure is housing. Most of the urban poor does not have own house they have to rent their house which is almost 66.7% [31]. Based on 2009 survey the average house rent is TK 500-1000. The minimum rent is TK 300 and the maximum rate is TK 1200 per month. In recent years the rent of houses increased a lot [14]. Very few poor spent money in nonfood item. Other than that, those who have households' member in rural areas spent part of their earnings there. Some of them also save money from monthly income to buy livestock, agricultural land or repair their housing in rural areas rather than spent it here where they live. The urban poor are often forced to take loans from various sources and more than half of the poor households had loans. They have very limited access to formal sources of credit due to their unsteady and vulnerable situations. But the majority (33%) gets loans from their relatives and friends for which they pay no interest [22]

VIII. URBAN MORPHOLOGICAL ANALYSIS

A. Dwelling Structure and Nature

The feature of housing of the urban poor is very low. Most of the urban poor live in temporary home especially tin-shed housing and very small portion of them live in semi pucca/pucca housing with permanent walls. Very few houses have roof which is made of brick and cement whereas the roof of maximum houses is made of tin (Corrugated Galvanized Iron Sheet or mostly known as CI Sheet). The remaining houses are made of bamboo, straw and polythene which are known as Jhupri. The study shows that majority of the houses wall are made also of tin and some are made of brick and cement. The left over is made of bamboo, straw and polythene. There are two storey houses made of solely tin shade which is extremely vulnerable structure.

Most of the urban poor are used to living in single-room houses with five to eight members which are up to 14 sq. meters (150 sq. feet). Very few live in double room dwellings up to 18.5 sq. meters (200 sq. feet) [30]. Of the single member

households, most live in awful conditions with 20 to 30 people living in a single room. The family with more than eight members lives in dwelling which has three rooms. Most of the residents have no individual cooking area and used share kitchen, outdoor space and convert their living space as cooking area. Like kitchen most of the dwelling has no individual toilet and used shared toilet and shower facilities which is very unhygienic. Male and children used to take bath in open spaces. Due to low quality material and structure, these people have to face serious problems in rainy season. Sometimes they have to take shelter in school, community places, and rail way station during this time. They have to reconstruct the houses again and do not get any support from the government or other organization even not from the owner themselves.

Fig. 17 Image of Tin shade structure [30]

B. Dwelling Size and Pattern

The size of the dwelling is in general 5 m to 12 m length and 3 m wide. They are laid in very irregular pattern and no proper orientation. House to house gap varies in different spaces and the minimum gap is 1 meter and maximum gap is 2.5 meter. There is lack of open space and vegetation. Street pattern is also very chaotic and disorganized; there is very little connection with the surrounding major road [5].

Fig. 18 The dwelling pattern of Korail area [30]

C. Physical Environmental Condition

The area has very poor environmental condition and exposed to extreme heat in summer and vulnerable during rainy season. Water stagnant is a major problem in the rainy season and also water pours in houses. These are both due to weak structure and materials. It is difficult to move from one place to another because of ill construction of roads. The area is surrounded by unhygienic and polluted water and odor pollution in whole community. There is lack of vegetation and open space due to density. As a result, the household members get sick for long time.

D. Infrastructure and Services

In Korail slum area 60% of water supply is provided by DWASA and 40% is bought from outside the area with a monthly payment [13]. Very few people used lake water for daily activity but not for drinking. Water sources are limited and they have to make queue to collect water for daily necessities. There are electricity and gas services available in this area but not continuous and adequate. The sanitation facilities are very unhygienic and vulnerable and the numbers of water seal latrines are 359, bucket latrines are 250, hanging latrines are 520. The people are not satisfied with the solid waste management system too [4].

The urban poor have limited access to the city health care services. They used to go to government hospitals and health care services run by NGOs. They have limited access to education and formal training but parents are now conscious and send their children to the schools. Unfortunately, there is no government primary school in this area. NGOs run two high school and twenty primary education centers. They do not spend time or money in recreational purpose and socializing event. Most of them take leave on religious occasion to go to their original home districts to meet with their relatives [22].
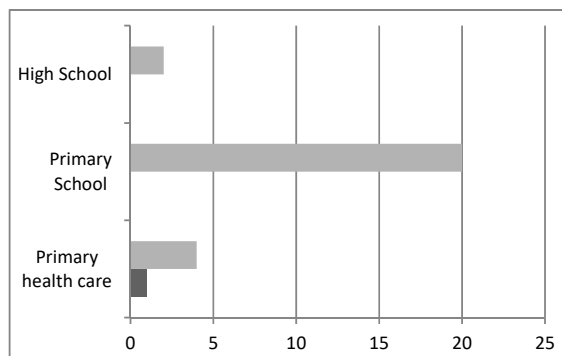
Fig. 19 School and Health care services

