

**SOCIO-ECONOMIC EVALUATION OF MUNICIPAL SOLID
WASTE MANAGEMENT
A CASE OF IBANDA TOWN COUNCIL, SOUTH-WESTERN
UGANDA**

BY

AHABWE RAYMOND

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**A RESEARCH DISSERTATION SUBMITTED TO THE FACULTY OF NATURAL
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RESOURCE ECONOMICS DEGREE OF
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SUPERVISOR; MR KIFUMBA DAVID NSAJJU

JUNE 2013

DECLARATION

I **AHABWE RAYMOND** declare that the work presented in this research dissertation is of my investigation and it has never been submitted by any student in any institution of higher learning. I take responsibility for any problems that may arise in this work.


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Date ..15th/07/2013.....

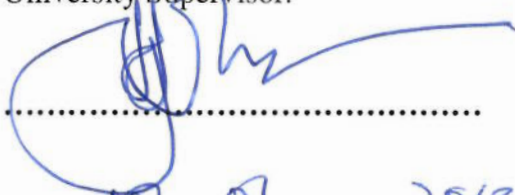
AHABWE RAYMOND

BU/UG/2010/238

(RESEARCHER)

APPROVAL

This is to certify that this research dissertation been submitted to the faculty of Natural Resource and Environmental Sciences-Busitema University with my approval as the University Supervisor.

A handwritten signature in blue ink, consisting of a large, stylized initial 'D' followed by a cursive name, positioned above a horizontal dotted line.

DATE: 15 / 07 / 2013

MR KIFUMBA DAVID NSAJJU

(SUPERVISOR)

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MAY YOU BE BLESSED!

DEDICATION

I dedicate this dissertation to my sister **Atukunda Sophia**.

God bless you as you pursue all your dreams

LIST OF ABBREVIATIONS

ERL	Environmental Resource Limited
NEA	National Environmental Act
CBO	Community Based Organization
Kg	Kilogram
UK	United Kingdom
DEAT	Department of Environment Affairs and Tourism (South Africa)
NEMA	National Environmental Management Authority
TC	Town Council
UNDP	United Nations Development Programme
PEAP	Poverty Eradication Action Plan
WHO	World Health Organization
CDM	Clean Development Mechanism
KCC	Kampala City Council
KCCA	Kampala Capital City Authority
UNFCCC	United Nations Framework Convention on Climate Change
MDGs	Millennium Development Goals
UN	United Nations
ITC	Ibanda Town Council
TC	Town Council

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ABSTRACT

Solid waste management is increasingly becoming a big problem in many cities in sub-Saharan Africa of which Uganda is no exception. This is largely attributed to the poor institutional arrangement, lack of capacity and use of poor technology by waste management Authorities in addition to the poor waste storage and disposal methods by the communities which subject them to health and environmental problems.

The study was carried out in Ibanda town council Ibanda district. The aim was to establish the fundamental causes of poor solid waste management and seek the local people's opinions on how the problem would be handled in Ibanda Town Council. This could be used to generate baseline information on the characterization of solid waste stream and status of solid waste management that can be used to design short and long term management plans for municipal solid waste management in Uganda. The objectives were to find out what methods are used to collect, store and dispose different solid waste categories generated in the town council, to establish reasons for prevalence of the diverse organic and inorganic solid wastes thrown about in Ibanda Town Council and To determine stakeholders' willingness to pay to achieve better and cost effective solid waste management practices in Town Council.

Self administered questionnaires, personal interviews and focused group discussions were used to obtain information on the different solid waste management practices. The gathered information was coded and edited in SPSS and analyzed using bar graphs and pie charts. Findings indicated that residents disposed of waste at disposal pits, open "disposal" sites. They also used substandard storage containers in sacks and cut jerry cans and ITC used open surface collection points. For these, residents stand greater chances of facing health and environmental risks.

