

Interinstitutional
consultation and
policy strategy in
Botswana transport
sector

Initiative for Climate Action Transparency – ICAT Report consolidating the interinstitutional consultation and policy strategy for Botswana’s transport sector

Deliverable #2

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Abbreviations

ACI	Airports Council International
BDQAF	Botswana Data Quality Assessment Framework
BERA	Botswana Energy Regulatory Authority
BOCONGO	Botswana Council of Non-Governmental Organisations
BOCS	Bus Owners Co-operative Societies
BTR	Biennial Transparency Report
BUR	Biennial Update Report
BURS	Botswana Unified Revenue Service
CAAB	Civil Aviation Authority of Botswana
CAF	Corporación Andina de Fomento
CCC	Climate Change Commission
CCET	Climate Change Expenditure Tagging
COVID-19	Corona Virus
DEA	Department of Environmental Affairs
DMS	Department of Meteorological Services
DoE	of Energy
DTRS	Department of Road Transport and Safety
ETF	Enhanced Transparency Framework
FDN	Financiera de Desarrollo Nacional
GCF	Green Climate Fund
GHG	Greenhouse Gas
GHS	Greenhouse Gas Inventory System
IAs	Institutional Arrangements
ICAO	International Civil Aviation Organization
ICAT	Initiative for Climate Action Transparency
IPCC	Intergovernmental Panel on Climate Change
MADS	Ministry of Environment and Sustainable Development
MENT	Ministry of Environment, Natural Resources and Tourism
MFED	Ministry of Finance and Economic Development
MoA	Memorandum of Agreement
MoU	Memorandum of Understanding
MRV	Measuring Reporting and Verification
M&E	Monitoring and Evaluation
NAMAs	Nationally Appropriate Mitigation Actions
NCCC	National Climate Change Committee
NDA	Nationally Designated Authority
NDC	Nationally Determined Contribution
NLTA	National Land Transport Authority
NTC	National Transport Corporation
PIS	Information Service
PPPs	Public–Private Partnerships

QA/QC	Quality Assurance / Quality Control
RENARE	National Registry for the Reduction of Emissions
RHT	Rose Hill Transport
SASSCAL	Southern African Science Service Centre for Climate Change and Adaptive Land Management
SB	Statistics Botswana
SC	Steering Committee
SDGs	Sustainable Development Goals
SIDS	Small Island Developing States
TBS	Triolet Bus Service
TC	Technical Committee
TMU	Technical Management Unit
TOR	Terms of Reference
UBS	United Bus Service
UNDP	Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
V2V	Vehicle to Vehicle
VAT	Value Added Tax

Glossary

Accuracy

A relative measure of the exactness of an emission or removal estimate. Estimates should be accurate in the sense that they are systematically neither over nor under true emissions or removals, so far as can be judged.

Activity

A practice or ensemble of practices that take place on a delineated area over a given period of time.

Activity data

Data on the magnitude of a human activity resulting in emissions or removals taking place during a given period of time. Data on energy use, metal production, land areas, management systems, lime and fertilizer use, and waste arising are examples of activity data.

Carbon dioxide equivalent emission

The amount of carbon dioxide (CO₂) emission that would cause the same integrated radiative forcing or temperature change, over a given time horizon, as an emitted amount of a greenhouse gas (GHG) or a mixture of GHGs. There are a number of ways to compute such equivalent emissions and choose appropriate time horizons. Most typically, the CO₂-equivalent emission is obtained by multiplying the emission of a GHG by its global warming potential (GWP) for a 100-year time horizon.

Transparency

Transparency means that the assumptions and methodologies used for an inventory should be clearly explained to facilitate replication and assessment of the inventory by users of the reported information. The transparency of inventories is fundamental to the success of the process for the communication and consideration of information.

Enhanced Transparency Framework (ETF)

ETF is designed to build trust and confidence that all Paris Agreement Parties are contributing their share to the global effort through MRV of Implementation of their Nationally Determined Contributions (NDC) in order to track if the global goal of achieving 1.5 to 2 Degrees Celsius is being achieved.

Executive Summary



The **Initiative for Climate Action Transparency (ICAT)** aims to help governments build capacity to measure the effects of their policies and report progress publicly, thus fostering greater transparency, effectiveness, trust and ambition in climate policies worldwide. Botswana has prioritized the Energy and Transport sectors for its ICAT activities.

This report is on Deliverable 2- of the ICAT- Botswana study “*Strengthening institutional arrangements for MRV in the transport sector*” focussing on presenting the institutional arrangement (IA) required for tracking implementation of the Botswana Nationally Determined Contribution (NDC) using a Monitoring Reporting and Verification (MRV) system that is complying with the ETF requirements under the Paris Agreement.

Botswana like other UNFCCC Parties have been undertaking MRV through the NCs, BURs, NAMAs etc. However, with the advent of the Paris Agreement, Parties have to develop their NDCs and a robust MRV system, and meeting the ETF is required domestically as well as internationally to transparently show if the Parties are moving towards their targets defined in NDCs and to track the implementation of mitigation and adaptation actions, as well as the use and results of means of support including climate finance.

To be able to track implementation of the NDCs, an institutional framework is required. Conceptually, the institutional framework required stretches from national level to sectoral level in the case of transport for instance. In a bottom-up fashion, the comprehensive institutional framework starts from data providers with an in-built QA to amalgamation at sector level and finally reaching a centralized national data system from which Thematic groups can draw data for use for GHG Inventory, GHG Mitigation, Adaptation and Resource tracking. The ideal situation would then have a TMU that will put together NDC and MRV Reports for consideration at NCCC. A well-equipped and empowered and resourced NCCC can take responsibility of inter-ministerial body. Under current situation, unless mandated with a legal status, such NCCC may not be able to make binding decisions and allocate resources to climate action hence the idea of high level Inter-ministerial body remains open.

There has been already some institutional framework undertaking MRV under the UNFCCC in Botswana that can be adapted to take further responsibility under the NDC MRV. The MENT itself is the main ministry in charge of climate action. A NCCC, the UNFCCC Focal Point DMS and a GHG Inventory Team already exist. The question is whether they are already effective and whether other structures are required within the hierarchy and if all key stakeholders are involved within the structures.

The expectation is that if we already have a GHG Inventory Team, we should also have other thematic groups for GHG Mitigation, Adaptation and resource tracking.

The required institutional arrangements for tracking the progress of the NDC and reporting on its implementation at both international and domestic level is therefore required to ensure such transparent and quality reporting in line with the ETF.

The required institutional framework for tracking NDC implementation is reviewed considering the various roles and mandates of institutions, inter-relationships and how coordination is achieved. The role of a key ministry such as MENT and other stakeholders such as national working committees, Sector Working Groups and data providers feeding into the MRV for the transport sector are analysed and gaps identified.

To interrogate the adequacy of the NDC MRV institutional framework, two key methods were used namely to examine IAs of other countries that are undertaking ICAT projects and interviewing relevant Botswana national and transport stakeholders on their views and inputs for the appropriate IA for NDC MRV.

Key Findings

International Perspectives

There have been useful experiences that have been realized from benchmarking with other countries. Some of the key findings from that exercise include:

1. The needed but usually lacking coordination of central government with regional institutions, semi-state and non-state organization that can also participate in data provision and implementation of the stipulated thematic areas of GHG Inventory, GHG mitigation measures and resource tracking. In relation to transport,

transport associations and bus operators in relation to public transport have been cited in other countries as important stakeholders. Funders may not be in the mainstream NDC MRV system but can be a source of tracking resources allocated to projects in the countries. Overall, this to satisfy both vertical and horizontal coordination of key stakeholders that should participate in an NDC MRV institutional framework.

2. Another important aspect of the NDC/MRV system is the creation of a national integrated Climate Change Information and database systems similar to what is being proposed for SB to enhance in addition to its already important role in support of data sets for the GHG Inventory.
3. Another interesting aspect is that the drive for such NDC/MRV work is dictated from the highest level in the countries and that even Sectoral Group report are signed off by senior officials before the reports are considered at a higher level.

Botswana National Level Perspectives

The current role played by MENT and DMS are considered adequate apart from perhaps adding resources for the NDC MRV. The NCCC is considered an inter-ministerial organ, but it is realized that its legal status and effectiveness is limited at the moment. The SB is considered well placed apart that it may have to establish an NDC/MRV desk to manage information related to climate action. The GHG Inventory team is considered relevant but has to include other sectors not represented and private sector participation.

