

# Valuing Solid Waste Disposal Services of Urban Local Bodies: A Public Perception Survey

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**Abstract-** Managing Solid waste is a significant issue with the ever-increasing and rising complexity of wastes in tune with faster urbanization and population growth. Inefficient solid waste management causes health, environmental pollution, and social issues. The local bodies entrusted with collecting and disposing of waste face severe management and technical issues in this regard. The general public, which contributes to the waste stream in a big way, has apprehensions about the system. The study evaluates waste disposal services provided by local bodies through a contingent valuation survey.

**Index Terms-** Open Dumpsites, Controlled Dumpsites, Sanitary landfills, Contingent Valuation Method, Willingness to Pay.

## I. INTRODUCTION

I ncreasing consumption and production by way of resource use generates a waste stream that is too complex to handle and creates different types of pollution. Biodiversity loss, habitat destruction, disappearing forest cover, and marine life are matters of great concern. Solid waste gained attention simply for being the most visible pollutant generated by society. Understanding how solid waste creates pollution, it is essential to take note of one of the ecosystem services of the provision of natural waste sinks to receive and absorb that is getting dumped into the ecosystem. Nature can perform this duty exceptionally well, but the problem starts when it gets overloaded with waste or by giving something it can't simply assimilate. Solid waste pollution occurs when the ecosystem service fails to perform due to overload and new and complex forms of waste in the waste stream (David Pearce 2000). The local bodies which are entrusted with the job of collecting and disposing of garbage prefer landfilling as a method of disposal. Landfills are of three types, of which sanitary landfill is the best, considering the engineering side and control of its functioning. The construction and maintenance of sanitary landfills are costly and technical, which is sometimes beyond the capacity of local bodies. So they go for open dumpsites, which means dumping solid wastes in a designated place in the outskirts of the city or town. The main advantage is the waste is taken away from the source of origin, and the city or town is free from any visible refuse. Two problems emerge from this scenario: inefficient collection and possible health and environmental risks emanating

from landfills, especially open ones. Leachate, landfill gas, and the breeding of mosquitoes and flies are risks associated with landfills (Lee and Jones-Lee 1993, UNEP 1999, CPCB 2000).

## II. VALUATION USING CONTINGENT VALUATION METHOD.

Like all other ecological services, the market is absent for the natural waste sink service provided by nature. We can use indirect methods for assigning values or prices for such functions. Contingent valuation, a technique used for valuation, is a survey that elicits the Willingness to pay (WTP) for a particular service or Willingness to accept (WTA) to forego a service (Ciriacy-Wantrup, 1947, Davis, 1963, Mitchel and Carson, 1989). The payment will depend mainly on income, education, and attitude towards environmental quality (Mitchell, R. C. et al. 1989, Hahnemann 1991, Cummings et al., 1986). Despite criticisms regarding validity, reliability, and bias, the contingent valuation method can present the Willingness to pay of a person or community to better environmental quality. Valuing the solid waste management done by a local body should start from the evaluation of the present system by the stakeholders and the presentation of an alternative approach that will be much better. Alappuzha town in Kerala was the study area, and its waste management system was evaluated. One hundred respondents from ten wards out of the total fifty were selected at random. They were presented with a questionnaire to elicit their socio-economic features and were asked to assess the existing waste disposal system. An alternative better project with its cost implications and features was explained and the willingness to pay for such a project was obtained. The responses were analyzed by applying ordinal regression to the econometric model.

$WTP = \beta_1 + \beta_2 am_i + \beta_3 ed + \beta_4 cd + \beta_5 gen + \beta_6 ea + \beta_7 hs + u$ , Where  $am_i$  (average monthly income of the household,  $ed$  (respondent's education),  $cd$  (children in the family),  $gen$  (gender of the respondent),  $ea$  (environment ethic),  $hs$  (house ownership).

## III. FINDINGS AND DISCUSSION

For the majority of the respondents, lousy odor from uncollected waste, mosquitoes, and general dirty surroundings is a matter of concern. 79% view that deterioration of environmental quality is mainly due to solid waste pollution. An overwhelming

majority support good projects to mitigate the problem even if it is costly. On being asked about sharing the project's costs, the average monthly payment agreed upon was Rs.26.4. The regression analysis showed that payment was positively affected by the number of children, gender, and house ownership. A positive Environmental approach doesn't significantly affect payment, and respondents with formal education were more likely to pay than those without education. Local bodies should reform and incorporate new technology. The general readiness to pay for an improved system is a positive development, and the authorities should work out a fully modified and efficient waste collection and disposal system. Local bodies can solicit private participation to make available technology and workforce. Given the mounting e-waste in the waste stream, proper waste segregation should be compulsory. Systematic risk perception studies and impact studies

will help the authorities to get an idea about the situation on the ground and a channel of communication with the stakeholders.

#### IV. CONCLUSION

An increase in population, the need for faster economic development, a new attitude towards life and society put environmental protection in a delicate position. We can never compromise production and consumption, but our long-term survival depends more on nature's health. Climate change and global warming caught the attention of the world community, but addressing pollution and environmental issues at the local level is of great importance as well.

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