



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Urban Growth and Its Characteristics: A Case Study on Bolpur Municipality, Birbhum, West Bengal

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Abstract:

Urban growth, especially small and medium-sized towns in India, is a crucial sign of socio-economic development. In Bolpur Municipality, which is situated in Birbhum district of West Bengal, this study investigates the nature and traits of urban expansion. Cultural significance of Bolpur town and its educational institutions (particularly Visva-Bharati University) and growing tourism activities have made it a significant urban centre. The study examines population growth, spatial expansion, changes in land use, and the town's functional development using secondary data from municipal sources and Census records. The results show consistent population growth, urban area development, and increasing strain on municipal services and infrastructure. The report emphasizes that to properly manage future growth, urban development must be planned and sustainable.

Key Words: Urban growth, Population growth, Spatial expansion, Land use, Urban development.

1. Introduction:

Urban growth is a dynamic and intricate process that shows how human settlements change in response to social, cultural, technological, and economic developments. Due to population growth, rural-urban movement, more economic activity, and better connectivity, urbanization has advanced dramatically in developing nations like India during the past few decades (Mohsin, 2015; Arif, Sengupta, Mohinuddin & Gupta, 2023; Halder, Haghbin & Farooque, 2021). The spatial organization, functional traits, and socioeconomic makeup of towns and cities have all changed because of this fast urban growth, posing both development potential and problems with housing, infrastructure, environmental sustainability, and governance (Alam, 2011; Ganguly & Ghosh, 2015; Xie, 2007; Anal, 1990). One notable example of a growing urban centre is Bolpur Municipality, which is situated in West Bengal's Birbhum region. Due in large part to the existence of Visva-Bharati University at Santiniketan, which was established by Rabindranath Tagore, the town is well-known for its cultural legacy and educational significance. Population growth of Bolpur and its land use patterns, economic activity, and urban infrastructure have all seen discernible changes throughout time. Its urban expansion has been influenced by several factors, including enhanced transportation connectivity, tourism, educational migration, and administrative duties (Mukhopadhyay, 1967; Roy, 2010; Saha, Sultana, Saha & Das, 2025).

Urban growth of Bolpur Municipality is marked by changes in its residential patterns, socioeconomic structure, and functional functions in addition to its physical expansion. The local environment, land resources, and municipal services are under more strain because of these developments. They have also created new opportunities for regional growth, employment, and cultural exchange.

Examining these traits offers important insights into the mechanisms influencing secondary towns in eastern India (Sen and Guchhait, 2013; Nandi, 2012). This study aims to analyse the nature, pattern, and characteristics of urban growth in Bolpur Municipality, focusing on demographic trends, spatial expansion, land use changes, and functional development. By examining Bolpur as a case study, the research seeks to contribute to a better understanding of urbanization processes in small and medium towns and to highlight the planning challenges and prospects associated with rapid urban growth in such areas (Mitra, 2006; Malik, Gupta, Mondal, Hazra & Mitra, 2007).

2. Selection and Importance of the Study:

Bolpur Municipality, situated in Birbhum district of West Bengal, holds a unique place among these towns. Bolpur, which is well-known for its educational institutions (most notably Visva-Bharati University in Santiniketan), cultural legacy, and surrounding rural hinterland, has seen significant shifts in urban functions, land use patterns, and population distribution. Because of these characteristics, the municipality is a perfect case study for comprehending the nature and forces behind urban expansion at the secondary town level, which is a scale that is frequently under-represented in urban research when compared to metropolises (Dolui & Sarkar, 2023; Gour, 2024). It is both relevant and essential to examine urban expansion and its features in Bolpur Municipality. Considering the dynamic character of urbanization in India's secondary towns, this case study not only fills a research vacuum but also offers practical advice for efficient urban planning, policy, and sustainable development at the local and regional levels.

3. Location of the Study Area:

Bolpur Municipality is situated in the Birbhum district, West Bengal - an eastern Indian state. Geographically, Bolpur is a significant urban centre in the state's Rarh area and is in the south-central portion of Birbhum district (Fig. 1). The municipality is well-connected by road and rail networks and is located around 160 km northwest of Kolkata, the state capital. Bolpur is located near Santiniketan, which is well-known around the world as the home of Rabindranath Tagore's Visva-Bharati University. The town's urban development and functional significance have been greatly influenced by this closeness. The municipality's position as a service and administrative hub for the surrounding hinterland is strengthened by the fact that it is surrounded by primarily rural areas.

