

Sustainable Urban Development: A Sustainability Study of the Dhaka Megacity

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ABSTRACT

Sustainable urban development is a precondition for positive and eco-centered development under the Urban Sustainability Framework (USF) (ADB, 2018). Climate change has played a vital role in global economic development. Meanwhile, the Earth is a roughcast multidimensional development dilemma, in which urbanization is one of them. There is a perceptual gap between the actual demand of the public and decision-makers' perceptions. According to recent UN studies, approximately 55 per cent of the world's population resides in urban areas, whereas it was 30 per cent in 1950. Currently, urbanization trends are very significant by population, for instance, in North America (82%), Latin America, and the Caribbean (81%), Europe (74%), and Oceania (68%). Urban growth in Asia is at an average of 50% and in Africa at 43% (UN, 2018). In the last two decades, the urbanization rate in Bangladesh has been 39.7% and the annual average growth rate is 3.21% (Knoema, 2023). However, this unplanned development has been destructive to natural growth, destroying the ecological environment, dishonouring historical monuments, and, finally, the cost is high in terms of money and sustainability. In this study, Dhaka, the capital city of Bangladesh, is the most vulnerable city in the world because of population, internal migration, air pollution, water pollution, and many more genuine reasons. Accordingly, this city is now unable to bear the load of this growing population's weight, which is horrible (ADB, 1998). Unplanned development also helps to increase traffic, and people waste their productive time in a way that also affects the GDP of Bangladesh. Ultimately, unplanned, imbalanced, and unsustainable development is increasing hazard, death risk, and several negative impacts of urban development in Dhaka. Consequently, for the sake of God, this type of rapid urban development needs to be reconsidered by policymakers and implementers for the betterment of current and future generations.

Keywords: Ecology; biodiversity; GAP; urban sustainability, environmental effects, pollutions, slum, traffic, Land use policies,

BACKGROUND

Compared with other developing countries, urbanization in Bangladesh is a rising phenomenon, but anxiously affects urban sustainability in the wake of deficiencies in good governance, including the Urban Sustainability Framework (USF), which has not been followed in this process. This situation also makes rural poverty and vulnerability more complex and vulnerable, predominantly in Dhaka, the capital city of Bangladesh (Rahman, 2008). Urban development is a challenging and complex issue due to housing and infrastructure, industrialization, land and land use policy, water supply and waste management, traffic control, multidimensional pollution, and so on. The ultimate gap of six key dimensions has been identified by the World Bank's study: governance and integrated planning, fiscal sustainability, economic competitiveness, environment and resource efficiency, low carbon and resilience, and social inclusiveness (ADB, 2018). Dhaka is the most polluted city in the world (Mohammad & Bishakha, 2020) because of the

cases and effects that are mostly relevant to urban development. Climate change and its impact are also key issues in urban development, particularly in Bangladesh, where multiple implications are inbuilt in the planning process executed by a developed-centered plan. While neither considers biodiversity nor people-centered development, it is highly expected that this development should be considered a more eco-centered development pedagogy. Before that, planners and decision makers should consider this most significant part of its development planning, but mostly neglect or do not consider it in every five-year plan. However, political willingness is a significant shortcoming of this rapid urban development in Dhaka (Hussain, 2013). The ultimate result is the development of urban areas with several inconsistencies and destruction of ecology and historical monuments (Rahman, 2008); (Shovon, 2008). The ultimate result of urbanization is an increase in buildings and construction, parks, museums, amusement areas, and industries. Besides, developing some hope among the lower part of the city's inhabitants but top-layer people benefited from utilizing the hard labour of the bottom part of the community (who are deliberately deprived of the so-called elite class).

It is important to properly plan and maintain urban open spaces, such as parks and green belts, around large cities, where areas in the fringes of the city are reserved for vegetation. Planning of the transport system, where an appropriate strategy for road pricing may be introduced for specific areas within the urban area to deal with traffic congestion (Dewan, Kabir., Nahar, & Rahman, 2012). Ensuring better management of existing road networks and effective traffic management. It is important that people address green cities and countrywide image building, urban governance, resource efficiency and coordination among agencies, policy coalitions, and change makers for disaster preparedness (Dewan, Kabir., Nahar, & Rahman, 2012). In addition, the conservation of common resources for sustainable and climate-resilient urbanization in Bangladesh, such as the megacity Dhaka, must be a priority agenda that must be reflected in the action.

A. Objective of the study

This study aims to identify recent challenges in urban development and the consequences of rapid urbanization in the short term and long-term impact on the environment in terms of how it impacts sustainable development in the name of urbanization. What are the urban development trends in Dhaka, and the overall situation in Bangladesh? Most prominently, this study emphasizes the environmental impact of rapid urbanization in Dhaka (Islam, 2022). These include major challenges and suffering of people, particularly children, senior citizens, and the general population.

METHODOLOGY

This study focuses on the recent phenomenon of urban development in Bangladesh, where rapid urbanization is the most significant area of discussion, considering a qualitative analysis under anthropological pedagogy. In the first part of the study, secondary data were chosen as the main source of this research work, where the author tried to figure out a comparative study as well as prejudiced areas that play a significant role in rapid urbanization in Bangladesh (Quader, 2000). They also exasperated underlying elements that are harmful to swift urbanization (Shovon, 2008). This is a qualitative study that focuses on the author(s).

