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Urbanisation and sustainable development: An environmental study of Bolpur town near Tagore's santiniketan, West Bengal, India

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ABSTRACT

Urbanization is a complex process of transformation that affects both people and places. It refers the concentration of people associated with non agricultural sector with land use change and rural plight i.e. population shift from rural to urban areas. Urban places of the world are therefore ever-increasing in number as well as magnitude. This ever-increasing number and expansion of urban places, although reflecting index of development, bear undesirable effects on people and society and in broad sense on environmental sustainability. Since the origin of a town to its maturity, the level of environmental problems increases with its planned or unplanned growth as compared to its rural surroundings. Very often, the deplorable scenario of several first order towns and cities, metropolitan and megalopolitan cities suffering from severe environmental tribulations comes into headlines, but towns of lower order of sequence or smaller in sizes are not highlighted properly, which will face the same in the coming future. Because today's smaller towns are tomorrow's larger cities. So, in this circumstance, it is important to study the growth pattern of each urban area because most of the environmental problems lie in the seeds of growth or development of a town that adversely affect its natural stability. The paper focuses on the issues of sustainability emerged out due to the unending process of urbanization in Bolpur town of West Bengal and seeks some way out to reduce the problems.

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KEYWORDS

Bolpur;
Urbanisation;
Sustainability;
Human perception;
Self-realisation.

INTRODUCTION

Bolpur town of Birbhum district, West Bengal, India falls on the category of class-V town as classified by Census of India due to its population ranging between 50000 & 99999. It has all the criteria, which are required for the development of an urban area. As stated earlier, urbanization is a complex process of change af-

fecting both people and places including the socio-economic, cultural as well as the physical structure of the area its adverse effect of has been increasing day by day, which becomes a serious problem of the town at present. So, growth pattern and environmental problems, both are very important aspects of the study to analyze the genesis of environmental sustainability in towns like Bolpur.

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OBJECTIVE OF THE STUDY

The broad objectives of this study are as under-

- 1) To describe the pattern of urbanization in the study area.
- 2) To highlight the major environmental problems created due to urbanization in Bolpur town
- 3) To assess the human perception about the environment in Bolpur town
- 4) To suggest a few strategies to get rid of these problems.

LOCATION OF THE STUDY AREA

Bolpur is one of the important towns of the district Birbhum, West Bengal as Tagore's Santiniketan and Visva-Bharati- a world famous educational heritage are located only one km. away from this town. It forms a part of south Birbhum and is located in between 87°42' E longitudes and 23°40' N latitude, with an area of 13.13 Sq.km. at the banks of river Ajoy.



Source: Bolpur municipality

Figure 1 : Location map of Bolpur town

GROWTH PATTERN OF BOLPUR TOWN

A. Bolpur town in early stage of development (1850-1947)

Bolpur started to grow up from a small village by

TABLE 1 : Number of houses in and around Bolpur village in 1851

Village	Number of Houses (Kancha)
Bolpur	163
Kalikapur	75
Bandhgora	79
Makarampur	15

Source: Sherwille's survey report, 1851-52

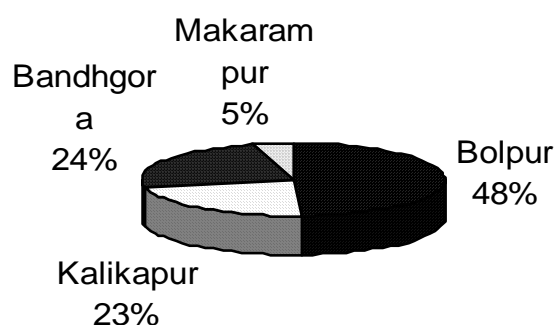
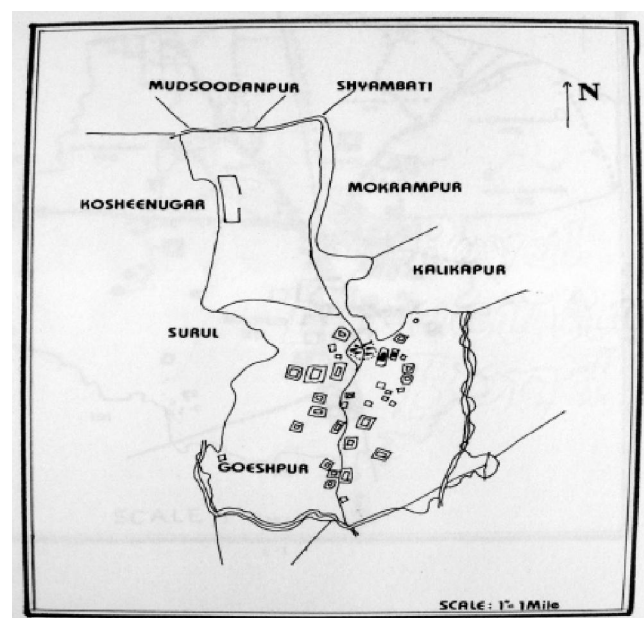


Figure 2 : Number of houses in and around Bolpur village in 1851



Source: Bolpur municipality

Figure 3 : Bolpur village 1851-1852

the initiation of a railway line through it. In the year 1850, railway line was started to construct from Khana to Sainthia. Some trader families at that time came Bolpur with the hope of benefit in their trades. According to captain Sherwille's report (1851-52), Bolpur was a small village having only 163 mud houses (TABLE 1).

