

# Solid Waste Management in **Janakpur 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 Janakpur Municipality<sup>1</sup>** 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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<sup>1</sup> This report was prepared by Bhushan Tuladhar and Nisha Manandhar based on field investigations conducted by Shobha Kumari Yadav.

## 1 Introduction

Janakpur, earlier known as Mithila Nagari is located in Dhanusha district in the Terai region of the Central Development Region of Nepal. Developed as a commercial and industrial town, Janakpur is also widely visited by a large number of pilgrims for its great historic and religious importance. This municipality was established in the year 1962 A.D. and is situated close to Nepal-India border, 23 km south of the Mahendra (East–West) Highway. Janaki Temple, is one of the largest and most beautiful temples in the country, lies in this municipality.

**Table 1: Background Information**

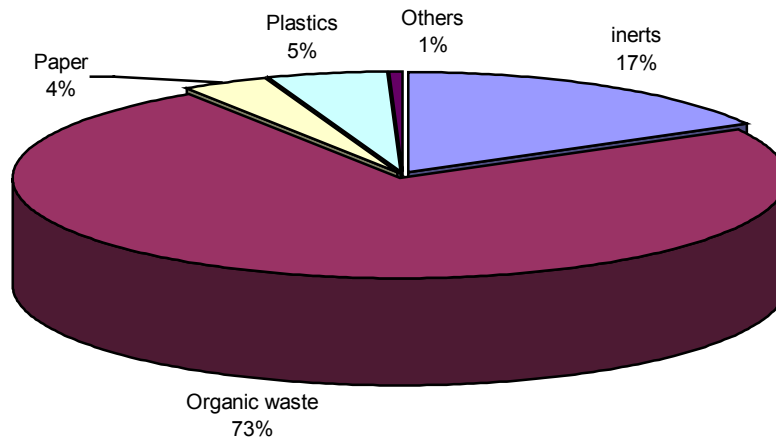
NAME	JANAKPUR MUNICIPALITY
District	Dhanusha
Year of Establishment	1962 AD
No. of Wards	16
No. of Urban Wards	13
No. of Rural Wards	3
Total Area	24.61 sq. km (CBS data)
Built-up Area	30.8 ha
Major Rivers and Ponds	Dugdhamati, Jalaedh, Gangasagar, Sitakund
Total Road length	Black-topped: 31 km Graveled: 30.7 km Earthen: 61.7 km
Population (2001)	74,192
No. of Households (2001)	13,734
No. of Shops	1714
No. of Restaurants, hotels and lodges	127
Annual Population Growth Rate (1991-2001)	3.1 percent
Estimated Population for 2003	78,863
Population Density	3014.71 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 Janakpur was 0.146 kg/person/day. This less than the national average municipal waste generation rate, which is 0.25 kg/person/day. Considering the estimated total population of Janakpur in 2003, which is 78,852, the total amount of household waste generated in the municipality comes out to be 11.5 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 by Janakpur Municipality becomes 15.3 tons per day. The actual amount of household waste generated may be a bit higher because the waste generation rate estimated by the field survey seems to be a bit low.

The survey also indicated that about 73 percent of Janakpur's waste is organic in nature, while plastics and paper made up 5 and 4 percent of the waste respectively. This is similar to the waste composition found in most other municipalities in Nepal.

Figure 1: Waste Composition



The loose density of the household waste collected was calculated to be 82.52 kg per m<sup>3</sup>.

Information on Janakpur's waste generation and composition is based on waste collected from 67 households in wards 2, 8 and 9, that had waste from 564 people.

### 3 Waste Collection

The municipality estimates that it collects about 3 tons of waste per day. Assuming that the waste generation rate is 15.3 tons per day, the waste collection rate is 20 percent, which is fairly low for a relatively large municipality like Janakpur.

Janakpur Municipality has 73 permanent sweepers, who sweep the city streets on daily basis and work under 7 supervisors. Sweeping is done using ordinary brooms with long handles and the waste is collected in handcarts using shovels and is then placed in temporary open piles which are later collected by roadside pick-up service. The waste is then loaded on to tippers and power tillers of average capacity of 4 m<sup>3</sup> and 3 m<sup>3</sup> respectively. The municipality has 12 handcarts and 12 tractors and tippers collecting wastes.