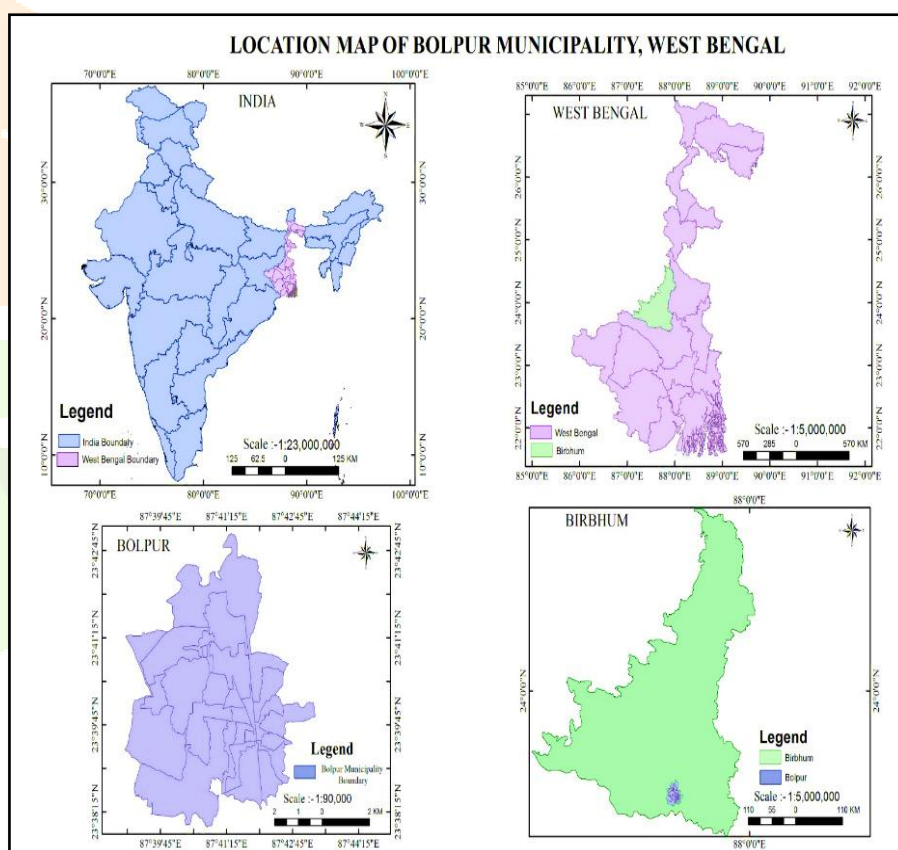


Figure-1: Location map of the study area

(Source: National Atlas and Thematic Mapping Organization, Kolkata; Bolpur Municipality)

4. Objectives of the Study:

The main objectives for the aforesaid study are as follows-

- To know the growth of Bolpur Municipality through time.
- To describe changes in land use and urban expansion of the study area.

- To find out identify major problems related to rapid urbanization.
- To suggest measures for planned and sustainable urban development of the study area.

5. Database and Methodology:

The present study is mostly supported by secondary data and a small number of field observations. The necessary information was gathered from several sources, including the Census of India (different years), Bolpur Municipality Records, Government Reports and Planning Documents, Maps and Spatial Data, Secondary Literature, including books, research articles, journals, and reports on urbanization and growth, as well as Field Observation (limited). The study is appropriate for comprehending urban growth trends at the municipal level because it makes use of secondary data and straightforward analytical procedures. The chosen technique serves as a foundation for planning and development recommendations and aids in detecting spatial and functional variances in urban expansion within Bolpur Municipality.

6. Historical Background of Urban Growth in Bolpur Municipality:

When a railway line was established through Bolpur, it began to grow from a little settlement. The construction of a railway line between Khana and Sainthia began in 1850-1855. At that time, certain families of traders arrived to Bolpur in the hopes of making money from their trading. Bolpur was a little community with just 163 mud homes, according to Captain Sherwill's account from 1851-1852 (Sherwill, 1855). Bolpur town began to flourish in 1859 when the Khana-Sainthia railway truck opened and the East Indian Railway's Sahebganj loop line was established. When Maharshi Debendranath Tagore established the Brahmacharya Ashram in 1863, it attracted students from nearby rural areas, increasing its population (Mukherjee, 1995; Mondal, 2025).

