

Solid Waste Management in **Gaur Municipality**



His Majesty's Government
Ministry of Local Development
Solid Waste Management and Resource Mobilisation Center



Clean Energy Nepal



Environment and Public Health Organisation

Preface

Solid Waste Management in Gaur Municipality¹ is one among a series of 58 reports, which briefly describes the current situation of solid waste management in each of the 58 municipalities in Nepal. The information presented in this report was obtained from a review of relevant literature, interviews with key municipal staff as well as other stakeholders, and a waste generation and composition survey. As the report is based on information collected over a short period, including a one-week field visit conducted in September 2003, this is not a comprehensive study, but it provides a brief overview of the solid waste management situation in the municipality.

This study was commissioned by Solid Waste Management and Resource Mobilisation Centre (SWMRMC) of the Ministry of Local Development. A team of four experts, Dr. Nawa Raj Khatiwada, Bhushan Tuladhar, Ashok Tuladhar and Dinesh Raj Manandhar, coordinated the study. The field investigations in each of the 58 municipalities were conducted by a team of environmental officers under the guidance of the coordination team.

This series of reports will be valuable for researchers as well as planners and managers of solid waste management systems. An analysis of the key findings from all the 58 municipalities is presented in a separate report published by SWMRMC.

Clean Energy Nepal (CEN) and Environment and Public Health Organization (ENPHO) wishes to thank Mr. Surya Man Shakya, General Manager of SWMRMC, for taking this bold and innovative initiative of gathering information on the solid waste management situation in all the 58 municipalities of Nepal for the first time. We also wish to thank the coordination team, as well as Mr. Murali Ranjit and Mr. Nirmal Acharya of SWMRMC, for their valuable input. Finally, we are very grateful to all the environmental officers who visited the municipalities to collect the required information and the municipal staff and the local people who have provided us with this information.

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¹ This report was prepared by Bhushan Tuladhar and Bhumika Vaidya based on field investigations conducted by Upendra Raj Kuikel.

1 Introduction

Gaur is the headquarters of Rautahat district in Narayani zone of the Central Development Region. It is a relatively small municipality situated in the Terai plains. The municipality was formed in 2048. It has 13 wards, out of which more than half are in rural areas. The major rivers and ponds in the municipality are Baraha and Bakaiya Khola. The total area of the municipality is 31,89.8 ha.

Table 1: Background Information

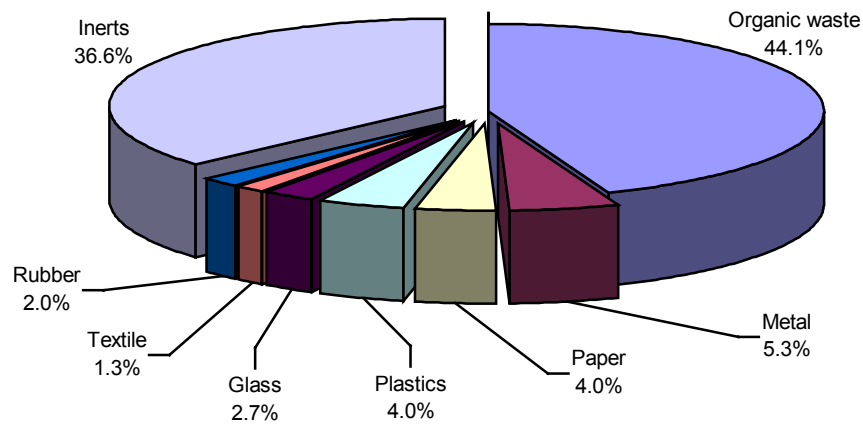
NAME	GAUR MUNICIPALITY
District	Rautahat
Year of Establishment	2048
No. of Wards	13
No. of Urban Wards	6
No. of Rural Wards	7
Total Area	21.53 sq. km (CBS data)
Built-up Area	NA
Major Rivers and Ponds	Baraha and Bakaiya Khola
Total Road length	93 km
Population (2001)	25383 (CBS data)
No. of Households (2001)	3956 (CBS data)
No. of Shops	200
No. of Restaurants, hotels and lodges	35
Annual Population Growth Rate (1991-2001)	2.2 percent
Estimated Population for 2003	26,512
Population Density (2001)	1179 per sq. km (CBS data)

2 Waste Generation and Composition

According to the field survey done in 2003, the average per capita household waste generation rate in Gaur was 0.20 kg/person/day. This is slightly lower than the average waste generation rate in urban areas of Nepal, which is 0.25 kg/person/day. Considering the total population of Gaur in 2003, which is estimated to be 26,508, the total amount of household waste generated in the municipality comes out to be 5.3 tons per day. If we assume that 75 percent of the total municipal waste is generated by households, then the total amount of municipal waste in Gaur comes out to be 7 tons per day.