E. Legal Tenure Right and Eviction

Tenure rights are highly insecure for Korail slum dwellers. The residents of this area faced eviction for several time. In 1999, two organizations ASK and BLAST rallied together against the high court order of eviction. It is clearly stated in the Bangladesh constitution Article 15 that no eviction could perform without proper rehabilitation [22]. Despite the High

court order several times the eviction happened in Korail slum area and there is no proof who ordered to evict. BLAST confirmed a stay petition for Korail slum dwellers but still the fate of these people is depending on the decision of the High court [8].

Fig. 20 The latest fire on March 16, 2017, Korail slum [36]

F. Internal Power Structure and Function

There are some political party offices (AL, BNP, JP) in Korail slum area. They only seek for vote in election and never help them. On the other hand, the ruling parties' tenure is active in different issues like monopoly of house rent, electricity bill and so on. The local authorities like police are also inactive in this manner and they are very much interested to control over the local government system. However, there is so many community groups among slum dwellers and they also have internal conflict in between. No single power can dominate the slum as the number of populations is huge. Previously there were some Community Based Organization (CBO) formed by Dushtha Sharthya Kendro (DSK) to enhance community power and to improve infrastructure services and also to solve internal problem along with NGOs. But the inferior number makes their progress very slow. On the other hand, there is no relation the local government activity and they did not liaison with the local government structure. In general, the affluent neighbor and land lord help them to mitigate any problem rather than any government body and political parties. The dwellers are reluctant to go any LGI office or political offices in times of dire needs [22].

IX. URBAN LAND ANALYSIS

A. Neighboring Urban Fabric and Land Price

The Korail area is in the prime location of Dhaka city as it is bounded by Gulshan, Banani and Mohakhali. Those areas are used as high end residential and the plot besides the major road are now commercials (see Appendix C). The individual lot sizes of Gulshan and Banani area were between 8.25 and 33 decimals [21] but the total number of plots gradually increased due to the multiple numbers of heir and rapid urbanization. The number of individual houses converted to high rise apartment buildings. The land use pattern has also changed drastically due to high demand of community and economic activities. As a result, several residential areas have transformed into commercial zone which in turns changed the planned residential area.

The residents who can afford to live in this area have a diverse socio–economic background. As price and rent of houses are relatively high only the high-income people can afford these houses. In Gulshan the official price of per katha of land, which was US $ 12,070 (TK 10 lakh) in 1993, has now been raised to US $ 60,352 (TK 50 lakh) by the RAJUK and the land price is same as Gulshan in Banani. However, the developer claimed that the actual price of each katha of land in Gulshan and Banani is much more than US $ 120,703 [30]. On the other hand, Mohakhali is one of the busy commercial areas of Dhaka city. According to REHAB data, the price of a katha of land rose by 344 percent in Mohakhali area [24], [29]. The land prices of Gulshan, Banani and Mohakhali area are 25,000,000, 15,000,000 and 12,000,000 BDT accordingly. That is most valued urban land and close to the global core of Dhaka city.

Fig. 21 Ariel view: Surroundings area of Korail Slum, Google earth, 28/09/2020

Area	The Price of the Land (Taka/ Katha)			
	Year			
	1975	1990	2000	2010
Gulshan	25,000	600,000	2,200,000	25,000,000
Banani	25,000	600,000	2,000,000	15,000,000
Mohakhali	25,000	600,000	1,800,000	12,000,000

Fig. 22 The land price of Dhaka City
1 taka= US $ 0.01207; 1 Katha= 1.65 decimal [25]

B. The Real Condition of Urban Land

Most of the third world cities require enormous amount of urban land for its growing urban population which increased the price of land and inaccessible to the low-income people. Moreover, the land value increases because of its high and relatively reliable returns and a shortage of investment alternatives. Therefore, land business is much profitable investment. Moreover, there are lack of government guidance, proper tax enforcement, regulations and land price ceiling.

