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## Survey on SWM for Sustainable Development and Public Health in Dutse Metropolis, Jigawa State, Nigeria

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### Abstract

A survey on solid waste management for sustainable development and public health in Dutse metropolis was conducted. One hundred (100) designed questionnaires were distributed across four major areas within the town which included Yadi, GidaDubu, Dan Masara and Mopol base quarters were twenty five (25) are distributed to each of the four sites. From the result, it was discovered that residence of Danmasara quarters discharge all their waste 100(100%) in government approve sites while Yadi quarters are the lowest in terms of discharging waste in government designated locations 6(24%).Based on flooding, Yadi recorded the highest rate of flooding 21(84%) while Dan masaraquartes recorded the lowest 9(36%). Proper waste discharge was also summarized according to educational status of individual respondents within the affected areas under study. It could be observed that people with secondary education had the highest of (47%) while informal education recorded the lowest (08%) in terms of proper waste discharge respectively. It is concluded that most of places in Dutse metropolis do not access to drainage system as well as government designed areas for waste disposal and hence, it is recommended that government should provide adequate waste disposal sites to each area within Dutse metropolis.

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### 1. Introduction

Nigeria is located at the Western part of Africa. It has 36 States and a Federal Capital Territory. The World Bank report of 2011 stated the population of Nigeria as 162, 470,737 with a GDP of US\$ 235.9 billion. With increase in population, urbanization and industrialization including globalization, the challenge of solid waste

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management (SWM) in the Country has increased and even now complex. Contributory factors to the challenge include inadequate regulatory framework that has manifested in lack of interest of private sector investment in service delivery (infrastructure); uncoordinated institutional functions; low political will, low capacity to discharge duties, poor data information for planning, wrong attitude of waste generator amongst others. Yet on the increase is the demand for good waste management service for public health and environmental protection (Iriruaga, 2014).

Solid waste is the unwanted or useless solid materials generated from combined residential, industrial and commercial activities in a given area. It may be categorized according to its origin (domestic, industrial, commercial, construction or institutional); according to its contents (organic material, glass, metal, plastic paper etc); or according to hazard potential (toxic, non-toxin, flammable, radioactive, infectious etc).

“Municipal solid waste” (MSW) is a term usually applied to a heterogeneous collection of wastes produced in urban areas, the nature of which varies from region to region. The characteristics and quantity of the solid waste generated in a region is not only a function of the living standard and lifestyle of the region's inhabitants, but also of the abundance and type of the region's natural resources. Urban wastes can be subdivided into two major components -- organic and inorganic. In general, the organic components of urban solid waste can be classified into three broad categories: putrescible, fermentable, and non-fermentable. Putrescible wastes tend to decompose rapidly and unless carefully controlled, decompose with the production of objectionable odours and visual unpleasantness. Fermentable wastes tend to decompose rapidly, but without the unpleasant accompaniments of putrefaction. Non-fermentable wastes tend to resist decomposition and, therefore, break down very slowly. A major source of putrescible waste is food preparation and consumption. As such, its nature varies with lifestyle, standard of living, and seasonality of foods. Fermentable wastes are typified by crop and market debris. The primary difference between wastes generated in developing nations and those generated in industrialised countries is the higher organic content characteristic of the former (UNEP, 2005).

Sustainable development is an implied development without destruction, it is the judicious use of nonrenewable resources for the present and future generations, which are non-renewable resources, must be used at a judicious rate, neither too fast nor too slow and to ensure that the natural wealth that they represent is converted into long-term wealth as they are used. In Nigeria we succinctly put it as sustainable development without jeopardizing future development, meaning that in our efforts to explore and exploit the natural resources to serve us, there is an obvious paradox evident in the need to ensure economic development, while protecting the environment (Adewole, 2009).

Public health is a fundamental requirement to human existence. Waste is directly linked to human development, both technologically and socially, some components of waste have economic value and can be recycled once correctly recovered. Effects of poor environmental hygiene on public health were studied in the precarious living quarters of Lagos state in Nigeria. The concept transformation of waste from an exhausted utility to a valuable commodity as a mechanism for effective solid waste management is yet to be properly utilized in Lagos State (Oyebode, 2013).

### *1.1 Statement of the problem*

Looking at the fact that Dutse is a developing city and a capital city of Jigawa state, increase in population is currently increasing the problem of solid waste and waste water disposal to proper channels. However, the research work will focus on the challenges associated with improper waste disposal in relation to its public health effects within the area of the study.

### *1.2 Significance of the study*

Municipal solid waste management is an important part of the urban infrastructure that ensures the protection of environment and human health. The accelerated growth of urban population with unplanned urbanization, increasing economic activities and lack of training in modern solid waste management practices in developing countries complicates the efforts to improve solid waste services. The changes in consumption patterns with alterations in the

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