



# GEF-6 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project  
 TYPE OF TRUST FUND: GEF Trust Fund

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## PART I: PROJECT INFORMATION

Project Title:	NAMA on Integrated Waste Management and Biogas in Uganda		
Country(ies):	Uganda	GEF Project ID: <sup>1</sup>	9210
GEF Agency(ies):	UNDP	GEF Agency Project ID:	5574
Other Executing Partner(s):	National Environment Management Authority (NEMA) as the lead agency, Directorate of Water Resources Management (DWRM), National Water and Sewerage Corporation (NWSC), Department of Fisheries Resources and the Directorate of Animal Resources (DAR) in the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), and Ministry of Energy and Mineral Development (MEMD).	Submission Date:	4 August 2015
GEF Focal Area(s):	Climate Change	Project Duration (Months)	60
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/>	Corporate Program: SGP <input type="checkbox"/>	
Name of parent program:	n/a	Agency Fee (\$)	206,153

## A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES<sup>2</sup>

Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs)	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
CCM-1, Program 1: Promote the timely development, demonstration, and financing of low-carbon technologies and mitigation options	GEFTF	2,170,030	12,000,000
Total Project Cost		2,170,030	12,000,000

## B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: Improved waste management practices in towns and municipalities through the introduction of integrated wastewater treatment plants and biogas digesters.						
Project Components	Financing Type <sup>3</sup>	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
1. Institutional strengthening and capacity building for improved waste management and regulation	TA	Enhanced capacity of municipalities to develop waste management plans and manage municipal solid waste and wastewater in a more sustainable manner	1.1 Capacity development of town councils and NGOs on integrated waste management  1.2 Support to towns and municipalities on the design and development of waste management plans	GEFTF	200,000	600,000

<sup>1</sup> Project ID number will be assigned by GEFSEC and to be entered by Agency in subsequent document submissions.

<sup>2</sup> When completing Table A, refer to the excerpts on [GEF 6 Results Frameworks for GETF, LDCF and SCCF](#).

<sup>3</sup> Financing type can be either investment or technical assistance.

			<p>1.3 Promotion of MSW biogas technology among municipalities, project developers, industry and the general public</p> <p>1.4 Incentives introduced to promote increased uptake of wastewater treatment and biogas technology</p> <p>1.5 Multi-stakeholder platforms on waste management and biogas established, whereby stakeholders will take on joint responsibility</p>			
2. Demonstration and investment in integrated wastewater treatment and biogas plants	TA	Biogas and WWT plants using MSW feedstock and sewage sludge procured and fully operational	<p>2.1 Business models designed for integrated wastewater treatment plants and biogas digesters for a range of plant sizes</p> <p>2.5 Monitoring and evaluation of project implementation and demonstration plants, including compilation of lessons learnt.</p>	GEFTF	200,000	600,000

	Inv		<p>2.2 Feasibility studies, permitting procedures and final engineering plans executed for 3 integrated wastewater treatment plants and biogas digesters with an estimated minimum capacity of 1 MW power installed</p> <p>2.3 Investment financing for the 3 plants facilitated and secured</p> <p>2.4 Procurement, construction and operation of:</p> <ul style="list-style-type: none"> <li>• 2 biogas demonstration plants in the medium-sized towns of Mbarara and Mbale, and</li> <li>• 1 biogas plant at an existing compost facility in Jinja for demonstration and capacity development purposes including delivery of electricity and/or heat to a buyer under a long-term contract (PPA)</li> </ul>		1,200,000	9,000,000
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3. Scale up the use of biogas technologies in other municipalities	TA	Biogas technology replicated in other potential municipalities in the country based on lessons learnt and success of the demonstration	3.1 Business model and concept expanded to at least 5 additional locations  3.2 Biogas technology for energy generation integrated into the national renewable energy and MEMD programmes  3.3 Mid and long-term strategy for the replication of biogas projects developed and implemented  3.4 Facility / approach to attract investment into the waste management sector developed  3.5 Based on the outcome of the above, guidelines on waste management practices formulated and best practices documented and disseminated	GEFTF	466,695	1,300,000
Subtotal					2,066,695	11,500,000
Project Management Cost (PMC) <sup>4</sup>				GEFTF	103,335	500,000
<b>Total Project Cost</b>					<b>2,170,030</b>	<b>12,000,000</b>

**C. INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE**

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
Donor Agency	GIZ	Grants	500,000
Donor Agency	African Development Bank	Grants	4,000,000
GEF Agency	UNDP	Grants	200,000
Donor Agency	KfW	Grants	3,000,000
Private Sector	Uganda Energy Credit Capitalization Company	Loans	2,000,000
Recipient Government	National Water and Sewerage Corporation	Grants	2,000,000
Recipient Government	National Environment Management Authority	In-kind	300,000
<b>Total Co-financing</b>			<b>12,000,000</b>

<sup>4</sup> For GEF Project Financing up to \$2 million, PMC could be up to 10% of the subtotal; above \$2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

**D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS <sup>a)</sup>**

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b) <sup>b)</sup>	Total (c)=a+b
UNDP	GEFTF	Uganda	Climate Change	n/a	2,170,030	206,153	2,376,183
<b>Total GEF Resources</b>					<b>2,170,030</b>	<b>206,153</b>	<b>2,376,183</b>

a) Refer to the [Fee Policy for GEF Partner Agencies](#).

**E. PROJECT PREPARATION GRANT (PPG)<sup>5</sup>**

Is Project Preparation Grant requested? Yes  No  If no, skip item E.

**PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS**

Project Preparation Grant amount requested: \$100,000					PPG Agency Fee: \$9,500		
GEF Agency	Trust Fund	Country/ Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee <sup>6</sup> (b)	Total c = a + b
UNDP	GEFTF	Uganda	Climate Change	n/a	100,000	9,500	109,500
<b>Total PPG Amount</b>					<b>100,000</b>	<b>9,500</b>	<b>109,500</b>

**F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS<sup>7</sup>**

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	<i>Hectares</i>
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	<i>Hectares</i>
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	<i>Number of freshwater basins</i>
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	<i>Percent of fisheries, by volume</i>
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO <sub>2e</sub> mitigated (include both direct and indirect)	<i>73,118 tCO<sub>2</sub> metric tons</i>
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	<i>metric tons</i>
	Reduction of 1000 tons of Mercury	<i>metric tons</i>
	Phase-out of 303.44 tons of ODP (HCFC)	<i>ODP tons</i>

<sup>5</sup> PPG requested amount is determined by the size of the GEF Project Financing (PF) as follows: Up to \$50k for PF up to \$2m (for MSP); up to \$100k for PF up to \$3m; \$150k for PF up to \$6m; \$200k for PF up to \$10m; and \$300k for PF above \$10m. On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

<sup>6</sup> PPG fee percentage follows the percentage of the Agency fee over the GEF Project Financing amount requested.