The municipality does not have containers or door-to-door collection system. Therefore, the main mode of collection is the roadside pick-up service.

### 4 Final Disposal

The collected waste is disposed in crude dumping sites away from the town along the highway. The area behind the Hanuman Hall had earlier been used for waste disposal but now it is no longer in use.

The Municipality has no plans to construct a landfill site in the near future due to lack of adequate financial and technical resources.

## **5 Composting and Recycling**

Janakpur Municipality does not have any recycling and composting programs. There aren't any composting plants being operated in the community level or by the municipality till now and there are no plans to build one.

Although scavengers are involved in picking up recyclable materials from waste piles, this is not being done in an organized manner. There is no input provided by private groups, NGOs and CBOs regarding recycling and composting.

## **6 Special Waste Management**

Janakpur Municipality has no separate system for collecting and managing medical wastes, and no steps have been taken for the management of construction and demolition wastes. Similarly, there are no specific programmes to manage industrial waste or dead animals.

## **7 Community Mobilization**

Although the municipality does not have any active programmes to promote community participation in waste management, an NGO called Support Nepal has been involved in awareness raising, advocacy and public education programs related to waste management for about one year. The organization has also distributed waste collection bins to about 300 households. Support Nepal has also started a quarterly awareness magazine called Parivartan and had earlier organized a weeklong cleaning program "Clean Campaign Janakpur" jointly with Peace Corps Volunteers (PCV). The organization was established in 1995 and has 32 members.

There are no school- based activities related to waste management.

## **8 Organizational and Financial Aspects**

The main responsibility for solid waste management lies with the Health and Sanitation Sub-Section of Janakpur Municipality. The unit has 73 sweepers and 7 supervisors.

In the fiscal year 2059/60, the municipality spent Rs. 45,05,261 on solid waste management. Out of this amount, Rs. 31,96,580 (71 percent) was spent on salary of SWM staff, Rs. 6,12,136 (14 percent) on staff benefits, Rs. 50,000 (1 percent) on uniforms and Rs. 6,46,545 (14 percent) on fuel. The SWM budget is about 15 percent of the total municipal budget.

## **9 Major Problems and Issues**

The main problem related to waste management in Janakpur is the haphazard disposal of waste due to the lack of a proper landfill site and appropriate management system. Other problems identified by the municipality include poor drainage, lack of recycling/composting, inadequate resources and poor awareness level among the people.

## **10 Conclusion & Recommendations**

Although Janakpur Municipality has some good waste collection equipment, it still has not been able to effectively manage waste. Only a small portion of the waste that is generated is collected and as there is no door-to-door collection system, all the waste is disposed on the streets before it is collected. This makes the streets dirty. Furthermore, as the municipality lacks a proper waste treatment and disposal facility, the collected waste is dumped in a haphazard manner. Clearly, the municipality has to do more to improve the waste management system. As Janakpur is a fairly large municipality and also a tourist centre with many religious and historic sites, the municipality should develop an integrated waste management plan and implement it with firm commitment.

### Recommendations:

1. The municipality should immediately establish a controlled dumping site, where the waste is at least covered with soil.
2. In the meantime, efforts should be made to develop a composting facility and a sanitary landfill.
3. The waste collection system should be improved so that waste is disposed directly on to the collection vehicles, instead of dumping on the streets. For this an effective door-to-door collection programme should be initiated and people should be asked to store their waste until a vehicle comes by to pick it up. This will need extensive interaction with local communities. Local NGOs and CBOs could be mobilised for this purpose.
4. The municipality should maximize composting and recycling by encouraging people and private sector to practice composting/recycling..
5. Special waste such as hospital waste, should be managed separately. .
6. The Health and Sanitation Sub-section, which responsible for solid waste management should have trained staff.
7. The municipality should introduce activities to maximize community participation in waste management. The activity of Support Nepal, a local NGO is good and such activities need to be further promoted by the municipality.

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**Annex 1: Photographs**



**Street Sweeping**



**Haphazard Disposal of Waste**





**Tipper and Tractor for Waste Collection**



**Open Waste Pile and Collection Vehicle**





**Disposal of Waste Next to a Pond**



**Haphazard Waste Disposal**



**Waste Disposal Along Highway**



**Waste Disposal Along Highway**