The proposal is that any inter-ministerial body for NDC/MRV should have power to make binding decisions and can agree on resource allocation.

Such a body would be technically supported by a Technical Management Unit comprising of various experts that can inform decision making by the inter-ministerial body and policy/strategy formulation. The TMU is to have required expertise and be guiding the NCCC/inter-menstrual body on the approval of national documents or reports. It would lead development and reviews of NDC/MRV reports before submission to both NCCC and UNFCCC/Paris frameworks.

Overall private sector participation is seen as inadequate and requiring strengthening with some of the champions leading the way to engage and mobilize their members to provide data and participate in NDC and MRV activities.

Supporting any institutional strengthening at national level is seen as potentially funded by government budgets where public institutional participation is involved. Both private sector and ICP support can be mobilized where activities of common interest such as capacity building are required.

The key points are that the NCCC needs to be strengthened if it is to act as the Inter-ministerial body making concrete decisions and intensifying its coordination role.

There is motivation for a TMU- that is below the NCCC but above the thematic groups (GHG Inventory, GHG Mitigation, Adaptation, Resource tracking) and Sectoral Groups (transport, energy, etc.) and can play a crucial role on advising on technical issues but should be well stocked with necessary expertise and well-resourced as well.

Transport stakeholders have indicated that they have not been active in the NCCC and GHG Inventory team and are seeking participation, although some of them have been supplying transport statistics.

Botswana Transport sector perspectives

Some relevant sectoral working groups exist but if they are to be adopted, they will require strengthening and capacity building to perform the NDC MRV / climate change activities function. Sectoral activities would entail collection of data at sector level working with organizations' specialized units in those sector organizations that are already tasked with that function. Such units would have support of SB and other outsourced entities to establish internal data quality assurance. The collected data could be signed for by senior officer to the sectoral working group chairperson.

Coordination of data requirements and quality will also be handled with inputs from thematic groups and TMU above so as to have alignment throughout the NDC MRV system. The TMU will have to be appropriately resourced to enable it to guide and solicit appropriate information from the Sectoral working Group members.

For effective participation of the private sector in the NDC MRV system, the public stakeholders with links in private



sector can mobilize private sector participation through their contacts. The role of private sector groupings such as Business Botswana can also champion mobilization of their members to provide required data and be involved in sectoral groups, thematic groups, TMU and even NCCC. Indications are that private sector participation has been thin in the NCCC and GHG Inventory team so far.

Raising of awareness with private sector in particular on the NDC/MRV process, is considered crucial to ensure active participation by those that have not been involved before. For instance, from the public side, organizations such as BERA in partnership with Dept. of Energy, DMS, and DRTS would raise awareness on the importance of data for NDC MRV.

For purpose of data provision, a recommendation is made to sign Memorandum of Understanding (MOUs) with data providers including private sector and involve them in the committees for their active participation to prioritise data.

Support will be required to build capacity especially where data are currently not available. Quality assurance assistance and ensuring data confidentiality should be maintained as required by data providers. Equipment may also be required by data providers for purpose of data collection and preliminary processing e.g., in terms of software and hardware and key types of expertise such as statistics/science/engineering sometimes with specialization of database systems, IT and environmental/GIS expertise.

Policy/legal framework to enhance institutional arrangement

So far, the Botswana Climate Change Policy and the ensuing CC bill are considered important policy framework to guide the formulation of the CC Institutional framework particularly the mentioned Climate Change Unit.

Participation of stakeholders and provision of data will be covered under other sectoral important policy/legislation considered important such as the Botswana Energy Regulatory Act of 2016, Petroleum (Exploration and Production) Act; Energy Act¹, Custom Act, the Atmospheric Pollution Act and Environmental Impact Assessment Act.

There is also a strong view that, much of the work on NDC MRV can be realised through MoU/MoAs with relevant institutions, especially the private sector. For Public entities, a directive could compel them to be compliant with MRV requirements – as this will also be one way of operationalizing the Climate Change policy.

Linking Transport sectorial structures and the national MRV structures

For effective linkages between sector and national structure, the proposal is that sectoral working groups, thematic groups would not be in isolation but should have representatives as members in the TMU and NCCC for purpose of bottom up and top-down communication.

The proposal is that the TMU should be managed by some of the members of the NCCC, and thematic working groups should also be made up of some of the officers under the TMU.

For linkages with national development goals, reporting to SDG committees is considered essential hence a single, comprehensive system should be put in place, covering all the requirements of the ETF and allowing an easy compilation of the data necessary to report National Communications (NCs) and BTRs as well.

QA/QC system in place

So far QA/QC system for NDC MRV data purposes is considered inadequate in some cases non-existent. The QC provided by SB is currently the main source, but none is seen at lower levels apart from the fact that some organizations may have their internal processes for data collection and quality assurance. The proposal is that capacity is built from the data providers and a possible third-party entity can support QC prior to SB level that is expected to head the national central data storage and management system.

The Data Processing Centre, such as SB is also to have data management specialists and statisticians tasked with the responsibility of ensuring that data is credible and of good quality. Similar necessary capacity can be supported and resourced at lower levels.

¹ Energy Act compels energy user for provision of information.

Conclusions

In summary to the stakeholder views and inputs are that existing institutional framework is functional but will require strengthening by involving other players that are important but not currently involved. The importance of TMU, Thematic Groups and Sectoral working groups are highlighted but ensuring that members of these groupings are engaged in each other for purpose of continuity of information flow. The involvement of key experts that are knowledgeable in the subjects and can support with relevant data collection, analysis and reporting is recommended. This is to say, the various groupings should not operate in isolation.

There is importance mentioned to involve participation of stakeholders that have not been involved before e.g., private sector and mobilizing them from through their business groupings and government offices also reaching out to their contacts in such organizations. Raising of awareness to such stakeholders is considered important for their active participation. Some resources may also be required to equip such organizations to be able to provide the needed data and for their effective participation as well.

QA and QC needs such support from organizational units undertaking data collection and as the data are being shared in a bottom-up approach culminating with the SB making final QC before the data are used for GHG Inventory, GHG Mitigation by the relevant Thematic Groups.

Recommendations

The recommendations for Government of Botswana through MENT are to:

- Consider international experiences presented here when designing own NDC/MRV Institutional framework to ensure participation of all key stakeholders in the process and have high level participation to ensure binding decision making and allocation of resources. Funders' data bases can be useful sources of resources allocated to climate change projects, augmenting the information already being collected by MFED and the NDAs.
- Undertake a process of stakeholders' workshop to agree if the proposed hierarchical groupings will be endorsed and who should be particularly in the Transport data providers and sectoral working groups and the required capacity building and resources required. This process is necessary before the Roadmap is developed so that actions that should be implemented to establish desired institutional framework are included in the Roadmap.
- Undertake stock taking of key stakeholders to indicate who should be in the structures of the NDC MRV system particularly currently in the NCCC, GHG Inventory Team and then in the proposed TMU, Thematic Groups and Sectoral Groups when adopted This will consider private sector participation alongside their public counterparts and the required awareness by each stakeholder category and other resources required.
- Set up a QA/QC system that is aligned from data providers to the central CC Information and database information system, with SB providing guidance to the lower organizations and this may be executed through a workshop of identified data providers and analytical teams in sectoral working groups and Thematic groups and even TMU.

Introduction

International NDC institutional framework

The **Initiative for Climate Action Transparency (ICAT)** aims to help governments build capacity to measure the effects of their policies and report progress publicly, thus fostering greater transparency, effectiveness, trust and ambition in climate policies worldwide. The ICAT exercise will result in transparent reporting by the Parties and hence reliable tracking of global emissions towards the goal of 2°C to 1.5°C under the Paris Agreement. This ICAT initiative is piloted with developing countries. Thus far, 40 developing countries have been invited to join ICAT, including Botswana and other African countries and have accepted the offer:².

ICAT integrates guidance, capacity building and knowledge sharing to engage countries in the use of a common framework to assess the impacts of their policies and actions and will improve the availability and quality of data and will thus enable countries to promote efficient and cost-effective policies. The Initiative will also provide a platform for countries to share lessons learned and build mutual confidence in their climate actions.

Specific to the participating countries, **ICAT** supports the implementation of domestic monitoring, reporting and verifications (MRV) efforts and goals through:

- capacity building programs of national stakeholders,
- training on MRV concepts, methods, and tools,
- iterative testing and application of ICAT Guides, such as the Transport Guide, transformation guide,
- continued observation of future UNFCCC transparency requirements and variations in the IPCC Guidelines,
- development of a road map to sustain ICAT outcomes.

Botswana has prioritized the Energy and Transport sectors for its ICAT activities and is being assisted through its Botswana Ministry of Environment, Natural Resource Conservation and Tourism (MENT) by UNEP DTU Partnership (UDP) and Italian National Institute for Environmental Protection and Research (ISPRA), the latter two being the international Implementing partners for ICAT.

The deliverables that have been defined in the TORs for the two sectors are presented in Box 1 below.

The emphasis of this report is on Deliverable 2- *Strengthening institutional arrangements for MRV in the transport sector* focussing on presenting the institutional arrangement (IA) required for tracking implementation of the Botswana Nationally Determined Contribution (NDC) using a Monitoring Reporting and Verification (MRV) system that is complying with the ETF requirements under the Paris Agreement.

² **Africa:** Botswana, Chad, Eswatini, Ethiopia, Ghana, Kenya, Liberia, Morocco, Mozambique, Nigeria, Rwanda, Senegal, South Africa, Sudan, Tanzania, Tunisia, Zimbabwe

Asia: Bangladesh, Cambodia, China, India, Maldives, Philippines, Sri Lanka, Thailand, Viet Nam

Latin American and the Caribbean: Antigua and Barbuda, Argentina, Belize, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Mexico, Peru, Trinidad and Tobago

Pacific: Fiji

Deliverable 1	Situational Analysis on MRV in Botswana and Needs and gap assessment for MRV in the transport sector (synergizing with the energy sector).
Deliverable 2	Strengthening institutional arrangements for MRV in the transport sector.
Deliverable 3	Develop a list of indicators for NDC tracking and monitoring in the Transport sector. Develop capacity for data management and impact assessment to track NDC implementation in the transport sectors based on ICAT methodologies and/or other available tools.
Deliverable 4	Barrier Assessment for MRV/EFT in the transport sector.
Deliverable 5	Develop a roadmap to ensure the achievement and sustainability of ICAT outcomes.
Deliverable 6	Report documenting the final validation workshop and main outcomes of ICAT Botswana.

Box 1 ICAT Botswana deliverables for transport sector

Why MRV institutional framework for NDC tracking?

All Parties to the UNFCCC have been implementing a domestic monitoring, reporting and verification (MRV) system through their National Communications, BURS, NAMAs etc. and with the Paris Agreement in force several additional MRV requirements which, when taken together with the existing UNFCCC arrangements, provide an enhanced basis for a Parties' international reporting requirements relating to their NDCs. The enhanced transparency framework (ETF) established by the Paris Agreement requires an MRV system to transparently report progress made towards the targets defined in NDCs and to track the implementation of mitigation and adaptation actions, as well as the use and results of means of including climate finance. The system should also capture broader non-GHG impacts – such as environmental, social and economic impacts – resulting from implementation of measures for the purposes of evaluating their contribution to achieving broader development goals.

The required institutional arrangements for tracking the progress of the NDC and reporting on its implementation at both international and domestic level is therefore required to ensure such transparent and quality reporting in line with the ETF. The required institutional framework for tracking NDC implementation is reviewed considering the various roles and mandates of institutions, inter-relationships and how coordination is achieved. The role of a key ministry such as MENT and other stakeholders such as national working committees, Sector Working Groups and data providers feeding into the MRV for the transport sector are presented and gaps identified.

The institutional arrangement should cover all the aspects of the NDC MRV that encompass GHG Inventory, GHG Mitigation and Adaptation and tracking resources needs, received and utilization.

Conceptual framework of an NDC MRV institutional framework

The Energy Sector report has provided elaborate institutional framework envisaged at UNFCCC/Paris Agreement ETF level and that is not repeated here. In Figure 1, a conceptual framework is provided that presents a generalized institutional framework that would be required at both national and sectoral levels such as for transport sector which is the subject of this report.

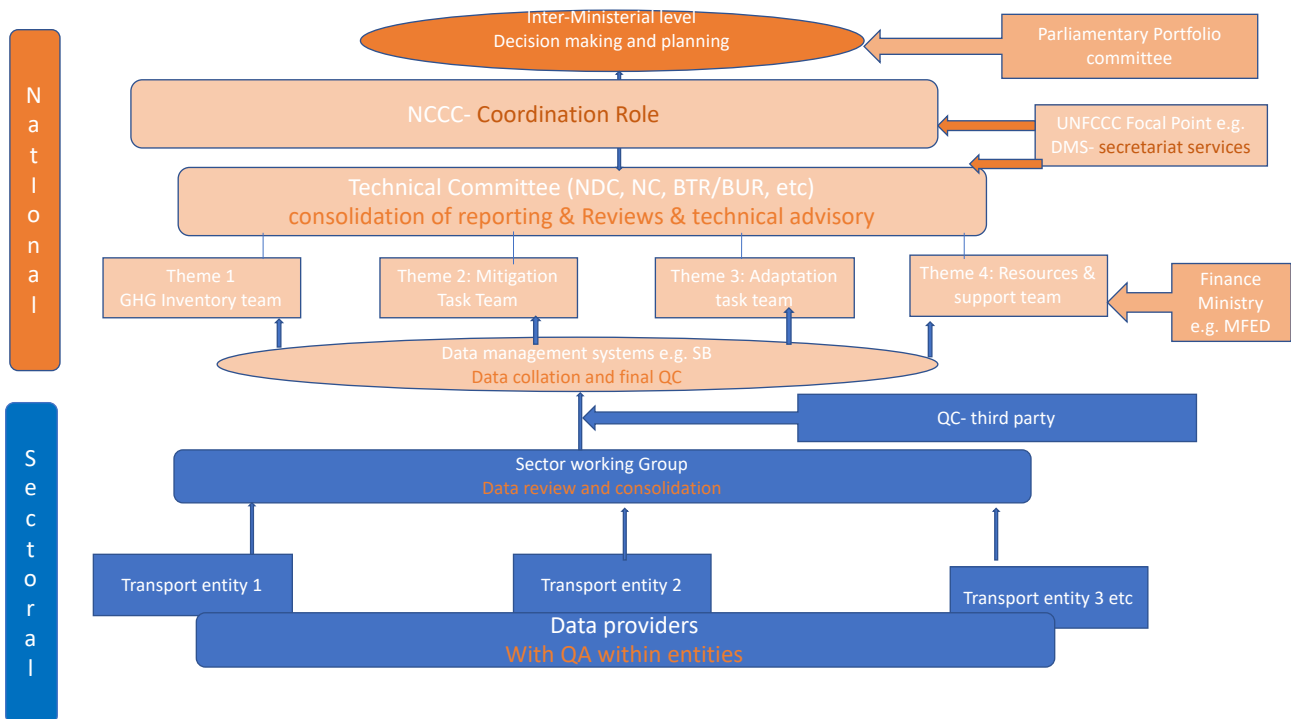


Figure 1 Conceptual Framework for NDC MRV Institutional Framework

At national level, a decision making and planning body that may be supported by Parliamentary oversight (and would support in passing needed legal framework for domestic data reporting) is considered important and such a body should have powers to make decisions on behalf of the government and may thus be at Ministerial level and in the case of Botswana chaired by MENT. Where this role is given to the NCCC, which is already in existence, ministerial members in such an organization should be given mandate to make decisions and commitments for resources. Otherwise, a body like NCCC is seen as important for coordination and giving guidance to the implementation of climate change instruments, including in the case of NDC. A technical committee (TC) that is dedicated to MRVs such as for NDC, NCs, BUR/BTRs etc. could then be set (from within the NCCC with possibility of coopting needed experts) to provide technical support and provide consolidated reporting that will be approved by the NCCC.

As is the case for Botswana, the UNFCCC Focal point such as DMS stands to support work of the NCCC and TC.

The Task Teams for GHG Inventory, GHG Mitigation, Adaptation and resource and support can be established from within the NCCC with possibility of coopting needed experts and will form the bulk of the TC. The GHG Inventory team already exists and may just need to be strengthened. The task team in charge of resources and support would then be coordinated by the Ministry in charge of Finance such as the MFED of Botswana.

The source of all data would be from a centralized data management system such as Statistics Botswana (SB) that will also apply its QC services before the data are utilized in developing the components of the NDC, in this case.

At Sectoral level key institutional arrangements starts with data providers that would be equipped to undertake their own quality assurance (QA) as the data are collected. In the case of the transport sector, the various relevant public and private entities covering road, air, rail, water transport subsectors will be the data providers. The QA aspects can already be instructed and built in these entities with support of a third-party QC entity and the data management system entity such as the SB.

An ad hoc transport working group, would then be formed to review and consolidate data from providers before a third-party entity is recruited to check the quality of the information going into the central/national data management facility such as SB. Since usually data would be reported either quarterly or annually, the sector working group and third-party QC entity will be appointed but would meet as required. It should be realized that apart from UNFCCC Focal Point, and MENT with its leading role, there are no new institutions per se but structures that can meet as planned and required to govern by TORs and mandates (may be legal powers to make decisions). This is with the view that NDC MRV institutional framework should build on existing institutions.

Methodology adopted to assess NDC MRV institutional framework

In assessing the required institutional framework for the transport sector, a number of country institutional frameworks were reviewed. The results of this review are presented in Chapter 3.

A questionnaire survey was also undertaken with relevant Botswana stakeholders. Key elements sought in the stakeholder consultations involved:

- Adequacy of existing national climate change institutions to perform NDC MRV.
- How inter-ministerial and technical management unit mentioned in the TORs can be structured; and whether new structures were needed or old ones can be adapted to take this role.
- At sectoral level key elements was how sectoral working groups would be structured and the expertise required for that; and whether there are existing sectoral groups that can be adapted for this role.
- Linkages of such sector and national institutions can be made
- Any desired policy/legal framework to support NDC MRV institutional framework.
- QA/QC systems in place and how they can be strengthened.

The questionnaire used for the consultation is in Annex 1 and stakeholder inputs are presented in chapter 4.

Baseline domestic institution for NDC

Key existing national institutional framework in Botswana

The key national climate change institutional framework exists that has been undertaking MRV for NC, BURs to the UNFCCC that includes the MENT as the lead ministry, DMS as the UNFCCC Focal point, the NCCC³ and a GHG Inventory team.

In relation to data collation and quality control, the Statistics Botswana is already a critical key national stakeholder in that regard and is actively participating in the development of GHG inventory.

The current assessment of an appropriate institutional framework for NDC tracking seeks to check the adequacy of the existing institutions and what strengthening or reconfiguration may be required for that existing framework to function as the NDC Institutional framework. The assessment also assessed whether new national or such structures are required in the context of undertaking MRV for NDC tracking.

Key transport sector institutional framework

The specific institutions that are active within the Transport sector that can contribute to the MRV for the NDC tracking related to the sector are presented in Table 1 showing their current roles and potential roles⁴ in the context

³ The NCCC was established as an advisory body to coordinate the implementation of Botswana's obligations under the UNFCCC

⁴ The proposal is not final and is subject to stakeholder deliberations

of the NDC tracking as per the Conceptual Framework (refer to Figure 1).

Transport entity	Current Role in the MRV system	Potential Role in NDC MRV institutional framework ⁵
Ministry of Transport and Communications	Policy and legal formulation	<ul style="list-style-type: none"> • Inter-ministerial body member chaired by MENT • TC Member
DRTS	The Department / organisation is mandated to register and licence all vehicles in the country which are contributing sources of transportation-related GHG emissions that include passenger cars and light-duty trucks, sport utility vehicles, pickup trucks and minivans. Most of the fuel burned is petroleum-based which includes petrol (gasoline) and diesel. The status of data availability is limited and not centralized as it is housed by various institutions which make MRV development complicated.	<ul style="list-style-type: none"> • Data provider (road SUBSECTOR statistics) with internal QA • Sector working group member • GHG inventory and Mitigation task teams • TC member
CAAB	CAAB submits air traffic data to Airports Council International (ACI) and International Civil Aviation Organisation (ICAO).	<ul style="list-style-type: none"> • Data provider (air statistics) with internal QA • Sector working group member • GHG inventory and Mitigation task teams
Botswana Oil Limited	National oil procurement and storage	<ul style="list-style-type: none"> • Data provider (Fuel) with internal QA • Sector working group member • NCCC Member
Business Botswana-Petroleum Sector	Sells petroleum products, e.g. petrol (ULP 95), diesel (50PPM) and so on. Diesel (50PPM) is a low sulphur diesel which contributes to low carbon emission, which is opposed to the use of Diesel 500 PPM. Quantities of liquid fuel purchased/imported, number of vehicles fuelled, and revenue generated is stored in a computer using Excel.	<ul style="list-style-type: none"> • Data provider (Fuel and transportation) with internal QA • NCCC Member
Department of	The Dept. of Energy is keeping track of energy mitigation initiatives, especially those implemented	<ul style="list-style-type: none"> • Data provider with internal

⁵ As per the Conceptual framework

<p>Energy Department of Energy- Statistics & Modelling</p>	<p>by government organisations. The DoE is relying on other entities for the available data that to date, are not adequate although available on request.</p> <p>Partially involved and many occasions in petroleum supply data and policy directions.</p>	<p>QA (Fuel-supply and demand)</p> <ul style="list-style-type: none"> • Sector working group • GHG Inventory and mitigation task teams
<p>Botswana Railways</p>	<p>In charge of Rail transport which is mainly catering for freight at the moment.</p>	<ul style="list-style-type: none"> • Data provider (air statistics) with internal QA • Sector working group member • GHG inventory and Mitigation task teams
<p>Private sector-fuel supply- Oil companies, oil transport companies</p>	<p>Indicated No participation in MRV but can be data provider on petroleum freight transportation</p>	<ul style="list-style-type: none"> • Data provider (Fuel and transportation) with internal QA
<p>Private sector-fuel Demand-companies DEBSWANA</p>	<p>Debswana has a reliable inventory of energy data (electricity and diesel, being the most significant emissions sources) for the past many years.</p> <p>Energy performance is formally reported on monthly basis and annually reviewed by external assurance providers. Energy efficiency initiatives have been deployed to reduce energy intensity at the Debswana operations.</p> <p>Anglo American (South African) conversion factors are used to derive GHG emissions.</p>	<ul style="list-style-type: none"> • Data provider (petroleum fuel consumption) with internal QA • GHG inventory and mitigation task teams
<p>BURS</p>	<p>Records data on imported second hand motor vehicles which might be contributing to greenhouse emissions (GHG), as well as trade statistics, payments of customs duty and imports VAT. Data are accessible when requested.</p>	<ul style="list-style-type: none"> • Data provider (vehicle imports, taxation/incentives) with QA in house
<p>Statistics Botswana</p>	<p>As a custodian of official statistics, Statistics Botswana (SB) provides most of the activity data needed for estimation of GHG emissions and removals. Statistics Botswana has representatives in the National Climate Change Committee, as well as the National GHG Inventory Team hence participates in the production of the National GHG Inventories, and National Communications. Most of the data sourced from Statistics Botswana are reliable and have been verified through the Botswana Data Quality Assessment Framework (BDQAF) of Statistics Botswana. Data are</p>	<ul style="list-style-type: none"> • Central data management system and overall QC • GHG Inventory task team • TC member • NCCC Member

	available upon formal request and SB data portal provides free access to the published reports.	
Ministry of Finance & Economic Development (MFED)	MFED is the focal point for GCF and not climate finance in total. The Ministry is heading carbon tax formulation.	Data provider on resource received Resource and support task team NCCC member Inter-ministerial body member

Table 1 Key institutions, current role, and potential roles in NDC MRV system in relation to the Transport sector.

More details have already been reported under the situational analysis report (Deliverable 1) in terms of the detailed roles of these transport related entities and have not been repeated here.

In the context of the stakeholder consultations, stakeholders from transport sector have expressed their views with regard to how both national and sectoral structures can be framed and those have been presented in Chapter 4.

Below is a presentation of selected examples of NDC MRV institutional frameworks that are in place in other countries.

Institutional experiences of other developing countries

The review of other countries NDC institutional frameworks for the transport sector considered the following:

- How the transport sector in that country is structured (subsectors e.g. road, rail, air, fuel supply etc).
- What the ICAT assignment is targeting in that country in the context of the transport sector.
- Key stakeholders mentioned for the transport sector and their roles.
- How they are linked to provide MRV Institutional framework at sector level.
- How transport MRV Institutional framework links with national institutional structure.
- Any gaps recognized and how they are to be addressed and/or recommended to be addressed.

Countries selected for this review cover a wide geographical extent encompassing Africa, Asia, Latin America namely Colombia, Ethiopia, India, Malawi, Mauritius and the Philippines.

Colombia

The transport sector of Colombia comprises road, rail, air and river and used to be dominated by rail transport for both freight and passenger but has now been neglected in favour of road development. Rail now accounts for 25% of freight transportation, although some rail refurbishment has undergone some refurbishment⁶.

⁶ https://en.wikipedia.org/wiki/Transport_in_Colombia

In the context of ICAT, the transport sector is targeting several actions implemented at sub nationals (cities, regions and departments) and non- state actors (national and international) increasing electrification of public transport (including mega cable) and cycle infrastructure⁷.

The Ministry of Transport has introduced National strategy for electric mobility that will introduce 600,000 electric vehicles to be registered by 2030. Cities will also increase modal share for bicycle trips by 5.5% by 2030 compared to 2018. Urban planning is also one of the key options considered to reduce fossil fuel consumption in the public transport sector.

Colombia has made considerable progress in the expansion of its air and maritime port capacity; while the country's ambitious road-building programme appears to be back on track after a series of delays. In addition, the government has sought to overhaul the industry's legal framework to better facilitate private investment, while municipal authorities have made efforts to improve both urban and rural mobility.

On the private sector side Financiera de Desarrollo Nacional (FDN), a mixed-ownership development finance institution, was established in 2011 and is 72.4% owned by the Ministry of Finance, with the International Finance Corporation, the Development Bank of Latin America (Corporación Andina de Fomento, CAF) and Sumitomo Mitsui Banking each holding a minority stake. The organisation provides direct financing for infrastructure projects, along with a diverse range of advisory services for public and private entities engaged in PPPs.

In 2017 17% of the loans issued by the FDN went to transport and has developed a number of products to attract private participation in the country's transport network and broader infrastructure system; these include subordinated debt and liquidity guaranties. It also provides long-term financing options such as infrastructure bonds and senior debt, as well as deferred credit lines for refinancing⁸.

The Ministry of Environment and Sustainable Development (MADS) requires that emission reductions be reported and registered in National Registry for the Reduction of Emissions (RENARE) so that they become part of the NDC. To achieve this, it is necessary to have an MRV (monitoring, reporting and verification) scheme designed for each project, which in most cases does not yet exist.

MADS has led the process of ⁹quantifying contributions from different actors. Particularly through resolution 1447 of 2018 which regulates the country's Monitoring, Reporting and Verification (MRV) system, and RENARE.

This resolution lays the foundation for obtaining reliable emissions reduction data that can then be used to verify the achievement of established goals. In this context, the ICAT project in Colombia has implemented the ICAT NSA Guide and quantified the aggregate impact of mitigation actions carried out by private sector and city-level actors in particular in order to support MADS in decision making at the regional and national level, help inform the updated NDC, and further the development of protocols for the monitoring, reporting, and verification of actions.

In conclusion, Colombia has played a significant role with Ministry in charge of transport leading in preparation of promoting NDC implementation through deployment of electrification of vehicles (supported by a strategy), urban planning and teaming up with cities to increase bicycle transport. A financing intuitional framework is also playing a significant role in the transport sector and can provide resources allocation to the MRV system. The requirement to report and register NDC GHG reductions and related regulatory framework for MRV in a central RENARE and adopting the NSA Guide for such reporting is interesting.

⁷ https://climateactiontransparency.org/icat_countries/colombia/

⁸ <https://oxfordbusinessgroup.com/overview/private-sector-activity-being-harnessed-provide-integrated-system-transport-infrastructure-going>

⁹ <https://climateactiontransparency.org/wp-content/uploads/2021/05/Contributions-of-subnational-and-non-state-actors-in-the-reduction-of-greenhouse-gas-emissions-in-Colombia-ICAT-NSA-Guide.pdf>

Ethiopia

Transport modes include rail, road, ports and harbours, airports, river transport, with rail connecting seamless to several sea ports for trade and for transporting most imports and exports. The rail transport of goods appears favourable – if compared to road transport – in terms of volume, costs, safety and speed of transportation for both imports and exports. The primary port for Ethiopia is the Port of Djibouti in Djibouti where over 95% of Ethiopia's trade passes through and dry ports are also in use.

Road projects now represent around a quarter of the annual infrastructure budget of the Ethiopian federal government. Additionally, through the Road Sector Development Program (RSDP), the government has earmarked \$4 billion to construct, repair and upgrade roads over the next decade.

Air transport is significant in Ethiopia with over 57 airports, of which 17 have paved runways. The Addis Abba airport is the largest airport.

Over the last years, the Ethiopian federal authorities have significantly increased funding for rail and road construction to build an infrastructure that allows better economic development.

ICAT focus for Ethiopia that is relevant to this project relates to getting ready for the UNFCCC Paris agreement Enhanced Transparency Framework requirements. In the case of transport introduction of non-motorised transport and other infrastructure projects that can result in GHG reductions are being considered¹⁰.

Transport in Ethiopia¹¹ is overseen by the [Ministry of Transport and Communications](#). The Prime Minister's Office, the Ministry of Finance and Economic Development (MFED), Urban Town Planning, road authorities and transport bureaus have also featured in some transport projects. Contractors and Financiers e.g. Chinese and the African Development Bank Group has provided a number of loans and grants to Ethiopia for the implementation of transport sector projects, a majority of which is in the road sub-sector.

The limitations seen in the institutional framework is lack of competent experts, unavailability of the required equipment, improper assignments of resources (human, infrastructure and budget).

There is also poor coordination between public national institutions and regional states¹². The connection between NRSC and Regional States' and municipalities' road safety coordinating offices are very weak. The decentralization of authorities to Regional States and city administrations has created a structural barrier or disconnection for coordinated road safety interventions. As a result, there is a lack of unity of command and direction at all levels. Currently, the NRSC has been organized as a unit in the Ministry of Transport which is not empowered to coordinate and mobilize resources independently, given the limited legal authority to perform its duties and responsibilities at country level. Also, there are overlaps in the duties and responsibilities of the institutions involved in road safety which need to be addressed. The current status is that the lead agency is not vertically and horizontally coordinated to carry out the work efficiently.

Vertical coordination is especially important in the Ethiopian case since each region is practicing with a certain level of independence.

Moreover, the success of the lead agency rests on the support of the highest governance body to ensure the development of appropriate capacity and funding. On the other hand, horizontal coordination with other organizations (e.g. transport bureau etc.) is essential to delegate some works to regional governments, which currently does not happen at all.

¹⁰ https://climateactiontransparency.org/icat_countries/ethiopia/

¹¹

<https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Ethiopia%20First/Ethiopia%27s%20NDC%20update%20summary%202020.pdf>

¹² https://unece.org/sites/default/files/2021-01/RSPR%20Ethiopia%20Report_Final%20web_1.pdf

Emerging lessons from the Ethiopia case study is the importance of involving financiers, semi state and non-state players especially the regional players and to ensure coordination between central government and regional institutions and avoid overlaps of mandates among institutions even at national government level. Another important aspect is that the coordination/lead institution should be empowered to make decisions and mobilize resources for the sector activities. This particularly so for the road sector

India

India's transport system is one of the largest in the world serving the land mass of 3.3 million square km and a population of over one billion. The network for the services comprise mainly of roads, railways and air services. The 6000 km coast line has 12 major and over 150 minor ports. While the ministry of Railways is responsible for running of the rail system, the highways are the joint responsibility of the Central Ministry of Road Transport and Highways (for National Highways) and the State Governments (State Highways, District and Rural roads). The Ministry of Civil Aviation looks after Airports and the Ministry of Urban Development is responsible for Urban Transport¹³.

In 2015, emissions from this sector represented about 10.5% of the country's total emissions (GHGPI, 2019), but that is set to increase. Road transport – the largest consumer of commercial fuel energy within the transportation system – accounts for 90% of the emissions, followed by civil aviation (6%), railways (3%) and water borne navigation (1%)¹⁴.

The ICAT assignment in India is to introduce electrical vehicles that meet better emission standards. Technologies like driverless cars, Vehicle to vehicle (V2V) communication technology for light vehicles to avoid crashes, Pre-collision technology have also been developed. By 2030, 56% vehicles produced would use combustion engines, 35% hybrid technologies and 9% electric power. Which means a 44% of small vehicles would not use a combustion engine to produce energy to run the vehicle. This would reduce Green House Gas (GHG) emissions to a significant level. 100% battery-driven electrical vehicles (EVs) are the ultimate goal of the vehicle alternative powertrain development over the next 15-20 years. The focus is towards fuel efficiency and reducing Green House Gas (GHG) emissions. Hence electric vehicles, hybrid electric vehicles (dual fuel) and fuel cell vehicles seem to be the future of vehicle technology. In India dual-fuel vehicles running on petrol/diesel and CNG are also becoming popular¹⁵.

As vehicle ownership in India is set to rise substantially, electric vehicles have been identified as one of the most promising ways to increase energy security and reduce emissions of greenhouse gases (GHGs) and other pollutants. Vehicle electrification clubbed with more renewables in the energy mix improves local air quality and reduces carbon dioxide emissions in support of national climate goals¹⁶.

The key stakeholders for such GHG mitigation measures include Government of India (Ministry Of Commerce 2019) with the aim to align freight movement with international benchmarks of 25-35% share of road, 50-55% share of railways and 20-25% share of waterways. These actions not only offer an opportunity to accelerate the decarbonization of transport sector but also play a key role in informing Nationally Determined Contributions (NDCs) in India¹⁷.

Importance to engage stakeholders at all levels - national, sub-national, government officials, local practitioners, representatives of transport organizations, the private sector, equipment/technology manufacturers, and civil

¹³https://niti.gov.in/planningcommission.gov.in/docs/reports/genrep/bkrap2020/11_bg2020.pdf

¹⁴ <https://wri-india.org/events/transport-sector-stakeholder-consultations-session-01-opportunities-transformative-climate>

¹⁵ <https://www.grantthornton.in/globalassets/1.-member-firms/india/assets/pdfs/smart-transportation-report.pdf>

¹⁶ <https://wri-india.org/events/transport-sector-stakeholder-consultations-session-01-opportunities-transformative-climate>

¹⁷ <https://wri-india.org/events/transport-sector-stakeholder-consultations-session-01-opportunities-transformative-climate>

society is seen as important.

The interesting institutional element is linking transport with trade as a multisectoral approach. The importance of combining public (central government and subnational-municipalities), private (transport organizations, technology suppliers) included) and civil society is also indicated.

Malawi Transport sector

Malawi has transport system encompassing road, rail, inland water and civil aviation subsectors with road having a share of 70 % of passengers and 90 % of goods for international and local destinations respectively. Petroleum consumption in the water sector is relatively minimal possibly as a result of limited number of vessels. Civil Aviation sub-sector is a very significant sub-sector for Malawi because the country is landlocked but still is not well developed. There are two international airports in the country which are Kamuzu in Lilongwe and Chileka and Blantyre. The country also has 31 airfields spread across the nation. Fuel in the civil aviation is predominantly aviation gas and jet kerosene. The consumption of aviation fuel is relatively small due to the fact that there is a limited number of planes which utilize this fuel.

In the initial years of Malawi's independence, the chief way of transporting goods was the rail network. However, due to the lack of maintenance and investment in the subsector, the infrastructure has dilapidated and collapsed.

The Malawian government came up with strategies to attain GHG emission reduction in the transport sector. The Malawian government launched the Malawi Growth and Development Strategy 3, the Malawi National Transport Master Plan (2017), the NAMA (2015), TNC and Malawi vision 2063. The National Transport Policy developed in 2015 was developed to guide development in the transport sector. The policy acknowledges the need for environmentally sustainable and climate resilient transport system. It also segmented transport into four types which are rail, road air and water. Measures put in place include the following:

- a) Promoting mass transport
- b) Increasing biofuel blend with vehicular fuel
- c) Promoting electric and flex vehicles
- d) Improving heavy taxes on the importation of old cars into Malawi as a means of cutting down emission
- e) Reinforcing the carbon tax on vehicles that ply on the roads of Malawi and
- f) Introducing toll gates for generating income on road maintenance.

The main stakeholders in the transport sector in Malawi are various diverse government ministries and various transport associations and funders.

The government of Malawi plays a significant role of formulating various policies e.g. the National Transport Policy (NTP) to guide development in the transport sector. The Environmental Affairs Department (EAD) is crucial in providing data for the transport sector and estimate specific GHG emissions. Energy sector plays a pivotal role in conducting an inventory of GHG for the NDC for the transport sector and the Malawian Energy Regulatory Authority (MERA) plays a significant part in determining GHG trajectories in the transport sector for the period 2021-2050. The Presscane and Ethanol Company of Malawi Limited furnishes with data on ethanol and bio-diesel.

Various other representatives from transport providers play a paramount role in assisting to come up with long term and short term low-carbon development strategies for attaining proposed targets. These include the Transport Associations like the Minibus Association of Malawi, the Transport Association of Malawi. The National Roads Authority and the Department of Energy Affairs also work closely with these transport associations.

Various funders that include the African Development Bank, the World Bank and the Japan International Cooperation, China, BADEA, the OPEC FUND, the Kuwait Fund and the Saudi Fund are some of the key contributors to transport infrastructure development in Malawi.

Currently the mandate of monitoring and evaluating government programmes and projects is vested in the Ministry

of Economic Planning and Development (MEPD) and National Planning Commission. Each government Ministry and Department publishes an annual report from which the MEPD produces the Annual Economic Review Report, which presents the performance of key government agencies.

Potential indicators for the transport sector include growth in number of vehicles by type and age and engine control technology, volume of liquid and gaseous fuel imported, litres of biodiesel sold, litres ethanol sold or blended for fuel, number of vehicles using bio-fuels, share of fossil liquid fuel substituted, and mileage covered per vehicle type among others. The MRV system will have a quality control mechanism in order to ensure quality data is collected and stored for future.

In developing the MRV for the transport sector emissions, there was the initial utilization of information in Malawi's existing MRV frame work such as Malawi's NAMA of 2005.

Gaps realized in the context of NDC MRV system include lack of a comprehensive data management system and did not include elements such as the type and amount of fuel produced and consumed in each of the sub-category of the transport sector. Data availability, data access and data quality are some of the significant challenges encountered by Malawi. The Greenhouse Gas Inventory System (GHIS) established in 2019 has not been operational.

There is lack of a dedicated MRV procedure for the transport sector that collects parameters that could be utilized for national NDC MRV set up and data are scattered in various jurisdictions in the transport increasing challenges to collect and collate the data for MRV.

In order to enhance data collection in the transport sector, responsible stakeholders should adopt the most fitting equipment for data gathering where it is needed (Banda et al. 2021). For Malawi to execute the Tier 2 analysis of GHG emissions in the transport fraternity in the future there is need for an advanced data collection procedure by the National Statistics Office or the National Planning Commission.

There is need for personal and institutional capacity building in MRV assessment. This strategy develops capacity to these experts in aiding the development of appropriate instruments for data collection as per IPCC guidelines.

The Malawi experience presents cooperation of various government ministries in the NDC MRV and the central role that the MFED and National Planning commission are involved in economy wide M&E of sector performances.

The other players that are not often mentioned in the climate change institutional framework are transport associations and funders, and they are also mentioned here.

The Importance of a functional comprehensive data management system under the National Statistics office of National Planning Commission is mentioned. The importance of building the necessary capacity of experts to collect, collate and analyse data according to transparent practices such as IPCC Guidelines are presented as important.

Mauritius

Transportation in Mauritius is characterized by the network of roadways, ports, and airports. The island was originally only accessible by boat until 1922, when the first flight landed in Mauritius. Rail in form of light Metro Express is still being built comprising 25km and a journey of 40 minutes connected to feeder buses for access to stations. Transport on the island is mainly by road. Mauritius has a widespread bus network with around 220 bus lines and roughly 900 bus stops¹⁸.

Port Louis is the main port in Mauritius. Port Mathurin is the main port on Rodrigues Island.

¹⁸ https://en.wikipedia.org/wiki/Transport_in_Mauritius



As of 2014 there are 2 airports in Mauritius namely, Sir Seewoosagur Ramgoolam International Airport, Plaine Magnien and Sir Gaëtan Duval Airport, Plaine Corail, Rodrigues Island.

Their key objectives are to: promote capital investments into developing sustainable transport infrastructure to reduce transport-related GHG emissions in Mauritius to mitigate climate change; engage and build technical capacities of transport-related policymakers, regulatory and other government agencies, financial institutions and the private sector.

With regard to ICAT assignment in Mauritius, a new Passenger Information Service (PIS) as part of a National Land Transport Authority (NLTA) initiative to modernize the transport system across the country is being adopted as part of promoting public transport by improving the quality and capacity of the public transportation system. The system being adopted offers integrated mobility management and passenger information capabilities.

Stakeholders playing a significant role in the transport sector in Mauritius include the National Transport Authority (NTA), the governmental department established under the Road Traffic Act in 1980 whose main responsibility is the regulation and control of road transport in Mauritius and Rodrigues. It falls under the responsibility of the Ministry of Public Infrastructure, Land Transport and Shipping. The responsibility for the administration of the NTA rests with the Road Transport Commissioner. The Traffic Management and Road Safety Unit and Ministry of Energy and public utilities also have a public role in the transport sector.

Important bus operators include Mauritius Bus Transport, National Transport Corporation (NTC), United Bus Service (UBS)), as well as smaller companies (Rose Hill Transport (RHT), Triolet Bus Service (TBS) and others) and various individual operators that are organized in regional Bus Owners Co-operative Societies (BOCS).

Mauritius has similar transport constraints as other Small Island Developing States (SIDS) of small size, remoteness and insularity, located far from sea routes, small internal markets, high freight costs, weak port transport infrastructure, lack of inter-island transport network (between port and airport), as well as being vulnerable to climate change. Given economies of scale, it is difficult for Mauritius (and SIDS in general) to attract private investment for transport but yet SIDS need robust transport system¹⁹.

Apart from public institutions regulating road transport and the bus operators, other institutions being considered are bus operators that are offering the bulk of the public transport. This points to the fact that where countries are keen to promote public road transport, such bus operators can be important stakeholders providing data and bus performances.

Philippines

Transport is a key sector in the Philippine economy, linking population and economic centers across the islands. The transport system of the Philippines consists of road, water, air and rail transport. Water transport plays an important role due to the archipelagic nature of the country, but road transport is by far the dominant subsector accounting for 98% of passenger traffic and 58% of cargo traffic. While the transport infrastructure has been developed and spread across the country (about 215,000 kilometres [km] of roads, 1,300 public and private ports, and 215 public and private airports), the level of service has not been sufficient due to the lack of sustainable financing. Improving transport infrastructure is critical for strengthening the investment climate and enhancing economic growth.

The government has developed a network of tolled expressways in central Luzon to address transport constraints on economic development by (i) linking the major economic and transport centers in Metro Manila and adjacent provinces, from Tarlac in the north to Batangas in the south; and (ii) facilitating multimodal transport. The expressway network, developed through public–private partnerships (PPPs) and with bilateral development assistance, links industrial parks and special economic zones, the ports at Subic and Batangas, and Diosdado

¹⁹https://sustainabledevelopment.un.org/content/documents/11102Meeting%20Report_EGM%20on%20Transport%20in%20DCs%20FINAL%201.pdf



Macapagal International Airport in Pampanga. While the development of this network has reduced travel times significantly, additional efforts to increase port capacity and improve management are necessary to realize fully the benefits of an integrated multimodal transport system.²⁰

The ICAT initiative for Philippines is in progress but is aiming to build the country's institutional capacity on the formulation of methodological frameworks, development of tools, and implementation of MRV/M&E tools both for mitigation and adaptation, and climate finance²¹.

The key Stakeholders in the Philippines mentioned in relation to Transport infrastructure are:

- The Department of Public Works and Highways that is mentioned as important on the government side.
- The Asian Development Bank - Enhance capacity for managing construction quality and support applied research for evaluating performance and cost effectiveness in road works, including preparation of manuals and guidelines for post-evaluation of DPWH infrastructure projects and their application to pilot projects.
- The Australian Agency for International Development - Install additional weighbridge stations to combat overloading, including improved operation and strict enforcement of load limits.
- The Japan International Cooperation Agency - Strengthen the management and processes employed in the DPWH for project implementation, in particular engineering design.

Some lessons emerging from the Philippine ICAT study that can be applied to the Botswana case are that:

- **A legal framework supporting data sharing and this is to be signed by the highest office in the land.**
- **The Climate Change Commission (CCC) is tasked to approve the NDC²² but process starts with lead sectoral agencies that prepare their GHG inputs and signed by Department Secretaries before sending to the CCC for approval.**
- **The National Integrated Climate Change Information and Exchange System (NICCDIES) is in place as a one stop shop for submissions from the lead sectoral agencies such as transport. The NICCDIES is the primary enabling platform of the CCC in consolidating and monitoring, data and information on climate change and climate action from sources and actors coming from both public and private sector and other stakeholders, allowing for decision-makers to access, distribute, and exchange these data for use in policymaking, development planning, and investment decision-making. The primary components of NICCDIES include database and information systems for the following: Greenhouse Gas (GHG) Inventory; Climate Change Mitigation: Measurement, Reporting, and Verification (MRV) System; Climate Change Action Plans; NCCAP and LCCAP; Climate Finance, including Climate Change Expenditure Tagging (CCET); Climate Reports.**
- **The Climate Change Expenditure Tagging reports on resources needed, received and expended but indications are that both institutional and human capacity is needed to track such resources.**
- **Sectoral reports are signed off by high level officials (department secretaries) for submission to the CCC.**

Stakeholder consultation and views

The consultations as already alluded to, considered national and sectoral perspectives on how the NDC MRV institutional framework can be framed.

On the national front, the stakeholders provided insights on whether the current key institutions of MENT, NCCC, DMS and GHG Inventory team was sufficient or needed reconfiguration and how the changes can be funded.

On the sectoral side, insights were required on whether there are sectoral groups in place that can be part of the

²⁰ <https://www.adb.org/sites/default/files/institutional-document/33700/files/philippines-transport-assessment.pdf>

²¹ Initiative for Climate Action Transparency (ICAT) Stocktaking of Climate Change Initiatives in the Philippines: A Focus on MRVs and Transparency. Dr. Marie Danielle V. Guillen

²²There is however not yet a legal backing for NDC institutional framework

NDC MRV Institutional framework, which organizations and experts would be best suited to be in those groups to deal with GHG Inventory, GHG Mitigation and Resources accounting.

Beyond that, views on how sectoral institutions could be linked with the national hierarchy, the required policy/legal framework and QA/QC would be required if current instruments are not adequate.

In the case of the transport sector, respondents that provided their views and inputs were from:

- Department of Road Transport and Safety (DTRS);
- Business Botswana – Petroleum;
- Botswana Oil Limited;
- Botswana Unified Revenue Service (BURS)²³;
- Botswana Railways

The other national stakeholder organizations that include DEA, SB, DoE, DMS, UB, MFED, UNDP and SASSCAL also provided their views on what institutional framework exists and what restructuring may be needed.

The overall picture of the national institutional framework has been well documented in the Energy Sector Chapter as provided by all the above organizations and is not repeated here.

In this transport sector report, emphasis is placed specific views from the transport stakeholders and how the sector-national linkages can be achieved.

Knowledge and perspectives on the national MRV institutional framework

Current coordinating body/lead institution

The collective view is that MENT is well placed in its role and may just need to allocate resources for the NDC MRV system and also strengthen its relationship with other ministries such as the Ministry of Transport and Communications within an inter-ministerial formation.

