

Technical Assistance Response Plan - Terms of Reference

Country	The republic of Uganda
Request ID#	2023000001
Title	<i>Strengthening Waste Management Policymaking in Uganda in Response to Climate Change</i>
NDE	<i>Dr. Samuel Okodi, Team Leader of the Infrastructure Innovations Bureau, Research UNFCCC-CTCN-NDE Focal Point, Ministry of Science, Technology and Innovation (e-mail : Samuel.okodi@sti.go.ug, +256 781 496372)</i>
Proponent	<i>James Kunobere, Manager Waste & Sanitation, Kampala Capital City Authority (KCCA) (e-mail : jkunobere@kcca.go.ug)</i>

Summary of the CTCN technical assistance

Uganda is a country located in eastern Africa that is experiencing a rapid increase in waste generation due to population growth and rapid urbanization. In particular, the amount of waste generated in Kampala City, the capital of Uganda, is expected to increase from 3,206 tons per day in 2015 to 4,739 tons per day in 2030.

Currently, Kampala City operates only one landfill, Kiteezi Landfill. The landfill is currently operating beyond its capacity, with about 1,200 tons of waste per day being disposed of on an area of about 14 hectares. There are no facilities for the reuse of waste.

In addition, the landfill is operated in a simple open dumping method without cover, which poses a serious risk of fire and explosion due to methane gas, and soil and river pollution in the surrounding area due to leachate.

To address these problems, KCCA (Kampala Capital City Authority) is planning a new Dundu landfill and has established guidelines for the management of solid waste in accordance with the 2017 National Urban Solid Waste Management Policy.

However, the government is struggling due to the lack of policies and capacity for climate change adaptation and the efficient management of waste disposal facilities. Therefore, it is necessary to redefine and implement current policies to achieve sustainable waste management and greenhouse gas reduction targets.

This study aims to identify the problems and improvement measures of the current waste management policy and system in Kampala City through technical, environmental, financial, social, and legal analysis.

The carbon dioxide and methane gases generated from waste at Kiteezi Landfill are emitted directly into the atmosphere without any treatment facilities, causing environmental pollution, fire, and odor problems. To address these problems, the study will examine facilities that can reduce greenhouse gases by analyzing the composition of waste and the characteristics of landfill gas. In addition, the study will establish a foundation for environmental industry and environmental technology cooperation to promote environmental industry exchange between the two countries and to prepare a plan for the entry of domestic companies into the surrounding African market, including Uganda.

Therefore, this research and development will aim to establish a mid- to long-term waste management plan that is environmentally sustainable and economically feasible for Kampala by: 1) conducting a survey of waste generation and composition projections, 2) proposing problems and improvement measures for policies and systems, 3) contributing to the achievement of the greenhouse gas reduction target (NDC), and 4) supporting the technical capacity building of government officials related to waste.

Agreement:

National Designated Entity to the UNFCCC Technology Mechanism, Uganda

Name: Dr. Samuel Okodi

Title: Research UNFCCC-CTCN-NDE Focal Point,

Science, Technology and Innovation Secretariat, Office of the President (STI-OP), Uganda

Date: 02nd April 2024

Signature: 

UNFCCC Climate Technology Centre and Network (CTCN)

Name: Jonathan Duwyn

Title: Officer in Charge, CTCN

Date:

Signature:

1. Background and context

Background

Uganda is a country located in eastern Africa, and the amount of waste generated is rapidly increasing due to population growth and rapid urbanization. In particular, waste generated in Kampala, the capital of Uganda, is expected to increase from 3,206 tons per day in 2015 to 4,739 tons in 2030.

Currently, there is one landfill in operation in Kampala City, the Kiteezi landfill, and it is currently operating beyond the landfill capacity. 1,200 tons/day of waste is brought into the area of about 14ha, and there are no facilities for waste reuse.

In addition, since it is being buried using a simple open dumping method without covering soil, there is a serious risk of fire and explosion due to methane gas, and contamination of the surrounding soil and nearby rivers due to leachate.

To solve these problems, KCCA (Kampala Capital City Authority) is planning a new Dundu landfill and is stipulating guidelines for solid waste management in accordance with the 2017 National Urban Solid Waste Management Policy.

However, due to the request from KCCA to support in policy development and to respond to climate change and improve the efficiency of waste landfill facility management, there is a need to redefine current policies and implement measures to achieve sustainable waste management and greenhouse gas reduction goals.

