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SUSTAINABLE DEVELOPMENT IN THE FACE OF RAPID URBANIZATION: A CASE STUDY OF BANKURA

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ABSTRACT

This study reveals the impact of rapid urbanization on sustainable development in Bankura City, Bankura district, West Bengal, India. Urbanization implies population concentration, economic and socio-cultural transformation which often lead to environmental deterioration at unsustainable development. Growing pollution from overpopulation, industrialization, vehicular pollution, deforestation, solid waste, and poor sanitation endanger environmental quality and human health. The paper examines the nature, pattern, and extent of urbanization in Bankura City, disclosing moderate urban growth and increased migration carried by employment, education, healthcare, and infrastructure which highlighting the necessity for sustainable development strategies.

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Introduction

In recent decades, the conflict between environment and development has intensified. In the concept of 'Sustainable development' state that the aims to balance present needs with the ability of future generations to meet their own needs. However, India's rapid population growth and urbanization have led to increased pollution across various environmental zones. The environment is deteriorating due to both anthropogenic activities and natural factors, highlighting the need for sustainable practices. In the recent era, more than half of the world's population lives in cities. In India, projections indicate that nearly half of the population will shift to urban areas within the next 30 years, significantly impacting the environment, economic structure, and social life. Rural-urban migration has become a widespread phenomenon, with many individuals moving from rural areas to cities in pursuit of better economic opportunities and living standards. Driven by rapid urbanization and industrialization, this trend has accelerated over the years, reshaping population dynamics and urban landscapes. According to the United Nations report (2006), the world's urban population has experienced significant growth, rising from 13% in 1900 to 29% in 1950. If this trend continues, projections indicate that by 2050, approximately 70% of the global population, or around 6.3 billion people, will live in urban areas. This represents a near doubling of the 3.5 billion urban residents reported in 2010 (UN Report, 2010).

Population growth plays a pivotal role in shaping human development. The size of the population significantly influences the living standards and socio-economic conditions of individuals within a region. Furthermore, a nation's economic growth and development are intricately linked to the dynamic interplay between the rate of population change and the rate of resource change (Chel,2021).

Urban population growth is predominantly occurring in small and medium-sized cities rather than megacities (Fragkias et al., 2013). Moreover, urban areas are expanding rapidly, with urban land area growing at twice the rate of the urban population (Seto et al., 2011). This increasing urbanization and population density have significant implications for ecosystems and surrounding environments, requiring informed strategies to mitigate these impacts (Rahman and Alam, 2021). The widespread conversion of ecological land to constructed land is also a pressing issue in both urban areas and small cities (Long et al., 2014).

Rapid population growth poses a significant challenge in developing countries, impacting various aspects of society, including the age structure, migration patterns, socio-economic inequality, and the size and composition of the workforce (Wesley et al., 2017). According to S. Chel (2021), the population growth rates of Bankura Sadar and Khatra subdivisions during the period of the 2001-2011, stand at 12.74% and 13.67%, respectively, exceeding the district's overall growth rate of 12.65%.

Urbanization has become a major policy concern in recent decades, as widely reported in research (Ahani & Dadashpoor, 2021; Almulhim & Cobbinah, 2022; Elmqvist et al., 2021; He & Zhang, 2022; Hölscher & Frantzeskaki, 2021). However, the concept remains loosely defined (Cobbinah et al., 2015). Some researchers argue that the global significance of urbanization is often obscured by inconsistent interpretations and meanings assigned at the country level (e.g., McGranahan & Satterthwaite, 2014). The environment undergoes natural fluctuations, but human activities significantly exacerbate pollution, posing severe consequences for all living beings. Currently, numerous environmental issues persist, contaminating essential elements of life and threatening the very existence of humans and other living organisms. Urban sprawl has significant environmental consequences particularly when development encroaches on wild lands and the urban-wildland interface (Luther, 2005). Some

of the key effects include destruction of wildlife habitats and ecosystems, introduction of non-native invasive species altering natural balances, increased risk of disease transmission between humans, pets and wildlife; water pollution from Oil, gasoline, pesticides fertilizers and other chemicals; increased flooding and soil erosion due to impervious surface is like concrete and pavement.

