

Solid Waste Management in **Putali Bazar 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 Putali Bazaar 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 Deepak KC based on field investigations conducted by Deepak KC.

1 Introduction

Putalibazaar is a mid-sized municipality located in the mid hills of the Western Development Region. Syangja Bazar, the headquarters of Syangja District, is about 235 km west of the capital city, Kathmandu and covers the major urban areas of the municipality. Majority of the areas within the municipality are rural in nature. Siddhartha High way links the major cities of the region with the municipality. The district is famous for rural tourism destination, Darau Sirubari which is at the altitude above 2000 meters.

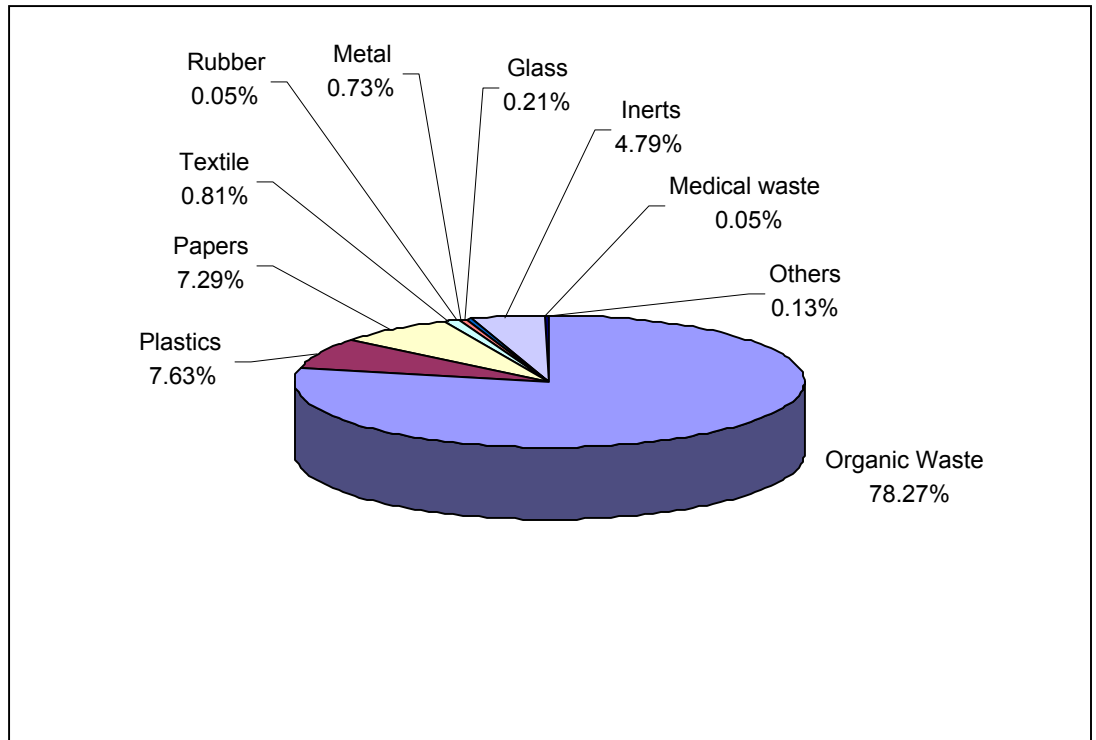
Table 1: Background Information

NAME	PUTALIBAZAR
District	Syangja
Year of Establishment	2053 B.S.
No. of Wards	13
No. of Urban Wards	4
No. of Rural Wards	9
Total Area	70.14 sq. km(CBS 2001)
Built-up Area	NA
Major Rivers and Ponds	Aandhikhola, Baadkhola, Aroudikhola
Total Road length	Total: 145.1 km Black-topped: 28.0 km Graveled: 9.3 km Earthen: 32.8 km Mule track: 75.0 km
Population (CBS 2001)	29,667
No. of Households (CBS 2001)	6675
No. Shops (Municipality Source)	518
No. of Restaurants, hotels and shops (Municipality Source)	25
Annual Population Growth Rate (1991-2001)	1.4 percent
Estimated Population for 2003	30,503
Population Density (CBS 2001)	422.97

2 Waste Generation and Composition

According to the field survey done in 2003, the average per capita household waste generation rate in Putalibazaar was 0.08kg/person/day. This rate is very low compared to the average municipal waste generation rate in Nepal, which is 0.25 kg/person/day. This low generation rate may be because a large portion of the organic wastes like vegetable residual, food residuals are feed to pigs. Considering the estimated total population of Putalibazaar in 2003, which is 30,491, the total amount of household waste generated in the municipality comes out to be 2.4 tons per day. If we assume that household waste accounts for about 75 percent of the total municipal waste, then the total amount of waste generated in the municipality becomes 3.3 tons per day.

Figure 1 Waste Composition



Information on Putalibazaar's waste generation and composition is based on waste collected from 81 households that had waste from 396 people.

3 Waste Collection

According to the Municipality, it generates approximately 10 tons of waste per day and collects approximately 4 tons per day. Both of these numbers seem to be an overestimate. The municipality has one tractor, which has a volume of 2.5 cubic meter and generally makes 2 trips per day. Practically, the tractor carries the waste more than its actual capacity. It is observed that the waste carried by a tractor in a trip comes around 4.5 cubic meters. Therefore, they will carry a total of 9 cubic meter of waste per day. Assuming that the density of waste on the tractor is between 300 to 400 kg/m³, the total amount of waste collected becomes approximately 3 tons per day.

Putalibazaar Municipality has 4 sweepers; two of them are temporary while rest sweepers work on daily wage basis. Street sweeping is normally not done. However, in some very special national ceremonial day, few meters of the main street is swept. The municipality has one tractor that has to collect all municipal waste.