<sup>7</sup> Provide those indicator values in this table to the extent applicable to your proposed project. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the [GEF-6 Programming Directions](#), will be aggregated and reported during mid-term and at the conclusion of the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and/or SCCF.

6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	<i>Number of Countries:</i>
	Functional environmental information systems are established to support decision-making in at least 10 countries	<i>Number of Countries:</i>

## **PART II: PROJECT JUSTIFICATION**

1. *Project Description.* Briefly describe: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline projects, 3) the proposed alternative scenario, GEF focal area<sup>8</sup> strategies, with a brief description of expected outcomes and components of the project, 4) [incremental/additional cost reasoning](#) and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and [co-financing](#); 5) [global environmental benefits](#) (GEFTF) and/or [adaptation benefits](#) (LDCF/SCCF); and 6) innovation, sustainability and potential for scaling up.

In just 15 years, Uganda’s economy has grown from \$6.2 billion in 2000 to more than \$25 billion today. Over that same period, GDP per capita has expanded from \$255 to \$657. In purchasing power parity terms, GDP per capita now stands at \$1,800. Along with its impressive economic growth, Uganda has witnessed steady progress in its human development indicators. While two decades of strong economic growth have undoubtedly brought tangible improvements to the lives of many Ugandans, there is a pressing need for more broad-based and inclusive growth that fully incorporates environmental sustainability principles. Robust economic expansion, while bringing many benefits, has also brought with it some unforeseen urban environmental challenges, most notably traffic congestion, air pollution, and a mounting waste management problem. The emergence of a middle class with new consumption preferences, coupled with remarkably high population growth<sup>9</sup> and urbanization<sup>10</sup> rates have put a strain on the ability of local government to keep up with infrastructure and urban service delivery requirements.

The situation is especially pronounced in the waste sector. As the level of consumption has increased in tandem with higher income levels and high population growth and urbanization rates, so too has the quantity of waste generated, especially in Uganda’s towns and municipalities. If we take the example of the Kiteezi landfill in Kampala, currently the only licensed waste disposal and treatment facility in the capital, the landfill receives around 1,000 tonnes of waste per day. However, the IFC estimates that this represents a collection efficiency of 50%, with some 730,000 tonnes of waste being generated in the city each year. Approximately 70% of the waste generated is organic. The Kampala Capital City Authority (KCCA), which is responsible for waste collection and transport, estimates that only approximately 1% of the waste is ‘informally’ recycled, which consists primarily of plastics which are sold to local and international recyclers.

The agro-processing industry, including fish processing factories and livestock slaughterhouses, produces substantial quantities of wastewater, much of which is discharged into the environment without any treatment. Although more than 100 facilities have permits allowing them to discharge treated wastewater, compliance with effluent standards is low. Many other facilities are operating without permits. By some estimates, 90% of the collected wastewater of Kampala is discharged without any treatment. Due to its effects on fisheries and urban water supply, the Ugandan government considers pollution from wastewater as a major urban environmental management problem, directly impacting two million Ugandans dependent on Lake Victoria, with indirect impacts on 40 million people who live in the lake basin.

<sup>8</sup> For biodiversity projects, in addition to explaining the project’s consistency with the biodiversity focal area strategy, objectives and programs, please also describe which [Aichi Target\(s\)](#) the project will directly contribute to achieving.

<sup>9</sup> The overall population growth rate of 3.24% ranks Uganda 9<sup>th</sup> in the world in that category.

<sup>10</sup> While the vast majority of Ugandans still live in rural areas, the urbanization rate has reached a staggering 5.43% annual rate of change.

Uganda's carbon dioxide emissions in the year 2000 amounted to 11.8 million metric tons, of which the waste sector contributed 693,000 metric tons.<sup>11</sup> There is a clear, discernible trend of increasing volumes of waste and concurrently, escalating emissions from the waste sector. During the period 1994-2005, GHG emissions from the waste sector increased by 72%.<sup>12</sup> Economic growth, population increase, and urbanization are considered the key factors leading to growing volumes of waste in urban areas in Uganda. Except for Kampala where solid waste is disposed in a landfill, all other urban centers have over the years, been disposing solid waste in burrow pits instead of constructed landfills, with no control of methane emissions. There is also no direct policy on methane mitigation from waste.

The global environmental problem that the project will address is the greenhouse gas emissions from improper and inadequate management and treatment of wastewater and municipal solid waste in towns and municipalities in Uganda. Most waste streams are uncontrolled and open and flow directly into the environment without any treatment. Open dumping and burning of solid waste are a common practice in many parts of the country, resulting in the uncontrolled release of local air pollutants and GHG emissions. Considering the adverse health and environmental impacts, the Government of Uganda considers pollution from wastewater and solid waste as a priority concern.

There are a number of barriers in place impeding the widespread application of effective waste management practices, including biogas energy technology and wastewater treatment. These include barriers related to:

#### Institutional capacity

- (i) Budgetary allocations for waste management are low. Waste management receives less than 10% of urban authority budgets. As a result, Urban Councils are generally ill equipped and lack the technical and financial capacity to successfully manage waste. It also means that many urban centers lack functioning solid waste and wastewater management systems, let alone an organized recycling system.
- (ii) Furthermore, the waste sector is plagued by inefficient institutional coordination and a lack of cooperation among stakeholders in MSW management. In many cases, there are overlapping mandates between the environment agencies and local government authorities with respect to licensing and monitoring of solid waste management operations.

#### Technology

- (iii) Municipalities are hampered by the fact that they have inadequate equipment and solid waste handling facilities.
- (iv) There is a lack of successful examples of biogas-based, on-grid electricity generation. Stakeholders in the waste sector generally have limited knowledge of waste-to-energy systems.

#### Finance

- (v) As there are currently no grid-connected biogas plants in Uganda and only limited experience with biogas plants for the waste sector, the banking sector is not familiar with this type of approach. Consequently, financial institutions are reluctant to provide financing for these investments and a considerable amount of paperwork and research is required before offering a loan.

