

PLANNING AND DEVELOPMENT OF DHAKA - A STORY OF 400 YEARS

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ABSTRACT

This paper provides an overview of urban structure and the planning history of Dhaka. Human settlement in Dhaka can be traced back as far as the 12th century, but it was the Mughals who for strategic reasons established a town in the early seventeenth century. Since then the city has experienced an adventurous path under different rulers and has faced multifaceted challenges. Starting as a military outpost, Dhaka has served as a business centre, trading hub, regional capital, provincial capital and now as the primate city of a nation with 16million inhabitants. While travelling through a political rollercoaster, the planning history of Dhaka is characterised by a variety of philosophical views all of which have left a spatial imprint on this historical city. The paper traces these different planning trajectories, examines their spatial impact and focuses on the current situation of Dhaka - one characterised by high densities and overcrowding, environmental degradation, severe traffic congestion and haphazard planning. Our analysis has a focus on growth and changes in urban structure over time. It particularly emphasises the spatial distribution of economic activities in Dhaka, and investigates the forces behind it. We also examine the role of different plans in accounting for the current form of the city. Geographical limitations appear to play a major role in the current urban pattern of Dhaka. There is wide heterogeneity in its urban form as different parts of Dhaka were developed over different centuries for different purposes. We investigate the harmony amongst different parts of the city to reveal dynamics among land uses and to present some guidelines for sustainable urban growth.

Key Words: Dhaka, planning and development history, urban structure, sustainable growth .

INTRODUCTION

Human settlement in Dhaka can be traced back as early as the 12th century (Ahmed, 1986). It is likely that the fertile land of the delta brought human settlement on this land. The Mughals recognized the importance of the land and established a city in the early seventeenth century (Karim, 1989). The Mughals established the city as their capital and strategic centre to rule the region, and as a business centre for handicrafts (Mohsin, 1989). The independence of the sub-continent after World War II in 1947 gave it a fresh impetus for

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development as it became the capital of East Pakistan - a province of Pakistan. The creation of Bangladesh as a sovereign country in 1971 further boosted the development and it quickly grew to primate city status.

While travelling through a political rollercoaster, the city received attention, negligence, political instability, poverty, natural calamity and went through different philosophical views for its development. The city in its present form translates its experiences through crowding, environmental degradation, land grabbing, mismanagement, corruption and political rivalry. However, as a home for millions and hope for more, it holds the opportunities for a better living place - a sustainable mega city that can lead this poverty stricken country towards a brighter future.

This paper is divided into four sections. At first urbanization pattern of Bangladesh is presented and then different physical and administrative boundaries of Dhaka by different institutions are discussed. Third, highlights of urban development and growth by different rulers are illustrated. Finally, role of planning initiatives to bring the city into current form are discussed.

URBANIZATION IN BANGLADESH

With a population over 12 million in the main city and 16.7 million in the mega region (United Nations, 2003), Dhaka is one of the largest cities in the world, being ranked the 11th largest city. Dhaka is also the fastest growing mega city in the world with a growth rate of 3.2% (Figure 1) and an estimated 300,000 to 400,000 new migrants, mostly poor, arriving to the city every year (World Bank, 2007). It is one of the most densely (968 person/Km²) populated countries on earth with an area of 144,000 km². Bangladesh is predominantly an agrarian country experiencing rapid urbanization and economic transformation in its recent history (Hossain, 2008). While developing nations in Asia show rapid rates of urbanization, Bangladesh still remains less urbanized (25%). Although the absolute urban population as well as the number of cities and towns in the country has significantly increased during the last few decades, both the process of urbanization and the dynamics of growth of urban centres in Bangladesh are quite different from other developing countries in South and Southeast Asia (Rahman, 2004). It appears, however, that trickle down effects are not spatially uniform, perhaps because of spatial variations in environmental conditions, and socio-economic infrastructure of the country (Rahman, 2004). And there exists wide spatial inequalities in the rates of urbanization, quality and quantity of social infrastructure and economic growth and development. Another reason that Islam (2006) mentioned for the existence of these inequalities is the practice of development planning. In Bangladesh traditional development planning takes a sectoral form (transport, housing, energy etc.) rather than a regional or spatial approach (Islam 2006).

Rapid population growth (Figure 2) at the national scale triggers urban growth as the rural economy cannot absorb this growing pressure. Urban growth in the cities, which plays an increasingly significant role in economic development, is challenging local governments in devising ways to develop and implement appropriate strategies to ensure sustainable urban development. The increased population growth of Bangladesh compared to its resources and frequent natural hazards, has made it more challenging to offer a minimum standard of living. Although income growth is higher and poverty incidence is lower than the rest of Bangladesh, Dhaka remains a low income city with large numbers of poor when compared with most mega cities of the world. Much of the country is prone to annual flooding that delimits the spatial growth for a country with limited economic strength. Moreover, poor city management, lower efficiency in administration and management and large corruption in service provision are exacerbating the problems (Mahmud, 2007). Urban traffic is reaching nightmare proportions, often causing massive delays in covering small distances with associated productivity losses. Several international agencies have rated the quality of living in world cities and Dhaka scored very poor on most of them. United Nations' City Development Index (CDI) ranked it 7th worst; Economist Intelligence Unit (EIU) ranked it 3rd worst with a ranking tied with Lagos; Asia week (2000) placed it 39 out of 40 cities (Ahmed and Ahmad et al. 2005).