In 1859 when Khana-Sainthia railway truck opened along with setting up Sahebganj loop line of East Indian

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Railway, the growth of Bolpur town was started. In 1863, *Maharashi Debendranath Tagore* founded the '*Brahmacharya Ashrm*' which began to pull students from adjoining rural areas leading to increase the population. In 1866, habitations of new people started around the then *Goalpara* for the said two causes. It was 1871, when the Sub-registration Office and the Police Station from *Amradhora* and the Post Office from *Kosba* were shifted to Bolpur. Since then, the growth of Bolpur town started around *Nichupatti*, *Ukilpatti* and *Sonapatti* area of present. During the First World War, the price of rice became very high. As a result of that, rice mills were

centers of rice trade.

In view of the increasing importance, Bolpur was noted for the first time as an urban area in the census of 1921. At that time, the population of Bolpur was 5896 whereas, in 1901, it was 4575. At the time of 1850-1947, a number of important establishments were found in Bolpur town (TABLE 2)

B. Urban development of Bolpur town since 1947

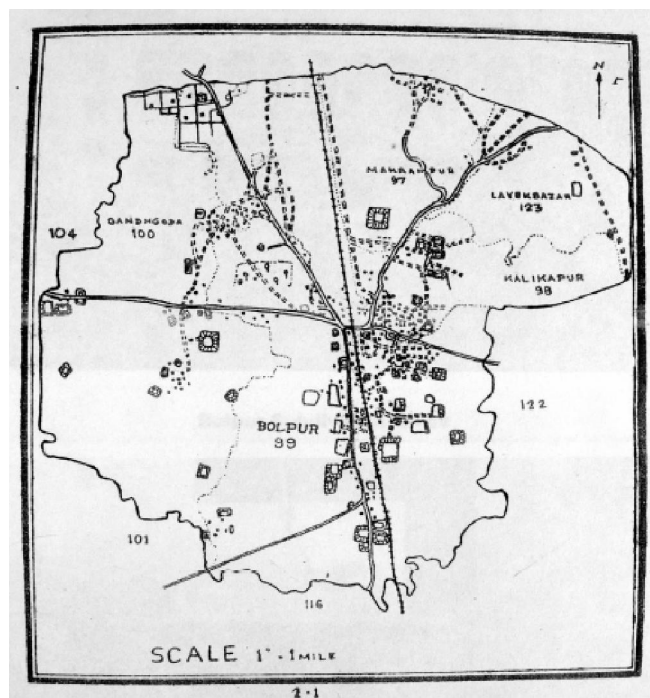
After independence in 1947, Bolpur became a Municipal town. Bolpur Municipality area was formed on 15th May 1950, with a total area of 13.13 sq.km. In 1951, Bolpur had 14,802 populations and there were 9 wards. In 1961, the population of Bolpur reached at 23,355 and in 1963, the number of Municipal wards increased from 9 to 14. In 2002, the number of wards increased from 14 to 18. In 1952, the first metalled road was constructed from Bolpur to *Illambazar*. Since then, several roads were constructed which linked the different nodes of the district with Bolpur. In the early stages, the roads were unmetalled and fewer in numbers and a few buses ran. With the increasing population, the number of routes also increased and those were converted into metalled. In 1988, the number of vehicles were 265, whereas in 1992, it increases to 512. At present, approximately 51 routes are available at Bolpur. As said earlier that Bolpur town grows with the initiation of railway line, therefore railway has been bearing great importance in the transportation network of Bolpur. At first, single line prevailed. As time goes, single line was turned into Double lines.

Myriads of establishments are found which support the urbanization process of the town. Initially, Bolpur has one college and six high schools. Among them, the college and four high schools were established after independence. Apart from these, the important establishments are *Jambuni Bus-Stand*, *Super Market*, *Gitanjali Auditorium*, *Ramkrishna Mandir* etc. Super Market is situated on the Santiniketan Road with at least 100 shops. Very recently, some shopping complex, namely- *Rekha Shopping complex*, *Netaji Bhazar* etc. have been established. Several rice mills which once expedited the process of urbanization in this area, are at present reducing in number. At present, 11 Rice mills are found here. So, these are the brief lucid picture of the development of Bolpur town.