#### Delivery models

- (vi) Linked to the above, there is a lack of economically and financially viable business models.
- (vii) Up until now, there has been very limited private sector engagement in the waste sector. Where solid waste management infrastructure exists, it is owned, controlled and operated by local government authorities, and the system is generally inefficient and usually does not reach a large percentage of town and city residents.

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<sup>11</sup> Second National Communication to UNFCCC.

<sup>12</sup> Ibid.

#### Awareness

- (viii) There is inadequate awareness of households on the importance of reducing waste and disposing of waste properly due to inadequate sensitization.
- (ix) There are currently no avenues for effective community participation in waste management planning.

#### Baseline scenario and associated baseline projects

Under a business-as-usual scenario, the volume of waste generated in urban areas of Uganda would continue to grow unabated. The three underlying trends driving the ever proliferating waste generation in Uganda's cities – namely economic expansion, rapid population growth and urbanization – are expected to continue. The EIU expects real GDP growth to reach 5.6% in 2015 and projects economic growth to average 6.5% in 2016-17, before accelerating to an average of 7.2% in 2018-19 (see Table 1).

**Table 1: Economic growth forecast for 2015-19**

Economic growth						
%	2014 <sup>a</sup>	2015 <sup>b</sup>	2016 <sup>b</sup>	2017 <sup>b</sup>	2018 <sup>b</sup>	2019 <sup>b</sup>
<b>Real GDP</b>	4.8	5.6	6.4	6.6	7.1	7.3

Source: The Economist Intelligence Unit. <sup>a</sup> Actual. <sup>b</sup> EIU forecasts.

It is projected that Uganda's urban population will increase from six million in 2013 to over 20 million in 2040 (see Box 1). A recent World Bank report notes that while cities can help propel growth, the speed of urbanization is challenging and can lead to congestion and strain infrastructure, lowering productivity. A study by the National Water and Sewerage Corporation estimates that under a business-as-usual scenario<sup>13</sup>, the BOD load to the environment could increase by as much as 370% by 2052, using 2008 as the baseline.

#### Box 1: Urbanization in numbers

- Uganda's urban population has doubled in the last 20 years.
- By 2040, 21 million people will live in urban areas in Uganda.
- Kampala is projected to become a mega-city of more than 10 million by 2040.
- 70 percent of non-agricultural GDP in Uganda is generated in urban areas.
- At least 60 percent of the urban population in Uganda live in slums.
- By 2013, 38 percent of the urban population was connected to the electricity grid.

Source: World Bank, "The growth challenge: Can Ugandan cities get to work?" 2015.

Under the baseline scenario, the approach to waste management would continue to be disorganized, haphazard and under-resourced. It is estimated that less than half of the waste generated in urban areas is collected by municipal authorities. A recent household survey conducted by Makerere University showed that uncollected waste is mostly burnt (74.1%) or dumped (15.2%) in open places. Fewer than one-third of industries and factories have wastewater treatment facilities or discharge permits. Efforts to reduce and sustainably manage urban waste flows would be sporadic and would not be sufficient to address the prevailing barriers.

Recognizing the magnitude and urgency of the waste management challenge, the National Environment Management Authority (NEMA) initiated a municipal solid waste composting project in 2005, with the primary aim of improving the management of municipal solid waste by turning the biodegradable portion of the waste into compost manure for agricultural use through a cooperation agreement with 17 municipalities in the country. At the end of 2014, solid

<sup>13</sup> This scenario assumes that no action is put in place to target waste reduction, reuse, indiscriminate dumping of solid waste and illegal discharge of wastewater.



waste compost plants with an optimum capacity of 70 tons per day had been constructed in 12 municipalities. The NEMA project, which links together the Ministry, local government, private sector, academia and civil society organizations around the issue of municipal solid waste, represents the primary baseline initiative of the proposed GEF project. Up until now, the NEMA programme has not considered biogas energy plants in the selected municipalities. So there is an opportunity for the GEF project to link to and expand upon the activities under the NEMA project.

Meanwhile, the Ministry of Energy and Mineral Development (MEMD) is pushing forward the use of renewable energy sources, in line with Uganda's Renewable Energy Policy. The policy aims to increase the use of renewable energy to 61% of the total energy consumption by the year 2017. The Promotion of Renewable Energy and Energy Efficiency Programme (PREEEP) is an initiative commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) to support MEMD over the period 1999-2017. PREEEP carries out capacity building measures for the Ministry as a contribution to improved policies, budget planning, monitoring and evaluation. Currently, the programme is also assisting MEMD to establish energy focal points in 17 pilot districts. However, the PREEEP programme has not exploited the energy potential from MSW and sewage sludge and does not address specific barriers for renewable energy technologies.

Uganda's installed electricity generating capacity stands at 810 MW, with peak demand of 510 MW. The electricity mix is dominated by hydropower, with a 60% share, followed by fossil fuels (mainly heavy fuel oil and diesel) at 21% and other renewable sources at 19%. In 2001, the state-owned Uganda Electricity Board was unbundled into the Uganda Electricity Generation Company Limited (UEGCL), the Uganda Electricity Transmission Company Limited (UETCL) and the Uganda Electricity Distribution Company Limited (UEDCL). The unbundling also created a regulatory authority, the Electricity Regulatory Authority (ERA) overseeing the sector. Uganda has a renewable energy policy in place with renewable energy feed-in tariffs published and in use with an independent power sector regulator. The RE FIT tariff for biomass (MSW) is \$ 0.103 per kWh and the FiT premium is \$ 0.01 per kWh. Uganda will soon become second only to South Africa as the country with the most independent power producers (IPPs) in Sub-Saharan Africa.<sup>14</sup>

Although biomass / municipal solid waste is considered one of the priority renewable energy technologies in Phase 2 of the RE FIT program, under the baseline scenario, the application of biogas technology for MSW treatment and energy generation is expected to increase very slowly due to the indicated barriers and the lack of successful examples. Moreover, the progressive implementation of the NEMA programme may translate into a lost opportunity if biogas energy technology is not included. GEF support is therefore particularly relevant as the waste sector currently lacks the required knowledge and expertise to integrate renewable energy technologies into the MSW management solutions offered under the baseline NEMA programme.

