TOWARDS IMPROVED MANAGEMENT OF HOUSEHOLD SOLID WASTE IN ELDORET MUNICIPALITY: A CONTINGENT VALUATION STUDY

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ABSTRACT

Solid waste management is a public good that may not be optimally provided under perfectly competitive market conditions due to indivisibility and non-excludability in consumption. For public goods, a contingent market often reveals willingness to purchase improved provision. This research was on the management of household solid waste (HSW) in Eldoret Municipal Council (EMC) of Kenya. The objectives of the study were fourfold: to assess the extent to which various approaches to HSW management have been adopted amongst Eldoret residents analyze factors influencing household adoption or non adoption of such methods, examine socio-economic constraints to improved HSW management and to evaluate household willingness to pay (WTP) for improved solid waste management.

The study was based on a field survey of Eldoret Municipality residential estates. The sampling techniques used for obtaining information were: Questionnaire, interview schedules, and secondary data. In analyzing the demand for improved household solid waste contingent valuation method (CVM) was used. Statistical Package for Social Sciences (SPSS) version 8.0 computer software package was applied in analyzing socio-economic and demographic data.

Data was mainly obtained from a contingent valuation (CV) survey questionnaire of a representative sample of 199 Municipality households. The detailed survey, carried out

between October 1998 and February 1999, found that Eldoret residents use the following HSW management techniques: collection cans (99.0% of respondents), burning (97.0%), open pits (96.5%), reuse (95.0%), throwing to an empty space (88.0%), and sale for recycling (69.9%).

The main constraints faced by Eldoret residents in HSW management were inadequate enforcement of existing legislation, and infrequent waste collection by municipal council. A logit regression was used to model the probability of household adoption of two main HSW disposal methods in Eldoret Municipality: burning and reuse. Eldoret residents are not likely to adopt burning and reuse of waste when household income increases. There is a high probability of domestic reuse of solid waste if it is not frequently collected and legally disposed. The probability of burning increases with infrequent solid waste collection. Increased distance from residence to waste disposal sites increases the likelihood for recycling and incineration of waste materials.

A contingent market, with a water bill and service charge as payment vehicles, was developed on improved HSW management. The EMC residents were willing to pay an average of Ksh 72 per household per month. An estimated ordinary least square model for WTP values shows income to have a significant positive effect; education, age, and total number of disposal methods had negative, but insignificant, effect. Eldoret residents' WTP values were not significantly affected by the choice of payment vehicle. A t-test on the difference between the mean WTP and the existing service charge of Ksh 30 showed a significant relationship at 5% level.

Based on the research findings, it is recommended that stricter enforcement of legal regulations on solid waste management to reduce illegal waste dumping. Secondly, since income was the main factor that influenced household willingness to pay for improved domestic solid waste management there is need of better financial management in EMC and development policies that attract internal and foreign investment. Thirdly, increased frequency in EMC waste collection and provision of collection cans/ sites near residential estates would ameliorate the HSW problem. Three aspects are suggested for further research: relationship between unit pricing and waste pickers' income, strategies for enhanced manufacture of recyclable packaging materials, and opportunities for joint participation between EMC and residential groups.