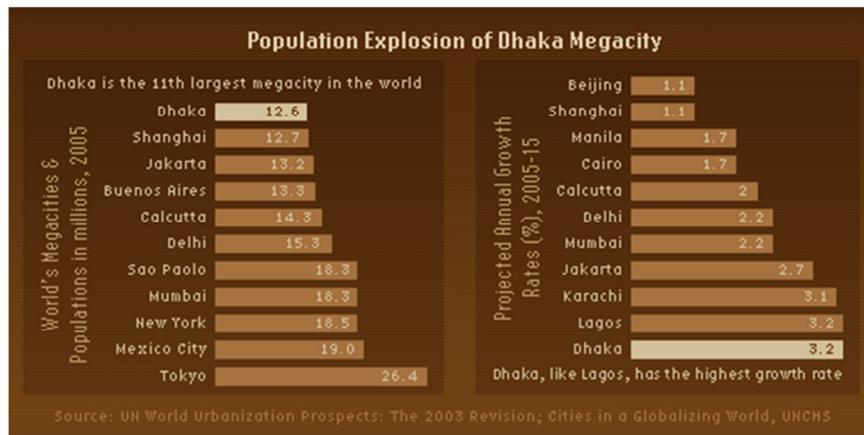


Figure 1: Population Explosion of Dhaka Megacity
Source: United Nations (2003)

The hierarchy of the urban system includes both induced and spontaneous growth centres. Large numbers of spontaneous growth centers grow due to rapid population growth as well as the growing importance of certain local resources that induce economic growth. There are 64 districts with varying levels of urbanization ranging from 60% to under 10% (Rahman, 2004). The district of Dhaka is over 90% urban (Islam 2006). Dhaka holds 38% of its total urban population whereas Chittagong and Khulna, the second and third largest cities, have only 11% and 4% of population respectively (United Nations, 2003). This rapid urbanization is putting pressure on the city's limited land, an already

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fragile environment, and weak urban services. In 1975, only 9.9% of the country's 75 million people lived in urban areas, this has increased to 25% in 2003 with 140 million people (Figure 2). Present population density in the main city of Dhaka is now believed to have reached around 34000 people per square kilometer (Ahmed and Ahmad et al. 2005). The United Nations (2003) has projected that urban population in Bangladesh will be around 40% by 2030.

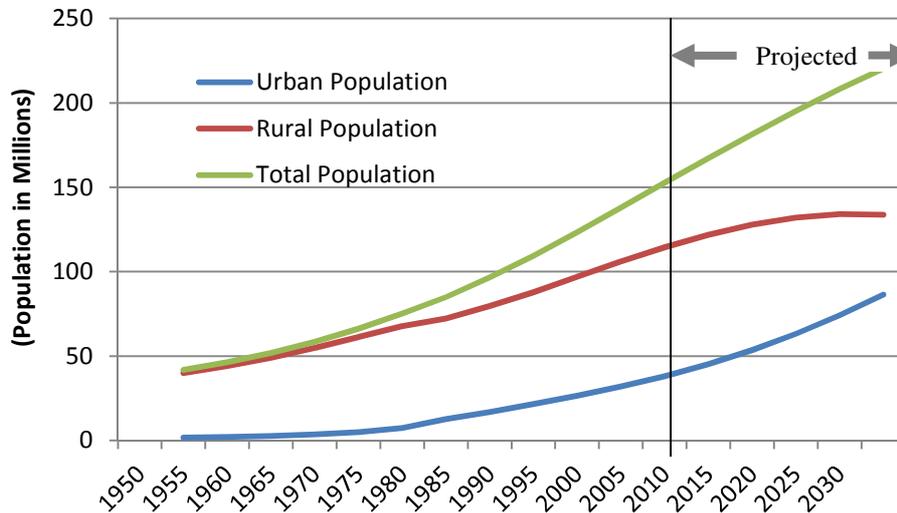


Figure 2: Population growth in Bangladesh
Source: United Nations, 2003

Unequal urbanization in the country and concentration of urban services, employment and business opportunities in Dhaka has transformed it into a mega city (Rahman, 2004). However, several planning documents have recommended the decentralization of economic activities and its growth from Dhaka and enhancing the economic base of other urban areas (Minoprio & Spencely and PW Macfarlane, 1959; Shankland Cox Partners and Others, 1981). But no effective mechanism has been developed. Since its independence in 1971, Bangladesh attempted several times to develop an acceptable local government structure to decentralize political power, administrative authority, and financial autonomy. But all have failed due to problems with national politics.

PHYSICAL AND ADMINISTRATIVE SETTINGS OF DHAKA

Dhaka, the capital of Bangladesh is located in the central region of the flat deltaic plain of the three large rivers, the Padma (the Ganges), the Bramhaputra and the Meghna (Figure 3). Over the years, the spread of this city has been determined by its population increase and availability of land for city expansion.

