Peri-Urban Agriculture as a Means of Urban and Rural Waste Management in the Tamale Metropolis

HARUNA ABUBAKARI

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ABSTRACT

The rapid population growth of Tamale with its concomitant waste problems presents a major health and environmental challenge in the Metropolis. A constant backlog of uncollected solid waste at communal container sites coupled with indiscriminate disposal has resulted in littering of streets and drains thereby choking them. This phenomenon culminates in general insanitary conditions in the Metropolis and creates breeding grounds for mosquitoes and other flies which cause diseases. This research was designed to link solid waste management to peri-urban farming through composting of organic solid waste for peri-urban farmers to ameliorate their soil conditions. Solid waste quantities and composition as well as quality for the purpose of compo sting were determined. Three major methodologies were employed - administering questionnaires and conducting interviews; solid waste characterization and laboratory analysis. The questionnaires aimed at assessing solid waste management in the metropolis and revealed that only 34% of households in the Tamale Metropolis receive solid waste collection services. Most rural households (75%) dump their solid waste in their backyard farms. Peri-urban farmers and non-farmers alike expressed interest to participate in solid waste recycling efforts especially composting. Solid waste was sampled (in the wet and dry seasons) from five residential and non-residential areas and characterized into compostable organic, wood, plastic, paper, glass, textile and other waste. Compostable organic was found to constitute over 50% by weight of total waste sampled for both wet and dry seasons. Chemical parameters analyzed in the laboratory were pH, electrical conductivity (EC), % total nitrogen (N) and % organic carbon (C). The *CIN* ratio was calculated from the %N and %C. All the parameters were found to be in levels suitable for composting.

Supervisors

Professor Christopher Gordon

Dr. Benjamin Dankyira Ofori