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Urban issues and their management-A micro case study on Dubrajpur Municipality, Dist.- Birbhum, West Bengal, India

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Abstract : *The increased rate of urbanisation and lack of infrastructure in the urban centres have resulted into a lot of environmental problems which affect the growth and development of these dynamic entities. The several issues related to an urban centre need to be dealt with for its proper planning. The paper attempts to assess the environmental quality of Dubrajpur Municipality, a small town in Birbhum district from the town dwellers' perspective. Several issues related to the smooth functioning of the town have been discussed in a qualitative manner and the management strategies have been suggested in a generalised way. The paper also addresses several infrastructural aspects and some basic amenities of Dubrajpur town related to the well living of its residents.*

Key words: Small town, Environmental quality assessment, urban crisis, urban life, urban transport, urban agriculture, Ecotourism

Introduction : Urbanisation has attained a fast pace across the world. Urban crisis developed over half of the 20th century, due to spectacular growth of urban centres and the way huge metropolises of millions of people have mushroomed in almost all sectors of the globe. In the third world countries the expansion of urban centres are taking place at a rate of 3.6 per cent per annum. The miserable life of these metropolises have attracted the attention of geographers to focus on the infrastructural development and provision of basic amenities in the relatively smaller towns and cities. The environmental conditions (both physical and social) and several other aspects of a town influence the quality of life of its residents. The paper takes in to account Dubrajpur, a small town in Birbhum district in West Bengal as a representative of all the urban centres of its class and nature. Proper planning and management of an urban centre requires a broad insight into its environmental quality involving a lot of attributes such as water supply, transport etc. The paper has basically twin objectives. First is to assess the environmental quality of the town from the town dwellers' perspective. Second is to discuss those issues of the town which have an impact on the smooth functioning of the town from the perspective of growth and sustainability. The different management strategies of the issues have also been suggested which will improve the standard of living of the dwellers and enhance the overall environmental quality of the town.

Study area : Dubrajpur town is located in the Suri sub-division of Birbhum district. It has a

geographical location of 23.8°N and 87.38°E. The Andal-Sainthia Eastern rail line passes through it. It is located at the junction of Panagarh- Morgram State Highway and Morgram-Raniganj National Highway (Extension of N.H. 60). It has an area of 16.83 sq. km. and it is the largest in terms of areal coverage among other towns of Birbhum district. According to Census of India, 2011, it consists of 38420 population. It falls under the small town category as it has a population of less than 50,000. According to Census of India, 2011, it falls under the class iii category of towns.

LOCATION MAP OF DUBRAJPUR MUNICIPALITY



Data sources and methods : In preparing the paper I went through several text books, articles and other related texts for a better understanding of the concepts. Based on my objectives extensive field survey has been conducted for collection of primary data. The survey includes questionnaire method and personal observation. The relevant secondary data has been collected from Census of India, 2011 and district statistical handbook,2003.Necessary information regarding the infrastructural aspects and basic amenities of the town has been gathered from the municipality office. The data related to the environmental quality assessment has been analyzed with the help of statistical methods and choropleth mapping. The road and transport section under the urban issues has been discussed with the help of both quantitative and qualitative approaches. The rest of the paper is totally based on qualitative analysis.

Environmental Quality assessment : Environment refers to living and non living things and how they interact with their surroundings including the atmosphere, air, water and land. It is the surrounding which includes human as well as environment ecological dimensions and physical environment. The inner meaning of environmental quality is the quality of life. It is, at its heart, a social phenomenon - social because man is the focus of concern. All that is done by technology to clean his physico – chemical environment, and all that is done to elaborate the health effects,must subserve the larger goal of man’s enjoyment of life. It is, therefore, the public’s environment, and it is no secret that man today faces an environment hostile to his aspirations for a better life.

In my study, I have used the term “environment” in its totality. In order to carry out an environmental assessment of Dubrajpur town, I have addressed those urban environmental issues which influence the standard of living of the residents and affect the process of development of the town to a great extent. Sixteen issues covering every environmental aspect of the town have been selected for this purpose. To simplify the analysis part, these have been symbolized as X1, X2, X3, X4, X5 X17.

