EVALUATION OF SOLID WASTE MANGEMENT PRACTICES FROM GENERATION TO DISPOSAL, CASE OF TORORO MUNICIPALITY

BY

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DECLARATION

I **Mwima Kuzaifa** declare that this report is my original work and to the best of knowledge, it has never been submitted for any purpose in any university or higher institution of learning.

Signature .....Date 26/07/2016.....

MWIMA KUZAIFA

(Student)

APPROVAL

This is to certify that this research has been under my supervision

Signature……Date……

……

MR. KIFUMBA DAVID NSAJJU

(SUPERVISOR)

DEDICATION

This report is dedicated to my mother Rehema Namwirya.

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The almighty God who has provided me with enough breath to live up to now, thanks for making a living testimony.

LIST OF ACRONYMS

KCC	Kampala Capital City
KM	Kilo Meter
MFPED	Ministry of Finance Planning and Economic Development
MSW	Municipal Solid Waste
NEMA	National Environmental Management Authority
NES	National Environment Statute
SPSS	Social Package For Social Scientists
SW	Solid Waste
SWM	Solid Waste Management
UBOS	Uganda Bureau Of Statistics
I.D	Indiscriminate Dumping

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ABSTRACT

The collection, transportation and disposal of solid waste (garbage, trash, liter, and rubbish among others) are the responsibilities of Tororo municipal council. The solid waste generated in Tororo municipality is stored, collected and disposed in both gazette and un gazette areas but most of it is dumped indiscriminately along the streets and open spaces. Much of these waste take long to be removed wherever it is dumped. This implies that the waste management system in Tororo municipality is not efficient which results into filth smell in the town.

The main objective of the study was to investigate the reasons for the delayed removal of solid wastes that is left to decompose at collection sites and why there is scattered solid waste material in Tororo municipality and make recommendations for improvement. The specific objectives of the study were 1. To establish the sources of the different solid wastes generated in Tororo municipality. 2 To establish reasons for delayed removal of solid waste from the different existing storage sites, and 3. To establish reasons for indiscriminate dumping of solid waste in Tororo municipality.

The data collection method used was basically a questionnaire with structured and semi structured questions. This was used alongside physical observations of the practices, reviews of various relevant literature and discussions with the concerned authorities.

The findings attributed the current state of the waste management system to inadequate funds, limited tracks for transporting wastes, *I do not care attitude*, limited public solid waste storage/collection containers/skips, and some of the respondents assumed that the concerned authorities seem not to be bothered more so about their state in the out skirts of the town.

In conclusion, solid waste generated in Tororo municipality takes relatively long periods of time at the different collection sites due to the inadequate funds to enable the municipal authorities remove the garbage at these sites in time.Therefore, to improve on the current situation there is need to increase on the funding for this sector as a solution for the delayed removal of wastes from the collection and dumpsites.

CHAPTER ONE

I.O. INTRODUCTION

1.1. Background of the study

1.1.1. Solid waste management in developing countries.

In developing countries without significant recycling, solid waste predominantly includes food wastes, yard wastes, containers and product packaging, and other wastes from residential, commercial, institutional, (http://en.wikipedia.org/wiki/Municipal_solid_waste 20 May 2014). Such wastes are dumped indiscriminately in un gazette areas which results into harm to the environment and human health. This is in agreement with that, garbage attracts rodents and other animals. Insects, such as mosquitoes that carry diseases, may hatch in water that pools on the waste (http://www.azdeq.gov/environ/waste/dumping/faqs.html 20 May 2014).

Also bacteria can grow in discarded food, and human waste. Most dangerously, hazardous chemicals in household and commercial solid waste may contaminate water and soil.

1.1.2. Legal frame work for solid waste management in Uganda

In Uganda, under the Local Government Act Cap 245, solid waste collection, transportation and disposal are one of the responsibilities of local governments. But as noted in the Uganda Policy Note (2014), in most urban areas the standards of refuse disposal is generally low. In urban areas the methods of waste disposal include pit, skip/bins, bush, garden, and others and this poses problems in urban local governments due to lack of treatment and disposal facilities. The unscientific manner of disposal of solid waste such as dumping in open sites and low lying areas constitutes a serious health issue.

