

PROBLEMS FACES BY THE RESIDENTS FOR THE PRESENT SITUATION OF SOLID WASTES DISPOSAL IN FIVE MUNICIPAL TOWNS OF BIRBHUM DISTRICT, WEST BENGAL

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ABSTRACT:

Scientific solid waste management and proper recycling of those disposed waste materials are the sole responsibility of the municipal authority. Collection of household wastes from each houses and colonies are done by them. Those collected wastes are dumped at the dumping ground of the municipality. These waste materials are highly toxic and polluted in nature. Sometimes these materials are thrown here and there by the municipal authority. Roadside dumping, pond side dumping are seen often. These unauthorized dumping of wastes are creates huge problems for the residents of the town. Severe skin diseases are seen among the residents who live around those dumping ground or dumping plot. The ground water gets severely contaminated through these intoxicated pollutants emit from the dumping ground.

***Key words:** Recycling, municipal authority, dumping ground, toxic pollutant, roadside dumping, unauthorized dumping, skin diseases.*

PRESENT STATE OF WASTE DISPOSAL IN THE MUNICIPAL TOWNS OF BIRBHUM DISTRICT:

Sustainable waste management foresee an integrated approach, modern technological support, policy making in administrative level and legal process for the management of solid wastes in the municipalities. Strategic planning on the basic of local needs and aspects with a long-term goal achievement is the main issue of waste management.

LOCATION OF THE STUDY AREA:

The study area is located in various parts of Birbhum District. The Five Municipal towns – Suri, Bolpur, Rampurhat, Dubrajpur and Sainthia are situated in different parts of the district. Birbhum district is located in the

south-western part of West Bengal and lies within 23°32'30"N - 24°35'10"N latitudes and 87°5'25"E - 88°01'40"E longitudes. The district covers about 4,545 km².

The *district* is almost triangular in shape having its apex to the north. It is bounded by Murshidabad district to the east and south east, Burdwan district to the south and the state of Jharkhand in the north and west. The Ajoy river forms the southern boundary of the district and it separates the district from the district of Burdwan.

There are three Administrative Sub-Divisions in Birbhum District namely Suri Sadar, Bolpur and Rampurhat Sub-Divisions. Also there are 19 CD Blocks and 167 Gram Panchayats with the district headquarter at Suri. Suri Sadar Sub-Division consists of 7 CD Blocks includes including Suri I, Suri II, Sainthia, Dubrajpur, Rajnagar, Mahammad Bazar and Khoyrasole. Bolpur Sub Division consists of 4 Blocks which includes Bolpur-Sriniketan, Illambazar, Labhpur and Nanoor. The remaining 8 CD Blocks, namely Mayureswar I, Mayureswar II, Rampurhat I, Rampurhat II, Nalhati I, Nalhati II, Murarai I, Murarai II are in Rampurhat Sub Division. All block headquarters are connected with the district headquarter through metalled roads. The Sahebganj Loophole passes through Bolpur, Sainthia, Rampurhat, Nalhati and Muraroi.

The three municipal towns viz., Suri, Sainthia and Dubrajpur fall within Suri Sadar Sub-Division, where as Bolpur and Rampurhat are in Bolpur and Rampurhat Sub-Divisions respectively. All five municipal towns selected for study have been shown the following map.

Location Map

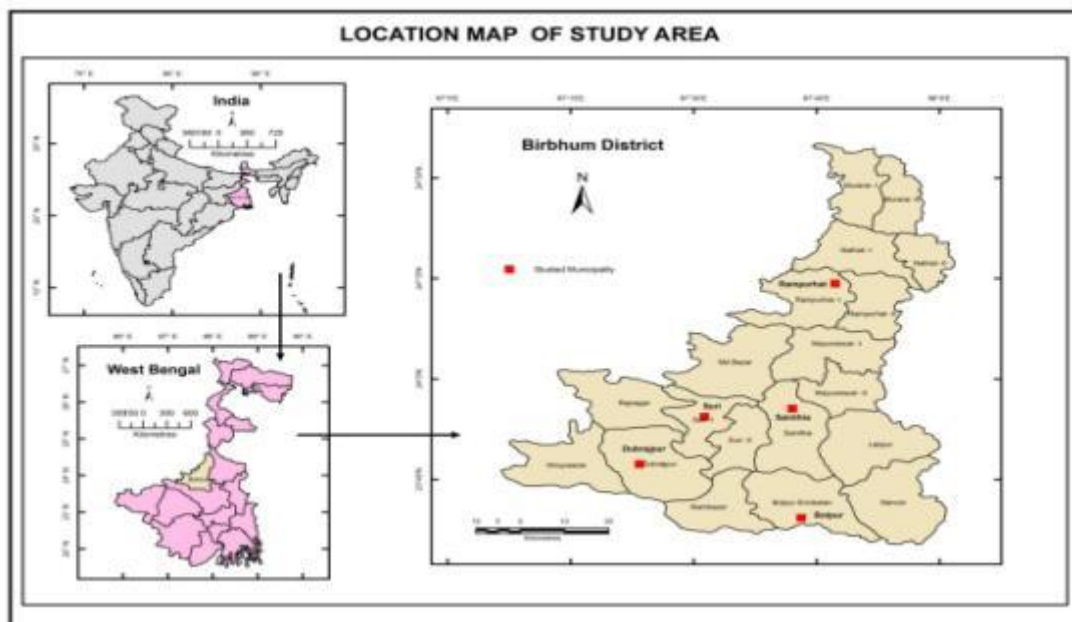


Figure: Location Map (Five Municipalities of Birbhum District)

Lacking areas of the Municipal authority for Solid Waste Management:

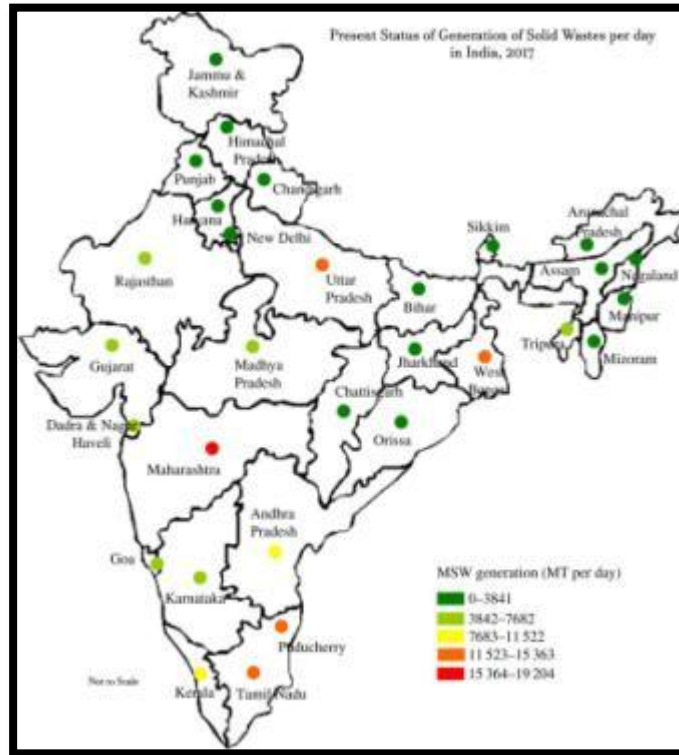
Surface and manual disposal of wastes is the most widely practiced system in the municipalities of Suri, Bolpur, Rampurhat and other two municipalities. Lack of an established system for collection, transportation, treatment, disposal and complete networking of the system is the major drawback in the proper management of waste in these municipalities. The local bodies or the ULBs (Urban Local Body) which are responsible for proper disposal of urban waste are over-burdened with other responsibilities of much higher priorities such as immunization, food sample testing, street cleaning etc. and waste disposal is relegated to the end of the list. The municipalities of Suri and other four have their own infrastructure of waste management.

The waste management cell or team has some specific criteria. This team is headed with SI (Sanitary Inspector) and other sub-ordinate staffs. But this waste management team of each municipality has various obligations in the proper waste management system. The reasons for poor operation and maintenance include the following:

- Inadequate finances.
- Multiplicity of agencies for operation and maintenance.
- Lack of performance monitoring.
- Inadequate emphasis on preventive maintenance.
- Lack of management.
- Lack of appreciation for the facilities set up by the ULB (Urban Local Bodies) for the use and safety of the community.
- Lack of proper training to the municipal workers who are involved in the municipal solid waste management.
- Lack of interest of the workers towards work.
- Remuneration to the workers who collect, transport and dispose the solid waste are not up to the satisfactory level to the workers.

Out of the total solid waste generated, the collected wastes are disposed unscientifically. The waste is often left unattended at the disposal sites, creating a health hazard. Urban slums areas are likely to be the ones most neglected. The slum area people are worst affected by the dumping process. In each municipality of Suri, Bolpur, Rampurhat, Sainthia and Dubrajpur have slum dwellers. These dwellers are mainly noted in the border or fringe areas. Their health gets affected and many of them have skin diseases and asthma.

Present Status of Generation of Solid Wastes per day in India, 2017



Source: <https://google/images/EU6cX7>

Figure: Present Status of Generation of Solid Wastes per day in India, 2017



Plate: Disposal of Municipal Wastes at the Dumping ground in Bolpur Municipality

ROLE OF NEERI (NATIONAL ENVIRONMENTAL ENGINEERING RESEARCH INSTITUTE):

Following table, prepared by NEERI (National Environmental Engineering Research Institute) for the year 1996 describes the frequency of cleaning in various localities. At the time of survey various types of localities were chosen based on economic and commercial perspectives.

Table: Collection Frequency of Solid Waste (NEERI, 1996)

Sl No	Types of Locality	Frequency of Cleaning	
		Class I Cities	Class II Cities
1	Residential Areas	Once or twice a day	Once a day
2	Area with high population density	Once or twice a day	Once a day
3	Area with medium population density	Once or twice a day	Once in two days
4	High income and VIP area	Once or twice a day	Once a day
5	Area with low population density	Once in two days	Once in three days
6	Market	Once or twice a day	Once or twice a day
7	Commercial areas	Twice a day	Once a day
8	Industrial areas	Once a day	Once a day

Source: NEERI, 1996 (National Environmental Engineering Research Institute)

From this table the collection frequency of solid waste is depicted based on the types of locality. The survey was done in various types of localities, like residential areas, highly populated areas, medium populated areas, low populated areas, commercial areas, industrial areas etc. in two types of cities the survey was done, Class - I type of city and Class - II type of city. On the basis of population and income group these divisions of classes in cities were done. The wastes from these areas were collected by either municipalities or by the corporations of the respective jurisdiction. The respective liable authorities collect wastes ones or twice in a day based on the characteristics of the area. In the Class - I cities of the residential area the authority collect the wastes ones or twice in a day and in the Class - II cities once in a day. Based on the population density the collection frequency differs from once or twice in a day to once in three days. In the low populated areas, this was done once in three days. The commercial and industrial areas, these practices were made twice or once in day as these areas produced more amount of solid waste. Though the table is little backdated but from the table we can have a clear and basic idea about the collection frequencies of wastes in Indian cities. At present all the municipalities and corporation are

highly attentive towards the proper solid waste management. The collection of wastes from the cities and towns are done with effectiveness and frequently to give the citizen a good and healthy pollution free environment. The respective liable authorities are giving the utmost effort to preserve a pollution-free environment and aiming for a proper scientific solid waste management for a better perspective.

The table below is describing the transportation situation of all the municipalities of the study area. All the municipalities have their own mode of infrastructure for transporting the collected wastes from the whole municipality. The transportation work of the collected wastes materials are mainly done in the morning time in all the municipalities or in the early evening time very often. The man power or the labour groups are designed in such a manner so that all the wards can be cleared in the municipalities. In the municipalities of Suri, Bolpur, Rampurhat, Dubrajpur and Sainthia, the team for transportation of solid wastes are planned very effectively and the collected garbage materials are dumped by them.



Plate: Municipal workers collecting the wastes from the community bins at Bolpur Municipality

Table: Means of Transportation for Solid Waste

<i>Name of the Municipality</i>	<i>Means of Transportation from Community Bins to Disposal Grounds</i>	<i>Number</i>	<i>Collection Frequency</i>	<i>Capacity</i>	<i>Total Capacity</i>
Suri	Tractor	8	4 to 5 trip per day (Avg)	1.50 MT to 1.75 MT / Tractor (Avg)	61.30 MT

Bolpur	Tractor	8	4 to 5 trip per day (Avg)	1.30 MT to 1.60 MT / Tractor (Avg)	50.10 MT
Rampurhat	Tractor	7	4 to 5 trip per day (Avg)	1.10 MT to 1.55 MT / Tractor (Avg)	39.00 MT
Sainthia	Tractor	5	4 to 5 trip per day (Avg)	1.10 MT to 1.50 MT / Tractor (Avg)	28.50 MT
Dubrajpur	Tractor	4	3 to 4 trip per day (Avg)	1.10 MT to 1.50 MT / Tractor (Avg)	22.10 MT

Source: All Municipality office data base

The means of transportation of solid waste of the study areas is given in table above. Mainly tractors are used for carrying the solid wastes from community bins and the wastes collected from door step. Within the wards of each municipality of the study areas tri-cycles are used for door step collection. These wastes are brought to the community bins where the tractors are loaded with these wastes. In Suri municipality 8 numbers of tractors are employed for this purpose and these tractors make 4 to 5 trip every day to dump the wastes from wards to dumping sites. The tractors have 1.50 to 1.75 MT carrying capacity and the total generated wastes are dumped in the dumping sites by these tractors. Both road sides of Suri-Dubrajpur roads are used as dumping sites and the nearby areas of Tilpara Barrage are also used in unauthorized manner for this purpose by Suri municipality. Similarly Bolpur municipality, with their 8 numbers of tractors, can dump the total 50.10 MT of wastes at their main dumping ground acquired by the municipality behind Bolpur Nursing Home at Sian at Khoskadampur Mouza. Rampurhat municipality has 7 numbers of tractors which make 4 to 5 trip per day with a capacity of average 1.10 MT to 1.55 MT and deposited the total daily generated wastes near the road side of NH 60 and near vacant land of new bus stand of Rampurhat town. Sainthia and Dubrajpur municipalities also use their own tractors and dumped the wastes at their respective dumping grounds on daily basis.

The main problems faced by the residents in the study areas for the garbage disposal system are of two kinds. All the people who are interviewed in the study area express more or less same kinds of opinions. Suri, Bolpur and Rampurhat municipalities are intensely populated so their problems are more acute than Sainthia and Dubrajpur municipalities.

EFFECTS ON ENVIRONMENT:

The adverse effects on environment due to un-scientific management of waste disposal are as follow:

- Ground and surface water pollution.
- Air pollution due to bad odour of wastes.
- Green house gases.
- Harmful effect of rats, stray animals, flies, mosquitoes, germs and other insects.
- Increase in acidity near the garbage heaps.
- Probabilities of diseases and epidemics.
- Health related problems for rag pickers.



Plate: Municipal wastes dumps at the road side at Rampuhat Municipality

EFFECT ON HEALTH DUE TO WASTE DISPOSAL:

The health risks associated with illegal dumping are significant. Areas used for open dumping which are easily accessible to people. Rodents, insects and other vermin attracted to open dumping sites may also pose health risks. Dump sites with scrap tires provide an ideal breeding ground for mosquitoes, which can multiply 100 times faster than normal in the warm stagnant water standing in scrap tires causing several illness.

Poisonous and chemically toxic contained wastes materials mixed with the normal wastes while collecting and transporting those materials make the remaining wastes toxic. Burns and other injuries can occur resulting from occupational accidents and methane gas exposure at waste disposal sites.

The collected wastes are transferred from the wheelbarrows into dustbins. After the waste is collected from the dustbins and streets, it is transported to the final disposal site by the municipal workers. Trucks and tractors are used for this purpose which are generally of an open body type and are kept uncovered. During transfer to trucks and its transportation, the waste spills onto the road. In order to avoid this and to accommodate more waste on trucks, some municipalities like Suri and Bolpur municipality engage compactor type vehicles. Due to lack of enough space for dumping grounds and for dumping of solid waste, the residents of every municipality dump their waste on road side as a result it is increasing their public health problems. The residents of the study areas are acting like irresponsible while throwing their daily household wastes sometimes on the roadside and inviting their own problems.



Plate: Municipal workers collecting the wastes for transportation to the dumping ground at Sainthia Municipality

All employees of every municipality of the study areas who are directly or indirectly related with municipal solid waste management should undergo extensive training including the linkage between a deteriorating environment, waste, human health, treatment and management of waste, recycling, occupational hazards, health and hygiene. These workers are also not adequately aware of the severe effect of municipal wastes. They collect the wastes with bare hand and without any kind of protection which is highly dangerous for their health. These workers need intensive knowledge about the garbage dumping through training programmes.



Plate: Roadside dumping of Wastes at Suri Municipality

The Ministry of Environment and Forests (MoEF), Government of India constituted a Committee on 3rd September, 2008 to evolve a Road map for the Management of Waste in India, under the Chairmanship of Shri R. H. Khwaja, Additional Secretary, MoEF. The Committee set itself the task of examining the existing administrative and regulatory mechanisms in the country for the management of various types of waste and for suggesting a strategy for achieving sustainable waste management.

The Committee constituted two Working Groups *viz:* (i) on Municipal Solid Wastes, Plastic Waste, Packaging Waste, Construction and Demolition Waste under the Chairmanship of Secretary, Department of Environment, and Government of NCT of Delhi and (ii) on Biomedical Waste, Hazardous Waste and E-waste under the Chairmanship of Member Secretary, CPCB (Central Pollution Control Board).

The Committee, primarily, focused on issues relating to various measures required for segregation, collection, transportation, treatment, recycling and disposal of various types of waste at the generation, treatment and disposal levels. The Committee also discussed the roles and responsibilities of various stakeholders, government, non-government and other agencies for achieving sustainable waste management. The Committee has also made recommendations on the legal, administrative and technological interventions required for managing each type of waste as categorized in the CAG (Comptroller and Auditor General) performance audit report.

The Committee suggest of the following recommendations for waste management as priorities in the country. These are:

- 1) The database for the waste management should be in a comprehensive manner about the policies and action plans in all the states as well as in all the municipalities of the country.
- 2) Formalizing a policy for popularizing internationally accepted hierarchy of waste management with a specific strategy devised for India.
- 3) Promulgating laws/rules for the management of major kinds of waste including construction & demolition waste end of life vehicles, packaging waste, mining waste, agriculture waste and e-waste.
- 4) Creating a nodal body for researching and suggesting methods and technologies for management of all kinds of waste.
- 5) Public and private partnership in achieving sustainable waste management and involving the self help groups in this work.
- 6) Devising and implementing disincentives and penalty for violation of the rules of solid waste management system.
- 7) Initiation of capacity building of Agencies/Bodies both at the central and state levels for a strategic management of wastes.
- 8) A comprehensive assessment of the amount of waste being generated. The database about the municipal solid waste should be generated in all the states of India for policy making and intervention on waste management.
- 9) MoEF may carry out waste related pollution impact monitoring, on a regular basis, to study the effects of improper disposal of waste on the environment. MoEF along with the states may also carry out regular surveillance including epidemiological surveillance of waste related impacts on public health.

OVERALL OBSERVATION:

- After observing the whole situation regarding solid waste disposal and management in the municipal towns of Birbhum District, this is noted that in some pockets of the towns the residents facing various problems in their daily life with haphazard waste management by the municipality.
- Due to irregularities in collection of the wastes from the waste pits, sometimes the wastes get scattered and spread over roads which create problems for the residents and create problems in transportation system also.
- Sometimes the staffs who are engaged in the waste collection from households, fail to collect the household solid wastes from door to door collection basis, as a result of that the residents of those towns faced many problems.

- Door to door collection, collection from community bins and community waste pits are very important daily work need to be done regularly by the municipal authority to give a healthy environment to the residents of the towns.
- Segregation at the source point is a very necessary point for waste giving the wastes collectors. If it is done properly the disposal of wastes become easy by the municipal authorities.
- Separation of bio-degradable and non bio-degradable wastes is a vital point which is needed to be done at the source point of the waste generation. Bio-degradable wastes are degradable in nature and dissolve with the soil, these are non toxic. But the non bio-degradable wastes are very poisonous and serious threaten for soil.
- Penalty fees can be charged to the public for throwing of wastes here and there. There are certain pits and bins for the waste disposal in every municipality areas. If the public don't follow the rule of waste disposal they should be penalized so that in future they will be more alert about this issue.

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