

Municipal Solid Waste Management: In the Case of Itaya Town, Arsi Zone, Oromia Regional State, Ethiopia

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Abstract

Solid waste is anything that is neither liquid nor gas and discarded as useless or unwanted material. Most cities or towns in the world experience challenges in managing waste due to ineffective waste management systems that drive to stress on infrastructures and resources with threats to the environment, health and economy. Thus, this study aimed to assess municipal solid waste generation, composition, collection, transportation, treatment and disposal in Itaya Town, Arsi Zone, Oromia Regional State, Ethiopia. Multistage sampling procedures including both probability and non-probability sampling techniques were employed to select respondents, whereas, a total of 220 respondents were involved in the household survey. The collected data was analyzed with the statistical Package for Social Science (IBM SPSS version 26.0) and STATA/MP version 17.0 statistical software. It was described using descriptive statistics and binary choice probity model analysis. The rate of solid waste generation in the study area was 0.30 kg/day/person, which has not been accompanied by current adequate sanitation facilities and management programs. The results of the study indicated that out of the aggregated waste collected from all sampling units, organic waste accounted for over 80%. In addition there were notable problems in municipal solid waste collection, transportation, recycling, reusing and disposal processes. The findings of the study revealed that 75% of the respondents reported that recycling is not being practiced in the town. Household awareness, willingness to pay for solid waste management, and availability of waste collectors were significant and positively correlated with effective solid waste management (t-test, $p < 0.05$). The study concluded that the most commonly employed waste disposal methods were illegal dumping and open burning, which are associated with environmental and health risks. Finally, the study indicated that all actors have to cooperate and participate in awareness creation, sanitation and integrated waste management by improving their scientific understanding through exchanges of scientific and technological knowledge.

Keywords: Generation rate, Municipal, sanitation, organic waste, waste recycle

Acknowledgments: All praises are due to the Almighty Allah, who is the Supreme Authority of this Universe. My warm gratitude also goes to all respondents involved in the data collection for their willingness to contribute to the study by being the source of necessary data and information. I show my appreciation to colleagues, friends, employees of the Itaya town municipal office and all organizations in and around the town that have contributed with valuable data. I take this opportunity to thank my friends for their help and encouragement especially Kassim Deddefo and Ahmed Tassa. Finally, I wish to express my deepest gratitude to my family for their love and support during the study. They are the greatest treasure in my life and I want to dedicate this effort to them. I wish to express my appreciation and sincere thanks to my wife Aisha Barsho for her patience and for taking responsibility for my family issues while I am on my study.

ACCEPTED