#### Alternative scenario

The proposed UNDP-GEF project aims to address the barriers outlined above and open up the market potential for biogas technology. The GEF project will pilot waste-to-energy generation through integration of the solid and liquid waste streams from the selected municipalities and agro-processing industry. The project aims to demonstrate the successful operation of biogas energy technology as a viable option for MSW treatment, thereby generating best practices towards achieving early market development and replication in other towns. It is envisaged that the GEF funding will be used to create sustainable MSW infrastructure in three municipalities initially, with subsequent upscaling to other urban centers. Thus, the proposed GEF project provides a unique opportunity to foster more sustainable waste management practices, including the use of biogas technology, in Uganda.

The proposed NAMA is the result of a NAMA prioritization exercise under the UNDP-supported Low Emission Capacity Building (LECB) project. The prioritization exercise involved 87 stakeholders, including government ministries, civil society, the business community, academia, and the media. Initially, it was envisaged that the NAMA would only target wastewater from the agro-processing industry, especially fish factories and abattoirs.

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<sup>14</sup> GET Fit Uganda Annual Report 2014.

However, following an initial pre-feasibility study, it was observed that the waste streams from the fish processing industry and small-scale abattoirs are not sufficient to generate a substantial volume of biogas for commercial purposes. Consequently, the scope of the initiative has been expanded to include waste streams from municipalities and the agro-processing industry. A NAMA on integrated waste management and biogas will be developed for submission to the UNFCCC NAMA Registry, with the goal of scaling up the GEF project. While the GEF project includes activities in three cities, the NAMA will provide a framework for scaling up to other towns and municipalities.

The project is fully aligned and consistent with the GEF-6 climate change mitigation focal area strategy. In particular, it will contribute to Objective CC 1: Promote innovation, technology transfer and supportive policies and strategies and Program 1: Promote timely development, demonstration and financing of low-carbon technologies and mitigation options. Bio-energy systems using biomass from wastes is one of the candidate options under this program. While household biodigesters are a well established technology in Uganda, biogas plants for the waste sector are not common and have not reached commercial scale. Moving from the research stage to the commercial application of robust and reliable biogas technology will require technology transfer. The proposed approach of combining wastewater treatment and biogas production has transformational potential and represents a clear shift from current practice.

The objective of the proposed UNDP-GEF project “NAMA on Integrated Waste Management and Biogas in Uganda” is improved waste management practices in towns and municipalities through the introduction of integrated wastewater treatment plants and biogas digesters. In order to achieve this objective, the project will focus on institutional strengthening and capacity development and creating an enabling environment as well as knowledge development for up-scaling similar initiatives. The project has three main components, as follows:

### **Component 1: Institutional strengthening and capacity building for improved waste management and regulation**

This component is designed to address the barriers that relate to the inadequate regulatory framework and low institutional capacity of waste management stakeholders to effectively manage the waste streams from municipalities and the agro-processing industry. The component comprises five outputs:

#### **1.1 Capacity development of town councils and NGOs on integrated waste management**

Capacity development is a fundamentally important aspect of the initiative in order to bring about the sought after transformation in how waste is managed. Such capacity development support could cover topics such as the importance of effective waste management, waste flow surveys, waste management planning, potential technology options, attracting investment, and participatory approaches, among others.

#### **1.2 Support to towns and municipalities on the design and development of waste management plans**

Waste management plans have a key role to play in achieving sustainable waste management. Their main purpose is to give an overview of all waste generated, by specific waste streams, and treatment options for the waste. The project will support municipalities in collecting data related to the quantity and composition of waste streams in their jurisdiction and will provide guidance in developing waste management plans, including the selection of appropriate technology.

#### **1.3 Promotion of MSW biogas technology among municipalities, project developers, industry and the general public**

A sensitization campaign will be conducted on the importance of sustainable waste management in general and on the benefits of MSW biogas technology in particular, involving the municipalities, project developers, agro-processing industry and the general public. One of the key principles of the campaign is that waste management is not only about compliance but also a social responsibility that eventually leads to behavioral change.

#### **1.4 Incentives introduced to promote increased uptake of wastewater treatment and biogas technology**

An incentive scheme (for example, tax breaks for equipment) will be devised to promote increased uptake of wastewater treatment and biogas technology. Where possible, existing mechanisms will be used. For example, the

Uganda Energy Credit Capitalization Company can provide financial support and extend the loan tenors (maturity) to make a RE project financially viable.

1.5 Multi-stakeholder platforms on waste management and biogas established, whereby stakeholders will take on joint responsibility

In order to facilitate sector coordination, the project will support the establishment of a multiple stakeholder coordination platform, whereby stakeholders will take on joint responsibility with clear roles and responsibilities for each actor. Guidelines on the functioning and performance of these multi-stakeholder platforms will be developed and documented.

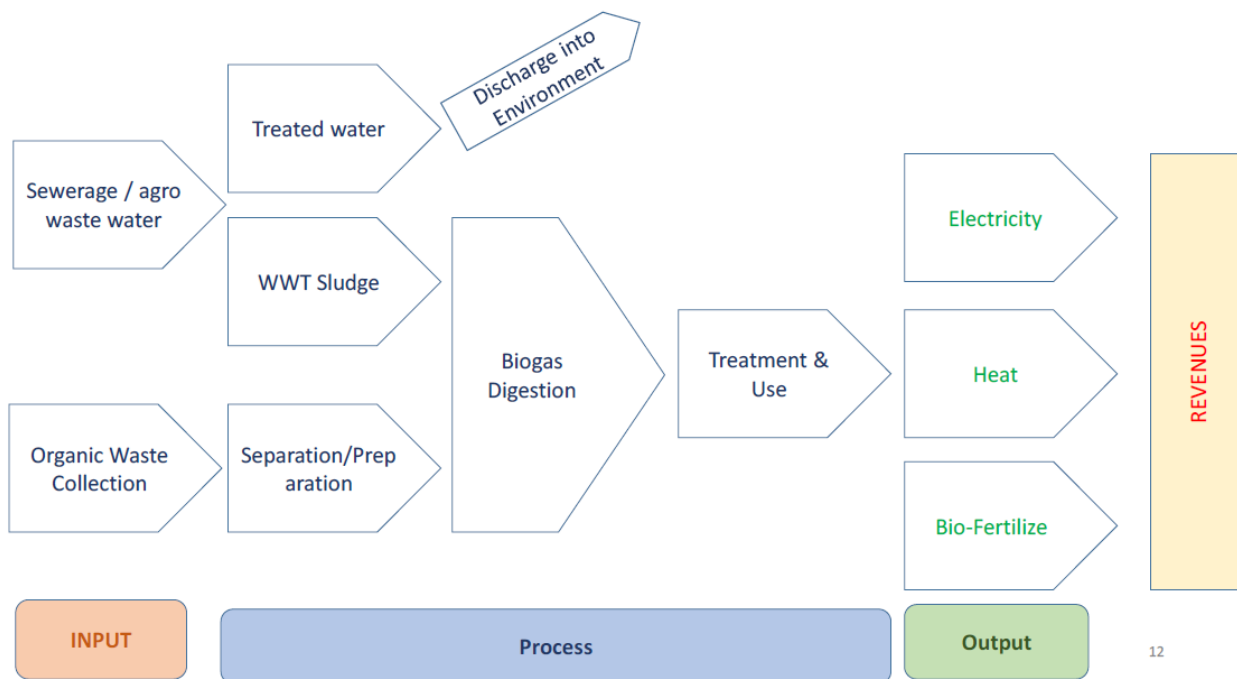
**Component 2: Demonstration and investment in integrated wastewater treatment and biogas plants**

