



Cover Page



GROWTH OF KOLKATA METROPOLIS: AN ENVIRONMENTAL ASSESSMENT

Mrs. Munmun Hait

Assistant Professor, Department of Geography
Ghatal Rabindra Satabarsiki Mahavidyalaya
Ghatal, Paschim Medinipur, West Bengal, India

Abstract: The metropolis of Kolkata is the heart of eastern India, once the London of the East. It was the capital of India until 1911. After 1752, Kolkata's population has steadily increased in huge numbers. At present this growth has stabilized but has reached such a level that it would not be an exaggeration to call it a population explosion. In Kolkata Metropolis, this population growth has reached such a scale that it is causing environmental degradation. In this discussion, the assessment of environmental degradation in the city of Kolkata and the measures taken to solve these problems are discussed. This type of discussion will not only help the government to adopt new policies but it will also help other researchers and guide policy makers.

Keyword: Population Explosion, Environmental Degradation, Unplanned Development, Decentralization.

Introduction

The metropolis of Kolkata is one of the oldest major cities in eastern India. Calcutta was the capital of India from 1773 to 1911 and people have been here for almost three centuries. At the time of independence, Calcutta's urbanization began to develop through the influx of large numbers of refugees. Before 1947, a large number of people migrated from present day Bangladesh to India especially Kolkata, they did not find a place in the city center of Kolkata and built colonies in the surrounding areas. Through satellite image analysis, it is known that the growth trend of the Kolkata metropolitan area is spread in North-East, North-West, South-East and South-West directions. Since 1886 the city of Kolkata has been served by the Calcutta Municipal Corporation. Infrastructural development, civic development, water drainage system etc. of Kolkata and its surrounding areas are controlled through this authority. According to Indian census latest data of 2011 the total population of Kolkata and its suburbs is about 15189 lakhs and its area is 1847.47 sq km.

Location

The Kolkata Municipal Development Authority (KMDA) boundaries are from Kalyani to Baj Baj on the left bank of the Hooghly River and from Bansheria to Uluberia on the right bank of the Hooghly River. Kolkata metropolitan area is spread over about 6 districts. Which is Kolkata, Howrah, Hooghly, South 24 Parganas, North 24 Parganas and Nadia. All in all, it is the urban center of the entire East India. Kolkata Metropolis is located at 22° 34' North and 88°20' East. The elevation of the Kolkata metropolitan area ranges from roughly 1.5 m to 9 m above mean sea level.



