

Solid Waste Management in **Baglung 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 Baglung¹ 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 based on field investigations conducted by Sital Kafle.

1 Introduction

Baglung is a new municipality, which was formed in 1996. It is located on the banks of the Kali Gandaki river. It is the headquarters of Baglung District in Dhulagiri Zone of the Western Development Region. Although the municipality covers a relatively large area, only 0.3 percent (30.8 ha) of the land is covered by housing settlements. The majority of the land (61.23 percent) is covered by forests. This is followed by agriculture (30.23 percent).

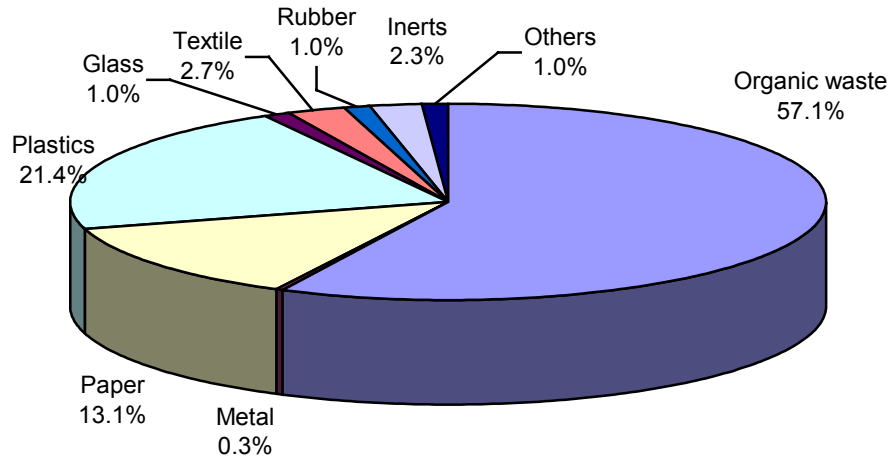
Table 1: Background Information

NAME	BAGLUNG MUNICIPALITY
District	Baglung
Year of Establishment	2053 B.S.
No. of Wards	11
No. of Urban Wards	NA
No. of Rural Wards	NA
Total Area	19.23sq. km (CBS data)
Built-up Area	164 ha
Major Rivers and Ponds	Kali Gandaki
Total Road length	Black-topped: 7.5 km Gravel road: 23.6 km Rural road: 16.6 km Others: 30 km
Population (2001)	20,747
No. of Households (2001)	3812
No. of Shops	94
No. of Restaurants, hotels and lodges	29
Annual Population Growth Rate (1991-2001)	3.2 percent
Estimated Population for 2003	22,208
Population Density	1078.89 per sq. km

2 Waste Generation and Composition

According to the field survey done in 2003, the average per capita waste generation rate in Baglung was 0.19 kg/person/day. This is slightly lower than the average waste generation rate in urban areas of Nepal, which is 0.25 kg/person/day. Considering the total population of Baglung in 2003, which is estimated to be 22,208, the total amount of household waste generated in the municipality comes out to be 4.2 tons per day. If we assume that the household waste makes up about 75 percent of the total municipal waste, then the total municipal waste generated in Baglung becomes 5.6 tons per day. The actual amount of household waste generated is probably much lower because most of Baglung's population live in rural areas where the waste generation rate is probably lower. The municipality estimates that the total waste generated is approximately 2.5 tons, of which 2 tons come from urban areas and 0.5 tons from rural areas.

Figure 1 Waste Composition



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 some other municipalities. The average organic content in waste from Nepalese municipalities is approximately 65 percent. Similarly, the portion of plastics is surprisingly high for a relatively rural municipality like Baglung. This clearly shows that the use of plastics has increased even in rural areas. The average amount of plastics in waste from Nepalese municipalities is 8 percent.

The loose density of household waste in Baglung was calculated to be 176.5 kg per m³.

Information on Baglung's waste generation and composition is based on waste sample collected from 87 households that had waste from 454 people.

3 Waste Collection

The municipality estimates that it collects approximately 1.5 tons of waste per day. Assuming that the total amount of waste generated in Baglung is 2.5 tons per day, the city is collecting about 60 percent of the total waste generated. However, if we assume that the total waste generated is 5.6 tons per day, then the collection rate is only 27 percent. Most of the waste that is not being collected is probably waste from rural areas within the municipality.

Baglung municipality has 5 sweepers and one supervisor, who are responsible for waste management. The sweepers sweep about 1.5 km of road in the main centre on a daily basis and about 1 km of road is swept once a week.

