Megacity – Mega Challenges: A case of Dhaka City – Capital city of Bangladesh

Track 1. Limitless cities and urban futures: planning for scale

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INTRODUCTION

• The capital city of Bangladesh – Dhaka is one of the fastest-growing cities in Asia

• 7th largest megacity and by 2030 it will be the 4th largest megacity of the world.

• This city consists of 38% of the whole country’s urban population with an estimated number of 17.6 million which covers 1528 sq. km of land (area of Dhaka metropolitan) and by 2035 this number will be raised up to 28 million.

INTRODUCTION

- Dhaka metropolitan comprises of six municipalities
- Geographically, Dhaka is located on the north bank of ‘Buriganga River’ and Geomorphologically which is flood plain of the world’s largest river system (Dewan, 2013).
- Geologically, Dhaka is under ‘Mordarate’ earthquake zone (based on Basic Seismic Coefficient)
### INTRODUCTION

#### Four major characteristics of Dhaka city

1) **Shortage of housing, infrastructure, and social services.**

2) **High level of poverty and social vulnerability**

3) **Poor quality of the physical and social environment**

4) **Inefficient urban management.**
WHAT IS MEGACITY?

• “An urban area with a minimum population of 10 million. There is no standard of geographical area or population density to define a city as a megacity.”

• In the current world, there are 37 megacities and by 2030 there will be 41 megacities.

• Among these megacities, 80% are in Asia, Africa and Latin America.

• Some common problems of megacities
  
  - High Population Growth
  - Urban Poverty
  - Massive Infrastructure Deficit
  - Pressure on housing
  - Environmental Degradation
  - High risk on public health
  - Economic dependency on federal/state government
  - Capital scarcity
MAJOR CHALLENGES OF DHAKA CITY

1. POPULATION GROWTH AND RAPID URBANIZATION

- The estimated growth rate of Dhaka's urban population is 4% whereas the national growth rate was 2.2% each year (since 1971).

- Three major reasons:
  - Reclassification of rural areas into urban areas
  - Natural urban population growth
  - Rural to urban migration (Only 16% of the total population of Dhaka city is local people and rest of 84% is migrated from the other part of the country).
MAJOR CHALLENGES OF DHAKA CITY
1. POPULATION GROWTH AND RAPID URBANIZATION

- In last, 60 years Dhaka city is expanded geographically by 1.8 times and the population density is increased by 27 times. Some statistics are given below:

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (sq. mile)</th>
<th>Population (million)</th>
<th>Density (Person/sq. mile)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1956</td>
<td>320</td>
<td>0.40</td>
<td>1,250</td>
</tr>
<tr>
<td>2019</td>
<td>590</td>
<td>20.00</td>
<td>33,900</td>
</tr>
<tr>
<td>2035 (Projected)</td>
<td>590</td>
<td>28.00 (Projected)</td>
<td>47,457 (Projected)</td>
</tr>
</tbody>
</table>
MAJOR CHALLENGES OF DHAKA CITY
2. TRAFFIC CONGESTION

• In last ten years, the average traffic speed of Dhaka city has dropped from 21 kmph to 7 kmph.

• It is also predicted that the speed might be dropped to 4 kmph by 2035 which is slower than general walking speed.

• In Dhaka, the amount of loss of working hour is 5 million hours/day which costs 31.2 million USD.
3. Hazards and Disasters

- The main natural hazards affecting Dhaka include floods, which are associated with river water overflow and rainwater stagnation.
- The city is endowed with a network of rivers, numerous ‘khals’ and canals: the ‘Turag’ on the west, the ‘Buriganga’ on the south, the ‘Balu’ on the east and the ‘Tangi Khal’ on the north.
- The elevation of 70% of the total City varies within 0.5 to 5 m which is very low and act as a temporary detention basin for flood water.
- The City experiences about 2000 mm annual rainfall, of which more than 80% occurs during the monsoon season.
MAJOR CHALLENGES OF DHAKA CITY

3. HAZARDS AND DISASTERS

- The city is one of the **active seismic regions** of the whole world for being located at the junction of several active tectonic plate boundaries: the **Indian plate**, the **Eurasian plate**, and the **Burmese microplate**. The city is believed to be awaiting a destructive earthquake at any time due to the shifting of or collision between these plates.
MAJOR CHALLENGES OF DHAKA CITY
3. HAZARDS AND DISASTERS

• There were about 80 fire accidents in Dhaka city last year alone.

