



SECTOR BRIEF UGANDA:

Waste and Recycling



Overview

Uganda has one of the youngest and most rapidly growing populations in the world with a fertility rate of 5.8 children per female. The current population is estimated at 44.6 million and is projected to grow to 104 million people by 2060. Growth in the population has a bearing on economic growth, which comes with challenges of urbanization, rural-urban migration, disparity of income, conflict on meagre resources, and growth of informal settlements. This situation is evident in Uganda, which now has a housing deficit of 2.1 million housing units. Household and industrial waste generation are growing in tandem with the population, though mechanisms to manage collection, disposal, and recycling are trailing. This presents both challenges and opportunities for waste management services and related industries to tackle waste generated in the country.

Waste Management & Recycling in Uganda

Waste Management

Waste Management (WM) in Uganda is a decentralized function vested in local governments which oversee collection, transportation and disposal. However, inadequacies in the stages of waste collection, disposal, and recycling have compelled the

majority of the city, municipal and town authorities to adopt a Public Private Partnership (PPP) approach to WM by crowding in (informal) waste collectors, private recycling, upcycling and WM companies.

Kampala grew from a colonial and royal resting place, achieving municipal status in 1950 and becoming a city in 1962. For 59 years, it was the only city in Uganda. Due to population growth and urbanization, the Government of Uganda (GOU) approved 15 new cities along with new municipalities and town councils in 2020. Out of the 15 approved cities, seven cities are now funded and formally operational, while eight are pending. The operational cities include: Arua, Gulu, Mbale, Jinja, Masaka, Mbarara and Fort-portal. Under the aforementioned cities are 22 municipalities, 174 town councils and 204 town boards spread across the country. The municipalities which present the biggest potential for waste and recycling are those located within the Greater Kampala Metropolitan Area (GKMA). It is the catchment area of the “Waste Collection and Management Master plan” which targets to manage municipal waste generated in Greater Kampala Metropolitan through efficient collection, transportation, treatment and safe disposal.

WM in most urban areas in Uganda is characterized by non-separation of waste at both source and final disposal. Most of the waste is not satisfactorily collected or disposed. The municipal authorities are inadequately equipped and financed to execute their mandate of providing WM services. According to Kampala Capital City Authority (KCCA), Kampala generates between 2,000 and 2,500 tons of waste per day but is only able to collect and



dispose an average of 1,300 to 1,500 tons per day. This implies that approximately 50% of the waste is uncollected or improperly disposed. Such waste remains a prime environmental concern in Uganda because it is a major cause of ungazetted waste dumpsites in all the five divisions of Kampala and Greater Kampala Metropolitan area.

Organic waste is the leading waste stream generated across all urban authorities in Uganda. The typical statistical count of waste composition at Kampala's final dumping site located in Kiteezi is detailed in the table below.

Composition of Waste Delivered at Kampala's Official Dumping Site – Kiteezi

Type of waste	Percentage (%)
Biodegradable waste	43
Mixed fines (Waste)	42
Plastics	6
Animal waste	3
Sanitary waste	3
Paper / Cardboard	2
Textile	0.5
Others (including glass)	0.5

Source: KCCA (2020), Kampala WM PPP Project

With the foregoing, KCCA has taken steps to improve the WM services by engaging the private sector through a PPP framework to promote efficiency in waste collection, disposal, recycling and up-cycling. KCCA collaborates with World Bank / International Finance Cooperation (IFC) to improve efficiency of WM by financing a new landfill located in Ddundu, Mukono District. This is due to replace the exhausted land fill at Kiteezi. In order to tackle the problem of waste generation, *Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH* in Uganda follows the circular economy approach and advocates for behavioral change, policy change and recycling for more sustainability in the sector.

Recycling

The recycling sub-sector in Uganda is majorly private sector driven, the recycling value chain is comprised of mainly plastics, paper, organic and metal recycling sub-sectors. However, the recycling sub sector is heavily reliant on informal waste pickers, who collect, sort, store and sell the waste to recycling hubs for onward conveyance for processing. This is prevalent with PET plastic waste, metal and paper waste. To a very small extent, organic waste is being processed into compost and in-waste-to-energy by small and medium enterprises (SMEs) and cottage industries. In collaboration with the National Enterprise Cooperation (NEC), the National Environmental Authority (NEMA) launched the e-waste management center in 2021. The center aims to collect, sort, dismantle and dispose e-waste in a sustainable way, it is expected to progress into a recycling facility.

The National Water and Sewerage Cooperation (NWSC) is the leading Government agency that provides water and sewerage services. As part of sewerage management, it processes fecal sludge into organic fertilizer and carbonized briquettes.