The Amradhora Sub-registration Office, Amradhora Police Station, and Kosba Post Office were moved to Bolpur in 1871. Bolpur was first identified as an urban area in the 1921 census due to its growing significance. Bolpur had 5896 residents at the time. Bolpur became a municipal town following its independence in 1947. On May 15, 1950, the Bolpur Municipality area was established, covering a total of 13.13 square kilometres. Bolpur had nine wards and 14,802 residents in 1951 (Roy, 2010).

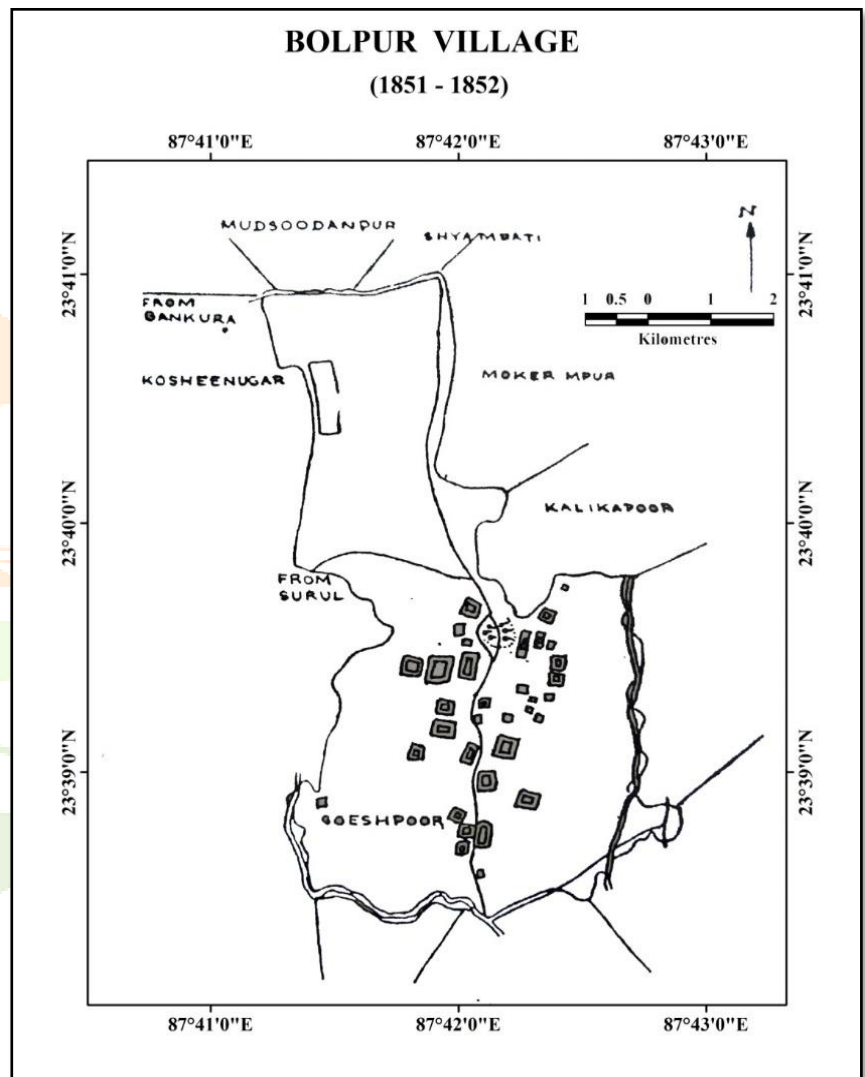


Figure-2: Bolpur village during 1851-52

(Source: Captain Sherwill's Settlement Report, 1851-52)

7. Dynamics of Population Size:

The population growth rate in Bolpur town was slow in the past. In 1901, the population was recorded as 4,575. In 1921, the population was 5,896. During certain years, natural disasters have an impact on population growth. Certain diseases, such as malaria and influenza, have led to an increase in the death rate. Consequently, the growth rate decreased during those years. In 1931, the population in the Bolpur Municipal Area rose significantly because of its increasing significance. The population rose to 10,046 in 1931. During this decade, Bolpur started to develop as a centre for the export of rice. In 1961, the population increased to 23,355 from 14,802, as recorded in 1951. In 1981, the total population of Bolpur was recorded as over 38,436. In 1991, the population was 52,760, and according to the 2001 census, it increased to 65,693. As per latest Census (2011) the population of Bolpur Municipality was 80,210 (see the table-1). The population is projected to be around 116,000 as of 2025. Even higher numbers are predicted for the larger metropolitan region or extended municipal boundary; some urban planning projections put the number at around 148,000 by 2025 to account for newly added wards (Roy, 2010; Sinha, 2015; Roy & Das, 2011).

