

## Efforts toward Achieving a Healthy Environment in Uganda: An Assessment of Waste Management in Kampala Central Division

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### Abstract

**Introduction:** There are a lot of international legal and legislative frameworks in place to monitor and assess the state of the global environment and provide scientific understanding of how environmental changes occur, and in turn, how such changes can be managed by action-oriented national policies and international agreements. In the face of growing foreign investment in developing countries with the birth of trade liberalization policies, environments are at risk due to emission of hazardous waste substances posing a risk to human health.

**Aim:** Therefore, the study aims to examine the role and responsibilities of stakeholders in the management of environmental wastes

**Method:** The study was a cross sectional study which employed quantitative method of data collection. The field data was collected through open ended questionnaires and observations. The secondary data was obtained through extensive literature review of documents. In all, 120 respondents were purposively recruited to be part of the study.

**Findings:** The study found that foreign or local industries were largely the producers of most of the waste which found its way to the environment. However, they are not involved in the collection and management of waste. Also, the dumping sites are not accessible forcing individuals to throw waste in the open.

**Conclusion:** It can be concluded that without proper coordination between government, producers and private waste collecting companies, it will be difficult to achieve a clean environment looking at the increase in foreign investors in the economy of Uganda. The

government should strengthen existing legal and legislative frameworks in order to guarantee the interest of the masses.

**Keywords:** Liberalization, investors, waste management, legislative frameworks, policies, industries, dumping sites

### **Introduction**

Trade has been characterized as a driver of environmental damage due to the increasing demand for food, water and energy which has led to significant changes to the ecosystem and a gradual depletion of natural resources (Zake, 2008, Shafaeddin, 2005). Studies and discussions at UNCTAD have shown that there is a vital need to understand better the broad social and economic costs as well as the benefits of specific actions or inactivity. Therefore, there is an effective coordination between stakeholders such as international organizations, civil society and private sector in effort to protect the environment while at the same time fostering trade. For instance, the international agencies are assisting developing countries by providing financial resources and technical assistance including favorable environment for facilitating investments in waste management. Similarly, private sector is also either, directly or indirectly, though, public private partnerships are getting involved at various stages of waste management chain. Also, community enterprises are usually involved in door-to-door collection of waste to appropriate dumping sites (Shafaeddin, 2005, 2005, UNEP, n.d).

There are a lot of international legal and legislative frameworks in place to monitor and assess the condition of the global environment as well as providing scientific understanding of how environmental changes occur, and in turn, how the changes could be managed through the formulation national policies and programmes based agreed international standards (Abaza, 1999, UNEP, 2011, Zake, 2008). For instance, the provision of the Basel Convention (Art. 4.2c) states that parties are required to put in place effective measure to ensure that a reduction in waste generation. Additionally, Article 10 (2c) admonishes signatory states to co-operate and come out with innovative technologies which will make impact or elimination of hazardous waste (Bali Convention, 2008, Krueger, 2004). Similarly, Article 9 of the Montreal Protocol also mandates states to cooperate in promoting research which will provide platform for exchange of information. This will result in effective technologies for enhancing recovery, recycling as well as offering alternative control to hazardous substances emitted into the environment. Stockholm Conventions are collaborating closely in the elaboration of general technical guidelines for the environmentally sound management of wastes consisting of, containment or contaminated with persistent organic pollutants (UNEP & UNCTAD, 2007).

Matsushita et al., (2006) mentioned that “several countries have taken bold steps to introduce mandatory recycling of products and packing to reduce the generation of wastes and the resulting pollution and need for landfills.” Similarly, in Uganda, there are domestic laws and frameworks which seek to foster hazardous waste management. In order to curb the continuous damage to the environment which has posed a risk to human health as a result of environmental waste linked to activities of humans, the Government of Uganda promulgated the National Environment Policy in 1994 whose main objective was to collect and disseminate accurate information relating to environmental management issues. This was further strengthened in 1995 with the formulation of National Environment Act Cap 153 which guaranteed the establishment of institutional framework that resulted in the formation of National Environment Management Authority [NEMA] (NEMA and UBOS, n.d, Zake, 2008).

The government of Uganda like many others of Sub-Saharan Africa implemented structural adjustment programme with it accompanying trade liberalization policies in the 1980s which aimed at improving economic performance of countries. However, there are indications that, this programme has failed in a number of respects, more especially, the environments in which a lot hazards has been emitted (Hoekman et al, 2009, Person, 2003). This is because the relationship and supportiveness between trade liberalization policies and environment standards is still questionable (Muradian & Martinez-Alier, 1999). This study therefore, tends to address the knowledge gap that exists in order to devise means that create a balance between trade and environment. The study intended to examine the effectiveness of waste management in Kampala Central Division and analyze the effort of stakeholders in managing waste in Kampala.

## **Materials and methods**

### **Research Design and study type**

This research used cross-sectional approach to study the effects of trade liberalization on the environment. Cross-sectional design type helped the researchers to obtain the needed information on time. It is a study design that is conducted within a short period at a particular point in time (Levin, 2006). In addition, the study employed quantitative data collection method in order to achieve the study objective. Quantitative information was used to measure the degree of trade liberalization influence on environmental damage through hazardous waste disposal.

### **Area of the study**

The researchers carried out research in Kampala Central Division – Nakivubo drainage channel and industrial Area. The area covers 14.64 square kilometers with a population of 1.18 million people as of 2002 national population and housing census data (National Environment Management Authority [NEMA] & Uganda Bureau of Statistic [UBOS], n.d). The main activities are both formal and informal trade as well as administration. The National Environmental Management Authority (NEMA) with the help of other supportive bodies holds the responsibility of hazardous waste management and the Ministry of Trade, Industry and Cooperatives with the help of other affiliated bodies is responsible for the overall issue of trade liberalization.

### **Population of the study**

The population was chosen based on three categories. These were as follows: the pollutants, regulators and finally the affected persons as a result of trade liberalization. The study population comprised of the following: slum dwellers, Ministry of Trade, Industry & Cooperatives, National Environment Management Authority, Kampala City Council Authority officials, Uganda Investment Authority, Uganda National Bureau of Standards, Uganda Bureau of Statistics, National water and Sewerage Corporation, Ministry of Water and Environment, Ministry of Health, United Nations Development Programme, United Nations Habitat, Sameer Agriculture Limited , KACITA official and Uganda Manufacturers Association, World Bank .

### **Sample size and sampling techniques**

The study made use of both purposive and sampling random sampling technique. Purposive sampling was used to participants who had knowledge about the issue under discussion while simple random sampling was used to draw the participants recruited from the slums. In all, a

total of 120 participants were recruited for the purpose of the study using both sampling techniques.

### **Data collection methods**

The study used different instruments to obtain information from the participants. Copies of questionnaires were used to obtain data from participants. This study, to a large extent, used primary data and where necessary some secondary data were used. In the first place, open-ended questionnaires were used to collect data from participants recruited for the study. The researchers prepared and administered questionnaires to collect data because the method is relatively cheap, can cover a large number of participants, and because the topic is a bit sensitive, the anonymity of participants was guaranteed. The questionnaires consisted of 31 questions divided into five sections. The questionnaires were distributed to both officials and slum dwellers who were given time to fill by themselves. The researchers were able to collect data in time since the questionnaires were administered successfully, and most of the participants were willing and open to provide data especially the affected groups. However, some challenges were encountered through the process: some participants were unwilling to provide data to the researchers claiming that the topic was sensitive to be handled even though confidentiality was assured; and also some participants seemed too busy and thus, taking long to respond to the questionnaires.

In relation to the secondary sources of data, the researchers conducted an extensive literature review of the documents related to trade liberalization and environment – mainly on hazardous waste management, because a number of studies relating to the study had already been carried out and these would help the researchers to make analysis of the collected empirical data. The popular search engines were Google scholar, UNEP and UNCTAD among other websites and other documents were obtained from NEMA and Ministry of Trade, Industry and Cooperatives officials.

### **Data Processing and Analysis**

In order to successfully perform this task than manual, Statistical Package software for Social Sciences Software (SPSS) was used in the analysis phase of the study. The data collected was analyzed by comparing opinions discussed and interpreted using descriptive statistics to form meaningful information that addresses the study objectives.

### **Ethical Consideration**

The researchers observed ethical issues while at the field, by moving with a letter of introduction to avoid suspicions, built relationships with the interviewees, dressed to suit the nature of participants. The researchers also respected the cultural values of the participants throughout the research process. The volunteers at Kisenyi were pleased because the researchers addressed them in Luganda, a widely spoken language in Kampala and Uganda in general.

