

Urbanization and Environmental Degradation : A Case Study of Muzaffarpur Municipal Corporation

Saurabh Kumar Thakur

Research scholar, university Department of Geography,
B.R.A. Bihar University, Muzaffarpur (Bihar)

Introduction:

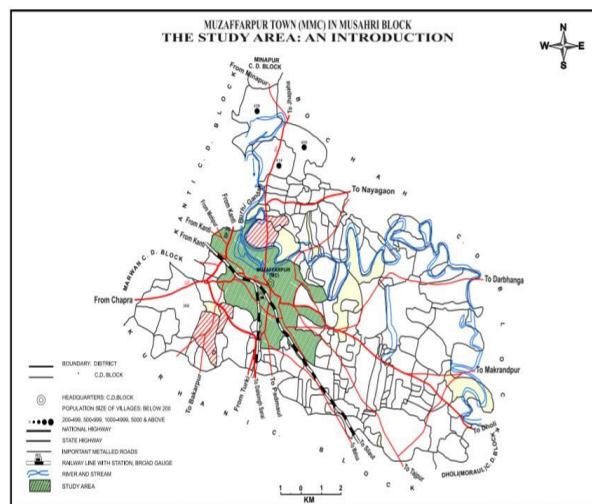
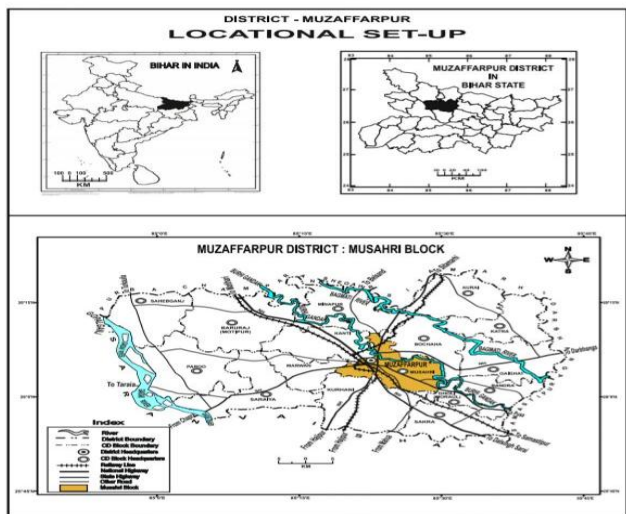
Urban areas face a number of environmental challenges. The scale and intensity of the problem vary in all related aspects. Environmental challenges faced in the urban areas have significant impact on health, socio-economic performance and overall quality of human life. The rapid urbanization has led to loss of green cover, declined of underground water table, rise in air, and water, and noise pollution, emergence of urban flood, problem of garbage disposal and many other environmental problems.

Aims and objectives: The present study proceeds with following aims and objectives:

1. What is the level of environmental degradation in Muzaffarpur Municipal Corporation (MMC)?
2. What are the major environmental issues?
3. Is there any governmental and non governmental agency working for environmental protection in MMC?
4. How to generate environmental awareness among the people to prevent further environmental degradation in and around MMC.

Methodology: It is an empirical study based on secondary data, personal observation and extensive library work. The secondary data has been obtained from various authentic government and non-government sources. Appropriate cartographic and statistical technical has been used to represent the data.

Study Area: Muzaffarpur is known as "Land of Litchi" and also known as "The capital of North Bihar". Muzaffarpur Municipal Corporation is the part of Muzaffarpur district. Muzaffarpur district divided into 16 blocks and the study area lies in Musahari block. The study area incorporates 49 wards of Muzaffarpur Municipal Corporation. It is geographically situated in the southern bank of Burhi Gandak River and located on 26°07' North latitude and 85°27' East longitude. The study area occupies an area of 26.68 kilometer square (2668.44 Hectares). It covers 0.84% of the total area of Muzaffarpur district. It is fourth most populous city in Bihar. As per 2011 census the population of the study area is 354462. The city receives good rainfall every year approximately 1182 mm mostly in the rainy season when monsoon strike the plain. The study area experiences extreme of temperature. The summer temperature reaches upto 44°C occasionally, where as the winter temperature may fall to 6°C. Muzaffarpur city is the most important centre of commercial and business activities for the whole of northern region of Bihar.