The tributaries of the major rivers surround the city of Dhaka. The surrounding rivers are the Buriganga in the south, Turag in the north and west and Balu in the east. The elevation of Dhaka is up to 13 meters above mean sea level. Dhaka west and some parts of the north and south are protected from river floods by peripheral embankments (Figure 3). Much of Dhaka and its surrounding areas are prone to yearly floods. Flood prone areas have 2 to 4 meters of flooding for 3 to 4 months. That extends to the edge of the city thus forming a real urban boundary. Even within the city itself, which stands on relatively elevated land including the areas to the north of the city, urban development opportunities are constrained by a large number of re-entrant valleys (Talukder, 2006). Thus the area of expansion of Dhaka has been governed by the physical configuration of the landscape in and around the city, particularly the river system and the height of land in relation to flood levels (Chowdhury and Faruqui, 1989).

Demographic, social and economic correlates are the determinants of urban structure which is a complex task to define for Bangladesh, due to high population density and a lower level of infrastructure and urban services. The definition employed by the census commission defined urban areas as the developed places around an identifiable central place where amenities (like metalled roads) exist and which are densely populated and a majority of the population are non-agricultural and where community sense is well developed (BBS, 1991). So, it changes over time as the urbanization progresses. Moreover, different organizations working with Dhaka city define the boundary with their own definition and utilize different city extents that make data accumulation more difficult (Table 1). The situation adds additional complexity as the boundary changes with the temporal horizon. For example, extent of Dhaka city varies from 360 to 1530 sq. Km according to different organizations operating on Dhaka. Very often the terms 'city', 'mega city' and 'urban agglomeration' are interchangeably used in reports and literature and their statistics are compared and aggregated inappropriately. For example, Ahmed and Ahmad et al (2005) mentioned Dhaka city having more 2000 square Kilometres with 34000 people per square kilometre, but a national daily (Prothom Alo, 2009) with a reference to national population research centre claims to have 27700 people per square kilometre. That makes the data comparison and combination very difficult and confusing. So, for this study, it is of utmost importance to define Dhaka spatially.

Table 1: Dhaka by different organizations

Administrative Body	Name	Area (in Km ²)	Population	Density (per Km ²)
Dhaka City Corporation ¹	<i>Dhaka City</i>	360	6,000,000	16,666
Other Municipalities (Narayanganj, Savar, Gazipur) ²	<i>Municipality</i>	162	1,242,520	7,669

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Bangladesh Bureau of Statistics (BBS) ³	Statistical Metropolitan Area (SMA)	3966	9,672,763	2,438
RAJUK (Capital Development Authority) ⁴	Dhaka Metropolitan Development & Planning Area (DMDP Area)	1528	9,300,000	6,086
Dhaka Transport Coordination Board (DTCB)	STP Area	7440 ⁴	17,090,417 (17,300,000)	2,297

Source:

¹<http://www.dhakacity.org/>

²BBS, 2001

³DMDP, 1997

⁴The Louis Berger Group, I. and B. C. Ltd (2005),

Dhaka city can be considered as the main city, which contains the old part of the city and a comparatively high density area enclosed by the Buriganga, Turag and Balu Rivers (Figure 3). The planning and development authority in Dhaka has defined their jurisdiction by a plan in 2005 which comprised of Dhaka city, several other municipalities within the Dhaka district and its surroundings in all directions with a higher level of urbanization. It is commonly known as the Dhaka Metropolitan Development Plan (DMDP) area. Again, the Strategic Transport Plan (STP) for Dhaka completed in 2005 defines an even larger area for Dhaka. The STP area is an extension of the DMDP area covering the whole Dhaka district with an assumption that areas outside the city and DMDP area have significant contributions and connections with the traffic in Dhaka (Figure 3).

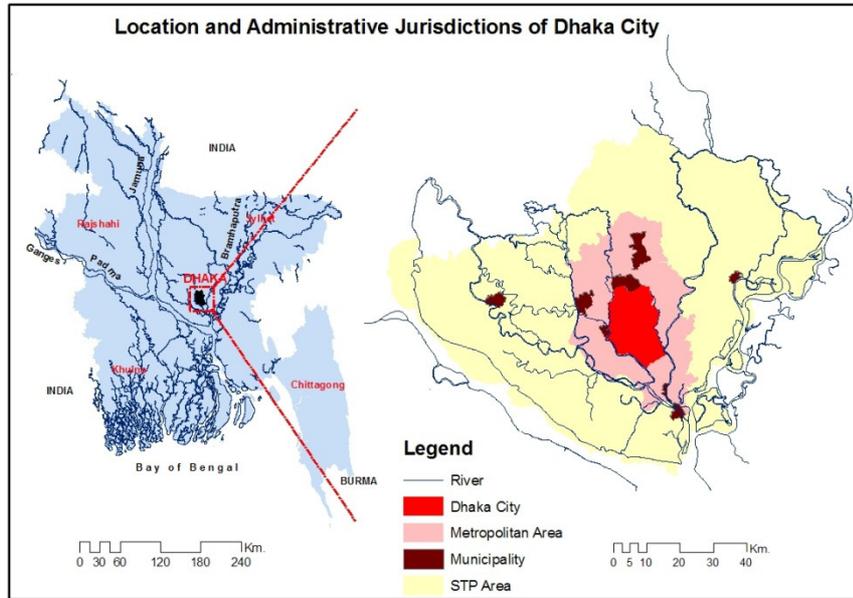


Figure 3: Location and Administrative Boundary of Dhaka
Source: DMDP (2005), STP (2005),