Table-1: Decadal growth rate of population of Bolpur Municipality (1901-2011)

Year	Population	Decadal growth rate (%)
1901	4575	0.00
1911	6185	35.19
1921	5896	-4.67
1931	10046	70.39
1941	13856	37.93
1951	14802	6.83
1961	23355	57.78
1971	29636	26.89
1981	38436	29.69
1991	52760	37.27
2001	65693	24.51
2011	80210	22.10

Source: Census of India (1901-2011)

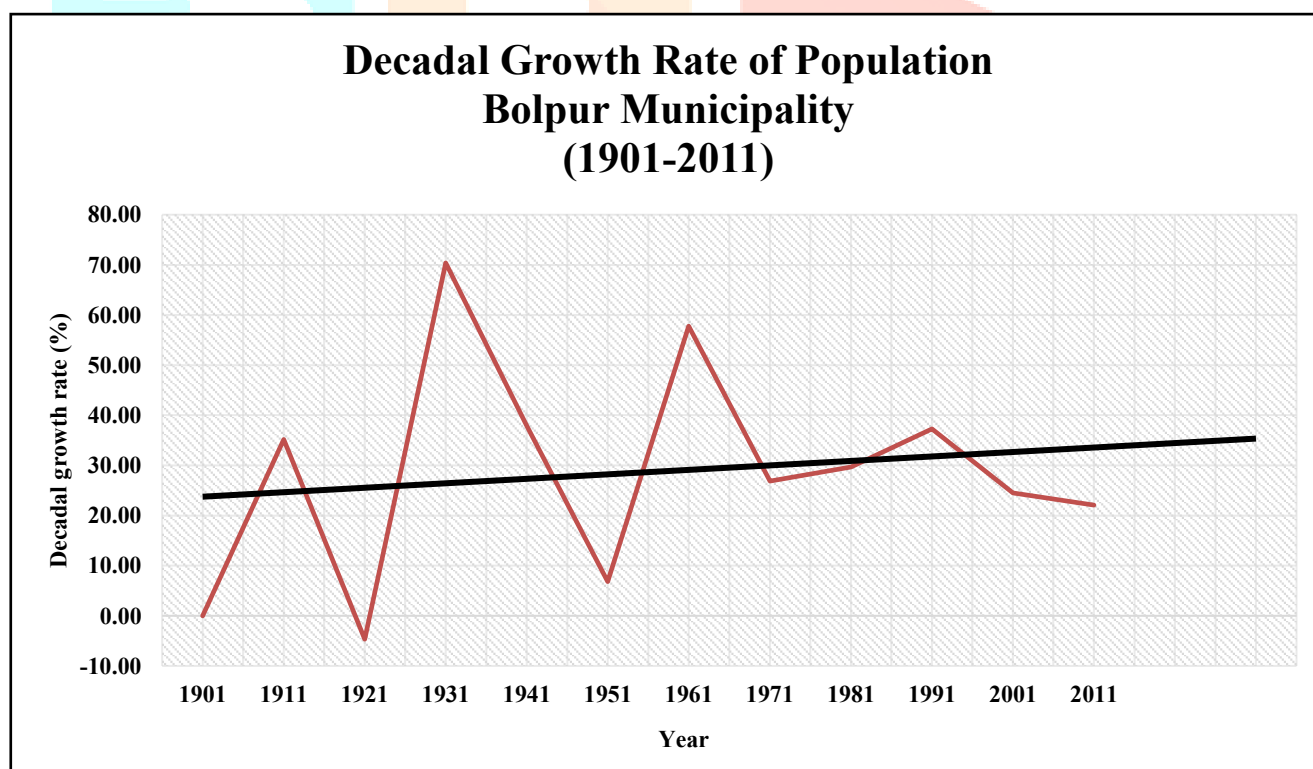


Figure-3: Decadal Growth Rate of Population of Bolpur Municipality (1901-2011)