Research design:

This study used a mixed-methods approach that included a systematic review of the literature to identify the most pertinent documents, and a narrative review to describe the major results in the selected documents. This combination includes the evaluation of a huge and diverse body of literature on the issue, as well as the integration and amalgamation of several academic, scientific, and practical fields. On the other hand, qualitative information was obtained from key professionals and practitioners in urban development in

Bangladesh through Key Informant Interviews (KII) and consultation with Urban Development Experts.

Data extraction approach

This interdisciplinary approach has become a popular strategy for researching various subjects, as evidenced by the increasing number of academic publications (Wu, Yan, Huang, & Sarker, 2022) following this study. Sustainable Urban Development (SUD) is essentially multidisciplinary and transdisciplinary because of the nature of its integration of technical and social sciences. This also applies to any review and synthesis, which will be interdisciplinary because they will incorporate insights and approaches from several disciplines or involve multiple disciplines in a single concept (Wu, Yan, Huang, & Sarker, 2022). Interdisciplinary attempts to build theories to adapt to changing situations have had limited effects. Multidisciplinary, interdisciplinary, and transdisciplinary perspectives and approaches are required in Sustainable Urban Development research. To ensure the validity and use of the findings of this study, all methodologies required conceptual correctness, which was followed in this research.

B. Development spectrum and contemporary theory: Literature review

The development spectrum and the contemporary theories of growth accentuate habitually on capital and technology (Ahmed & Ahmed, 2014). There is also a missing fundamental factor in a country's geography. Geographic units in terms of location, climate, resource endowments, and environment are the constituent elements of the engine of growth, forming enormous bundles of trade, transport, innovation, and talent (Ahsan & Rahman, 2018). Generally, urbanization leads to industrialization, and these two issues are closely linked in many ways. With increasing economic development, the dominance of the agricultural sector gradually diminishes, and industrialization takes place at an accelerated rate (Islam, 2022). Urbanization is positively correlated with industrialization, which has traditionally been happening. The level of urbanization in Bangladesh to the total population is 28%, but the contribution of 28% of the population to the GDP is 65%. Dhaka City comprises 9% of the total population of Bangladesh, but its contribution to the GDP is approximately 40% (BBS, 2015), (ADB, 2016).

In the twenty-first century, it was the most significant demographic transformation in our century because it rearranged national economies and reformed the lives of billions of people. According to recent statistics, approximately 55% of the global population lives in urban areas and approximately 1.5 million people are added to the global urban population every week (ADB, 2016). Every year, urban areas are growing by more than 75 million people more than the population of the globe's eighty-five smallest countries collectively (UN, 2018). It is estimated that the world's population will reach 8.6 billion in 2030 and 9.8 billion in 2050. In 2010 people were living 7.0 billion on Earth, and more than two-thirds of the population will be living in cities in 2050 compared to about half of the population in 2010 (ADB, 2016). It is projected that in developing countries, urban areas will triple between 2000 and 2030 from 200,000 sq. km to 600,000 sq. km (ADB, 2016). The additional 400,000 sq. km of newly urban built-up area that will be constructed within only 30 years equals the total built-up urban area throughout the world as of 2000. The number of megacities is projected to increase to between 60 and 100 in 2050 from 22 in 2010, mostly in developing countries of Asia, Africa, and Latin America (ADB, 2016), (UN, 2018)). These cities face high levels of social, economic, and environmental challenges owing to increased road traffic congestion for augmented demand for transport, alongside economic progress, and enhanced living standards.

The Nature of Urbanization

Urbanization is an ongoing process but sometime follows plan and sometime not. At this moment, the issue of urbanization is very important in Bangladesh. Throughout this study author finds the following features when analyzing the nature of urbanization. Such as –

- Urbanization is a dynamic and systematic process of social and cultural transformation.
- High population density in small areas.
- Urban slum areas are available in cities to provide housing for urban people.
- Municipalities, city corporations, and local government institutes are the governing bodies of urban areas.
- The main center of industrial production, business, trade, etc. is in urban areas.
- Educational institutes, cultural centres, playgrounds, parks, monuments, and so on are in urban areas to provide a healthy environment to its inhabitants.

Urban Sustainability Framework (USF):

The Urban Sustainability Framework has six key dimensions: i) governance and integrated planning, ii) fiscal sustainability, iii) economic competitiveness, iv) environmental and resource efficiency, v) low carbon and resilience, and vi) social inclusiveness (WB, 2018). The new Urban Sustainability Framework guidance document includes a “Four-Stage Approach” for cities to improve their sustainability status through the following process: defining a vision with priorities, determining financing, and, finally, monitoring and evaluating their project implementation progress.

