Initiative for Climate Action Transparency – ICAT Uganda

Expansion of the National GHG Inventory Management System and Operationalization of NDC Tracking Framework

Project no.: MoWE/CONS/2022-2023/00024

PROJECT VALIDATION WORKSHOP REPORT

December 2024

Technical support provided by:

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PREPARED UNDER

The Initiative for Climate Action Transparency (ICAT), is supported by Austria, Canada, Germany, Italy, the Children's Investment Fund Foundation, and the Climateworks Foundation.

The ICAT Secretariat is managed and supported by the United Nations Office for Project Services (UNOPS)

Document control

DOCUMENT CONTROL	
CLIENT:	Ministry of Water and Environment
CLIENT ADDRESS:	Kampala, Luzira
PROJECT TITLE	Expansion of the National GHG Inventory Management System and Operationalization of NDC Tracking Framework
PROJECT NUMBER:	MoWE/CONS/2022-2023/00024
DELIVERABLE TITLE	Report of the Validation Workshop for the ICAT Project (NDC
REVIEWED BY:	Luanne Stevens Mike Bess CCD team
CCD ACCEPTANCE:	Name: Date:
REPORT SIGN-OFF	Name: Date:

SUBMISSION DATE TO UNOPS	

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Abbreviations

CCD	Climate Change Department
GHG	Greenhouse Gas
GHGMI	Greenhouse Gas Management Institute
ICAT	Initiative for Climate Action Transparency
IPCC	Intergovernmental Panel on Climate Change
KCCA	Kampala Capital City Authority
MTIC	Ministry of Trade, Industries and Cooperatives
MoLG	Ministry of Local Government
MoWT	Ministry of Works and Transport
MEMD	Ministry of Energy and Mineral Development
MWE	Ministry of Water and Environment
NEMA	National Environment Management Authority
NDC	Nationally Determined Contribution
NEMA	National Environment Management Authority

1. Introduction

1.1. Project Background

The Government of Uganda, through the Ministry of Water and Environment - Climate Change Department (MWE-CCD) received financing from the Initiative for Climate Action Transparency (ICAT) through the United Nations Office for Project Services (UNOPS). Part of these funds have been earmarked for the development of the Nationally Determined Contribution (NDC) Tracking and Monitoring Framework for Transport and Waste Sector Policies. The project's main objective is to strengthen Uganda's capacity to expand its National Greenhouse Gas (GHG) Inventory Management System and operationalize an NDC tracking framework, allowing the country to track progress towards its NDC targets under the 2015 Paris Agreement of the United Nations Framework Convention on Climate Change (UNFCCC).

The Paris Agreement's overarching aim is to limit the global temperature increase to well below 2°C above pre-industrial levels, with efforts to cap the increase to 1.5°C. Fulfilling this objective requires each participating country to develop, implement, and progressively refine its national climate action plan, or NDC. Uganda ratified its initial NDC in October 2015 and has since updated its contribution in September 2022, reinforcing its commitment to mitigating climate change impacts through specific, actionable measures.

This report details the proceedings of the ICAT project validation workshop which was held on 28th November at the Imperial Botanical Beach Hotel-Entebbe. Participants included leading agencies, academia, private castor and District local government.

The workshop was called to order by the Project Coordinator Mr. Derick Senyonga. He welcomed all the participants to the workshop both in person and online. The workshop started with prayers, thereafter was

self-introduction of the precipitants

1.2. Remarks by ICAT project Coordinator

The Project Coordinator welcomed all the participants from Transport and Waste sectors to the validation workshop both in person and those online from the GHGMI and ICAT. He indicated that the aim of the workshop was to have the consultants present the findings and outputs of the ICAT project to key stakeholders to validate the work done. In addition, the workshop aims to build awareness around the outputs of the ICAT project. The consultants will be making presentation in the Transport and Waste sectors.

1.3. Remarks by Waste and Transport Sector Working Group Leads

The Transport sector

On behalf of the Transport Sector, Mr. Charles Mutemo said that the ICAT project was very useful for the Ministry of Works and Transport (MoWT). The project has helped the team to effectively utilise the training sessions on conducting mitigation policy impact assessment using tools such as LEAP and GACMO. He added that the team is now capable of using tools to inform the various reporting required at the sector level, even at CCD. He said that, the team closely with the consultants engaged other sectors members from Uganda Railway Corporation (URC) and Uganda Civil Aviation Authority (UCCA) and Uganda National Road Authority (UNRA) to develop templates and capturing relevant data. The templets provided by the consultants are very useful for data capturing and documentation. There is still more work to be done in the transport sector which will make it possible to move Tier 2. He thanked ICAT for the support provided and the Greenhouse Gas Management Institute (GHGMI) for training provided.

Waste Sector

Mr. Dan Kiguli from the National Environment Management Authority (NEMA), the project helped in improving on what was done during the CBIT capacity building. Training was conducting in which the new IPCC inventory software, GACMO and LEAP were introduced. Although NEMA is still using Tier 1, there is a desire to move to Tier 2. More Trainings are needed so that NEMA will be able to move to Tier 2 in the future. Although NEMA is largely focusing on Solid waste and composting, it also coordinates the domestic and industrial wastewater treatment and discharge and waste burning and incineration. He thanked ICAT for the support provided and the Greenhouse Gas Management Institute (GHGMI) for the training provided.

1.4. Remarks from Greenhouse Gas Management Institute (GHGMI)

Technical Support Team (Dr. Luanne Stevens and Mr. Mike Bess)

Dr. Luanne extended her appreciation to all participants who were present to validate the project outputs. She additionally thanked the sector working groups for their tireless efforts in providing expertise and sharing positive experiences towards the project based on respective sectors.

She encouraged participants to actively participate by contributing and providing independent feedback during the session.

1.5. Opening Remarks by ICAT Executive Director

The opening remarks were given by Ms Celeste Gonzalez on behalf of ICAT.

She started by congratulating Uganda upon reaching the milestone of validating the ICAT project outputs. She added that ICAT is supporting several countries across the globe with the ultimate objective of building national capacities to enhance transparency reporting which is in line with

Article 13 of the Paris Agreement. The capacities built will necessitate the countries to gradually be in a position to report, transparent, accurate, and comparable data. ICAT is pleased to be operating in Uganda and there is high commitment to continue its support to enhance the country's transparency requirements. She added that lessons learnt and best practices shall be utilized to build the second phase of the project based on Uganda's needs as will be documented in the final project report.

