

Solid Waste Management in **Jaleshwor 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 Jaleswor 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 Raju Niraula.

1 Introduction

Jaleshwor is a small municipality located in Mahottari District of Janakpur zone. The town is located in the terai plains next to the Indian border. The municipality is surrounded by Parkauli and Madai VDC to the north, Suga VDC to the east, Naindi VDC and Ankar VDC to the west and Bihar state of India to the south. The municipality was established in 2049 B.S and it constitutes of 13 wards. Out of which 6 wards are in urban area.

Table 1: Background Information

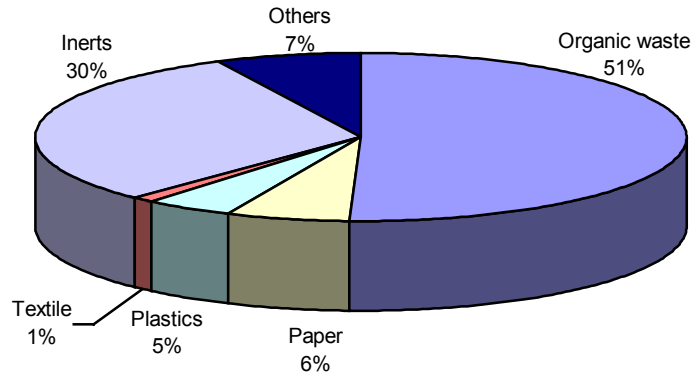
NAME	JALESHWOR MUNICIPALITY
District	Mahottari
Year of Establishment	2049 B.S
No. of Wards	13
No. of Urban Wards	6
No. of Rural and semi urban Wards	7
Total Area	15.49 sq. km (CBS data)
Built-up Area	NA
Major Rivers and Ponds	Rato Nadi, Barun Pokhari, Puranda Pokhari
Total Road length	35.88 km
Population (2001)	22,046 (CBS data)
No. of Households (2001)	3680 (CBS data)
No. Shops	129
No. of Restaurants, hotels and shops	4/ 84/ 3
Annual Population Growth Rate (1991-2001)	2.0 percent
Estimated Population for 2003	22,937
Population Density	1423.24 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 Jaleshwor was 0.28 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 Jaleshwor in 2003, which is estimated to be 22,936, the total amount of household waste generated in the municipality comes out to be 6.4 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 generated in Jaleshwor becomes 8.56 tons per day. The actual waste generation rate is probably less than this because of the people in rural areas.

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 the national average of 65 percent. Similarly, the portion of inert material is relatively high, compared to the national average of 9.6 percent.

Figure 1 Waste Composition



The loose density of household waste in Jaleshwor was calculated to be 90.1 kg per m³. This is fairly low compared to density from other municipalities.

Information on Jaleshwor 's waste generation and composition is based on waste collected from 82 households in Mahendra Chowk, Bhumisudhar, Machaline and Shankar Tole of ward no. 1, 2, 4 and 6, that had waste from 619 people.

3 Waste Collection

Although the field survey indicated that the waste generation rate in Jaleshwor is about 8.5 tons per day, the municipality estimates that about 3 tons of waste is generated per day. Of this, the municipality claims to collect 1.5 ton per day or 50 percent of the total waste generated. If we assume that the waste generation rate is 8.5 tons per day, then the municipality is collecting only about 18 percent of the total waste that is generated. But in special occasion like Durga puja the waste collection exceeds more than 7 tons per day.

For waste collection, the municipality has a tractor trailer with capacity of 2.63 m³. The municipality has 15 permanent and 1 temporary sweepers for the solid waste management. The sweepers sweep 14 to 19 km of the street daily. Municipality provides roadside pickup service using the tractor twice a day. The is no door-to-door or container system for waste collection.

4 Final Disposal

The collected waste is openly disposed in the roadside. The crude dumping site is 2 km away from the city and it has been used sine 2039 B.S.

The municipality has no plans to construct a landfill site in near future.

5 Composting and Recycling

Jaleshwor Municipality does not have composting and recycling programme. However the Municipality allows scrap dealers for scavenging waste in collection and dumping site. According to the municipality, about 10 kawadis from Janakpur and Birtamode are dealing with the scrap materials within the municipality.

6 Special Waste Management

Jaleshwar Municipality has one hospital, four clinics and two laboratories. However, the municipality does not have any system to collect and manage hazardous waste from these facilities. Hospital waste is either mixed with other waste and dumped or burnt. Similarly, there is no system to manage other types of special waste such as dead animals and construction waste. These are dumped along with regular municipal waste.

7 Community Mobilization

The Municipality does not have any activities to mobilize local communities in waste management and no community-based organizations or NGOs are involved in waste management.

9 Organizational and Financial Aspects

The Municipality does not have solid waste management or sanitation unit but it has a supervisor who assigns 16 sweepers to clean various parts of the city twice a week.

The municipality spends approximately Rs. 9,69,350 annually for solid waste management. This is about 18 percent of the total municipal budget. Of the amount spent on solid waste management Rs. 794,350 (82 percent), is spent on salary and wages, Rs. 80,000 (8 percent) is spent on fuel for the tractor, Rs. 50,000 (5 percent) is spent on vehicle maintenance, the rest (5 percent) is spent on equipment, uniform and other expenses.

8 Major Problems and Issues

The main problems associated with waste management in Jaleshwar are the lack of solid waste management section and proper landfill site. The Municipality also lacks involvement of community and private organizations in waste management, composting, recycling programs and proper management of special waste as well.

10 Conclusion & Recommendations

Although the municipality has a system of street sweeping, it is careless in managing the collected waste. The municipality has not initiated any programmes to involve the community in waste management and promote waste recycling and composting. Therefore, the municipality needs to start developing structures and system for effective waste management.

Recommendations:

1. The municipality should establish basic statistical records related to waste management to formulate effective plan and strategy of waste management.
2. Solid waste management unit should be established with trained staff and adequate resources.
3. Haphazard disposal of waste on the roadside should be stopped and a simple landfill site should be developed, where waste can be buried.

4. Along with construction of landfill site, municipality should also promote composting and recycling programs.
5. The waste collection system should be improved so that waste is collected door-to-door to the extent possible and open piles on the streets are discouraged.
6. For effective solid waste management municipality should involve local community as well as private organization.
7. Medical waste should be managed separately. They should be burned in a controlled manner or buried separately.
8. Public awareness campaigns should be done in community, schools and municipality staffs and community and School based programmes should be launched to increase awareness.

For more information please contact:

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Removal of Solid Waste from Open Drains



Open Waste Piles



Loading waste on to Tractor



Dump Site