The recycling sub sector in Uganda has until recently been characterized by low mechanization and value addition. This presents significant opportunities for investment, trade, technology transfer, and job creation. China, India and Turkey have the current leads in foreign investment, technology transfer and trade in semi-processed plastic waste. They provide offtake opportunities for recycling factories in Uganda. One example is *Acacia Foundation Limited*, a Chinese led company that has one of the largest plastic recycling plants in Uganda.



Key Market Segments

The market segments in the waste and recycling sub sector are segregated according to different waste streams:

- Low-Density (LD) and High-Density (HD) Plastic waste:** Low density and high-density plastics are on high demand among plastic recyclers in Uganda. Low density plastics are recycled into products such as nursery bed pouch bags, carry bags, garbage bags, dump course sheets, post-harvest drying sheets, bricks, pavers, roofing tiles, granules for export, etc. High density plastic waste is typically recycled into jerry cans, basins, buckets, conduit pipes, and granules for export. LD and HD plastic waste saw a rise in demand between 2018 and 2021 when China stopped importing recycled plastics from Uganda. Most recyclers turned to LD and HD plastics as promising business opportunity because it could be easily absorbed locally.
- PET Plastics:** PET Plastics recycling is the leading sub-sector in Uganda, with up to 600 metric tons of plastic waste generated daily, however only 6% of plastic waste is collected. The emerging plastic recycling sector has since led to the establishment of the Uganda Plastics and Manufacturers and Recyclers Association (UPMRA) in 2010, the association aims to sensitize the masses through campaigns on proper waste disposal. The association is the voice for the plastic recycling sector and advances member interests. It works with public and private agencies to develop the sector.
- Organic Waste:** Uganda produces 10 million tons of banana (matooke) waste, making it a large chunk of organic waste generated in the GKMA. This waste is being turned into manure/ fertilizer and other products. Several SMEs have ventured into this enterprise, notable among them are *Green Bio Energy*, *Bikuta traders* and *Marula Proteen*. These players enter into agreement with KCCA to collect waste from markets and roadsides and process it into different products (organic manure, briquettes, and insect protein for feeding livestock and fish). *Marula Proteen Uganda Limited's* products meet international standards and offer a viable alternative to traditional chemical fertilizers that can be harmful to the environment and human health.
- Fecal Sludge:** NWSC is the leading agency managing the fecal sludge value chain in Uganda. It leads the collection, transportation and processing of human waste to compost. The compost is sold to clients who apply it to trees, flowers and grass. It is not yet authorized to be introduced to the human food chain due to the risks involved. It is notable too, that only 1% of the urban population in GKMA have access to central sewage collection and management system, the majority of residents in Kampala and other cities across Uganda rely on on-site human waste disposal and private sector-driven retrieval.

Project example

The GKMA PET Plastic Recycling Partnership is a multi-stakeholder partnership that aims at improving the recycling value chain, including upstream collectors, collection hubs, recycling plants and downstream users of plastic waste. The programme has since provided business development support to 10 PET plastic recycling hubs across the GKMA. It plans to grow the number to 50 by June 2023.

The partnership aims at improving attitude and behavior towards waste and plastic in the GKMA as well strengthening the policy framework to facilitate greater recycling by private and public sector actors. The partnership comprises several players including: GIZ NatuReS programme, Coca Cola Bottlers Africa, Mukwano Group of Companies Uganda, Water & Juice Manufacturers Association (UWJMA), National Environment Management Agency (NEMA), Kampala Capital City Authority (KCCA), Ministry of Water and Environment (MoWE), and Global Green Growth Institute (GGGI).

<https://nature-stewardship.org/who-we-are/>

Some of the leading private sector players include *Plastic Recycling Industries Limited* (owned by *Coca-Cola Beverages Uganda*), *Nile Plastics*, *AK Plastics* and *Dunia* (owned by *Mukwano Group*). In Kampala alone, there are over 3,000 informal waste recyclers. The notable businesses include *Eco-plastile limited*, *Pipeline Designs & Foam Industries Limited*, *Aquila Limited* and other small & medium enterprises recycle plants.

Waste to Energy

In line with the NDPIII, and the Kampala Waste Management Project, there are notable moves to make energy out of waste. KCCA and World Bank have this in their blueprint for the planned dump site in Ddundo, Mukono District where energy will be made out of biomass. The company Mandulis Energy has taken the lead in developing off-grid waste-to-energy from agricultural waste for rural electrification. Green Bio Energy helps in making bio-char briquettes out of domestic waste. A feasibility study was done by the Ministry of Energy and Mineral Development (MEMD) and United National Development Fund (UNDP) in 2020 to assess the viability of a waste-to-electricity plant under the National Appropriate Action Initiative. This initiative is expected to absorb organic waste from Kampala, Wakiso and Mukono Districts.

