## **BUSITEMA UNIVERSITY**

## FACULTY OF NATURAL RESOURCE AND ENVIRONMENTAL SCIENCES

THE ECONOMIC IMPLICATIONS OF A LAND FILL TO THE SORROUNDING COMMUNITIES: A CASE STUDY OF KITEEZI LANDFILL, WAKISO DISTRICT.

BY

SSUUBI VICTORIA

BU UG 2012 134

SUPERVISOR; ASSOCIATE PROFESSOR ISABIRYE MOSES

A RESEARCH REPORT SUBMITTED TO THE FACULTY OF NATURAL RESOURCE AND ENVIRONMENTAL SCIENCES IN PARTIAL FULFILLMENT FOR THE AWARD OF A DEGREE IN BACHELOR OF SCIENCE IN NATURAL RESOURCE ECONOMICS OF BUSITEMA UNIVERSITY.

**JUNE 2015** 

## DECLARATION

I SSUUBI VICTORIA hereby declare to the best of my knowledge that this research report is solely a result of my own research, effort and findings. I therefore affirm that it has never been submitted for an award of a degree or any other academic qualification in any university/ institute. Where other people's work and ideas were used, due acknowledgement was done accordingly in form of citations, quotations and references.

DATE 17/06/2015

SIGNATURE

SSUUBI VICTORIA

BU/UG/2012/134

## APPROVAL

I hereby certify that this research report titled "The economic implications of a landfill to the surrounding communities. A case study of Kiteezi landfill, Wakiso district" is the original and individual work of Ssuubi Victoria. It has been done under my supervision and is ready for submission to the board of examiners of the Faculty of Natural Resource and Environmental Sciences, Busitema University with my due knowledge.

SIGNATURE

ASSOCIATE PROFESSOR IŠABIRYE MOSES

RESEARCH SUPERVISOR

## DEDICATION

Crossing my academic finishing line has not been a one man's effort. This race has been accomplished by the efforts, sacrifices and support of a number of generous hearts. I therefore wholeheartedly dedicate this publication to my maternal Uncles and Aunties especially Samuel and Hellen Lutwama.



### **ACKNOWLEDGEMENT**

First and foremost I convey my sincere appreciation to the Almighty GOD for the gift of life, knowledge, wisdom, courage and guidance he always avails me.

I have been blessed with so many wonderful people who have helped me throughout my academic journey that trying to name them all is abit intimidating. I am extremely fortunate to have so many great friends but I am worried that if I tried to list, I would leave some one out. So instead, let me thank God for those special people (you know who you are) who have in many ways enriched my life.

However, in an elite category that demands mentioning are the following: My research supervisor Associate Professor Isabirye Moses for his patience and guidance that have helped me complete this research. A special thanks to both the teaching and non-teaching staff of Busitema university-Namasagali campus. To the pioneer alumni especially Julius, John and Betty for the selfless experiences you have always shared with me, thank you so much.

To my family especially Uncle Samuel Lutwama, my grandmother Mrs. Nassiwa, beloved cousins Leandrah, Jeremiah and Reeno for the love, guidance, moral, financial and physical support. I can never thank you all enough.

I would also like to extend my sincere gratitude to Mummy Leanne, Aunties Hellen, Alice, Edith, and Suzan for the motherly love and care.

To my brothers, this is for us!!

SSUUBI VICTORIA

# Table of Contents

DECLARATION	
APPROVAL	
DEDICATION	,ìi
ACKNOWLEDGEMENT	۱۱
LIST OF TABLES	vii
LIST OF FIGURES	i
ABSTRACT	
ACRONYMS	x
CHAPTER ONE	1
INTRODUCTION	
1.1Background	1
1.2 Problem statement	, 4
1.3 Objectives of the study	.,,,,.
1.3.1, General Objective	5
1.3.2. Specific objectives	5
1.4 Research questions	
1.5 Significance of the study	.,,,, 5
1.6 Scope of the study	
1.6.1 Content and geographical scope	., <u>.</u>
1.6.2 Time scope	5
1.7 Structure of the report.	<b>.</b>
CHAPTER TWO.	<del>-</del>
LITERATURE REVIEW	
2.0 Introduction	
2. 1 Understanding MSW and landfills.	
2.1.1 Categories of MSW	
2,1.2 MSW disposal	8
2.1.3 Kiteëzi landfill	
2.2 The economic implications of landfills:	10
2.3 Relationship between the nature of businesses and Kiteezi landfill	:, 12
2.4 Influence of distance from the landfill on the value of property in Kiteezi	14
2.5 The future prospects of Kiteezi	15
CHAPTER THREE	17

METHODOLOGY	.17
3.0 Introduction	. 17
3.1 The Study Area	. 17
3.2 The Study Population	/17
3.3 The Research Design	.17
3.4 Sample Size and Sampling Procedure	. 17
3.4.1 Sample Size	. 17
3.4.2 Sampling Techniques and Procedures	. 18
3.5 Data Type, Collection Methods, Instruments	18
3.5.1 Data Type	18
3.5.2 Data Collection Methods	18
3.5.3 Data Collection Instruments	18
3.6 Data Reliability and Validity	.18
3.7 Data Analysis	19
3.8 Ethical Issues and Considerations.	19
3.9 Limitations of the study	. 19
CHAPTER FOUR	. 20
PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS	. 20
4.0 INTRODUCTION	20
4.1 Social economic analysis about respondents	. 20
4.1.1 Gender	. 20
4.1.2 Respondent's age distribution	. 21
4.1.3 Level of education	
4.F.4 Monthly income	22
4.1.4 Duration of stay and value attached to the landfill	. 22
4.1.5 Number of dependents	. 23
4.2.0 Economic importance of the landfill	. 23
4.2.1 Economic activities carried out at the landfill.	. 24
4.2.3 Relationship between the nature of businesses and the landfill	. 24
4.3.0 Relationship between distance from the landfill and the value of property	
4.4.0 The future prospects.	
4.4.1 Decommissioning the landfill.	, 29
4.4,2 Potential biogas production for electricity	
4.4.3 Composting manure	.30

4.4.4 Récreation facility	
CHAPTER FIVE	32
CONCLUSIONS AND RECOMMENDATIONS	32
5.0 INTRODUCTION	32
5.1 Conclusions	32
5.2 Recommendations	33
5.3 Areas for further research	33
References	34
Appendix i: Ouestionnaire	36

## LIST OF TABLES

Table 1: Level of Education	, 21
Table 2: Monthly Income	
Table 3: Number of Dependents	
Table 4: Cross Tabulation of the Value attached to the Landfill and Income Level	
Table 5: Economic Activities Carried out Around the Landfill	
Table 7: Willingness to Sell or Rent Property	
Table 8: Ease of Accessing the Landfill	

## LIST OF FIGURES

Figure 1: Gender of respondents	. 20
Figure 2: Age of the respondents	
Figure 3: Relationship between duration of stay and value attached to the landfill	
Figure 4: Nature of waste disposed at Kiteezi landüll.	24
Figure 5 Distance between respondents' home and landfill.	. 27
Figure 6: A distance map showing households from the centre of the landfill	. 28

### ABSTRACT

The study was carried out to find out the economic implications of a landfill to the surrounding communities. A case of Kiteezi landfill, Wakiso district Uganda. To enable data collection, well designed questionnaires were presented for respondents to fill and give their opinions towards the study after which data was checked, edited and coded.

The main motive behind the carrying out of this study was to explore and unwrap the economic value of Solid Waste (SW) and landfills in general. It is common belief especially in developing countries that waste is something no longer useful and always codenamed trash. Little do they know that even some of the imported assets they treasure so much in their homes are trash to the developed countries but what makes them expensive and useful is simply because they were not thrown away into landfills!

With the literature, findings and results presented in the various next chapters, it was proved that SW and landfills in general are viable sources of income and therefore can steer an area or community to economic development coupled with sustainable use of resources through reducing, re-using and recycling of waste. Similarly the value of property in an area around a landfill can highly be influenced both positively and negatively depending on the individual's perceptions and social or economic status.

The potential of Kiteezi landfill however has not yet been fully utilised as the vast majority of the salvagers have no bank accounts with virtually no exposure to education, the job is delicate requiring sophistication to avoid getting hurt and the waste disposed is messy. Also the community has not yet fully exploited the potential spin offs of investing in Solid Waste Management (SWM). Armed with help from Kampala Capital City Authority (KCCA) or any other authority in terms of financial management, health and safety guidelines, the scavenging populations can benefit more from their business hence developing the communities around them. This can be done through sensitization about long term plans of sustainable income, investing in resource recovery through reusing, recycling and reduction and also empowering entrepreneurial groups within the salvaging populations

### ACRONYMS

BISL: Bin-It-Services Limited

ELD: European Landfill Directive

EPA: Environmental Protection Acts

EU: European Union

FEIL: Farm Engineering Industries Limited

GIS: Geographical Information System

GOU: Government of Uganda

ILWIS: Integrated Land Water Information System

KCC: Kampala Capital City

KCCA: Kampala Capital City Authority

LAS: Landfill Allowance Scheme

MSW: Municipal Solid Waste

NGOs Non-Governmental Organisations

OECD: Organization for Economic Cooperation and Development

SW: Solid Waste

SWM: Solid Waste Management

TPD: Tons per Day

UK: United Kingdom

WIP: Waste Implementation Programme

WMW: Waste Management World

### CHAPTER ONE

### INTRODUCTION

### 1.0 Introduction

This chapter covers the background of the study, problem statement, the general and specific objectives, research questions, significance of the study, scope of the study and the conceptual frame work.