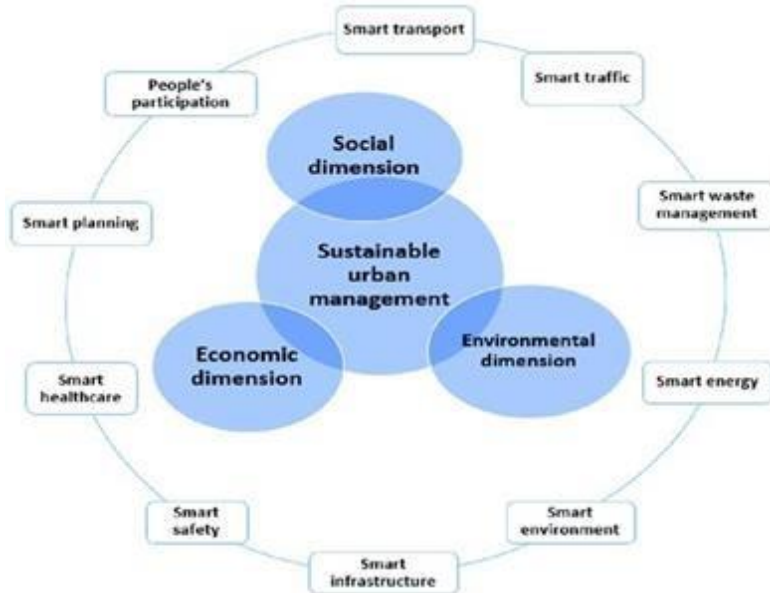


Figure-1: Urban Sustainability Framework (USF), Source: (ADB, 2018)

Accordingly, the Sustainable Development Solution Network, the issue of sustainable urban methods has been problematic and difficult to deal with; therefore, there are still significant challenges that need to be addressed and overcome in a sustainable way (SDSN, 2020). The field of sustainable urban planning desires to extend its boundaries and broaden its horizons beyond the built form of cities to include what ICT must offer as innovative solutions and sophisticated methods to improve the contribution of sustainable urban forms to sustainability. There are four technologies and two classes of applications pertaining to models of smart sustainable cities that can be merged with the typologies and design concepts of models of sustainable urban forms. The proposed matrix helps scholars and planners understand and analyze how and to what extent the contribution of sustainable urban forms to sustainability can be advanced through big data and context-aware applications. The proposed data-driven and simulation methods were intended to investigate, evaluate, and strategically optimize the contribution of sustainable urban forms to the goals of sustainable development. Therefore, all these modern technologies, techniques, and systemic approaches can lead to sustainable urban development. In Dhaka, the developers, designers, the policymakers, and implementation should all consider the Sustainable Urban Development framework for developing a

sustainable city.

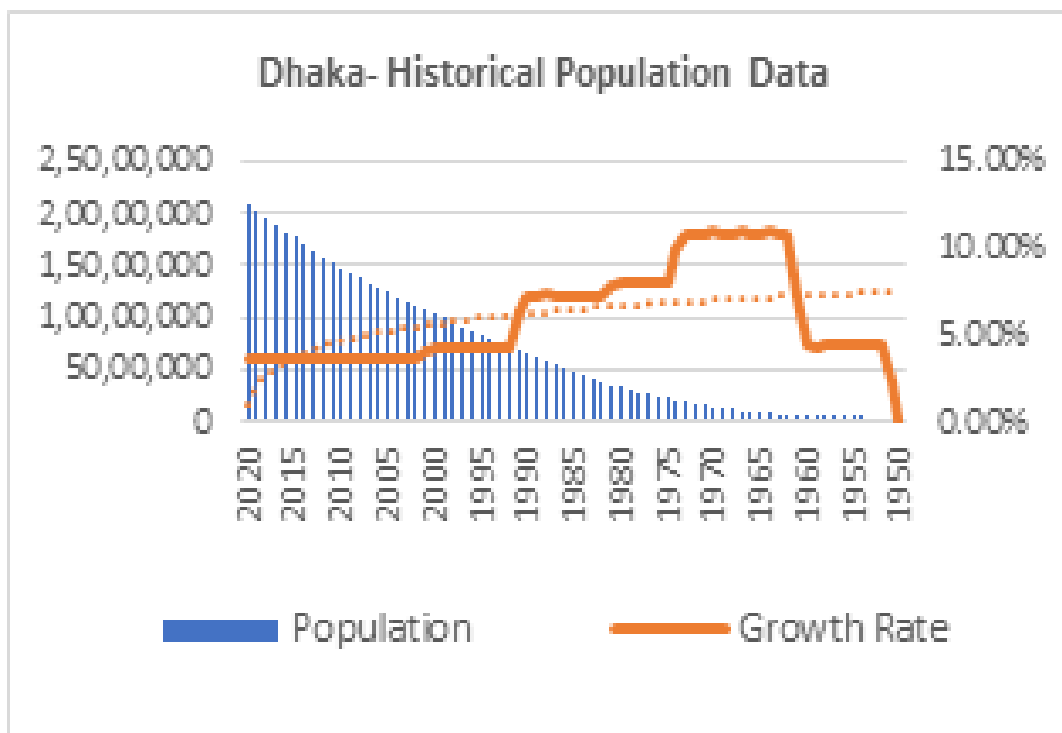
C. The trend of urbanisation population in Bangladesh

The urban population growth in Bangladesh prior to the twentieth century cannot be marked as rapid urbanization in an accurate sense because the transformation in rural life associated with urbanization was not evident (Centre for Urban Studies, 1974). Urban population growth in Bangladesh since 1901 has been represented by the following eras: only 2.43% of Bangladesh’s population lived in urban areas in 1901 (BBS, 1977); however, in the next two decades, the urban population continued almost immobile. Between 1911 and 1921, there was only an 8.85% increase in the urban population of Bangladesh (BBS, 2015). In the recent trend, it seems that some buildings and constructions have been developed considering the lower middle or middle class community (Islam, 2022), and developers are benefited in many ways; for instance, the handover time and commitment time never match because developers always invest these money in multiple projects, but they take these money from these community people by providing or showing hope of assets where they could live forever (Haq, 2004) (Huq, M, E., 2003).