Uganda Sustainable Development Goals (SDGs) and 3rd Medium-Term Plan (NDPIII)

Uganda designated the environment as one of the accelerators for achieving the Sustainable Development Goals (SDGs) in its national development strategy, the 3rd Medium-Term Plan (NDPIII, 2020.21 ~ 2024/25). In addition, public investment by industry to respond to the effects of climate change was mentioned in the customized Uganda iSDG (Integrated Sustainable Development Goals) model. It also mentioned that the environment can directly contribute to sustainable cities and preventing climate change, and that it will be a great help in mitigating industrialization and its negative consequences that can have a negative impact on growth.

KCCA (Kampala Capital City Authority) business promotion plan

- Establishment of an integrated solid waste management system: Increase the proportion of safely managed waste from 50% to 80% by 2025 by establishing a transportation, disposal, treatment, and reuse system.*
- Establishment of a strong urban environmental management, monitoring, and pollution control system*
- Establishment of public health monitoring and education system*
- Relocation of Kiteezi waste landfill to Dundu*

2. Problem statement

<i>Problem</i>	<i>Plan</i>
<i>Need of proper waste management system and policy</i>	<ul style="list-style-type: none"> • <i>Identification of problems in waste management in Kampala City through investigation</i> • <i>Establishment of alternatives and plans to prepare for shortages and problems in waste treatment facilities</i> • <i>Establish a plan to establish the recycling system in line with Ugandan policies</i> • <i>Establishment of integrated waste management system and waste-related policies</i> • <i>Establish realistic waste recycling and reduction plans</i>
<i>Need of proper waste recycling infrastructure</i>	<ul style="list-style-type: none"> • <i>Suggest a plan for installing and operating waste recycling facilities</i> • <i>Suggestion of operating plan to connect new and existing landfill sites</i>
<i>Need of proper expertise in waste disposal</i>	
<i>Need of proper greenhouse gas treatment facilities generated from landfills</i>	<ul style="list-style-type: none"> • <i>Contribution to achieving NDC through greenhouse gas reduction and national greenhouse gas reduction goals</i>
<i>Need of proper waste management experience and technical knowledge</i>	<ul style="list-style-type: none"> • <i>Capacity building training for government officials related to waste</i> • <i>Program education centered on technical capabilities</i> • <i>Establish a foundation for future entry into the environmental field in Uganda by introducing domestic technology</i>

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3. Logical Framework for the CTCN Technical Assistance:

Objective: Properly dispose of waste by supporting the establishment of national policies related to waste landfills, and strengthen the capacity of government officials for related climate change response projects.												
Outcome: it will be possible to properly manage waste through support for integrated waste management and related policy proposals, and waste recycling and landfill operation plans. This becomes more realistic through capacity building of government officials. In addition, the discovery of projects like using greenhouse gases generated from waste can reduce greenhouse gas emissions in Uganda.												
	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Mandatory Output: Development of implementation planning and communication documents												
Activity: All implementers must undertake the following activities at the beginning and at the end of the CTCN technical assistance. i) A detailed work plan of all activities, deliveries, outputs, deadlines and responsible persons/organisations and detailed budget to implement the Response Plan. The detailed work plan and budget must be based directly on this Response Plan; ii) Based on the work plan, a monitoring and evaluation plan with specific, measurable, achievable, relevant, and time-bound indicators used to monitor and evaluate the timeliness and appropriateness of the implementation. The monitoring and evaluation plan should apply selected indicators from the Closure and Data Collection report template and enable the lead implementer to complete the CTCN Closure and Data collection report at the end of the assignment (please refer to item iv below and section 14 in the Response Plan); iii) A two-page CTCN Impact Description formulated in the beginning of the technical assistance and update/revised once the technical assistance is fully delivered (a template will be provided); iv) A Closure and Data Collection report completed at the end of the technical assistance (a template will be provided).												
Mandatory Deliverables: i) Detailed work plan ii) Monitoring and evaluation plan iii) CTCN Impact Description iv) Closure and Data Collection report												
Output 1: Integrated waste management and related policy establishment and proposal												
Activity 1.1: Research and analysis of basic data (political, economic, social, technological factors, etc.)												
Activity 1.2: Analysis of waste policies and regulations												
Activity 1.3: Identify the current status and prospects of environmental industry & environmental technology												
Activity 1.4: Waste generation and disposal status investigation (including technical and financial factors)												