- X1 — General behaviour of the residents of the town
- X2 — Duration and quality of water supplied by the authority
- X3 — Health facilities provided by the health centre
- X4 — Levels of transport in the town.

- X5 — Traffic congestion scenario of the town
- X6 — Condition of roads in the town
- X7 — Condition of electric supply in the town
- X8 — Quality and range of commodities available in the local market
- X9 — Law and order maintained by the police in the town.
- X10 — Educational facilities in the town
- X11 — Transport linkages of the town with other big towns
- X12 — Level of pollution in the town
- X13 — Development of eco-friendly industries in or near the town
- X14 — Tourism prospect of the town
- X15 — Management capability of municipal authority
- X16 — Access to public open space

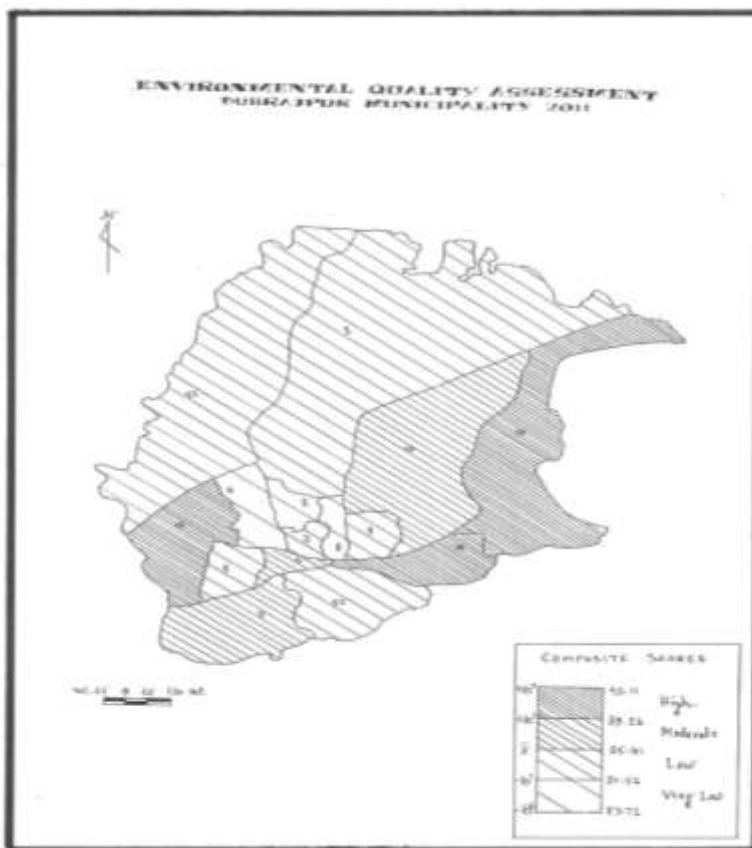
Environmental Quality Assessment of Dubrajpur town is totally based on the perception of the residents. I have adopted this method because the residents , being the part and parcel of the town, can judge its environmental conditions

The working process of the study has three distinct phases :

- First I have prepared a separate questionnaire which includes all of the sixteen issues. Depending upon the level of perception,each issue has been assigned values or weightages ranging from ‘0’ to ‘4’.(0-very bad,1-bad,2-average,3-good,4-very good)
- This has been followed by an extensive field work covering all the wards with ten samples from each ward. The respondents were asked to share their perception of each of these issues related to the overall environmental condition of the town and according to their level of perception each issue has been given a value .
- Finally in the analysis part ,the average value for each of the issues for each of the wards has been computed in a table. A composite score (X) for each ward has been derived by adding up the average values for all the issues of that ward. Thereafter the mean value of the composite score is calculated. For each ward , the deviation of the composite score from its mean value is calculated.

**TABLE : ENVIRONMENTAL QUALITY ASSESSMENT
DUBRAJPUR MUNICIPALITY , 2011**

| WARD NO | X1 | X2 | X3 | X4 | X5 | X6 | X7 | X8 | X9 | X10 | X11 | X12 | X13 | X14 | X15 | X16 | X | DEV |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| 1 | 3 | 2 | 1.6 | 2 | 2.5 | 2 | 1.5 | 3 | 3 | 1 | 3 | 2 | 1.5 | 2 | 2 | 1.5 | 33.6 | -1.8 |
| 2 | 3 | 1 | 0.7 | 2 | 0.8 | 2.6 | 1.6 | 3 | 2.5 | 2 | 3 | 2 | 1 | 2 | 1.5 | 2.2 | 30.9 | -4.5 |
| 3 | 3 | 2 | 2 | 2 | 1 | 2 | 2 | 3 | 3 | 2.5 | 3 | 2 | 1 | 1 | 2 | 1.7 | 33.2 | -2.2 |
| 4 | 3 | 1.5 | 1 | 1 | 1.5 | 2 | 2 | 3 | 2.4 | 2 | 2.6 | 1.5 | 1 | 2 | 2.5 | 2.5 | 31.5 | -3.9 |
| 5 | 4 | 2.5 | 1.5 | 2 | 1 | 2.5 | 1.5 | 3 | 3 | 2.6 | 2 | 2 | 0 | 1 | 1.5 | 3 | 33.1 | -2.3 |
| 6 | 3 | 2 | 2 | 2 | 1.5 | 2 | 1 | 4 | 3 | 2 | 2.5 | 3 | 1 | 3 | 3 | 2.8 | 37.8 | 2.4 |
| 7 | 4 | 3 | 1.5 | 2.5 | 2 | 1.5 | 1 | 2 | 3.5 | 2.5 | 3 | 2.5 | 2 | 1.5 | 2 | 3.2 | 37.7 | 2.3 |
| 8 | 3 | 2 | 1 | 2 | 1 | 2 | 1.5 | 2.5 | 3 | 2 | 3.5 | 2 | 1 | 2 | 1 | 1.4 | 30.9 | -4.5 |
| 9 | 2.3 | 2 | 3 | 3 | 1 | 1.6 | 2.3 | 2.3 | 3 | 2.6 | 3 | 1.3 | 1 | 2.5 | 2.1 | 1 | 34 | -1.4 |
| 10 | 3 | 2.5 | 2.5 | 3.2 | 1.5 | 2 | 2.5 | 2 | 2.5 | 3 | 3.2 | 1.6 | 2 | 3 | 2 | 1.5 | 38 | 2.6 |
| 11 | 3.5 | 1 | 2 | 2 | 1.2 | 2 | 2 | 2.5 | 3 | 1.5 | 2 | 2 | 1.5 | 2.3 | 1.5 | 2.3 | 32.3 | -3.1 |
| 12 | 3 | 3.5 | 1 | 1.5 | 2 | 3 | 3 | 3 | 3.5 | 3 | 3 | 2 | 1 | 2 | 3 | 2.5 | 40 | 4.6 |
| 13 | 4 | 2.4 | 1.5 | 1.2 | 0.5 | 1 | 2.4 | 2.6 | 4 | 2 | 2.5 | 1.5 | 0.8 | 1.9 | 2 | 3 | 33.3 | -2.1 |
| 14 | 3.6 | 2.7 | 3 | 3 | 2 | 2.4 | 3 | 1.5 | 3 | 2.6 | 3.5 | 2 | 2.5 | 1.5 | 3 | 2.6 | 41.9 | 6.5 |
| 15 | 2.5 | 3 | 2.5 | 3.5 | 2.5 | 3.6 | 1.5 | 2.5 | 3.6 | 2.4 | 4 | 2.3 | 1.2 | 2.5 | 2.5 | 2.2 | 42.9 | 7.5 |
| | | | | | | | | | | | | | | | | | M= | |
| | | | | | | | | | | | | | | | | | 35.4 | |
| | | | | | | | | | | | | | | | | | S.D= | |
| | | | | | | | | | | | | | | | | | 3.85 | |



Issues of Dubrajpur town and their management ∴ From the detailed field work and overall opinions of the respondents, some issues have come up which need further discussion. The problems associated with those issues and their efficient management strategies have been suggested in a generalised way.

Health : Dubrajpur town displays a poor picture in case of health facilities. The residents demand for better health facilities in the town. The reasons are :-

1. There is not any hospital (neither public nor private) within the municipal boundary of the town.
2. A block health centre in there nearby at Mansayar , Hetampur but it cannot cater to all patients of Dubrajpur. Here primary treatment and treatment of some general diseases are possible. Due to shortage of infrastructure , in most cases the emergency patients are shifted to either Siuri or Burdwan hospital.

3. The patients are taken to the health centre by rickshaws only. There are no other means of transport.

4. There are a few specialized doctors in the health centre and the number of drug shops are also limited in Dubrajpur town (only 8). On the other hand , as per my survey , the diseases which prevail among the residents are mainly *Diarrhoea* , *Cough and Cold* , *Tuberculosis* , *Malaria* etc. *The minority Population dominated wards and the S.T*

dominated wards are the main victims as health is directly related to level of education and perception of environment. My field survey reveals that the wards 10 , 14 , 7 are very much polluted and the drainage condition is poor. Stagnant water is the breeding ground of mosquitoes causing Malaria. Sanitation facilities are unsatisfactory especially in ward no. 7 and some parts of ward no 11.

For the proper management of health services , immediately a hospital need to be

established in the town itself equipped with every modern facilities. Basic services to the urban poor like clean water supply, sanitation, sewerage and solid waste disposal system, education should be ensured. New drug shops have to be established. Along with the general medicines, costly medicines for complicated diseases should be available in the hospital as well as in the drug shops. Water born diseases can be checked by the purification of drinking water. Under The State Urban development Agency, Dubrajpur Municipality is running a health allied programme namely "THE MOTHER AND THE CHILD" from 2007. The main aspects of this programme are family planning, food and nutrition, immunization and the pregnancy of the mother and the health of the child. Similar health initiatives with an emphasis on different aspects of health should be implemented. Thus the integrated development of health allied infrastructural services coupled with efficient management strategies on behalf of Dubrajpur Municipality and incorporation of private sector efficiencies can enhance the health scenario of Dubrajpur town.

Education: The education system of Dubrajpur town is a prime concern. Though there are a number of schools in the town, the literacy rate is low (55.3%) surprisingly. In Dubrajpur town, there are 14 Primary schools, 4 High schools (2 Boys and 2 Girls) and 1 Junior high school. According to the primary survey, 82% of the respondents opined that the quality of public education in Dubrajpur is good. However in my survey, I have found that a major portion of the high income group (42%) are in favour of the private education system in the town. Already there are a few secondary private schools being established in the town. The respondents also opined that the K.C. college in Hetampur is a good institute for general higher education and it is serving to the whole of Dubrajpur.

For the efficient management of education system of the town, the following strategies are proposed:

1. Development of infrastructure for higher education.
2. Setting up of professional institutes in the town for the production of skilled, professional experts in the various aspects.
3. Minimizing the school drop ratio. If necessary, providing the children with financial support especially for the S.T. and the Minority section because in most cases they are the victims.
4. Maintaining the Student – Teacher ratio in the schools for providing Quality education and eliminating the Private Tuition system which are not afforded by many lower income group families.

Water Supply: The chief source of water in Dubrajpur town is river Ajay. From the river water is served to the town through pipelines. All the wards enjoy the facility except ward no. 11 and the northern part of ward no. 1. The Andal – Sainthia railway line has divided the town into two parts - the North and the South. Efforts are being made to supply river water through pipes to these wards also and work is under progress. The other sources of water are tube – well and well. The underground water is scanty and according to the respondents and my empirical observation, the beds of the wells become dry totally during the summer. At that time, the deep tube wells become the main source of water supply along with the river water. Though Ajay is non – perennial in nature, water is dug out from its bed. Actually the geological structure of Dubrajpur town is unsuitable for the storage of ground water. The impermeable hard pan of the lateritic tract with occasionally stone pieces act as hindrance to the formation of aquifer. From the municipal officials I came to know that once Geological Survey of India examined the status of the geological structure of the town. After experiments, they remarked that there is no provision of ground water in the town. For the sustainable development of the town and from the point of view of acute water scarcity, this is one of the challenging issues, the planners are going to face in the future.

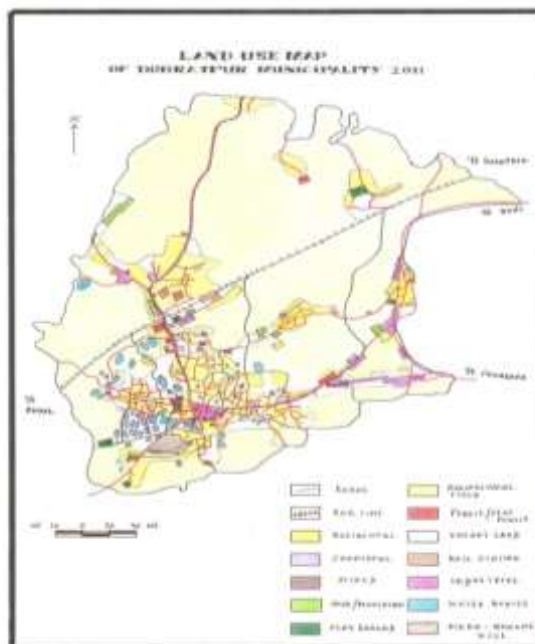
For the efficient management of water supply the following steps should be taken:

1. Increase the scope of conjunctive use of surface water.
2. Decrease the per head use of water.
3. Check the abuse of water.
4. Increase the awareness about abuse of water.
5. Keep the source of surface water pollution free.
6. Practising harvesting of water using the roof to store rain water.
7. Replacement of old and worn out pipes by new and higher capacity ones.
8. Afforestation at the home stead to increase evapo-transpiration.
9. Controlling the population to minimize water demand.
10. Increase the recycling of water.

Road and Transport: Dubrajpur has mainly developed as a commercial centre because of its good transport system. It is well connected by train to Andal and Sainthia. It has fair road linkages with the important places of Birbhum too. Dubrajpur is well connected with Kolkata by bus and train. Good conditioned buses ply between Dubrajpur and Kolkata on a regular basis at short intervals. Howrah – Siuri Hool Express and Howrah – Rampurhat Mayurakshi Fast Passenger link Dubrajpur to Kolkata on railway route. But as these trains take a lot of time to reach

Kolkata , people prefer buses to trains. The location of the town at the junction of the Morgram – Raniganj National Highway and the Panagarh – Morgram State Highway gives impetus to its economic development.

In order to judge the reason responsible for the development of Dubrajpur town as a commercial centre I have focused on the direct connectivity of Birbhum district. My prime objective is to find out the location of Dubrajpur town in one of the connectivity zones derived from the Direct Connectivity Mapping Of Birbhum District. For this analysis , I have taken 24 important places (including urban and rural areas) of Birbhum district as nodes connected to each other either directly or indirectly. Dubrajpur is located in the high direct connectivity zone.



An over bridge connects the Northern part of the town with the Southern part. The intra-town road network is average. From the Land-Use Map it can be seen that the density of road network is higher near the C.B.D. In the peripheral zones (such as wards 1 , 7, 11 , 15) the density is low. The roads are narrow near the C.B.D and as the distance from the C.B.D increases , the roads become widened. From the field survey I have got the information that traffic congestion mainly takes place on the Raniganj road at the office hours. It is because the road is narrow and the heavy vehicles mostly run on this road as it is the National Highway. The modes of transportation Within the town are mainly rickshaw and cycle. The average perception of the respondents about the condition of roads and the efficiency of transportation of the town is satisfactory.

The intra – town road network should cover all the wards and each ward should be connected with the other. The roads that are of mud (in most of the peripheral wards) should be converted into pucca roads. The bus service among Dubrajpur town and the surrounding villages should be improved. For the proper development of the town in respect to the trade and commerce, the frequency of train service should be increased.

