

A Study of Solid Waste Management in Dya-Kuu Community, Ward no. 10 in Kirtipur, Nepal

Pratik Bajracharya¹, Seema Karki¹, Prakash V. Bhave¹, Rupesh Maharjan²

¹ International Centre for Integrated Mountain Development (ICIMOD)

² Agriculture and Forestry University (AFU), Hetauda, Nepal

Abstract

As rapid urbanization leads to an increase in municipal waste, inefficient waste management services have resulted in the dumping of waste in undeveloped plots (public and private) along with open burning. Even though public-private partnership (PPP) arrangement for waste management exists in Kirtipur municipality, the oligopoly of private waste collectors means that some communities are deprived of waste collection service. Dya-kuu community, despite being a peri-urban area with 34 households, resort to dumping and burning on privately owned, undeveloped plots due to poor waste collection service. This study examines key issues for current waste management in Dya-Kuu community and suggests viable alternatives to the problems identified. This study used focus group discussion and household survey method to understand the current waste management practices and to evaluate what options might be available to the community in the future, such as, increase of collection frequency from once to twice a week. 68 % of the households practised burning of waste, whereas 38% opted for dumping in two informal plots. Only four households currently subscribed to waste collectors from an adjoining neighborhood. Furthermore, our survey revealed that many households ended their subscription for waste collection because of a sudden hike in the price. The waste collectors cited the steep and narrow roads and untimely payment for the increased price and for their unwillingness to provide service to Dya-kuu.

Keywords: municipal solid waste, oligopoly, informal plots, dump, burn

Objective

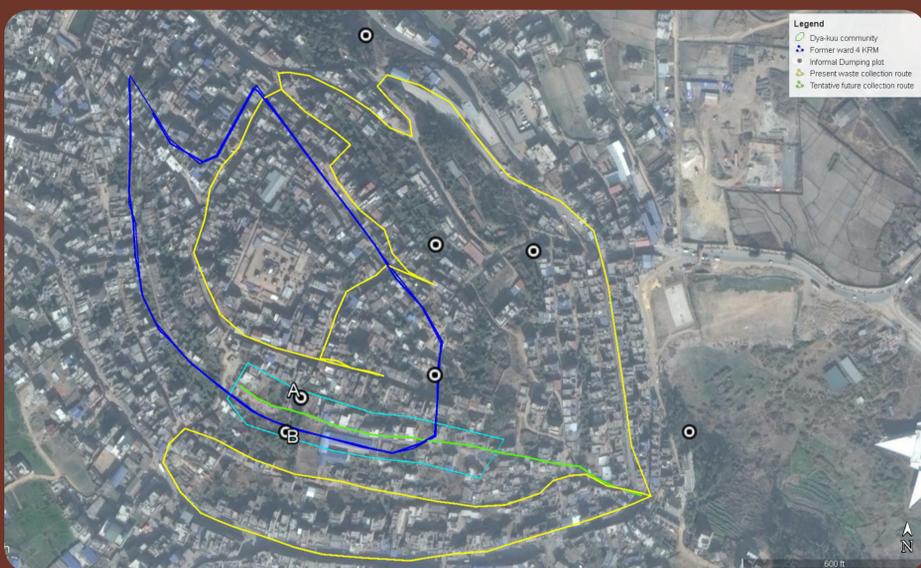
The objective of this study was to find out the current waste management system in Dya-kuu community, Kirtipur.

Rationale

Dya-kuu community, which is composed of 34 households, was selected as the site of study and survey for the following reasons:

- Currently, the community is not receiving any waste collection service and suffers under the oligopolistic structures of local waste management.
- A lot of littering can be seen along the road of the community.
- Burning of waste in the dumping sites near the houses can be seen once or twice a week.
- The Tole Sudhar Samiti (TSS) had agreed for source segregation and invited a new waste collector (with full cooperation from the community members), but the plan had not been implemented when this study was conducted.