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Activity 1.5: Survey on waste disposal facilities and related companies																				
Deliverable 1: Characteristics investigation report, Field investigation report																				
Output 2: Support for waste recycling and landfill operation plan																				
Activity 2.1: On-site inspection of waste treatment facilities, etc. (establishment of waste treatment material balance)																				
Activity 2.2: Establishment of basic direction and policy strategy for improving waste management																				
Activity 2.3: Review of recycling plans and stable landfill operation plans																				
Activity 2.4: Review of waste-related laws and detailed implementation plans																				
Deliverable 2: Draft report and final report																				
Output 3: Study for greenhouse gas reduction projects																				
Activity 3.1: Study for project items and establish implementation plan																				
Activity 3.2: Suggestion of plans such as promotion system for studied projects																				
Activity 3.3: Plan for local expansion by domestic companies																				
Activity 3.4: Exploring ways to enter neighboring countries through studied projects																				
Deliverables 3: Greenhouse gas reduction project report																				
Output 4: Support for capacity building of government officials																				
Activity 4.1: Exploring various capacity building methods such as workshops, education, and training																				
Activity 4.2: Implementation of technical capacity building for government officials related to waste																				
Deliverables 4: Satisfaction survey results after workshop and training (including final report)																				

4. Resources required and itemized budget:

Activities and Outputs	Input: Human Resources <i>(Title, role, estimated number of days)</i>	Input: Travel <i>(Purpose, national vs. international, number of days)</i>	Inputs: Meetings/events <i>(Meeting title, number of participants, number of days)</i>	Input: Equipment/Material <i>(Item, purpose, buy/rent, quantity)</i>	Estimated cost <i>Please accumulate the costing at Activity and Output level and provide an estimated costing range for each activity and the total Response Plan</i>	
					Minimum	Maximum
Output 1: Integrated waste management and related policy establishment and	<i>RD, 5days RE, 20days LR, 33days</i>					33,750

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proposal						
Activity 1.1: Research and analysis of basic data (political, economic, social, technological factors, etc.)	<i>RE, 3days LR, 3days</i>					2,250
Activity 1.2: Analysis of waste policies and regulations	<i>RD, 5days LR, 20days</i>					3,750
Activity 1.3: Identify the current status and prospects of environmental industry & environmental technology	<i>RE, 4ays LR, 4days</i>					5,250
Activity 1.4: Waste generation and disposal status investigation (including technical and financial factors)	<i>RE, 10days LR, 3days</i>					3,750
Activity 1.5: Survey on waste disposal facilities and related companies	<i>RE, 3days LR, 3days</i>	<i>4 international trips for RD and RE</i>	<i>Kick-off meeting, 1 days, 25 participants Site survey, 2 days, 4 participants</i>	<i>Rent a conference room for kick-off meeting, Local transportation for 6 days (car rental)</i>		18,750
Output 2: Support for waste	<i>RD, 15days RE, 30days</i>					33,750

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recycling and landfill operation plan	<i>GE, 20days LR, 550days</i>					
Activity 2.1: On-site inspection of waste treatment facilities, etc. (establishment of waste treatment material balance)	<i>RE, 20days GE, 20days LR, 20days</i>	<i>3 international trips for RD, RE and GE</i>	<i>Site survey, 20 days, 4 participants</i>	<i>Buy 10 perforated pipes for landfill gas collection and measurement Local transportation for 6 days (car rental)</i>		<i>15,000</i>
Activity 2.2: Establishment of basic direction and policy strategy for improving waste management	<i>RD, 5days LR, 15days</i>					<i>6,000</i>
Activity 2.3: Review of recycling plans and stable landfill operation plans	<i>RD, 5days RE, 10days</i>					<i>5,250</i>
Activity 2.4: Review of waste-related laws and detailed implementation plans	<i>RD, 5days LR, 20days</i>					<i>7,500</i>
Output 3: Discovery of greenhouse gas reduction projects	<i>GE, 28days LR, 3days</i>					<i>52,500</i>
Activity 3.1: Project items and establish implementation plan	<i>GE, 10days</i>					<i>15,000</i>