- **Paper Waste:** Due to an increased demand for paper in organizations, industries, hospitals, and schools, Uganda's paper market is worth over 500 Billion UGX (equivalent to Euro 130 Million based on consumption of 7kg per person per year). The sharp increase in population denotes further growth in demand for paper. Several SMEs and cottage industries have ventured into paper recycling, while waste pickers collect wastepaper and sell it to established companies for processing. Foreign companies from India and China are dominant in the paper recycling sector.
- **Steel recycling:** Over 10,000 people in Uganda earn a living from steel recycling, with the supply chain serving both local artisans and established steel rolling companies. An estimated 4,000 tons of steel waste is recycled monthly to make construction materials, particularly, steel bars. *Tembo Steels* is one of the leading steel recyclers in Uganda. The number of steel recyclers has caused a spike in demand for scrap steel, which compels micro waste collectors to engage in vandalism of steel from utilities, rails, signposts etc.

- **E-waste:** The generated E-waste in Uganda was estimated at 17,000 tons/year in 2018 and is projected to rise 4,500 tons per annum. E-waste is sorted and dismantled in the short run, with a long-term view of progressing towards refurbishment and recycling. This is done at the e-waste management center, located in Kampala's Industrial Area under the management of NEMA and NEC.

Legal, Political, Institutional and Regulatory Frameworks

The waste management & recycling sector in Uganda is governed by several policies and regulations, with the principal legislation being the 1995 constitution of Uganda and the amendments thereof.



Legal and Regulatory Waste Management Framework	
Policies / Regulations	Responsible Institution
National Environment Act, 2019	Ministry of Water and Environment (MWE): It was established in 2007, its mandate is derived from the National Environmental Act, 2019 and the National Environment (Waste Management) Regulations, 2020. The mandate of the MoWE includes the development, management, and regulation of water and environment resources, including WM in Uganda. https://www.mwe.go.ug/
National Environment (waste management) Regulations, 2020, and Guidelines for the Management of Landfills in Uganda (2020)	National Environment Management Authority (NEMA): It is in charge of developing environmental policy, rules, legislation, standards, and recommendations, as well as advising the government on environmental management. Its key role is regulatory, compliance and oversight of environmental conservation and protection. https://www.nema.go.ug/
The Local Government WM ordinance KCCA Act, 2010	KCCA governs the Capital city on behalf of the Central Government, as established by the KCCA Act 2019. It's responsible for managing social services such as WM in the city. KCCA comprises of 5 divisions: The Central, Kawempe , Nakawa, Rubaga and Makindye Division. The urban divisions are responsible for WM within their areas of jurisdiction. https://www.kcca.go.ug/
Public Health Act	Ministry of Health: The public health mandate of this ministry includes solid waste management throughout the country. This mandate is derived from the Public Health Act, Cap 281. https://www.health.go.ug/
The Local Government Act	This act is implemented by the Ministry of Local Government, and it gives the Ministry its mandate to manage decentralized services to district / urban authorities across Uganda, which include Solid Waste Management. https://molg.go.ug/
National Energy Policy, 2019	Ministry of Energy and Mineral Development: The Ministry is the implementor of the National Energy Policy, 2019 which advances the use of waste-to-energy products like briquettes, power generation from waste incineration and biogas. These provide alternative energy sources while propping effective waste management https://energyandminerals.go.ug/
National e-waste Management Policy (2020)	Ministry of Information, Communication, Technology and National Guidance: The ICT Ministry is responsible for overseeing the e-waste policy in collaboration with other government entities. This policy provides for the establishment of e-waste management facilities in Uganda and informing the public e-waste management. It also works to promote both local and foreign investors in the establishment of e-waste management facilities in Uganda. https://ict.go.ug
National Industry Policy, 2020	Ministry of Trade and Industry: This Ministry is responsible for the National Industry Policy. It promotes cleaner production practices, recycling of waste, appropriate waste management and disposal as well as efficient resource management programmes. https://www.mtic.go.ug/
Investment Code Act, 2020	Uganda Investment Authority (UIA): The Uganda Investment Authority (UIA) is responsible for the Investment Code Act, 2020. The Act spells out procedures for foreign investors and regulations on foreign investment, comprising priority investment sectors that include value addition across several sectors. Among the sectors of interest is waste recycling. https://www.ugandainvest.go.ug/

Drivers of waste recycling in Uganda

Uganda's steps toward a green and circular economy is enshrined in [Uganda's vision 2040](#) that provides the foundation for sustainable management of the environment. It aims to leverage strategic opportunities and use them to catalyze higher returns across all sectors of the economy. The identified opportunities include among others, waste management.

Uganda's National Planning Authority (NPA), in collaboration with the MWE and with the support of the GIZ NatuReS programme, developed the country's first Green Growth Report under the theme "Stimulating resource use efficiency in manufacturing and waste management for sustainable development". [The Uganda Green Growth Report](#) confirms that Uganda is making progress in transitioning from depletive and polluting production to a restorative and circular economy. The report highlights key observations in Uganda's green growth progress between 2017 – 2020, emerging issues, as well as challenges. It also strengthens the opportunities for scaling up green manufacturing and waste-to-wealth activities and mentions policy concerns. It moreover identifies, documents and reports lessons learned as ways to strengthen the activities required to achieve sustainable manufacturing and waste management in Uganda.

This transition to a circular economy is also reflected in the [National Development Plan \(NDP III\)](#), where Uganda recognizes the benefits of a circular economy (CE) which acknowledges waste as a resource born out of industrialization and urbanization. The GoU recently adapted the climate change Act (2021) and is committed towards the National low carbon industrialization strategy.

Uganda recently launched the [Green Economy Recovery Plan](#), under the Ministry of Finance and Economic Development (MoFPED). It provides directions for approaching the challenges of the country's COVID-19 recovery and climate change. Furthermore, it lays the focus on green projects ranging from climate-smart agriculture to greening Uganda's cities and the industrial sector. The plan gives special attention to waste and fecal sludge management.

The drivers for the transition to a greener and more circular economy in Uganda include job creation, investment opportunities in low-carbon industrialization, and engagement of the private sector for increased uptake of opportunities in the Waste Management space. This is strengthened by [Uganda's Green Growth Development Strategy \(UGGDS\)](#) under the NPA. The strategy operationalizes the global agenda on climate change and green economy. The UGGDS focuses on catalytic investment in areas that include increased private sector participation in the green economy, raising awareness and designing opportunities for private sector investment in waste management.

Business opportunities in waste management

Opportunities for businesses and investors are constantly growing. New technologies appear in Uganda and methods of waste management are introduced. Below are some business opportunities that fit Uganda's context.

- **Establishment of a glass recycling industry in Uganda**
- **Recycling PET flakes into various products:** Recycled PET flakes are required to solve the input challenge of businesses which make final products such as yarn / fibre, wood-plastic composite and PET packaging. There is a strong opportunity of establishing an outfit that helps mop PET plastics churned out into the environment every day.
- **Blending plastic waste to make and repair roads:** There is an opportunity to work with cities and municipal councils in Uganda to blend plastic waste with bitumen in road construction and repairs. The funds consumed annually for repair and paving of new roads are projected to increase annually in the new local administrative units. This business model of mopping up huge amounts of plastic waste has been piloted in India and South Africa.
- **Bio fuels:** There are initiatives to use organic waste like saw dust, agro-waste or fecal sludge to make biogas and briquettes for domestic and industrial use. The fecal sludge innovations for fuel (briquette manufacturing) have been explored by NWSC. This is also a potential area for investment.
- **Financing and investment:** Financing / equity to waste and recycling SMEs with innovative and scalable business models. The companies listed below in the section of examples of business models present potential for financing and investment.
- **Construction, housing and furniture manufacturing:** There is an opportunity to invest in the plastic recycling sector targeting affordable housing in Uganda to solve the deficit. A blend of plastic waste with saw dust or organic fiber (which can be obtained from abundant banana agro-waste) can be used to make doors, panels for house construction and furniture. A PPP with the Government can be explored to provide such products for construction and furnishing of homes for the security forces, and government funded entities.
- **Private sector cooperation:** Supply of technologies (machinery, equipment and knowledge transfer)
- **PPP with NWSC** for processing sludge waste into fertilizer
- **Manufacturer driven waste collection:** There is a growth in the "Extended producer responsibility". Riding this tide to investment in the waste collection and conveyance supply chain is an area of interest. Replicating this model from the developed countries. This presents an investment opportunity in the circularity of the beverage and packaging industry where sustainable and dignified jobs are created in the value chain.