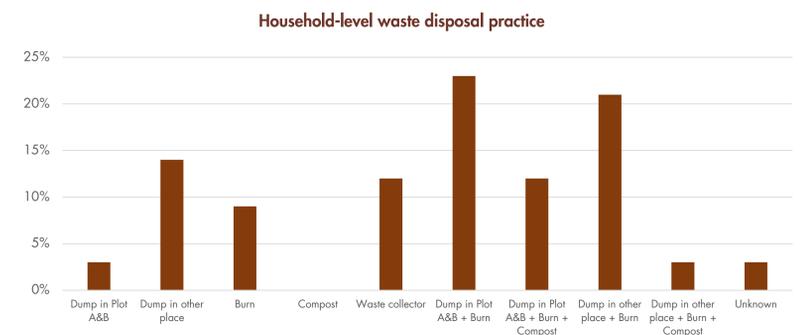
Study Area



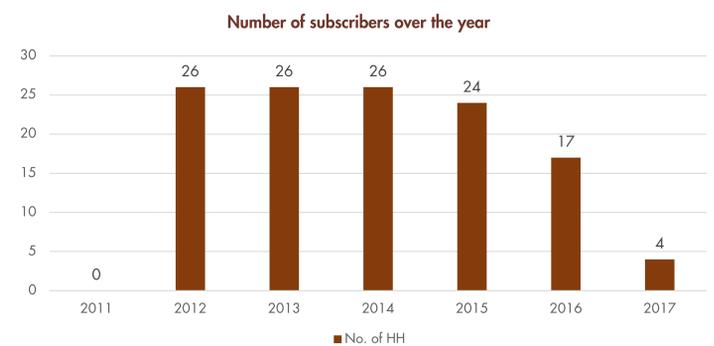
Methodology

- A set of questionnaire was developed for the 34 households of Dya-kuu community.
- Survey topics included:
 - Situation of current household waste management
 - Reasons for leaving waste collection service
 - People's attitudes towards the increase or decrease in collection fee and collection frequency
 - Number of kitchens, as the area has large numbers of tenants
 - Socio-economic status
- The survey data were entered in Microsoft Excel and analyzed with simple calculations and graphs.
- A map was prepared using GIS and Google Earth-Pro.
- Formal and informal meetings were organized with community members, TSS and experts working in waste management field.

Results



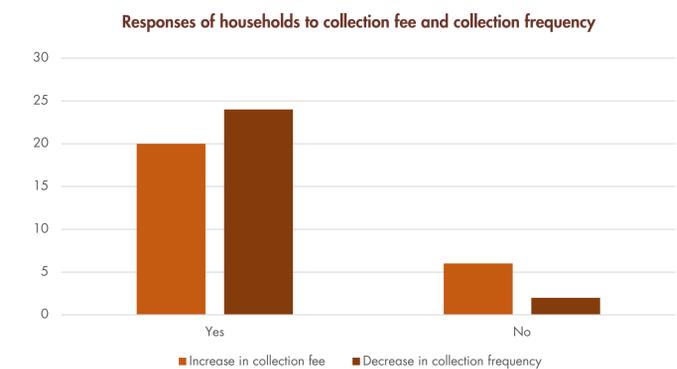
- 33 households opt for different ways of disposing their waste: dumping, burning, composting, and waste collection.
- Majority of the households practises dumping either in the community or at another place. Composting is practised by very few households.



- There was a gradual decrease in household subscription to waste collector over the years.
- Currently only four households are subscribed to waste collector, but from an adjoining community.



- 38% of the households claimed a sudden hike in subscription fees.
- Waste collection was not regular in the study site.
- Due to a sudden hike in the subscription fee and after a period of irregular service, the waste collection was completely stopped.



- Households that were earlier subscribed to waste collection reported an increase in collection fee but a decrease in collection frequency.

Conclusion

- Among 34 households, only 26 subscribed only once.
- Waste is being disposed in an undesirable manner through practices of open dumping, burning, and littering along the pathways.
- Around 38% of the households dumped waste in two undeveloped plots (private land) and 68% of the households were burning their waste near their residence.
- Only four households were subscribed to local waste collector from an adjoining neighborhood.
- Steep and narrow roads combined with untimely payment and increased waste production led to the decrease in collection frequency and increase in price of subscription.

Discussion

- Solid waste burning can be reduced through social awareness programs. The youth and TSS can be brought together to work in the community.
- TSS can take a lead and the community members can cooperate to bring in a new waste collector for timely collection.
- Existing solid waste management act specifies that unsegregated waste will not be collected. Therefore, the households need to be introduced to proper segregation skills.
- Waste collector should expand their route.