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Activity 3.2: Suggestion of plans such as promotion system for studies projects	<i>GE, 15days</i>	<i>4 international trips for GE</i>	<i>Report and discussion, 5 days, 25 participants</i>	<i>Local transportation for 6 days (car rental)</i>		<i>30,000</i>
Activity 3.3: Plan for local expansion by domestic companies	<i>GE, 3days LR, 3days</i>					<i>7,500</i>
Output 4: Support for capacity building of government officials	<i>RE, 10days LR, 9days</i>					<i>30,000</i>
Activity 4.1: Exploring various capacity building methods such as workshops, education, and training	<i>RE, 5days LR, 2days</i>					<i>7,500</i>
Activity 4.2: Implementation of technical capacity building for government officials related to waste	<i>RE, 5days LR for government sector, 5days LR for private sector, 2days</i>	<i>8 international trips for RE</i>	<i>Workshop, 7 days, 25 participants</i>	<i>Rent a conference room for workshop - Government sector: 5times - Private sector: 1time Local transportation for 6 days (car rental)</i>		<i>22,500</i>
Estimated range of costing for the entire Response Plan						<i>150,000</i>

5. Profile and experience of experts

Based on the required Human Resources identified in section 4 (Resources required and itemized budget) please provide a description of the required profile of all involved experts for the implementation of the CTCN Response Plan.

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Experts required	Brief description of required profile
Research director (RD)	<ul style="list-style-type: none"> •All technical, administrative, and planning operations for research performance •Process management for the entire research •Review of research results to derive optimal results •Setting research direction through expert advice
Researcher (RE)	<ul style="list-style-type: none"> •Conduct research by research field •Discussion and sharing of information by field
Greenhouse gas reduction expert (GE)	<ul style="list-style-type: none"> •Analysis of waste characteristics through local waste property investigation •Academic advice in fields related to greenhouse gas reduction research
Local research and development service provider (LR)	<ul style="list-style-type: none"> •Uganda government cooperation and response •Securing investigation/analysis data related to KCCA's existing waste landfill •Investigation of local requirements such as licensing in accordance with Ugandan laws and regulations •Collect opinions from local interested organizations and hold meetings with government officials •Held capacity building workshops for waste management practitioners •Kiteezi landfill site investigation planning, government cooperation, on-site accompaniment

6. Intended contribution to impact over time

Expected greenhouse gas reduction

- For the selection of greenhouse gas reduction project methodologies, small-scale methodology - AMS-III.G is applied first, and large-scale methodology ACM0001 is applied if the small-scale is exceeded.

Baseline Emission (BE)

Baseline calculation of methane emissions

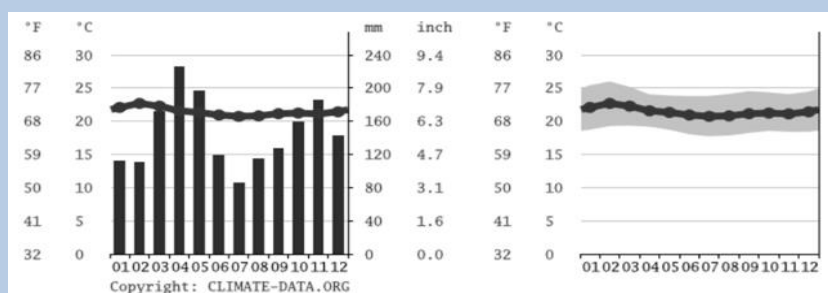
- Assumptions are made and available data are applied, considering statistical values and the expected operating period of the landfill.

- Daily landfill amounts are applied, reflecting the annual average population growth rate (2020-2028).
- Annual landfill amount = daily landfill amount x 365 days.
- The landfill will operate until 2025.
- The results of the waste composition analysis are applied, and it is necessary to reclassify into detailed categories in the future.

Category	Share (%)
Organic waste	43
Mixed fine waste	42
Plastics	6
Animal waste	3
Sanitary waste	3
Paper and cardboard	2
Textiles	1
Other	1

Source: Preliminary Information Memorandum, Kampala Waste PPP Project

- Application of tropical and humid climate conditions in Kampala, Uganda



Projected Emission (PE)

- Projected annual electricity consumption after the project is 2,000 MWh, multiplied by the power emission coefficient of 0.0685 tCO₂/MWh.
- Projected emissions after the project: 137 tCO₂/yr (PE value needs to be re-calculated through future detailed verification)

Emission Reduction (ER)

- Estimated emissions reductions: Annual average of 115,251 tCO₂/yr

Year	Landfill amount (ton/yr)	Project period	BE (tCO ₂ /yr)	PE (tCO ₂ /yr)	ER (tCO ₂ /yr)
2010	318,480				
2011	327,675				
2012	337,136				

2013	346,870				
2014	356,886				
2015	367,190				
2016	449,680				
2017	434,350	2027	134,392	137	134,255
2018	378,870	2028	129,769	137	129,632
2019	389,502	2029	125,306	137	125,169
2020	400,433	2030	120,996	137	120,859
2021	411,670	2031	116,835	137	116,698
2022	423,223	2032	112,816	137	112,679
2023	435,099	2033	108,936	137	108,799
2024	447,310	2034	105,189	137	105,052
2025	459,862	2035	101,571	137	101,434
2026	0	2036	98,078	137	97,941
Annual average (tCO ₂ /yr)			115,389	137	115,251

7. Relevance to NDCs and other national priorities

According to the Nationally Determined Contributions (NDCs), Uganda's greenhouse gas emissions have been slowly increasing from 53.4 MtCO₂e in 2005 to 90.1 MtCO₂e in 2015, and are projected to reach 148.8 MtCO₂e by 2030 and 235.7 MtCO₂e by 2050.

The Ugandan government is implementing the agenda of Uganda Vision 2040, which is the country's most important long-term development plan, as well as the second National Development Plan (NDP III), which aims to reduce carbon emissions, achieve low-carbon targets, and ensure sustainable development.

According to the National Urban Solid Waste Management Policy (NUSWMP), the Greater Kampala Metropolitan Area (GKMA) generated 3,206 tonnes of solid waste per day in 2015, and this is projected to reach 4,739 tonnes by 2030. Kiteezi landfill is the only landfill in Kampala City, and it serves the entire GKMA. The facility is already far beyond its design capacity, and does not treat leachate due to ageing, malfunction or non-functional treatment equipment. Therefore, the 35-acre Kiteezi landfill receives approximately 1,200 tonnes of waste per day, but reusable solid waste is not separated from the general waste stream and is already mixed with waste. In addition, the landfill lacks a sanitary drainage system, which is causing significant impacts on soil and water quality in the surrounding environment.

In addition to the solid waste disposal problem, there are no treatment facilities that can properly manage the emissions of carbon dioxide and methane into the atmosphere. To mitigate these problems, a project is currently underway to construct a new landfill with improved solid waste treatment capacity in Dundu, 36 km from Kampala.

Therefore, through this project, it is necessary to update the current policy framework (NUSWMP) and develop an implementation plan with assistance, so that Uganda can achieve its goal of sustainable waste management and reducing greenhouse gas emissions.

In addition, it is intended to support policies on realistic waste recycling and waste reduction measures by reviewing the current waste policies and operating methods in Kampala City.

8. Linkages to relevant parallel on-going activities:

This TA is supporting the establishment of national policies related to waste landfills, and strengthen the capacity of Uganda's government officials for related climate change response.

Uganda's NAMA on Integrated Waste Management and Biogas from 2022 aims to provide environmental benefits and reduce greenhouse gas emissions from improper and inadequate management and treatment of wastewater and organic waste in towns, municipalities, cities, and agro processing industry in Uganda.

According to the "National Environment (Waste Management) Regulations (2020, No. 49)", there are waste-related regulations, but ordinances are needed for specific implementation. To provide the necessary technical and financial assistance to Kampala Capital City Authority, support is required to retain the services of policy and legislative drafters to the Kampala Capital City Authority during the development of the by laws in this TA.

9. Anticipated follow up activities after this technical assistance is completed:

Kampala City Solid Waste Integrated Management System, Policy, and Technology Accumulation

The integrated management system and policy presented in this TA can help Kampala City select and implement an integrated waste management system and policy that is appropriate for local conditions, and can be used as basic data.

In addition, by providing education and workshops on advanced waste management technologies and policies from Korea and abroad to government officials, they can acquire related technologies and know-how and strengthen their capabilities. This can be expected to not only improve the abilities of the officials, but also to grow the environmental aspect of Kampala City by improving waste management and the economic effect by growing the related environmental market.

Realization of the Promotion of International Greenhouse Gas Reduction Projects

This TA includes the discovery of international greenhouse gas reduction projects. Therefore, it can be said that it is a foundation for promoting international greenhouse gas reduction projects in Kampala City by establishing a detailed business plan for the discovery of international greenhouse gas reduction projects, establishing a step-by-step business promotion strategy for the development of follow-up projects, and producing essential materials at each stage. In addition, the possibility of follow-up projects can be maximized through the promotion and cooperation of Korea East-West Power Co., Ltd. in the promotion of international greenhouse gas reduction projects.

10. Gender and co-benefits:

Imbedded in design of the activities:

In Kampala City and throughout Uganda, waste recycling is mostly done by scavengers, who are poor people who collect and recycle waste directly. Many women workers participate in this work to make a living. These workers collect waste from waste dumps in unsanitary and dangerous conditions. However, their rights are not protected and supported because they are considered to be socially disadvantaged. There are also insufficient systems and capabilities for them. In addition, the representation of women in decision-making, such as determining these systems and institutions, is very low. Therefore, this TA has been designed to provide waste recycling technologies

	<p><i>that enable them to recycle waste in a safe space, not only to increase waste recycling but also to create employment opportunities. In addition, it is planned to support policies to ensure that women's active participation and decision-making are reflected at each stage of the integrated waste management system, and to expand the proportion of women's participation in capacity building for government officials to strengthen the protection and support of women's rights.</i></p>
<p>Gender and co-benefits intended as result of the activities:</p>	<p><i>Women's equality</i> <i>This activity can improve the living conditions of women workers in the waste sector, provide equal opportunities for economic stability and access to jobs, and promote the participation and reflection of women in decision-making on waste.</i></p> <p><i>Co-benefit</i> <i>Through the accumulation of a waste management system and policy, and management technology that are appropriate for the conditions of Kampala City, it can improve the surrounding environment and living environment to improve the quality of life and protect the natural environment, and reduce environmental pollution through proper waste management. In addition, by promoting international greenhouse gas reduction projects such as incinerating and generating methane gas generated in landfills, it can achieve the benefits of both power supply and greenhouse gas reduction at the same time.</i> <i>In addition, it can be expected to increase employment and economic benefits due to the growth of the overall environmental market, and to achieve sustainable development of waste through the overall raising of awareness of the environment.</i></p> <p><i>a. National Reconciliation</i> <i>This project is related to the area of environmental improvement and has little to do with national reconciliation.</i></p> <p><i>b. Inclusive Economic Growth</i> <i>The project will contribute indirectly to poverty reduction by generating additional employment and contribution to provision of basic amenities to the people and hence leading to improvement in quality of life of, at least, the people within the community in which the project is sited. The construction, controlling and monitoring of the LFG plant will create new positions for both skilled and unskilled labour in the communities.</i></p> <p><i>c. Gender Equality</i> <i>Households, and particularly women play important roles in solid waste management in Uganda, as they are mostly responsible to prepare and purchase food and other items for household consumption as well as to manage the household waste. Men, women and children transport waste to collection points and to curbside pick-up, depending on the weight of the containers. Men have primary responsibility to give money to women in the</i></p>

household to pay the tariff collectors.

At the institutional level women are underrepresented both in lower-level positions and at managerial or decision-making levels. Senior and mid-level management staff, most economists, engineers, and operators in the sector are males. Women mostly work at junior (and consequently low-paying) technical positions. The project also will be focused on women's important roles in waste minimization and management to improve female consumer awareness of environmental and solid waste management issues through public awareness campaigns and training. This will enhance collection point operations for women operators by ensuring that overall conditions are improved.

d. Other (Communities' Health)

The unsanitary dumpsites (especially huge scale sites as this target areas) in Uganda and scattered waste piles impacts adjacent communities, especially in terms of excessive odours, noise, dust, vermin and blowing litter. They can elevate health concerns relating to exposed waste, and leachate and landfill gas emissions. As these facilities are unsanitary, visually ugly, and degrade and pollute adjacent lands and water resources, they can reduce adjacent land values and restrict their future use. Communities along dumpsite access corridors also suffer from traffic, noise, dust, litter and accidents. Thus, immediate actions are needed to both improve and expand KCCA's solid waste collection services, and to remediate existing disposal facilities to reduce environmental and public health impacts. The project will be changed the current situation and then the improved municipal solid waste system will accrue healthier benefit to households in the project areas. Modest direct short-term impacts on health levels in the project area may be expected during the project's implementation phase. In addition, implementation of sanitation awareness and hygiene promotion activities will also assist to reduce the incidence of inflectional diseases.

The implementation of project activities in the target areas will contribute positively to climate change, as the emission of greenhouse gases emission will be reduced. Methane (CH₄) is the main GHG generated at the landfill, and combustion of such gas yields carbon dioxide (CO₂) which is less harmful (being methane 28 times as dangerous as carbon dioxide in terms of climate change); other compounds destroyed by flaring include ammonia.

11. Main in-country stakeholders in implementation of the technical assistance activities:

Using the table below, please list and describe the role of in-country stakeholders, participants and beneficiaries who will be involved in or directly consulted during implementation of the assistance.

In country stakeholder	Role in implementation of the technical assistance
Kampala Capital City Authority (KCCA)	<i>The Kampala Capital City Authority (KCCA) is the legal institution responsible for managing waste in Kampala City. It is responsible for managing waste collection and transportation. It collects waste through a total of 28 waste collection vehicles in collaboration with private recycling companies. However, inefficient waste collection is taking place</i>

	<p><i>due to a shortage and aging of vehicles.</i></p> <p><i>When the project is implemented, it is expected that the efficiency of work can be improved by supporting waste collection equipment and improving the system and policy through consulting on the integrated management system for each management stage, including waste collection, transportation, and treatment.</i></p>
<p><i>National Environment Management Authority (NEMA)</i></p>	<p><i>The National Environment Management Authority (NEMA) is a principal agency of the government responsible for coordinating, monitoring, regulating, and supervising all activities relating to the environment. NEMA reviews Environment and Social Impact Studies before granting approval or rejecting projects that may have an impact on the environment.</i></p> <p><i>The review of waste-related Regulations and support for drafting Ordinances in this TA are expected to help complete NEMA's waste-related regulations.</i></p>
<p><i>Ministry of Water and Environment (MWE)</i></p>	<p><i>The Ministry of Water and Environment (MWE) was established in 2007, from the then Ministry of Water, Lands and Environment, following the cabinet decision taken on 15th April, 2007. It has the overall responsibility of the development, managing, and regulating water and Environment resources in Uganda.</i></p> <p><i>The mission of Ministry of Water and Environment is to promote and ensure the rational and sustainable utilisation, development and effective management of water and environment resources for socio-economic development of the country.</i></p> <p><i>The Minister of Water and Environment take decisions on carbon finance activities in her capacity as the CDM/SDM Designated National Authority (DNA) for Uganda.</i></p>
<p><i>Private Sector for Garbage collector</i></p>	<p><i>Solid waste management (SWM) must be provided by the public or private sector. Private participation sometimes refers to formal private enterprise, but in developing countries the informal sector plays a large role in SWM, and private sector contribution to solid waste service provision is a common phenomenon in most cities in developing countries.</i></p> <p><i>About 30 private companies are registered by Kampala City Council (KCC) to collect waste in any division of the city as long as they get customers. However, private sector workers face low salaries due to low budget allocations for solid waste services in developing countries.</i></p> <p><i>Review improvements to the collection environment and employment environment in the private sector.</i></p>

12. SDG Contributions:

Instructions: Please complete the grey section below for a **maximum of three SDGs** that will be advanced through this TA. A complete list of SDGs and their targets is available here:

<https://sustainabledevelopment.un.org/partnership/register/>.

Goal	Sustainable Development Goal	Direct contribution from CTCN TA (1 sentence for top 1-3 SDGs)
1	End poverty in all its forms everywhere	
2	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	
3	Ensure healthy lives and promote well-being for all at all ages	
4	Ensure inclusive and equitable quality education and promote life-long learning opportunities for all	
5	Achieve gender equality and empower all women and girls	
6	Ensure availability and sustainable management of water and sanitation for all	Reducing the proportion of wastewater generated from waste by half through the establishment of integrated waste management plans, and promoting the increase of recycling and safe reuse.
7	Ensure access to affordable, reliable, sustainable, and modern energy for all (consider adding targets for 7)	
	7.1 - By 2030, ensure universal access to affordable, reliable and modern energy services	
	7.2 - By 2030, increase substantially the share of renewable energy in the global energy mix	
	7.3 - By 2030, double the global rate of improvement in energy efficiency	
	7.a - By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	
	7.b - By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	Expanding infrastructure for sustainable energy service provision through the development of greenhouse gas reduction projects, such as the use of landfill gas for power generation.
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	
9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	
10	Reduce inequality within and among countries	
11	Make cities and human settlements inclusive, safe, resilient and sustainable	
12	Ensure sustainable consumption and production patterns	
13	Take urgent action to combat climate change and its impacts	
	13.1 - Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	
	13.2 - Integrate climate change measures into national policies, strategies and planning	Climate change measures are reflected in national policies, strategies and plans through integrated waste management and related policy establishment proposals.
	13.3 - Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	

	13.a - Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible	
	13.b - Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities	
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	
17	Strengthen the means of implementation and revitalize the global partnership for sustainable development	

13. Classification of technical assistance:

Please indicate primary type of technical assistance. Optional: If desired, indicate secondary type of technical assistance.

Please tick off the relevant boxes below	Primary	Secondary
<input type="checkbox"/> 1. Decision-making tools and/or information provision	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> 2. Sectoral roadmaps and strategies	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> 3. Recommendations for law, policy and regulations	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> 4. Financing facilitation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> 5. Private sector engagement and market creation	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> 6. Research and development of technologies	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> 7. Feasibility of technology options	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> 8. Piloting and deployment of technologies in local conditions	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> 9. Technology identification and prioritisation	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Please note that all CTCN technical assistance contributes to strengthening the capacity of in country actors.

14. Monitoring and Evaluation process

Upon contracting of the implementing partners to implement this Response Plan, the lead implementer will produce a monitoring and evaluation plan for the technical assistance. The monitoring and evaluation plan must include specific, measurable, achievable, relevant, and time-bound indicators that will be used to monitor and evaluate the timeliness and appropriateness of the implementation. The CTCN Technology Manager responsible for the technical assistance will monitor the timeliness and appropriateness of the Response Plan implementation. Upon completion of all activities and outputs, evaluation forms will be completed by the (i) NDE about overall satisfaction level with the technical assistance service provided; (ii) the Lead Implementer about the knowledge and learning gained through delivery of technical assistance; and (iii) the CTCN Director about timeliness and appropriateness of the delivery of the activities and outputs.

(i) NDE about overall satisfaction level with the technical assistance service provided;

<i>Items</i>	<i>Goal</i>
<i>Need of proper waste management system and policy</i>	<i>Proposal of at least three Ordinances related to waste management Output: Ordinance Review Report</i>
<i>Need of proper waste recycling infrastructure and proper expertise in waste disposal</i>	<i>Proposal of at least two policy directions for increasing recycling rate Output: Recycling Policy Review Report</i>
<i>Need of proper greenhouse gas treatment facilities generated from landfills</i>	<i>Proposal of Greenhouse gas reduction amount and landfill gas treatment method Output: LOI of DNA for GHG Project</i>
<i>Need of proper waste management experience and technical knowledge</i>	<i>5 workshops for government sector and 1 workshop for private sector (including students) Output: Survey satisfaction level of over 90%</i>

(ii) the Lead Implementer about the knowledge and learning gained through delivery of technical assistance

<i>Workshop</i>	<i>Objectives</i>
<i>Government sector</i>	<p>OBJECTIVE:</p> <ul style="list-style-type: none"> - Provide support to Kampala Capital City Council to have Ordinance undergo the complete development processes, - Draft and Review/revise Ordinance formulated by Kampala Capital City Authority to conform to legal drafting guides in Uganda. - Follow up the submission of Ordinance passed by the Kampala Capital City Council with the Attorney General's Office to secure their certification and gazetting. <p><i>Number of Workshop: 5 times</i> <i>Target group: government officials</i></p>
<i>Private sector</i>	<p>OBJECTIVE:</p> <ul style="list-style-type: none"> - Analyze the current status of Uganda's waste recycling market (collection, transportation, recycling, etc.) and analyze the recycling market in the private sector. - Review measures to increase profitability of waste recycling in the private sector and ways to improve the sanitary environment for workers. - Review certification plans to improve recycling in the private sector. <p><i>Number of Workshop: 1 time</i> <i>Target group: private companies</i></p>