

## Solid Waste Management in **Tansen 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 Tansen 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 Bhumika Vaidya based on field investigations conducted by Bhuvan Thapa.

## 1 Introduction

Tansen is a small municipality located at an altitude of 1372 meters in the hills of western Nepal. This historic municipality was established in 2014 B.S. It is bordered by Chirtungdhara VDC to the East, Bandi Pokhara to the West, Barangdi and Chapapani to the North and Madan Pokhara and Telgha to the South. The major market centres in the municipality are Makhan Tole, Shital Pati, Bhagwati Tole, Asan Tole, Narayan Tole, Bhimsen Tole, Bus Park, Shilkhan Tole, Taksar Tole, Basantapur Tole, and Bhusyal Danda. The Municipality is also an important tourist destination because of its natural beauty and cultural heritage.

**Table 1: Background Information**

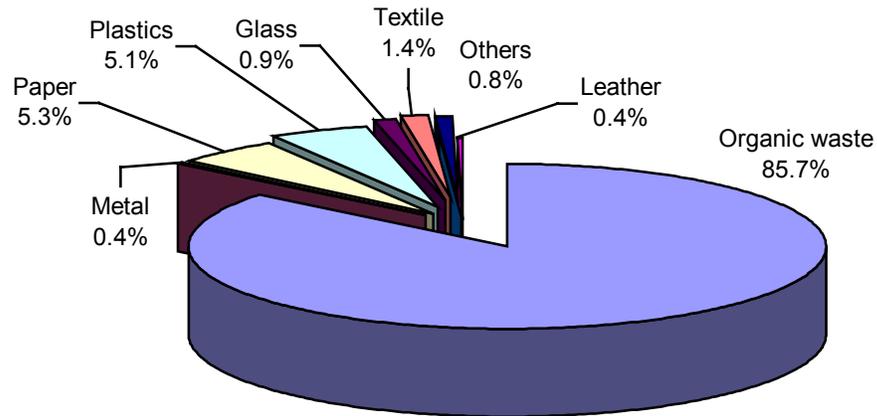
NAME	TANSEN MUNICIPALITY
District	Palpa
Year of Establishment	2014 B.S
No. of Wards	15
No. of Urban Wards	10
No. of Rural Wards	5
Total Area	21.72 sq. km (CBS data)
Built-up Area	NA
Major Rivers and Ponds	Holandi river, Teendhara, Geru Khola, Lotus Lake
Total Road length	55.8 km
Population (2001)	20,431 (CBS data)
No. of Households (2001)	4,813 (CBS data)
No. of Shops	475
No. of Restaurants, hotels and lodges	142 / 126
Annual Population Growth Rate (1991-2001)	4.2 percent
Estimated Population for 2003	22,183
Population Density	940.65 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 Tansen was 0.425 kg/person/day. This is significantly higher than average waste generation rate in urban areas of Nepal, which is 0.25 kg/person/day. Considering the estimated total population of Tansen in 2003, which is 22,164, the total amount of household waste generated in the municipality comes out to be 9.4 tons per day. If we assume that 75 percent of the total municipal waste is generated by households, then the total amount of waste generated in Tansen comes out to be 12.5 tons per day.

The composition of waste shows that organic waste is the largest portion of the waste stream. The percentage of organic waste is however, higher than the national average of 65 percent.

**Figure 1 Waste Composition**



Information on Tansen’s waste generation and composition is based on waste samples collected from 55 households in Narayan, Bhagwati and Taksar areas in ward no. 1, 8, and 5 that had waste from 274 people.

### **3 Waste Collection**

The Municipality estimates that it collects approximately about 4 tons of waste per day. Assuming that the total amount of waste generated in Tansen is 12.5 tons per day, the Municipality is collecting about 32 percent of the total waste generated.

Tansen Municipality has 34 sweepers, who sweep street and public open spaces daily. They sweep altogether 4.8 km streets daily.

The Municipality has 2 tractor trailers with a capacity of 2.75 m<sup>3</sup>, 40 handcarts and 20 dokos for waste collection.