1.6. Official Opening Remarks by Ag. Commissioner, Climate Change Department

Mr. Muhammad Ssemambo welcomed all the participants at their various capacities to the workshop to validate the work done by the consultants which was ongoing since its inception last year. He said that, as we near the end of this important initiative, it's a pleasure to see such a distinguished gathering of stakeholders, there expertise and insights were instrumental throughout this project, and the to their presence to the workshop signified the collaborative spirit that has driven the success of the project.

He elaborated that, the ICAT project was focused on enhancing Uganda's capacity for transparency in climate action, specifically concerning greenhouse gas (GHG) emissions in the transport and waste sectors.

Through rigorous efforts, the project has achieved significant progress across two main work streams:

- Strengthening the capacity of sector working groups to manage sector GHG inventories and conduct baseline and mitigation projections and
- Enhancing and operationalizing the NDC tracking framework for the Transport and Waste sectors.

He mentioned outputs that the project has been able to achieve which are very instrumental towards the BTR reporting and these include;

- Data collection templates for the transport and waste sectors.

- A database of inventory activity data.
- Baseline and policy impact projections.
- An NDC tracking framework for the transport and waste sectors and
- A roadmap for implementing the NDC tracking system.

He also mentioned that, given the success in the Transport and Waste sectors, there is a pressing need to scale up ICAT's approaches to other key sectors such as Energy, Industrial Processes and Product Use (IPPU), Agriculture, Forestry, and Other Land Use (AFOLU). These sectors contribute significantly to Uganda's GHG emissions and present substantial opportunities for mitigation.

He concluded by expressing his sincere gratitude to the partners who have been instrumental in making this project a reality which includes the UNOPS, GHGMI and the consultants.

Fig1. General Group photo on validation workshop

1.7. Presentation on the General overview of ICAT Uganda project including milestones achieved

The Project Coordinator (Mr. Senyonga Derick), stated that Uganda is a signatory to international conventions such as the Kyoto Protocol and signed the Paris Agreement, which main objective to reduce GHG emissions in all sectors of the economy. Uganda must report her national emissions however, there are still gaps to be filled:

1) improve data collection processes for GHG inventories,
2) build national capacity to complete GHG emissions projection analyses;
3) improve the ability to track NDC targets through an MRV system that fulfils the country's international obligations under the UNFCCC; and
4) consider the assessment of SDGs.

He presented that, the ICAT provided funds to assist Uganda to address these gaps. The project focused on the transport and waste sectors as these sectors are those which have new mitigation actions in Uganda's updated NDC. These two sectors have the greatest need in terms of Uganda's GHG data collection, data management and emission computation in order to have a more comprehensive national GHG inventory and assessment of their mitigation potentials.

The main objective of the ICAT project was to sustainably enhance the GHG emission inventory data collection, projections and mitigation analysis modelling capability for the Transport and Waste sectors and, to enhance Uganda's ability to track the NDC actions in these two sectors.

The project has the specific objectives to:

1) Contribute towards ongoing efforts to build a national transparency framework that meets international standards and is tailored to domestic needs;

2) Strengthen the national capacity to apply methodologies and tools to assess GHG and sustainable development impacts, and the effectiveness of policies, measures, actions and plans included in Uganda's revised NDC;
3) Contribute towards ongoing efforts to improve the availability and quality of data required to measure GHG and sustainable development impacts;
4) Support the formulation of NDC indicators in a manner that will allow consistent monitoring and evaluation of progress; and,
5) Contribute towards ongoing efforts to develop frameworks that facilitate tracking of progress on NDC implementation while strengthening Ugandan capacities to construct and apply indicators towards that end.

The project was implemented in two work streams:

1) Strengthen the sector working group's capacity to manage sector GHG inventories, conduct baseline and mitigation scenario projections
2) Develop NDC tracking framework for both Transport and Waste sectors

Work stream 1 aimed to enhance the data collection and management process for the Transport and Waste sectors to improve Uganda's ability to produce emission inventories and track the mitigation actions in the NDC. Data, institutional, and resource gaps were identified, and recommendations were made for improved data collection, processing, and archiving systems for projections in the Transport and Waste sectors.

Policy actions from each sector were selected to pilot the mitigation impact projections. Mitigation scenarios were developed, data collected, and mitigation impacts assessed through the use of the selected model.

Work stream 2 aimed to Enhancement and operationalization of the NDC

tracking framework by implementing the following activities:

i. Strengthen the national capacity to track and monitor NDC actions in the Transport and Waste sectors;

ii. Develop a NDC tracking and monitoring framework for the Transport and Waste sectors;

iii. Develop a roadmap for the implementation of the NDC tracking framework; and

iv. Conduct training workshops to build awareness of the operationalization of the tracking framework.

The Project Co-ordinator further mentioned what the project had achieved which included;

- Data collection templates for Transport and Waste sector inventories developed
- Database of inventory activity data for Transport and Waste sectors developed
- Introductory tools workshop held (GACMO, LEAP, and TRACE among others)
- Baseline and policy impact projections report for the Transport and Waste sectors conducted
- Recommendations for improved data collection and management for baseline projections done
- NDC tracking framework and Data Collection templates for the Transport and Waste sectors developed
- Roadmap to operationalize the NDC tracking framework developed
- Training was held on how to operationalize the NDC tracking framework and Data collection templates

1.8. Presentation of outputs of work stream 1 (GHG emission

estimation and projection)

Part 1. GHG Inventory Estimates, Baseline Emission Estimates, and Emission Projections for the Transport sector

This presentation was led by Dr. Adam Sebit, Consultant from the ECCE consult. In his preamble he mentioned that the Transport sector is key in social economic development. It is the largest source on anthropogenic emission at the national level. There is need to get accurate data in the transport sector, that will improve on the national inventory.

He mentioned that data collection templates were developed for each of the key modes of transport that is to say, road, Railway, navigation/water ways and aviation transport and pipeline transport system is under construction. The developed templates are to be used by sector teams to collect relevant up-to-date data that is in line with the IPCC 2006 and 2019 refinements requirements. He demonstrated the template for Uganda Railway Corporation with filled data as an example.

Dr Sebit mentioned that the templates were designed in such way that it can easily be used by the data compliers. It has sections of procedures, objectives and colour codes. It can be modified when the need arises. The templates include both Tier 1 and Tier 2 data.

Data was collected for the years 2010 to 2022 and in instances where data was unavailable, other methodologies such as interpolation and extrapolation were used. The final templates were delivered to the inventory compilers to document the data.