URBAN EVOLUTION HISTORY OF DHAKA

Dhaka has come to its present state by experiencing different rulers of different cultures and through a wide range of governance structures, administration, natural calamity, poverty and an enormous number of other problems. In order to realize the form of the city and its spatial consequences, it is essential to understand the historical evolution of the city through knowing its major expansion, growth strategies, planning decisions and reasons behind it. Dhaka was a small rural settlement on relatively high and flat land surrounded by flood affected swampy land until the end of 16th century. In the last 400 years the city experienced several rulers having different perspectives on city development and expansion. The spatial growth, especially, in last 60 years in phenomenal (Figure 4). The Mughals established their capital in Dhaka in 1610 and developed the city as a business hub along with their defense headquarters. The British East India Company took over control of Dhaka in 1757 and considered Dhaka as a regional trading centre and market. Dhaka became the provincial capital of East Pakistan in 1947. During this time Dhaka received large numbers of Muslim migrants from India. To accommodate this sudden growth several area development project were undertaken between 1950 and 1960. As the capital of Bangladesh since 1971, Dhaka lead the nation in urbanization and city primacy.

SETTLEMENT BEFORE AND AFTER MUGHAL EMPIRE (1608-1757)

Dhaka came into prominence after the Mughals appointed Islam Khan as the first Mughal viceroy of Bengal in 1608. Islam Khan established his capital in Dhaka in 1610 with a view to subjugate the landlords of Bengal (Ahmed, 1986 ; Karim, 1989). It was the geographical location of Dhaka, the topographic advantages of being situated on higher ground in a low lying region, and above all its strategic position on the water-routes of the country which convinced the Mughals to establish their capital (Chowdhury and Faruqui, 1989). During the Mughal era, Dhaka attained great commercial importance and became a trading centre for the whole of South East Asia.

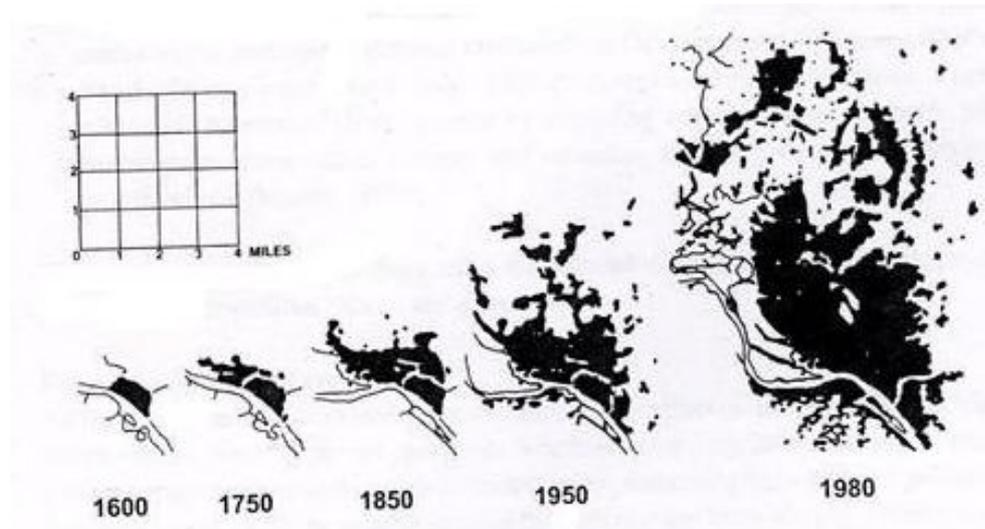
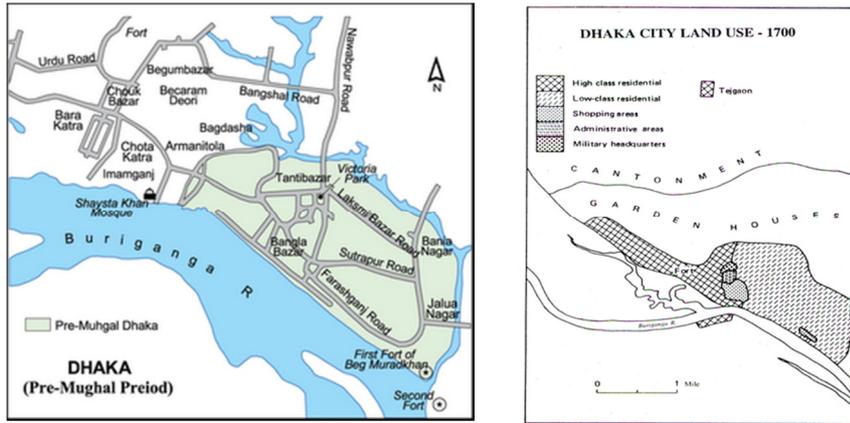


Figure 4: Urban Growth of Dhaka
Source: Shankland Cox Partners and Others, 1981

Mughal Dhaka was developed as a manufacturing centre for a wide variety of cottage products -some of these items included shell works, bamboo mats, fine cottons, refined butter and cheese along with a number of agricultural products that were exported to other parts of the country. The easily washable cotton fabrics of the Dhaka region attracted the European trading companies to settle and establish their factories in Dhaka (Mohsin, 1989). Inland and external trade expanded and handicraft production, especially the production of textiles sharply increased during this time (Islam, 1989a). Due to its commercial importance Dhaka attracted the European traders - the Portuguese, the Dutch, the English and the French, and also the Armenians - they all came and established their trading posts in Dhaka in the 17th century. They established their factories in the Tejgaon area (Figure 5b), which continued to enjoy commercial importance during the next century (Chowdhury and Faruqui, 1989). However, the greatest development of the city took place under Shaista

Khan (1662-1679). The city then stretched for 20 km in length and 12 km in breadth and is said to have contained nearly a million people (Ahmed, 1986).