The Municipality has container service, roadside pick up service and door-to-door collection system. Most of the waste is placed as temporary open piles, whereas in the bus parks, waste is collected in handcarts.

### **4 Final Disposal**

The collected waste is disposed in a crude dumping site. The site with an area of about 10 ropani (0.5 ha) has been used since the past 10 years. The site is about 2 km far from the city. The life span of the site is not mentioned as waste is dumped on a steep slope where monsoon rain drains most of the waste into the river below it.

In near future, the Municipality plans to construct a landfill site in Ward No 12 with area coverage of 150 ropani, which is 4 km away from the city. For this purpose the municipality is waiting for the ADB's Eco-Tourism Project for financial support.

### **5 Composting and Recycling**

Recently a local CBO, Makhan Tol Development Organization in Ward No. 4, in partnership with the Municipality, has initiated programmes to promote composting. It is promoting pit and drum composting in 100 households.

Tansen Municipality allows scavenging in collection and dumping site but has no private scrap dealers in direct contact.

## **6 Special Waste Management**

Tansen Municipality has 3 hospitals, and 26 clinics, which generate medical waste. The Municipality does not have a separate system to collect medical waste and it is managed by the generators themselves. The Mission Hospital, which is the biggest hospital in Tansen, has its own incinerator. Dead animals, as well as construction and demolition wastes are dumped with the rest of the waste. Industrial waste is not a major issue because of the lack of big industries.

## **7 Community Mobilization**

The municipality has several community-based groups called Tole Lane Organization (TLO), some of whom conduct activities related to solid waste management. TLO of bus park area, Makhan Tole and Narayan Tole are involved in waste collection and street sweeping. While Makhan Tole of Ward No 4 is also involved in household composting. They have also organized community clean-up campaign, pamphlets distribution and rally. They also collect Rs. 15 per month from 100 households for waste management.

## **8 Organizational and Financial Aspects**

The Sanitation Sub-section within the municipality is responsible for solid waste management. The section has 2 permanent sweepers, 32 temporary sweepers, 1 supervisor and 1 solid waste management technician. Bishnu Adhikari, the Solid Waste Management Technician, has received 6-month training on Solid Waste Management from Urban Development Through Local Efforts (UDLE), a GTZ funded project.

Reportedly, the municipality spent approximately Rs. 16,40,000 in the year 2059/60 on waste management. This is about 25 percent of the total municipal budget.

## **9 Major Problems and Issues**

The main problems associated with waste management in Tansen are lack of landfill site, lack of space for community composting, difficulty in collecting waste from narrow lanes and lack of awareness among people. The municipality also needs additional resources for effective waste management.

## **10 Conclusion & Recommendations**

Being a small, relatively rural, municipality, waste management is not a critical issue in Tansen. However, with increasing urbanization, the problem is bound to increase in the future. Therefore, Tansen Municipality needs to start developing appropriate structures and system for effective waste management. The municipality has done some good work such as organizing TLOs and mobilizing them in waste management related activities, promoting household composting

and identifying a site for a landfill site and conducting preliminary studies. The municipality should build on these to establish an effective waste management system in Tansen.

**Recommendations:**

1. The Municipality has done its homework for establishing a landfill site by identifying a site and conducting preliminary investigations. Now it needs technical and financial assistance in developing the site. Either SWMRMC or ADB's Eco-Tourism Project should provide this assistance.
2. Though there is proper waste collection system, open piles are seen on the streets. This should be discouraged through awareness campaigns and door-to-door waste collection.
3. The Municipality has done a remarkable job organizing community groups and some of these groups are already involved in waste management related activities. The municipality should work closely with all the TLOs to mobilize public participation in waste management and encourage household-level composting and recycling.
4. Community and school-based programmes should be launched to increase awareness and promote waste minimization and composting/recycling programmes.

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**Annex 1: Photographs**



**Tractor Used for Waste Collection**



**Waste Collection Bin Distributed by the Municipality**



**Waste Disposal Site**



**Waste Disposal Site Along the Highway**



**Incinerator at Mission Hospital**



**Proposed Landfill Site**