This component addresses the barriers related to technology and delivery models. The component consists of two TA outputs and three capital investment outputs:

2.1 Business models designed for integrated wastewater treatment plants and biogas digesters for a range of plant sizes

The development of viable business models will enable technical and financial sustainability, thereby creating new opportunities for investment. In developing the business models, opportunities for public-private partnerships (PPPs) will be explored as PPPs have emerged as an alternative to improve municipal solid waste service performance at lower costs. One potential model that will be considered will be one in which the public sector retains the ownership of the plant, but the operations, management and maintenance will be outsourced to private companies. Particular attention will be paid to O&M of the integrated wastewater treatment and biogas plants, cost recovery and diversifying revenue streams through the sale of electricity, heat and bio-fertilizer. Figure 1 below shows the flow chart depicting the value chain of the proposed concept.

**Figure 1: Flow chart of integrated wastewater treatment and biogas plant**



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2.5 Monitoring and evaluation of project implementation and demonstration plants, including compilation of lessons learnt.

Under this output, an MRV system will be established for the NAMA. This improved monitoring system will be fully integrated into NEMA's core operations. In addition, lessons learned will be compiled on the experience, operational performance and commercial viability of the demonstration plants. These lessons will be instrumental in informing the design of subsequent biogas plants in other municipalities.

#### Investment sub-component

2.2 Feasibility studies, permitting procedures and final engineering plans executed for 3 integrated wastewater treatment plants and biogas digesters with an estimated minimum capacity of 1 MW power installed

Once the business model is in place, this output will lay the groundwork for subsequent investment. Three bankable feasibility studies will be prepared for the proposed sites of Mbarara, Mbale, and Jinja, with firm data for project development. Permitting procedures, including compliance with environmental and safety standards, as well as the final engineering plans will also be carried out.

2.3 Investment financing for the 3 plants facilitated and secured

The estimated construction cost for a medium sized biodigester is in the range of USD 1.2 – 1.8 million. The project will help to facilitate access to finance for the three biogas plants by maintaining a close dialogue with the Uganda Investment Authority, Private Sector Foundation Uganda, the Uganda Energy Credit Capitalization Company, Credit Support Facility under MEMD, and commercial banks. The project will explain the benefits of improved waste management services in general and biogas plants in particular.

2.4 Procurement, construction and operation of 2 biogas plants in Mbarara and Mbale and 1 biogas plant at an existing compost facility in Jinja

Potential biogas technologies that can be considered are High Performance Temperature Controlled (HPTC) biogas digesters and conventional Continuous Stirred Tank Reactor (CSTR) type. To secure sufficient feedstock for biogas generation, liquid and solid waste streams will be combined. The feedstock for the biogas digesters will include sludge from wastewater treatment, organic municipality waste, and waste from the agro-processing industry. The project will facilitate cooperation with technology providers on wastewater treatment and biogas.

### **Component 3: Scale up the use of biogas technologies in other municipalities**

Building on the results of the first two components, this project component seeks to scale up the use of biogas technologies in other municipalities. The component includes five outputs:

3.1 Business model and concept expanded to at least 5 additional locations

Based on the business model developed under Output 2.1, and the experience gained in designing, constructing, operating and maintaining the demonstration biogas plants, the concept will be expanded to at least 5 additional municipalities. It is expected that this will take place in years 4 and 5 of the project period.

3.2 Biogas technology for energy generation integrated into the national renewable energy and MEMD programmes

In order to truly achieve scale, it will be important for biogas technology to be firmly embedded in the national renewable energy and MEMD programmes. The project will work closely with the relevant authorities to ensure that MSW biogas technology is incorporated into national planning processes.

3.3 Mid and long-term strategy for the replication of biogas projects developed and implemented

This output focuses on establishing the conditions for additional investment in biogas energy generation in the medium and long term, both by government and private investors. A mid and long-term strategy for replication will be developed.

3.4 Facility / approach to attract investment into the waste management sector developed

Such a facility could include guarantee mechanisms and/or financing schemes for project preparation costs, among others. The GEF project is not expected to provide financing for such mechanisms but will support their

establishment and design as necessary.

3.5 Based on the outcome of the above, guidelines on waste management practices formulated and best practices documented and disseminated

The experience gained by the project will generate a considerable amount of useful information. In order to capture and disseminate this information, guidelines on waste management practices will be formulated and best practices will be documented and disseminated broadly.

#### Environmental benefits

With a total installed capacity of at least 1 MW at the three sites, it is expected that together the three biogas plants will produce about 6,570 MWh of electricity per year. The grid emission factor in Uganda has been estimated as 0.55645 tCO<sub>2</sub>/MWh.<sup>15</sup> Thus, the annual GHG emission reductions would be approximately 3,656 tonnes of CO<sub>2</sub>. Over the expected useful life of the biogas plants of 20 years, the direct GHG emission reduction from the GEF project would be 73,118 tonnes of CO<sub>2</sub>. Using a conservative replication factor of 2, the indirect GHG emission reduction under the bottom-up approach would be 146,236 tonnes of CO<sub>2</sub>. GHG benefits from methane recovery and heat production will be calculated during the PPG.

In addition to global environmental benefits, biogas interventions also have many positive impacts on the local environment. Biogas production reduces landfill waste and as a result, it can dramatically reduce odors. The use of an anaerobic digester can protect water quality since it lowers pathogen levels. Moreover, the bio-fertilizer by-product is a nutrient-rich fertilizer that can be used in the agricultural sector to increase crop yield. Biogas production also brings many economic benefits. It can create jobs, it turns a cost item (waste treatment) into a revenue-generating opportunity, and it can operate in conjunction with composting operations.