(Source: Census of India, 1901-2011)

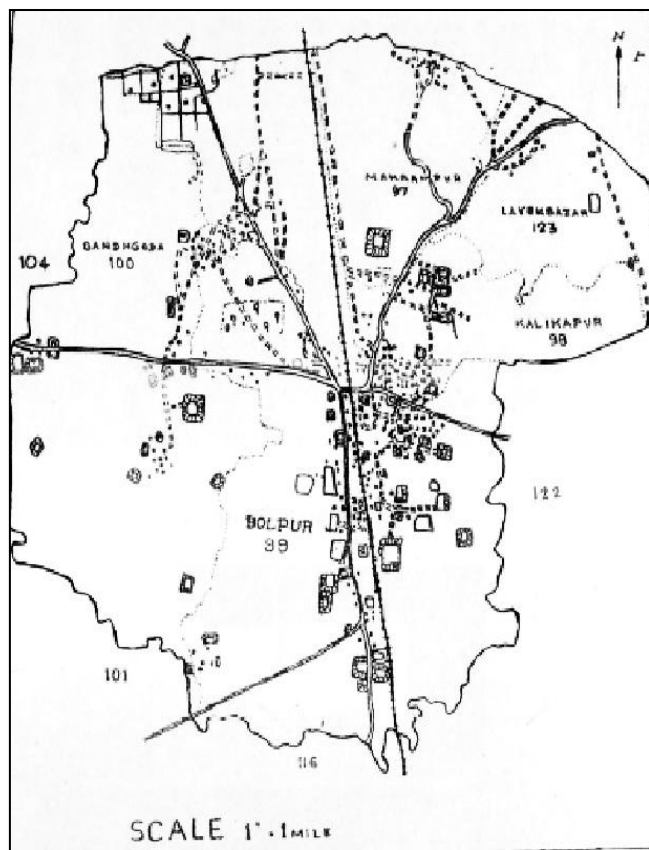


Figure-4: Bolpur as Census Town (1926)

(Source: Bolpur Municipality)

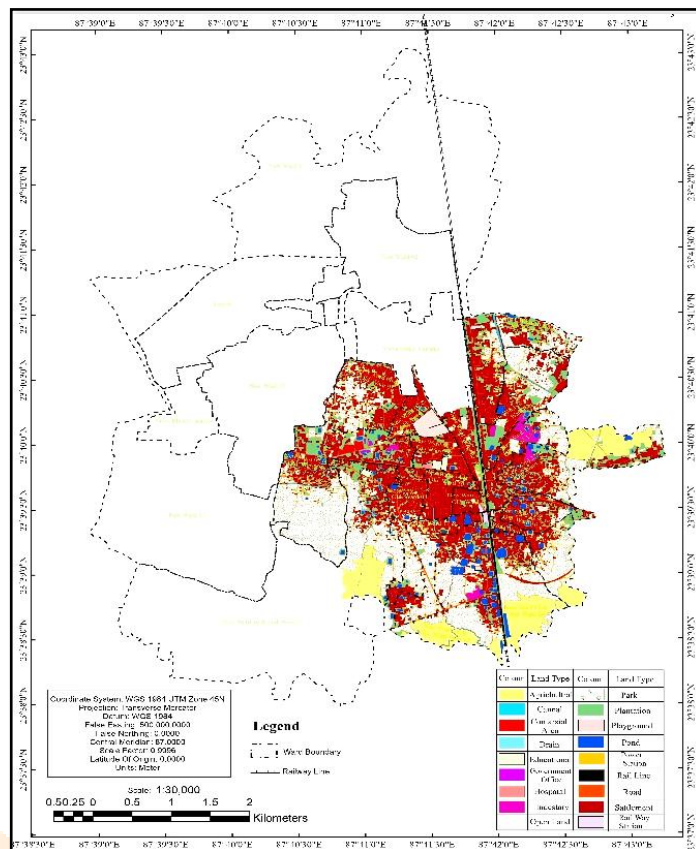


Figure-5: Bolpur as Municipal Town (2025)

(Source: Prepared by Researcher; based on Municipality Data)

8. Urban expansion and Area enlargement:

Bolpur was noted for the first time as an urban area in the census of 1921 (see the fig. 4). Bolpur Municipality has increased its administrative limits several times since its founding to accommodate growth. Around 1950, it covered roughly 13.13 square kilometres, but as urbanization expanded, it grew. To accommodate this development, the administrative structure has gradually increased (Mukhopadhyay, 1991; Dolui & Sarkar, 2023; Mukherji, 1937). The number of wards and total municipal jurisdiction increased as new regions were gradually added through ward delimitations in 1952, 1961, 1995, 2010, 2015, and 2021 (see the table-2). According to recent planning studies based on Bolpur Municipality Data, the municipality's territory has grown to approximately 35.4 sq km because of recent expansions and the integration of nearby communities including Prantik, Surul, and Muluk villages (see the fig. 5).

