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Quantification and Characterization of Solid Waste in Alkalakla Administrative Unit, Khartoum State–Sudan

Ahmed Abdelgadir Mohamed Elzaki
Department of Environmental Health, Faculty of Public & Environmental Health, University of Khartoum, Sudan

Abstract

Strong waste age is a result of human exercises, poor strong waste administration lead to genuine general medical issues. Measurement and portrayal of strong waste parts think about a significant advance in strong waste administration systems. A cross-sectional distinct investigation was directed in Alkalakla Administrative Unit to decide strong waste per capita age rate and distinguish strong waste creations. Thinking about occasional varieties and financial class, World Health Organization (WHO) and California Integrated Waste Management Board (CIWMB) methods for strong waste study were embraced in inspecting technique and strong waste isolation. Information were gathered and examined multiple times in 2013 (January, May, and August). The normal load of strong waste created in Alkalakla Administrative Unit, considering each of the three seasons, was 0.401 kg/capita/day, and as needs be assessed yearly measure of strong waste was (36241.6 ton). There was negative moderate relationship between's family size and strong waste per capita age rate (r=-0.449, p esteem <0.001). Investigation of strong waste segment shows that food remains represents the biggest extent (37%), trailed by earth materials (20.5%) and plastic (13%). 3.77% of strong waste was risky materials. Debris and fertilizer spoke to the least rate (0.31%) and (0.11%) separately. The normal of strong waste per capita age rate over the seasons and neighborhoods, were like the normal weight evaluated by Eastern Mediterranean Regional Office (EMRO), while it had noteworthy contrasts from the normal assessed by Khartoum State Cleaning Corporation. Measurably there were occasional varieties in strong waste age; anyway there were no huge contrasts between neighborhoods. Study discoveries have critical monetary planned in strong waste administration specific high rates of natural parts and low thickness of strong waste.Daily human exercises consistently created strong waste, which became genuine general medical issues with poor administration . Strong waste materials are an annoyance and may cause unfavorable effects in human wellbeing and the earth . Geographic area, atmosphere, quick urbanization, way of life, socioeconomics and financial components are the fundamental determinants of strong waste organizations and sum . Pay level, family size, and instruction status are exceptionally refered to as variables recognizing strong waste age rates. However, the impacts of those may not be at a similar level in various areas, for example, nations, urban areas, districts, and so on. Strong waste age rate is decreased when the number of inhabitants in the zone increments . Poor strong waste administration rehearses have a genuine danger to wellbeing and condition since it might prompt: air, soil and water contamination , sadly just 60% of the waste produced in creating nations is really gathered and arranged appropriately . He assortment and treatment of civil strong waste are generally inadequate because of an absence of complete data on the measure of metropolitan strong waste disposes of. A dependable estimation of the strong waste amount in the city is significant for appropriate strong waste arranging and the board. Information on squander creation, creation, and reusing are fundamental for planning courses of assortment frameworks, deciding situations for canisters, overseeing assortment teams, and select suitable strong waste removal choices ,and it's vital if elective waste administration plans ought to be created, for instance if material reusing or organic treatment ought to be considered .

This investigation was centered around assurance of strong waste sythesis and per capita age rate in Alkalakla Administrative Unit. The particular targets were; to assess strong waste age rate for various sources, to decide fundamental strong waste segments, to recognize strong waste thickness, and to distinguish the contrasts between neighborhoods, areas and seasons in regard to strong waste age rate, organizations and thickness.

The normal of strong waste age rate in Alkalakla Administrative Unit was (0.40 kg/ca/d) and the mean strong waste thickness was extremely low (170 kg/m3), the yearly measure of created strong waste was 36241.6 ton. The normal of strong waste per capita age rate over the seasons and neighborhoods, factually were like the normal weight evaluated by (EMRO) (0.5 kg/top/day), while it has critical contrasts from the normal assessed by Khartoum State Cleaning Corporation (0.6 kg/top/day). There was a negative moderate relationship between's family size and strong waste per capita age rate. The most prevailing parts of strong waste in the investigation zone were food remains, trailed by earth (Sand), and the third thing was plastic. Risky materials were seen as a segment of strong waste. No measurable noteworthy distinction in strong waste creation between private parts and seasons. Study discoveries have noteworthy financial planned in strong waste administration specific high rates of natural parts and low thickness of strong waste.This study was focused on determination of solid waste composition and per capita

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generation rate in Alkalakla Administrative Unit. The specific objectives were; to estimate solid waste generation rate for different sources, to determine main solid waste components, to identify solid waste density, and to identify the differences between neighborhoods, sectors and seasons in respect to solid waste generation rate, compositions and density.

The average of solid waste generation rate in Alkalakla Administrative Unit was (0.40 kg/ca/d) and the mean solid waste density was very low (170 kg/m3), the annual amount of generated solid waste was 36241.6 ton. The average of solid waste per capita generation rate across the seasons and neighborhoods, statistically were similar to the average weight estimated by (EMRO) (0.5 kg/cap/ day), while it has significant differences from the average estimated by Khartoum State Cleaning Corporation (0.6 kg/cap/day). There were strong statistical significant differences in solid waste generation rate among all seasons, however no significant differences between residential sectors and neighborhoods. There was a negative moderate correlation between family size and solid waste per capita generation rate. The most dominant components of solid waste in the study area were food remains, followed by earth (Sand), and the third item was plastic. Hazardous materials were observed as a component of solid waste. Study findings have significant economic prospective in solid waste management particular high percentages of organic components and low density of solid waste.

Keywords: Generation rate; Waste characterization; Seasonal variation; Waste composition; Segregation.

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