

## SOLID WASTE MANAGEMENT PRACTICE IN MALERKOTLA CITY: AN APPRAISAL

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### Abstract

Municipal solid waste includes refuse from households, non-hazardous solid waste from industrial, commercial and institutional establishments, market waste and street sweepings. Waste generation increases with population expansion and economic development. Rapid industrialization and population explosion in India has led to the migration of people from villages to cities, which generate thousands of tons of solid waste daily. Improperly managed solid waste poses a risk to human health and the environment. The solid waste amount is expected to increase significantly in the near future as the country strives to attain an industrialized nation status by the year 2020 (Sharma and Shah, 2005; CPCB, 2004; Shekdar et al 1992). Poor collection and inadequate transportation are responsible for the accumulation of solid waste at every nook and corner. The management of solid waste is going through a critical phase, due to the unavailability of suitable facilities to treat and dispose of the larger amount of solid waste generated daily in cities. Uncontrolled dumping and improper waste handling causes a variety of problems, including contaminating water, attracting insects and rodents, and increasing flooding due to blocked drainage canals or gullies. Improper waste management also increases greenhouse gas emissions, which contribute to climate change. Most of our cities and municipalities in third world countries like India are struggling with improper disposal of waste. Hence, it is significant to study waste disposal practice in Malerkotla city of Sangrur district in Punjab and suggest feasible solid waste management strategies. The aims of the present study are to highlight the present locations of solid waste disposal site in Malerkotla city which are creating health and environmental hazards. Based on fieldwork proper waste management practices are also suggested for Malerkotla city.

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## 1. Introduction

Municipal solid waste includes refuse from households, non-hazardous solid waste from industrial, commercial and institutional establishments, market waste and street sweepings. Waste generation increases with population expansion and economic development. Rapid industrialization and population explosion in India has led to the migration of people from villages to cities, which generate thousands of tons of solid waste daily. Improperly managed solid waste poses a risk to human health and the environment. The solid waste amount is expected to increase significantly in the near future as the country strives to attain an industrialized nation status by the year 2020. Poor collection and inadequate transportation are responsible for the accumulation of solid waste at every nook and corner. The management of solid waste is going through a critical phase, due to the unavailability of suitable facilities to treat and dispose of the larger amount of solid waste generated daily in cities. Uncontrolled dumping and improper waste handling causes a variety of problems, including contaminating water, attracting insects and rodents, and increasing flooding due to blocked drainage canals or gullies. Improper waste management also increases greenhouse gas emissions, which contribute to climate change.

Most of our cities and municipalities in third world countries like India are struggling with improper disposal of waste. Hence, it is significant to study waste disposal practice in Malerkotla city of Sangrur district in Punjab and suggest feasible solid waste management strategies.

## 2. Objectives

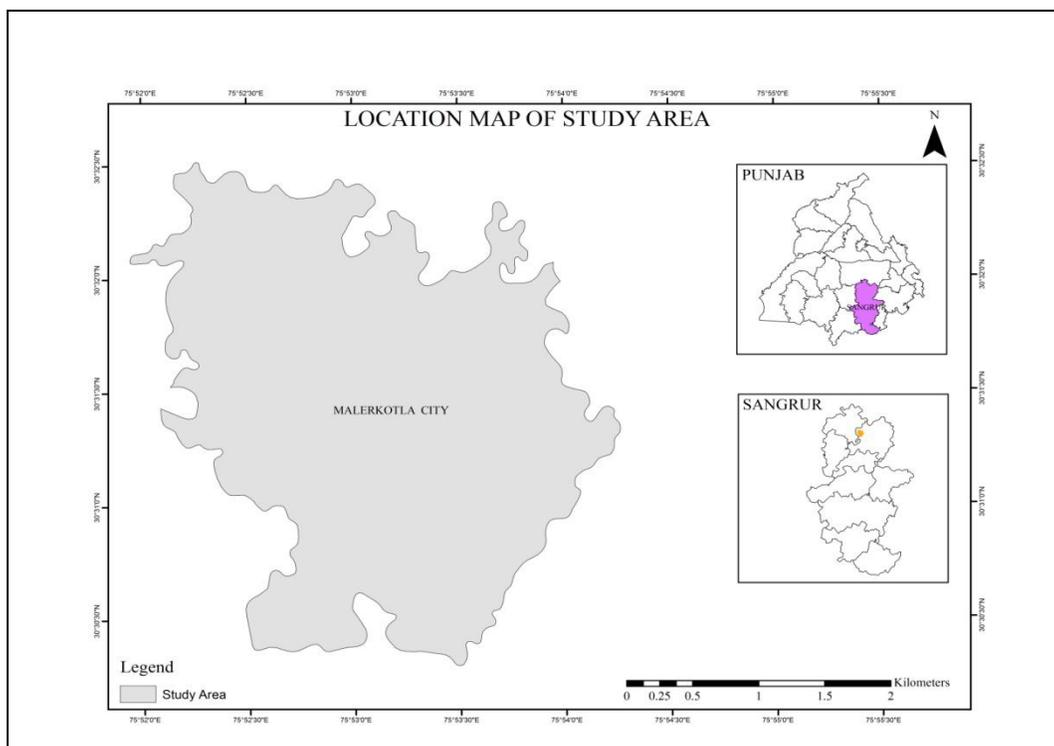
The aims of the present study are to highlight the present locations of solid waste disposal site in Malerkotla city which are creating health and environmental hazards. Based on fieldwork, proper waste management practices are also suggested for Malerkotla city.