The composition of waste shows that although organic waste is the largest portion of the waste stream, the percentage of organic waste is relatively low compared to other municipalities. The average organic content of waste in Nepalese municipalities is approximately 65 percent. The inert portion, which includes sand, dust, and stone, is relatively very high compared to the national average of 9.6 percent.

Figure 1 Waste Composition



The loose density of household waste in Gaur was calculated to be 437 kg per m³.

Information on Gaur's waste generation and composition is based on waste sample collected from 80 households, Dosiya Tole of in ward 9 that had waste from 365 people.

3 Waste Collection

The Municipality estimates that it collects approximately 2.7 m³, which is equivalent to about 1.1 tons of waste per day. Assuming that the municipality generates about 7 tons of waste per day, the waste collection rate is about 16 percent. Most of the uncollected waste is probably waste generated in rural areas.

Gaur Municipality has 15 permanent sweepers, 1 supervisor and 1 waste management in-charge. The sweepers clean the street and public open place about 5 km daily.

The Municipality has tractor trailer and 2 handcarts, which are used to provide roadside pick-up service for waste collection. The municipality or any other private organization does not provide the services like door-to-door collection and container service.

4 Final Disposal

The collected waste is disposed in a crude dumping site. The site, located near the Municipality building has been used for the past 8 years. It covers an area of 1 ropani. Previously, the waste was dumped in other vacant plots in the municipality. The Municipality has no plans to construct a landfill in future.

5 Composting and Recycling

The municipality does not have any programmes to promote composting and recycling and is not aware of any other organizations involved in such activities.

6 Special Waste Management

The Municipality does not have a separate system for managing special waste such as medical waste, construction debris and dead animals. The Municipality has one hospital, four clinics and four laboratories. Medical waste generated by these facilities is dumped along with municipal waste.

7 Community Mobilization

The Municipality has no programmes to promote community participation in waste management and there are no community groups or NGOs involved in waste management.

8 Organizational and Financial Aspects

The Environment/Sanitation Sub-section within the Community Development Section is responsible for waste management in Gaur municipality. The section has 12 sweepers, 1 in-charge and 1 supervisor.

The proposed budget for Community Development Section for the fiscal year 2060/61 was Rs 5,75,000. This is only 2.4 percent of the total budget of the municipality, which was Rs 2,390,000. Of the amount allocated for Community Development Section, Rs. 100,000 was for environment programmes and Rs. 50,000 for awareness programmes.

9 Major Problems and Issues

The problems in solid waste management in Gaur Municipality are lack of proper landfill site, inadequate waste collection services and lack of planning for SWM. Lack of composting and recycling activities and community involvement in waste management are also major problems.

10 Conclusion & Recommendations

Being a small, relatively rural, municipality, waste management is not a major issue within the municipality, but with increasing population and urbanization it may be a problem if not managed properly.

Recommendations:

1. The practice of dumping the waste in a crude manner should be stopped and at least a controlled dump site, with provisions for proper drainage of surface run off and burial of waste, should be developed.
2. Along with the construction of landfill site municipality should also promote composting and recycling.
3. There is no involvement of community and private organization for solid waste management in the municipality. For effective solid waste management, municipality should involve local community as well as private organization.
4. Proper waste collection system should be developed so that open piles on the streets are discouraged.

5. The staff responsible for waste management should be properly trained.
6. The special wastes should be managed separately. Hazardous medical waste should be burned in a controlled manner or buried.

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Annex 1: Photographs



Waste Piles on the Streets



Waste Collection Using a Tractor



Cleaning of Drains Clogged by Waste



Equipment Used for Waste Management



Unloading of Waste from Drains on to Open Land



Waste Disposal Site