Level of Environmental Degradation: The study area witnessed rapid population increase after independence. However there is hardly any subsequent increase in civic amenities which has resulted into tremendous pressure over existing urban amenities and resources and causing server environmental damage in and around the city. The present study reveals that the level of environmental degradation in Muzaffarpur is quite alarming. It is paradox that majority of people are unaware of deteriorating state of their surrounding and this ignorance further aggravates the

problem. The air pollution, water pollution, land pollution, water logging, noise pollution, growth of unauthorized cow shades has largely contributed to environmental degradation.

Air Pollution: The ever increasing number of vehicles frequent use of generators, air condition and industrial units have collectively contributed to air pollution in the city. According to central pollution control board (CPCB) which releases the daily assessment of the air quality (AQI). With an AQI of Muzaffarpur had been reached the second most polluted city in the country on 25th november 2019. Some other reason of air pollution burning wood and charcoal in low income houses and kachi bastu and small scale industries.

Water Pollution: Water pollution is another major causes of environmental degradation. Water resources in the city are polluted due t disposal of sewage directly into the surface drains or water bodies. Ground water contamination essentially dur to laage number of septic tanks in use in the city.sue to jise quantity of sewage and domestic water is dischared inti the Burhi Gandak river daily without ant sustainable method of treatment making the water highly contaminated. The biomedical waste also dumped in the river. It is highly contaminates the river water. The biomedical waste also dumped in the open area and Alon the roads without any treatment and during rainy season there are chances of seeping these toxic material through the soil and contamination of underground water similarly jise quantity of domestic waste which also includes toxic chemicals like batteries, empty packets, shampoo and perfumes, soap, non-bio degradable wastes etc are dumped in open area which too can see trough the soil with rain water and can reach underground water. The domestic drains too add huge chunks of affluent like detergent, floor cleaners, soaps, shampoos and pesticides to river.

Water Logging: The unplanned has led expansion of town construction of houses and buildings in to low lying areas which use to serve as natural drainage during the rainy season and has resulted into water logging in many areas. Loss of green cover coupled with cementing of open space for construction of roads, buildings, flyovers have greatly reduced the area available for rainwater infiltration through sub-soil adding to the problem of water logging. Chocking of drainage pits further aggravates the situation. A number of the newly constructed colonies are not linked with the cities drainage system hence their sewage discharge is drained in adjoining open space giving way to permanent water logging and are highly hazardous. The decline in underground water table is also a matter of great concern. In recent year area available for

underground water percolation has dramatically reached due to extensive construction and has contributes to decline in underground water table. Simultaneously, withdrawal of excess underground water to meet daily requirements of the growing population aggravates the problem.

Land Pollution: The main cause of land pollution in Muzaffarpur is improper solid waste management system. Indiscriminate dumping of garbage and absence of a sanitary landfill site are among the reasons for increasing leachate contamination and land pollution. Large number of septic tanks, most of which are unlined or do not have soak pits which are also one of the cause of land pollution in the city. Consultations and field visits have revealed that large number of septic tanks are emptied into open drains or that septic tanks do not have impermeable lining. Wastewater is also disposed off directly into open drains from where it percolates into the ground and pollutes land.

Noise Pollution: The noise level in meajority area in Muzaffarpur is alarming and has become a cause of concern fir health experts. Automobiles have proved to be a major cause of noise pollution. The movements of heavy trucks, buses, trains, three wheeler tempos, motorcycle, scooters, mopeds, jeeps, fall under the list whose cumulative sound outcome is nose pollution. Typical ambient noise level of monitoring of muzaffarpur town during the year 2004-05 are presented in the table below:

S.N.	Sampling location	Zone Category	Average Ambient Noise Level in db(A) Leq	Day time standerds in respect to of noise 06:00 a.m. to 10:00 p.m.
1.	Near Juran Chapra Chowk	Commercial	75.7	65db(A)Leq
2.	Bhagwand\pur Chowk		76.8	
3.	Kalyani Chowk (com)		71.6	
4.	Aamgola NearRly. Crossing		68.7	
5.	Baiya Bus Stand near Ticket Booking Office		78.8	

6.	Ramdayaloo Mor		74.2	
7.	Sarai Syed Ali Road, Technical Chowk	Residential	67.4	55db(A)Leq
8.	M.E. Hospital Main Gate	Silence	74.1	50db9)Leq
9.	SKMCH, near emergency ward		52.2	
10.	B.R.A. University Campus		56.4	
11.	Near Kachhari Chowk		72.4	

Source: State of Environment Report, Bihar, 2007

Role of Government and Non-Government Organization: The government and non-government organization can go a long way in preserving environmental quality preventing environmental degradation. There are a few government and non-government organizations in Muzaffarpur working in this direction. Among government agencies, the State Pollution Control Board is playing an important role in this direction. The Board was constituted in the year 1974 under the prevention of water (Prevention and control of Pollution) Act. At present it is working for prevention and control of pollution, and dissemination of collection information regarding pollution control, conducting research and development in the field, organizing training and mass awareness programme to educate public, monitoring the effluent treatment and sewage plants, advising state government regarding pollution control.

There are a few non-government agencies working hard for preservation of environmental quality. "PRIA" Participatory Research In Asia is working in Muzaffarpur since January 2016 in the field of water and sanitation.

Generating Environment Awareness:A New Paradigm: The present study reveals the dimensions and nature of environmental problem in Muzaffarpur. The environmental quality in and around Muzaffarpur has drastically degraded and if continues unnoticed, soon it may a catastrophic level of degradation. On the basis of the study, certain environmental problems haven been identified as model problems and reach on the need is to find out solution which may emerge a paradigm to tackle the delicate environmental problems. The paradigm thus, suggests following remedial measures to preserve and enhance the fragile environmental quality:

- Arousing environmental consciousness is a powerful technique to protect environment. It will help people to formulate their own code of conducts regarding environmental issues. It needs community education to equip people with the necessary skills and techniques to protect and improve the quality of environment. These awareness programmes should be linked with national development plans to make it accessible to every section of the society. The community participation can be raised by organizing environmental quiz,exhibitions, seminars, symposium and workshops frequently on locality basis. The environmental massages can also be conveyed to the people with the traditional arts like folk dance, nookad nataks, nautankis, pappet shows, paintings, poem, and folk songs.
- The media has immense potential and can go a long way in spreading environmental awareness among masses. The contribution of print and audio-visual media is appreciable in this direction. The efforts of Discovery Channel and National Geographic are worth mentioning at this point. Some newspapers have special column which deals with environmental issues.
- The government agency like State Pollution Control Board and Municipal Corporation can organize environment based seminars, symposium and exhibitions. They need to organize workshop and programme on water harvesting, use of solar energy, vermicomposting, recycling regular training of paper, water conservation, traffic rules etc. To check air pollution, constant monitoring of vehicles is needed. Government should strictly impose environmental laws and the persons found violating environmental norms should get stringent punishment. It will generate sense of responsibility among masses. The earth day, Environment day, water conservation day, ozone day, wild life week and van mahotsav should be celebrate as national festivas.
- The role of non-government agencies in environmental protection is They should with equally important. harmonize their activities government bodies to make it more effective. The NGO's needs to acquaint the people with existing environmental problems and should equip them with the environmental friendly ways to tackle such problems.
- Sustainable development is the answer to environmental problems. The development should be within the carrying capacity of the area concerned. This holistic approach wilh give way to sound environmental background.

- Acquainting women folk with the present state of environment can be very effective in tackling environmental problems. Women being sincere, sensitive and conservationist by nature would certainly care for their surrounding and also train their children and family members to do the same. Even earlier the environmental protection movements initiated by women were quite successful.
- Imparting environmental education to children can go a long way in preserving environmental quality. The thoughts instilled in the childhood leaves long lasting impression and as the child grow up will carry forward the sensitive care for the same. approach towards environment and will
- Review of the environmental thoughts ingrained in various religious and classical texts will certainly arouse environmental consciousness of the masses can be very effective in tackling environmental problems.

Conclusion:

This study reveals following characteristic

- The level of environmental awareness and consciousness among the people of Patna is necessarily low.
- The lack of environmental awareness and ignorance is further adding environmental degradation.
- The rapid urbanization and consequent population boom has degraded collectively environment to a great extent.
- The sensitive approach of the NGO's towards environment is quite appreciable. The paradigm suggested above may help in spreading environmental awareness among the people of Muzaffarpur.

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