TABLE 2 : Important establishments of Bolpur town up to 1947

Year	Important Establishments
1904	Bolpur High School
1916	Bolpur Town Library & First Electricity
1918	First Rice Mill
1921	Bolpur Union Board
1930	Bolpur Girls' School
1937	First Oil Mill

Source: 'Birbhum Parichiti'



Source: Bolpur municipality

Figure 4 : Bolpur town 1926

established at Bolpur. The first rice mill was established in 1918. Gradually, rice mills were established one after one and Bolpur was converted into one of the important

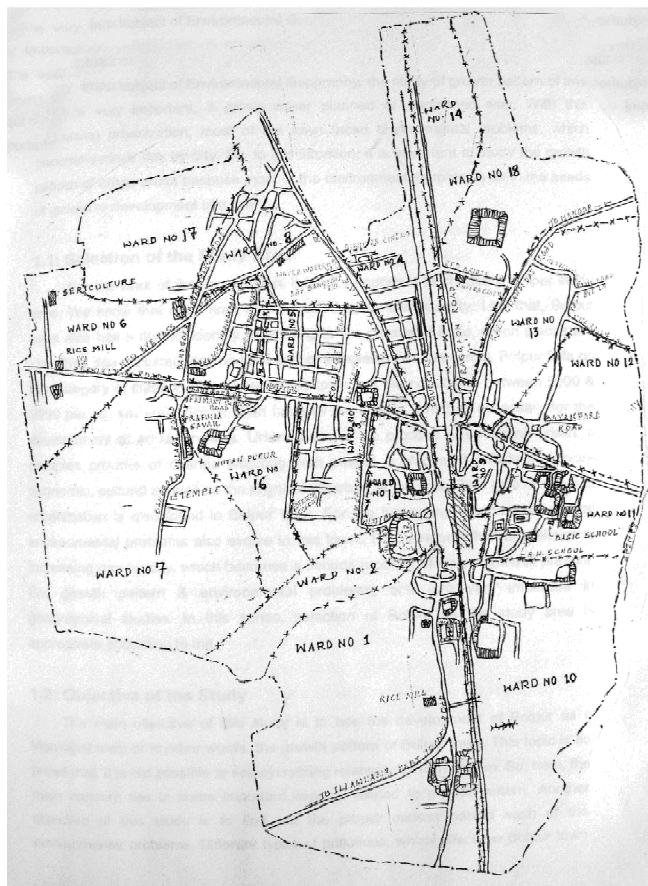
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C. Present day high rate of urbanization

The process of society's transformation from a predominantly rural to a predominantly urban population is known as Urbanization which is vividly found in the study area.. It includes two events-

1. An increase in the number of people living in urban settlements and
2. An increase in the percentage of the population engaged in non-agricultural activities living in such places.

At present, above 65,000 people live in Bolpur town. This shows the high growth rate of population. According to 2001 census, the number of total workers are 22206, and 94.1% of the total workers are engaged in non-agricultural activities. These two fig-



Source: Bolpur municipality

Figure 5 : General map of Bolpur town, 2007

ures reveal that Bolpur town is in the process of urbanization.

Despite its smaller area, it has been facing environmental problems related to its urban growth. Unplanned growth of urban areas, lacks of infrastructure etc. are associated with the urbanization. The rapid growth of

population puts heavy pressure on public utilities like-housing, sanitation, transport, water, electricity, health and so on.

High rate of urbanization, increasing number of traffic, population, congestion, lack of transport routes etc. often block the areas like *chowrastha*, *Chitra More*, *Bazar area* adjacent to Railway station releasing huge dust in the atmosphere during office house. The main cause of such jam with hustle-bustle situation is due to only single road towards the railway station which is 10 feet in width in an average. In addition, rapid urbanization has resulted concentration of both high to poor class settlement and interestingly both of the groups of society have been contaminating the environmental by emitting harmful gases through throwing of domestic waste and the burning of fossil fuels. Heavy congestion within the settlement creates water pollution through sewage of domestic, solid and liquid waste passing through the 'Nula' (drain) of the town. Most of those are open and not deep enough. Water overflows and enters into the localities during rainy season reason. Pungent smell emitted from perishable materials of the vegetable market area of the town contaminates the true character of the surroundings. Urbanization does not only increase the number of establishments and people but also reduce the normal tune and rhythm of nature hampering its sustainability through unwanted vehicular siren and harsh sound of the study area.

ENVIRONMENTAL PROBLEMS OF BOLPUR TOWN

The increasing rate of urbanization has been generating lots of environmental problems in Bolpur town. There has been found a changing pattern of environmental quality and sustainability in recent years due to increasing urbanization.

