Assessment of Sanitation Conditions and Waste Management Practices in Some Selected Basic Schols in the Koforidua Municipality

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ABSTRACT

As part of the assessment of sanitation conditions and waste management in some selected Basic Schools in Koforidua Municipality, analysis of soil was carried out to detect heavy metal concentrations in the soil near refuse dumps and the playing ground of children in the selected schools. Other parameters analyzed were pH, conductivity, Ca, Mg, K and Na. Also particle size and organic matter were determined. Soil samples points were determined by Global Positioning System (GPS), collected and analyzed by using Atomic Absorption Spectrometer. Traces of heavy metals were detected in the samples. The heavy metal concentrations (mg/kg) in the soil have the following maximum Fe: 556.2 whilst the minimum element detected was Cd: 3.25. The concentration levels of heavy metals in the soil caused by garbage dump are listed in the following order; Fe> Mn > Zn > Cu> Cd. Positive correlations were observed between Cd-Mg. Highly positive correlations exist between pH-Ca, Conductivity-Mg, Conductivity-K and K-Mg . The pH of the soil is alkaline and did not indicate any seasonal difference. Organic matter of the soils was low. Relatively high heavy metal concentration was observed for soil samples from the dumpsite than the soil taken from the control site. Solid waste menace is a serious concern all over the world and its effective management is very important in solving myriad of problems connected with unhygienic and insanitary environments. Proper characterization and quantifications of solid waste is fundamental for the planning of municipal waste management service. As part of the objectives of this study, efforts were also made to characterize the various waste components and their relative quantities generated in the selected Schools and also to ascertain the sanitation conditions in the schools. In terms of waste stream characterization, wastes were characterized into food waste, plastic and rubber, paper/cardboard, textiles, glass, wood and metals. Food wastes, plastics and rubber were found to have constituted the major components in the waste stream. The food waste collected ranged from 61,539.25 kg/L at A.M.E Zion Basic School (AZP) to 95,227.25 kg/L at Christ Complex (CC) School. Moreover, the

plastic and rubber wastes collected ranged from 46270.75 kg/L at AZP School to 71576.25 kg/L at CO school. The results also showed that SDA School recorded the minimum density value of waste at 0.33 kg/L during the month of collection whilst the maximum density value of waste was recorded during the period at AMP School with a value of 0.73 kg/L. Questionnaires issued out to respondents revealed that majority of the respondents (69.5%) had good knowledge of indiscriminate disposal of waste as well as the poor sanitation conditions in the schools. However, their continual habits of dumping waste indiscriminately on the schools' compound could be attributed to lack of effective educational campaign on environmental sanitation awareness and enforcements of laws. This study thus recommends intensive education, should be carried out including the establishment of school health management committees, in schools to help curb the menace of waste and insanitary conditions in the schools.

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