CHAPTER ONE

1.0. INTRODUCTION.

1.1. Background of the study.

1.1.1. Global perspective about solid waste generation and management.

Poor solid waste management is not an individual country's problem but rather it is increasingly becoming a big problem in many urban centers of the world. For instance, according to the 1999 State of the Environment Report for South Africa (DEAT, 1999), the country generates over 42 million m³ of solid waste every year. This is about 0.7 kg per person per day, which is more typical of developed countries than a developing country (by comparison the figure in the UK is 0.73 kg, 0.87 kg in Singapore and 0.3 kg in Nepal). In addition, 5 million m³ of hazardous waste is generated every year (DEAT, 1999). Every day 2.6 million of domestic and commercial waste water is processed at treatment works. The last figure does not include agricultural and some industrial waste, which are the largest sources of waste (DEAT, 1999).

1.1.2. Solid waste management in Uganda.

Solid waste disposal and management is both an urban and rural problem. Every person is a potential generator of waste and thus a contributor to this problem. It has more often turned out that the rate at which solid waste is generated is far higher than the capacity to responsibly manage this waste. Waste is generated by, and from different sectors; domestic, commercial, industry and others and in many instances; the waste management responsibility has been left to the government or administrative authorities, (NEMA, 2005). Therefore, that the immediate stakeholders in the issue of solid, in this case the residents need to join hands with the authorities in dealing with this problem that has far-reaching environmental and human health effects.

Uganda is one of the countries in the world that rank low in urbanization but this notwithstanding, the urban population is growing. Actually, the urban population is growing faster (3.7%) than the national average (3.4%). The implication of this growth is that pollution issues such as solid waste management and the provision of adequate safe water alongside acceptable levels of sanitation coverage will need closer attention (National Environment Management Authority (NEMA), 2005). As Uganda's urban areas increase in

REFERENCES

DEAT and DWAF (1999) National Waste Management Strategies and Action Plans for South Africa

Environmental Resource Limited (ERL), (2008); Solid Waste Disposal–Kampala Municipal Solid Waste Management (6, Nov. 1996) UNEP Technical Publication National Environment Management Authority, 2000

NEMA, (1998) Caring for our Environment a Handbook for Local leaders, NEMA in conjunction with Friedrich Ebert stiftung (FES)

Ngategize P, (2000). Draft Strategic Plan for Solid Waste Management for Mpigi District,

Nyakaana (2006), population, urban development and environment in Uganda; the case of Kampala city and its environs; Makerere University, Kampala Uganda

Ngategize (2001), solid waste management strategic plan for Mpigi district, Uganda.

Ntambi S 2006, waste management within urban areas in Uganda; a case study of Kyazanga Town Council Lwengo District

Strategy Formulation Phase PMG 130 DEAT and DWAF 2000, Pretoria Environmental Monitoring Association Limited 1996, Kampala Uganda.

The National Environment (Waste Management) Regulations, 1999

The National Environment Act (NEA) (1999); the Republic of Uganda

The constitution of the Republic of Uganda 1995

Uganda <http://planipolis.iiep.unesco.org/upload/uganda/uganda%20HDR%202005.pdf>

United Nations environmental program agency 2006, informal solid waste management
<http://www.unep.org/pdf/kenyawastemanagementsector/sector/chapter1> (16th May, 2013)

UNDP, (2005), Uganda Human Development report, United Nations Development Program,
Kampala, Uganda,

UNEP (1996); International Source Book on Environmentally Sound Technologies for waste
management

Zake J, Yawe A, Lutalo R and Kawcesa M (2007), A Base line survey Report for Sustainable
Neighbours in focus cities project. Environmental Alert, Kampala, Uganda

Zerbock O (2003) Urban Solid Waste Management, Waste Reduction in Developing
Countries. Available on [http://www.cce.mtu.edu/peacecorps/documents-
july03.wastereductionandincineration.FINAL.PDF](http://www.cce.mtu.edu/peacecorps/documents-july03.wastereductionandincineration.FINAL.PDF)