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INTRODUCTION

1.1 Scope of the work

The term 'urbanization' may put before us an idea of a modern humanization, but its presence dates back in the pages of history since the ancient civilization. Due to different social, economical, cultural, historical or even political reformations we have been well acquainted about a city's origin, its development, evolution and its decay several times. In this connection, Balurghat, the headquarter of the District of Dakshin Dinajpur which even 60 years ago had been a mere village, in the historical context of the partition of India, overnight made its appearance as a town and today has been turned into a Class-I urban centre. Though this settlement has been greatly developed and progressed by rapid urbanization, still different problems and gaps related to the development of this town are also undeniable facts. It has also been a proven truth that urbanization brings in its wake a number of unwanted situations which are inseparably and organically related to each other and thus, unfortunately, hard to avoid. Right at that stage a fully flourished town starts deterioration and the urban life becomes horrible and gradually loses its advancement, if not swift and carefully planned renewable programme are introduced. The present research work thus tries to aim at the appearance of Balurghat from a tiny hamlet to a Class-I town, its growth, evolution and development as well as highlights the problems that have been originated due to the proximate result of urbanization.

A settlement is an organized colony of human beings including the buildings in which they live or work and the tracts of streets over which their movements take place. Settlements modify the natural environment by intruding a cultural element. In the beginning, these settlements bear simple forms, but with the growth of civilization and technical knowledge the degree of variability in their size and the complexity of their relationships become overwhelmingly greater. Settlements are often divided into two types—rural and urban.

The term 'urban' is usually applied to a spatial or areal unit, having marked secondary and tertiary functions which differentiate it from a rural unit. 'Urbanism' is 'the way of life' (Louis Wirth, 1938) prevails in an urban area, while 'urbanization' is the process of evolution of urban units or areas. Jones (1966, p. 79) has defined an urban settlement as 'a physical conglomeration of houses and streets or it is a centre of exchange and commerce or it is a kind of society or even a frame of mind. Has it a certain size, a specific density? The difficulties in definition are countless and there is very little unanimity, it seems to be all things to all men'. However, urban areas may be defined according to different criteria such as size, population density and type of local government like municipality or notified town

area committee. It is related to a town or a city with a large nucleated settlement in which the majority of the employed inhabitants are engaged in secondary and tertiary activities.

It is customary in every country to classify the population as rural and urban. In general, a town is defined as a compact settlement with inhabitants engaged chiefly in non-agricultural occupations. However, there is no universally agreed definition of a town in terms of population size as to distinguish it from a city or village. It is essentially an urban settlement with a business centre that serves its own inhabitants and others who live outside its boundaries. In India, prior to the 1961 census, the definition of urban area was somewhat liberal and a lot was left to the discretion of the local authorities. Under a uniform criterion adopted for distinguishing urban and rural settlements, the census of India, 1971 defined towns as all places with a corporation, municipality or cantonment board, or notified area committee, and all other places which satisfied the following criteria:

- (1) A minimum of 5000 population,
- (2) At least 75% of the male working population engaged in non-agricultural and allied activities, and
- (3) A population of at least 400 persons/ sq. km.

The 1981 census definition of a town was broadly based on the 1971 census concept and the urban criterion of 1981 census varied slightly from that of 1961 and 1971 census, in that the workers in occupations of fishing, livestock, hunting, planting or orchards were treated as engaged in non-agricultural activities whereas in 1981 census, these activities had been treated as agricultural activities. The definition of an urban area in 1991 census does not change basically from that used in 1981.

It is the fact that 21st century is the age of urbanization. More so for the developing countries. Urbanization is associated with the concentration of population into towns and cities. It is a process through which a society gets transformed from an agrarian economy to an industrial economy and from a small homogeneous society to a large heterogeneous mass. According to most conservative demographic analysis, 60% of the world population will live in cities by another quarter of a century, a paradigm shift in comparison to the last century when similar percentage of people were actually lived in the rural habitats throughout the world. In terms of percentage of population living in urban areas, India is not highly urbanized. However, the growth of urbanization in India has been quite rapid in the last few decades and India is meant to be a major player in this pace of urbanization which is considerably fast among the developing countries.

Since independence, the state of West Bengal has witnessed a steady rate of urbanization and the percentage of urban population in West Bengal has always been higher than the

national average. During the decade 1951-'61, due to historical reason and in recent years, as a fallout of agricultural prosperity, the state had significantly stemmed the process of village to city migration. According to census 2001, the state shares a whopping 28.03% of urban population than that of national level of 27.78%. This enormous population is spread over 126 statutory towns and 252 census towns. As a matter of fact, the number of class-1 towns in the state has gone up almost 12 times during the last three decades.

West Bengal Municipal Act, 1993 specifies a set of criteria for the constitution of any municipal area. Such criteria are, however, subject to relaxation for constitution of notified areas. The criteria are:

- (1) The population of the area should not be less than 20,000.
- (2) Density of population should not be less than 750 inhabitants/ sq. km.
- (3) One half of the adult population should be chiefly engaged in pursuits other than agriculture, and
- (4) Income from taxation and other sources should likely to be adequate for the discharge of municipal functions under the Municipal Act.

The urban governance or 'Urban Local Bodies' (ULBs), as they are technically called, in State of West Bengal dates back to early 18th century. Initially Kolkata and other municipalities were created mainly to cater to the eco-political needs of the time. However, the requirements and aims started to change with time and many of them gradually lost their relevance during post independence era. During this period hardly few new municipalities were formed and most of them were under bureaucratic control without any provision of election. From the mid eighties, a consistency of decentralization was found to observe which started to give emphasis not only in the increasing numbers but also in the activities of several municipal corporations and other ULBs.

To enable the ULBs to function as a local government in its true sense and to make them responsible and accountable to the urban residents, the State Govt. has been constantly reviewing and amending the out dated laws, as well as new laws were formed to help the municipalities keeping track with rapidly changing urbanization process. The major steps in the urban governance in recent years are as follows:

- (1) Reduction of the difference within the development grants and per capita development expenditure earmarked for Kolkata Metropolis Area and that of outside urban centres.
- (2) Utilization of regional resources in municipal development.
- (3) Giving priority to the improved quality of life of the urban poor and weaker sections of the society.

- (4) Decentralization of the development projects.
- (5) Make the municipalities capable to provide urban services as well as micro-planning for their area.

There is no denying that due to the applications of such policies and efforts, resultant rapid urban growth provides various opportunities for the state to develop, though the accompanying problems of inadequate infrastructure, unemployment, underemployment, urban poverty, slums, blights, overcrowding, congestion, insanitation, traffic problems, low provision of basic urban amenities, scarcity of goods and services, gender inequality, environmental pollution, socio-cultural degradation etc. are creating chronic and acute crisis to such urban centres.

1.2 Selection of the topic

The present study is embodied with the urban problems and their effects on the people. There are some motivating factors which attract the researcher to study a particular town like Balurghat viz. – partition of Bengal as a causative factor behind the origin of Balurghat town, rapid increase in population due to heavy influx of immigrants from erstwhile East Pakistan, rural depopulation in the surroundings of the town, changes in the trend of population growth as well as land use pattern and related problems. Although the metropolitan and big cities are always getting the prime attention to the town planners to formulate planning policies for the betterment of their environment which suits for an ideal place to live in but the small and medium towns are becoming always neglected in terms of proper planning and development. So, the planners should have a new look upon the growing needs of the small and medium towns to reduce the pressure from the big cities on one hand, and on the other hand to create a balance urbanization over the whole country. Keeping in mind such conditions, the present research is going to discuss the problems of urban setting of Balurghat town and prospects of development in future.

1.3 The problems

There are various purposes for which research is done. Researchers interested in taking up research have the initial difficulty of picking up a problem worth investigating. Sometimes research is done to satisfy one's own curiosity and interest, while at other times it is done as a commercial venture. No matter what the purpose, the output of all the researches is either a new insight into the problem under investigation or a new method of approaching the problem or a new order or system of data hitherto available only in a haphazard way. The prior and clear understanding of the purpose for which research is proposed to be done,

enables the researcher to formulate his objectives and research design more specifically and appropriately.

The study of urban geography becomes important and imperative both for the academicians and people engaged in decision making at government, economic and social levels at present, as the world is witnessing a rapid increase in population specifically faster increase in urban population due to heavy influx of rural population to the towns. India is no exception of this especially during the last few decades. The immense social and economic costs of urbanization are manifested in chaotic urban growth with a number of social and economic problems. The urban centres continue to grow without any diversified or balanced economic base while the corresponding infrastructure for the proper development is not available. Unless serious efforts, planning and directions are made to control these situations, the urban features of the country will continue to be in utter confusion under increasing social and economic stress and strains. In this whole process, the small and medium towns in India have become the worst victims. The scarce resources are being increasingly pumped into the metropolitan centres leaving very little to the small and medium towns for which urban conditions are worsening daily in them.

Like other medium towns of West Bengal as well as India, Balurghat is also facing such problems. The main problems of this municipal area are as follows:

1. Haphazard concentration of population due to heavy influx of immigrants from erstwhile East Pakistan (now Bangladesh) is a boosting factor for unplanned urbanization.
2. Being a District Head Quarter, Balurghat became a classic example of transport and communication backwardness due to its geographical location as a pocket town.
3. The sewerage and drainage systems of the town are not so scientific in terms of the flow of water. The stagnant water leading to unhygienic conditions like foul odour, breeding places of mosquitoes etc. Not only that the problem of water logging causes in some parts of the town due to over flow of such drains during heavy downpour.
4. Another serious problem occasionally faced by the town is inundation during monsoon causing several gastro-enteritis diseases, transport difficulties, problems in supply of drinking water, loss of properties and many other management problems making the urban life difficult.
5. The inadequate medical infrastructure and the scarcity of health care facilities cause tremendous stress on the urban population. The private sector's involvement in health care is also negligible.

6. Regarding solid and semi-solid waste management of garbage, rubbish, ashes etc. which are mainly coming from households is far below the optimum level. In some cases, such waste materials causing illegal filling up of the beds of the River Atreyee and the *Danga khari*.
7. Narrow and serpentine roads causing default in the smooth flow of traffic which make congestion as well as increase accident probability.
8. The slum pockets of the town are one of the important sources of environmental pollution and sanitation problems. Increase of anti-social activities in such slums along the fringe areas cause to socio-cultural degradation.
9. Insufficient urban infrastructures in respect to the growing demands of civic amenities are also noticed.

In spite of all difficulties, Balurghat town has been experiencing a steady growth much higher than the State average and, thereby, putting more and more pressure in the dwindling urban amenities. The situation becomes worse during the recent past. Immediate attention to comprehensive urban renewal programme should be attempted.

1.4 Overview of literature

Urban geography deals with the study of site, evolution, morphology, spatial pattern, functional classification, urban economic structure and administration, hierarchy of central places, urban development and planning etc. of towns. Historically, urban geography is standing on three main themes—the quantitative and descriptive approach which establishing the spatial organization of the town, the behavioural method that emphasizing the decision making process within the perceived environment and the radical tradition which not only stresses the spatial inequalities and the inequitable distribution of resources within a city, but suggests strategies to remedy such problems. However, cities are the cradle of civilization. A country's state of economic development is judged by its cities—the quality of it and the quantity or number of it. In the modern era, cities and towns are known as much for their glamour as for their problems. Their nature and problems is becoming more novels which is an interesting but problematic field of study to the town planners. In the recent past, many eminent scholars have contributed a number of studies in the form of books, journals, papers and reports to study the process and pattern of urbanization, morphology and evolution of towns and related problems.

In world context, urban geographic studies received a fillip with the publication of Taylor's '*Urban Geography*', J. Garnier's '*Urban Geography*' and Smailes' '*The Geography of Towns*' which provided structural outline as well as extension, problems and planning of

towns. Johnson's *'Urban Geography'* and Carter's *'The Study of Urban Geography'* have introduced new ideas and have provided firm grounds for the geographic study of towns. David Clark's *'Urban Geography'* is another introductory guide to study urban geography. While in Indian context, the publication *'Urban Geography in Developing Countries'* edited by R. L. Singh is marked as the pioneer work for the beginning of urban geographic studies in India. Prof. B. Bhattacharya's *'Urban Development in India'* discusses the stages of evolution of towns in historical perspective. *'Urban Geography'* edited by Majid Husain lights upon the patterns and tendencies of urban settlements. Ashis Bose, in his book *'India's Urbanization 1901-2001'* has discussed the growth pattern of urban centres in India. While Ramachandran's *'Urbanization and Urban Systems in India'* expresses the process and pattern of urbanization as well as urban policies in India. *'Urbanization in India'* edited by R. S. Sandhu is focusing on the urbanization and related slum problems, Th. N. K. Singh's *'Urban Development and Planning'* highlights the evolution, functional classification, development, land use and perspective planning of Nambol town of Manipur.

Several number of papers have been contributed by the Indian geographers and town planners in this field of which two largest groups are engaged in two separate but interrelated urban geographic studies i.e. morphology and land use pattern of the towns and problems as well as planning strategies of those towns. In very recent years, numerous papers are published by many scholars such as— *'Development of Knowledge Base for Urban Land Use Planning'* by Chari, Christopher and Krishna, *'Structural and Morphological Transformation of Tirupati Town'* by Nagabhushanam, *'Water Supply and Drainage Status in South Dum Dum Municipality, Calcutta'* by J. Das and S. C. Mukhopadhyay, *'Problems of Industrial Pollution in and around Hyderabad'* by P. Singh, Jayasree De's *'Urban Environment, Sanitation and Health in India'*, D. C. Barai's *'Solid Waste Management in Bangalore City'*, K. M. Kulkarni's *'A study of Housing in Ahmedabad city'*, K. R. Dikshit's *'The Large and Medium Cities in India: The Former as Problem Areas and The Latter as Growth Centres of Future'*, A. Benninger's *'Small and Medium Towns and Their Role in Spatial Diffusion of Development'*, S. Mukherji's *'Problems of small and Medium Towns of India: Their Inadequate Economic Characteristics'*, N. Singh and G. Krishan's *'Medium Towns and The Development Process in India'*, V. S. Phadke's *'Role of Medium Towns in Regional Development in India'* etc. which have a great value in urban studies in India.

Several case studies and research works have been made by the geographers and planners on many municipal towns of West Bengal regarding their trends of urbanization and proper developmental management. In North Bengal, Siliguri, Jalpaiguri, Malda etc. are some of the towns where these types of works have made more frequently both at personal and

government levels. But Balurghat municipal town is that type of neglected terminal town which has no particular attraction to grow interest among the planners. Some plans were made by the municipality itself in the recent past for its own interest but yet no personal effort has been made. Very recently, the municipality in collaboration with Centre for Development Studies, North Bengal University; has made '*Master Plan for the Drainage System of Balurghat Municipality*' (2007). However, there is a plenty of scope of work and a thorough and analytical study regarding the overall problems and prospects of this town is to be taken up with due weightage.

1.5 Study area

The name of the town has been probably derived from 'BALUKAKIRNAGHAT' meaning a '*ghat full of sand*' (Roy, 2000, p. 12). The Balurghat municipal area is comprised of mouza Chakbhabani, Khadimpur, Bongi, Narayanpur, Balurghat, Bararaghunathpur, part of Hosseinpur and part of Dakra. It is situated on the eastern bank of River Atreyee and is spread over an area of 10.56 sq. km. with a population of 135,737 (2001) distributed among the 23 wards (Presently 151,299 according to 2011 census). The geographical location of Balurghat is $25^{\circ} 12'27''$ N to $25^{\circ} 15'04''$ N latitude and $88^{\circ} 45'41''$ E to $88^{\circ} 47'43''$ E longitude, with an average elevation of about 24 m above the mean sea level (figure 1.1).

The State Capital Kolkata in the south is 450 km. and the 'N-En. Corridor' Siliguri in the north is about 300 km. away from Balurghat. The other nearest urban centres Malda (110 km.), Raiganj (110 km.), Gangarampur (42 km.), Hili (26 km.) etc. are noteworthy. The only main road SH-10 maintains the road network of Balurghat with rest of the State. After the introduction of railway just in December 2004, the overall transport mode has slightly improved. Probably it is the only municipal town in the State which is surrounded at the southern part by the long international boundary with Bangladesh by a margin of merely 1-2 km.

It is generally agreed that Balurghat and its surrounding areas were a gap of shallow trough in between Garo and Rajmahal hills which gradually filled up by the alluvium in the course of time. This area is the part of the northern plain of West Bengal locally known as '*barind*' mainly composed of older Pleistocene and Holocene alluvium deposits (the thickness of the alluvium varies from 200-300 m) which are found in the north and north-eastern corner of the town near the Danga forest, covered by the flood plain of the river Atreyee. The rest of the town is more or less composed of river borne sediments of fine grain upon the Atreyee flood plain. Stratification is common due to different mode of its deposition. Along the valley and the two banks of the Atreyee, the soil consists of a mixed

sandy loam locally known as '*pali*'. Topographically, this area is very slightly undulating plain with a gradual slope from north to south.

Balurghat lies just to the north of the tropic of cancer experiences a long hot summer, profuse rain and shorter but intense winter and remain enough humid during most part of the year. June is the hottest month with mean maximum and minimum temperature of 34.4⁰C and 24.2⁰C respectively while January is the coldest month with the mean minimum and maximum temperature of 10⁰C and 25.3⁰C respectively. Though sometimes the temperature rises during summer more than 40⁰C and during cold, temperature often falls <5⁰C. April and May occasionally experience thunderstorms and rain followed by hails popularly known as '*kalbaishakhi*'. The average yearly rainfall is about 1600 mm. mostly occurring during the monsoon months of June to September while winter season experiences a very lesser amount of rain and heavy fog (table 1.1 and figure 1.2).

Table 1.1 Meteorological data of Balurghat Town (2010).

Months	Mean Temperature	Rainfall
January	12.60	9.60
February	19.95	12.20
March	24.80	24.60
April	28.50	60.10
May	28.90	145.60
June	29.25	302.00
July	28.75	360.00
August	28.85	245.70
September	28.80	252.30
October	27.05	180.30
November	23.10	12.60
December	19.10	1.80

Source: I.M.D., Govt. of India.

LOCATION MAP

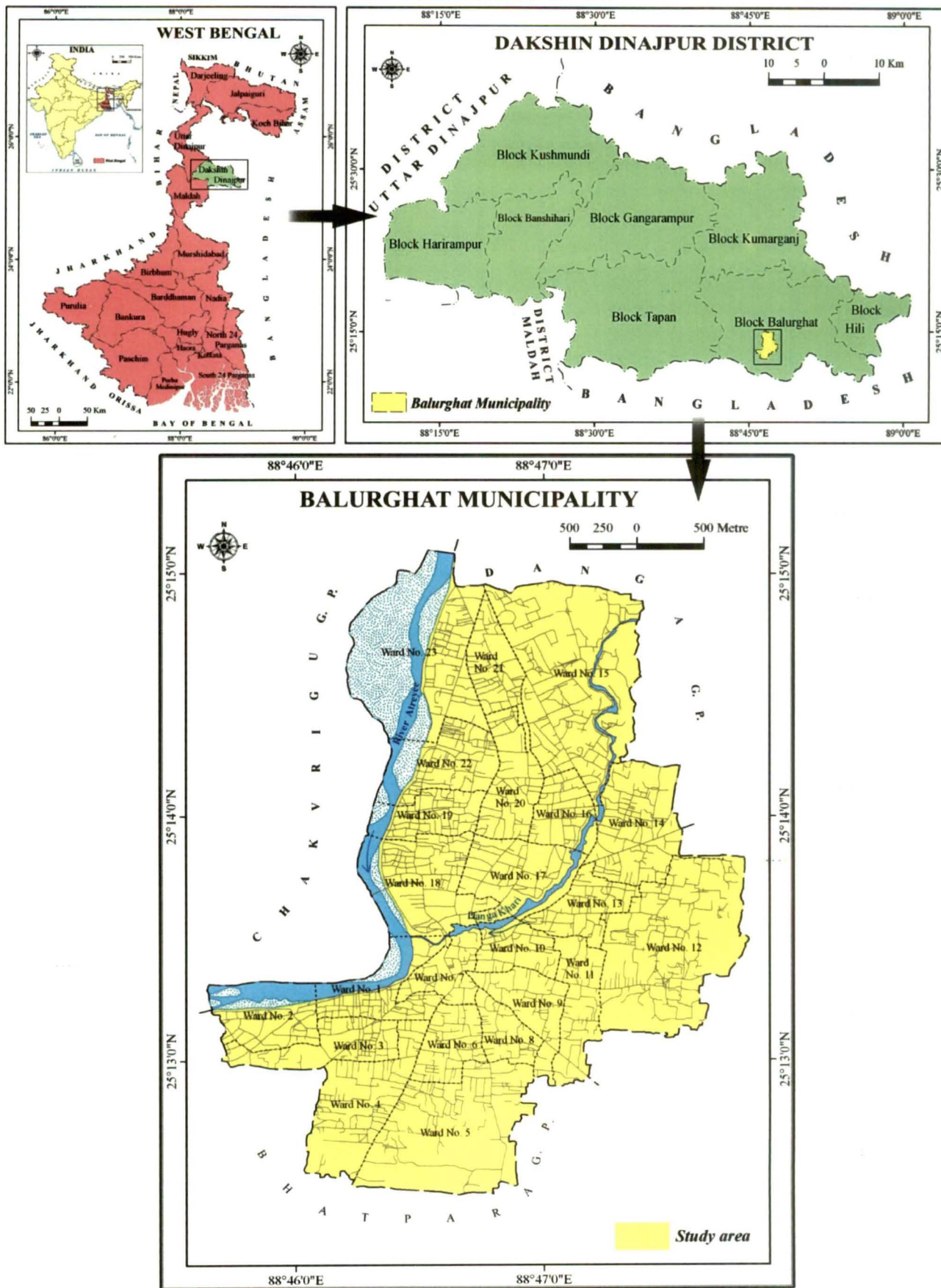


Figure 1.1 Location map of Balurghat Municipality.

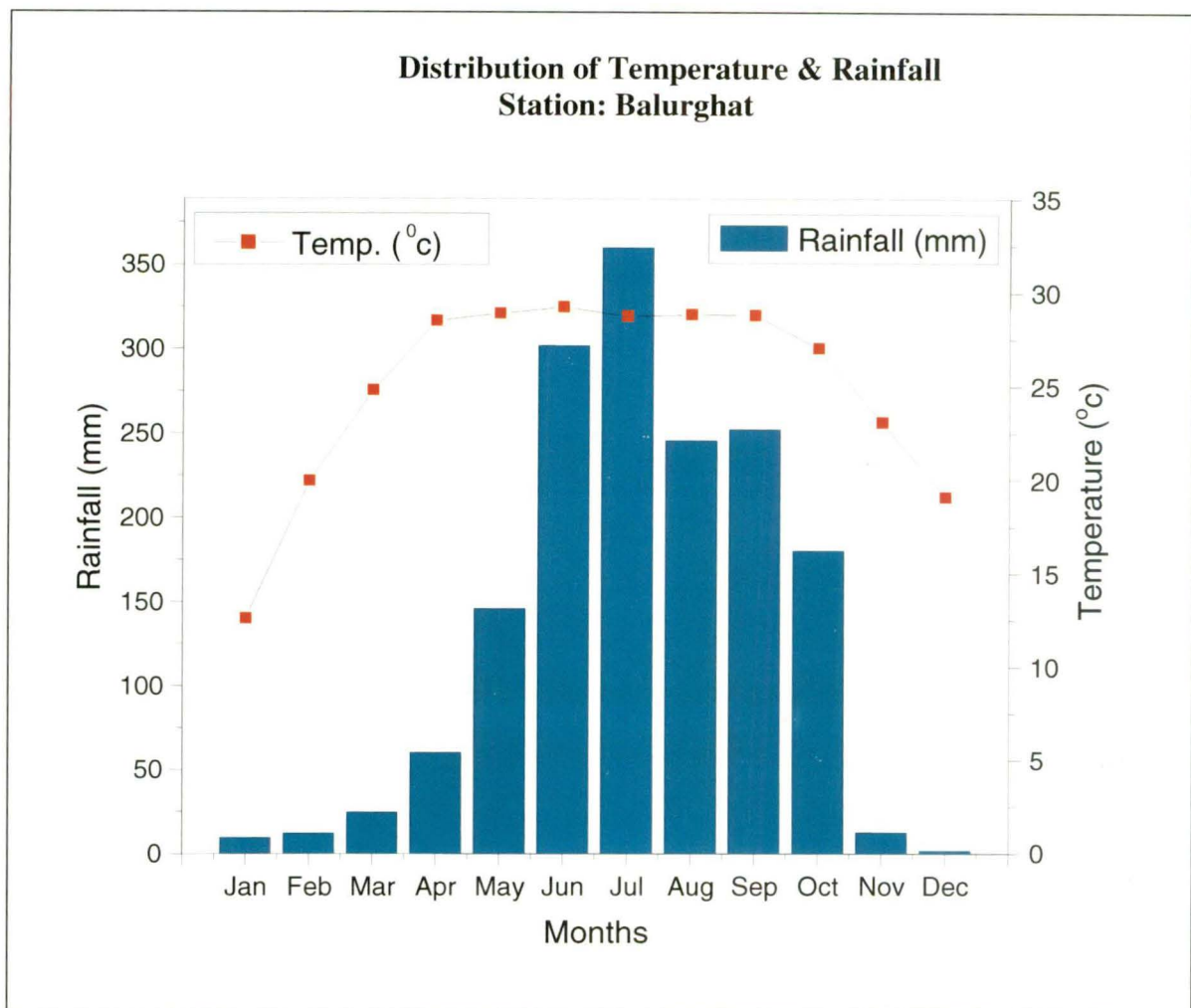


Figure 1.2 Mean monthly temperature ($^{\circ}\text{C}$) and rainfall (mm) of Balurghat Town for the year 2010.

1.6 Hypothesis

Hypotheses are propositions of a given set of facts which remain partly or wholly unverified. It determines the relationship of two variables and is accepted or rejected after empirical and experimental verifications. Practically hypothesis has been defined as a tentative theory of supposition provisionally adopted to explain certain facts and to guide in the investigation of others.

The present research attempts to test the following hypotheses:

1. The growth of Balurghat town has been found intricately linked with the partition of the country followed by the liberation of Bangladesh which ultimately induced huge migration from erstwhile East Pakistan.
2. With the limited urban amenities, the municipal area always shows higher urban growth rate than that of the State average.

3. The gap between available infrastructure and population growth is found ever widening within the urban territory.
4. Like other dynamic settlement of North Bengal, Balurghat town also experiences lot of socio-economic as well as socio-cultural transformations.
5. Spatial variation regarding infrastructure is noticeable and the housing condition of the households vary according to their economic background.
6. Higher the internal resource generation, higher will be the economic development for urban renewal.