### 1.1 Background

According to Wikipedia, a landfill is a site for the disposal of waste materials. Historically, landfills have been the most common method of organised waste disposal and remain so in many places around the world. Some landfills are also used for waste management purposes such as temporary storage, consolidation and transfer and or processing of waste material by sorting, treatment or recycling.

Historically trash had just been "tossed" out of our living areas. In cities trash and human waste was simply thrown into the streets or outside the gates. As cities became more populated and disease spread mankind came to the realization that throwing waste into the streets was contributing to the spread of devastating disease outbreaks and making cities centres of filth and disease. Bubonic Plague, Cholera, and Typhoid fever were just a few of the diseases spread by filth that harboured rats, and contaminated water supplies. It was not uncommon for European city dwellers to throw their trash and human wastes out of the window to decompose in the street. During the 1800's the connection between disease, sewage, trash and filth was discovered. Though there was tremendous resistance most famously in France, by the late 1800's cities created garbage collection and disposal systems using horse-drawn carts to collect garbage and dispose of it in open dumps, incinerators, or at sea. In New York City in 1916 the garbage collection took in 4.6 pounds of garbage per person per day. (Gomez et al. 2011)

According to World Waste Management (WWM), during the first half of the 20th century when garbage was routinely collected incineration was a common method of disposal. Many apartment buildings were constructed with garbage incinerators in the basements and trash shoot systems. In the 1920's it was common for garbage, incinerator ash, and dirt to be used to fill in swamps near cities which allowed the contamination of groundwater. The precursor to the modern landfill was first tried in California in 1935. Trash was thrown into a hole in the ground that was periodically covered with dirt. In 1959 the American Society of Civil Engineers first published guidelines for a "sanitary landfill" that suggested compacting waste and covering it with a layer of soil each day to reduce odours and control rodents. Even at this point landfills were designed by excavating a hole or trench, filling the excavation with trash, and covering the trash with soil. In most instances, the waste was placed directly on the underlying soils without a barrier or containment layer (liner) that prevented water percolating through the waste and picking up contaminants known as leachate from moving

#### References

Ahimbazwe, R. 4th JULY 2009, "Plastic Money". Kampala: The New Vision.

Amanda Berney, 2014, an overview of Municipal Waste and Landfills: How Cities Deal with Garbage, Recycling, Landfills and Dumps. About.com

Amin M.E 2005, Social Science Research. Conception, Methodology and Analysis, Kampala, Makerere University Printery

Anand, S.2011, Solid waste management. India: Mittal Publications.

Auditor general, March, 2010. Value for money audit report on solid waste management.

(Defra), Department for Environment, Food and Rural Affairs February, 2003. A study to estimate the disamenity costs of landfills in Great Britain. Cambridge Econometrics in association with EFTEC and WRc. Final report.

Edward Humes, 2014 Garbology: Our Dirty Love Affair with Trash.

Frank Mugagga etal April 2007 Questioning the integration of the informal sector, the case of solid waste management, Working papers on population and land use change in central Ethiopia.

Geological map of central Uganda, 1974

http://marginalrevolution.com/marginalrevolution/2012/08/garbage-landfills-around-the-world.html#sthash;tYxhfZPB.dpuf

Kakembo, T, (Sep. 10, 2010), "The new face of Kiteezi", Kampala: The New vision.

Kasoma, A (22<sup>nd</sup>, February 2013). "Kampala plan for energy", Kampala: The Independent newspaper.

Kasozi, J. (n.d), 2008. Private firms play key role in waste management.

KCC (2000). Solid Waste Management Ordinance,

Magezi-Akiiki J. B. (2003), Solid Waste Management Practices and Policies, A Case of Kampala City, Uganda.

Mikkel L. J and G. Boyer (1999), Observations of Solid Waste Landfills in Developing Countries: Africa, Asia, and Latin America. Urban Development Division, Waste Management Anchor Team, the World Bank.

Mudanyi Pers. Com, Engineer Mudanyi personal communication.

NEMA 1998, National Environmental Management Authority, State of Environment Report for Uganda.

Oso Y. W and Onen D. 2008, a general guide to writing research proposal and report, A hand book of beginning researchers, 2<sup>nd</sup> Edition, Kampala Makerere University printery.

Scot J Callan and Janet M Thomas, Environmental Economics and Management, Theory, Policy and Applications, Second Edition.

Tenywa, G. September, 2014. "Garbage dealers save Lake Victoria from plastics". Kampala: The new vision.

Tukahirwa J.T (PhD), Solid Waste Management in Kampala under the Transformation Process, Public Health and Environment, Kampala Capital City Authority.

UBOS, (2006), 2002 Uganda Bureau of Statistics Population and Housing Census, Analytical Report: Abridged Version. Kampala-Uganda.

WaterAid, October 2011. Solid Waste Management Arrangements and its Challenges in Kampala: A Study in Bwaise II Parish, Kawempe Division - Briefing Paper.

WMW April 2007, Waste Management World Newsletters