E.1. Comparative study on urban population in Dhaka

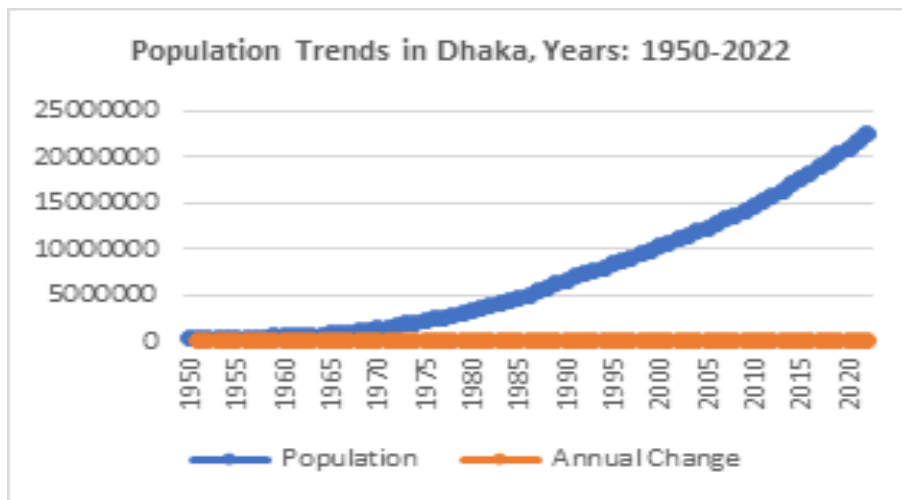
In recent phenomenon, about 55 % of the world population was in the urban whereas in 1950, it was about 30%. Currently, urbanization trends are very significant by population, for instance, in North America (82%), Latin America and the Caribbean (81%), Europe (74%), and Oceania (68%). The picture of urban growth in Asia is approximately 50% and in Africa, it is 43% (UN, 2018). In 2021, the share of the rural population in Bangladesh at around 61% while it was 68% in 2012 (Statista, 2023). In the last two decades, because rapid urbanization in Bangladesh has been destructive to natural growth, people have been destroying ecological/natural environments, besmirching historical monuments, and finally, the cost is high in terms of money and sustainable development.

Figure-2: Historical Population Data, Dhaka



(Source: Dhaka, Bangladesh Metro Area Population 1950-2020 | Macro Trends)

Figure-3: Population Trends in Dhaka, Years: 1950-2022,



(Source: www.worldpopulationreview.com)

Figure-2 & 3, shows the population trends in Dhaka over the last seven decades. This historical population trend illustrates that in 1950, the growth rate was about 0%, but in 1962-73, 12 years growth rate was on an average 10.83%, which was the highest growth rate in the average decade. Every decade, the rate of population growth has declined, but the total population, or cumulative figure, is growing significantly. Through this analysis, it is again illustrated that in 1950, the total population was 0.03 (0.0%) million; in 1960, it was 0.051 million (4.53%), in 1970 it was 1.37 million (10.90%), in 1980 it was 3.27 million (8.04%), in 1990 it was 6.62 million (7.27%), in 2000 it was 10.29 million (4.31%), in 2010 it was 14.73 million (3.62%), in 2020 it was 21.006 million (3.56%), in 2022 it was 21.016 million (3.55%). In this **figure-2** the Logarithmic line shows that over the period of 70 years, population growth in Dhaka was on average below 7%, except from 1960 to 1991.

D. Alternative Urbanization in Dhaka, Bangladesh:

There are a few empirical or regularities that are as universal as the following, but no issue regarding the path of economic development a country has followed. Rapid or scarred urbanization has been an inevitable consequence in Dhaka, like other large cities in Bangladesh. The relationship between urbanization and economic development has long been a popular topic of debate. Here is a big question, ‘should a developing country encourage urbanization?’ While this is a real dilemma in Bangladesh, because of a highly unfavorable land-population balance, urbanization is the only alternative to urbanization. The question is not whether Bangladesh should urbanize, but how Bangladesh will handle the challenges of urbanization. Cities in Bangladesh are faced with the challenges of rapid population increase characterized by crises, such as lack of economic dynamism, governance failure, severe infrastructure and service deficiencies, inadequate land administration, massive slums, and social breakdown. However, urban centers continue to grow, despite the severity of these obstacles. As a result, urban areas in Bangladesh have exceptionally high population densities, but relatively low economic densities. High population density, combined with rapid urbanization, implies a large and fast-growing urban population. Dhaka City, the largest urban conurbation in Bangladesh, is one of the most densely populated urban areas in the globe. However, the economic density of Bangladesh’s urban areas (GDP or value-added p/sq.KM) is relatively low from an international perspective. Economic activity was concentrated in Dhaka. Approximately 9% of the Bangladeshi population lives in the Dhaka metropolitan area, which contributes to 36% of the country’s GDP.

E. Dhaka is Economic Growth Centre of Bangladesh

Bangladesh needs to build an urban space that is capable of innovating, is better connected and more livable

to make cities competitive. Bangladesh’s urban space is falling behind in all three of these drivers of competitiveness (ADB, 2011), (UN, 2018). The Dhaka metro area needs to evolve into a diversified economy with skilled human resources and an innovation capacity fueled by the cross-fertilization of ideas typical of large metropolitan areas (ADB, 2018), (Shovon, 2008). Dhaka metro area also needs to be better connected internally and with its peri-urban areas, and both Dhaka and Chittagong must strengthen their connection to the global economy. Improved connectivity within Bangladesh’s system of cities is also important for productivity and export competitiveness (WB, 2018), (UN, 2018). The development of an economically dynamic urban space, in the Dhaka metro region, has occurred at the expense of livability. The livability of the urban space will become an even more binding constraint to sustained growth as Bangladesh transitions to a new business model based on higher-value industries and services, which need a highly skilled and internationally mobile workforce (Ahmed & Ahmed, 2014), (Mohammad & Bishakha, 2020). This is a tall order for Bangladesh but planning needs to start today for Bangladesh’s cities to become more competitive in future. Urbanization has a crucial role to play in the economic development of Bangladesh. The circumstances under which the population in Dhaka is growing without proportionate infrastructural development will begin to wipe out most of the gains associated with urbanization. That is, relatively high levels of urbanization may not be sufficient to ensure higher levels of economic welfare in Bangladesh. It could happen in Bangladesh as well unless the urban managers rise from their persistent snooze.

F. Historical evolution of Dhaka in Maps:

Historically, Dhaka is 400 years old, it is experienced concentrated development and apparent expansion towards the north, northeast, and northwest by surrounding fragments of open and undeveloped land in core city areas (Fig. 4). Developed land, as seen in this period (90s), visibly expanded to Adabar, Mirpur-1, Mirpur-11, and Airport in the north and further north to the banks of the Turag River. A visible volume of developed land, as seen in 90s maps of Tongi bazar (under Gazipur district) and the adjacent industrial areas, were the main momentum for urban development. The expansion of the city to the east and west was limited due to the presence of a huge depression between Dhaka and Savar, which resulted in major development having to occur in other directions, such as the rapid development along the north–south strip of Dhaka City. Though, away from the city limits to the north and northwest spans into depression areas, vast lands were rural and agriculture in use, actively working as hinterland for Dhaka and yet to be incorporated within the full continuum of urban development by 1990.

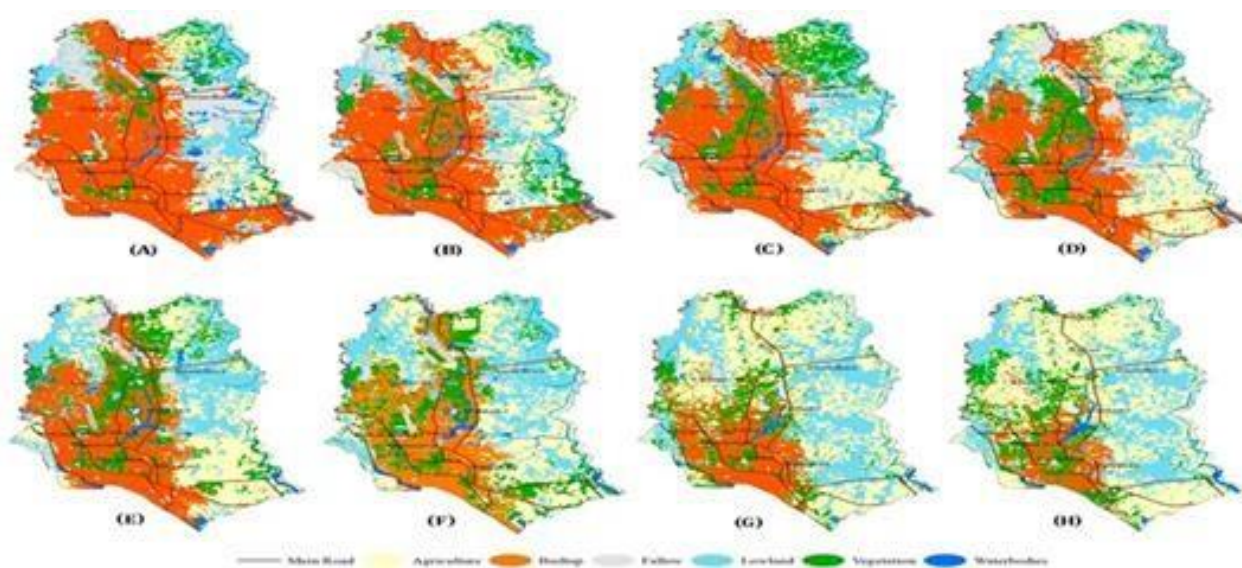


Figure -4. Land cover map of Dhaka City Corporation area (DCC) between 1972 and 2015. (A) 2015; (B) 2010; (C) 2005; (D) 2000; (E) 1995; (F) 1990; (G) 1980; (H) 1972. (MDPI, 2023)

G. GAPS in Urban development in Dhaka

The urban development spectrum is multidimensional, but for developing a megacity like Dhaka, a comprehensive plan is important to reach the development or urbanization goal. Many GAPS exist in the planning and execution of urban development programmes. In the developing world, they consented more to and positively considered nature and ecosystems in their urban development. If we look at their development works in the cities, they have a master plan that includes climate change, natural growth, balance of life, and building and road construction (Alam M. J., 2018). In Bangladesh, an overall challenge in livelihoods, especially for many populations, comes to this megacity to ensure their livelihoods; in most cases, their hopes reach the slum dwellers and they have passed year to year in these slum dwellers where life is almost a prison. Considering the above discussion and identifying GAP, what are the main gaps in urban development in Bangladesh? The author determined the following gaps in urban development in Dhaka, Bangladesh using a self-identified model.

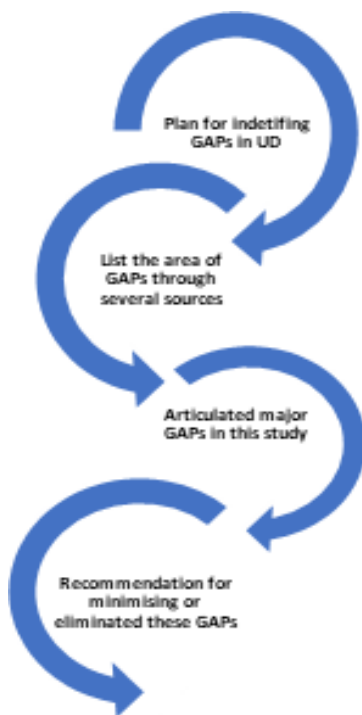


Figure-5: Framework of our study and urban Development GAP identification method by authors

To identify gaps in previous research and secondary data

- Skeleton the main influences in this field of research
- Show that we are familiar with the literature on this topic
- Indicate who the main area of study and explore gaps
- Evaluate previous studies on these same tropics
- Our position and study in relation to other researchers’
- Identify areas of controversy or less confidence of authors
- Rich and betterment of our own work by citing other authors’ study
- We highlighted recent literature and use older sources where relevant to our works
- Understand what previous methodologies have been used and to avoid making the same mistakes as previous researchers
- Validated that we can do in our research
- Avoid plagiarism and demonstrate our referencing skills
- We focused to provide a clear theoretical framework
-

- Demonstrate our understanding of the key ideas and concepts in this rapid urbanisation topic
- Make you more confident that our area of research is worth studying and will contribute to future studies.

Identified major urban development GAPS are as shown as below for future consideration-

- Planning gap is the main deficiency, among others, because based on plan, it must be executed.
- Land use policy is not contemporary, which is a massive gap in urban development.
- Development plans do not consider biodiversity and eco-centered development.
- Climate change is an important and significant issue but is considered minimal.
- Generally, people's expectations do not consider which is highly important.
- Water supply and waste management are very important for an urban area, but it is observed that there is a significant planning shortfall in the Dhaka urban development.
- Traffic management is very traditional and less effective, and people must spend an average of 30-40% productive time on the road.
- Multidimensional pollution has been observed in Dhaka and recently world number one in air pollution.

Throughout this study and analysis, urban development is a very challenging and complex issue due to housing and infrastructure, industrialization, lack of land and land use policy, water supply and waste management, traffic control, multidimensional pollution, etc., Dhaka is the number one polluted city (ADB, 2016). According to the Business Standard, 2019, in the world due to cases and effects that are mostly relevant to urban development. It is estimated that in Dhaka, more than 13 million people are living, and by 2025 it will reach 20 million or more. However, the demand and supply of citizen essential services gaps are very high and are increasing day by day. Initially the supply of water in Dhaka is about 1700 million liters per day but demand is 2050 liters (Alam M. J., 2018). That means, 30% people are under covered and the rest of 70% people are passing their daily life through alternative and different hazard sources of water and sanitation (Ahmed, S.S., and Ahmed, M. (2014). It has shown how much uneven development or rapid urbanization has occurred without considering its consequences. On the other hand, the people who live in this megacity know very well about waterlogging when rain falls a bit high and even when it falls as cats and dogs that are time suffering know no bounds. Therefore, a city is highly vulnerable to inundation when rain occurs. According to the UN-Habitat's 2008 State of the World's Cities report, Dhaka is between 2 and 13 m above sea level, so any rise in sea level poses a severe threat. The urban poor live in water-logged and flood-prone areas, with 90% of slum dwellers sharing a single room with three or more people (Dowall, 1992). In these high-density, high-risk conditions, floods not only contaminate water supplies but also mix with raw sewage and induce water-borne diseases.

H. Urban planning and ethical values

In Bangladesh, ethical judgment regarding the urban planning process is lacking. The process of urbanization in Bangladesh is very rapid, and with rapid urbanization in the Dhaka Megacity, the natural environment has been seriously hampered. Water, air, and soil are severely polluted (Haq, 2004). Due to the excessive population, inadequate roads, and lack of open space, the city becomes unlivable. The rich enjoy all the modern immunities of life, but most of the population is compelled to lead miserable inhuman lives. More than one-third of the population lives in slums and slum dwellers are deprived of basic human needs. Most citizens of Dhaka City have no access to pure drinking water, which is essential for human existence. The roads and streets are under the control of rich families and have private cars. Due to unplanned housing and roads, the public has no right to use roads and streets, and even has no right to cross the roads safely. They are unable to walk on the footpath due to improper use of footpaths, or sometimes they are occupied

by hawkers or salespeople.

I. Competitiveness of Dhaka Megacity

We author, other researchers, engineers, architects are very concerned about the city competitiveness is a dynamic and multi-dimensional concept and its importance and growth (Ahmed & Ahmed, 2014). It describes a city's comparative advantage in attracting portable production features, and its capability to leverage these returns to sustain growth in a fast-changing universal environment. The competitiveness of a city is depending on innovation, livability, and connectivity in a global economy (Ahmed & Ahmed, 2014). Empirical evidence suggests that cities with high innovation levels, a livable and high-quality environment and internally and globally connected are more economically successful, as they are attractive location for firms and workers beautiful waterfronts, historical sites, echo park, sports facilities, good accommodation, comfortable transport system, industrial parks etc. are important for attracting foreign investment and economic growth (Ahmed & Ahmed, 2014). Dhaka megacity accounts for more than half of the urban sector's contribution to GDP. This is important when examining the competitiveness of Dhaka.

Dhaka City and its periphery are famous for garments and its relevant industries for several reasons, such as low labor costs, low utility costs, and low transportation costs. Considering all these factors, Dhaka is a suitable place for investors globally. Most of the garment industries in Bangladesh are export-oriented, and over 60% of them are in Dhaka and its surroundings. The geographical concentration of factories in Dhaka and some districts gave them advantages in terms of access to skilled labor, lower transportation, and other business transaction costs. This sector has gained comparative advantage due to the large pool of low-cost labor and low transportation costs due to the co-location of industrial establishments and some supporting government policies. The government of Bangladesh has identified this sector as one of the 'thrust sectors' of growth of the economy and has provided significant support to its development. The RMG is a highly competitive industry driven by low labor, transportation, materials, and utility costs. The profit of RMG is very low, and factories engaged in manufacturing and retail of clothing and apparel products are constantly seeking ways to keep costs down to maintain a competitive business edge (Siddiqui, 2020). Considering all these factors, many people are interested in coming to Dhaka to ensure their livelihood as well as to improve their children. However, policy indicates that the dissemination of RMG industries over the country is business-viable and ecologically sustainable because low-income people can earn more by living in their places if these industries are distributed near their houses.

J. World urbanization prospects: the 2018 revision

The World Urbanization Prospects 2018 (UN, 2018) and based on that document, we found globally 55% of the world's population residing in urban areas in 2018, but in 1950, it was 30%. It has also been projected that 68% of the urban population will be urban in 2050 (ADB, 2016). Other significant regional scenarios are in North America (82% of the urban population), Latin America and the Caribbean (81%), Europe (74%), Oceania (68%), Asia (approximately 50%), and Africa (43%), which live in urban areas, comparatively very low compared to the rest of the world (UN, 2018).

K. Sustainable urbanization and current trends

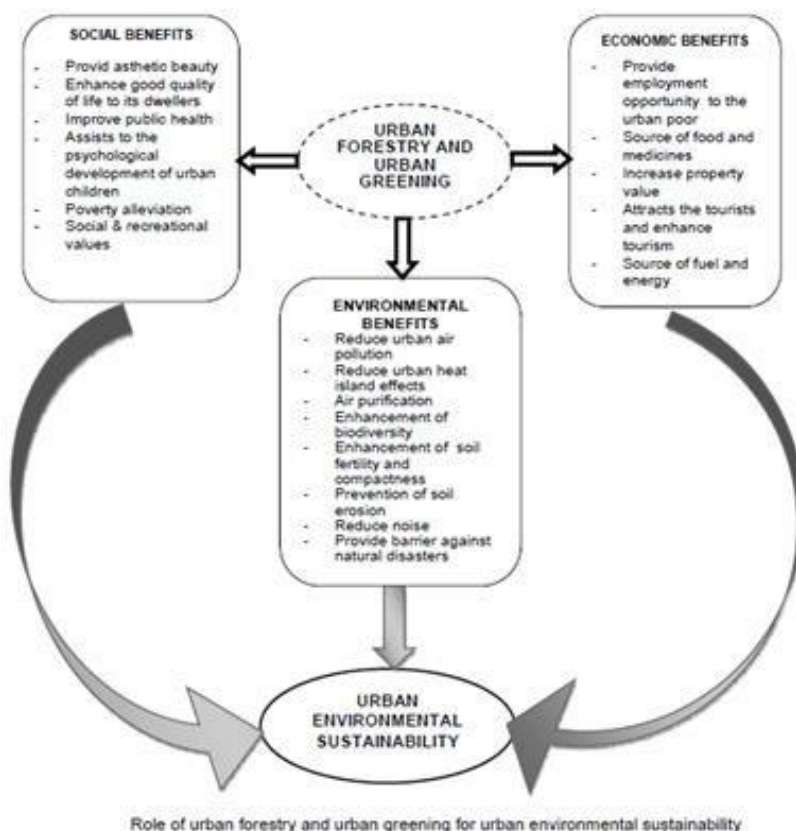
The world continues to urbanize, and sustainable development depends increasingly on the successful management of urban growth, especially in low-income and lower-middle-income countries, where the most rapid urbanization is expected between now and 2050 (ADB, 2016). Bangladesh is proceeding in the same way, but its planning and execution are not modern. Integrated policies to improve the lives of both urban and rural dwellers are needed, solidifying the linkages between urban and rural areas, and edifying their existing economic, social, and environmental bonds (Centre for Urban Studies, 1996), (Dewan, Kabir., Nahar, & Rahman, 2012), (Ahsan & Rahman, 2018). Transport is the life of a city, and choices on public transit options are essential pronouncements of a city's future growth and development. It is a key

infrastructure sector that acts as a stimulus to economic growth and development and an important element of strategies for poverty reduction, regional integration, and national development, including the environmental objective of limiting GHG emissions (UN, 2018), (ADB, 2016), (Rahman, 2008). As transport by burning fossil fuels is one of the major contributors to global warming, this sector could be one of the prime sectors where policies aimed at reducing GHG emissions will be the most important (The business Standard, 2022). Sustainable transport that emphasizes the use of public transport, bicycles, and walking, and discourages the use of individual motorized vehicles such as cars and motorcycles, is essential to achieve many of the proposed SDGs and the 2030 agenda for sustainable development; therefore, it is mainstream across several SDGs and targets, especially those related to food security, health, energy, infrastructure, cities, and human settlements (UN, 2018).

L. Major challenges in sustainable urban development

In development, different countries face several challenges due to the multi-environment and different cultural and socio-economic conditions. In Bangladesh, the most significant challenges in the urban sector are housing and infrastructure, industrialization, lack of land, water supply, waste management, and multidimensional pollution. The government should address these problems properly and take proper action to overcome these challenges (Alam, 2018). However, this is happening in urban development in Bangladesh. The Government is more focused on growth without developing a comprehensive development plan and how-to executive this plan in a sustainable way including to consider SDGs achievement (BBS, 2015) (Ahsan & Rahman, 2018). The figure below properly addresses how forestry and urban greening contribute to urban environmental sustainability.

Figure-6: Role of urban forestry and urban greening for urban environment sustainability



(Source: (Haq, 2004)

If we analyze **Figure # 6** (Role of urban forestry and urban greening for urban environment sustainability), where we find that if we try to establish a sustainable and green city, then we must consider forestation in

the urban development plan and execute it in the development process. This diagram also shows that there are some social, economic, and environmental benefits, and the combined impact of these benefits is urban environmental sustainability. Thus, it has provided a clear picture of sustainable urban development.

CONCLUDING REMARKS

The study focused more on digesting gaps in planning and its execution in urban development, especially in Dhaka, Bangladesh. They also acknowledge and consider climate change and its impact, which is also a key issue of urban development, particularly in Bangladesh, because multiple consequences are inbuilt in the planning process. Before that, the planner and decision makers should consider this most significant part of its planning, but mostly neglected or did not consider highly expected sustainable development, that is, i) eco-centered development means minimal degradation of natural resources, and ii) less pollution-based development or must follow environmental assessment procedures and guidelines during development planning and in an action (Ministry of Environment and Forest. 1996). This is also the lead focus in SDGs, and the Bangladesh government has significant consideration, but in planning, we figure out a huge GAP in implementation. On the other hand, political willingness is one of the substantial deficiencies in rapid urban development in Dhaka and Bangladesh. In this study, the author also analyzes the plan and real-life scenario and identifies that the institutes/organizations (*BAPA, DoE, BELA*), who are more concerned about the environment, also fail to reduce the GAP. It is also very significant that corporate social responsibility and public-private partnership initiatives could add more value to ensure sustainable urban development in a developing world like Dhaka.

In the recent century, it is notable that urban centers are the heart of economic growth and the center of all innovation and empowerment considering all development aspects (Quader, 2000). It contributes to over 80 percent of the global GDP, plays a critical role in people's normal lives, and is crucial to accomplishing sustainable development goals (SDGs). However, the speed and scale of urbanization bring challenges, including meeting accelerated demands for affordable housing, sustainable and inclusive transport systems and other infrastructure, basic services, and jobs, particularly for the nearly 1 billion urban poor who live in informal settlements to be near opportunities. Global climate change and its current and potential consequences for life, property, and prosperity are now accepted as major challenges for human society over the next 100 years (The business Standard, 2022). By 2030, without significant investment to improve the resilience of cities around the world, climate change may push up to 77 million urban residents into poverty (UN, 2018) (ADB, 2016)). Therefore, developing a sustainable city, along with its basic infrastructure, is of utmost importance to ensure future sustainability. Building cities that “work”—are inclusive, safe, resilient, and sustainable—require intensive policy coordination and investment choices. Consequently, city-level actions will be a central part of sustainable development initiatives, where the world needs comprehensive and sustainable urbanization as a landmark in the path towards socio-economic development, as documented by SDG Goal 11: Sustainable Cities and Communities.

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