In major parts of the Bazaar area such as Mahendra Chok, Bank Road, Police Checkpost, Abhiyan Path and Pragatinagar, the tractor collects the waste everyday from the waste collecting bins while in some areas of the bazaar such as Devasthan, Narayansthan, Ghumti, the waste is collected on alternative days.

There are some areas in the bazaar such as Baadkhola and Rannghola, where the waste is collected in few days interval. So the frequency waste collection varies according to the location. For waste collection, municipality has distributed 55 waste collecting bins (each having the capacity of 0.11 m³) that are kept in the roadside and the tractor collects waste from those bins. The number and capacity of the bins seem insufficient. So people of the area where there is no waste collecting bin throw the waste in the near by bushes and river.

4 Final Disposal

The collected waste is disposed in two sites depending upon the seasons. In dry season, from October to mid May, Malebagar, an Andhikhola river bank with an area of about one ropani, has been used as a crude dumping site since last three years. Similarly, the place where the rivers Aandhikhola, Baadkhola and Aroudhikhola meet has been a crude dumping site from mid May to October. Collected waste is dumped in the stream of the Aandhikhola River and the river stream helps to carry the waste on its way. Basically, when the discharge of the river is less, the waste is dumped in the Malebagar and when the discharge is high, the waste is dumped into the river. There is no motorable road to reach the Malebagar dump site. Hence, tractor uses the river as the road in dry season.

Three years ago, municipality used to dump its waste near Tindhare (2.5 kms from Mahendra Chok).

The municipality wants to construct a landfill site but it doesn't have any concrete plan and program in immediate future. In 2055/056, Rs 500,000 was allocated for dumping site but nothing has been done till date. There were two options (Gundikhola, 3 kms from city centre and Thadekhola, 2 kms from city centre) to construct the landfill site but that couldn't be materialized due to public pressure, political interference and lack of strong determination on the part of the municipality.

5 Composting and Recycling

Almost all households in the rural area practice composting and they make compost in Malkhato (a pit hole where animal dung and other biodegradable waste is collected and made compost) and Juthelno (outdoor dishwashing place) but urban households rarely practice composting. During the survey, it is observed that the urban households feed the kitchen waste and agricultural residue to domestic animals such as pig, buffalo and goats.

In rural areas of ward no. 1, few households have started composting practice with the help of HELVETAS supported Agricultural Project, implemented by Suryodaya Youth Club (SYC).

6 Special Waste Management

Syangja district hospital manages its waste by its own and doesn't mix its hospital waste with municipal waste. The hospital doesn't have an incinerator so they collect the waste such as syringe, surgery blade, papers, IV pipes and other combustible waste in a pit in one of the corners of the hospital compound and burn it. When the pit is full, the burnt waste is buried and covered with thick layer of the soil. Some degradable waste such as placenta and other body parts are dumped into the pit and cover with soil. Saline bottles both plastic and glass are collected by hospital peons and sold. However, the health clinics and pathology

laboratories of Bazaar area mix all kind of wastes and throw into the waste collecting bin which is later collected by municipal tractor. Thus collected waste becomes hazardous and can cause serious health impacts.

The city does not have any system to collect other types of special waste such as construction/demolition debris, industrial waste and dead animals.

7 Community Mobilization

So far the municipality is not working with NGOs in the field of waste management. However, a year ago, Suryodaya Youth Club (SYC) had approached to municipality with a proposal to manage all municipal waste but it was not implemented because of the many conditions put forth by both the parties.

SYC is promoting household composting in smaller scale in few areas of ward no 1 and planning to extend the program in more households.

8 Organizational and Financial Aspects

The main responsibility for solid waste management lies with the sanitation and Hygiene Section, led by Mr. Narayan Sharma, an assistant level staff. But, Mr. Sharma has other responsibilities in Bazaar Management as well and doesn't have any training on SWM. Besides Mr. Sharma, the section has a tractor driver, two temporary sweeper and two other sweepers on daily wage basis.

The municipality spends approximately Rs. 3, 53,166 in waste management each year. This includes staff salary, tractor fuel and repair. The budget for SWM is about 3.16 percent of the total municipal budget.

9 Major Problems and Issues

The main problem associated with waste management in Putalibazaar is the lack of a sanitary landfill site. The municipality also requires additional vehicles and collection equipment and trained staff. A separate SMM section in the municipality would be beneficial and the municipality also needs to do more to mobilize public participation in waste management.

10 Conclusion & Recommendations

Although Putalibazaar is a relatively small municipality with mostly rural population, it needs to do more to manage the waste generated in the Bazaar areas. It has done a good job of placing containers at strategic locations for waste collection, but the collected waste is simply dumped in the river. The municipality needs to promote composting and recycling and also develop a simple landfill.

Recommendations:

1. SWMRMC should provide technical assistance for preparing an integrated waste management plan for the municipality.
2. The waste collection system should be improved with more number of waste collecting bins.

3. Awareness raising activities should be run in different urban wards of the Municipality involving local youth clubs as well as schools.
4. Municipality should take initiative to forge partnerships with NGOs for small scale community composting and recycling.
5. The tractor which is currently being used seems to be very small. Larger tractor or tripper is required for effective collection of waste.

For more information please contact:

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Annex 1: Photographs



Overflowing Waste Collection Bin on the street



Transfer of Waste from the Bin to the Tractor



Waste Collection in Tractor



Transportation of Waste to Dumping Site on the River



Dumping of Waste in the Andhi Khola River



Scavenger Birds Flying Over the Dumping Site (Aandhikhola River)



An Old Dumping Site



Proposed Location for New Landfill Site