#### Incremental reasoning

The proposed GEF-funded project will trigger market development for a renewable energy technology (biogas), which would not take place under the baseline project alone. GEF support is required to remove the prevailing barriers in the waste sector in order to achieve the short-term and medium-term targets of the NEMA programme. The GEF-funded intervention will create further investment opportunities, thereby mobilizing private sector investment. By the end of the project, MSW-based biogas technology will have demonstrated its potential to contribute to Uganda's renewable energy targets. At that stage, it is expected that widespread deployment will take place.

In the absence of GEF support, the institutional capacity of stakeholders in the waste sector would remain limited, there would continue to be gaps in the regulatory environment, and the level of awareness on proper waste management would remain low. As a result of the proposed UNDP-GEF intervention, the identified barriers related to technology (project design and operation), institutional capacity (supportive institutional framework and human resources), and delivery models (sustainable business models) will be greatly reduced. The proposed results and activities are deemed fully incremental as biogas technology is actually not covered by the NEMA programme.

#### Innovativeness

While biogas technology is not new in Uganda, the proposed approach of integrating wastewater treatment and biogas production has not yet been done on a commercial scale. These integrated plants will help to address both solid and liquid waste streams from municipalities and the agro-processing industry. The proposed project will pioneer a new way of doing business in the three pilot municipalities, in which waste is considered a valuable resource. While reducing the volume of landfill waste, the biogas plants will also generate electricity, heat and bio-fertilizer, which can all be used for productive purposes. Biogas production represents a promising way to overcome

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<sup>15</sup> Belgian Development Agency, Ugandan Grid Emission Factor 2013.

the problem of waste treatment, with co-digestion of organic waste one of the most effective ways to treat a wide variety of solid organic waste products and sludge.

**Sustainability**

The project has been designed in a way to ensure that project results are sustained well beyond the life of the project. Capacity development of town councils are an important element to enable municipalities to plan and manage waste much more effectively. In developing business models, special attention will be paid to operations and maintenance and revenue streams. Partnerships will be forged with well-established technology providers to ensure that quality systems are procured. Furthermore, the multi-stakeholder platform that is set up will endure beyond the project duration and will emphasize the importance of a shared responsibility on waste management. The incentives that are put in place will help to stimulate market development of waste-to-energy technology. Finally, the three proposed demonstration plants will give confidence to both residents and investors on the viability and suitability of biogas plants as a means of managing municipal organic waste.

**Potential for scaling-up**

There is a vast growth potential for the waste management sector in Uganda, given the underlying drivers discussed earlier and the fact that it is such an important priority and concern. MSW-based biogas installations for energy generation have a large replication potential in Uganda and other countries in the region. There is significant potential to scale up given that open dump sites are still a common practice in many municipalities and current compliance levels among major urban polluters are very low. There is also strong interest and support from urban authorities to address this issue. If a successful model is demonstrated, the waste management solution would be taken up by many other districts and municipalities in the country. The proposed GEF project aims to address the key barriers to unleash this potential.

As this GEF project represents one of the government’s top priority NAMAs, efforts will be made to attract international financial assistance for scale-up. The initial cost estimates for technology support and a credit facility total \$53.7 million, of which \$20 million will be sought from bilateral and multilateral donors. A subsequent, follow on GCF-funded program could be another important means to scale up the project results. Efforts will be made to ensure that this GEF project will generate the data and detailed analysis that would be required to put together a GCF proposal at a later stage.

2. *Stakeholders.* Will project design include the participation of relevant stakeholders from [civil society](#) and [indigenous people](#)? (yes  /no  ) If yes, identify key stakeholders and briefly describe how they will be engaged in project design/preparation.

During project design, relevant stakeholders will be requested to provide baseline data on the current and projected situation in the waste sector, both at the national level and in the selected cities of Jinja, Mbarara and Mbale. All relevant stakeholders will be invited to participate in a PPG inception workshop to discuss needs, barriers and opportunities for effective municipal solid waste and wastewater management. Partners will also be invited to attend the PPG validation workshop to validate the project design. The key stakeholders and their roles are described below. The project is not expected to have any impact on indigenous people.

Stakeholder	Role
National Environment Management Authority (NEMA)	As a regulatory authority, NEMA is responsible for waste management policy development. As the current policy is being reviewed, NEMA will be instrumental in the finalization of the integrated Solid Waste Management policy and in supporting the creation of an enabling environment for wastewater treatment and utilization of biogas technology. NEMA will also serve as the lead implementing partner at the national level for this initiative.

Ministry of Energy and Mineral Development	The MoEMD is guided by the Renewable Energy Policy (2007), including the promotion and development of biogas technology in the country. In 2015, a new feed-in tariff structure will be introduced for RE projects. The Ministry will be engaged in the possibility of connecting the biogas plants to the grid infrastructure and in negotiation of the feed-in tariff.
National Water and Sewerage Corporation (NWSC)	NWSC is responsible for the supply of water and treatment of wastewater in urban Uganda. It is a key player in the sector with a vast knowledge base, and has a mandate to do wastewater treatment in urban centers outside Kampala. NWSC will be involved in the planning and design of the integrated wastewater and biogas plants and will provide the necessary data on wastewater. Ultimately, NWSC will manage the new plants constructed under the project.
Directorate of Water Resources Management (DWRM)	The DWRM is responsible for monitoring and regulating water resources and issuing wastewater discharge permits. Its mandate includes the coordination of stakeholders in the wastewater sector. DWRM will play an important role in improved compliance with the regulatory framework and functioning of the WWT plants.
Ministry of Water and Environment (MWE)	MWE, which is tasked with the sound management and sustainable utilization of Uganda's natural resources, will have an advisory role in developing institutional frameworks for integrated waste management and establishing policy regulations governing renewable energy from biogas technology from sewage sludge and MSW feedstock. It can also provide advice on the reuse and recycling of products in order to safeguard the environment.
Ministry of Local Government (MOLG)	MOLG is the main institution responsible for spearheading decentralization in Uganda. The Ministry will help coordinate project activities with the municipal local governments, ensuring that legal requirements are addressed and quality services are delivered within the development plans in a coordinated and cost effective manner.
Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)	Their involvement in the project will be limited to an advisory role linked to the quality and quantity of bio-slurry and by-products from biogas production that is useful for agricultural production.
Kampala City Council Authority (KCCA) and District / Municipal Local Governments	KCCA is responsible for waste management within the Kampala City boundaries. The project will coordinate with KCCA and other local governments in the development of waste management guidelines and regulatory frameworks, awareness creation, and private sector partnerships based on its experience in existing waste management projects.
Uganda Energy Credit Capitalization Company (UECCC)	UECCC's mandate is to facilitate investments in Uganda's renewable energy sector by pooling resources from the government, investors and development partners. It provides credit support for private sector led renewable energy infrastructure development. Among the services that it provides, UECCC can provide capacity building for IPPs and financial institutions.
Uganda Investment Authority	The Uganda Investment Authority is a semi-autonomous government agency whose role is to provide firsthand

