

ABSTRACT

Solid Waste management is increasingly becoming a problem due to the increase in solid waste generation and change in composition of waste produced which can be attributed to increased world-wide population growth, urbanization and consumerism. This change is necessitating a change in the ways in which solid waste is handled. This has led to the formulation of sustainable solid waste management practices which promote economic, social and environmental development. This development project, informed by the findings of the research project "Assessing the Sustainability of Solid Waste Management Practices in Peri-Urban Areas;- A case of Uthiru/Ruthimitu , Nairobi" which found that the solid waste management practices are unsustainable sought to develop a sustainable solid waste management model for Matini village one of the villages in Uthiru/Ruthimitu.

The project embarked on the identification of legislation guiding sustainable solid waste management both globally and locally as well as the identification of best practices through case studies which led to the identification of three models that could be applied to bring about sustainable solid waste management in Matini. From the lessons learnt from the case studies and literature review the project developed three alternative models: an economic model, a socio-economic model and an integrated model. The project then undertook a site analysis with the aim of identifying the drawbacks that would need to be addressed if either of the models was to be implemented at the site. An evaluation of the models through a goals achievement matrix was done and the integrated model was chosen as the preferred alternative. The alternative made the best case for environmental protection while also being economically viable and socially acceptable. It involves at source sorting of waste, involvement of CBOs in waste collection, the regularization of solid waste recovery as well as the on-site biodegradation of organic waste through anaerobic digestion to produce electricity and fertilizer and composting to form soil amendment.

A site plan for the preferred alternative was then developed and a monitoring and evaluation framework for the same created. This project recommends the adoption of the preferred alternate for sustainable solid waste management in the area which advocates for the biodegradation of organic solid waste through anaerobic digestion and composting and also that more research should be carried out to identify how Urban Planning can be used to make solid waste management more sustainable.