Dhaka city has the similar situation where the land speculators hold considerable amount of land thus eventually reduces the supply of land. A study shows that on holding lands unsold and unproductive more than 10 years 39.5% land holders are suspected as land speculators where 48.59% intention of buying land is to earning money. Maturity period of land speculation has been found as 6.63 year. This speculation has to be taken into regulations [12]. Less than 30% of the households of the city own more than 80% of the total land [6]. Nowadays, there is less hold of government authority in the fringe area on land whereas private sector developer or land speculators holding rate is high. They enforce local muscle men or unfair means to hold on the power and also seized any development for further growth. Moreover, they also allowed illegal people or migrant people to stay in a very high rate. According to the report from Daily Star, recently 1000 acres of land are illegally grabbed [20]. The lands grabbed in illegal ways are most often not used for development but kept for speculation. Government authority along with the city dwellers needs to regulate these speculation actions to protect the city [6].

X. Urban Housing for Poor

The urban poor have very limited access to urban land in Dhaka. They generally live on vacant private or government land. There is no sufficient and affordable housing for them. Unfortunately, there is a limitation of resources and need for deep political process to establish the concepts of housing for urban poor. The housing delivery system remains inept as public and private developers tend to work in feed storage. As the private developers are oriented to profit maximization; they mostly concerned to provide housing for upper and upper middle-class society. Moreover, the public lands are also reserved to serve government officials and middle-income group and reserved only 1.2% (Purbachal), 4.3% (Uttara, 3rd phase) and 7.5% (Jhilmeel projects) of land for low income group that actually distant from the real scenario [27]. Furthermore, housing finance is limited, short-term and expensive and there is a lack of proper loan market. The market is small regardless of demand for low- and middle-income housing finance and it supplies to well-off groups only. These are the possible issues why developing affordable housing for low-income urban communities is challenging. On the other hand, the study shows that only 56% urban poor are tenants, 8% are free dwellers and 20% have no proper space to stay; they are mostly illegal occupants or squatters [26]. Due to shortage of supply, these families are force to resort to costly informal arrangements According to a study by Bangladesh University in 2017, slum residents pay BDT 47 per square foot which is twice the amount tenants pay for decent housing in areas such as Dhanmondi [27].

A. Housing Allocation Organization in Bangladesh

There are different bodies and organizations who deal with the housing allocation in Bangladesh. In public sector National Housing Authority (NHA) is the most important agency of the Central Government who generally resolve the housing problem for poor, low-income and middle-income people. Besides NHA, Ministry of Housing and Public Works and Local Government Engineering Department (LGED) provide housing and housing related activities. Other than public agency there are formal private housing and formal individual housing, private informal housing and autonomous bodies. There are also public and private institutions which are responsible for housing; these are House Building Research Institute (HBRI), Real Estate & Housing Association of Bangladesh (REHAB) and House Building Finance Corporation (HBFC), commercial banks and financial institutions [27].

B. Scheme of Publics Authority for Urban Poor

According to updated National Housing Policy in 1999, the government of Bangladesh works in the housing sector as a 'facilitator' not as a 'provider'. The government responsibilities are to ensure access to land, infrastructure services, housing finance mechanism and supply of material in a reasonable price especially for low income and middle-income people. The policy calls for special consideration for improvement of low-income settlements in support of ensuring proper rehabilitation in cases of slum eviction. Study shows that the policy did not slow down the eviction process and forced the slum and squatters to land filling and land grabbing. The regular filling of the water retention ponds within the city area makes it more prone to flooding eventually creating high environmental risks [11]. The National Government, the Government of Bangladesh began implementing upgrading program in urban slums in the mid-eighties with UNICEF. This program has been active in some 25 cities, including Dhaka. Originally the program had a strong physical component like improvement of drains and sanitation. It had no housing component. Other than the designated housing authority Prime Minister's office directly manages some habitat projects which have little concentration for urban poor [26]. Unfortunately, the public sector can manage only 7% of the demand and expected that others will fill these gaps [27]. The Housing and Settlement Directorate has provided sites and service scheme at Mirpur, Vashantek area for the low-income people who were rehabilitated from the city core to these areas but failed to meet the need of the people. They sold the rights of the apartment and moved back to the vicinity of their workplace [3]. NHA with the support of World Bank is developing a project for approximately 24000 urban poor who lived in informal and low-income settlements by 2021 [27].

C. Scheme of Private Sector for Urban Poor

The urban housing in Dhaka city is mainly met by the formal or informal private sector. These sectors provide ready housing for moderate to high income people [3]. Study shows that 10% of the housing demand is met by formal private sector where as 90% of the demand is fulfilled by independent developers and consumers [23]. However, these private

sectors have limited resources and it is easier for them to focus investment opportunities to wealthy customers. They are not responding as actively as hoped to meet the demand for urban poor of the city. Besides, the 50% of the low-income people are living in the informal private sector housing by paying high rent which may not bring any the benefits to the slum in respect of economies of scale, investment capital and in long run accountability.

D. Scheme of NGOs for Urban Poor

NGOs and micro finance institutions are working for the benefit for poor (rural or urban) for a long time in Bangladesh. The NGOs working in rural area are providing significant housing program for them. However due to scarcity of land, high price and ownership problem, threat of eviction, the ability of middlemen to extract rent from the poor, lack of credibility of the government restrict these NGOs to involved in housing and land tenure issues. Additionally, NGOs do not want to involve in housing issues as the 97% of the slum dwellers do not own the plot where they live [8]. Moreover, government strict rule and regulations over land limit the development process of NGOs in housing finance and benefit. They are more involved in infrastructure development for slum dwellers like slum environment, water and sanitation, provide primary health care, and empower poor women living in these communities. In Korail, there are NGOs like: BRAC, ASA, DSK, BRISK, RIC, Intervida, Bureau Bangladesh, Glory, and SHAKTI. They mostly involved in operating non-formal education program for the working children, health center – major attention on pregnant mother, some skill based/technical training and micro credit support for the community people [14]. Some of the NGOs are working with sanitation system and made some community latrine, water point and drain-pavement inside the Korail. Though the coverage is very limited but the initiative is very remarkable [30].

E. Responsibilities or Accountabilities towards Slum Dwellers

It is clear from the above discussion that there is very insignificant connection between government authority, private sector developer and NGOs in slum development. Government authorities are greatly concerned with the development program due to rapid urbanization and the declining law and order. Private sector developer is concerned to secure their investment by providing housing for middle and affluent communities. NGOs are more concerned with preventive and primary health-care services and environmental improvement issues [30].

RAJUK is the central body to manage the city for proper development planning and control. It is an autonomous body; the overall responsibilities and functions are prescribed and assigned by the government. Also, Government has a prescribed policy where it clearly defined the role of financial benefits between public and private actors in regards of land acquisition, development and housing projects. However, it is widely known that the politicians are the major performers both in the public and private agencies major portion of the development projects in Bangladesh are financed by the bilateral or multilateral donors [30]. In reality most of the funds are improperly handled or misuse by the name of development. Site and service scheme or rehabilitation scheme are much more theoretical metaphor rather than practical. On the other hand, politicians are using slum dwellers as their vote bank and slum dwellers are making negotiation with the politicians for buying temporary tenure security. As a result, these people have more reliance on NGOs rather than any government service provider as their protector.

XI. COMPARATIVE ANALYSIS WITH ADDITIONAL SLUM AREA

To summarize the analysis of the Korail slum, the area has been compared with another slum area in Asia. The study area has been compared with Bangkok and Mumbai slum which have almost similar situation. The Bangkok government has taken development strategy to mitigate the problem which has been successfully implemented in the case of Bang Bua settlements. In the case of Mumbai, the Government is still struggling to meet the need of the existing slum dwellers and take several steps to mitigate the issue. As discussed above there are no steps has yet been taken by Government except eviction of some part of the Korail slum area. The socio economic and development comparison has been given in Table I.

XII. DISCUSSION AND CONCLUSION

The study found that most of the people are living in a temporary habitat in vulnerable condition due to low income, lack of support and insecure tenure system. They have been paying a higher amount of money for house rent, getting civic amenities and facilities like water, electricity, and so on. This is because the land lords are very much speculative and under the shelter of political leaders and musclemen. As a result, the slum dwellers are silent and reluctant to improve their present condition and they are in constant fears of eviction. On the other hand, the Government has no such scheme and financial resource to rehabilitate this huge population. As discussed above most of the government body are corrupted and getting their undue benefit. Moreover, there is no evidence of land and housing development for poor from private sphere. On the contrary, it is true that the slum dwellers are occupying a land of opportunity and high value. To rectify this present phenomenon, it is necessary to find any alternative solution which is better for the existing dwellers and the city as a whole. Therefore, based on above discussion and analysis the future steps should be-

- Coordination between all of the actors including Government body, politician, private sector developers and NGOs.
- Rectifying the present policy to relocate the slum in the fringe area and find any alternative solutions
  Providing slum dwellers tenure security and encouraging them to improve the existing condition and also initiating

strong community network among slum dwellers (following positive examples with Bang Bua canal settlements, Bangkok.).

