

Solid Waste Management in **Birendranagar 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 Birendranagar 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 Gopal Raj Joshi based on field investigations conducted by Birendra Bahadur Rawal.

1 Introduction

Birendranagar, a mid-sized municipality, is the head quarters of Surkhet district as well as the Mid-western Development Region. The municipality, which lies on the bank of Jhurpa and Bheri river, was established in 2033 B.S. The municipality is located in a small, bowl shaped and beautiful valley surrounded by Mahabharat and Chure hills. It is at an elevation of 655-m from the sea level and the climate is moderate. The municipality is bordered by Lati koili and Uttarganga VDC in the south, Gadhi VDC in the north, Jarbuta VDC in the east and Uttarganga and Lekhgaun VDC in the west. The city is known as the gateway to Karnali zone and is a major administrative and commercial center of this region.

Table 1: Background Information

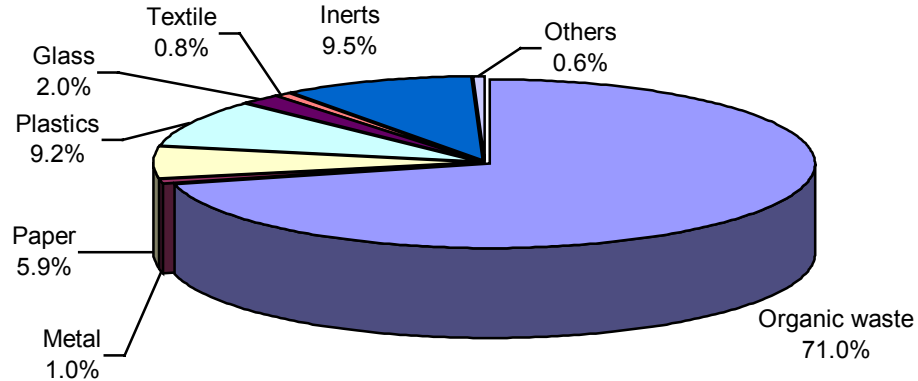
NAME	BIRENDRANAGAR MUNICIPALITY
District	Surkhet
Year of Establishment	2033 B.S.
No. of Wards	12
No. of Urban Wards	6
No. of Rural and semi urban Wards	6
Total Area	34.95 sq. km
Built-up Area	13 sq km
Major Rivers and Ponds	Khorkhe, Neware, Itram, Chisapani stream, Bulbule Taal
Total Road length	Black-topped: 5 km Graveled: 40km Earthen: 31.10km
Population (2001)	31381
No. of Households (2001)	7139
No. Shops	900
No. of Restaurants, hotels and shops	110
Annual Population Growth Rate (1991-2001)	3.2 percent
Estimated Population for 2003	33,422
Population Density	897.88 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 Birendranagar was 0.17 kg/person/day. This is slightly less than the average waste generation rate in urban areas of Nepal, which is 0.25 kg/person/day. Considering the total population of Birendranagar in 2003, which is estimated to be 33,401, the total amount of household waste generated in the municipality comes out to be 5.68 tons per day. If we were to assume that household waste makes up about 75 percent of the total municipal waste, then the total amount of waste generated in Birendranagar becomes 7.57 tons per day.

The waste composition in Birendranagar is similar to other Nepalese municipalities with organic waste consisting of more than 70 percent of the waste stream.

Figure 1 Waste Composition



Information on Birendranagar’s waste generation and composition is based on waste collected from 80 households ward no. 6 (TaraTal, Shantinagar, Mangal Gadhi, Suryodaya Tole, Birrendra Chowk, Buddha Tole, Hatiya Line) that had waste from 422 people.

3 Waste Collection

According to the Birendranagar Municipality, the city is collecting approximately 4 tons of waste per day. Assuming that the total amount of waste generated in Birendranagar is 7.57 tons per day, the city is collecting about 5.3 percent of the total waste generated. The waste that is not being collected is probably waste from rural areas within the municipality.

The municipality has 12 sweepers, 4 of whom are permanent employees, who sweep approximately 1 km of city streets on a daily basis.

Sweeping is done using ordinary brooms with long handles and the waste is collected in baskets using shovels. Once the baskets are filled, the waste is loaded on to a tractor trailer or tipper. The municipality has one tractor with trailer (3.5 m³), one truck and one loader.

The municipality does not have bulk containers or door-to-door collection system. As a result, all the waste is placed on to the roadside for pick up by the municipal sweepers. The roadside pick up service is performed daily. The municipality has not distributed waste bins within the city.

4 Final Disposal

As the municipality does not have any assigned dumping site, waste is dumped in a crude and haphazard manner in small open pits wherever wasteland is available. Sometimes waste is also dumped in the banks of the Khorke stream. The municipality does not have any plans to construct a landfill site.

5 Composting and Recycling

The city has not initiated any activities regarding source separation of waste, community or household composting, and recycling.

Individual scavengers and scrap dealers do the recycling of waste. The city has approximately 20 scavengers and scrap dealers involved in recycling.

6 Special Waste Management

Birendranagar Municipality does not have any system for collecting and managing medical waste separately. Hospital and clinic are dumping their waste in pits dug inside their premises or dumping it with municipal waste. The municipality has 34 health-care facilities including one hospital, 10 clinics and 23 laboratories and medical shops.

The city is collecting and dumping other types of special waste such as construction/demolition debris, industrial waste and dead animals along with general waste. The dead animals are generally buried along the riverbank and in the jungle. The construction and demolition waste is dumped in the low land available within the city.

7 Community Mobilization

Birendranagar Municipality has not involved community groups in waste management. There are no NGOs or community groups active in waste management related activities.

8 Organizational and Financial Aspects

The main responsibility for solid waste management lies with the Sanitation sub section under Community Development Section of Birendranagar Municipality. The sub section has 12 sweepers.

The municipality spends approximately Rs 7,40,289 in waste management each year. This includes staff salary, fuel and vehicle maintenance. This is approximately 5 percent of the total budget of the municipality, which is about Rs. 12.5 million.

9 Major Problems and Issues

The main problem associated with waste management in Birendranagar is the lack of a sanitary landfill and compost plant. The municipality needs necessary resources to plan and develop these facilities. The municipality also requires additional vehicles, collection equipment trained manpower as the present resources is insufficient. Another problem in the municipality is the lack of community based activities in waste management.

10 Conclusion & Recommendations

Birendranagar Municipality has to put more effort on solid waste management by effectively mobilizing local communities and initiating innovative programmes such as door-to-door waste collection, recycling, medical waste management and composting at household level. The resources in the municipality seem to be insufficient for improving the waste management system. So the municipality needs additional resources to improve the waste collection system by introducing new practices and awareness campaigns. Birendranagar also needs support to develop waste treatment and disposal facilities.

Recommendations:

1. The municipality should stop haphazard disposal of waste. It should at least cover the disposed waste and it should also find safer place for a landfill site. SWMRMC should provide necessary resources (technical and financial) in developing the site for composting and landfilling.
2. The waste collection system should be improved .For this waste should be collected from door-to-door to the extent possible. As the city lacks this system the household waste is dumped on the road. This is making the city dirty as well as waste management practices troublesome.
3. Once the municipality has a composting facility, it should introduce source-separated collection. This should be implemented in a phased manner. In order to make this effective, it should be supplemented by a public awareness campaign. The households should be provided with two buckets to collect organic and inorganic waste separately.
4. The baskets that are currently being used seem to be very small. Larger carts or rickshaws with detachable containers would probably be more effective. The municipality should keep waste bins /containers on the road side so that waste is not dumped on the streets.
5. The municipality should increase equipment, vehicles, and trained manpower. Regular training for the staffs should be conducted.
6. The municipality should prepare strategy and action plan to involve local communities and NGOs in solid waste management, particularly household composting. The municipality should also initiate school-based programmes.

For more information please contact:

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Annex 1: Photographs



Waste Collected by Tractor



Equipment Used for Waste Collection



Waste Bin Outside Slaughter House in Hatiya Tole



Waste Disposal Near a Small Pond in a Squatter Area



Waste Disposal Site on the Banks of Khorku Stream



Haphazard Disposal of Waste Near Ujwal Kala Kendra