## 3. Methodology

The inferences and conclusions of the study were drawn on the basis of analysis of primary data and secondary data. The primary data related to major solid waste dumping site in the Malerkotla city was collected through intensive field work during March 2013. Secondary data available in the form of Census data, satellite imagery, articles, papers, books etc. was also used in the study. The data collected from field survey has been processed in the GIS environment and required map layers have been generated for analysis purposes. Satellite imagery, administrative boundary maps etc. were the input data. A field survey was carried to verify the dumping site in city. Maps were scanned and on screen digitization was carried in ESRI Arc GIS Version (9.3). LISS-3 image downloaded from Bhuvan Geo-portal was also used in this study.

## 4. Study Area

Erstwhile princely state of Malerkotla is a municipal council in Sangrur district in the Indian state of Punjab. Malerkotla is located at extent of 30.5167° N, 75.8833° E (Map 1). As per provisional data of 2011 census Malerkotla urban agglomeration had a population of 135,330, out of which males were 71,401 and females were 63,923. The literacy rate was 70.25 per cent. Primarily agrarian by occupation cultivators of Malerkotla town remained famous for growing vegetables. Malerkotla is the only place in Indian Punjab that has a majority Muslim population.



**Fig: 1 – Study Area**

### 5. Solid Waste Management Practice in Malerkotla

Solid waste management is a complex task which depends as much upon organization and cooperation between numerous public and private sector and as it does upon appropriate technical solutions. Waste management is an essential task which has important consequences for public health and well-being, the quality and sustainability of the urban environment and the efficiency and productivity of the urban economy. In most cities of developing countries, waste management is inadequate, a significant portion of the population does not have access to a waste collection service and only a fraction of the generated waste is actually collected. Similarly, wastes are directly thrown away on the streets of Malerkotla city and garbage collecting places. Out of which most of it still remained there for hours sometimes for days, which later pile up and clog city drainage lines. People of the city throw waste on the streets as per their convenience. Solid waste is dumped at every nook and corner of the city. Although some sites for dumping solid waste were identified by the municipal authorities (Map 2) but people are very much reluctant to go to that site. It has been observed during the field survey that there was no segregation of solid waste at household level in Malerkotla city. Even the solid waste collected by the municipality worker was also not segregated at any level.

- While identifying major sites for dumping solid waste, the administration ignored basic rules. Some sites are situated either adjacent or near to schools hospital, bus stand and religious places. Foul smell generated from garbage often disturbs the school atmosphere particularly of Government Boys Senior Secondary School.

- It has also been observed that not a single solid waste dumping site is covered with boundary wall. Stray dogs and cattle are always spread dumped garbage on the road. It leads to traffic congestion for hours at almost all the sites situated along the roadside.
- Rag pickers also aggravate the situation many a times. They collect plastic bags and other such material from the garbage. While collecting these things they generally spread out the garbage.
- The city administration does not have proper solution to handle solid waste. Lack of cooperation by the residents, manpower and funds are the excuses always made for the ill management of solid waste in Malerkotla by the administration.

