Economic Evaluation of Household Solid Waste Management in Jakarta, Indonesia

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Abstract

The management of household waste in Indonesia faces great challenges with pressures that include time bounded use of landfill, rising quantity of waste disposed that leads to the increasing space demand in waste disposal site, and unsanitary landfilling as the current main method for waste disposal that poses great threats to the environment and public health. The largest stream of municipal solid waste in Indonesia comes from household, thus household waste becomes the focus of this research. As policy makers tend to have concerns on aspect as cost when considering waste management options, this paper provides an elaboration regarding the economic analysis of household solid waste management system.

The analysis is conducted against the four predetermined scenarios of MSW management. The scenarios take into account the at-source waste sorting modalities and waste treatment methods as follows. Scenario 1: Unsorted waste to landfill (baseline scenario); Scenario 2: Sorted waste for home/communal composting, Scenario 3: Sorted waste for anaerobic digestion; and Scenario 4: Sorted waste to composting center. At-source waste reduction is most desirable to avoid or reduce waste generation, while composting and recycling are useful for recovering materials and preventing entrance to the waste stream. This study would therefore estimate the potential revenues from the sorted recyclable materials. It also analyze upon the householders' willingness to pay for other people to sort their waste with the assumption that the government authorities demand at-source waste sorting.

The methods used for this research is cost and benefit analysis (CBA), willingness to pay, economic analysis with estimation of Net Present Values (NPV), and survey analyses with to determine motives of sorting. The data used for this research is primary data collected from field surveys with 100 households in Jakarta.

Expected results from this study are: 1) financial cost and benefit of the different waste management scenarios; 2) comparison of economic analysis among the scenarios, which accounts the externality of greenhouse gas (GHG) savings for the waste treatment scenario, of which data on GHG emission is based on primary data collected from the survey; 3) householders' willingness to pay in order to compensate other people to sort their waste if at-source sorting is mandatory; and 4) potential revenues from recycling of sorted recyclable waste.

References

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