## **Results**

### **Background characteristics of participants**

Table I presents the demographic characteristics of the participants involved in this study. The average age of the participants was 28 years. Majority (28.7%) of the participants were between 41 to 50 years whereas 33.3% were above 50 years. Males (62.5%) were dominant

in the study than females (37.5). Asked about participants' educational status, 50 representing 42% had tertiary qualification whereas 14.2% had primary education. About 17.5% had other forms qualification while 18 participants representing 15% had no formal education as well as 11.7% having secondary school qualification. On participants marital status, majority of the participants interviewed were single (41.7%) with 32.2% being married. Only 9.2% and 2.5% of participants were divorced and widowed, respectively. Co-habitation also constituted 4.2% of total participants.

Table I:  
Socio-demographic characteristics of participants

<b>Variables</b>	<b>Characteristics</b>	<b>Frequency</b>	<b>Percentage</b>
Age (n=120)	• ≤30	2	1.7
	• 31 – 40*	26	21.7
	• 41 – 50*	52	43.3
	• 51 – 60*	40	33.3
	<i>Mean; Min/Max</i>	15/65	
Gender (n=120)	• Male	75	62.5
	• Female	45	37.5
Level of Education (n=120)	• No formal education	18	15
	• Primary	17	14.2
	• Secondary	14	11.7
	• Tertiary	50	42
	• Other	21	17.5
Marital Status	• Single	50	41.7
	• Co-habitation	5	4.2
	• Married	39	32.5
	• Separated	12	10
	• Divorced	11	9.2
	• Widowed	3	2.5
Occupation	• Trading	22	18.3
	• Government (Civil Servant)	44	36.7
	• International Organization	6	5
	• Apprenticeship	19	15.8
	• Industries	29	24.2
Religion	• Christianity	105	87.5
	• Islamic	12	10
	• Other	3	2.5

Source: Field Data, 2015 \*Active population

### **Type of waste produced, collection and disposal techniques**

Respondents were asked about the type of waste being produced by multinational companies in Kampala Central. Majority of respondents (70%) stated that the widely produced hazardous wastes are pharmaceuticals, used fuels, acids which are generated by industries, hospitals, homesteads, petroleum stations among others. The researchers observed that most of the companies do not deal directly in the disposal of the waste in Kampala. For instance, a quality assurance manager of a company said that:

*We do produce a number of wastes but we do not deal in their disposal, because we contracted a private company to do that for us, there, we do not know what happens to it thereafter*

This is likely to affect management of these wastes since the pollutants are not so much involved in the monitoring and waste disposal which makes it difficult to determine the number of companies that share the dumping sites and quantity disposed of properly.

Respondents were asked whether legal and legislative frameworks are able to effectively manage waste management in the country. Over 80% of respondents indicated that the laws are ineffective in managing waste while 20% also mentioned otherwise. Since trade activities are not effectively regulated, each party in Uganda is free to generate any amount of hazardous waste and use any kind of technology in its production leading to increase in waste production which is improperly disposed. Respondents were asked about ways of waste collections in their respective vicinity. It was found that 22% of the respondents said hazardous waste is collected using bins; 11% said, pits; 25% said it is left in the open areas; 27% said it is thrown on water channels and drainages and 15% opted for other collection methods. It is evident that the environment is not safe looking at the nature of waste disposals.

### **Management of waste and disposal**

Respondents were asked as to the entities who contribute so much when it comes to hazardous waste in the environment. It was observed that 55% of the respondents said that it is the private companies/individuals who are responsible of contributing towards hazardous waste management while 45% mentioned that the government is responsible for the waste management and the remaining 5% said it is the work of the NGOs/CBOs to contribute towards proper waste management. It should be noted that since pollutants were not directly involved in collection and disposal of hazardous waste, the government has made it mandatory to tax all pollutants in order to manage their hazardous by-products.

Respondents were asked as to whether they have idea about authorities who are in charge of regulation of waste in Kampala. Majority of respondents, 52% indicated that they have no idea about those in charge of management of waste while 48% indicated having knowledge of such institutions. The researchers found out that waste regulators in Uganda are promoting waste management by conducting public awareness campaigns on proper disposal of these wastes, however, the waste management regulations are hardly known to the public. Also, respondents were asked about the institutions that are constantly helping in waste collection

and management in their areas. It was mentioned that bodies such as private companies, NGOs and government are constantly involved in waste collections.

Respondents indicated issues they consider in the disposal of waste to include; accessibility, type of hazardous waste and means of transportation. It was found that 67% of respondents mentioned that the dumping sites were not accessible while 33% indicated otherwise. The researchers observed that these sites are inaccessible but the only means of transporting waste is the use of open truck which poses health risk to the people. Observation by the researchers revealed that even the most used means of disposal which is the bins were not accessible as only few are available to users. It should be noted that the few bins available were most times left flooded. The users are not bothered as to what happens after but continue using the facilities even though they are full. On means of transportation, it was observed that although each type of waste needs its own type of transportation and disposal method but waste management companies transport all waste equally. For instance medical waste needs to be incinerated, but these have found their way on the road sides or water channels of Kampala, and thus causing unnecessary public accidents. There is need to advocate for appropriate transportation facilities in order to avoid unnecessary accidents to those that handle these waste and fiscal support to keep these facilities in good condition.

On general assessment, 75% of respondents revealed that waste management in Kampala is highly ineffective leading to choked gutters and unsanitary environments. This is partly due to the fact that hazardous waste producers were not held responsible for their actions. For instance, for not collecting back their packaging or wastes in the city since the majority of the respondents identified multinational companies as the main producers of most of these hazardous wastes. There is therefore, a need to mandate both the producers and final consumers to be responsible of the wastes so as to protect our environment and at the same time encourage trade.

### **Discussion**

The study examined effectiveness and effort of stakeholders in managing waste in Kampala Central Division. The results of the study found that multinational companies were the main producers of waste to the environment. Also, the study found that these companies are not directly involved in the disposal of the waste they produce. It is possible that foreign or private companies mostly involved in polluting the environment are not held accountable for their actions and inaction leading to continuous disposal of waste posing health risk to the citizens. There is no coordinated effort to fight illegal disposal of harmful wastes in the city since the private sector is left to oversee these wastes from the point of production to the point of final disposal without public oversight. This has therefore, led to the increased costs for cleaning up over a long period of time and yet these would be minimized, with sound coordinated management practices (Hoekman et al, 2009, Person, 2003, Shafaeddin, 2005).

The results of the study also found that there are weak or non-enforceable laws in Uganda which have failed to regulate the activities of industries involved in waste disposals. This might be as a result of liberalization which led to formulation of weak laws making it possible for industries to dispose hazardous waste into the environment without concern to lives and properties. Duy (n.d) and Zake (2008) mentioned that the provisions favor developed world without considering the least developed countries (LDCs) which are not in position to finance

waste management and its effects. Therefore, the need to promote cost sharing and inclusion of clauses of consideration for the LDCs would pave way for a harmonized management of hazardous wastes. UNCTAD (2007), Basel, Stockholm and other conventions are collaborating closely to develop general technical guidelines for the environmentally sound management of wastes consisting of guidelines for destruction and decontamination technologies for polychlorinated biphenyls. However, these guidelines are not well known to producers in the LDCs. This therefore, calls for inclusion of clauses that favor LDCs and thus, pave way for a harmonized management of wastes.

The results of the study found that the most common means of waste disposal is throwing or pouring of such substances into water bodies and drainage systems. This might be as a result of the fact that authorities involved in waste disposals may not be performing their duties with regards to making available equipment for proper waste disposal. However, studies by NEMA and UBOS (n.d.) found that most people over look dust bins available in the streets and prefer to dump waste on open areas and water drainage channels. This is because people are not self-disciplined on waste management as most of them just throw waste through car windows irrespective of whether it is organic or inorganic. Therefore, waste management has become a great public concern because of numerous containment sites along road sides of Kampala. The damage caused by hazardous wastes has also taken an economic toll with regards to cleaning up the environment which is costly to the local authorities, particularly those that are located in poor communities (Krueger, 2004). This explains why the Kampala City Council Authority has also initiated a policy known as "*Kampala yange*" where the public is involved in clean-up exercises of the city in every last Saturday of the month as a way to mitigate clean-up costs and keep the city clean.

The study revealed that dumping sites were not accessible as only trucks could access the sites. The inaccessibility may force the ordinary citizens who are unable to afford the cost of transporting waste to dump at unauthorized places. It is possible that the cost of disposal of waste maybe expensive making it impossible for the private industries to be involved in the collection and management of waste. Even dust bins which were found to be the easily accessible means of waste disposal were not available for waste collections. Also, the few available bins were usually uncollected contributing to waste disposal in the open when the bins get full. This might sum up reasons why people dispose waste in the open. This finding accords with studies by Krueger (2004) and Matsushita et al. (2006). The waste management has financially benefited those that are involved in its management because they charge higher fees in transporting waste to dumping sites. The study also found that there are community licensed enterprises often involved in door-to-door collection and transportation of waste (UNEP, n.d). Although these enterprises are not well equipped to handle hazardous wastes and most of the wastes is transported on open trucks, thus, exposing the transporters as well as the entire population to undesirable conditions. Therefore, the need to reinvent proper guidelines that would help to protect both the human health of these enterprises, the environment and look beyond short-term benefits accruing from trade liberalization but look at mandatory environmental sustainability for a better tomorrow.

In contribution towards waste management, the study found that the private sector has taken the lead when it comes to waste collection and disposals. It is possible that the government has entered into partnership with the private sector to help in waste management. It might

be that the government has failed in performing its functions therefore pushing the private sector to do what the government is not doing. UNEP (n.d.) supports the study finding by stating that in the effort to strengthen national implementation of an Integrated Waste Management (IWM) approach, UNEP provides assistance to developing countries as a way of supporting the implementation of the actions of the Bali declaration on waste management on human health and livelihood, which invites international organizations, governments, members of the industry and business sector to provide resources and technical assistance. The assistance includes; creating conducive environment for facilitating investment in waste management, strengthen support in the field of waste management in line with Bali declaration's strategic plan for technology support and capacity building, and to propose IWM as a key priority area for the UN 'Delivery as one' initiative.

It was found that waste management is generally not effective contributing to the continuous availability of waste in the environment. This might be as a result of uncoordinated effort of government and private sector in effort towards managing waste in Kampala. It is possible that the laws in Uganda have encouraged disposal of waste substances in the environment since no action is taken against offenders involved in harming the environment. This finding corroborate with studies by UNEP (2011) and Krueger (2004). It was discovered that the regulators are promoting hazardous waste management but the laws governing waste management are weak making it non obligatory for companies to contribute to waste management. The hazardous waste producers are not held responsible for their actions for not collecting back their packaging or remaining of these wastes in the city since the management of these wastes greatly lies to the producer. There is therefore, a need to mandate both the producers and final consumers to be responsible of their wastes if we are to protect our environment and encourage trade.

### **Conclusion and recommendations**

The study aimed to examine roles and responsibility to stakeholders involved in waste management in order to achieve a healthy environment in Kampala Central Division. Trade liberalization and environment have therefore, got a direct relationship in promoting sustainable development. The results of the study found that foreign and locally own industries were the main producers of waste which are found in the environment. The study found that there are weak legal and legislative frameworks in Uganda which have only protected the interest of foreign companies than its own citizens. The study found that these industries are not involved in the management of waste leaving the government and private companies to be involve in waste collection and management. It was found that the dumping sites were not accessible to the public leaving no choice than to dump in open places posing health risks. The high cost of transporting waste to dumping sites has forced the locals to dump in the open due to their inability to afford. Also, the study found that dust bins which were found to be the most common means of waste collection were unavailable and thus contributing to haphazard disposal of waste. In general, it can be concluded that without proper coordination between government, producers and private waste collecting companies, it will be difficult to achieve a clean environment looking at the increase in foreign investors in the economy of Uganda. The country stands at risk to tackle filth engulfing the city should measures not be put in place to curb the menace of indiscriminate waste disposal.

In the first place, the government needs to focus on in-ward-warding formulation of environmental policies as well as their strong implementation since the out-ward-looking

development policies have caused more harm than good to both the Ugandan environment and its citizens, since the failure to develop and implement strong and mandatory environmental regulations in the name of increasing trade flows in the country greatly jeopardizes environmental sustainability, and the unchecked trade liberalization has at the same time led to the lowering of the standards of living. The government of Uganda should apply state intervention in order to check the poor practices associated with trade liberalization policies. This should be in a much supportive approach that benefits both trade and environment in Kampala. Both the citizens and the foreign business owners should be willing to comply with the government's initiative on mandatory declaration of hazardous wastes and their handling procedures.

Secondly, there is also the need to develop a well coordinated public private partnership with an active oversight and control of wastes from point of production to the point of final disposal, so as to minimize the costs associated with clean-up over a long period of time, since sound waste management practices are significantly lower in order to protect the environment and improve on the living standards of citizens. Consequently, there is also need to hold the harmful waste producers liable for inappropriate disposals since the responsibility of waste management solely lays on them. Therefore, they should provide technical support to hazardous waste handlers in form of specified collection facilities, covered and right trucks for specific wastes, in order to minimize the risk of spills and releases to the environment. In order to achieve trade liberalization and environmental supportiveness, there should be mobilization and sensitization of masses as a way to give technical advice to the end users of final products from both agriculture and industries that need proper disposal techniques. There is also need to provide incentives to people who invest in waste management sector as a way to encourage more entrants and self compliance.

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