(a) Pre-Mughal Dhaka

(a) Mughal Dhaka

Figure 5: Dhaka during Pre-Mughal period (a) and Mughal period (b)
Source: Islam, 1996b

The Mughal Dhaka was divided into several functional areas. The ‘bazaar’ or market place was the focus of development. The market was well located to serve both the upper class and the lower class residential areas. It was also close to the Buriganga river which served as the principal means of communication. An important aspect of the city’s life was the cottage industries. They were located close to the market area. The artisans also lived there. In most cases, the same house was used for the factory and the residence. Within the industrial area there were different zones for different crafts. All these specialized industrial and trading areas and some surrounding other localities housed a major part of the city’s low class population consisting of artisans, labourers and petty traders.

Rivers and canals were used as a means to transport goods and people from surrounding villages. Within the city, development was compact and walking was the main mode of travel. There was very little vehicular traffic. This accounts for the absence of any well-developed road system in Mughal Dhaka. There were horses but mainly owned by the Mughal army and very rich merchants. The city was divided into a number of neighbourhoods which was a cluster of houses webbed with intricate narrow lanes (Islam, 1996a). The commercial importance in the late 17th century helped to allocate some land in Tejgaon to establish factories for the Europeans and hence settlements. Bungalows were sparsely located around the Tejgaon area where European businessmen mainly lived. This area later became connected by a train line in the late 19th century.

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Dhaka lost its status as a capital town in 1706 when the Mughal capital was shifted from Dhaka to Murshidabad, Kolkata and it started to decline and experienced a long slumber for more than a century (Ahmed, 1986). The factories of the companies attracted many people connected with manufacturing, trade, commerce and money lending. The export of the European companies from Dhaka increased enormously during this time. So, in spite of shifting the capital to Murshidabad, Dhaka as a city and commercial centre did not decline significantly, though city expansion and development was definitely contained (Karim, 1989).

Dhaka lacked any kind of corporate or municipal institutions during the Mughal period (Gupta, 1989). The Mughals constructed forts and other administrative establishments on newly cleared land at strategic locations and canals were excavated for quick deployment of Mughal forces. They did not have any specific plan for city expansion but the city expanded towards the north, because, being on low land, other directions were not suitable for any development.

DHAKA UNDER BRITISH RULE (1757 - 1947)

With the end of Mughal rule and the inception of British power around 1760, Dhaka began to decline in importance and contract in size. The city experienced disastrous famines, flood and fires. Calcutta was growing in importance and it was difficult for Dhaka to compete with Calcutta which was the capital of British India. During this period Dhaka suffered physical shrinkage as well (Chowdhury and Faruqui, 1989). From 1800 to 1867 the population dropped from 200,000 to less than 60,000 (Islam, 1996).

The second half of the 19th century marked the beginning of the physical renewal of Dhaka. The city did not expand but the old Mughal town underwent changes. As a result medieval Dhaka was finally transformed into a modern city with metalled roads, open spaces, street lights and piped water supply' (Ahmed 1986, p. 129). In the process of consolidation of Dhaka's commercial dominance in Eastern Bengal, the Narayanganj-Dhaka-Mymensingh railway was opened in 1886. The rail was laid almost parallel to the Mugla road from Tongi through Tejgaon to the Phulbari area and encircled the Ramna area to save the greenery (Figure 6). The inner part of the city also witnessed widespread rebuilding activities of roads and houses, but not following any definite plan.

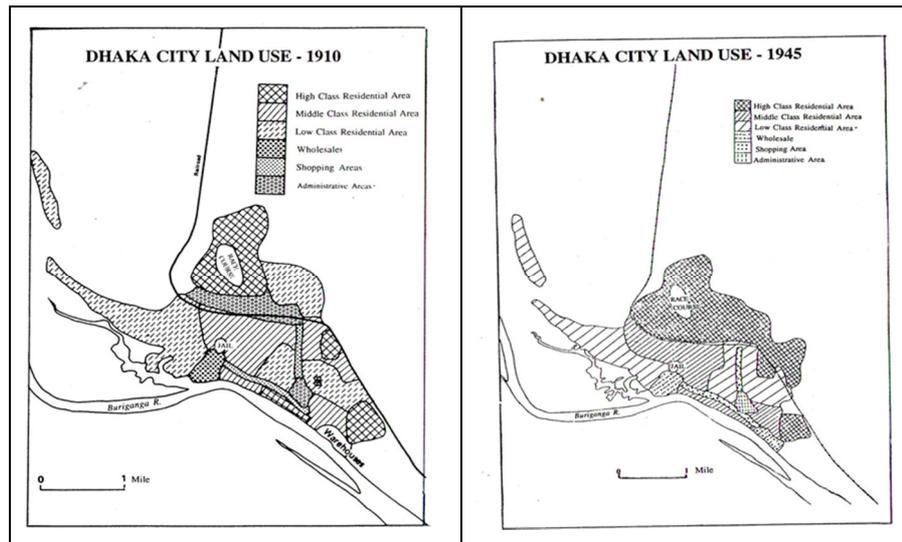


Figure 6: Dhaka during the British period (1757-1947)
Source: Islam, 1996b

The Appointment of Sir Patrick Geddes in 1906 to make a plan for the city shows its recognition as an important city for the British in India. Sir Patrick Geddes, following his week-long visit in the locality, proposed an outline for the development of the city. He emphasized the protection of natural greenery in the Ramna area and the widening of roads for increased traffic (Geddes, 1906). Geddes emphasis was to conserve the character of any area while making plans to accommodate growth.

DHAKA AS THE EAST PAKISTAN CAPITAL (1947 - 1971)

Since becoming the capital of East Pakistan in 1947 the landscape of Dhaka City has been undergoing rapid change; the city expanded northward and the high class residential areas were constantly endeavouring to keep themselves at the northern periphery of the city by creating 'new Dhaka'; mainly, because, higher lands were available in the North and low lands in East and West were vulnerable to annual floods. The Motijheel area, once desolate and lying on the fringe of marshes and swamps, was earmarked as a commercial area in 1954. To cater to the ever increasing residential needs of the new capital, the Dhanmondi area, which was adorned with paddy fields, came to be developed as a residential area after 1955. The Mirpur road formed an axis and the highland on either side of the road came to be occupied right up to Mohammadpur and Mirpur. In the 1960s these two areas came to be developed by the government mainly to accommodate the migrant Muslim population (Figure 7)

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The need for a planning body was felt at this time and the Dhaka Improvement Trust (DIT) was created in 1956 for the planning and development of the city. DIT developed the Ghulsan Model Town in 1961, Banani 1964, Uttara 1965 and Baridhara model town in 1972. Although these satellite towns were developed to accommodate the middle income groups, the inappropriate allocation procedure and rapid increase of land price has ended with these high class residential areas. These satellite towns have now matured, cater for a large number of jobs and are important centres for the city (Kabir and Parolin, 2010).

DHAKA AS THE CAPITAL OF BANGLADESH (SINCE 1971)

Independence in 1971 enhanced urbanization in Bangladesh. Dhaka, being the largest city and having most amenities, received the lions share of this growth. The driving factors for this rapid rural urban migration are surplus labour in agriculture, globalization, drought, systematic failure of rural agriculture and perceived opportunity in the city (Khan, 2008). With the increase in population, the highlands spreading towards the north came to be occupied and built up. The intervening ditches, swamps and marshes were filled up, not in any planned manner, but as the exigency arose and private initiative played a dominant role in the process (Huq and Alam, 2003). The planning and development authority DIT/RAJUK chose the highlands on the Dhaka-Tongi axes as sites for its residential projects. The city did not experience any serious effort to reclaim land under a well-planned scheme to give the city a homogenous and cohesive growth (Chowdhury and Faruqui, 1989 ; Talukder, 2006).

Until 1990 the main city was limited between the Balu and Turag rivers in the east and west due to the area beyond this limit being low, swampy and flood affected. But with rapid population growth and the advent of private developers the low lying areas were filled in and elevated and different housing schemes offered. As the land become scarcer, the vertical development for both commercial and residential sectors becomes a common pattern.

PLANNING INITIATIVES FOR DHAKA MEGA CITY

Dhaka is a prominent city in the region. This flood prone fertile delta remains highly dense since history for its agriculture production and business potential. City expansion is highly contained by geographical limitation. Though the presence of physical planning is not strong enough, it has significant impact in shaping the city and to bring it to current situation.

1917: DACCA TOWN PLANNING REPORT

During British colonial times Sir Patrick Geddes was commissioned to make a development plan for Dhaka city. Geddes produced a proposal after a week long visit to the city. He mentioned the inadequacy of his own 'diagnostic survey' in Dhaka, because of the time constraint. But he showed the way to deal with particular aspects of the city, and proposed that further surveys should be

conducted in the same line to complete the process of diagnostic survey and subsequently to produce a more authentic master plan for the city. Geddes emphasis to conserve the character of any area while making plans to accommodate growth. Dhaka city was divided into zones in this plan, which offered an outline for development of the old town area with colonial offices and residential buildings around Ramna Green (Safi, 2010). But that plan was never adopted formally or no efforts were made for implementing the same (Ameen, 1998). However, the influence of the guidelines that it chalked out is very prominently evident in the Dhaka Univesity area (Hyder, 1994).

1948: East Pakistan Planning Sub-Committee

A comprehensive planning lack was felt to accmmodate the sudden growth. Due to absence of any planning body, in 1948, the East Bengal (or East Pakistan) government created a planning division under which a sub-committee prepared a physical plan for the city's expansion (Islam, 1996b). However, this plan lacked any formal background studies. The plan was a sort of development scheme concentrated on about 50 km² area around Dhaka. It suggested improvement of roads, new roads construction, new residential area (Dhanmondi for high class, Azimpur and Motijheel for government employee), an industrial area (Tejgaon), 'New Market' shopping centre and hotel development (Shahbagh). Residential plan was partially implemented but the impacts of these development projects have been quite significant on the spatial structure of the city (Ameen 1998; Islam 1996b; Mowla, 2007).

