

Solid Waste Management in **Dashrathchand 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 Dashrathchand 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 and Gopal Raj Joshi based on field investigations conducted by Santosh Khatiwada.

1 Introduction

Dashrathchand is a small municipality located in the hills of Mahakali zone of the Far Western Development Region. It is the headquarters of Baitadi District. It lies on the bank of the Mahakali River. The Municipality is bordered by Dehimandau, Durga Bhawani, and Shree Kedar VDC in the east, Mahakali river in the west, Nwali VDC and Chaulani River in the north and Gwallek, Nagarjun VDC in the south. The municipality was established in 2053 BS and got its name after the famous martyr Dasrath Chand.

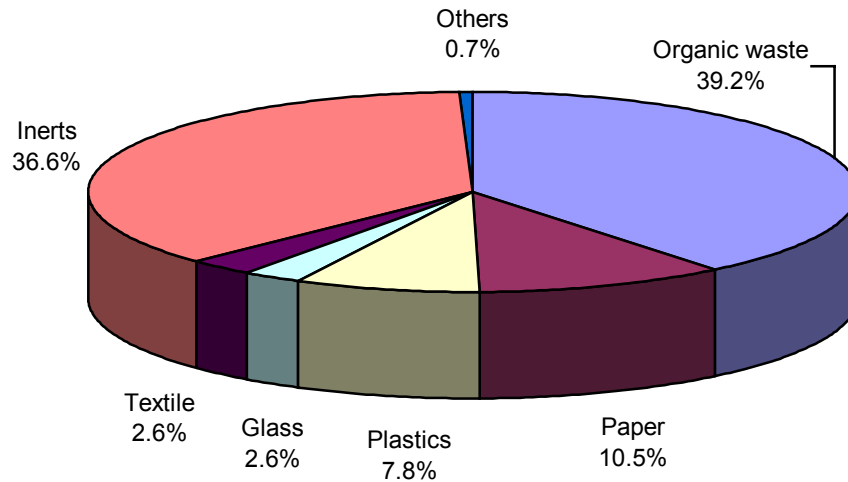
Table 1: Background Information

| | |
|---|---|
| NAME | DASRATHCHAND MUNICIPALITY |
| District | Baitadi |
| Year of Establishment | 2053 B.S. |
| No. of Wards | 13 |
| No. of Urban Wards | 3 |
| No. of Rural and semi urban Wards | 10 |
| Total Area | 55.01 sq. km |
| Built-up Area | 103 ha |
| Major Rivers and Ponds | Mahakali, Kansana, Chaumlia, Bhattighat |
| Total Road length | Earthen: 34.5 km |
| Population (2001) | 18,345 |
| No. of Households (2001) | 3481 |
| No. Shops | 282 |
| No. of Restaurants, hotels and shops | 39 |
| Annual Population Growth Rate (1991-2001) | 0.2 percent |
| Estimated Population for 2003 | 18,418 |
| Population Density | 333.48 per sq. km |

2 Waste Generation and Composition

According to the field survey done in 2003, the average per capita household waste generation rate in Dasrathchand was 0.27 kg/person/day. This is similar to the average waste generation rate in urban areas of Nepal, which is 0.25 kg/person/day. Considering the total population of Dasrathchand in 2003, which is estimated to be 18,404, the total amount of household waste generated in the municipality comes out to be about 5 tons per day. If we assume that 75 percent of the municipal waste consists of household waste, then the total amount of municipal waste generated in Dasrathchand municipality comes out to be 6.6 tons per day. The actual amount of household waste generated is probably a bit lower because most of Dashrathchand's population live in relatively rural areas and their waste generation rate is probably lower.

Figure 1 Waste Composition



The composition of waste shows that although organic waste is the largest portion of the waste stream, the percentage of organic waste is low compared to other municipalities. On average, more than 65 percent of the waste in Nepalese municipalities consists of organic waste. Similarly, the portion of inert material is very high compared to the national average of 9.6 percent. This may be because a significantly large portion of the organic waste is composted at source and never enters the waste stream.

The loose density of household waste in Dasrathchand was calculated to be 349.7 kg per m³.

Information on Dasrathchand's waste generation and composition is based on waste collected from 63 households in Godlapani and Shahi Chowk in ward no. 1 and 5, that had waste from 283 people.