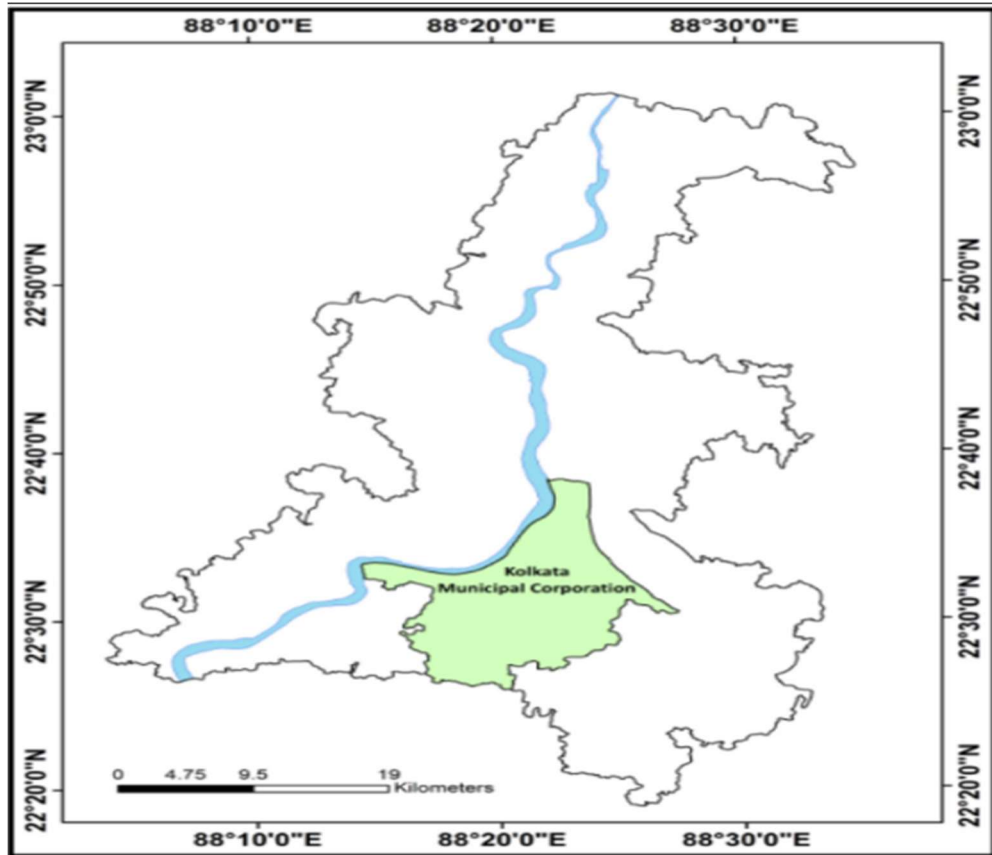
Cover Page



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LOCATION MAP OF KOLKATA MUNICIPAL CORPORATION



Objectives

The objectives are following

firstly, to review the growth of Kolkata metropolis.

secondly, to highlight the problems arising from the growth of Kolkata metropolis, to assess the environmental degradation.

and finally, to discuss some measures to solve the problems of this metropolis.

Data base and methods

Demographic data from the 2011 census has been collected in this discussion. Satellite images of 2015 have been used to review the growth of Kolkata Metropolis. Also, various specific surveys have been taken to understand the problems of Kolkata Metropolis. All the possible solutions mentioned in the solution of the problem are selected through specific surveys. The help of different scientific map has been taken for map analysis. The help of different methods of statistics has been taken for data analysis.

Discuss and analysis

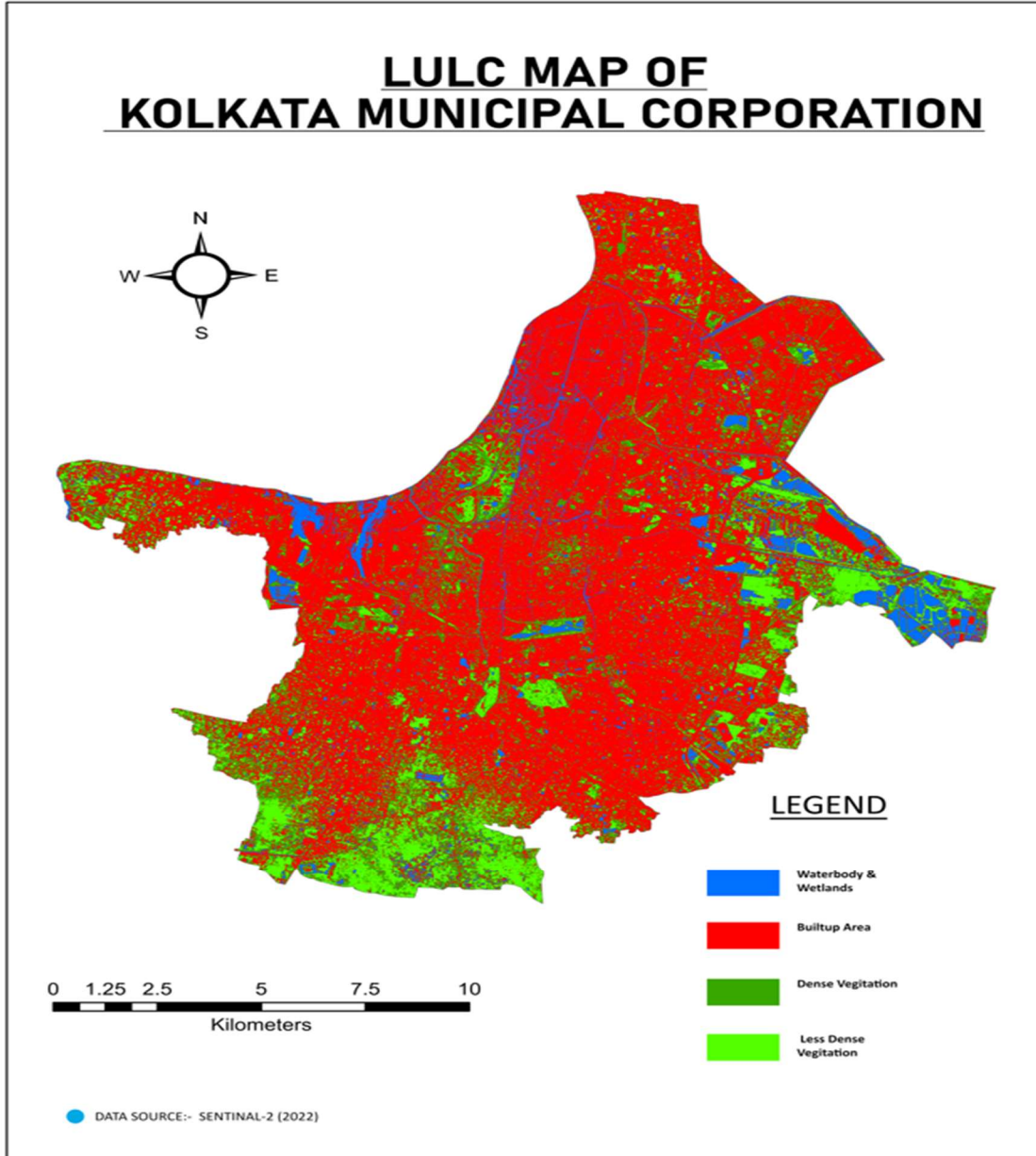
1) Development of the city

Although Calcutta was mentioned in the writings of Vipradas Pipalai in 1495 AD, Job Charnak, an employee of the East India Company, first sowed the seeds of British trade and scepter in Calcutta. Job Charnock's main reason for preferring Calcutta was political unrest and increasing shipping problems in other prominent river ports of East India.

2) Population growth

The population of Kolkata in 1752 was 120000. According to the data in 1950 this population was 4604143 and in 2020 the population of Kolkata is estimated to be 14850066. Population pressure is currently increasing from Kolkata to the suburbs. The main reasons for this increasing population pressure on the area near Kolkata are land availability, middle class economy, employment opportunities, improved communication system, pollution issues etc.- The population of Kolkata Metropolis (including urban area) is 14112536 as per 2011 census data. The growth rate over the last decade is 7.6 %.

3) Land use



A look at the land use pattern of Kolkata and adjoining areas shows that the amount of settlement area and the demand for land suitable for homesteads is increasing at a steady rate. For this, the construction of houses is constantly destroying vegetation and agricultural land. The constant cutting of trees has brought environmental degradation to this nearly 1900 sq. km area to another level. As a result, Kolkata metropolis is gradually becoming a heat island. In other words, the temperature of greater Kolkata is rising from its surrounding regions, making Kolkata's environment unbalanced.

4) Homestead demand

Homestead demand is increasing in Kolkata and adjoining areas in such a way that all the trees are cut down, agricultural land is destroyed and housing estates are built which destroys the balance of the environment to a large extent. Due to the lack of suitable land for housing and homesteads, the land prices in the areas adjacent to Kolkata are increasing day by day. The survey revealed that the rate of increase in land prices is slightly higher in South Kolkata than in North Kolkata. Especially the extension of



Cover Page



subway to New Garia, employment opportunities in the shop market, infrastructural facilities (such as roads, hospitals etc.), expansion of Eastern Metropolitan Bypass etc., land prices and demand in South Kolkata are continuously increasing.

The biggest problem with Kolkata and its adjoining areas is that most of Kolkata's urbanization is unplanned. Due to the lack of foresight and proper enforcement of laws by the government over the past three hundred years, Calcutta's urbanization has gone completely unplanned, resulting in environmental degradation.

Problems

1. Unplanned development is the biggest problem in the greater Kolkata metropolis. The development in the areas near Kolkata and especially in the municipal areas is somewhat planned but the development in the panchayat areas is completely unplanned. In the recent past, Calcutta consisted of four corporations, 37 municipalities and 24 panchayat societies. Inadequate roads, lack of proper drainage system etc. in large parts of Kolkata metropolis are examples of unplanned development.
2. The population pressure of Kolkata and its surrounding areas is increasing day by day which is putting tremendous pressure on land use. The proportion of population on land is increasing very rapidly. This situation can be attributed to lax birth control system, constant illegal immigration from Bangladesh, lack of certain financial security of the people Kolkata population density is 24000 per square kilometre (2011). The current population growth rate of Kolkata and adjoining areas is 10.30%. Population growth has become so alarming that it would not be an exaggeration to call the situation overpopulation.
3. The lack of settled land has become so prevalent that continuous deforestation and destruction of agricultural land and homesteads have occurred, which has led to marginalization and environmental degradation. On the one hand Maidan area known as Kolkata's lungs which contains 60% of the city's greenery is affected by pollution in various ways. Due to the rapid decrease in the amount of vegetation, the balance of the environment is going to be disturbed. A special feature of the city of Kolkata is that Kolkata is surrounded by a green environment from all sides. This green environment is the source of all kinds of vegetables, fish, milk in the city of Kolkata. Every day these products from this region come to Kolkata and meet the daily needs of the residents of Kolkata city. This region is called the food bank of Kolkata city. But now in all these regions the amount of agricultural land is drastically reduced to make way for housing. As a result, the prices of daily use items in the city of Kolkata have become skyrocketing.
4. The kidney of Kolkata is the East Kolkata wetlands and associated greenery. According to the Ramsar Convention, it is legally prohibited to exploit any type of wetland. But some businessmen, especially the promoters, are able to sell the land at a very low price easily, which causes an irreparable damage to the environment.
5. As a result of this unplanned development, groundwater reserves are gradually decreasing. Especially Kolkata city's ground water reserves are almost exhausted. According to a 2017 data, the ground water table has dropped up to 16 meters in central Kolkata, 10 meters in Garia, up to 15 meters in Kalighat, Parkcircuit, Babughat, Alipore etc.
6. The traffic pressure is increasing day by day in Kolkata. Every day about crores of people come to Kolkata for work. Many of them settle in places in Kolkata that are convenient for commuting. There are many such places in the suburbs of South Kolkata that are settled only for commuting. Unplanned development of all these areas could become a major cause of pollution and green degradation in the coming decades.

Solution

- 1) **Correct legislation:** To move the Kolkata metropolis into a planned system, proper legislation on water, land, green and transport use is required. If not, Kolkata will face a difficult problem in the near future.
- 2) **Maintenance and awareness of laws:** It is the responsibility of the government to ensure that this law is properly followed. However, not only the government but everyone should come forward in this matter. Proper application of the law will be possible by making the proper land use map through proper information and making the public aware.
- 3) **Determining population policy and preventing illegal immigration:** The population pressure of Kolkata city is increasing day by day. Kolkata and the future will face a difficult situation if the population movement can be controlled by proper legislation. Besides, illegal immigration from Bangladesh must be strictly prevented.
- 4) **Decentralization and development:** Finally, it can be said that the government as well as the local administration should emphasize on decentralization and development to reduce the pressure on Kolkata. To put it a little more simply, it can be said that the development and communication infrastructure should not only be concentrated in Kolkata, but should be spread in all the surrounding districts, irrespective of cities and villages. It will reduce the dependence of common people on the city of Kolkata.



Cover Page



Conclusion

The city of Kolkata is growing rapidly especially due to employment opportunities, good hospital services, IT centres etc. Population explosion and housing demand in Kolkata metropolis has reached such a level that people are desperate for vacant space. As a result of the huge demand, agricultural land and wetlands are rapidly being converted into housing complex and slums, leading to rapid degradation of Kolkata's environment. If development takes place keeping in mind the above problems and solutions then Kolkata will be set as an example for other cities of the world in future.

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