Urban Agriculture : It is very interesting to note that about 35 % of the area of Dubrajpur town is under the cultivable land. Wards 1, 7, 11, 12, 13 are mostly dominated by agricultural practices. The number of cultivators are also high in these wards. According to Dubrajpur municipality, Paddy is the main crop of the town. With the help of irrigational facilities, agriculture is practiced here. As the soil is infertile in nature, it does not support a wide variety of crops. Due to the limited application of bio-chemical inputs (fertilizers , pesticides , insecticides) and modernized instruments the annual as well as per hector production is less. Fragmentation of landholdings is also responsible for the low level of production. There are few water bodies in the town where fishery is practiced mainly in the rainy season. But due to scarcity of water and mismanagement regarding storage of rain water fishery in Dubrajpur town has remained mainly in its subsistence nature instead of flourishing as a commercial activity. Lack of investment and government initiatives have also added to the situation. The agricultural scenario of the town can be improved by undertaking some projects like Small Farmers’ Development Agency, Supply Of High Yielding Seeds, Integrated Agricultural Development etc. To promote fishery on a large scale harvesting of rain water is compulsory along with maintenance of the water bodies. Emphasis should be given on the policies that encourage private sector investment. For the planning

purposes, the agricultural tracts located within the municipal boundary as well as the adjoining ones should be given importance and when future expansion will take place at the cost of these tracts, appropriate town planning schemes should be adopted that on one hand accelerate the infrastructural development and on the other safeguard the land owners as well as the occupiers.

Power Supply : Power supply system in Dubrajpur town is very much unsatisfactory. In my primary survey, almost 90 % respondents demand an efficient and modern power supply system in the town. Dubrajpur town gets its power supply from D.V.C, Durgapur. But it cannot satisfy the demand of the households. As a result Dubrajpur hardly experiences a day with uninterrupted power supply. But the strange fact is that inspite of its close proximity to Bakreswar Thermal Power Plant, it is facing shortage of power supply. The B.T.P.P has 5 units with a capacity of 210 Mega Watts per unit. But Siuri, being The Capital Town of Birbhum is enjoying a handsome power supply from B.T.P.P. So the Municipal authority should look into the matter and make an

agreement with B.T.P.P for an efficient power supply for its present and future developmental activities.

Tourism : Dubrajpur town has a very high potentiality of tourism. The important places to visit near Dubrajpur are Mama-Bhagne hill, Hetampur Rajbari, Bakreswar Thermal Spring and Temple. According to the opinions of the respondents, only a few tourists come to these places in winter. The lack of strategies of govt. and the lack of enthusiasm among the local bodies to promote tourism are the main causes of the undergrowth of the town's tourism sector. Tourism related infrastructural services have to be developed like construction of hotels, lodges, efficient transport system to increase the flow of tourists. Eco Tourism has to be developed by public – private joint venture. The residents of Dubrajpur town along with some voluntary organizations should also participate actively in this developmental process. By the efforts of all, if tourism is successfully developed in Dubrajpur, it will not only contribute to the local economy but also produce a lot of employment opportunities.



Mama-Bhagne hills

Conclusion : The study reveals that there is an intra town spatial variation in the perception of the residents about the overall environmental quality of the town. According to the perception of wards no. 2,4 and 8 the environmental quality of the town is very low and the residents of wards no. 12,14 and 15 are in favour of high environmental quality. The residents of the remaining wards perceive that the environmental quality of the town is medium. This perception depends on a whole range of socio-economic conditions. The issues regarding the development of the town and well living of its residents clearly display the fact that at present Dubrajpur town is facing a lot of problems pertaining to its socio-morphological and socio-



Hetampur Rajbari

environmental aspects. The major problems are the lack of medical facilities and adequate clean water supply, underdeveloped drainage systems, lack of modern higher educational institutions, traffic congestion, interrupted power supply etc. Suitable steps should be taken by the municipal authorities and rational town planning schemes should be implemented to overcome these problems. Apart from the retail and whole sale trade activities, an alternate economic base should be created such as development of eco-friendly industries, promotion of tourism etc. By the implementation of these strategies, the residents of the town will be able to enjoy a higher social and economic status and the town itself will be able to sustain in its long run.

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