These problems demand attention and action to mitigate their dire effects. The immense population pressure creates significant demands on natural resources, contributing to environmental degradation. To balance development with environmental conservation, adopting sustainable development practices is crucial for India's future.

Objective of the study:

The objectives of this paper are:

The main objective of the present paper is to find out urban growth and its impact on environment for the entire study area.

1. To raise awareness about environmental sustainability, focusing on the current status of urbanization in Bankura city and its trends, as well as promoting fair and equitable benefit-sharing.
2. To examine the issues and challenges related to poverty, biodiversity in Bankura city.
3. To explore current and future prospects for sustainable development in Bankura city and propose potential solutions.

Study area:

The study focuses on Bankura city of Bankura district, located in western West Bengal, India. It lies between 22°38' and 23°38' north latitude and 86°36' and 87°46' east longitude. The district is bordered by Bardhaman to the north and northeast, Hooghly to the southeast, Paschim Medinipur to the south, and Purulia to the west. The most important rivers of this district are the Dwarakeswar and the Gandheswari, flow through the district. Bankura district is divided administratively into 3 subdivisions they are: Bankura Sadar, Bishnupur, and Khatra.

Data and Methodology:

Both primary and secondary data. Methodology this study is mainly based on the secondary data obtained from the Census of India and data published by other national and international agencies.

Primary census abstract-2001, 2011 and District Statistical Handbook-2010- 2011, Directorate of Agriculture are the main sources of data.

Table 1: - Common data about the Bankura district.

SL.NO.	Area (sq.kms)	Population	Male population	Female population	Sex ratio	Population density(/sq .kms)
1.Rural	6791.53	3296901	1685777	1611124	956	485
2.Urban	90.47	299773	152318	147455	967	3314

3. Bankura city	19.06	137386	69843	67543	967	7200
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Source: Made by scholar and data taken from Census-2011

Table-2. Block and municipality wise Population growth rate under subdivision of Bankura Sadar.

Name of the Block and Municipality	Population in 2001	Population in 2011	Population growth
Bankura I	95840	107685	12.36
Bankura II	123415	140864	14.14
Chatna	169215	195038	15.26
Mejia	76123	86188	13.22
Gangajalghati	162007	180974	11.71
Onda	220572	252984	14.69
Saltora	121552	135980	11.87

Barjora	179007	202049	12.87
Bankura(M)	128781	137386	6.68
Total	1276512	1439148	12.74

Source: Census of India 2001,2011; M=Municipality.

Literacy rate of district:

The literacy rate of the state is much higher than literacy rate of the district. According to west Bengal human development report (2004), educational index of the Bankura district is 0.62. On the basis of educational index, the rank of the Bankura district is 11. The literacy rate in the urban area of this district is almost equal to the literacy rate in the state due to available basic educational amenities of urban region. The literacy rate of Bankura city is higher than the rural as well as the other urban areas of Bankura district. The literacy rate in the rural area is 68.9; it is very poor compared to urban area of this district. It is the result of high population growth and lack of basic amenities of education in rural areas of this district.

Table-3 Literacy status of Bankura.

Sl. No.	Literacy Rate (%)
Rural	68.9

Urban	84.4
Bankura city	86.12

Source: 2011, Census of India.

Occupation:- The income of the people is determined from the various sources of occupational structure. According to West Bengal human development report (2004), income index of Bankura district is 0.26. This is the lowest standard in comparison to other district in West Bengal. According to district human development report (2007), people in the 41.52 percent belonging to below poverty line category, people in the 42.48 percent below poverty line community live in the block area region and 29.48 percent people of this district live in municipal area region.

According to the Census of India 2011 the occupational pattern of Bankura municipality Bankura city is as follows-

Table-4 Workforce Overview

Total population	137386
Total Workers	49494 (approximately 36% of the total population)
Male Workers	38739
Female Workers	10755

Main Workers	41358 (83.56% of total workers)
Marginal Workers	8136 (16.44% of total workers)

Table-5. Occupational Classification of Bankura city

Among the Main workers

Cultivators	178 (0.43%)
Agricultural labours	172 (0.42%)
Household industry worker	1963 (4.75%)
Other workers	39045 (94.4%)

This data indicates the vast majority of the working population in Bankura city is engaged in non-agricultural sectors, reflecting the urban character of the municipality. The high percentage of other workers includes individual employed in sectors such as manufacturing, trade, commerce, education, health services, and public administration.