- Decentralizing the employment sector from Dhaka to other part of the country and to create more job opportunity.

TABLE I
SOCIO-ECONOMIC DATA ANALYSIS

Selection	Case Study 01 (Bang Bua Slum, Bangkok)	Case Study 02 (Dharavi slum, Mumbai)	Case Study 03 (Korail slum, Dhaka)
Location	Core area of northern Bangkok Canal side.	In the middle of financial capital, besides sea side	Core of posh residential area of Dhaka. Lake side
Socio-Demographic data	3400 Households in 13 kilometer stretch canal area. Old settlement, duration of stay 50 years.	10, 00,000 people in 200 hectors area. Old settlement, over 60 years ago, started as fishing village. Economic depression- resettlement reason	86,200 people in 99 acres of land. Old settlements since 1961. Climatic disaster and economic depression – resettlement reason.
Dwelling /Habitat type	One or two storey reinforced concrete. Material-Wood and mortar	One or two storey. Roof-CI sheet, wall- brick, CI sheet, bamboo, polythene, straw etc. Very few concrete roof slabs.	One or two storey. Roof-CI sheet, wall- brick, CI sheet, bamboo, polythene, straw etc. Very few concrete roof slabs.
Economic pattern	Informal sector- vendor, taxi driver, construction worker, small business owner.	80% Informal, small, home-based production units like recycling industries, leather tanneries, heavy metal work, garments, shoes, luggage and jewelry.	Informal sector- vendor, taxi driver, construction worker, small business owner, garments worker, maid, rickshaw puller etc.
Infrastructure	Poor condition.	Very poor.	Very poor.
Internal power structure	Strong internal community network	Multiple power structure mainly political groups.	No strong power structure, influence of political groups.
land ownership	Government under Treasury department of Bangkok.	Under state ownership, small portion under private ownership.	Three stakeholders- T&T, PWD and former private land owner
Tenure condition	• Illegal settlers	• Illegal, fear of eviction.	• Illegal, fear of eviction.

TABLE II
DEVELOPMENT STRATEGY TAKEN BY PUBLIC AND PRIVATE SECTOR

Selection	Case Study 01 (Bang Bua Slum, Bangkok)	Case Study 02 (Dharavi slum, Mumbai)	Case Study 03 (Korail slum, Dhaka)
Organization	Bang Man Kong National upgrading programme, CODI- community capacity building and provide loan and local NGOs.	PMGP (Prime Minister Grant project), SPARC, NGOs, SRS and MCHS (Markandeya co- operative housing society)	No development strategy yet.
Area covered	The entire Klong Bang Bua settlement	Part of Dharavi slum: Markandeya slum portion.	
Tenure Security	30 years renewable lease. 1 baht per sq.:40 -70 bath rent per month to the Treasury Department. Self- help housing concept.	Direct subsidy from government HUDCO loans Low interest fee loans. Competition among slum dwellers.	
Working Framework	*Policy and decision making level*- Treasury Department, CODI, local authorities and local university. *Working level*- different level of community committee (existing and new formation by CODI)	*Policy and decision making level*- PMGP and SPARC *Working level*- PMGP, SPARC, SRS, HUDCO, MCHS and developers.	
Extent of development	Proving new houses, relocating existing block, face lifting of existing dwellings, widening of streets, canal revitalization and environmental up gradation, infrastructure and services.	Demolishing the existing slum and providing new apartment unit to the slum dwellers with services. Commercial zone for state housing authorities. Developers unit.	
Network	Good collaboration with organization, community committee and local authority. Strong community network.	Poor communication among different organization. Lack of community involvement.	