	information on investment opportunities in Uganda and to issue investment licenses. Their involvement will entail promoting waste-to-energy technology to investors, with demonstrated potential in the pilot municipalities.
Private Sector Foundation Uganda (PSFU)	The vision of the foundation, which is made up of 175 business associations, is to be the lead national partner in private sector development. It will be involved in developing and carrying out effective policy advocacy activities on behalf of the private sector on issues related to business development in the project, especially, investment opportunities and operations and maintenance of the integrated waste management systems established under the project.
Waste Pickers Alliance Uganda	The alliance seeks to address the poor working conditions, poor earnings and lack of legal protection of waste pickers. It aims to increase waste pickers' earnings for a decent livelihood, by removing the middlemen, and to train them on savings and cooperative organizing, with a view to eventually integrating them into the formal economy.

3. *Gender Considerations.* Are [gender considerations](#) taken into account? (yes  /no  ). If yes, briefly describe how gender considerations will be mainstreamed into project preparation, taken into account the differences, needs, roles and priorities of men and women.

Project preparation will include special attention for waste pickers, especially women and girls, who face multiple and intersecting forms of discrimination in the sector. Women waste pickers face a stigma and are often marginalized and excluded from other forms of participation in the economy. As the implications of gender in the informal waste management sector in Uganda are not fully understood or appreciated, it is proposed to carry out a gender assessment during project preparation to fully gauge the gender implications in the waste sector, identify possible interventions that can narrow the gender gap, and develop specific indicators and targets related to gender equality. One possible indicator could include increase in women's income, for example.

Potential interventions by the project to address the issue of gender equity could include:

- (i) Commitment to the promotion of gender equality in waste management could be a criterion in choosing partner organizations and local experts;
- (ii) A gender perspective will be integrated in assessment studies, planning, implementation and monitoring of waste management projects. This will include a gender-specific analysis of how available waste and resources are valued and used;
- (iii) Actions that focus on the different needs of women and men in training;
- (iv) Use of affirmative action that targets increased numbers and skills acquisition by female staff;
- (v) Staff training on gender analysis and mainstreaming;
- (vi) Finally, at the policy level, the project will work with relevant institutions and the Waste Pickers Alliance to regularize and professionalize the informal waste sector.

4 *Risks.* Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable).

Risk Description	Level of Risk	Mitigation Measure
Political: In the face of competing priorities, the political	Low	The broad engagement of stakeholders through the NAMA identification process has ensured the



Risk Description	Level of Risk	Mitigation Measure
will to comprehensively address waste management may not be sustained.		ownership and commitment of lead government agencies. The stakeholder-driven process has naturally selected the most engaged and committed stakeholders to develop the NAMA.
Technical: While biogas technology is not new in Uganda, the proposed approach of integrating wastewater treatment and biogas production has not yet been done on a commercial scale.	Medium	The project will benefit from the experience of Makerere University, which has done extensive research on biogas and developed a wastewater treatment plant and biogas plant for the Kampala abattoir as a demonstration/research facility. Taking it to a commercial level will rely on the sale of electricity, heat and bio-fertilizer. The development of sound business plans, and partnering with the right technology providers, will be essential in addressing this risk.
Technical: Inadequate attention to the quality of design of the biogas facility could undermine confidence in biogas technology for MSW processing.	Medium	The project will facilitate cooperation with technology providers on WWT and biogas. There are a variety of biogas systems available on the market. As soon as accurate information on the quantity and quality of waste streams is available, advice can be formulated on the best possible biogas technology for a particular site. The selection of a particular technology and the design parameters will be made in close consultation with Makerere University, local government partners, and biogas experts.
Financial: Project owners and local financial institutions may not be willing to invest in biogas technology since the commercial approach has not yet been proven.	High	The project will engage closely with key financial sector players, notably the Uganda Investment Authority, Private Sector Foundation Uganda, the Uganda Energy Credit Capitalization Company, Credit Support Facility under MEMD, and commercial banks. The project will explain the benefits and value chain of MSW-based biogas plants. Putting in place financial mechanisms such as a guarantee scheme would also help to facilitate financial closure.
Information: There is currently no up-to-date inventory or data on the quantity and composition of waste streams suitable for biogas generation.	High	Data collection related to the quantity and composition of waste streams will be a very important part of the process of developing waste management plans in the pilot municipalities. For specific project sites, feasibility studies will address this issue. The project will also explore the possibility of combining efforts with GIZ on the development and management of a database on waste management and mapping of waste streams in Uganda.
Social: Sites for waste treatment and disposal can cause local social impacts, such as interference with traditional, often informal waste collection.	Medium	Waste collectors in the informal sector will be fully involved in both project preparation and implementation. The project will work closely with relevant authorities and the Waste Pickers Alliance to identify ways of improving working conditions and earnings, with a particular focus on women. The ultimate aim will be to regularize the sector.
Sustainability: There is a risk that the integrated wastewater treatment and biogas plants will	Medium	Sustainability considerations have been fully integrated into the project design. The strong focus on capacity development will help to ensure that municipalities

Risk Description	Level of Risk	Mitigation Measure
not be sustainable, either from a financial or technical perspective.		have the required expertise and skills to operate and manage the biogas facilities. From a financial perspective, the design of business models will take into account investment costs, operational costs, and operational sustainability. On a broader level, the MRV system will become a core part of NEMA's day-to-day operations, enabling the agency to strengthen enforcement of waste management regulations.