The municipality has a tractor with a capacity of 5.33 m³ for waste collection.

The municipality also uses some containers for waste collection. Sometimes, waste is placed on to the road side for pick up by the municipal sweepers.

4 Final Disposal

The collected waste is disposed in a crude dumping site on the banks of the Kali Gandaki River. The site covers an area of approximately 2.5 ha and is located about 5 km from the city. The site has been used for the past 3 years and the municipality estimates that the site can be used for at least 7 more years. Sometimes, a portion of the waste is taken to an alternate site located in ward 1 (Khundruki) where it is sorted and the non-recyclable portion is buried.

The municipality wants to construct a landfill site in Achhene area of ward 1. The site is approximately 3 ropanis in area and is located about 5.5 km from the city. Land acquisition is currently the main problem in developing the site.

5 Composting and Recycling

Recently a local NGO, Dhaulagiri Integrated Resource Development Centre (DIRDC), in partnership with the municipality, has initiated programmes to promote recycling and composting. These include distribution of colour coded bins to households for collection of organic and inorganic waste, distribution of steel hook (suiro) for collection of plastics, distribution of cloth bags and composting of waste as a pilot project. The demonstration compost plant is located in ward 1 located approximately 6 km from the city centre. Here approximately 500 kg per day waste is being composted in compost pits.

Baglung municipality also has a few private scrap dealers who collect or buy recyclable materials such as plastic and paper.

6 Special Waste Management

Baglung has one district hospital, one maternity home, one homeopathic hospital, 2 sub-health posts and a blood donation centre, which generate medical waste. The municipality does not have a separate system to collect medical waste. The hospitals burn the waste on their own.

Dead animals are buried and construction waste is either reused or dumped with the regular municipal waste. Industrial waste is not a major issue because of the lack of industries.

7 Community Mobilization

A few NGOs in Baglung, particularly Dhaulagiri Community Resource Development Centre (DCRDC) and Dhaulagiri Integrated Resource Development Centre (DIRDC), are actively involved in waste management. Both these organizations have formal agreements with the municipality and they are involved in waste collection, composting and recycling. DCRDC is collecting waste, segregating it and composting the organic fraction. DIRDC is promoting household composting and organizing training programmes. It is also planning to start waste collection activities in the near future. The NGOs are receiving some support from international agencies such as HELVETAS and FINNIDA. The NGOs should make a concerted effort to make the programmes sustainable even after the assistance from the international agencies stop.

Recently staff from Kathmandu Metropolitan City's Community Mobilization Unit provided training on waste composting and recycling to local groups in Baglung.

8 Organizational and Financial Aspects

The Health Sanitation and Environment Section is responsible for waste management in Baglung municipality. The section has five sweepers and a supervision. Overall, the municipality has 56 employees, which means that SWM staff make up approximately 11 percent of the total staff.

In fiscal year 2059/60, the municipality had allocated Rs. 430,000 for waste management, out of which Rs. 379,456.39 was spent. This is approximately 4 percent of the total municipal expenditure.

9 Major Problems and Issues

Although some good programmes have been initiated in Baglung, it still requires financial and technical support to improve its waste management system. Support is required for preparing an integrated waste management plan, developing compost plant and landfill site, procuring necessary equipment and training manpower.

10 Conclusion & Recommendations

Being a small, relatively rural, municipality, waste management is not a major problem and several local NGOs have initiated innovative programmes to collect and recycle/compost waste. These initiatives need to be supported and further promoted. It seems like Baglung Municipality is on the right track and with a bit more support it could be developed into a model to showcase effective waste management in a small municipality in the hills of Nepal.

Recommendations:

1. SWMRMC should provide technical assistance for preparing an integrated waste management plan for the municipality.
2. The pilot scale compost plant is a good initiation; it should be improved and continued.
3. Haphazard disposal of waste along the banks of Kali Gandaki should be stopped.
4. A simple landfill site should be developed, where waste can be buried.
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. Community and school-based programmes should be launched to increase awareness and community participation in waste management.

For more information please contact:

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Annex 1: Photographs



Colour-Coded Collection Bins Distributed to Households



Cloth Bag & "Suiro" for Plastic Waste Collection



Old Drum Used as a Waste Container



Broom & Basket Used for Waste Collection



Tractor Used for Waste Collection



Waste Dumping Along the Highway on the Banks of Kali Gandaki River