

Solid Waste Management in **Waling 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 Waling 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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Executive Director
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¹ This report was prepared by Bhushan Tuladhar and Bhumika Vaidya based on field investigations conducted by Khadak Rokaya.

1 Introduction

Waling is small newly established municipality located in Syanja District. It was established in 2053 B.S. It has 11 wards, 6 of which are urban area and 5 are rural. In this municipality, 3.6 percent (449.9 ha) of the land is covered by housing settlements. The majority of the land is agricultural land (42.86) and forest area (39.09). This is followed by grassland (21.77), roads, canal, and rivulets (13.16).

Table 1: Background Information

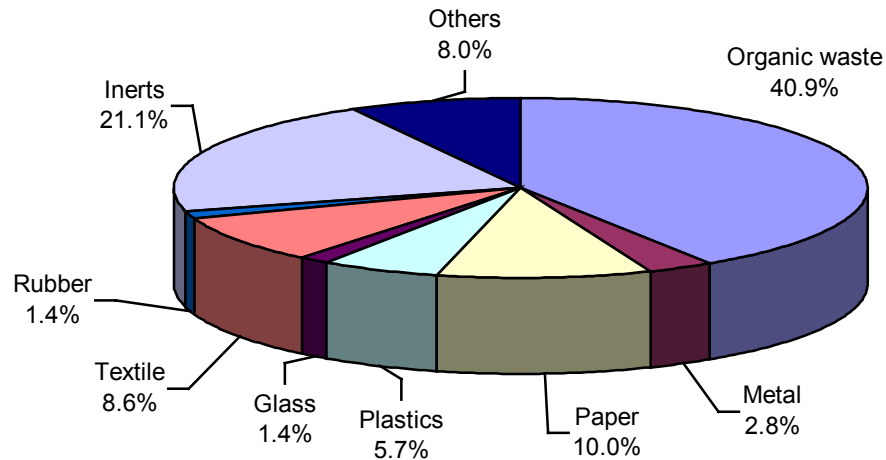
| NAME | WALING MUNICIPALITY |
|---|--|
| District | Syangja |
| Year of Establishment | 2053 B.S |
| No. of Wards | 11 |
| No. of Urban Wards | 6 |
| No. of Rural and semi urban Wards | 5 |
| Total Area | 34.76 sq. km (CBS data) |
| Built-up Area | 449.90 ha |
| Major Rivers and Ponds | Aandhi Khola, Armedi Khola and Mirdi Khola |
| Total Road length | 8 km |
| Population (2001) | 20414 (CBS data) |
| No. of Households (2001) | 4292 (CBS data) |
| No. Shops | 623 |
| No. of Restaurants, hotels and shops | 134 hotels |
| Annual Population Growth Rate (1991-2001) | 2.0 percent |
| Estimated Population for 2003 | 21,239 |
| Population Density | 587.28 per sq. km (CBS) |

2 Waste Generation and Composition

According to the field survey done in 2003, the average per capita household waste generation rate in Waling was 0.22 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 estimated total population of Waling in 2003, which is 21,248, the total amount of household waste generated in the municipality comes out to be 4.7 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 Waling comes out to be 6.2 tons per day. The actual amount of household waste generated may be lower because a large number of people in Waling live in rural areas.

The survey also indicated that about 41 percent of the total waste is organic in nature. Although the percentage of organic matter in the waste is higher than other materials, its percentage is much lower than what is found in most other municipalities. On average, 65 percent of the waste in Nepalese municipalities consists of organic waste. Similarly, the percentage of paper and plastics at 10 and 5.7 percent respectively, is higher than most other municipalities.

Figure 1 Waste Composition



The loose density of household waste in Waling was calculated to be 70.9 kg per m³.

Information on Waling's waste generation and composition is based on waste sample collected from 66 households in ward no 1, 2 and 3 that had waste from 330 people.

3 Waste Collection

The Municipality estimates that it generates about 1.9 tons of waste per day. But it has no information on the amount of waste that is collected.

For waste collection, the municipality has one tractor trailer and a truck, which is out of condition. The Municipality has seven temporary sweepers and two drivers who sweep about 2 km of the city streets daily.

Municipality has door-to-door waste collection service. But it does not have container service. Some of the hotels on the highway have their own containers.

4 Final Disposal

The collected waste is disposed in a crude dumping site on the banks of the Andhi Khola River, about 0.5 km from the city. The site with an area of 0.25 Km² has been used for the past two years. There is no transfer station as waste generation in the municipality is very less and the dumping site is near to city.

The Municipality has plans to construct a landfill site in near future, but it lacks appropriate place, as the local villagers are not ready to provide land for the site.

5 Composting and Recycling

The Municipality estimates that about 30 percent of the households are practicing composting. The municipality however, does not have any programmes to promote composting and recycling.

Municipality also allows scavenging in collection as well as disposal site. However, the municipality does not have any information on the number of scavengers or scrap dealers operating in the city.

6 Special Waste Management

The Municipality does not have any system to manage special waste such as medical waste, industrial waste, dead animals and construction/demolition debris. The Municipality has three hospitals. All the waste generated in the municipality, including the medical waste, is mixed together and dumped near the river.

7 Community Mobilization

The Municipality does not have any programmes to motivate local communities in waste management or raise public awareness on this issue. Similarly, there are no community groups or NGOs involved in waste management.

8 Organizational and Financial Aspects

Waling Municipality does not have a solid waste management section but it does have seven sweepers and two drivers working on waste management. Altogether the municipality has 40 staff, so 22 percent of the total staff are involved in waste management. As the sweepers just sweep the streets and dump the collected waste in the river banks, the waste management system is very crude and none of the staff have received proper training on waste management.

In the fiscal year 2059/60, the municipality had allocated Rs. 110,650 for waste management, out of which Rs. 70,650 was for the salary of sweepers and Rs. 40,000 was for vehicle maintenance and fuel. This was only 1.2 percent of the total budget. Similarly, in fiscal year 2060/61, the municipality allocated Rs. 270,000 for solid waste management, which is 2.8 percent of the total proposed budget. The municipality spends approximately Rs. 58,52,848 in total each year. but the This indicates that the municipality is spending a very small portion of its budge on solid waste management and the money is only allocated for staff salary and operating cost of the vehicle.

9 Major Problems and Issues

As Waling Municipality has no section on waste management and it is only involved in sweeping the streets and dumping the waste in the river, there is no proper waste management system in the city. Major problem is therefore the lack of attention given by the municipality for waste management. Other problems include, lack of proper systems for waste collection, recycling and disposal. Municipality also lacks involvement of community and private organizations in waste management.

10 Conclusion & Recommendations

Waling Municipality has no proper waste management system. There is neither a solid waste management section nor a supervisor. As the population density and generation of waste is quite low compared to other municipalities, waste management is not a major problem at present but as the town grows, the problems will increase. Therefore, the Municipality needs to start developing appropriate structures and system for effective waste management.

Recommendations:

1. A solid waste management unit should be established with trained staff and adequate resources.
2. Haphazard disposal of waste in the river should be stopped and a simple landfill site should be developed, where waste can be buried.
3. Along with construction of landfill site, municipality should also promote composting and recycling programs.
4. 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.
5. For effective solid waste management municipality should involve local community as well as private organization.
6. Medical waste should be managed separately. They should be burned in a controlled manner or buried separately.
7. Public awareness campaigns should be done in communities, schools and among municipality staffs.

For more information please contact:

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Annex 1: Photographs



Dumping Waste from the Tractor on the Banks of the River



Waste Dumping Site



Waste Dumping Site