Source: Case study 01- [34], [15] Case Study 02- [16]-[19], [32]

APPENDIX

Appendix A: Population Census of Dhaka since 1600 to 2001

TABLE III
THE POPULATION AND AREA SIZE OF DHAKA CITY [10]

Year	Periods	Population	Area	Year	Periods	Population	Area
1608	Pre Mughal	30,000	2	1931	British Period	161,922	20
1700	Mughal Period	900,000	40	1941	British Period	239,728	25
1800	British Period	200,000	4.5	1951	British Period	411,279	85
1867	British Period	51,636	10	1964	Pakistan Period	718,766	125
1872	British Period	69,212	20	1974	Pakistan Period	2,068,353	336
1881	British period	80,358	20	1981	Bangladesh Period	3,440,147	510
1891	British Period	83,358	20	1991	Bangladesh Period	6,887,459	1,353
1901	British Period	104,385	20	2001	Bangladesh Period	10,712,206	1,530

Appendix B: The Table of Calorie Intake

TABLE IV
THE CALORIE INTAKE DATA OF URBAN POOR [10]

Survey year	Poverty line 1 Absolute Poverty (2,122 k.cal per person per day)				Poverty line 2 Hardcore Poverty (1,805 k.cal per person per day)			
	National		Urban		National		Urban	
	Number (Million)	% of Pop	Number (Million)	% of Pop	Number (Million)	% of Pop	Number (Million)	% of Pop
1988-89	49.7	47.8	6.3	47.6	29.5	28.4	3.5	26.4
1991-92	51.6	47.5	6.8	46.7	30.4	28.0	3.8	26.3
1995-96	55.3	47.5	9.6	49.7	29.1	25.1	5.2	27.3
2000	55.8	44.3	13.2	52.5	24.9	20.0	6.0	25.0

Appendix C: DMDP Plan Structure

Structure Plan- SP (1995-2015)

In the structure plan section 'Shelter and housing' it was recommended that-
- *Land* – Remove existing impediments in the supply, transfer and regulations of land for shelter;
- *Facilitating Actions* – Introduce supporting actions designed to increase the operations of land and housing markets in favor of the majority of low to moderate income households;
- *Environmental Impact* – Introduce supporting actions designed to minimize the impact of the shelter sector on environmental conditions, maintain basic public health and minimize the impacts of natural hazards on shelters.

Urban Area Plan- UAP (1995-2005)

UAP has given more specific recommendation for housing. It has divided the entire urban population in five percentiles based on their income level. These five groups are-
- 0-10 percentile: This group of people has no or very little income for survive and cannot afford to pay for shelter. For this group UAP has recommended night shelter facilities along with water, sanitary and food against some services.
- 10-30 percentile: This group of people can meet the basic needs (shelter, food, cloths, medical and education) for survival but has no savings. They fall under slum and squatter settlements and illegally occupied the land but still pay rent or levies to be allowed to stay. It is recommended that there will be a reduction in the levies paid by guaranteeing some form of secure tenure and also encouraging them to improve their living condition, basic services and environmental condition through community participation. It recommended relocation with all basic facilities in the fringes of the city rather than redevelopment of the existing sites.
- 30-50 percentile: This group is above deep poverty level and has some savings to improve their living conditions. They need political and institutional framework and motivation and safety for their investments. Through partnership with local, public and private sector infrastructure and community services, this group is capable of the implementation, operation and maintenance of tertiary levels of infrastructure and community and social provisions. UAP proposed affordable housing and subsidized plots with secure tenure in the fringes area.
- 50-70 percentile: They are able to acquire small plots and develop their own permanent structures with a long implementation time. UAP proposed several land development scheme for this group of people. It also recommended better housing loan and repayment terms to induce early development by increasing income generations and job opportunities.
- 70-100 percentile: This group of people is well served and more than able to improve their and neighboring infrastructure and services. The role of the public sector should be reduced to one of moderator or manager by providing at-cost major off-site infrastructure and by setting building standards and planning regulations that should be met.

Detail Area Plan- DAP (2005-2015)

The major function of DAP is to implement the scheme described in UAP to meet the requirement of the five percentiles group of people. Tools for implementations are-

For the 0-10 percentile, the prime tool to implement the strategy is to identify this group geographically. For the inhabitants in the 10 to 50 percentiles, the necessary tools are: strong participation of the stakeholders, land banking scheme by RAJUK and of course identification of these groups in terms of location. For the inhabitants of the 50-70 percentiles, the required tools are: strong participation of the land owners and their consent upgraded inventory of land owners and upgraded land value information.

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