World Academy of Science, Engineering and Technology
International Journal of Agricultural and Biosystems Engineering
Vol:11, No:11, 2017

Household Solid Waste Generation per Capita and Management Behaviour in Mthatha City, South Africa

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Abstract : Mismanagement of waste is continuously emerging as a rising malpractice in most developing countries, especially in fast growing cities. Household solid waste in Mthatha has been reported to be one of the problems facing the city and is overwhelming local authorities, as it is beyond the environment and management capacity of the existing waste management system. This study estimates per capita waste generation, quantity of different waste types generated by inhabitants of formal and informal settlements in Mthatha as well as waste management practices in the aforementioned socio-economic stratums. A total of 206 households were systematically selected for the study using stratified random sampling categorized into formal and informal settlements. Data on household waste generation rate, composition, awareness, and household waste management behaviour and practices was gathered through mixed methods. Sampled households from both formal and informal settlements with a total of 684 people generated 1949kg per week. This translates to 2.84kg per capita per week. On average, the rate of solid waste generation per capita was 0.40 kg per day for a person living in informal settlement and 0.56 kg per day person living in formal settlement. When recorded in descending order, the proportion food waste accounted for the most generated waste at approximately 23.7%, followed by disposable nappies at 15%, papers and cardboards 13.34%, glass 13.03%, metals at 11.99%, plastics at 11.58%, residue at 5.17, textiles 3.93%, with leather and rubber at 2.28% as the least generated waste type. Different waste management practices were reported in both formal and informal settlements with formal settlements proving to be more concerned about environmental management as compared to their counterparts, informal settlement. Understanding attitudes and perceptions on waste management, waste types and per capita solid waste generation rate can help evolve appropriate waste management strategies based on the principle of reduce, re-use, recycle, environmental sound disposal and also assist in projecting future waste generation rate. These results can be utilized as input when designing growing cities' waste management plans.

Keywords : awareness, characterisation, per capita, quantification
Conference Title : ICSAEF 2017 : International Conference on Sustainable Agriculture, Environment and Forestry
Conference Location : Cape Town, South Africa
Conference Dates : November 02-03, 2017