All these areas have revealed to be centres of activities. Mohammadpur and Mirpur were designated to rehabilitate non-Bengali refugees arriving from India. These represented the first introduction of the Western concept of 'sites and services' and the 'core house' for the general masses (Islam, 1996b). Tejgaon was developed to encourage factory development and to provide employment to basically non-Bengali immigrants. These schemes were later adopted in the 1959 master plan. These new physical developments, though piecemeal in their efforts, reflect European concepts of urban planning and design with functional zoning of land use (Mowla, 2007).

1959: DACCA MASTER PLAN

The first comprehensive master plan was made by an expatriate firm Minupria & Macfarlane in 1958. The objective of this master plan was to establish planning principles rather than to lay down a detailed and inflexible scheme. It identified two main problems for the development of the city: (i) shortage of land above flood level on which to build and (ii) the congestion in the old central area of Dhaka (Minupria and Macfarlane, 1959). The plan was prepared over a 20 year planning horizon (1958 to 1978) with an estimated population increase by 40% (1.75% per annum). The plan defined the landuse pattern, zoning, water bodies, flood prone and buildable zones. They expected that population will increase from 575,000 to 816,000 in the main city and from 1,035,000 to 1,466,000 in the conurbations.

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They recommended two major changes to the boundary of the area under the jurisdiction of the Dacca Improvement Trust (Now known as RAJUK, Capital Development Authority)(Figure, 7). Dhaka did not have much scope to expand to the south, east or west; so they therefore proposed that the northern boundary should be extended to include all the land in Tungi suitable for building and concluded that this should be sufficient to accommodate the growth of Dhaka until 1978. The plan also recommended taking control on the land on the south bank of the Buriganga River: “any unsuitable development there could, on account of its proximity to Dhaka, be most detrimental to the town’s amenities” (Minupria and Macfarlane, 1959).

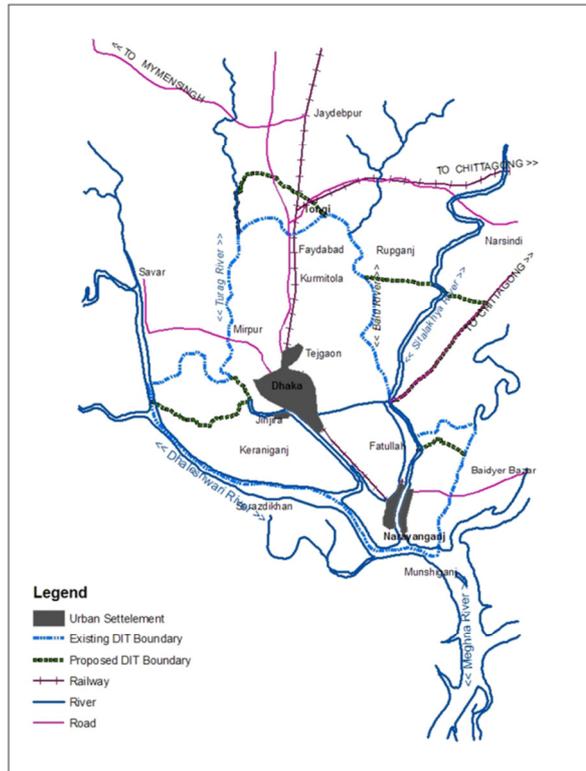


Figure 7: City Boundary proposed by 1959 Master Plan
Source: Prepared by Authors Based on Shankland Cox Parters and Others, 1959

Other prominent suggestions were:

- in order to discourage the excessive growth of Dhaka, it was highly recommended to formulate a national planning policy for Bangladesh aimed at encouraging the expansion of industry and commerce in other towns.

- Dhaka's growth as a capital city, administrative and university centre is stimulated by setting up substantial new industries; serious considerations should be given to steering them elsewhere.
- They estimated that 70,000 people will require factory employment and 1400 acres will be required for this factory land.
- This plan suggested an additional 4481 acres of land zoned for industry. At 50 persons/ acre this would provide employment for 224,050 persons
- they estimated that housing will be required for 402,700 persons and suggested several new housing schemes for them (Figure 8)
- they detailed out the strategic location of these sites. For example, since Tungji is located far to the north and did not have good transport links with Dhaka, they suggested it be developed as a self-contained new town having a balanced community of houses and a nucleus of industry. Mirpur, on the other hand, was suggested as a residential satellite having good commuting options to the main city.
- They identified the unique living standard for the old city dwellers and suggested extended residential areas on the reclaim land in the south (Keraniganj and Postogola) to accommodate growth of the old part of the city.