1.1.3 Statement of the problem

Tororo municipality with an average population of 44,000 (UBOS 2013) compared to 43,700 people (UBOS 2011) indicates that the rate of population growth is high, by the year 1998, Tororo municipality had a population density of 202 persons per KM^2 (NEMA 1998) compared to the current 500 persons per km^2 (MFPED 2012) is currently facing challenges of managing the garbage generated. The National Environment Management Authority (NEMA1998) noted that

REFERENCES

Ekere, W. 2009. Assessment of waste situation and potential for reuse in urban and peri-urban areas of Lake Victoria crescent. PhD. Thesis, Makerere University, Uganda.

European Union. 2008 Directive 2008/98/EC of the European parliamnent and of the council of November 2009 on waste and repealing certain Directives. Official journal of the European union. L312/3-30

Hickman: Lanier H. (1999): Principles of Integrated Solid waste Management. ISN 1 883767-26-1

http://en.wikipedia.org/wiki/Municipal_solid_waste 20 May 2014 20. May 2014

http://www.azdeq.gov/environ/waste/dumping/faqs.html 20 May 2014 20. May 2014

http://www.urbanknowledge.org/ur/docs/Uganda_Policy%20Note.pdf 20. May 2014

Jagannath., Er.V.2000. validation of micro treatment plants for community solid waste using Environmental sound technology criterion. Internet conference on material flow analysis of integrated Bio-systems (March-October 2000).

KCC.2003. City Development strategy, Kampala Development plan. 2003/2004. Kampala city council

Local Government Act 0f 1997. Constitution of Uganda 1995

MFPED (2012). Millennium Development Goals Report For Uganda 2012. Ministry Of Finance, Planning and Economic Development, Kampala, Uganda

NEMA & UNEP., 2010. Guidelines for E-waste management in Kenya. Ministry of Environment and Mineral Resources, Kenya

NEMA (1998) State Of Environment Report For Uganda 2008. National Environment Management Authority (NEMA), Kampala

NEMA (2000) State Of Environment Report For Uganda 2008. National Environment Management Authority (NEMA), Kampala

NEMA (2008) State Of Environment Report For Uganda 2008. National Environment Management Authority (NEMA), Kampala

NEMA (2010) State Of Environment Report For Uganda 2010. National Environment Management Authority (NEMA), Kampala

NEMA National Environment Management Authority (2007) Clean Development Mechanism (CDM)-Uganda solid waste compositing project analysis Report

Oberlin, A.S., 2011. The role of Households in Solid waste management in East African cities, PhD Thesis. Environmental policy series. Wageningen University. The Netherlands

Okot-Okumu, J., & Nyenje R., 2011. Municipal solid waste management under the decentralization in Uganda. Habitant international

Okot-Okumu, J., (2008) Solid waste management in Uganda: issues, challenges and opportunities. POVIDE program workshop. The Netherlands.

Popov V., A. Kungolos, C.A Brebbia, and H. Itoh (2006): waste management and the Environment 111 (V.3) WIT Press (UK)

Public Health Act of 1964. Constitution of Uganda 1995

Richardson, G.M., and Whitney, J.B.R 1995. Goats and garbage in Khartoum, Sudan: a Sabiiti, E.N., Bareeba, F., Spondondly, E., Tenywa, J.S., Ledin, S., Ottabong, E., Kyamanywa, S. Ekborn, B., Mugisha, J., and Drake, L., 2004. Urban market garbage: a hidden resource for sustainable urban/peri-urban agriculture and the environment in Uganda. The Uganda journal. 50:102-109

Simon. A.M., 2008. Analysis of activities of community Based Organizations involved in solid waste management, investment Modernized Mixtures Approach. The case of Kinondoni Municipality, Dar es Salaam. MSc. Thesis. Wageningen University.

The national environment (waste management) Regulations, 1999

The National Environment Statute (NES) OF 1995

Tororo municipal council office 2014 (Unpublished)

UBOS (2011) statistical abstract 2011. Uganda Bureau of Statistics, Kampala Uganda

UBOS (2013) statistical abstract 2011. Uganda Bureau of Statistics, Kampala Uganda.

Water Aid Uganda, (2011) Solid waste management. Study in Bwaise 11 Kawempe division. Final Report

Water Aid, WSUP & CIDI, October 2011. Issues for policy change. Challenges of urban solid waste management in Kampala city

World Bank (1993): Alternative Approaches to pollution control and waste management.

Zurbrugg, C.2002. Urban solid waste management in low income countries of Asia: How to cope with the garbage crisis: Presented for: scientific committee on problems of the environment (SCOPE) Urban solid waste management Review session, Durban, South Africa, November 2002)