**5. Coordination.** Outline the coordination with other relevant GEF-financed and other initiatives.

The GEF project will closely coordinate its activities, exchange information and lessons, and work toward a common objective with the following related initiatives. Makerere University has designed and developed a wastewater treatment system combined with biogas technology that is operational at the Kampala abattoir. The university has also developed proposals with the support of Sida towards the upscaling of WWT and biogas plants at additional abattoirs in Uganda. The GEF project will draw on national technological capacities existing in research institutions and universities. For example, Makerere University can analyze the composition of waste streams on COD/BOD, Ph, carbon-to-nitrogen ratio and can monitor the performance of WWT and biogas systems. The university can also play an important role in knowledge development.

The National Sewerage and Water Corporation currently operates one WWT plant in Kampala and is in the process of commissioning three more. One WWT plant (45,000m<sup>3</sup>/d) will incorporate biogas technology and is financed by KfW and the African Development Bank. The biogas plant will primarily use the sludge from the WWT plant as feedstock and will in addition have the capacity to take in waste streams from external sources. The Kampala Capital City Authority (KCCA) is in the process of rolling out a collection/transport and disposal/treatment project within the next few months. A landfill will be capped and the methane will be captured for power generation. Given the fact that there are already several ongoing waste management initiatives in Kampala, the project does not envisage any investments in the Kampala vicinity. Still it will be instructive to establish links to the initiatives in the capital to share data and knowledge. The multi-stakeholder platform that will be set up under the project will help to facilitate this coordination.

MEMD has constructed a 300 m<sup>3</sup> biogas digester at Kayei, in Apac District, with support from the World Bank. The biogas plant will generate 10 kW of power. MEMD is also planning to construct one large-scale biogas digester as soon as sufficient waste streams are identified. Under the NEMA programme outlined earlier, 12 towns have composting plants that are operational. Organic waste is collected and utilized to produce compost. These waste streams can be used to generate biogas for power as well as organic fertilizer. The GEF project will provide incremental support to integrate biogas production at the existing compost facility in Jinja.

GIZ is active in the waste sector and implements several projects on waste management. In particular, GIZ provides support towards the Reform of the Urban Water and Sanitation Sector (RUWASS) and is a member of the Wastewater Dialogue network in Uganda. UNDP could link up to this network. GIZ's main focus areas are in Kampala and a district in the North of Uganda. There may also be an opportunity to combine efforts towards the development and management of a database on waste management and mapping of waste streams in Uganda. Finally, the project will further coordinate with the national renewable energy programme to avoid duplication of efforts, specifically in the field of capacity building and promotion. Synergies with RE in the field of policy development to accelerate the implementation of renewable energy technologies will also be explored.

**6. Consistency with National Priorities.** Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? (yes  /no  ). If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.

The project is fully in line with national strategies and plans, key among which include:

In the context of Vision 2040, which is Uganda's long-term strategic growth framework, environmental protection and waste management are emphasized. The medium-term growth framework, the National Development Plan 2009/10 – 2014/15, considers climate change and waste management as enabling sectors. Under the national Waste Management Policy, environmentally sound management of waste is defined as “taking all practical steps to ensure that waste is managed in a manner which will protect human health and the environment against the adverse effects which may result from the waste”.

The National Climate Change Policy identifies the following mitigation strategies for the waste sector:

- Promote the development of waste-to-energy programmes for converting municipal solid waste into energy for domestic and commercial use
- Promote the sorting and composting of waste
- Promote the trapping of methane for use as energy instead of flaring the gas to waste
- Promote the gasification and incineration of large quantities of waste to generate thermal energy or electricity
- Promote the use of human waste in production of biogas for cooking and lighting in institutions such as schools and hospitals, leaving the solid by-product to be used as fertilizers.

The Second National Communication to the UNFCCC identifies the waste sector as one of the key sources of GHG emissions in Uganda. It also notes the trend of increasing emissions from the waste sector. Furthermore, the Technology Needs Assessment recognizes the solid waste sector as one of the six sectors that contribute most to Uganda's GHG emissions. The TNA identifies as priority mitigation technologies composting, recycling, anaerobic landfill, aerobic landfill, minimizing of waste production, sanitary landfill and sorting.

Finally, Uganda has set the following targets for the renewable energy sector:

- 61% of electricity generation from renewables by 2017<sup>16</sup>
- 188 MW of small hydro, biomass and geothermal capacity by 2017
- 30,000 solar water heaters by 2017
- 100,000 biogas digesters by 2017

Conversion of municipal waste to energy is cited as one of the supporting objectives of the RE policy, with a target of 30 MW installed capacity from municipal waste by 2017.

*7. Knowledge Management.* Outline the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

Knowledge management will be a key element of the project, especially for upscaling and replication. The project aims to identify, collect and organize relevant data, as well as engage in cross-fertilization and sharing of lessons learned, both domestically and internationally, thereby contributing to an updated and systematized knowledge base. In addition, learning missions will take place during implementation to capture and document lessons from similar initiatives, and to make them available in a simple and readily accessible format. Gathered knowledge including lessons learned and best practices from relevant projects and initiatives will be adapted and shared in different forums with staff and key stakeholders. At every opportunity, the project will aim to mainstream knowledge into the GEF operations and connect to available knowledge resources.

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<sup>16</sup> The current renewable energy share is 19.2% of total installed capacity, excluding hydropower.

**PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)**


**A. RECORD OF ENDORSEMENT<sup>17</sup> OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):**

(Please attach the [Operational Focal Point endorsement letter](#)(s) with this template. For SGP, use this [SGP OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Patrick Ocailap	Deputy Secretary to the Treasury	Ministry of Finance, Planning and Economic Development	13 July 2015

**B. GEF AGENCY(IES) CERTIFICATION**

**This request has been prepared in accordance with GEF policies<sup>18</sup> and procedures and meets the GEF criteria for project identification and preparation under GEF-6.**

Agency Coordinator, Agency name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email
Adriana Dinu, UNDP-GEF Executive Coordinator		August 4, 2015	Faris Khader, Regional Technical Advisor	+251 91 250 3307	<a href="mailto:faris.khader@undp.org">faris.khader@undp.org</a>

**C. ADDITIONAL GEF PROJECT AGENCY CERTIFICATION (APPLICABLE ONLY TO NEWLY ACCREDITED GEF PROJECT AGENCIES)**

For newly accredited GEF Project Agencies, please download and fill up the required [GEF Project Agency Certification of Ceiling Information Template](#) to be attached as an annex to the PIF.

<sup>17</sup> For regional and/or global projects in which participating countries are identified, OFP endorsement letters from these countries are required even though there may not be a STAR allocation associated with the project.

<sup>18</sup> GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF