Validation workshop For Activity 2 of the ICAT-Eswatini project

ICAT Initiative for Climate Action Transparency

Initiative for Climate Action Transparency - ICAT

Validation Workshop of Activity 2 of the ICAT Eswatini Project

Deliverable #3

AUTHORS

Prof S Mkhonta, Dr. M Mathunjwa and Dr. G Msane

Centre for Sustainable Energy Research (CSER)

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PREPARED UNDER

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Abbreviations

CBIT	**Capacity Building Initiative for Transparency**
CSER	**Centre for Sustainable Energy Research**
CSO	**Central Statistics Office**
EEC	**Eswatini Electricity Company**
EIPA	**Eswatini Investment Promotion Authority**
ERS	**Eswatini Revenue Service**
ESERA	**Eswatini Energy Regulatory Authority**
GHG	**Greenhouse Gas**
GHGMI	**Greenhouse Gas Management Institute**
GoE	**Government of Eswatini**
ICAT	**Initiative for Climate Action Transparency**
IPCC	**Intergovernmental Panel on Climate Change**
MEPD	**Ministry of Economic Planning and Development**
MNRE	**Ministry of Natural Resources and Energy**
MoF	**Ministry of Finance**
MoU	**Memorandum of Understanding**
MPWT	**Ministry of Public Works and Transport**
MRV	**Measurement, Reporting and Verification**
MTEA	**Ministry of Tourism and Environmental Affairs**
NDC	**Nationally Determined Contributions**
QA	**Quality Assurance**
QC	**Quality Control**
UNESWA	**University of Eswatini**
UNFCCC	**United Nations Framework Convention on Climate Change**
UNOPS	**United Nations Office for Project Services**

1 Introduction

1.1 Background

The Kingdom of Eswatini ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1996 and the Kyoto Protocol in 2002, in order to contribute to the global fight against climate change. In 2015, as party to the Convention, the country submitted its Intended Nationally Determined Contribution (INDC) to the convention. The Ministry of Tourism and Environmental Affairs (MTEA) has received support from the Initiative for Climate Action Transparency (ICAT) to improve institutional arrangements and data collection processes and develop a roadmap for improved institutional arrangements and data collection procedures in the energy sector. This will assist Eswatini to meet the accelerated reporting requirements under its Nationally Determined Contribution (NDC) under the UNFCCC's Paris Agreement. The University of Eswatini's (UNESWA's) Centre for Sustainable Energy Research (CSER) was engaged by ICAT (through UNOPS) to implement the ICAT project with technical support from the Greenhouse Gas management Institute (GHGMI). The full project includes the following main activities:

- Activity 1: Adaptation scoping and gap analysis for the health and water sector.
- **Activity 2: Energy sector GHG inventory institutional arrangements and data collection roadmap**.
- Activity 3: Agriculture sector GHG inventory institutional arrangements and data collection roadmap.
- Activity 4: Incorporation of timber and sugarcane plantation data into the LULUCF sector GHG inventory.
- Activity 5: Renewable electricity policy scenario assessment and impact modelling with recommendations for implementing NDC targets.

Activity 2 of the ICAT project aims to contribute towards ongoing efforts to improve the availability, collection and quality of data required for estimating emissions in the energy sectors therefore enabling Eswatini to meet its enhanced international reporting standard requirements. To accomplish this aim, a scoping and gap analysis of the energy sector in the Kingdom of Eswatini was carried out to determine gaps and constraints in the data collection process; develop a road map for an enhanced data collection road map; and make recommendations for MRV system and design. This included an assessment of requirements for Tier 2 road transport methodologies and sustainable energy balance data.

To estimate GHG emissions using the Tier 2 level for the transport sector requires more disaggregated data than for Tier 1. The requirements according to the 2006 IPCC guidelines are as follows:

The main gas from the energy sector CO_2 emissions are determined by the fuel type and country specific emission factors.

The other main GHG gases from the energy sector are methane (CH_4) and nitrous oxide (N_2O) are determined by

1. vehicle fuel type
2. vehicle type
3. emission control technology type
4. emission factor (kg/km) and
5. distance travelled.

On 11th April 2022 in Mbabane, Eswatini at the Hilton Inn a workshop was held to assist Activity 2 to accomplish its effort to support the Enhanced Transparency Framework (ETF) on meeting the obligations of the NDC for the country.

1.2 Objectives of the workshop

The proposed workshop's specific objectives were:

1. To validate the draft scoping and gap analysis report for the energy sector and also receive input from stakeholders;
2. To analyse and review draft data collection templates for organisations (industry, commercial sector and institutions), transport and energy consumption in households;
3. To check if it can be possible to uses a digital data collection tool during annual vehicle road license renewals proposed transport sector to collect necessary data to close the data gaps identified in the energy balance upgrade GHG emissions determination to Tier 2;
4. To review of existing arrangement for data flow from data providers to data entry points and establish Institutional Arrangements between all stakeholders in the energy sector; and
5. To engage stakeholders to contribute to a draft data collection framework to be the basis to produce a Roadmap for improved institutional arrangements and data collection procedures in the energy sector of the Kingdom of Eswatini.

1.3 Expected outcomes

The workshop was expected to produce the following outcomes:

a) Finalisation of the scoping and gap analysis report

b) Finalisation of data collection templates for organisations (industry, commercial and institutional), transport and households

c) Input to the data collection implementation plan as a basis for a Roadmap for data Collection in the Energy Sector.

d) Production of a workshop report.

1.4 Format and participation

This one-day hybrid in-person and virtual for GHGMI workshop was attended by stakeholders from government ministries and agencies, local government, industry and GHGMI. The programme of the day was directed by Mr Makhanya from MTEA.

1.5 Invitations and response rate

A total of 25 stakeholders were invited to attend the Workshop. These included the Minister for Tourism and Environmental Affairs/MTEA, where Eswatini's Climate Change Unit/CCU, under the National Meteorological Services Department, serves as Eswatini's UNFCCC Focal Point, personnel from the Ministry of Natural Resources and Energy (MNRE) - Department of Energy, Ministry of Public Works and Transport (MPWT) - Department of Road Transportation, Ministry of Economic Planning and Development (MEPD), Central Statistics Office (CSO), Ministry of Finance (MOF), in the Central Motor Registry (CMR), Industry, Eswatini Environment Authority (EEA) and municipalities. There were 21 physically participating attendants and two online (virtual) participants from GHGMI. The register for stakeholders who attended the workshop physically appears as Annex 1.

2 Workshop Proceedings

The presentation was on the workshop objectives and expectations, current state of GHGs inventory compilation from energy and transport sector and the scoping and gap analysis report. These presentations were then followed up by discussions. The midmorning session focussed on improving data collection and data flow, followed by breakout sessions where the draft collection templates were reviewed by stakeholders and made recommendations to improve the drafts. The proposed institutional arrangements were presented followed by discussions that will inform the collection roadmap for improved institutional arrangements and data collection procedures in the energy sector in the country. The workshop programme is attached as Annex 2.

Figure 1: Mr Makhanya making his remarks

Figure 2: Physical participants in the workshop

2.1 Presentation by MTEA

The workshop was opened by the MTEA's (Ministry of Tourism and Environmental Affairs') Climate Change Unit/CCU Co-ordinator, Ms. Khetsiwe Khumalo. This section provides the narrative of what she presented is as follows:

Climate change actions require baseline information (business as usual without any intervention), and that this requires reliable data. In 2016 in the Third National Communication, it was note that

energy particularly the transport subsector had the largest emissions. This was further confirmed by the GHG inventory in 2018.The transport sector accounts for the highest emissions of short-lived climate pollutants like black carbon [ozone and methane]. Even though short-lived, these pollutants also affect the climate and hence the weather.

The country uses a lot of second-hand vehicles that are suspected to be major emitters. However, this has to be quantified to measure the impact of these vehicles make rather than basing conclusions on assumptions. It is good that the key ministries are represented here, those of Natural Resources and Energy and Public Works and Transport. These ministries are expected to assist in improve the data collection templates produced by the consultants. These should provide quality data to estimate what and how much is emitted from the transport sector.

According to the IPCC climate change impacts are going to be severe, and the southern Africa region will be the most affected, and this of course, includes our country. There is therefore need to take action, and reduce emissions and adapt to climate change.

Policies and actions must not be by impulse but must be based on scientific evidence. Therefore a lot of effort must be dedicated to help with the data collection templates to inform what works and what won't. Right decisions can be made with the correct information. With bad data bad decisions can be made. Information is also needed when sourcing for climate finance

Reveal the challenges on the ground when it comes to data collection. MTEA coordinates climate action and is committed to work with stakeholders.

The data collection templates developed in this project may not be perfect. However, with their uses opportunities for improvement will be identified. What is critical is the supply line of data. For example EEA is interested in local pollution. They can assist in tracking the short-lived climate pollutants as they are also cause local pollution. There is the potential to manage short-lived climate pollutants when working n collaboration.

Eswatini emissions are small compare to the overall global GHG emissions. However as part of the global community, the country has to mitigate climate change which can help it build capacity for climate change adaptation which is crucial for the country. Climate change is at the centre of everything and has impact to all the sustainable development goals (SDGs). MTEA is also working with the Ministry of Economic Planning and Development on climate action to address the SDGs.

The project is funded by the Initiative for Climate Transparency (ICAT).. The University of Eswatini is the implementing entity and is supported by the Greenhouse Gas management Institute (GHGMI).

She went on to thank all participants in this workshop and asked thy participate, interrogate and help the consultants develop the right outputs to inform policy.

2.2 Presentation by Dr Mduduzi M Mathunjwa

Dr Mathunjwa, from the Centre for Sustainable Energy Research (CSER), gave a presentation on the workshop objectives and expectations. He further gave an overview of the current state of GHGs Inventory Compilation from energy and transport sector with emphasis on the following:

1. Current arrangements and gaps in GHG inventory compilation
2. Energy and transport as the leading contributors to the GHG inventory.
3. Country's targets for Tier 2 calculations in the Transport sector
4. A general introduction of the scoping and gap analysis report was given.

The presentation is attached as Annex 3.

Figure 3: Dr Mathunjwa giving objectives of the workshop

He further stressed that in order to produce transparent GHG missions, we need to quantity fuel and know the technology used so that we can know which emission factor to apply in the calculations. Without this information it is difficult to find estimates of the greenhouse gas emissions. In other countries the GHG inventory is compiled by the unit responsible for the energy balance (which is the MNRE in Eswatini). There is need for capacity building so that MNRE can produce the inventory and transmit the results to the MTEA.. He stated that it is important for economic sectors to know their carbon footprint because a large footprint could be a barrier to trade.

Reactions to the presentation included:

Deepa Pullanikkatil (MTEA, NDC Co-ordinator supported by the UNDP) made a clarification that in the revised NDC, mitigation also includes the introduction of hybrid vehicles.

Mr Matsebula from EEA asked if the blue technology which is installed in modern vehicles is good or bad in terms of emissions. He said this is a stop-start system where the engine is shut down when the vehicle stops and starts automatically when the accelerator is pressed. Dr Mathunjwa clarified that GHG emissions from restarting are larger, but lower than those from starting a cold engine. For short stops, it makes sense to turn the vehicle off in order to minimize fuel use in long idle periods, and reduce CO_2 emissions. He said that it would be important to quantify savings in emissions for frequent short stops.

Ms Kitsewe Khumalo stated that the exercise of sectors doing their own GHG inventories was started a few years ago. She said that this will ensure sectors “own” the inventories (have ownership of the data and the quality of the data), rather than the inventories being done by MTEA and use them to inform policy and actions. EEA has also been earmarked as part of this process. The challenge is setting up a system for sharing of funds across ministries and agencies to ensure that they have the resources to do the work and ‘own’ the results. Another problem is the issue of capacity building in the various sectors.

2.3 Presentation by Prof. Mkhonta

Prof Mkhonta gave a presentation on improving data collection and data flow (presentation attached, Annex 4):

1. To support the compilation of the national energy balance; and,
2. To support a more accurate calculation of the carbon footprint of the transport sector and major industries.

Questions that he addressed included:

1. A demonstration on how the national energy balance feeds into the GHG inventory compilation;
2. What the particular needs are for the GHG inventory compilation; and,
3. What are the best practices for the GHG compilation for the transport sector?

Some of the highlights of the discussions that followed included the following:

It was stated that there is a need for accurate data to correctly identify mitigation potentials and also to find appropriate integration. It is also necessary to check progress towards achieving Eswatini's NDC goals. It was said that data collection is a key part of the national inventory arrangements a country puts in place to regularly estimate and report greenhouse gas emissions. MTEA is the nationally designated entity that reports to the UNFCCC. For transparency, the methodology, how MTEA compiles the inventory, what are the institutional arrangements between different government sectors, and how the GHG inventories are verified, are important. Mr Dladla from EEA made a suggestion of incentivizing data providers to share data as the current method of data sharing is not working. EEA has legislation that allows them to collect environmental data from any organisation in the country. It was stated that institutional arrangements can help in the sharing of data.

Figure 4: Prof Mkhonta giving a presentation on improving data collection and data flow.

2.4 Break-out sessions

Participants were then split into 3 groups to discuss draft templates that were developed by the consultants.

Group A: Data collection: Industry and Commercial sectors

No	Participant's name	Ministry/ Organisation	Position
1	Gugu Vilakati	MNRE	Assistant Energy Officer
2	Gcina Dladla	EEA	Acting Executive Director
3	Mancoba Zwane	Matsapha Municipality	Head of Environment
4	Mduduzi Dlamini	EEA	Environment Engineer
5	Simphiwe Thwala	Coca-cola - Eswatini	EQSH Analyst
6	Mduduzi Mathunjwa	UNESWA-CSER	Consultant

Dr Mathunjwa presented the format and the contents of the templates. He emphasised the need for information confidentiality and that MNRE can never release the information to third parties. Stakeholders were then asked to review the templates and make their inputs. Other comments included:

1. The original template from MNRE introduction wording was modified so that it comes out much clearer to an individual who will be using the template.
2. Template can be updated or adapted overtime to address any needs or problems that are encountered.
3. Suggestions that in table E, coal mixtures should be added in case the locally mined anthracite coal is used locally mixed with other coal.
4. In some sectors it is difficult to get the data.
5. Municipalities can assist in the collection of data for GHG inventory. In their normal data collection form that they use, other section relating to data needed for GHG inventory can be added.
6. It was also suggested that in order to reduce data collection provision fatigue of data providers, there could be arrangements where the data needed by all government ministries, departments and agencies is all collected once a year from each data provider.

EEA commented that they were also in a position to determine GHG emissions for the waste and LULUCF sectors, if the model for MNRE to determine GHG emissions for the energy sector would take-off. It was stated that for the LULUCF sector it may probably be best to collaborate with the UNESWA Department of Geography, Environmental Science and Planning.

Group B: Data Templates collection: Transport sector consumption patterns

No.	Participant's name	Ministry/ Organisation	Position
1	Mr Sipho Matsebula	EEA	Ecologist
2	Mr Lukhele	Motor Registry	Director of the Road Transportation
3	Ps T. Ndzimandze	MNRE	EO
5	Nelsiwe Ndzinisa	USA Distillers	Environmental Officer

6	Dudu Khumalo	Treasury	Principal Accoutant
7	Simiso Mkhonta	UNESWA-CSER	Consultant

Prof Mkhonta said the template will assist the Ministry of Public Works and Transport to assemble data that will be utilized to populate the GHG emissions for the transport sector. Missing information will be collected annually by the Eswatini Revenue Service (ERS) during car license renewals using a digital application (digital App).The App is still to be developed.

He then gave an overview of the template. Stakeholders were asked to analyse the template and make recommendations. The app will be piloted first to identify gaps and make some improvements where necessary. The director suggested that the piloting of this app. Comments on the template included:

1. There should be a field for hybrid cars in the template where respondents could also include details if the car is hybrid or not.
2. Template is appropriate for data collection, needs to be piloted first.

Group C: Data Collection Templates – Household Energy use

No	Participant's name	Ministry/ Organisation	Position
1	Nolwazi Khumalo	MNRE	S.E.O
2	Thandazile Dlamini	MNRE	P.O.E
3	Khetsiwe Khumalo	MTEA	Coordinator
4	Gugu Vilakati	MNRE	A.E.O
5	Gugu Msane	UNESWA-CSER	Consultant

Dr Msane indicated that the household template for energy consumption that was prepared by CSER has been overtaken by one prepared by the MNRE, CSO and the World Bank through the Energy Sector Assistance Management Programme (ESMAP). Since a lot of effort and resources have already been dedicated to this development by both local and international experts, and agreed on it, the CSER can only check it for completeness for the purpose of GHG inventory determinations.

2.5 Afternoon session presentations

Prof Mkhonta presented on perspectives for the institutional arrangement setup (presentation attached, Annex 5). His talk centred on:

1. The need for formal data sharing agreements was pointed out;
2. Pros and cons of the current setup were shared;
3. Pros and cons for in-house GHG calculations by the Energy Department (for the energy sector) and the Road Transport Department (for the transport sector) were shared; and,
4. The need for MRV experts working group that would assist MTEA in the QA/QC process of the inventory was suggested.

The proposed institutional arrangements (IAs) were guided by established (IAs) from other countries, and then contextualised for Eswatini's circumstances. The proposed IAs define the responsibilities associated with preparing the national inventory, including data providers and experts who will provide activity data.

The outlook of the current institutional arrangement was followed by discussions that will inform the data collection roadmap for improved institutional arrangements and data collection procedures in the energy sector in the country. Challenges and comments included:

1. The main challenge on the decentralized model of the institutional arrangements (IAs) is the issue of climate budgets. MTEA has not developed an appropriate instrument to enable then=mm to share climate change funding with other ministries;
2. The climate action experts are currently concentrated at MTEA. There is need to develop the specialist to look into methodologies of doing the GHG calculations in other sectors;
3. MTEA will be the coordination Agency to oversee planning activities, setting timelines and compilation and submission of GHG inventory reports to the UNFCCC;
4. Putting IAs in place can effectively support MRV implementation;
5. MNRE is already training people to compile GHG inventories, however, they still need support; and,
6. MPWT need the capacity building on climate change matters in order for them to identify possible mitigation and adaptation measures within their sector. They stated that before this project, they did not know that they had an important role to play on climate change matters.

3 Closing

The closing for the workshop was done by the Project Facilitator Mr Makhanya on behalf of MTEA. He summarised the proceedings of the workshop and thanked the participants for their active participation in workshop, and requested for continued cooperation on climate change matters.

Annex 2: Activity 2 Workshop Programme

Workshop Report to Review the Scoping and Gap analysis, Data Collection Templates, Institutional Arrangements and Implementation Plan for Roadmap for Energy and Transport Sectors

Date: 11 April 2022

Venue: Hilton Inn, Mbabane, Eswatini

Programme

Time	Session	Leader
0900 – 0930	Arrival and Registration	All
0930 – 0950	Welcome Remarks	MTEA
0950 -- 1000	**Goals of the ICAT supported Project:** • Transparency on Adaptation, Mitigation, and GHGs Inventory Compilation & Reporting to the UNFCCC	MTEA
1000 – 1010	**Introductions and workshop objectives and expectations:** • Energy stakeholders • Transport stakeholders	CSER: Dr Mathunjwa
1010 – 1100	**Current state of GHGs Inventory Compilation from energy and transport sector:** • Energy and transport as the leading contributors to the GHG inventory. • Current arrangements and gaps in GHG inventory compilation • Country's targets for Tier 2 Calculations in the Transport sector A general introduction of the scoping and gap analysis report will be followed up by discussions.	CSER – Dr Mathunjwa
1100 – 1120	**Tea Break**	All
1120 – 1145	**Improving data collection and data flow:** • To support the compilation of the national energy balance • To support a more accurate calculation of the carbon footprint of the transport sector and major industries **Questions to be addressed include:** • A demonstration how the NEB feeds into the GHG inventory compilation. • What are the particular needs for the GHG inventory compilation? • What are the best practices for the GHG compilation for the transport sector?	CSER: Prof. S.K. Mkhonta
1145 – 1230	**Break-out section to validate the sector specific templates**	CSER
Session A	**Data collection: Industry and Commercial sectors** Participants: CSER(1), MNRE(2), MTEA, Industry representatives, Municipal representatives, Research Institution representative	Dr M. Mathunjwa

Session B	**Data Templates collection: Transport sector consumption patterns** Participants: CSER, Ministry of Public Works and Transport, Revenue Department, Transport Sector representatives (3), MTEA, EEA representative	Prof. S. K. Mkhonta
Session C	**Data Collection Templates – Household Energy use** Participants: CSER, MNRE, Central Statistics Office, Tikhundla representatives,	Dr G. Msane
1230 – 1300	**Conclusion and take-away from the data templates validation exercises**	CSER: Dr G. Msane
1300 – 1400	**Lunch Break**	All
1400 – 1500	**Perspectives for the institutional arrangement setup.** • Need for formal data sharing agreements • Pros and cons for centralized GHG compilation model • Pros and cons for decentralized GHG compilation model by the Energy Department (for the energy sector) and the Road Transportation Department (for the transport sector) • Need for MRV experts working group that would assist MTEA in the QA/QC process of the inventory. The outlook of the current institutional arrangement will be followed by general discussions that will inform the collection roadmap for improved institutional arrangements and data collection procedures in the energy sector of the Kingdom of Eswatini.	CSER: Prof S. K. Mkhonta
1500 – 1515	**Tea Break**	All
1515 – 1530	Summary of the workshop findings and a way forward	CSER/MTEA: Mr S. Makhanya
1530– 1540	**Closing Remarks**	MTEA

Annex 3: Dr Mathunjwa Presentation on Workshop Objectives, Expectations, Scoping & Gap Analysis Report and Requirements for GHG Calculations

Project Title:

Technical support to increase the overall transparency capacity and set-up of sectoral MRV systems in the Kingdom of Eswatini

Project Purpose:

Increase the Overall Transparency Capacity to Benefit Sectoral Monitoring Reporting and Verification (MRV) Systems in the Country in Line with the Paris Agreement

Brief overview of the ICAT project

ICAT project consist of five activities focusing on the main drivers of climate action in Eswatini:

1. Health and water sectors: adaptation scoping and gap analysis
2. Energy and transport sectors: roadmap for accurate reporting of the carbon footprint of these sectors
3. Agriculture sector: roadmap for accurate reporting of the carbon footprint of these sectors
4. Forestry and land use: roadmap for accurate reporting of the carbon footprint of these sectors
5. Impact generating electricity from renewables on the National Determined Contributions to halting climate change

Take aways about the ICAT project

The ICAT project report will

- Provide the roadmap of that ensure Eswatini collects and report accurate data on her carbon footprint
- Improved assessment and understanding of the impact of renewable electricity policy impacts on our carbon footprint
- Provide the roadmap how to best mainstream climate action into the Health and Water sector especially on adaptation to the impacts of climate change.
- Will feed into the CBIT project of the MTEA

1. Introductions and workshop objectives and expectations

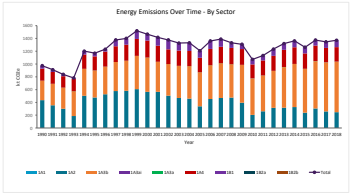
Objectives

To determine whether:

1. **there are any gaps in the energy balance that need to be addressed;**
2. **the data collection templates are understandable;**
3. **the proposed transport annual data collection tool will be practical to obtain the necessary information for the transport inventory**
4. **the proposed institutional arrangements can ensure transparency in the reporting of greenhouse gas emissions**

2. Energy Sector GHG Emissions

1. **Energy sector accounts for about 40% of national greenhouse gas emissions**
2. **Largest contributor to energy GHG emissions is the transport subsector**
3. **The revised NDC only addresses mitigation in the transport sector by only 10% ethanol-petrol blend**
4. **This study may revel more information that can enable the identification of more alternatives, e.g. efficient public transport, park and ride – already practiced informally (Ngwenya and Lozitha)**



3. Why the concern on GHG emissions?

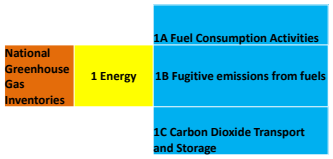
- **Associated with global warming that results in adverse weather effects**
- **Main GHG gas is carbon dioxide (CO_2)**
- **Other main gases from the energy sector include methane (CH_4) and nitrous oxide (N_2O)**
- **Eswatini contributes less than 0.03% of the global emissions**
- **She is part of the global community and party to the United Nations Framework Convention on Climate Change and the Paris Agreement on transparency and submitted its NDCs.**

4. Benefits of improved Energy balance

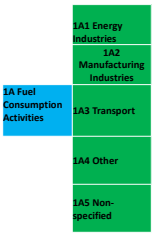
Helps to inform policy for:

1. **energy planning / energy security**
2. **cost effective energy source options**
3. **access to affordable and sustainable energy**
4. **awareness of carbon footprint (could be a trade barrier)**
   - **VW fined USD1B and current cost USD39B, CEO sentenced 7 years and served half**
5. **transparent reporting of national greenhouse gas emissions**

5. IPCC SECTORAL CATEGORIES



6. IPCC SUB-SECTOR CATEGORIES



Annex 4: Prof. Mkhonta's Presentation on Improving Data Collection and Data Flow

Improving the quality GHG emissions estimates within theenergy and transport sector

Activity 2 – Energy and Transport Sector Center for Sustainable Energy Research

April 11, 2022

Climate Change pledges: a case for quality data

- List of determined contributions, pledges or targets to reduces GHG emissions (climate change mitigation)
- Climate neutrality
- Emission below business as usual
- Emission below base year
- Emissions per GDP
- "Golden rule: Promise what you can keep"
- pledges must be quantifiable
- pledges must verifiable

x

What is MRV of GHG Emissions?

- Measurement (or estimation)
- Reporting – at national or international level
- Verification - Quality assurance or quality control
- Framework where stakeholders interact to monitor the quality of GHG emission estimates at national, sectoral, and facility levels.
- National driver for MRVs
  - To correctly identify the mitigation potentials
  - To plan appropriate mitigation actions (NAMA))
  - Tracking progress towards mitigations goals (demonstrate to UNFCC)

National driver for MRV System

- Eswatini made a commitment under the UNFCCC to pursue a low-carbon development strategy
- Eswatini's Revised NDC (12/09/2021), submitted by the Govt to the UNFCCC promises a 5% reduction of GHG emissions below business as usual
- under UNFCCC agreement post 2020, INDC must be communicated
- in a clear, accurate, and transparent
- IPCC reporting guidelines is according to emissions from 4 sectos
- 1) Energy and transport
- 2) Industrial process and product use
- 3) Agriculture, forestry and land use
- 4) Waste

Overview MRV

- What gets measured?
- Emission of GHGs
- Generally estimated from activity data When to measure?
- Driven by reporting requirements at the UNFCCC What information is reported?
- GHG estimates by sector
- Methodology, Institutional Arrangements QA/QC Who reports?
- National designated entity – MTEA

Overview MRV

- What is verified?
  - GHGs inventories
  - IAs, Methodology, data collection system How is it verified?
  - Check for transparency, consistency, comparability, completeness, and accuracy
  - Checked against parrallel indicators (employment or economic indicators)
- Who verifies?
  - International report – UNFCCC consultant experts
  - Nationally – Inter-Ministrial Working Groups
  - Sectoral report – Sectoral Working Groups
  - Facility or Company level – Department Manager

Tier Approach for GHG emissions

- According the UNFCCC reporting there are three tiers
- Tier 1 – uses international default factors
- Tier 2 – uses national default factors
- Tier 3 – country-specific methodologies Higher methods are more accurate and valuable
- Energy emission based on carbon content of fuel burnt
- Technologies utilized
- Eswatini currently provides Tier 1 estimates both for energy and transport sector, with an intention for Tier 2 in the future.

Current methodology of GHG

- Uses the National Energy Balance report as primary data sources for GHG estimates
- Estimates GHG emission for Transport sector from petroleum consumption patterns
- Estimates for Energy sector Limitations of the national balance data
- It provides aggregated
- Missing detailes for GHG sector specific activities

Report referred in this Presentation

- 1) How to Set up National MRV System, published by GIZ Environment and Climate Change Division (2021).
- 2) Eswatini's Revised NDC (12/09/2021), Submitted by the Govt to the UNFCCC

Annex 5: Prof Mkhonta Presentation on Perspectives for the Institutional Arrangement Setup and Implementation Plan

Institutional Arrangements and Roadmap for MRV of GHG

Activity 2 on Energy and Trasport Sector Center for Sustainable Energy Research

April 11, 2022

Concept of MRV system

- Framework where stakeholders at multi-levels of governmental interact to check the effectiveness of mitigation actions, impact of support, and monitor the quality of emissions.
- Measurement (or estimation)
- Reporting – at national or international level
- Verification - Quality assurance or quality control There are three types of MRVs
- MRVs of GHG emissions estimates
- MRVs of National Appropriate Mitigation Actions
- MRVs of financial/techical support (impact of financial flows/capacity building)

Three levels of MRVs of emissions

- National level for:
- GHG inventory reporting to UNFCCC (BUR and NC)
- National projections to plan NAMAs Sectoral level for:
- to feed into the national GHG inventory
- National projections to plan NAMAs Facility level for:
- to monitor company level GHG emissions
- to address regulatory requirements or as a business case (Emissions Trading Schemes or access CDM financing)

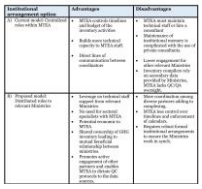
Determinants of MRV success

- Success factors
- Institutional arrangements in place – coordinate participation of stakeholders
- Clearly defined roles and responsibilities
- Legal instruments to support the IAs and data sharing agreements Success outcomes
- Development of National Appropriate Mitigations Activities
- Accurate GHG inventory to help prioritize effective and cost effective environmental policies.
- Who should be involved in the MRV system
- Data suppliers
- National statistic Offices; Research Organizations
- Companies and Trade Organizations
- Government agencies; Departments; and Ministries

Institutional Arrangements of MRV System

- These are institutional, legal and procedural agreements between the lead agency, data management, and data sources that enable continuous estimation and timely reporting of national GHG inventory
- Define the responsibilities between the stakeholder
- Provides the confidence in the inventory process Two approaches:
- Centralized MRV system
- lead agency coordinates GHG compilation from each sector
- Decentralized MRV system
- Lead agency consolidates sectorial GHG emissions from responsible Government departments
- There are pros and cons for each set-up

Institutional Arrangements of MRV System

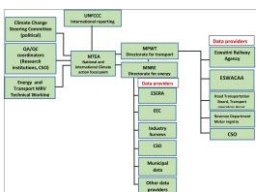


Benchmarks

Current Institutional Arrangements

- Current set-up

Proposed Institutional Arrangements



Implementation plan

- Short term actions (2022 to 2023)– drafting of IAs and capacity building
- MTEA (Climate Change Unit) and MNRE (Energy departments)
- MTEA, MPWT, and MF on creating an App for car licence renewals and include the relevant information
- channelling of Climate Action budgets to the collaborating departments for capacity building, human resource hiring, etc.
- Medium term actions (2023 to 2025) – system testing
- Data collection under the improved arrangements and testing the efficiency of the MRV system
- Long term actions (beyond to 2025) – adjusting and improving the MRV system

Report referred in this presentation

- 1) How to Set up National MRV System, published by GIZ Environment and Climate Change Division 2021
- 2) Eswatini's Revised NDC (12/09/2021), Submitted by the Govt to the UNFCCC