

Solid Waste Management in **Ilam 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 Ilam 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 Rupesh Udas.

1 Introduction

Ilam Municipality was established in 2015 B.S and it lies in the hills of eastern development region of the country. The region is famous for its tea plantations. This small municipality is bordered by Sarki and Ujeli Kholsa to the North, Puwa and Mai River to the South, Mai Khola in the East and Puwa Khola in the West. The municipality has 9 wards, out of which ward no. 1 and 2 are in urban areas, while the rest are in rural areas.

Table 1: Background Information

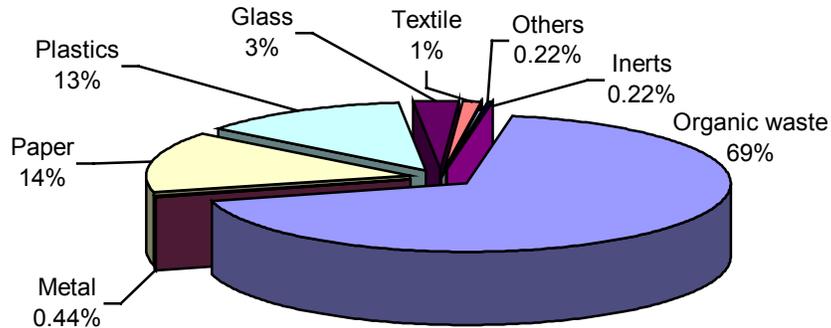
NAME	ILAM MUNICIPALITY
District	Ilam
Year of Establishment	2015 B.S
No. of Wards	9
No. of Urban Wards	2
No. of Rural Wards	7
Total Area	26.63 sq. km (CBS data)
Built-up Area	NA
Major Rivers and Ponds	Mai Khola and Puwa Khola
Total Road length	Total: 82 km Black-topped: 20 km Gravel road: 12 km Earthen road: 50 km
Population (2001)	16237 (CBS data)
No. of Households (2001)	4007 (CBS data)
No. of Shops	564
No. of Restaurants, hotels and lodges	94
Annual Population Growth Rate (1991-2001)	2.1
Estimated Population for 2003	16,926
Population Density	609.73 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 Ilam was 0.23 kg/person/day. This is similar to the average waste generation rate in urban areas of Nepal, which is estimated to be 0.25 kg/person/day. Considering the estimated total population of Ilam in 2003, the total amount of household waste generated in the municipality comes out to be 3.9 tons per day. Assuming that 75 percent of the total municipal waste is generated by households, the total amount of municipal waste generated in Ilam becomes 5.2 tons per day.

The composition of waste shows organic waste as the largest portion of the waste stream. This is similar to the average amount of organic waste in municipal waste in Nepal, which is about 65 percent. However, it is relatively low for a predominantly rural municipality like Ilam. This may be due to the composting practices in rural areas of the municipality. Similarly, the portion of plastics and paper is quite high compared to the national average, which is 8 percent plastics and 8.9 percent paper.

Figure 1 Waste Composition



The loose density of household waste in Ilam was calculated to be 190 kg per m³.

Information on Ilam waste generation and composition is based on waste sample collected from 86 households in ward no. 2, that had waste from 478 people.

3 Waste Collection

The municipality estimates that it collects approximately about 9 m³ of waste per day. If we assume that the density of waste is 190 kg/m³, then the amount of waste collected is approximately 1.7 tons per day. If we assume that the total waste generation is 5.2 tons per day, then the collection rate is about 33 percent. The waste is only collected from the urban areas.

Ilam municipality has 5 supervisors, 2 drivers and 9 permanent sweepers. The sweepers sweep 5 km of street daily except Saturdays.

The municipality has a tractor with a capacity of 4.6 m³ and 1 dump truck with capacity of 2.85 m³ for waste collection. The tractor is normally used for waste collection and transportation. However in special circumstances dump truck is also used. Municipality also provides door-to-door collection service. The collected waste from the households is placed in the collection vehicle and is transported to disposal site.

4 Final Disposal

The collected waste is disposed in a crude dumping site. The site with an area of 78 Ropani has been used since the past 1 year. It is about 7 km far from the city.

Before this site, waste was dumped in Kholsi. The Municipality has no plans to construct a landfill site.

5 Composting and Recycling

Composting is prevalent in the rural areas but its percentage is not known. The Municipality does not allow scavenging in collection and dumping site and there is no private scrap dealer in direct contact with the Municipality.

6 Special Waste Management

Ilam Municipality has 1 hospital, 6 clinics and 2 laboratories. The Municipality does not have a separate system to collect medical waste. Hospital waste, industrial waste, construction and demolition waste are commingled and disposed with municipal waste. Dead animals are buried.

7 Community Mobilization

Sungava Club in Ilam Municipality-2 is involved in public education, training on waste management, research, school-based program, community clean-up campaigns and paper recycling. The club was previously involved in promoting household composting as well. Paper recycling is done by involving 13 schools and the products are used for making visiting cards and greeting cards. The Club has also submitted a concept paper for waste management to the municipality. The club, which was established in the year 2040 BS, has 36 members and 8 staff. It has been involved in waste management related activities since 2055 BS.

The municipality itself does not have regular programmes on community mobilization but it occasionally organizes awareness campaigns.

8 Organizational and Financial Aspects

The municipality has 5 city police, 9 sweepers and 2 drivers for solid waste management. Reportedly, the annual budget of municipality for solid waste management is approximately Rs. 9,00,000. This is about 23 percent of the total annual budget of the municipality. Until the year 2056/57 no separate budget was allocated for solid waste management.

9 Major Problems and Issues

The main problems associated with waste management in Ilam municipality are as follows:

- Lack of a separate unit responsible for waste management
- Lack of a proper landfill site
- Lack of SWM awareness

Other problems include absence of composting and recycling programmes, and improper management of medical waste is not managed properly.

10 Conclusion & Recommendations

Because Ilam is a small and predominantly rural municipality, waste management is not a critical issue yet. However, with increasing population and urbanization the problem is bound to increase in the future. Therefore, Ilam Municipality needs to start developing appropriate structures and system for effective waste management. A local group Sungava Club has initiated a few

programmes on waste management. The municipality should work closely with such local groups to ensure that the lack of a proper waste management system does not ruin the beauty of Ilam.

Recommendations:

1. Solid waste management unit should be established within the municipality and it should be equipped with adequate resources and trained staffs.
2. Municipality must manage the dumping site properly. Instead of dumping crudely a simple landfill site should be developed, where waste can be buried.
3. Municipality should also promote household and community composting and recycling programmes. Local groups can be involved in this process.
4. The waste collection system should be improved so that waste is collected door-to-door to the extent possible and discourage open piles on the streets.
5. The medical wastes should not be mixed with general waste; it should be managed separately.
6. SWM awareness campaigns should be done in community, schools and among municipality staffs.

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Annex 1: Photographs



Overflowing Waste Container



Concrete and Metal Containers on the Street



Tractor Used for Waste Collection



Waste Collection Using a Truck