On Emission Projections for the Transport sector, the consultant mentioned the methodology and tools used to accomplish this task. He stated that the LEAP model was used and described it as a structured tool based on the analysis of the available data on the base year for transport modes. To incorporate data into the model road transport was divided into two subsectors namely, passenger and freight. Railways transport is also

sub-divided into freight and passenger. The aviation transport combines cargo and passengers, due the availability of data, it could be segregated. It can also be subdivided into passengers and cargo and thereafter passenger kilometres and tonne-kilometres. Water transport includes boats, marine vessels and ferries. The boats are generally used for fishing and transport at less extent. The data collected during the piloting of the data collection templates) was utilised as input for the model and for the basis of the projections.

The transport sector mitigation assessment was done by building different scenarios: Business as usual – BAU, with existing measures (WEM) and with current development plans. These emission scenarios were modelled from the 2015 base year, and were defined as follows

- Baseline / Business-as-usual: a scenario that considers existing measures, and forecasts future GHG emissions based on expected trends. 'With Existing Measures' (WEM): includes mitigation measures that were in place up to 2015 (the base year). This similar to the Baseline Scenario.
- Current Development Policy (CDP): This includes mitigation measures that have been in place since 2015, but it also includes planned measures and/or targets and commitments that have not yet been implemented.
- With Additional Measures (WAM): This includes additional mitigation measures or measures implemented in earlier scenarios with a higher degree of ambition.

He further mentioned that, the base year in this study is 2015. The emissions from the four modes of transport (road, rail, aviation, and water-borne) were calculated based on the Intergovernmental Panel on Climate Change (IPCC) fifth assessment report (AR5), the *2019* Refinement to the *2006* IPCC Guidelines for National Greenhouse Gas Inventories guidelines.

He further presented the assumptions and data for the baseline projection and discussed the results presented below.

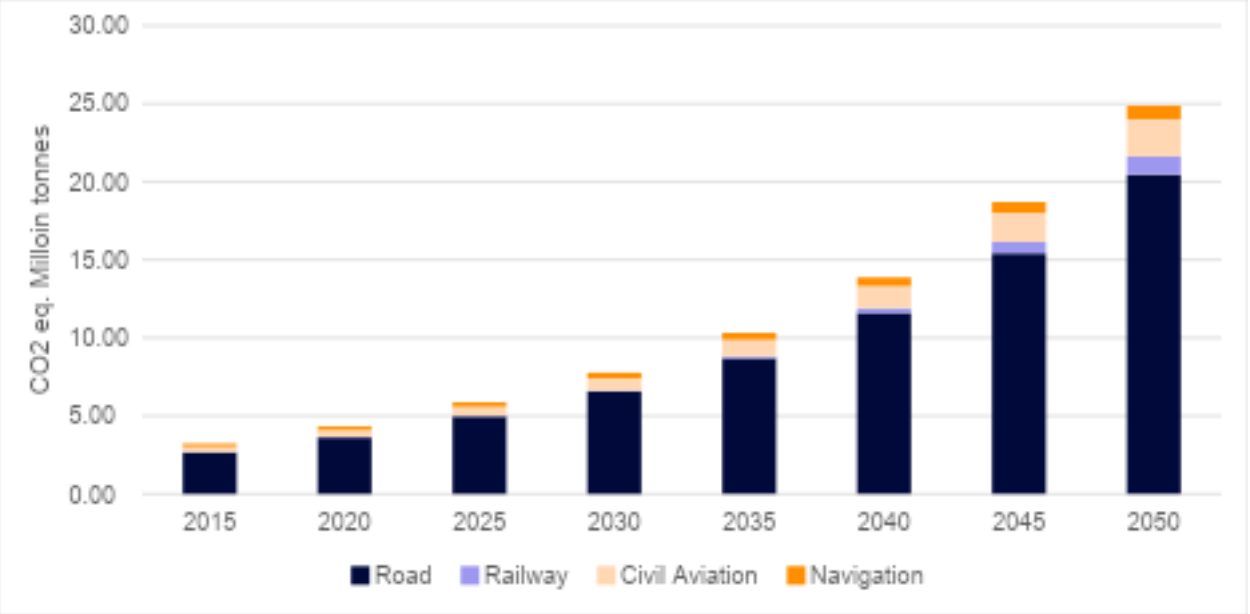


Fig.2 Emissions baseline and projections in the transport sector

Dr Sebit discussed the Mitigation Options in this sector and these include;

a) Promote the use of efficient motor vehicles:
b) Fuel switch from fossil fuels to cleaner fuels such as electricity, ethanol blending, and biodiesel;
c) Use mass transit, such as buses and trains in town service; and,
d) Shifting freight from lorries to railways and waterways.

It was indicated that out of the four mitigation options, improved fuel economy is the most appropriate for Uganda and hence presented the its impact on emission reductions as shown in the figure below.

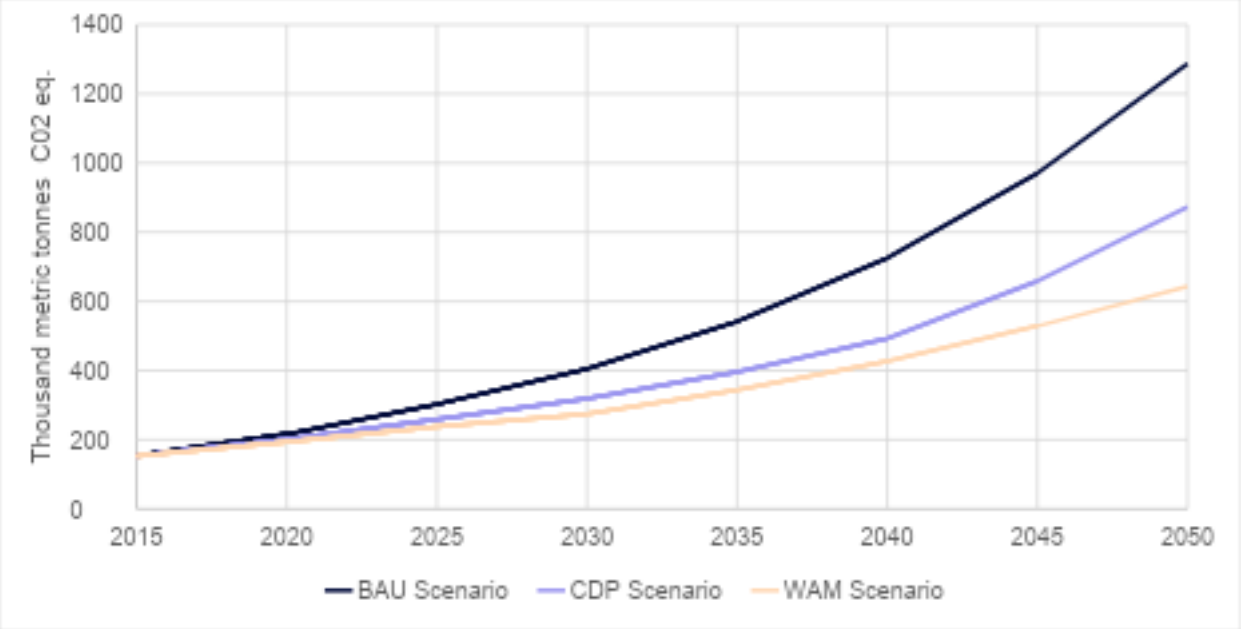


Figure 3. Projections for car emissions if fuel economy policies are implemented.

He thereafter discussed numerous recommendations for improving data collection for emission estimation and projections for the transport sector. Some of the key recommendations are:

- MoWT should develop a national database on vehicle fleet, fuel consumption, and efficiency.
- MoWT and MEMD should develop fuel efficiency policies and standards that have benchmark/target on consumption for light, medium and heavy-duty vehicles being imported into the country
- MoWT works closely with police and possibly the insurance companies to track the number of vehicles written off and their capacities (CC) share with stakeholders.

- The CCD and MoWT, with should form a small group personnel members who can be assisted to go into the details of the LEAP. The participants should be trained on how to integrate LEAP with other tools
- There should a data provision policy/legislation, where it is made for institutions to share relevant data to inform the GHG inventory.

Part 2. GHG Inventory Estimates, Baseline Emission Estimates, and Emission Projections for the Waste sector

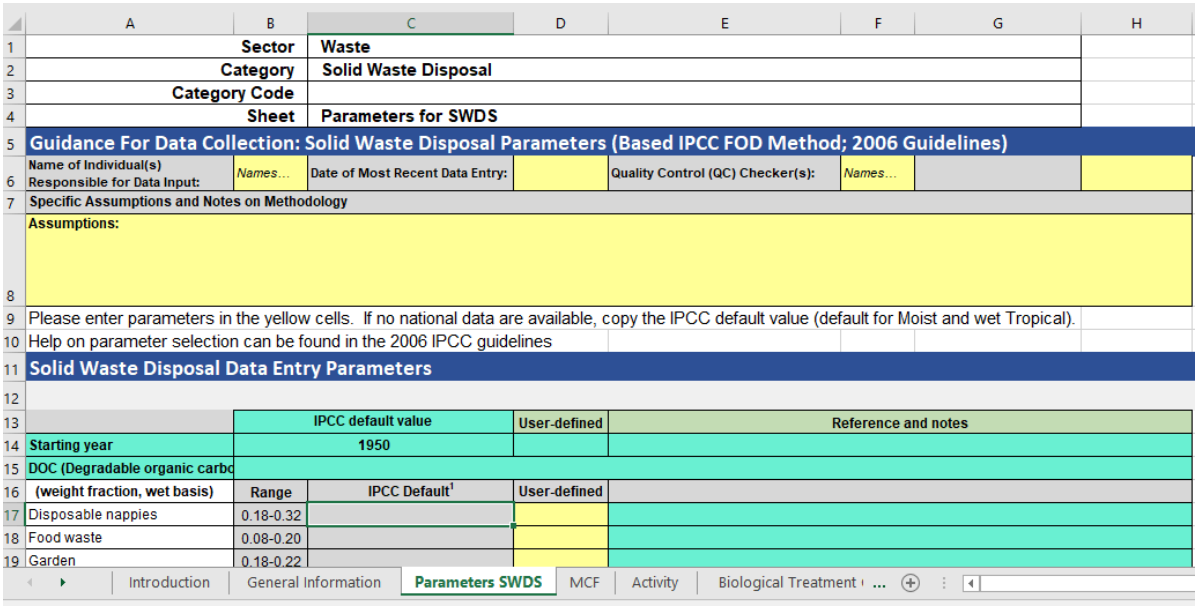
The presentation was led by consultant, Dr. James Okot Okumu (Waste Expert). In his preamble he mentioned that the GHG emission in the waste sectors varies depending on the type of waste management practice. The categories of wastes are; Solid waste, composting, incineration, wastewater treatment, and discharge. He added that, even though there is no central place to archive data, it is envisaged that it will be set soon at the National Environmental Management Authority.

The waste sector in Uganda currently uses default emission factors in the waste sector based on Tier 1. Uganda is planning to move to Tier 2. This calls for Uganda to explore possibilities of generating domestic emission factors for GHG. It will be more accurate and it will enhance transparency. All documentation will be based on the 2006 IPCC Guideline, 2019 refinement.

The consultant elaborated that, data collection templates for the waste sector were developed in consultation with the sector working groups. This was important to ensure that, the developed tools are easy to use but at the same time meet the required IPCC standards.

He mentioned that the tools effectively guide the data compilers, on what data needs to be filled, and contact details of the data provider, and can perform automated emissions calculations

He then demonstrated the functionality of the data collection templates to the stakeholders



	A	B	C	D	E	F	G	H
1	Sector	Waste						
2	Category	Solid Waste Disposal						
3	Category Code							
4	Sheet	Parameters for SWDS						
5	Guidance For Data Collection: Solid Waste Disposal Parameters (Based IPCC FOD Method; 2006 Guidelines)							
6	Name of Individual(s) Responsible for Data Input:	Names…	Date of Most Recent Data Entry:		Quality Control (QC) Checker(s):	Names…		
7	Specific Assumptions and Notes on Methodology							
8	Assumptions:							
9	Please enter parameters in the yellow cells. If no national data are available, copy the IPCC default value (default for Moist and wet Tropical).							
10	Help on parameter selection can be found in the 2006 IPCC guidelines							
11	Solid Waste Disposal Data Entry Parameters							
12								
13		IPCC default value		User-defined	Reference and notes			
14	Starting year	1950						
15	DOC (Degradable organic carbo							
16	(weight fraction, wet basis)	Range	IPCC Default[1]	User-defined				
17	Disposable nappies	0.18-0.32						
18	Food waste	0.08-0.20						
19	Garden	0.18-0.22						

Introduction | General Information | Parameters SWDS | MCF | Activity | Biological Treatment | ...

Figure 4. Screenshot of the sample data collection template

On the baseline and policy impact projections for the waste sector, the data for the greenhouse gas (GHG) emission projections were obtained from the waste sector database of inventory activity data developed under the project and this includes:

- Solid waste disposal sites (SWDS) of different subcategories (managed or unmanaged, and shallow or deep),
- Biological Treatment of solid wastes (composting and anaerobic digestion),
- Incineration and Open Burning,
- Wastewater (domestic and industrial)

The Tools used include:

- IPCC model based on the 2006 Guidelines Vol.5- Wastes [FOD] method

- Excel- based on IPCC model: *IPCC_waste_model.xls.Excel (for SWDS only), 4_Waste_blanks.xls.Excel -for the rest of waste categories*
- *GACMO* version 206

The waste sector assessment was done by building different scenarios:

Business as usual – BAU, with existing measures (WEM) and with current development plans. These emission scenarios were modeled from the 2015 base year.

The Baseline Emissions: Most of the emissions come from solid waste matter. The fraction may change in the future as more data will be collected from other sectors.

Below is the graphical presentation of the results on, GHG emissions estimates from 2025-2020.

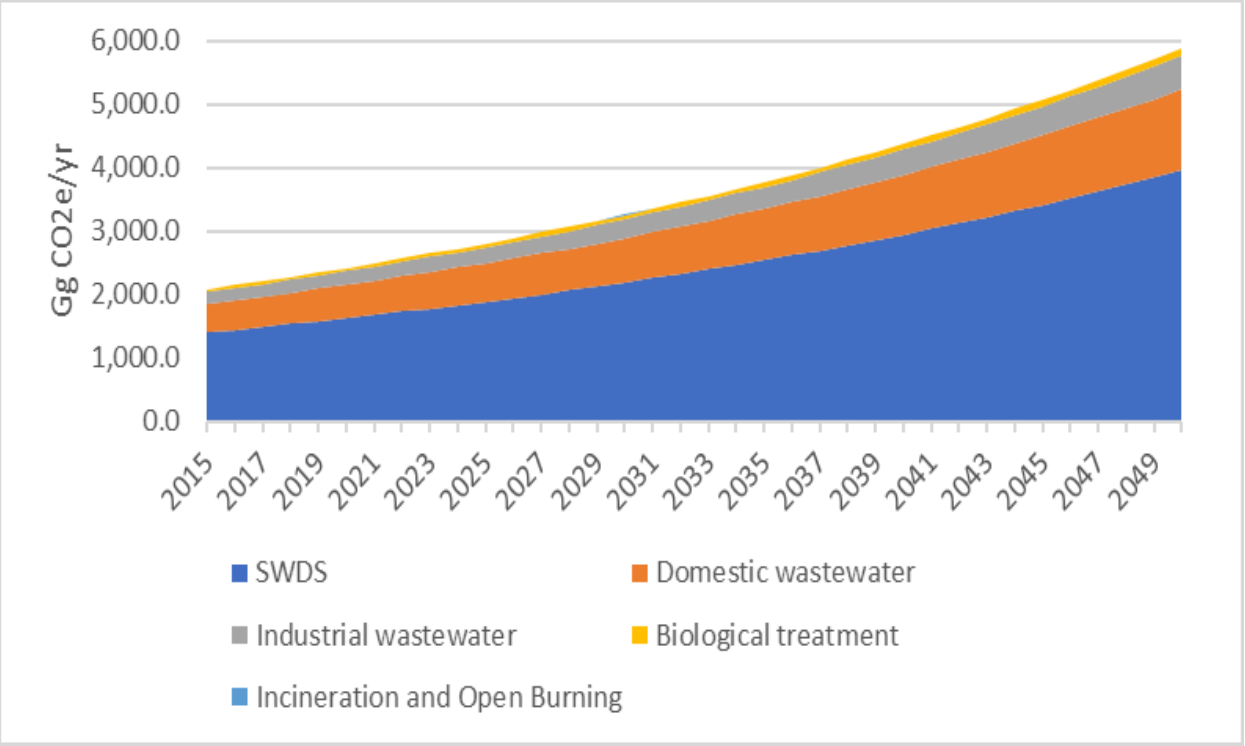


Figure 5: Baseline projection

On policy impact of Mitigation policy and measures; he mentioned that; the

mitigation projections based on NDC are: Green cities waste management and School bio-latrines. The impacts of these mitigation measure are however, not quantified yet though the target was 24.7% GHG emissions reduction by 2030.

GACMO-version 2006 software based GHG emissions assessment was only possible for solid waste (SW) and the mitigation options relevant to Uganda selected include: Composting of MSW, incineration plant, recycling of plastics. For the existing mitigation options reported for the NDC and update are described by the IPCC Excel model and GACMO model BAU trajectories.

When fully implemented, the main mitigation measures and policies are projected to reduce the 2030 emissions by 34.8% to 2.09 MtCO2e. So, the mitigation reduction levels were raised to 40% by 2050 to construct the trajectories.

The mitigation trajectories presented below were based on the IPCC model.

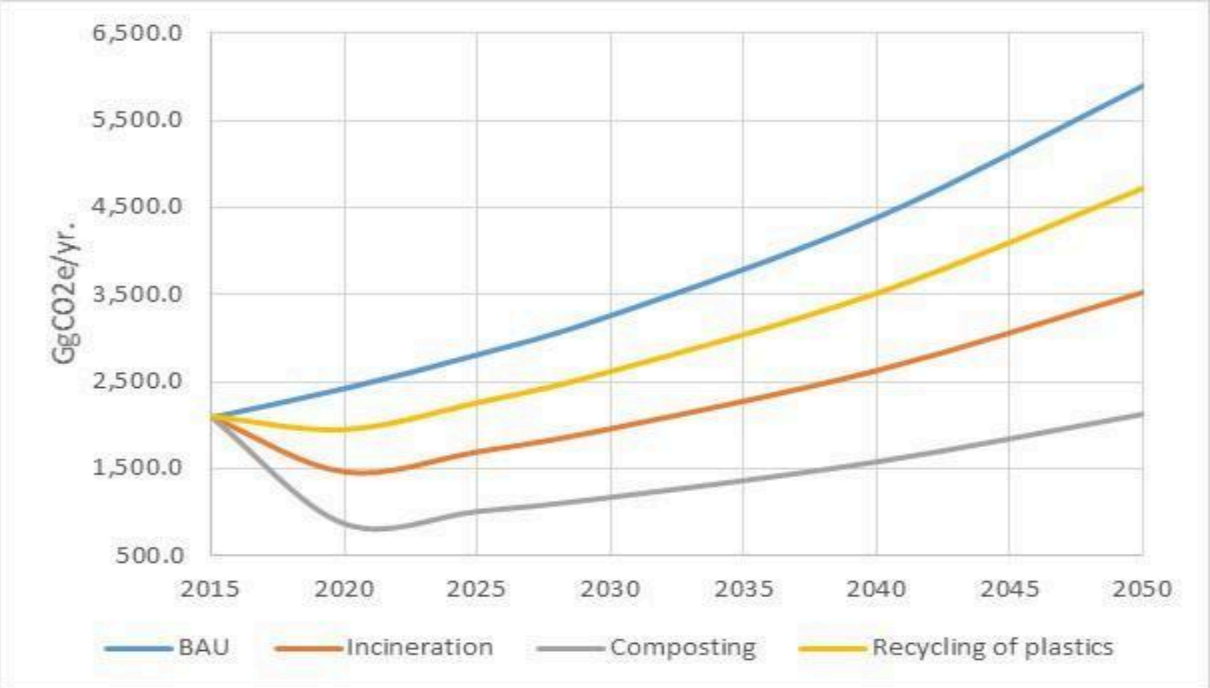


Figure: 6 The mitigation trajectories

He therefore concluded that:

- The 2006 IPCC model is good for use to track the NDC adequately for the waste sector:
- The model has supporting Guidelines in Vol. 5-waste with each subsector having a chapter that provide guiding notes including the theory behind emission calculations, default values and choices/options.
- The use of Internationally recognized protocols such as the IPCC Guidelines for National GHG inventories ensures consistency.
- Establishing a centralized database – good for data QC/QA, consistency and transparency
- Upgrade methodology from Tier 1 to Tier 2 at an appropriate time.

1.9. Feedback session on presentation of work stream 1 outputs (Questions and Answers)

General submission on the waste sector

There is low funding for the waste sector management, which limits NEMA operation. There is option having a centralised system for data waste management and inventory. In this case, all the participants outside MENA will have access to data, thus all regions will be connected in one system. The EIA I (Environment Impact Assessment) application and licensing will be online. All areas of waste, wastewater and discharger, incineration, and composting.

Questions and Answer

1) The UCAA is not capturing data for landing and take-off. Is It possible to get data from other countries?
    - *Response*: Since we are in Uganda, we have to use Uganda data. Can learn use the methodology from the IPCC and other credible sources.
2) The data for per capita is used for urban areas, what about the rural areas?

- *Response:* The solid wastes in the rural areas are taken to gardens, that is similar to composing, but in the urban areas the solid wastes are taken to landfills it starts decaying and generates GHG.

3) It is not easy to access data, that is a common problem.
    - Response: There is a need for centralised data which can be addressed with time.

4) The waste water treatment and discharge and compositing which is higher?
    - *Response:* There is rule of thumb to this question. What matters is much data is collected from each of the sector, Data collection should be improved.

5) The Industrial waste is based on the GDP, but this value keeps Changing, it is a challenge.
    - *Response UBOS*: There different sets of GDP data, it can be discussed with the consultant after the meeting.

6) There are other data sources such as the world Bank and FAO can those data bed used in our report?
    - *Response:* For the sake of transparency, we have to use national data. All data should be referenced.
    - *Response:* FAO get data from UBOS. The World Bank use the development indicators.

1.10. Presentation of the outputs of work stream 2 (NDC tracking framework for the Transport and Waste Sector)

This presentation was led MEIR Engineering consultant team.

In the preamble the team presented the objective of the assignment:

- To strengthen the national capacity to track and monitor NDC actions in the Transport and Waste sectors

- To develop a NDC tracking and monitoring framework for the Transport and Waste sectors
- To develop a roadmap for the implementation of the NDC tracking framework; and
- To conduct training workshops to build awareness on the operationalization of the tracking framework.

The expected deliverables include:

- NDC tracking and monitoring framework for transport and waste sectors
- Data collection templates for the transport and waste sectors
- Database of key mitigation and adaptation actions in the transport and waste sectors
- Roadmap for the implementation of the NDC tracking framework in the Transport and Waste sectors
- Project validation workshop

They explained the NDC Tracking conceptual framework as seen in the figure below.

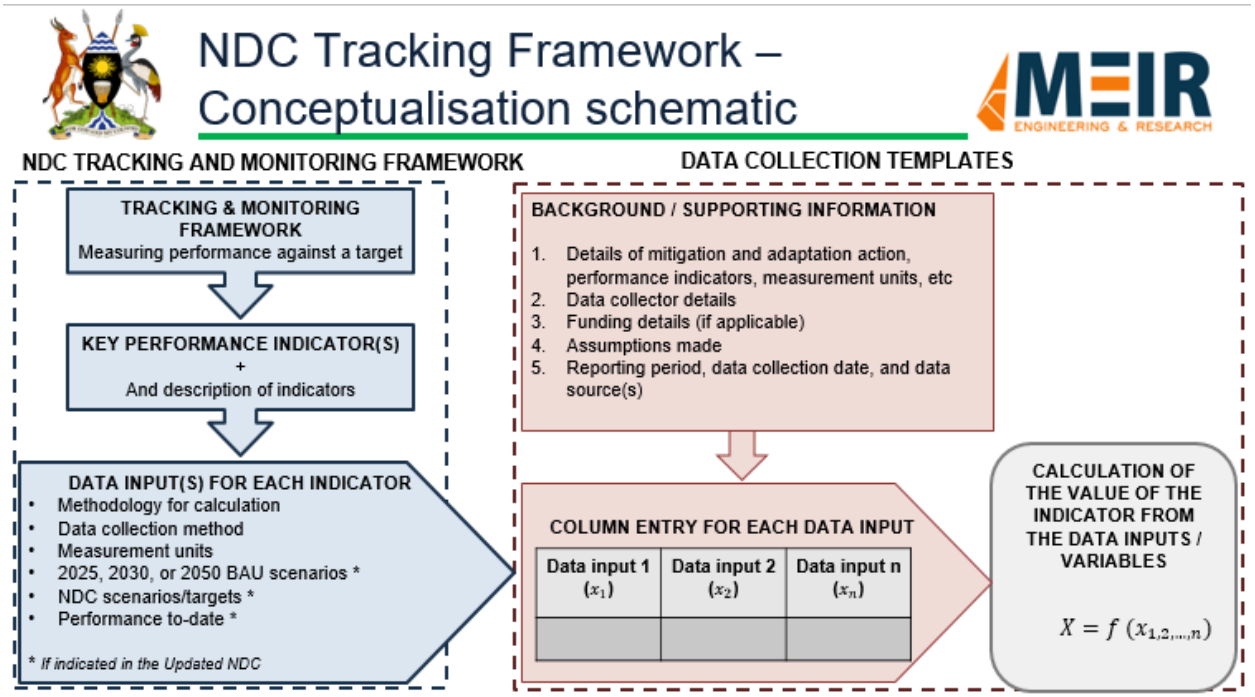


Figure 7. Screenshot of the NDC tracking conceptualisation schematic

On NDC tracking data collection templates, the team explained that:

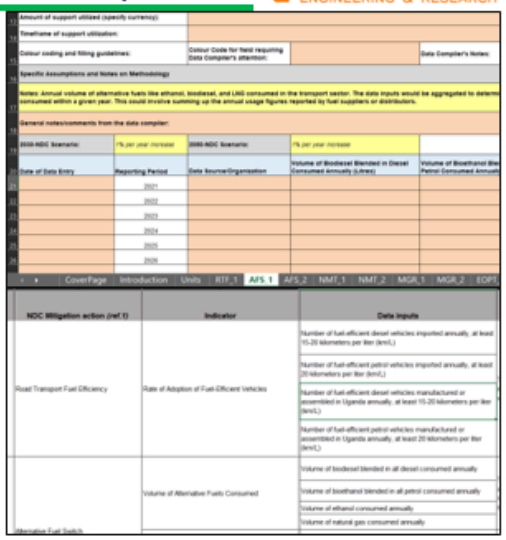
- The Excel-based templates systematically capture the activity data required for tracking NDC actions.
- The templates are structured such that each sheet focuses on a single indicator relevant to the tracking of policies and measures in each sector.
- The data collected through these templates will directly feed into the NDC tracking framework, supporting national and international climate change reporting requirements.
- The draft templates were subjected to stakeholder review, feedback, and revision

The team demonstrated the tracking framework and the data collection templates in the following slide.

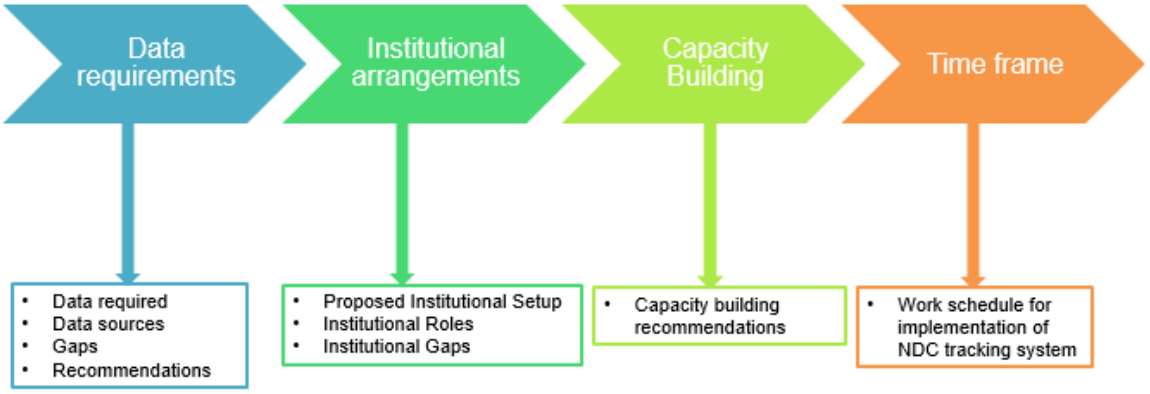
Demonstration of the NDC tracking framework and data collection templates

MEIR ENGINEERING & RESEARCH

1. NDC Tracking & Monitoring Framework - Waste Sector
2. NDC Data Collection Templates - Waste Sector
3. NDC Tracking & Monitoring Framework - Transport Sector
4. NDC Data Collection Templates - Transport Sector



The road for implementing the NDC tracking framework comprised of 4 broad components as shown below.



MEIR presented data gaps as;

- Low degree of disaggregation of the data required to track NDC actions
- Lack of national or sub-regional estimates for constants and emission

factors

- Lack of a standardized approach for data collection and storage
- Varying data quality amongst stakeholders
- Capacity limitations in terms of skills for personnel
- Bureaucratic procedures within government agencies to access data

The following recommendations were made for improving the data collection and the monitoring system:

- Implement a centralized data collection and sharing platform that can be accessed by the existing Waste Sector Task Force for the GHGI and overseen by CCD
- Implement regulatory frameworks for data collection and reporting
- Conduct targeted capacity-building initiatives
- Streamline data access through a unified access point

1.11. Feedback session on presentation of the assignment 2 (Questions and Answers)

This chapter outlines the feedback received from stakeholders focusing specifically on the NDC tracking framework and data collection tools. It includes remarks on the tools that were developed as well as broader strategic aspects of the project implementation. The observations and recommendations provided by stakeholders are presented below:

i). Project deliverables were deemed valid:

The project outputs were deemed valid by the stakeholders, confirming that the objectives set under the work-stream for the NDC tracking framework were successfully met. This endorsement highlights the effectiveness of the project deliverables in aligning with the intended goals and expectations under the project.

ii). Provision of equipment for data entry personnel in the MDAs:

Stakeholders noted that capacity-building efforts should include equipping data entry personnel with the necessary tools to facilitate effective data collection and management. It was recommended that the project provisions include necessary technological equipment such as laptops and other relevant devices that data entry focal points in various MDAs require for optimal performance.

iii). Access to locked cells in templates:

The stakeholders recommended that passwords for the locked cells in tracking framework and data collection templates be provided. This measure will allow necessary adjustments to be made in the future as requirements evolve, ensuring the tools remain flexible and adaptable to changing needs.

iv). Additional capacity building:

Stakeholders emphasized the need for additional capacity-building initiatives to further equip relevant personnel with the necessary skills to effectively use the NDC Tracking Framework and associated data collection templates. Continuous training will ensure that stakeholders are proficient in managing and utilizing these tools for accurate data reporting and tracking.

v). Appointment of data management persons in MDAs

It was recommended that responsible MDAs appoint designated persons specifically for handling data related to this project. Ensuring these persons are clearly identified and their roles well-defined is crucial for maintaining the integrity and efficiency of data management within the framework and data collection templates.

Response to the feedback from the stakeholders

This section details how the feedback requiring the Consultant's attention,

as highlighted above, will be addressed. It outlines the specific adjustments and enhancements that will be made to ensure the tools are optimally aligned with stakeholder needs.

i). Access to locked cells in templates:

The passwords for the locked cells in the excel sheets will be provided along with the tools. This measure ensures that responsible sector leads can access and modify the information in the protected cells if need arises. This access facilitates necessary modifications and updates within the protected cells, particularly when updates to constants are required when new country-specific constants are developed. Granting this capability is designed to enhance the operational flexibility and long-term usability of the data collection tools, ensuring they remain relevant.

ii). Provision of equipment for data entry personnel in the MDAs:

The capacity building needs will be expanded to address the technological needs of data entry personnel across various MDAs. It now includes specific recommendations for the provision of essential equipment, such as laptops and other relevant technological gadgets, that are necessary to facilitate efficient and accurate data entry. This enhancement ensures that all personnel involved in data handling are adequately equipped to perform their duties effectively.

iii). Appointment of data management persons in MDAs

The Climate Change Department proposed organizing a meeting with sector leads to strategize on the operationalization and early deployment of the developed tools. This initiative aims to ensure that the tools are effectively integrated into workflows and actively utilized as soon as possible. During the workshop, it was emphasized that MDAs should identify people who will be responsible for managing data related to this project. Consequently, the proposed meeting with

sector leads will also address follow-ups on the appointment of data focal persons within the relevant MDAs, aiming to streamline data management and reporting processes for effective implementation.

Conclusions on NDC tracking framework

The validation workshop marked an integral step in the concluding phase of the ICAT project. This workshop provided a crucial platform for presenting the NDC tracking framework and the associated data collection templates directly to the stakeholders. Their feedback affirmed the validity and effectiveness of these tools, with only minor comments and suggestions for improvement noted.

The relatively minor nature of the feedback can be attributed to the continuous and iterative process of engagement and refinement that characterized this project. Throughout the project lifecycle, stakeholders have been actively involved in various workshops, providing ongoing feedback which the Consultant has consistently integrated into the development of the tools. This proactive approach to stakeholder engagement has significantly enhanced the final outputs, ensuring they are well-tailored to meet the specific needs of the users.

Stakeholders expressed appreciation for the efforts of the project teams in developing these essential tools. However, they also emphasized the need for ongoing capacity building. There is a recognized necessity to further familiarize stakeholders with the functionalities of the tools to ensure their effective implementation. In response to the latest feedback, the Consultant has integrated the comment that was raised into the revised tools.

1.12. Way forward and closing remarks

Remarks from the project coordinator

The sixteen months of the project is coming to end. There is general call for centralised data centres, that will facilitate data sharing. It was noted that there is need for more capacity building.

The tools which were developed and used by the consultants are flexible and can easily be use however, they cannot be used without data. The GoU is putting in place regulatory framework to enhance data sharing and reporting.

He also provided a chance to the stakeholder's feedback on whether the project desirables are valid asked for feed regarding the matter.

Reaction from the participants:

- The project has achieved its objective. It is a good step towards the transparency framework. The work is based on the updated NDC. Our next reports BTR (Biennial Transparent Reporting) staring in 2025 will be better.
- The works done by the technical expert are valid. The consultants worked closely sector working group.
- The templates are good for data gathering, but there is need of an IT person to manage it. The areas need expansion of the project to other sectors such as AFOLU, IPPU and Wetlands.
- There are few additional works need to be done to fix the report.

The Project coordinator thanked all the participants and the consultants for ably presenting their findings. Thanks to the technical experts ECCE and MIER. The sector working groups for their support.

Closing comments from GHGMI:

Luanne Stevens thanked all participants in phase one of the ICAT project to bring it to where we are. Capacity building takes time. She will continue engaging with Uganda so that the capacities of other areas are also developed. Let's look forward to phase two of the ICAT project.

Official Closing remarks by the Commissioner

It has been a long journey to reach this point. He thanked the sector working groups for working closely with the consultants. We have now had training using the tools provided during the training. He thanked GHGMI

for its technical support to the sector working group and consultants. What remains now is the operationalisation of the tool.

All along we have been using default data. It a high time that we move to Tier 2. The GoU will work with support from other countries, to support the National Emission Factor for Uganda so that we can improve the transparency

- There were several gaps noted during the training, the GoU will be working to close the gaps.
- The data and information collected should inform the National Development Plan
- After going through this training, sectors should be able to develop be able to develop Climate Action Plan and share with CCD
- It will be mandatory for all lead agencies to report their emissions to the CCD.
- The ICAT project should spread to other sectors such as AFOLU, IPPU and wetlands
- NEMA is at the apex of waste sectors. Therefore, NEMA should open up the boundaries to cover rural and other areas in solid waste, incineration, compositing and wastewater treatment and discharge.
- There is a need to organise a meeting will all sector leads and local government and other sectors to operationalise the tools.
- The GoU will mobilise funds for development of other sectors, which were not covered in this ICAT project. The GoU will get back to ICAT for the remaining areas.
- There is ongoing initiative for all the lead sectors to make quarterly report to CCD to feed into the NDC processes including MRV.
- There were issues about MOU between Government Ministries in data sharing, the Attorney General is clear about that. There is no need for MoU for sharing data.

- All participants should be ready to embrace phase two of ICAT project.

Annex I: Agenda – Workshop Validation for ICAT Project in Uganda

Time	Activity	Responsible person
08:00 am - 08:30 am	Arrival and registration	CCD/MWE
08:30 am-8:50 am	Prayer and Self-Introduction	All
08:50 am - 09:00 am	Welcome Remarks	ICAT project Coordinator
09:00 am- 09:10 am	Remarks by Waste and Transport Sector Working Group Leads	Mr. Dan Kiguli (Waste sector); Mr. Charles Mutemo (Transport sector)
09:10 am- 09:15 am	Remarks from GHGMI Technical Support Team	Dr. Luanne Stevens/Mike Bess (GHGMI/Greenhouse Gas Management Institute)
09:15 am- 09:20 am	Opening Remarks by ICAT Executive Director	Dr. H. Wuester,
09:20 am- 09:30 am	Official Opening Remarks	Commissioner, CCD
09:40 am- 10:00 am	General overview of ICAT Uganda project Inc. Milestones achieved	Project Coordinator
10:00 am- 10:15 am	Questions, Comments, and Response	
10:15 am - 10:45 am	Photo moment and Tea break	All

Time	Activity	Responsible person
10:45 am-11:30 am	Presentation of Assignment 1 Part 1: i. GHG Inventory Estimates, Baseline Emission Estimates, and Emission Projections for the Transport ii. Policy impact trajectory for the Transport sector	ECCE Konsult
11:30 am- 12:00	Questions, Comments, and Response	
12:00 pm-12:45 pm	Presentation of Assignment 1 Part 2: iii. GHG Inventory Estimates, Baseline Emission Estimates, and Emission Projections for the waste iv. Policy impact trajectory for the waste sector	
12:45 am 1:00 pm	Questions, Comments and Response	
1:00 pm-2:00 pm	Lunch Break	
2:00 pm-3:20 pm	Overview of Assignment 2: Presentation of the assignment 2, i. NDC tracking framework for the Transport and Waste Sector ii. NDC tracking Data collection templates iii. Roadmap for implementation of the NDC tracking	MEIR Engineering and Research Ltd

Time	Activity	Responsible person
	framework	
3:00 pm - 3:30 pm	Question, Comments and Response	
3:30 pm-3:45 pm	Way forward and closing remarks	CCD
3:45 pm -	Departure	

Annex II: Workshop Photography