1.7 Aims and objectives

The following objectives are taken into account for the progression of the present research work:

1. To evaluate the location, physical set-up, morphological characteristics as well as demographic character of the municipal area.
2. To know the level of urbanization in terms of population growth.
3. To study the land use and its changes due to the pressure of population.
4. To analyze the existing urban amenities provided by the municipality.
5. To identify the infrastructural problems and their impact on urban habitat.
6. To suggest suitable measures for the further development of the town.

1.8 Methodology

To carry out the work, the research programme may be divided into three parts:

- A.** Pre-field: Study of literature, journals, magazines, maps, data, content analysis, recording of notes, statistical compilations and manipulations etc. are done in detail.
- B.** Field: Measurement of roads, drains, river banks etc., questionnaire, individual opinion, collection of primary and secondary data, land use survey, possible use of mobile phone for recording, photographic evidences etc. are taken into consideration.
- C.** Post-field: Analysis, synthesis, computation, tabulation and mapping of collected data with the help of suitable statistical, cartographic and GIS techniques have been made.

The following methodologies are followed to fulfill the above mentioned aims and objectives:

1. Data and information are collected from different offices of the State Government. A random basis sampling of (5-10) % is carried out to know the demographic character on different socio-economic aspects.

2. Several statistical methods and cartographic techniques are followed to make an attempt on the level and intensity of urban development in terms of excessive population growth.
3. An attempt has been made to show how the tremendous growth of population increasing pressure on land and finally changing the pattern of land use within a short span of time. In this regard, the transformations of land are shown with the help of the cadastral map based on plot-to-plot and ward wise detail land use survey.
4. Correlations are attempted in between internal resource generations and existing urban amenities provided by the municipal authority.
5. In order to identify water-logged prone area, the following methods are applied:
 - a) Spot elevation of different locations (at 50 m interval) is measured by dumpy level survey.
 - b) A contour map (at an interval of 1 m) of municipal area is prepared based on interpolation method.
 - c) Water-logged prone map are prepared based on the contour map along with primary information which are collected from the affected households.
6. In respect to traffic congestion, a traffic flow survey has been followed to measure the inward and outward movement of daily traffic. The collected data and information has been processed and analyzed systematically to provide suitable strategies to mitigate the urban problems and for the betterment of quality of life.

1.9 Sources of data

The data bases of the present study are as follows:

- (1) The description about the evolution of the township have been gathered by consultation of several books, journals, magazines, records, reports, literature etc. published both at personal levels and government levels and also by the municipal authority itself. Several interviews are conducted with the elderly, learned and knowledgeable persons of the town. Surveys have been made to understand the physical, socio-economic and cultural set-up of the town through the application of available theories, methods and techniques related with urban development and planning.
- (2) Information regarding land utilization, land values, impact of land use change etc. has been collected from B.L. & L.R.O. and D.L. & L.R.O., municipality office and through field visits as well as personal interviews with the urban residents.

- (3) The demographic data has been taken from the District Census Handbooks of formerly West Dinajpur District and also from the 2001 Census and 2011 Census (provisional) of Dakshin Dinajpur District. Data regarding area of different wards, drainage systems, slums pockets, waste management, civic amenities etc. have been made according to the records supplied by the municipality. Information also taken from different websites wherever necessary.
- (4) Meteorological data has been collected both from the mini weather station located at the District Collectorate Building and the I.M.D., Govt. of India.
- (5) Regarding traffic and transport information, data have been collected from the RTO, Traffic Police Dept., N.B.S.T.C. Depot and different Motor Worker's Unions.
- (6) Information about health services are taken from District Hospital, Municipal Matrisadan and several private nursing homes.
- (7) Primary data have been collected from field survey through scheduled socio-economic questionnaire.
- (8) Data relating to flood has been collected from the Irrigation and Waterways Dept., Govt. of West Bengal, Master Plan for Drainage of Balurghat Municipality and several personal contacts dealt with the flood affected people.

1.10 Design of the thesis

The study of problems and prospects of Balurghat Municipal Area in Dakshin Dinajpur District is done from a geographical point of view and based upon the overall observation, statistical information, field survey, several visits and interviews in each and every ward of the town. Thus the thesis contains two main parts— the first part highlights the growth and overall problems of the town while the second part suggests some proposed developmental strategies for future. However, the entire research work is splitted up into 10 chapters.

Chapter-1 deals with the conceptual framework about urban studies, location and physical aspects of the townscape. It also reviews the existing literature on urban studies and points out the hypotheses, objectives and methodologies followed in the ongoing study.