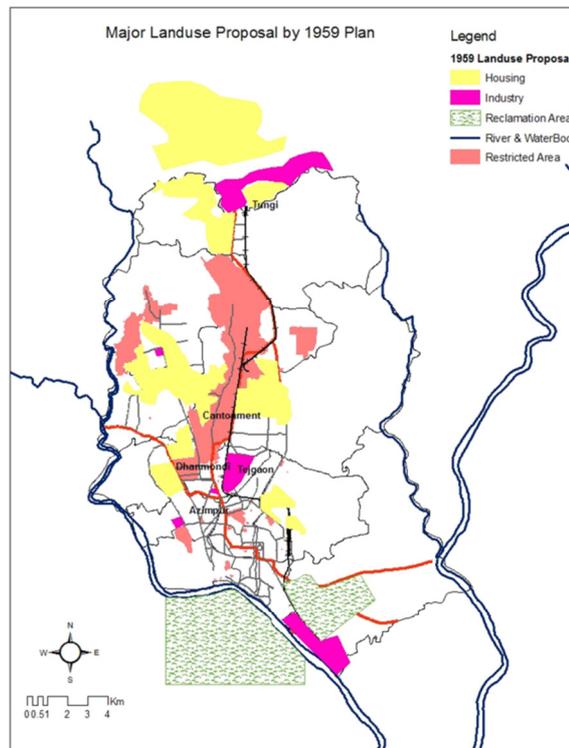


Figure 8: Land use proposal in 1958 master plan

However due to unusual growth, increase of population and changes in socio-political conditions RAJUK failed to fulfill their task (Ameen, 1998). The implementation process is marked more by breach and deviation than adherence to the plan. RAJUK had made efforts to develop new areas for residential, administrative and commercial purposes. It has made changes in landuse pattern and chalked out detail structure plans which would never be implemented. Again adhoc decisions from bureaucratic quarters and natural forces determined the growth of the city (Ameen, 1998 ; Mowla 2007).

1981: DHAKA METROPOLITAN AREA INTEGRATED URBAN DEVELOPMENT PROJECT

In 1981, with ADB assistance, an expatriate firm Shankland Cox Partnership and others undertook the project named 'Dhaka Metropolitan Area Integrated Urban Development Project' (DMAIUDP). The impetus for this plan was the storm water drainage and flood problems of Dhaka metropolitan area, and its purpose was to provide a long term growth strategy for urban expansion. The 'master plan' concept had by this time gone out of fashion and it was almost impossible to bring vast unplanned developments under any sort of rigid control. It is noticeable that this study referred to projects rather than plans. It was an excellent study and considered nine options and several recommendations (Ameen, 1998). They realized that flooding and drainage are major problems of the city. With scanty resources it is not possible to make low areas flood free, instead the focus was on acquiring developed land and growth would take place in that direction in a more linear pattern. The recommendation was for a north south corridor (mass-transit) with branches towards Savar and, ultimately, to Aricha. Institutional re-arrangements were also suggested. The strategy plan took a long-term view of the city up to 2001. The recommendations of this strategy plan were never taken seriously (Zaman and Lau, 2000) and the reports only served to become a superficial reference work. Nevertheless, many of the assumptions of the plan proved to be accurate, and these later provided a comprehensive basis for the future urban growth of Dhaka.

1995: DHAKA METROPOLITAN DEVELOPMENT PLAN

In 1995, another expatriate group, Mott Macdonald in association with Culpin Planning Ltd. and others undertook the project: Dhaka Metropolitan Development Plan (DMDP). The plan was presented as a structure plan and has four major components: (i) Strategic growth options (ii) Structure plan (iii) Urban area plan, and (iv) Detailed area plan.

The DMDP structure plan provides a long term strategy for the 20 years to 2015 for the development of a greater Dhaka region that has an area of 1528 km² (DMDP, 1995) and is administered by RAJUK under the Town Improvement Act 1953.

The plan assumed that with the implementation of the Flood Action Plan, a vast area, including the present low areas, will be flood free and new peripheral expansion will take place on the east and west by encroachment on suburban and with the agricultural land, with the northern area being mainly for wealthier groups of population following existing trends of growth. More roads and highways are recommended to link with the sprawling new developments, leading to a vision of low rise, low density city form, with long journeys to work (Zaman and Lau, 2000). These proposals were meant to reduce traffic congestion in the older parts of the city.

SPATIAL GROWTH AND URBAN FORM OF DHAKA

Dhaka city grew from a rural settlement to become a mega city without much planning effort (Islam 1996b; Huq and Alam, 2003; Nilufar, 2010). Nilufar (2010) identified four distinct urban patterns in Dhaka (Figure 9), which reflects the age of the city, its rulers, planning philosophy and above all planning control. First is the historical core or 'Old Dhaka' which still contained the Mughal layout of the human scale city. Narrow lanes, very compact buildings, mixed use - all remain the same and remind one of the glorious past. The second category of urban area comprises the formal planned area or satellite towns conceived and planned since 1950. Dhanmodi, Gulshan, Mirpur, Baridhara are examples. It was usual that low lying areas were selected and reclaimed for 'site and services' satellite towns. Until 1980 only RAJUK was involved in planning and designing for this type of development but now private developers are also providing the same. There is a third category combining the two - a fusion of old and formal patterns - which occupies the most part of development (Mowla, 2007). Shanty towns and small temporary houses falls in fourth category where about 30% of Dhaka dwellers live.



Old Dhaka



Gulshan Residential (planned)



Organic



Slum

Figure 9: Urban Forms in Dhaka
Source: Google Earth (from Altitude 600 meter)

CONCLUSION

Dhaka mega city is growing in an uncontrolled manner leading to more crowding and congestion in the main city. The evidence suggests that if there are no major decisions in terms of its pattern of development, congestion could reach intolerable levels in the near future (Kabir and Parolin, 2011). Different planning reports emphasize decentralization of city functions but implementation is found to be very slow in comparison to its population growth. The urban structure of the mega city, the allocation of land-use and activity and its intensity reflects the historical past of the city. Comprehensive action is urgently required that recognizes the character of an area and allocation or controlled activity in a sustainable manner.

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