

Evaluation of Solid Waste Disposal and Waste Management Awareness in Kalutara Urban Council Area: A Case Study

SR Amarasinghe

Department of Soil Science, Faculty of Agriculture, University of Ruhuna, Kamburupitiya, Sri Lanka

Abstract

The solid waste generation in Sri Lanka has remarkably increased over the last decades without a proper management technology of the solid waste. The generation rate, collection and disposal of solid waste are functions of desired factors that could be considered in order to find a solution to the waste management problems. At present, households in Kalutara Urban Council area experience problems due to the alarming rate of solid waste increment. Therefore, the objective of this study was to evaluate the solid waste disposal and awareness regarding the solid waste management in households of Kalutara Urban Council area. The solid waste disposal, waste management awareness, and attitudes against the waste collection services were considered in several wards in Kalutara Urban Council area including Kalutara South, Kalutara North, and Katukurunda. Seventy five respondents were interviewed using a structured questionnaire. The results indicated that most households lack the knowledge of proper technology to manage waste. The Government should strengthen and enforce the solid waste collection services and appropriate laws to prevent serious environmental disasters.

Keywords: Awareness, Households, Management, Solid waste

Introduction

Improper management of solid waste causes many environmental and health problems. Solid waste could be defined as non-liquid and non-gaseous products of human activities and is regarded as being useless (Babayemi & Dauda, 2009). The rapid increment of population in Kalutara Urban Council area appears to have caused many solid waste disposal problems. According to available statistics, the Kalutara District population has increased at the average annual growth rate of 1.26 percent from 1981-2001 and 1.23 percent from 2001-2012 (Amarasinghe & Fernando, 2014). Kalutara town is situated 40 km south of Colombo which is closer to Southern highway and coastal railway line. Kalutara Urban Council Area had the highest population of 37081 among other 3 Urban Council areas in Kalutara district (Census & Statistics, 2001). Kalutara Urban Council area has 11 wards with 18408 males and 18673 females (Census & Statistics, 2001). Since May 2013, the segregated waste has been composted in Nagoda, Pohorawatta 'Mihisaru' compost preparing centre and

other non-biodegradable waste were trashed into an open dumpsite which belongs to Kalutara Urban council (Amarasinghe & Fernando, 2014). Approximately 20 tons of waste is generated within Kalutara Urban Council area and collected by 12 collection centres every other day. However, due to unsatisfactory collection, the households opt to practice other disposal options such as open dumping, burning and burying. Therefore, the present study attempted to evaluate the solid waste disposal and awareness regarding the solid waste management in households of Kalutara Urban Council area.

Materials and Methods

Seventy five households were selected covering 11 wards of Kalutara Urban Council area, namely, Katukurunda, Cinnamon Gardens, Heenatiyangala, Baskethall, Main Street, Park, Sri Sumangala, Good Shed, Asokaramaya, North Railway Station, and Hospital ward, and interviewed using a questionnaire. Extensive literature and interviews were employed.

This study area was selected because it has the highest population and is the centre of administration. This study attempted to evaluate the common solid waste disposal options, the level of awareness on solid waste management, waste segregation and the effect of gender, age, and educational status on solid waste management.

Results and discussion

Solid waste disposal and waste management awareness

The respondents consisted of male and female with various age, occupational and educational status. Forty eight percent of respondents were males while 52 percent were females. The gender influence on awareness of waste management, use of waste disposal options and separation of waste at source are shown in Table 1.

According to the Table, awareness of waste management was higher among the females. However, the percentages of those who separate waste at source always and occasionally were higher among males and those who involved in open burning were higher among females. According to the results, the awareness of waste management was highest among the age group of 36-45, followed by those between 26 and 35 years and those between 46 and 55 years of age, while it was least among

the age group of over 60 years. When considering the educational level, the awareness of waste management was highest (60%) among those who had secondary education followed by those who had tertiary education (30.7%). This indicates that awareness of waste management is not influenced by educational level.

Solid waste collection

Although 81.3% households use waste collection service, 76% of them were not satisfied with the waste collection service.

Solid waste disposal

Several households practice heedless burning as a solution for their non-biodegradable waste. As the collectors refuse to collect waste such as polythene, cardboard and paper, they simply burn waste on fire in a corner of their backyard or in an open space. Not only the non-biodegradables, some households burn plant litter as well without taking much effort for composting. This causes serious and dangerous environmental pollutions. The gaseous toxic substances from plastics and polythene burning may cause serious respiratory and other dangerous diseases.

Table 1: Gender, awareness of solid waste management, separation of waste at source and the use of waste disposal options

	Male	Female	Total
Awareness of waste management (%)	46.7	49.3	96.0
Separation of the waste at source (%)			
Always	16.0	13.3	29.3
Occasionally	24.0	20.0	44.0
seldom	6.7	16.0	22.7
never	1.3	2.7	4.0
Waste disposal options (%)			
Waste collection service	40.0	41.3	81.3
Open burning	38.7	49.3	88.0

References

- Amarasinghe SR, Fernando FFHG 2014. Pro-environmental Behavior Regarding Solid Waste Management in Householders of Kalutara Urban Council Area- A Case Study, *Journal of Tropical Forestry and Environment* Vol.4(1), pp 80-84
- Babayemi JO, Dauda KT 2009. Evaluation of Solid waste generation, categories and disposal options in developing countries: A case study of Nigeria: *J Appl. Sci. Environ. Manage.* vol.13(3) pp 83-88
- Census 2012. Results on Population, Dept. of Census & Statistics, [http://www.statistics.gov.lk/Pop/Housat/CPH2011/Accessed 12 June](http://www.statistics.gov.lk/Pop/Housat/CPH2011/Accessed%2012%20June) 2013.

Conclusions

Although the level of awareness of waste management and the use of waste collection service was higher among households of Kalutara Urban Council area, the percentages of those who use other waste disposal options such as open burning were higher. Gender, age, and educational status were some factors influencing the solid waste management in this area. The knowledge and level of awareness of solid waste management and other sectors involved in waste management to improve the solid waste collection service and to enforce the environmental education and awareness on waste management.