Discussion:

Rapid urbanization in Bankura City compared to other subdivision blocks or town in the Bankura district can be attributed to several interrelated economic, infrastructure and administrative and

geographical factors. Many individuals, especially those from low-income background migrate to different regions in search of alternative employment opportunities. This migration is often given by an even regional development which is hindered by factors such as limited assets, inadequate access to credit, insufficient training underdeveloped rural infrastructure and a scarcity of non-farm opportunities.

Administrative importance:

As the district headquarters, Bankura city is home to key administrative offices, courts, police headquarters, and various public services centers. This naturally concentrates population employment and investment in infrastructure here.

Economic opportunities:

This city offers more diversified employment in sectors like small scale industries, Handicrafts, metal crafts, pottery, trade and Commerce, transport and Logistics.

Education and Healthcare

These are less reliant on agriculture, unlike rural blocks, drawing people in from villages.

Educational and Healthcare infrastructure. Bankura City host prominent Institutions like Bankura University, Medical College and other technical colleges and schools.

People migrate here for better education and healthcare, often settling permanently.

Transportation hub:

The city is a major transportation and connectivity mode via Road and rail linking it to Kolkata, Durgapur and Purulia. Improved accessibility Boost trade and commuting, aiding urban growth.

Rural to Urban migration:

Lack of jobs, irrigation, or modern services in other blocks leads people to migrate toward Bankura City. Seasonal and permanent migration contributes to a growing urban workforce.

Government and private investment:

Government urban scheme life (Atal mission for rejuvenation and urban transformation) and Municipal development Projects Prioritize district towns over rural blocks. Private investment in retail, banking and Housing has also increased.

By taking following steps, Bankura City can become more sustainable, liveable and resilient for its citizen.

1. Promote green spaces- Develop and maintain parks, gardens and green belts to improve air quality, reduce urban heat island effect and enhance biodiversity.
2. Efficient water management- Implement rainwater harvesting systems, efficient irrigation practices and water conservation measures to reduce water waste.
3. Sustainable Transportation- Encourage public transport, walking and cycling by developing

pedestrian-friendly and cyclist friendly infrastructure.

4. Waste Management- Implement effective waste management systems including recycling, composting and proper disposal of hazardous waste.

5. Developed and implement sustainable urban planning strategies that prioritize mixed land use density and community engagement.

6. Community engagement- Engage with local communities to raise awareness about sustainable practices and involve them in design making processes.

7. Preserve natural resources-Protect and preserve natural resources such as water bodies, forest and wildlife habitats within and around the city.

8. Disaster resilience- Develop and implement disaster resilience strategies to mitigate the impact of natural disaster.

9. Monitor and evaluate- Establish a monitoring and evaluation system to track progress, identify areas for improvement and make data driven decisions.

Conclusion:

The study conducted in Bankura city of Bankura district of west Bengal has concluded that high population growth is the problem of socio-economic development. Maximum people of the district are live in rural areas they faced by low medical amenities, poverty, illiteracy and growth in population. Main constraints like population pressure, low literacy, lack of medical amenities, occupation are also dominated poorer socio-economic condition of the people in the district, on the basis of these constraints regional disparities of the district has noticed which

forced people to migrate to Bankura city. This city's proximity to the district headquarters provides its residents with easy access to various facilities, particularly education, due to its close proximity to Bankura city. So, some strategy implications are needful to recover the backward situation to overcome the socio-economic situation. Rapid urbanization poses significant challenges, balancing economic growth with environmental sustainability. This paper highlights the issues of urban population growth and the resulting sustainability challenges in Bankura city. Bankura's growth is driven by various factors, but the city's infrastructure and services must keep pace with its expanding population. If not, Bankura may face inadequate services, environmental degradation, and poor urban governance.

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