3 Waste Collection

Dasrathchand municipality collects approximately 0.5 tons of waste per day. Assuming that the total amount of waste generated in Dashrathchand is 6.6 tons per day, the city is collecting only about 8 percent of the total waste generated. This is a very low collection rate. This may be because the waste generation rate is an overestimate and most of the waste from rural areas of the municipality is not being collected.

Dasrathchand municipality has 2 permanent sweepers, who sweep approximately 1km of city streets three times a week, and a supervisor.

Sweeping and collection is done using ordinary brooms and local equipment called phaduwa. The waste is collected in wheelbarrows using shovels. The municipality has a total of 2 of wheelbarrows, with a capacity of 0.04 m³. Once

the wheelbarrows are filled, the waste is placed in to containers, made of half-cut 200 litre oil drums, or a tractor-trailer. The municipality has one tractor with trailers (3.3 m³ capacity). The roadside pick up service is carried out 3 times a week.

4 Final Disposal

The collected waste is a disposed in a crude dumping site on the banks of the Mahakali River and on isolated slopes along the road, about 1-km from the city. The site with an area of 2 ropanies has been used for the past one year. It is estimated that present site could be used for further 4 years. Previously, waste was also dumped in Godlapani Bazar.

The Municipality does not have any plans to construct a landfill site.

5 Composting and Recycling

Dasrathchand Municipality does not have any special programs and activities for promoting recycling and composting. But the city claims that almost all rural household compost their waste in the traditional manner, but this is not practiced by urban households.

6 Special Waste Management

Dasrathchand Municipality does not have any system for collecting and managing medical waste separately. Every generator of medical waste (1 hospital, 5 clinics and 2 drugstores) is managing their waste themselves. The hospital burns its waste in an incinerator and ash is buried.

The city does not have any system to collect other types of special waste such as construction/demolition debris, industrial waste and dead animals. Dead animals are buried. Construction/demolition waste is reused as a filling material or dumped with other waste.

7 Community Mobilization

Dasrathchand Municipality has not initiated programmes to mobilize local communities and NGOs to work on solid waste management. So there is very little community participation in waste management. The municipality rarely conducts awareness campaigns on this issue.

8 Organizational and Financial Aspects

The municipality does not have a separate section/unit responsible for solid waste management. So the main responsibility for solid waste management lies with the Administrative Section. The section has allocated one supervisor, one driver, and two sweepers for solid waste management.

The municipality spends approximately Rs. 2,25,000 in waste management each year. This is approximately 2.25 percent of the total budget of the municipality, which is about Rs. 10 million.

9 Major Problems and Issues

The main problem associated with waste management in Dasrathchand is the lack of an organized structure and system for waste management. The municipality does not have a separate unit and its involvement is limited to sweeping the streets using two sweepers and dumping the collected waste in a crude manner. The lack of facilities for waste treatment and disposal and the lack of public participation in waste management also seem to be major problems.

10 Conclusion & Recommendations

Being a small, mostly rural and relatively new municipality, Dasrathchand does not have a major waste management related problem. As a result, the municipality does not have adequate structure or systems in place to deal with waste management. The municipality however has a tractor for waste collection and it also has waste collection bins in the city, which is very good. The municipality needs to build on this by promoting household composting and recycling and practicing controlled dumping, where the waste is covered with soil, instead of crude dumping.

Recommendations:

1. The municipality should stop the practice of dumping waste in a haphazard manner. A simple and inexpensive landfill site could be developed, as the city is not generating so much waste.
2. The municipality should set up separate unit/section for solid waste management and unit should have trained manpower. SWMRMC can assist in this process by providing training and field visit to other municipalities.
3. The waste collection system should be improved so that waste is collected door-to-door to the extent possible. The municipalities should encourage people to dispose waste directly in the tractor instead of on the road.
4. The municipality should promote household composting in the urban areas as well. For this the municipality should provide training to local communities.
5. Community participation in waste management should be increased with regular interaction with community groups and training on household composting.
6. The municipality should prepare strategy and action plan for waste management.

For more information please contact:

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Annex 1: Photographs



A Waste Collection Bin in a House



Tractor Used for Waste Collection



Waste Dumping at Godlapani, Baitadi