Rapid rate of increase in population has been held responsible as one of the most significant factor of unsustainable environment of this area. As a consequence of rapid population growth, several problems have been emerging e.g. growth of slums, shortage of housing, overcrowding and congestion, unhealthy living condition, breakdown of infrastructure etc.

The rate of increase of population of the Bolpur

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town was not fast in the past. It is found that in 1901, the population was 4575. While in 1921, the population was 5896. In between years, some natural calamities affect the population growth. Some diseases like-Malaria, Influenza, the death rate rose high. As a result, the growth rate became lower in those years. But in 1931, there was a sudden increase of popula-

TABLE 3 : Decadal growth rate of population of Bolpur town (1901-2001)

Year	Population	Decadal growth rate (%)
1901	4575	0
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

tion found in Bolpur Municipal Area due to its growing importance. The increased population became 10046 in 1931. In this decade, Bolpur began to grow as center for export of trade in Rice. After that, in 1961, the population reached to 23355 from 14802 as was found in 1951. The total population of Bolpur was registered more than 38,000 in 1981. While in 1991, it was 52760 and according to 2001 census, it was 65693 (TABLE 3)

HUMAN PERCEPTION ABOUT THE ENVIRONMENT

People almost forget that they are the product of environment. Therefore any disturbance to the nature can also disturb the existence of lives in the earth. So, self realization about their exploitation of nature is the panacea to reduce these ever growing problems and can bring sustainability. On the other hand, as the human society are being endangered, human perception and their opinion regarding urbanization, industrialization and any sort of constructional activities should be taken into consideration. Here a survey has been done considering human perception on environment and some

TABLE 4 : Primary causes of environmental pollution

Causes of Pollution	No. of Respondents	%
Heavy congestion in settlement	20	40
Garbage dumping in open places	9	18
Lack of sewage system	18	36
Do not know	3	6
Total nos. Interviewed	50	100

Source: Personal survey

of the results are discussed here.

During perception study it has been come out after taking opinion from the resident of the study area that the primary causes of Environmental problems is due to heavy congestion of settlement (observation of 40% of total respondent), whereas 36% of total respondent thinks the problem is due to lack of proper sewage system (TABLE 4). But both blame high rate of urban-

TABLE 5 : Perception of people about the increasing urbanisation

Possible causes	Nos. said Yes	%
Urbanization Welcomed	28	56
Urbanization not Welcomed	5	10
Urbanization creates problem	9	18
Do not know	8	16
Total nos. Interviewed	50	100

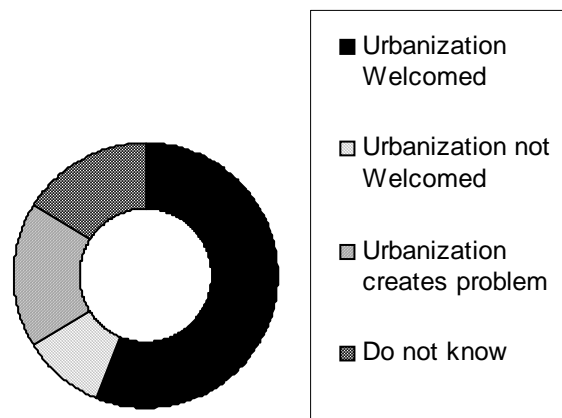


Figure 6 : Perception of people about increasing urbanization

ization in this regard. Later on, when people's perception about the acceptance of urbanization is studied, another interesting fact comes out, wherein it has been observed that most of the respondent put opinion in favour of urbanization as they will be benefited from that process. About 56% of the respondent welcome urbanization for their self interest and only 10% do not prefer the same for its

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severe consequence (TABLE 5, Figure 6).

SUGGESTIVE MEASURES

It is true that rapid population growth has accelerated the process of urbanization in this area, even worldwide but at the same time it can not be denied that unplanned and random growth of urban morphological pattern have been damaging environmental stability in the heart of these urban settlement like Bolpur. It is now very difficult to renew or redevelop those existing defective morphology to check the ever increasing environmental problems but planning may be made in order to reduce the magnitude of the problems through sustainable way of making new settlement and infrastructure. In addition responsibility should be given to local inhabitants through awareness about significance of nature and their habitable places. Problems have to be abolished from grass root level i.e. from the beginning of the urbanization process. Physical environmental resources should be given top priority to reduce the side effects while constructing any type of establishments and it should be always remembered that its contribution is like a life saving drug. Smaller towns like Bolpur,

which may emerge as giant urban hub in coming future, should be viewed carefully considering the spread of environmental inequity and accordingly sustainable nature based developments will have to be established.

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