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Research Article

Relevance of Municipal Waste Management: An Empirical Investigation at Katwa Municipality in West Bengal

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Abstract: The successful waste management programme, well managed, enhances the country's health and environmental quality. This survey examines the position of the management of solid waste in the district town. For primary data collection covering around 70 to 90 randomly selected populations, the questionnaire was used. This survey is useful for people to raise awareness of waste management. Households were not aware of waste recycling, reuse & reduction of various organic or organic waste. Compared to the rest of the defined administrative area, small district town is defined. It is an important issue to identify backwardness, which is the urgent need for growth. This paper uses available data from Katwa Municipality to try the block level backwardness index.

Keywords: Backwardness Index, District Planning, Development Policy, Solid waste management, Environment management, Recycling, Reuse and reduction

1. Introduction

Of late, the relationship between people and nature has been influenced by industrialization, quick urbanization and populace improvement. Human exercises create tremendous measures of strong squanders and its administration and it has become a specialized and natural test. Much trash is eliminated in environmentally impractical manner by open unloading or consuming. It might prompt misfortunes of supplements, monetarily and influence the air, soil and water. We know in agricultural nations, the natural squanders are plundered by utilizing oxygen consuming and anaerobic strategies which may influence the lining water and soil to avoid the contamination because of social occasion of squanders and waste administration is a significant undertaking in the Urban and Cosmopolitan urban communities. A few waste administration procedures are received relying on the waste nature, amount and its blended constituents. For bio-strong squanders fertilizing the soil is the most ideal choices to debase the losses as well as to create final results advanced with supplements to improve soil richness. In spite of the fact that microbial treating the soil and vermin-fertilizing the soil are utilized to disintegrate the bio-strong squanders. Here we have utilized a consolidated methodology, wherein microbial fertilizing the soil followed by vermin-treating the soil of natural trash to deliver manures advanced in supplements to improve soil ripeness just as the efficiency of vegetation and State strategies on the district's choice to reuse. This paper can shed light on the effectiveness of each policy initiative. The relationship between household disposal preferences and the municipality's decision to implement recycling and controlling produce of waste. This research expands the full array of economic and local tastes for recycling on the municipality's decision to recycle. Suitable supervision was not a issue as the population was small and a huge land was available to the population. The large residents of people in cities and communities gave rise to haphazard littering and open dumps. These dumps in turn formed breeding grounds for rats and other vermin, posing significant risks to public health. The unhealthy waste management practices resulted in several outbreaks of epidemics with high death tolls and in the nineteenth century public officials started to arrange waste in a controlled manner in order to safe guard public health. Most developed countries passed through a period when they were developing environmentally. Today, however, most of these countries have effectively addressed much of the health and environmental pollution issues associated with wastes generation. In contrast, the increasing rate of urbanization and developments in emerging countries is now leading to a repeat of the same historical problems that developed countries have had to address in the past. Since January 1994, compostable waste has been collected at the curbside. This was an important measure in increasing the separately collected amount of compostable waste. Moreover, the municipalities are since 1994 indebted to supply an infrastructure for the separate collection of glass, paper and textile.. This is a result of the municipal obligation to collect separately paper, glass, and textiles and since recently also plastic packaging. On the other hand, municipalities may choose how these materials are collected. Therefore, in some cases they are not collected at the curbside, but citizens can deliver them to collection points at central locations. In the literature there is discussion which method (curbside collection or drop off centers) is most effective in collecting recyclables. In fact, for aluminum and glass they cannot reject the null hypothesis of no relationship between

increased curbside access and the quantity recycled. However, for plastics they found a significant relation between the percentage of population served by curbside programs and the amount of recycled plastics. Several Dutch municipalities introduced unit wise pricing of unsorted and compostable waste as a measure to encourage the separate collection of recyclables and to encourage reducing the total amount of waste as well.

More recently, based on UK municipal panel data Abbott et al. (2011) study the determinants of dry recycling and composting rates separately. They recommend that it is helpful by explaining the variation in the total recycling rate to disaggregate in dry and composting recycling and the residual waste collection frequency and the type of container is important. In addition, they show that there is proof one US pound is defined as 453 grams that a lower collection frequency of residual waste increases dry recycling rates. This is interesting as some Dutch policy advisers in the Netherlands suggest moving back the residual waste collections frequency could encourage recycling as well (see Reus and Jonkergouw (2013)).

Lastly it can be stated that the activities associated with the management of municipal solid waste from the point of generation to final disposal can be grouped into the six functional elements.

- Waste generation
- Storage
- Collection
- Transportation
- Segregation & Processing
- Disposal

2. Salient Features of the Study Area-

Katwa Market has dissipated in various regions. The greater part of the transitory products market complex situated at katwa station Bazar. The market has two squares for vegetable shops and one each for products of the soil shops and the vegetable market will have around 200 shops.

As a piece of decentralization whole town is partitioned into five zones for the assortment of strong waste as follows.

- Station Bazar
- Netaji Pouro Bazar
- Haji Market
- Nichu Bazar

There are numerous kinds of metropolitan strong waste, for example, food squander, refuse, business squander, institutional waste, road clearing waste, mechanical waste, development waste and disinfection squander. It contains recyclable (paper, plastic, glass and metal and so on), poisonous substances (paints, pesticides, utilized batteries, drugs and so on) Compostable natural issue (foods grown from the ground strips, food squander), soiled waste (sterile napkins, and so forth)

3. Methodology

This paper which is an audit of literary works depended intently on auxiliary information just like the case with most work area study where existing data are utilized for investigation and to outline essential ends. A portion of the particular wellsprings of information for the investigation incorporate books, diary articles, and government reports, hierarchical and private WebPages also. This kind of examination approach is utilized when a generous measure of work has been done on an exploration theme and when the aim of the investigation is to address explicit inquiries dependent on past works. It is hence that the current papers used this way to deal with inspect what various analysts have said on squanders, its arrangement and the executives.

4. Survey at KATWA Municipality Area

The current survey was organized with 150 people. Vis-a-Vis interview method is conducted for this survey, 18-75 years age groups were selected for this interview. The survey was conducted with the following questions: What are the different type of wastes generate, Amount of waste disposed per day, Availability of private dump yard, Availability of waste collection center , Awareness on disposal of waste as instructed by government, Regularity in disposal of the dumped waste and Knowledge on vermin-composting and manure production?

1 Type of wastes

2 Amount of waste disposed per day

3 Availability of private dump yard

4 Availability of waste collection center
5 Awareness on disposal of waste as instructed by government
6 Regularity in disposal of the dumped waste
7 Knowledge on vermicomposting and manure production

5. Discussion and Analysis

Spoiled vegetables and fruits as wastes were reported by 70 peoples, feed waste, poultry wastes including debris of birds, rotten eggs and feathers were disposed by 34 persons and food waste was reported by 15 persons. Quantity of waste disposed by respondents: 45 persons stated that they dispose vegetable and fruit wastes of 25 kg/day, 35 persons dispose 40-50 kg/ day poultry waste and 9 persons dispose 100-150 kg/day of food waste. The availability of dump yards in these study areas are minimal and only 5 persons are reported to put the wastes in dumping yard. Waste collection center -Most of the people (95) reported that they had no collection center while 5 persons said road side accumulation center are indeed available. Awareness of disposal waste guided by government or private organization: There was no awareness as reported by 95 people and 5 people know about guidance of the government or private agencies. Disposal waste: 95 persons did not dump the waste whereas 5 persons regularly disposed the waste by dumping it. Vermicompost: Most of the people (95) unaware about vermicompost procedure and only 5 persons know about the vermicompost but not practiced.

Table 1: Classification of Waste in the Study Area

S. No.	Questionnaires	Responses
1	Type of Daily waste	Spoiled vegetable and fruits waste feed, slaughter or poultry wastes
2	Amount of waste disposal per day	40 kg/per person (Average)
3	Methods used for waste disposal	TheT No special method other than dumping the waste in municipal service
4	Availability of private dump yard	17 Nos.
5	Means of garbage removal	Municipal service (150 persons aprox)
6	Availability of waste collection center	89
7	Awareness on the type of waste as instructed by Government	Sometimes by Municipality
8	Regularity in disposal of the dumped waste	Occasionally
9	Knowledge on vermicomposting	Not More than 10
10	Proposal for waste management	Under Consideration

Source: Data collected by authors, 2019-20

Municipal solid waste management is a major concern in Indian small town as well. It has been reported that about 0.35 kg of solid waste produced at katwa per capita every day. Municipal solid waste is generally collected, transported and dumped. Huge volume of wastes was left unattended along the roadsides and vegetable market. Open discarding of garbage enables the breeding of disease vectors and dumpsites increase the risk of groundwater contamination and adding ongoing risks to the environmental and public health Almost 50% of the respondents in the survey areas improperly dispose spoiled vegetables and fruits. All the participants acknowledged that they were not using any special method other than dumping. A majority of people were not using private dump yard whereas the few of the participants reported to use private dump yards. Some of the participants reported availing services from municipality and others use private service for removal of garbage. However, few of them did not aware about the system and it shows that there is a lack of awareness and correct practice. Most of the participants were

found to be not having awareness about the types of waste. While a few participants know the different types of waste but did not aware about the management of the waste. Very few participants replied that they were having awareness on waste disposal as instructed by the government or by a private organization. But most of the respondents were not found to have awareness on the waste disposal. Major respondents did not know about the vermicomposting and while few participants having knowledge on the vermicomposting process. From the results of the present survey, it is clearly apparent that the people in urban settings surrounding the markets are not having awareness on the types of wastes and disposal of waste even most of the participants are not regularly disposing the wastes. There is a need to create an awareness regarding the management of the organic waste and also the use of the vermicompost to process these wastes for generating manure suitable for agriculture productivity. Though the participants are generally worried about the environment due to dumping of wastes and garbage has become a serious environmental and health issue day by day. There is a great need to create the right awareness by organizing public education and tremendous awareness programs on types of waste, origin, waste disposal, waste management and associated health and environmental implications of wastes and eco-friendly waste processing methods.

6. Conclusion

The treatment of solid waste needs basic techno-waste management viability and environmentally sustainable transparent approaches. There is continued demand on environmentalists to find sustainable alternatives for waste management as the population continues to expand. The potential demand for environmental conservation will be safe and clean, and this will be the most significant problem in recent years. In solid waste management, the basic viability of techno-waste management and environmentally sustainable transparent approaches are expected. If the population continues to expand, there is continued demand on environmentalists to implement successful waste management strategies. It will be safe and clean to satisfy potential environmental demands, and this will be the most significant challenge. This is because tests have shown a strong correlation between air, water and soil contamination, and the direct effect of water and air pollution is diseases such as lung cancer, heart disease, cholera and hepatitis, and eutrophication. In order to stop the build-up of open dumps and proliferation grounds for rats and other vermin that pose a high health danger, proactive preparation for the future would avoid indiscriminate dumping and other hazardous activities. Finally, and perhaps most notably, regional councils may have launched recycling schemes among their own residents in direct reaction to local tastes for recycling and are rewarded and, by the way, it can be said that the energy cost will be minimized for him or her.

7. Future Policy Issues

Provision of litter bins at public places shall be made and there will compulsory segregation at all the sources. As the disposal site is at 5 km away and smaller vehicle are used for the transportation of solid waste, it would be enviable to set up transfer station to economize the expenditure on the transportation. As manual separation of solid wastes are at the disposal site in village Sawargad, it is the most positive way to achieve the recovery and reuse of material such as metal, plastic, glass and rubber etc. It should be done throughout the year. System should be based on Environmental protection rules. Public awareness and public participation as essential for the successful implementation of the legal provisions and should have to have an integrated approach towards sustainable management of municipal solid wastes. There should be sufficient health and safety provisions for workers at all stages of waste handling. Annual report of collection of solid waste shall have to be formulated for future strategy.

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