Table-2: Ward delimitation of Bolpur Municipality (1950-2025)

Year	No. of Wards	Remarks
1950	9	Inception as Municipality
1952	12	1st delimitation of Wards
1961	14	2nd delimitation of Wards
1995	18	3rd delimitation of Wards
2010	19	4th delimitation of Wards
2015	20	5th delimitation of Wards
2021	22	6th delimitation of Wards

Source: Bolpur Municipality, 2025

9. Scenario of Land use land cover Pattern:

Land use and land cover pattern of Bolpur Municipality reflects the city's continuous urbanization and evolving human-environment interactions. Land use and land cover map of Bolpur Municipality land use land cover map for the year of 2005 and 2025 shows urban expansion has resulted in a significant rise in built-up area, according to analyses of temporal LULC changes (e.g., from 2005 to 2025) (see the fig. 6 & 7). Agricultural land, vegetation cover, and open or bare land have all decreased as built-up land grows to accommodate housing, infrastructure, and services. This pattern shows how traditional land uses are being altered by urban growth pressures, with urban and settlement zones taking the place of natural and agricultural landscapes (Das, 2020; Haque, 2018; Ghosh & Mitra, 2010).

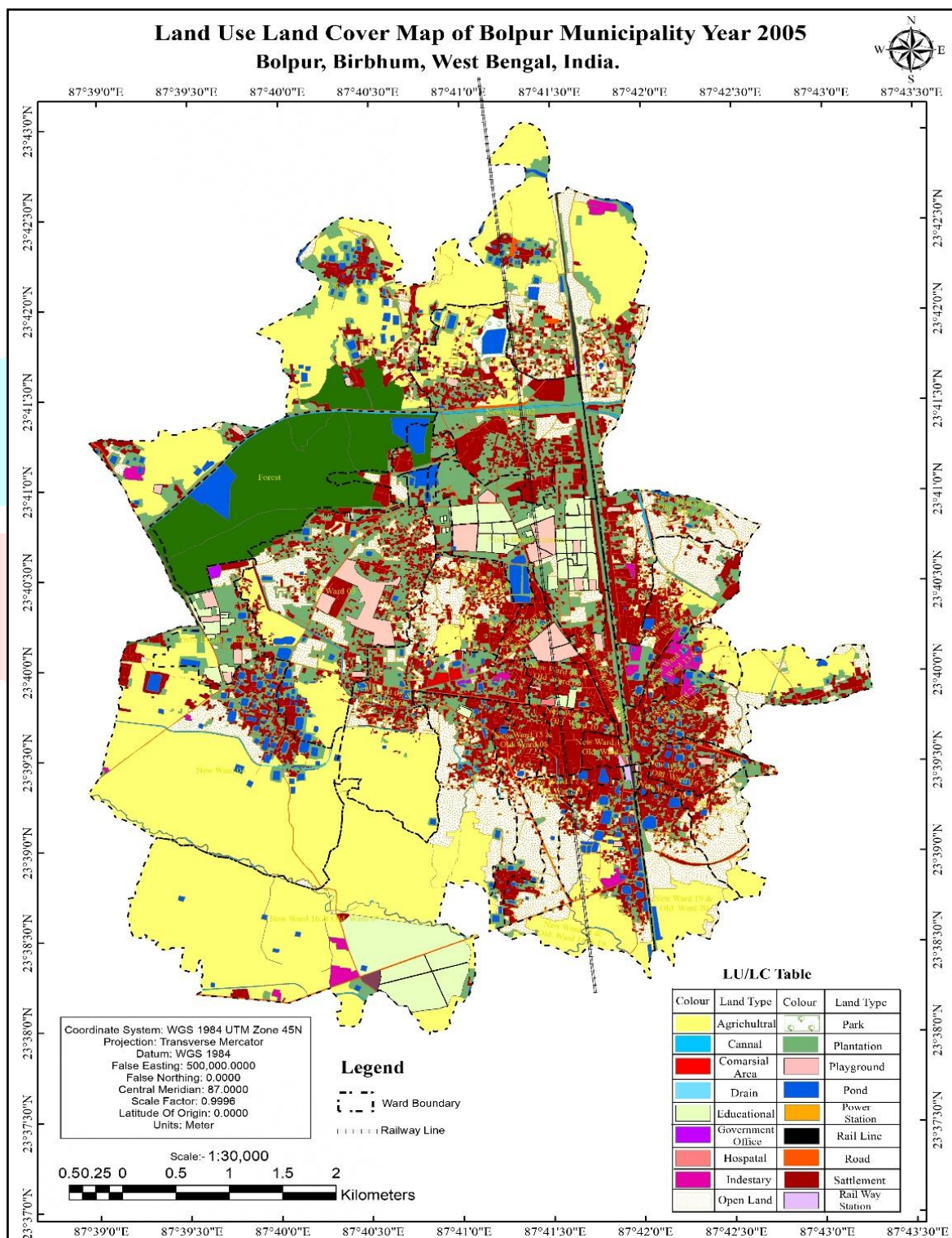


Figure-6: Land Use Land Cover Map of Bolpur Municipality, 2005

(Source: Prepared by Researcher, Based on Municipality data and Satellite Image)

