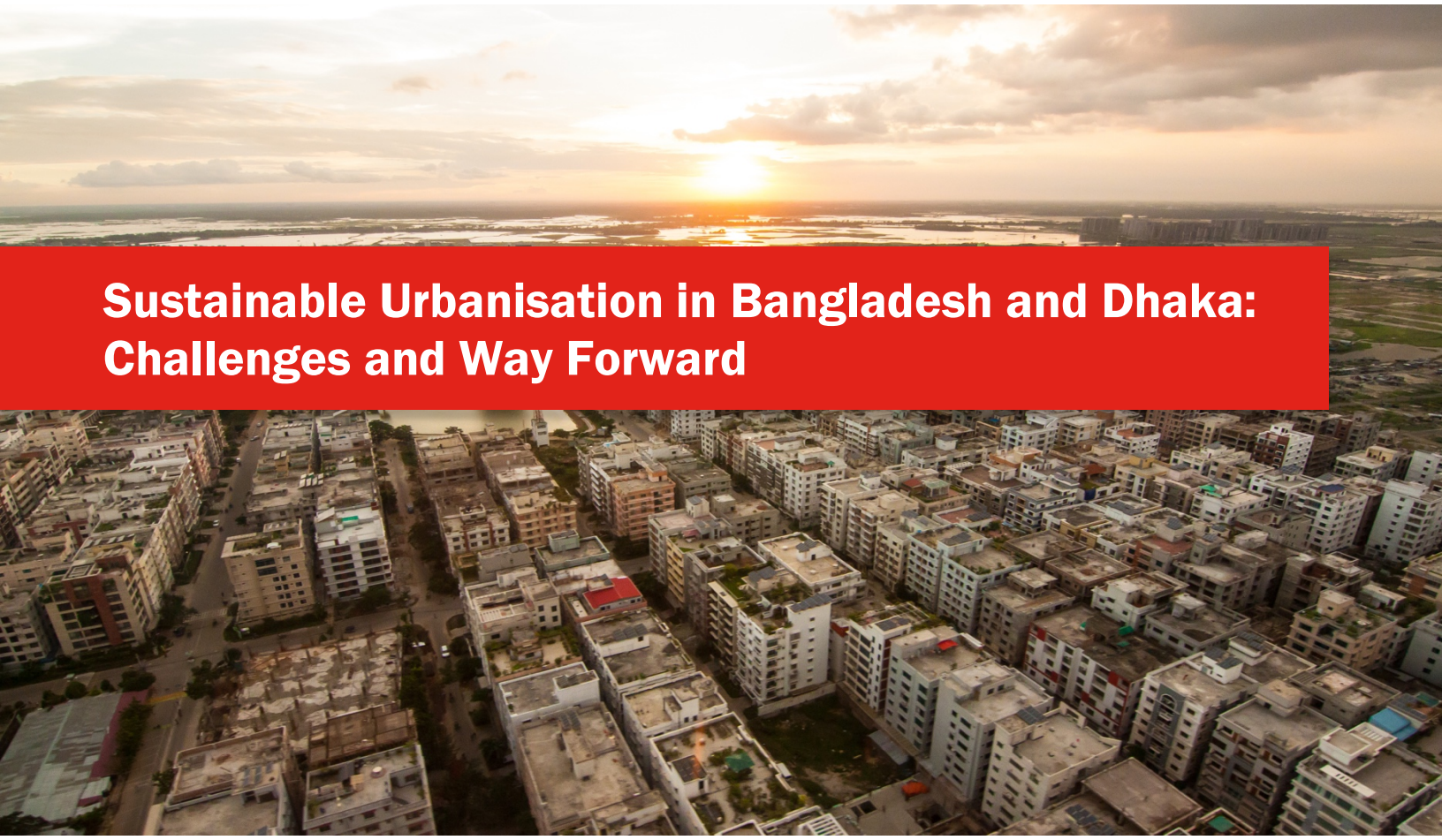

Sustainable Urbanisation in Bangladesh and Dhaka: Challenges and Way Forward

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Summary

Bangladesh is a rapidly urbanising country expected to host 56% of its population in urban areas by 2050. Urbanisation and industrialisation have accelerated the growth of GDP. However, the fast and unplanned urban transformation process has brought forward pressing urban challenges that have seriously disrupted the balance among social, economic and built environment aspects. The results of urbanisation in Dhaka are reflected in the high-density urban living and the socio-spatial divisions. The current growth and urbanisation pattern have exhausted the housing and urban services, including access to health and education services and facilities, severely damaging the sustainability of the natural and built environment. To address the current sustainability challenges, Dhaka requires policies for decentralisation of activities rather than pro-growth planning. A new joined-up national and local policy agenda and an active city government are crucial to tackle the multidimensional crisis of Dhaka.

About this Background Paper

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This Background Paper showcases findings from the research conducted by the author as part of an international research consortium, the GCRF Centre for Sustainable, Healthy and Learning Cities and Neighbourhoods (SHLC), funded by UK Research and Innovation as part of the UK Government's Global Challenges Research Fund.

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Disclaimer

The author, Dr. Shilpi ROY, is working as an Associate Professor of Urban and Rural Planning Discipline at Khulna University, Bangladesh. The views and opinions expressed in this background paper are the author's own and do not reflect the views of the Asia-Europe Foundation (ASEF).

1. Introduction

The process of urbanisation is usually acknowledged as a vital driver of economic development. In general, cities in low-income and lower-middle-income countries are transforming through rapid and unplanned urban growth[1], accompanied by a high prevalence of inequality, unmet demand for housing, urban services and infrastructures, as well as policies failing to ensure that the benefits of city life are equitably shared across all income, gender and age groups. Moreover, within the existing governance mechanisms and resources, these cities face important sustainable development challenges, including urban inequality, rapid sprawl, pollution and environmental degradation.

Bangladesh, a lower-middle-income country with an urban population of nearly 57 million people in 2016, has been urbanising at the average annual rate of 1.37% since 2011. Although this rate is lower than the average rate of the lower-middle-income countries, it is anticipated that by 2050 the country's share of urban population will reach 56%. Both rapid urbanisation and swift industrialisation in the country have secured an annual GDP growth rate of above 7% in the last three financial years, significantly above the annual GDP rise of 5.3% in lower-middle-income countries. The urbanisation process, however, has brought pressing urban challenges towards sustainable cities and communities, including an increasing number of slums and squatters, inadequate essential services and facilities for neighbourhood residents, lack of affordable housing, pollution in different forms, etc. (Planning Commission, 2012; GoB, 2017). These challenges are most acutely felt in the capital city Dhaka.

This background paper looks at the pattern of urbanisation and the challenges associated with delivering sustainable urbanisation and SDG 11 (Sustainable Cities and Communities) in Bangladesh, with a focus on Dhaka. As one of the most unplanned mega cities in the world, Dhaka faces important sustainability challenges which should be closely analysed to inform future policies for urban sustainability.[2]

[1] In thirty years' time, the share of the urban population in lower-middle-income countries is expected to reach, on average, 57% (UN, 2014).

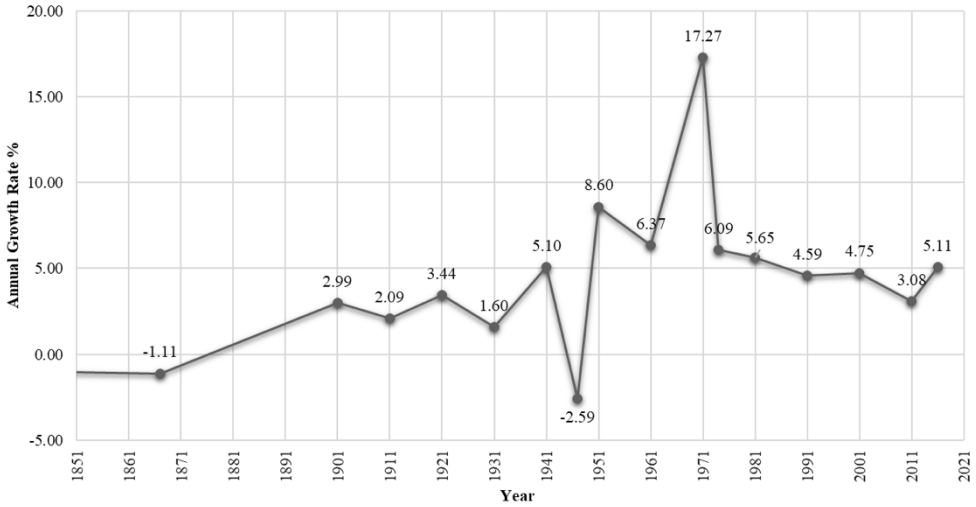
[2] Three data collection tools have informed this background paper: the review of policies and documents, use of secondary data and key informant interviews. Secondary data was mined from reports, as well as national and international databases to portray the picture of urbanisation and development issues in Bangladesh and Dhaka.

2. Overview of Urbanisation in Bangladesh

Pattern of Urbanisation in Bangladesh

Bangladesh is one of the fastest urbanising countries in the world, with an average annual Rate of Urbanisation (RoU)[3] of 5.34 since 1974 (BBS, 2015c). Although there is a decreasing RoU during the last few decades, the Level of Urbanisation (LoU)[4] is still rising at an alarming rate. While the LoU was only 8.78 in 1974 (Planning Commission, 2013), it raised to 23.30 in 2011 (Planning Commission, 2013; BBS, 2014). In another estimate[5], the LoU was between 25 to 28 in 2011 (BBS, 2014; UN, 2014 in BBS, 2015b; Planning Commission, 2015) and 35.8 in 2017 (World Bank, 2018). Following this trend, it is anticipated that the LoU in Bangladesh will be 50 by 2025 (BUF, 2012) and by 2050 the share of urban population will reach 56% (UN, 2014 in BBS, 2015b).

Due to the urbanisation process, large cities, where most economic investments and infrastructures are concentrated, are drawing population at a significantly higher rate in comparison to other cities (Planning Commission, 2012; Planning Commission, 2015). In 2011, the top three largest cities, Dhaka, Chittagong and Khulna, accomodated about 64% of the total urban population of the country (Planning Commission, 2015). Dhaka City Corporation Area only had 18.9 million in 2011 comprising 44.26% of the total urban population (Planning Commission, 2015).



Source: BBS, 2014; Islam, 2005 in Roy, Sowgat and Mondal, 2019

Figure 1: Rate of Urbanisation in Bangladesh, 1851-2016

[3] The Rate of Urbanisation (RoU) describes the projected average rate of change of the size of the urban population over the given period.
[4] Level of Urbanization refers to the proportion of the total national population living in areas classified as urban.
[5] This is without considering the reclassification of urban areas[5] that had a profound impact on the drop of RoU to 1.37 % (BBS, 2015c). The desertion of the Statistical Metropolitan Areas (SMAs), growth centres and some urban areas from the prevalent definition of urban areas lasted between 1981 and 2001 (BBS, 2015c).

Sustainability challenges in Bangladesh

Sustainable Development Goal 11 (SDG 11) aims to create "Sustainable Cities and Communities" by 2030. This paper conceptualises the economy, housing and urban services, the natural environment and the socio-spatial divisions as the vital elements of a sustainable city and its neighbourhoods. This section unpacks seven key challenging areas hindering equity, welfare and shared prosperity, which are critical to achieve a sustainable future for our cities and communities.

Housing

Irrespective of income class, access to adequate, safe and affordable housing is a fundamental requirement for creating a sustainable neighbourhood. However, in all significant urban areas, the public sector remains unable to satisfy the enormous market demand for affordable housing (GoB, 2017). In the face of rising demand for land and housing, the price for land has become unaffordable to most. For example, the costs for a 1000 ft2 housing unit ($50/ft2) is more than the average monthly income ($45) in Khulna city, which is far beyond the affordability of the poor who earn as low as US$1 a day (Hasan, 2003 in Sowgat et al., 2016). In the absence of affordable housing, poor rural migrants are forced to move into established slums and squatters or to construct informal housing (Sowgat & Roy, 2013).

In major cities, with very high land value in the city center and limited land availability in the market, people are forced to live in high density gated communities.

associated land uses have consumed all types of land, leading to loss of wetland, open spaces and public parks, with important health implications. In addition, the violation of setback regulations affects natural ventilation and access to natural light. Hard surfaces and heavy use of glass contribute to building up heat, leading to a dependency on energy consumption.

Poverty

Urbanisation has undoubtedly contributed to urban economic growth, resulting in a substantial decline of urban poverty (LGED, 2011; Sowgat & Roy, 2013). Nevertheless, 7.35 million people, who account for 21% of the urban population, remain in poverty (LGED, 2011). Moreover, there are also severe, highly localised deprivations in urban areas (BBS, 2005 and BBS, 2011 cited in LGED, 2011). Between 1997 and 2014, about 11,000 slums emerged in urban areas (BBS, 2015g). For

[6] Currently, about 40% of the residential communities in Dhaka city have a density of over 99,000 people per km^2 (RAJUK, 2016). High density urban built-up areas are putting pressure on extremely deficient urban facilities and services, leading to exceptionally deficient open spaces, severe traffic jams, reduced solid waste management, water logging during rainy season, air pollution and inadequate public transport facilities. These are obstacles to a healthy life in big cities. Moreover, high rise buildings are built within the old stock of buildings where there is a severe lack of spaces for public safety infrastructure and for safeguarding people from fire hazards, electricity and gas accidents.

The rising demand for housing in major cities has resulted in unsustainable consumption patterns. Due to the lack of developable land and poor application of development control regulations, housing development and

[6] In Dhaka, 70% of the population was forced to live on just 20% of its land (Mahmud et al., 2001 in LGED, 2011).

major urban centres, the rise was notable. The largest concentration of urban slums are found in Dhaka, followed by Chittagong, Khulna and Rajshahi.

The concentration of poverty in different dimensions, including employment, income, housing and access to urban services is particularly acute in informal housing. In Khulna, in 2013, only 5% of the poor people had access to jobs in the formal sector (Sowgat et al., 2016). Due to insufficient earnings from informal jobs, only 1.8% of poor households have an income of more than US$58 per month, whereas 88% of poor households earn less than US$1.43 a day (Sowgat et al., 2016).

At the national level, the percentage of people living in semi-pucca dwellings increased from 53% in 1997 to 63% in 2014, which reveals the increase in income level of the poor people. On average, in the major cities, poor people generally live in areas with a density of about 205,415 people/km^2 (CUS, 2006 in Sowgat et al., 2016). The density of the poor households in Narayangonj was as high as 20,272 poor households/Km^2 in one section of the city (Noman et al., 2016). Poor people are exposed to the constant risk of eviction by the government and private landowners without prior notice and rehabilitation.

Poor people are lagging far behind the rest of the population in terms of access to urban services and facilities. For Khulna, only 10% of the informal settlements have a proper drainage network, while 38% have an exceedingly poor drainage system. Likewise, there is no regular refuse collection system for 80% of informal settlements (CUS, 2006 in Sowgat et al., 2016). In addition, a recent slum census of 2014 reveals that only 26% of slum households enjoy sanitary latrine facilities, and about 7% of households use 'hanging' toilets in city corporation areas (BBS, 2015g).

Water supply and sanitation

In all significant cities, supply of water by the public sector remains inadequate against the growing demand. According to the Household Income and Expenditure Survey 2010, about 5% of the city area was out of water supply coverage, and about 59% was covered by hand pump tubewells that are believed to be contaminated by discharge from pit latrines and septic tanks. During the dry season, the scarcity of water supply becomes acuate. The enormous unfulfilled demand for water is met through the extraction of groundwater. Extensive pumping of groundwater in significant cities has severely depleted aquifers which is the primary source of water supply.

A large section of urban residents is yet to access essential sanitation services. As of 2015, above 46% of the urban population was lacking access to essential sanitation services. Only in Dhaka, an expensive sewer network serves a small share of the population (20%). In urban slums, faecal sludges directly go to drains, open fields, roadsides or riverbanks. Only 8.5% of households have access to improved sanitation facilities, compared with the urban average of around 76%. The use of hanging latrines, suspended over ponds and rivers, is twice as high in urban slums as the national average.

Transport

Large sections of roads do not have the capacity for the growing traffic. Existing neighbourhood roads are severely damaged by vehicle overloading. The safety of pedestrians has already reached an alarming level due to the absence of sidewalks on most neighbourhood roads. Where available, encroachment of drain covers and damages are common scenarios. Cycling and walking for short trips are viable transport modes with

health, social and environmental benefits which should be promoted. Except a few residential neighbourhoods planned by real estate companies, suitable environments are rare. As a result, neighbourhoods and cities are deprived of opportunities for healthy living.

Pollution

Unprompted urban growth is taking over low lying lands, canals and ponds which are floodwater retention areas. In addition, roads are repaired and constructed so that they become higher than the surrounding areas. Consequently, waterlogging and drainage problems are common in most neighbourhoods during monsoon and floods.

Outdoor air pollution has been a significant problem in the cities of Bangladesh, especially in Dhaka and Chittagong city. Over the past few years, there has been some improvement in air quality in Dhaka because of the introduction of lead-free gasoline, compressed Natural Gas run vehicles and the withdrawal of two-stroke three-wheeler baby taxis. Yet, the level of suspended particulate matter (SPM) in the capital Dhaka remains 3-4 times higher than the National Ambient Air Quality standard during the dry winter months. Estimates show that every year more than 3,500 premature births in Dhaka are attributable to particulate pollution. Excessive traffic on roads, high-density urban living and non-conforming land use within residential neighbourhoods are also responsible for noise pollution.

Waste management

Management of waste is an emerging problem in almost all urban areas of Bangladesh. Municipality/city corporations can collect only less than 50% of solid waste from collection points and dispose of these waste primarily at open, unlined landfill sites. Community-Based Organisations, Non-Government Organisations and Community Initiatives for house-to-house waste collection in neighbourhoods partially fill the service gap. However, poor communities are unable to afford these paid services. As a result, 40% of solid wastes in Dhaka city, 52% in Khulna and 56% in Barishal are left on the roadside or other public places (Planning Commission, 2015), causing environmental degradation, public health risk and block drains, while leading to waterlogging (Planning Commission, 2013).

Green spaces

Creating sustainable cities and neighbour-hoods requires to provide universal access to safe, inclusive, accessible and green public spaces, particularly for women and children, older persons and persons with disabilities. However, in the process of urban growth, all major cities have lost or are losing their high-quality land, including open and green spaces, as well as structures of water system, putting the health of citizens at risk. For example, in Khulna city, the open space/vacant land rate was 7.6% in 1961 and declined to only 1.26% in 2012 (Ahmed, 2002; KDA, 2002 and KDA, 2012). Even land uses like ward councillors offices, water pumps, commercially-run community centres and schools consume open spaces in planned residential neighbourhoods. In recent years, there have been efforts to create accessible, age and gender friendly neighbourhood parks in Dhaka, but it remains insufficient. Although the new city areas have huge potentials for incorporating green and public spaces, the possibilities are shrinking with unplanned urban growth.

3. Overview of Urbanisation in Dhaka

Dhaka is one of the world's fastest-growing megacities (World bank, 2007 in LGED, 2011). However, the city has seen rapid and irregular urban growth (growth of built-up area). The average annual urban growth rate for 1991–2019 in this city is as high as 8%. Alarmingly, its outskirts are sprawling badly, with a rate of 43% for the same period (Roy and Sowgat, 2021). The built-up areas in the outskirts of Dhaka expanded by 234 km^2 between 1991 and 2019, compared to about 116 km^2 in the city. The city of Dhaka accommodates about 20 million people with an average population growth of 2.74% since 2015 (Roy et al., 2021). This section identifies the critical urban challenges that are threatening the sustainability of Dhaka.

Economy

The economic benefits of urban growth in Dhaka and its region are substantial as the city itself contributes to 36% of gross domestic product (GDP) and about 32% of national employment. Industrial development and a new migrant workforce in peri-urban Dhaka also contribute to poverty reduction and national economic growth. Its GDP share was US$ 10 billion in 2017, which suggests the city is yet to become a successful engine for economic growth (Swapan et al., 2017). Moreover, Dhaka is becoming a service-based economy because it has not built an investment-friendly environment necessary for creating a competitive manufacturing growth centre (World Bank, 2012). Every year, 30,000 to 40,000 rural migrants join the city, but most of the poor don't have suitable skills to work in the formal sector. With 36% of national GDP, most employment in Dhaka is therefore in informal sectors, whereas the second contributing sector is the agriculture sector in the city periphery (25.60%). The manufacturing sector contributes to only 10.54% of the job. High dependency on a few sectors, the dominance of the informal sector and the growth of low productive service sectors make the economic growth of Dhaka very challenging in the face of increasing demand of new jobs in the rapidly urbanising city (Roy, Sowgat and Mondal, 2019). The rate of unemployment in the city is as high as 26.6% (BBS, 2014). The shift of the garment industry without a sustainable alternative source of jobs and income for the city dwellers may further affect the city's economy. Dhaka's employment shows a high dependency on the informal sector and relatively low income for those who cannot access the formal sector (Hossain, 2013), which results in income inequality and class division in the city.

Housing

Dhaka fails to provide housing to the majority of its population. About 38% of households in Dhaka live in temporary structures, and only 22.16% own a house. The government provides only 7% of total housing and the rest of the supply comes from the private sector. Real estate development companies contribute 45% of the housing stocks, while 55% are built by individuals (BBS, 2015d). Dhaka's private and government housing market currently serve upper and upper-middle-income households. Even in the government planned residential areas, the development authority doesn't respect the target of incorporating lower, lower-middle and middle-income people in urban development. Instead, people with upper-middle to high-income access these plots (Hossain & Hackenbroch, 2018). Plots, apartments and houses are often seen as investments,

resulting in multiple ownership of properties by the upper-middle-income and high-income, leaving minimal opportunities for low-income and middle–income households to own a property in the housing market. People with low-income and middle-income end up renting or building houses in unplanned residential areas characterised by high-density living, narrow streets, as well as minimal open spaces and parks (Islam and Zahur, 2016). Data shows that 57% of people do not own any land in the city, whereas 4% own around 28% of the land of Dhaka City (RAJUK, 2015). The high land price forces lower-middle-class households out of the market and often outside the city, where they are denied urban services (Begum, 2007). The city now faces an acute housing shortage because of low-quality housing supply, housing shortage, and exceptionally high land prices in the DCC area (Islam, 2017).

Urban Services

Dhaka encounters severe challenges in meeting the demand for urban facilities and services such as open space, solid waste management, sanitation and transport. In 2014, Dhaka had 14.5% of total land as parks and playgrounds, which is much lower than the standard of 25% outlined in the planning documents in Bangladesh (Chowdhury, 2014 in Islam, Mahmud and Islam, 2015). With the cooperation of Dhaka South City Corporation (DSCC) and Dhaka North City Corporation (DNCC), a project is taken to regenerate, redevelop and manage 51 parks, open spaces and playfields inclusive for people of all age groups and sex, but the progress has been plodding so far. As these spaces are created based on the availability of areas instead of actual demand, most neighbourhoods in the city have limited access to these public spaces. DSCC and DNCC manage around 62% of the waste generated in the city, but they require the support of Non-Government Organisations to collect wastes from the communities (Hai and Ali, 2005). 38% of solid wastes in Dhaka city (Planning Commission, 2015) are left uncollected, causing environmental degradation and public health risks because of indiscriminate dumping (Planning Commission, 2013). Wastes often block the drains and sluice gates of the flood protection dam, and create water logging during the monsoon. Due to drainage congestion and inadequate pumping facilities, the city comes to a halt every year during heavy rainfall as water takes over the major roads (Alam and Razi, 2018). In addition, only 58.6% of people have access to improved sanitation, 5.1% of the households have non-sanitary toilet facilities and 0.27% have no toilet facilities. Currently, 15 million people (84.35% of the total population) have access to water supply, but additional 11.19 million people will need new connections by 2035.

Natural environment

Although the city is surrounded by rivers and has 43 canals, it remains waterlogged during the rainy season and frequently experiences flash flooding. 33% of canals and ponds and 53% of low-lying flood flow zones were filled up during 1988-2008 by individuals, businesses, real-estate developers, organisations and government agencies (Brammer, 2010). Because of encroachment and siltation, canals can no longer support the drainage system (Islam et al., 2010). Dhaka has already lost its open spaces, green surfaces and water system because of encroachment or real estate development (Alam, 2014).

Dhaka is the third most polluted city in the world (WHO, 2018). However, a different account by the US Environmental Protection Agency declared it the most polluted city of

2018.[7] Construction works, brick kilns and vehicles run by fuels are identified as the primary source of pollution (Salim, 2018). The concentrations of suspended particulate matter (SPM) in the air, especially in the commercial area, are more than ten times higher than the WHO standard (150 mg/m^3) (Alam et al., 2000 in Roy, 2009) and seriously affect the health of its citizens.

Since 1991, Dhaka's sprawl has taken over nearly 234 km^2 of cultivated lands and 32 km^2 of vegetated areas and water bodies, including wetlands and flood protection areas. This loss has caused significant damage to the natural environment and ecosystem, putting pressure on food production.

Fire Hazard

As the city primarily encompasses high-density built-up areas developed unexpectedly through organic development and poor abidance with development control rules, the risk of fire hazards is exceptionally high. Two recent fire events in the city are examples of uncontrolled land use of Dhaka city. A fire incident in February 2019 in the historic part of Dhaka took 67 lives because of exploding gas cylinders and chemicals stored in residential buildings. The narrow roads were unable to accommodate the firefighters (The Daily Star, 2019). Another incident in March 2019 took the lives of 25 people and injured more than 70 due to a fire in a high storied commercial building in Banani which was not built according to building codes and lacked fire safety measures (BBC, 2019).

Socio-spatial division

Economic growth has failed to reduce inequality and localised deprivations in Dhaka (BBS, 2011 in LGED, 2011; Desert, Parikh & Kabir, 2016). 45% of people in Dhaka are defined as the urban poor, while only 3% of people in Dhaka enjoy a high standard of living (Corner and Dewan 2014 in Swapan et al., 2017). Poor people are lagging far behind the rest of the population in terms of access to services and facilities. Urban poverty and spatial imbalance in terms of service distribution are still hampering the provision of effective and inclusive education. There is hardly any government education service provision in or near the slums (Cameron, 2009). 517 NGO schools are operating in Dhaka city to deliver basic education services to the poor and the unprivileged population living in the hard-to-reach area. However, in most cases, the government has failed to mainstream this into the formal education system. Due to poverty, children from poorer households often fail to pay schools and private tuition fees, which is one of the primary reasons for dropping out from school in Dhaka city (Cameron, 2010). Besides, the extreme poor fail to afford formal education in the city (Hossain, 2013).

[7] The Air Quality Index for Dhaka was calculated as high as 222.

Source: Roy and Sowgat, 2021

Figure 2: Korail slum right next to posh Gulshan Residential area

4. The Way Forward

Urbanisation is inevitable for the economic growth of the country. Policies and interventions related to regulated urbanisation in Bangladesh require promoting equity, welfare and shared prosperity to attain urban sustainability. City level policies, initiatives and development projects should contribute to decentralisation of activities and acknowledge the rural-urban imbalance and uneven primacy of large cities. Due to the lack of resources and poor coordination among the implementing authorities, a major share of national level urban policies remains unimplemented at the city level. There is a need of realistic and attainable urban policies. A new joined-up national and local policy agenda with an active city government is also needed to address the critical and multi-dimensional urban challenges in Bangladesh.

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