Chapter-2 focuses the evolution as well as chronological growth of the urban area from the angle of historical, political and geographical perspectives.

Chapter-3 portrays the existing land use pattern; ward wise land utilization, relative changes in past and present land use and its impact on human habitation.

In Chapter-4, an assessment of demographic characters like density and growth of households, origin and characteristics of slums, problems related with slums etc. have been

made to find out the causes behind rapid urbanization and its immediate consequences arise in the form of slums, environmental and sanitation problems.

Chapter-5 is concerned with the most serious problem of flood and water logging, the town facing almost frequently during continuous downpour due to poor drainage and sewerage systems.

The transportation problems like pattern of roads, scarcity of footpaths and passenger sheds, nature of traffic flow, absence of automatic traffic signal, heavy congestion and probability of accidents, encroachment of shops along the roads, need for better mode of transport and communication etc. have been discussed in a detailed manner in Chapter-6.

In Chapter-7, an effort has been made to discuss the problems of waste management, shortage of dumping yard, recycling of such waste materials etc. Not only is that, the existing municipal services and the role of people also considered carefully in this regard.

Chapter-8 shares the capability of existing urban infrastructure to fulfill the basic needs of the people. Another attempt is made to depict the health-care system like unavailability of better treatment facilities in District Hospital, inadequate contribution of private sector in health-care etc.

Chapter-9 deals with some suggestions and planning proposals in various aspects of Balurghat town for the overall development in future.

Lastly, in Chapter-10, summary and conclusions have been presented in terms of the whole study.

Thus the researcher made a heart-felt effort for the completion of research programme in an observational-statistical-descriptive approach in support of various cartographic illustrations.

References

- Alvi, Zamir, 1995: *Statistical Geography, Methods and Applications*, Rawat Publications, Jaipur, pp. 1-12.
- Census of India, 2001: *District Census Handbook*, Dakshin Dinajpur District.
- Chandna, R. C., 2004: *Geography of population*, Kalyani Publishers, New Delhi, pp. 362-398.
- Clark, David, 1990: *Urban Geography*, Cosmo Publications, New Delhi, p. 16.
- Ghosh, Sumita, 1998: *Introduction to settlement Geography*, Orient Longman Limited, Calcutta, pp. 103-117 and 130-135.
- Govt. of West Bengal, 2003: *Urban West Bengal, a Policy Statement*, Published by Municipal Affairs Department and Urban Development Department, pp. 7-15.

- Govt. of West Bengal, 2004: *District Statistical Hand Book*, Dakshin Dinajpur, Bureau of Applied Economics and Statistics.
- Jana, M. M., 1993: *Characteristics and Classifications of Towns in North Bengal*, Geographical Review of India, Vol. 55, No. 4.
- Jones, E., 1966: *Towns and Cities*, Oxford University Press, New York, p. 79.
- Khan, Najma, 2002: *Quantitative methods in Geographical research*, Concept Publishing Company, New Delhi, pp. 5-25.
- Kothari, C. R., 2004: *Research Methodology, Methods and Techniques*, New Age International Publishers, New Delhi.
- Mandal, R. B., 2000: *Urban Geography*, Concept Publishing Company, New Delhi, pp. 479-489.
- Misra, R. P., 2002: *Research Methodology, A Hand book*, Concept Publishing Company, New Delhi.
- Mitra, Saptarshi, 2006: *Dakshin Dinajpur Zilla* (in Bengali), Yozona, December, pp. 81-90.
- Roy, D., 2000: *River is the another name of Creation: The Atreyee River* (in Bengali) in *Dadhichi Uttaradhikar Balurghat*, edi. by M. Chakraborty, Banerjee Press, Balurghat, pp. 4-17.
- Siddhartha, K. and Mukherjee, S., 2004: *Cities Urbanization and Urban Systems*, Kisalaya Publications Pvt. Ltd., Delhi, pp. 212-225.
- Singh, Th. N. K., 1998: *Urban Development and Planning*, Rajesh Publications, New Delhi, pp. 7-15.
- Sinha, V. C. and Zacharia, E., 2000: *Elements of Demography*, Allied Publishers Limited, New Delhi, pp. 396-423.
- Survey of India, 1994: *District Planning Map Series (1994): Dakshin Dinajpur, West Bengal*, Published by the Department of Science and Technology.
- Wirth, L., 1938: *Urbanization as a way of life*, in *American Journal of Sociology*, Vol. 44, pp. 1-24.
- Witherick, M., Ross, S. and Small, J., 2001: *A Modern Dictionary of Geography*, Arnold Publishers, London, p. 280.



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