• Fire hazard also affecting the readymade garments sector, which is generating 78% of the country's total foreign earnings.

• Vulnerability of Dhaka City dwellers to fire hazards has been increased due to reckless building construction.

• 95% of buildings have no fire escapes, 99% have not organized any fire drill, and 70% of people have no knowledge of survival skills needed during a fire.
The generation of greenhouse gases is increasing with the city's population expansion, rapid urbanization and industrialization, electricity and fuel consumption and growing motor vehicle use.

Unpredictable changes in temperature and rainfall causing increased frequency of floods and droughts.

Dhaka is acting as a concentrated urban island, a renowned phenomenon that absorbs heat and exerts profound effects on both regional weather and global climate. This phenomenon is associated with a number of local problems such as biophysical hazards (e.g., heat stress), air pollution and associated public health problems.
MAJOR CHALLENGES OF DHAKA CITY
4. ENVIRONMENTAL POLLUTION

Air Pollution

- Bangladesh is the 4th, among 91 countries with the worst urban air quality.
- Problems associated with air pollution have been enhanced due to the increasing number of automobiles, industrial operations, urban constructions and adjacent brick kilns around the city.
- Meteorological parameters like temperature, rainfall, relative humidity, and wind speed are also one of the important factors to influence the urban air quality.
MAJOR CHALLENGES OF DHAKA CITY
4. ENVIRONMENTAL POLLUTION

Water Pollution

• Dhaka city is surrounded by a number of rivers and canals of which Turag, Buriganga, Dhaleshwari, Balu, and Shitalakhya are the important ones.

• Different anthropogenic activities like the dumping of industrial, medical and household waste and untreated sewage effluent into these rivers.

• Water born diseases like - yellow fever, cholera, dengue, malaria, and other epidemic diseases spread man to man
MAJOR CHALLENGES OF DHAKA CITY

4. ENVIRONMENTAL POLLUTION

Solid Waste Management

• Dhaka City produces more than 4000 Metric Tons of solid waste per day of which 200 Metric Tons waste contain toxic chemicals, radioactive elements and pathological substances.

• Unsuitable methods of waste disposal, poor selection of dumping sites and lack of public awareness and inadequate policies

• Associated Problems - Diseases transmission, fire hazards, odor nuisance, atmospheric and water pollution, aesthetic nuisance and economic losses
Decentralization:
Dhaka is packed with a large number of physical structures and people. This kind of unplanned expansion can be solved through rapid political decentralization. It means strengthening the various tiers of the local government. In Bangladesh, most of the local government is not truly dependent. They are dependent on the central government to discharge their duties.

Good Governance:
Dhaka is a good example of lack of good governance. According to RAJUK(2015), ‘It is a system that individuals and institutions, whether public or private, plan and follow to manage the common affairs of a city’. In Dhaka, there are some strong government and development agencies. It needs proper coordination among these bodies of different levels.

People-Oriented Development:
In recent decades, the physical growth of Dhaka doesn’t represent the picture of development. All the development steps should be people oriented and demand driven.

Law Enforcement and Implementation:
There are several rules, regulations, and projects to control the unplanned development of Dhaka city. It needs proper implementation of rules, regulations and Law enforcement.
The megacity – Dhaka plays an important role in the national economy of the country although it covers only 1% of the whole country.

Its contribution to GDP is 36% and provides 44% of the country’s total employment.

The government and the dwellers of Dhaka should work in a collective way to revive this city.
THANK YOU