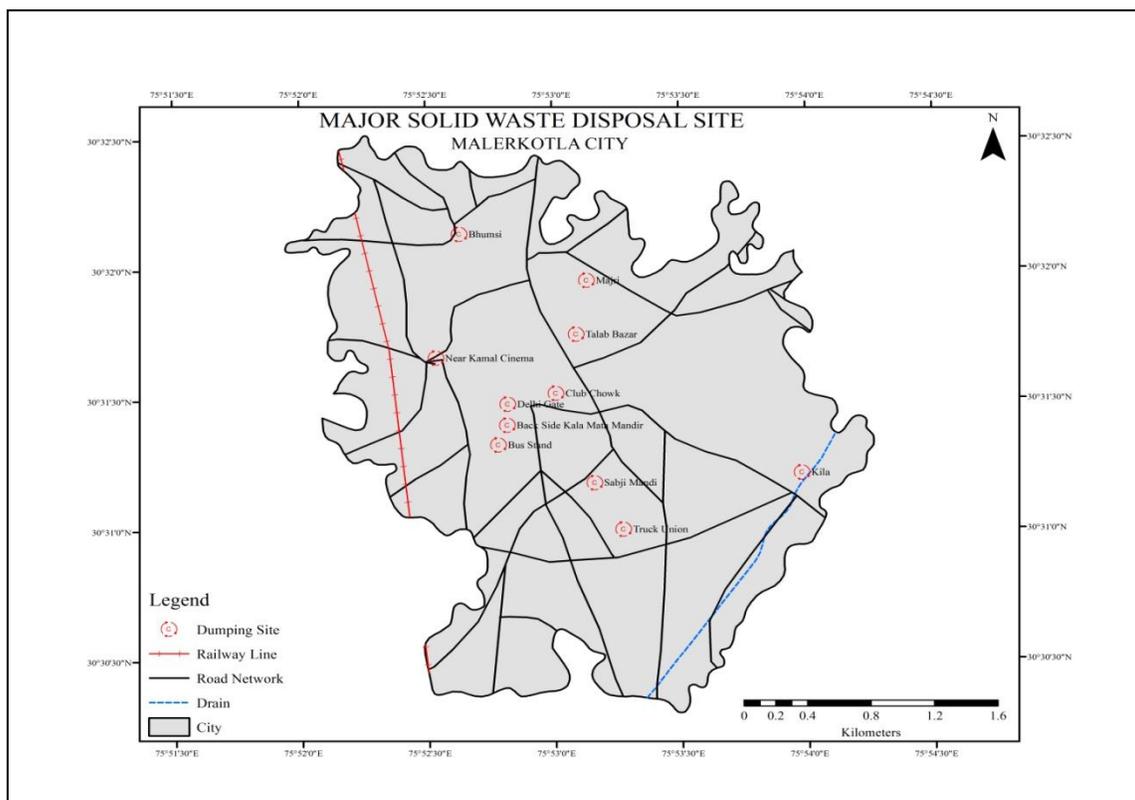


Fig: 2 – Major Solid Waste Disposal Site

### 6. Suggestions for the Proper Management of Solid Waste in Malerkotla City:-

There are some suggestions to protect the environment and health of the people of Malerkotla city by properly managing solid waste:

- Waste generation patterns are determined by people’s attitudes as well as their socio-economic characteristics. Attitudes towards waste may be positively influenced by awareness-building campaigns and educational measures. Residents of Malerkotla should be made aware about the solid waste management through mass campaigns and awareness programmes. Services of local NGOs can be obtained after giving them proper training.



- People should also be made aware about waste prevention. Waste prevention strategies include using less packaging, designing products to last longer, and reusing products and materials. Waste prevention helps reduce handling, treatment, and disposal costs and ultimately reduces the generation of methane.
- Recycling is a process that involves collecting, reprocessing or recovering certain waste materials (e.g., glass, metal, and plastics, paper) to make new materials or products. Some recycled organic materials are rich in nutrients and can be used to improve soils. The conversion of waste materials into soil additives is called composting. Recycling and composting generate many environmental and economic benefits. For example, they create jobs and income, supply valuable raw materials to industry, produce soil-enhancing compost, and reduce greenhouse gas emissions and the number of landfills and combustion facilities. Malerkotla city residents should be given incentive for adopting such practices. Municipality could give incentive in the form of subsidy on their electricity and water bills.
- Ban should be imposed on use of polyethylene bags.
- Facility of segregation at household levels should be provided. It includes the patterns of waste generation and handling of household and other waste management.
- Proper boundary wall should be built around the dumping sites to keep away stray dogs and cattle from the dumped garbage.
- Sustainable solid waste management systems should be adapted by the Malerkotla municipality.

## 7. References

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