Market Entry Options

There are national and international entry options for German / European companies into the Uganda investment space, such as:

- **Investor one stop center:** Uganda Investment Authority houses the physical and e-biz one stop center, where applications for company registration, tax registration, land registration, Environmental Impact Assessment (EIA) certification and

obtaining an investment license can be acquired. Acquiring an investment license is mandatory for foreign investors in Uganda, and may come with incentives. <https://www.ebiz.go.ug/>

- **Uganda European Business Forum:** A platform that periodically mobilizes and enhances trade between Uganda and the European Union, coordinated by the EU delegation in Uganda. <https://www.ugandaeuropbusinessforum.com/>
- **The Delegation of German Industry and Commerce for Eastern Africa:** The Delegation of German Industry and Commerce for Eastern Africa promotes positive bilateral business relations between German and East African companies and conducts business delegations, business partner searches and other services for companies through its service entity AHK Services Eastern Africa Limited. Its Competence Center for Energy, Environment and Sus-

tainable Economy acts as anchor point for all topics related to sustainability, including waste management <https://www.kenia.ahk.de/>

- **German African Business Association:** This association can be engaged by German and European companies to provide business information and to arrange contacts. Furthermore, the association organizes events and business missions to African markets. <https://www.afrikaverein.de/en/the-association/>
- **German RETech Partnership** is a network of German companies and institutions in the waste management and recycling industry. It supports the export of innovative technologies and knowledge transfer. Opportunities in Uganda can be harnessed by the partnership to interest German companies in the local Waste and Recycling sector. <https://www.retech-germany.net/en/>

Risks in the waste management sector

Risk area	Sector affected	Detail on risk identified
Green field	PET Plastics	By providing development support and technical services to SMEs involved in waste management value chains, a relatively new sector can be supported right from the start. This goes along with risks when working young companies / a sector which is not well established yet. The PET recycling sector has a number of young businesses. To mitigate these risks, the GIZ Natures project is supporting over 50 SMEs and collection hubs to become resilient and impactful in the sector.
Client risk	PET plastics, LDP plastics	There is a need to establish an end-to-end recycling outfit or address off-taker risk. This risk precipitated globally when China rejected PET waste from global suppliers. LDPs are mostly affected by Government Policy and prone to being banned, in which event inputs will be limited.
Bureaucratic red tape	All sectors, especially at the start of investment	This arises when navigating Government offices which sometimes work in silos.
Supplier risk	E-Waste	Investors need to get involved in sourcing and collection of E-waste, creating a supply chain for off-takers. The current situation in the sector does not make it attractive for local and foreign investors. Efficiencies are needed in collection and conveyance of E-waste nationally.
Quality risk	All waste sectors	Waste collected is not segregated as there are high costs of recycling, or low-quality inputs for recycling. Segregation of waste at source will greatly improve waste collection conveyance and recycling.
Credit risk	All waste sectors	Inadequate patient and substantial local capital from the financial sector, because the sector is regarded as high risk and its business models are not understood by financiers. Most businesses in recycling are weather bootstrapping or offshoots of other businesses.
Legal risk	All waste sectors	The requirement to comply with local ordinances, existing players in the industry, stringent procurement laws affects sustainability of waste management companies (e.g. labor rights).

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Sources and useful links:

- Business Scouts for Development Uganda <https://www.giz.de/en/worldwide/93161.html>
- Cities Alliances, Improving Waste Management to Build Resilience in Uganda <https://www.citiesalliance.org/newsroom/news/results/improving-waste-management-build-resilience-uganda>
- GOU (Uganda Vision 2040) <http://www.npa.go.ug/wp-content/uploads/2021/02/VISION-2040.pdf>
- Green Finance Platform <https://www.greenfinanceplatform.org/sectors/waste>
- GroFin Uganda <https://www.grofin.com>
- Kampala Solid Waste PPP Project <http://disclosure.pppunit.go.ug/project/14/kampala-solid-waste-management>
- KCCA, Waste Management Sector Overview <https://www.kcca.go.ug/>
- Iungo Capital <https://iungocapital.com/>
- Market Exploration Programm (MEP) <https://www.bmwk.de/Redaktion/DE/Artikel/Aussenwirtschaft/markterschlussungsprogramm.html>
- National Water and Sewerage Corporation <https://www.nwsc.co.ug/>
- National Enterprise Corporation <https://www.nec.go.ug/>
- Uganda Development Bank <https://www.udbl.co.ug/>
- Uganda Green Enterprise Finance Accelerator <https://iungocapital.com/>
- Uganda Plastics and Manufacturers and Recyclers Association <https://upmra.org/>
- Yunus Social Business <http://uganda.yunussb.com/>

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In order to support the sustainable engagement of German companies in emerging and developing countries, Germany Trade & Invest (GTAI), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and the German Chambers of Commerce Abroad (AHKs) as well as other partners combined their expertise in the German publication series “New Markets – New Opportunities”. The booklets show companies the economic potential of future markets as well as the funding and consulting opportunities offered by the German development cooperation.

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