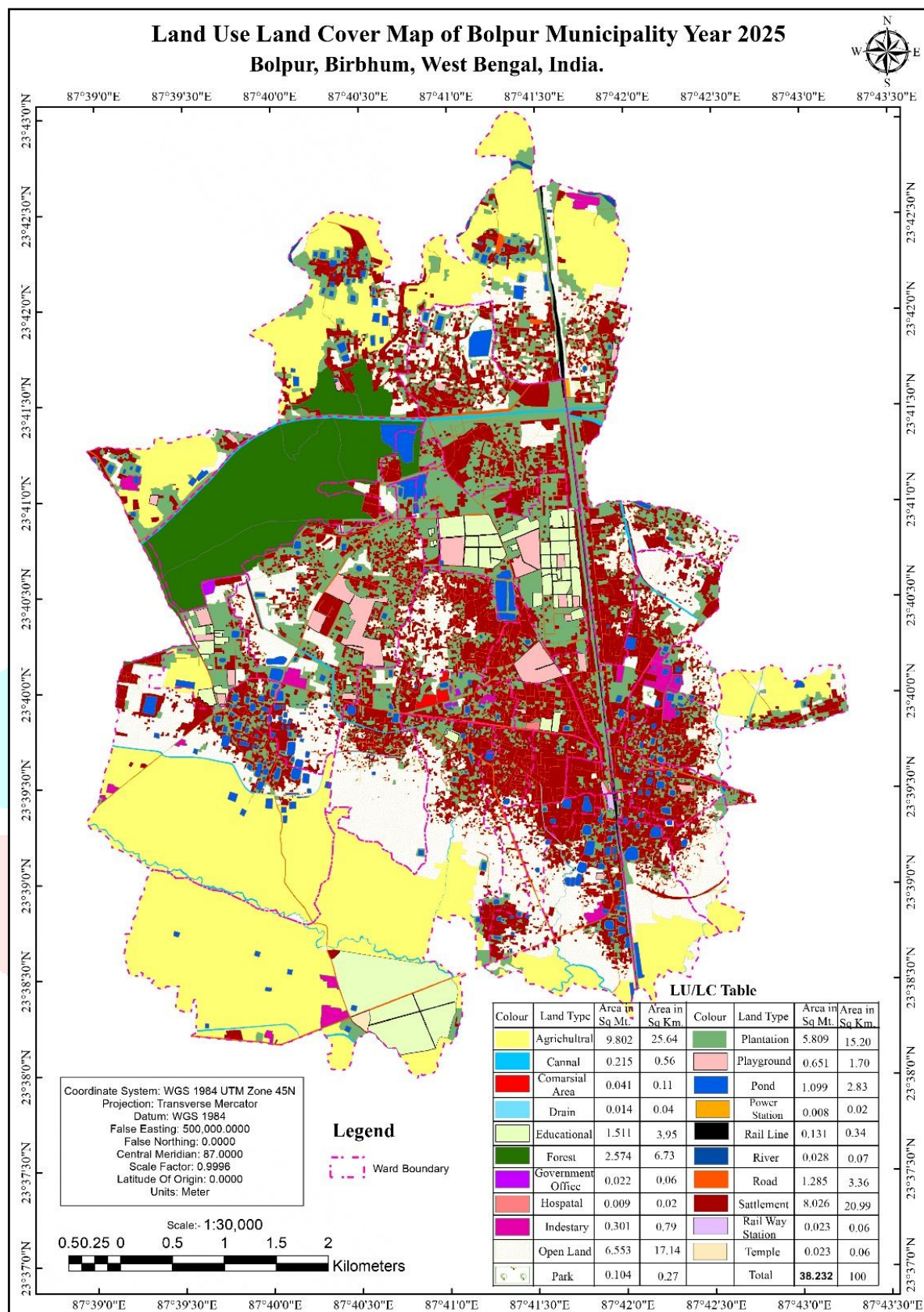


Figure-7: Land Use Land Cover Map of Bolpur Municipality, 2025

(Source: Prepared by Researcher, Based on Municipality data and Satellite Image)

Urbanization is primarily concentrated in the North-West and North-East, following major highways and transportation corridors. The highways that connect Bolpur to Ilambazar and Santiniketan exhibit a 'ribbon' growth pattern, with peri-urban farmlands being quickly replaced by infrastructure focused on tourism. There has been a discernible rise in Land Surface Temperature (LST) because of the conversion of pervious agricultural land to impermeable built-up surfaces, resulting in localized heat islands within the municipality (Das & Das, 2020; Mondal, 2025; Mondal, 2018). The Bolpur Municipality is using the Housing For All Plan of Action (HFAPOA) in 2025 to control this growth.

9. Major Findings:

Bolpur Municipality is undergoing fast but unequal urban growth, according to the study, which is driven by administrative functions, education, culture, and connection. Even though the town has a lot of potential for regional growth, ward-specific planning and sustainable management are necessary to deal with the problems brought on by the town's fast urbanization.

- Bolpur Municipality has experienced steady population growth over the last few decades. As the main urban hub of the Birbhum district, population dynamics of Bolpur Municipality are characterised by steady decadal increase and a significant rate of migration.
- Population density is highest in central wards, gradually decreasing toward peripheral wards, reflecting uneven urban growth. The population density of the municipality has increased significantly, from 1,142 people per square kilometre in 1951 to almost 6,100 people per square kilometre by 2011, despite the municipality's increased territory.
- The urban area of Bolpur has expanded horizontally, especially along major roads and near Santiniketan. As of the most recent re-delimitation in 2021, the municipality's overall size is expected to increase from its original 13.13 sq. km. to roughly 35.40 sq. km. The ward structure was enlarged multiple times to handle the fast urbanisation, going from nine wards in 1951 to twenty-two wards by 2021.
- Peripheral wards have witnessed significant conversion of agricultural land into residential and commercial uses. To control the severe densification of the built-up LULC class, new development must adhere to certain setback requirements (four feet on all sides) as of March 2023.
- The municipality faces challenges in managing solid waste, traffic, and urban services due to increasing population and unplanned growth. With a focus on Housing For All (PMAY) and maintaining its historic eco-friendly character in the face of growing industrialisation and tourism, it has developed into a 'Sustainable City' framework.

10. Conclusion:

Urban growth is a dynamic, multifaceted process influenced by demographic, spatial, economic, and functional aspects, according to the study of Bolpur Municipality. Bolpur, a secondary town with significant cultural and educational value, has a distinct pattern of urban growth, with periphery wards experiencing rapid but largely unplanned growth and centre wards being densely populated and well-developed. Both population growth and spatial expansion have been significantly influenced by the existence of Visva-Bharati University, tourism, and transportation connectivity.

The necessity for sustainable land management and urban planning is highlighted by changes in land use, especially the conversion of agricultural land into residential, commercial, and institutional areas. The study emphasizes how crucial it is to implement ward-specific development strategies to take use of economic, cultural, and educational potential of Bolpur municipality, while addressing the problems associated with growing urbanization. Bolpur Municipality may attain equitable, sustainable, and inclusive urban growth with meticulous planning, enhanced infrastructure, and participatory governance, setting an example for comparable secondary towns in India.

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