The DMS is also best placed in its role and some transport stakeholder agencies are already providing the required climate change data directly to DMS.

The NCCC, whilst considered an inter-ministerial structure, has no stipulated annual programmes, and is expected to intensify its coordination role and to make effort to include other private sector stakeholders that are not in the Committee. Its legal status and resource allocation are also required to strengthen its role. Some transport bodies e.g., Botswana Railways, has in dictating its interest to be included in both the NCCC and GHG Inventory team.

The SB is well placed to be a one stop data post, but a climate information desk is needed and suggestions are that it should have MoUs with DMS and GHG Inventory team for data sharing.

The GHG Inventory team is a needed structure but need reinforcement by including all other key stakeholders and a couple of transport sector agencies mentioned that, as they may not be included at the moment. The team will also need to be resourced and training provided for those handling the GHG Inventory preparation, especially from the challenging sectors such as transport and private sector that may not be participating now.

With regard to financing strengthening of the institutions and capacitating them, a number of proposals were made. For participation of public officers in the MRV structures, no new resources are needed as that will be part of their roles and where necessary government budget e.g. through MENT may be boosted to cater for climate action. Private sector and International Cooperation Partner donations were also mentioned as possible sources as long there is clear justification on how the resources will be used. These may cover capacity building and putting systems in place. Two of the transport stakeholders proposed levying a tax on the emissions- e.g., carbon tax, which in the case of Botswana is being developed.

²³ With regard to vehicle imports

Inter-ministerial body/steering committee

With regard to whether an Inter-ministerial body exists that can be adapted to take care of NDC MRV system, many suggestions were floated. There are existing inter-ministerial committees such as for SDGs, Miombo in some cases where MENT is involved but they all seem to fall short to taking this role. Suggestions are floated to add other stakeholders from private sector and ministries not included in some of these existing committees. The key elements of such a steering committee that have been presented is that they should be at senior level, able to make binding decisions and allocate resources. It should not be a SC where ministries pull out officers to be present. The NCCC is considered inter-ministerial but suggestions are that it needs to be rejuvenated to take this role.

Technical Management Unit (TMU) functions

TMU Role

From the perspective of transport stakeholders, the Technical Management Unit (TMU) could be a structure that would deal with submission of NDC and MRV reports to the NCCC for approval dealing with technical issues that will also affect formulation of policies and strategies and affect NDC MRV improvements and technically supporting the NCCC and Inter-Ministerial structures.

The TMU will be expected to:

- Champion monitoring of institutional performance (including the interministerial committee) and progress made on implementation of transport measures.
- Analyse challenges guide formulation of policy and strategy formulations.
- Champion improved NDC MRV coordination and beef stakeholders' engagements.
- Support capacity building to achieve the intended NDC MRV and Socio-economic goals.
- Be in charge of reviewing and submission of NDC and MRV to the NCCC that is expected to oversee all activities under climate action in Botswana.
- Give guidance and direction to different sectors of the economy with regard to their technical roles related to the NDC and MRV reporting.

From a broader perspective, stakeholders proposed that the TMU would:

- Technically oversee activities in their sectors that are related to NDC, GHG Inventories, BTRs, and NCs;
- Ensure the flow of data/information and knowledge between agencies and lead agency/ies,
- Ensure the implementation of NDC MRV;
- Ensure political buy-in for the implementation of the NDC MRV;
- Facilitate coordination and links between the NDC MRV activities and the work plan of different agencies represented in the SC;
- Facilitate the provision of co-financing to the activities under the NDC MRV;
- Ensure tracking of NDCs implemented by various organisations;
- Encourage data provision among organisations with regard to reporting of NDCs implementation;
- Validate data from the public and private sector stakeholders needed for preparation of the NDC and MRV reporting, as well as vetting all the reporting to the UNFCCC;
- Facilitate/link of the NDC MRV activities with national development goals;
- Inform national decision makers on progress on climate action and the level of climate ambition;
- Equip decision makers with the continually improved evidence they need to choose the right course of action and secure investments working in harmony with national development strategies and the SDGs;
- Provide reliable information to the international community through regular national reporting which, among other functions, shows national achievements in planning and implementing ambitious climate action;
- Contribute to building trust and understanding, and attracts public and private investment;
- Guide on the requirements for reporting and making sure that the institutions are adequately capacitated to perform as expected.

TMU Structure

Transport stakeholders proposed that the TMU structure would be:

- Having all relevant disciplines with skills and experience in their fields to be able to validate the data collection and technically assist in the committee accordingly.
- Institutions /experts (e.g., data collectors, analysers, modellers etc.) that are already involved in the implementation processes of NDCs and equipped with vast knowledge on issues of what is to be reported and what data to be provided.
- Formed from the inter-ministerial steering committee to build continuity of communicating.
- At Level of middle technical manager or Director level for the NDC MRV²⁴.

There is also suggestion to include membership from financial and economic planning particularly those managing the NDAs function so as to increase their scope to focus on overall climate finance and not just GCF issues only.

Views and inputs to the transport sector MRV institutional framework

Sectoral working groups/thematic groups

Existing sectoral working groups

The transport stakeholders indicated that sectoral working groups comprising both public and private entities and already reporting to sectoral Level Consultative Council²⁵ can be considered for this role and then strengthened to perform the NDC MRV / climate change activities and function with a well-established annual implementation plans, clear targets, and continuous capacity training. A good monitoring mechanism is needed to guide and improve the groups' performance.

The proposal is that data collection would be done at the sector level and submitted to each chairperson of sectoral working groups. In the case of private sector, Business Botswana volunteered to submit such data to the agreed Lead Institution.

Consultations would have to be made to assess what different institutions/organisations already have in form of their own units that are handling data collection, processing so such units can be aligned to share data as and when the need arises.

Proposed Sectoral Working Group Structure

The general stakeholders consulted proposed on the way forward that sectoral working groups would be aligned with the NCCC's MRV Subcommittee with key experts from various sectors such as transport, energy, mining etc. – whose responsibility will among others include providing up-to-date data as per requirements. These sectoral working groups would be coordinated by the TMU that can fall under the DMS. Such a TMU will have to be appropriately resourced to enable it to guide and solicit appropriate information from the Sectoral working Group members.

For purposes of data collection, such sectoral working groups would work with organizational focal points/units.

Transport stakeholders also proposed that apart from sectoral working groups, Thematic working groups should be formed per thematic areas of the NDC MRV (e.g. GHG emissions, Adaptation, Mitigation, etc.).

Public and private sector arrangement

The stakeholder view from transport stakeholders was that to ensure that public and private sector are both actively

²⁴ E.g., Botswana Railways proposes proposes the inclusion of project manager, SHEQ manager, and IT manager

²⁵ They include: energy sector; petroleum sector; mines sector; transport sector. Other stakeholders proposed that SDGs Technical Task Force (TTF) and Thematic Working Groups (TWGs) may also be considered for this role: Sustainable Environment Thematic Working Group

involved in NDC implementation, a linkage mechanism should be developed which will assist institutional arrangement to mainstream data collection and exchange, and collaboration with the existing structures, (e.g., Business Botswana has a transport sector on its structure which can be engaged to assist on private participation). Such an institution is needed to undertake key stakeholder engagement management to ensure that they are on board.

BERA in partnership with Dept. of Energy, DMS, and DRTS would raise awareness on the importance of data for NDC MRV and provide incentives for data provision, or incentives for safe disposal of pollutants from the transport sectors.

Such government and private champions would raise awareness (public and private sector) and educate through engagement with the structures of the private institutional arrangement.

There is need to institute Memorandum of Understanding (MOU) and include private sector in the committees for their active participation to prioritise data collection. This should be coupled with creating awareness in data sharing and include the private sector to be part of some high-level steering committees.

In agreement, other stakeholders concurred that the Secretariat to the NDC MRV Working Group will have to be strengthened personnel-wise and formal partnerships (MoU) established with private sector entities. Members of the Working Group will be the ones responsible for ensuring timely collection of data from the private sector implementing the following:

- Raise awareness of the importance of data and how it feeds into NDC implementation and MRV.
- Take advantage of the Statistics Act of 2009 for data collection and exchange and source data from private sector entities. Such legislation as needed should be put in place for data sharing by private sector and enforced.
- Sign MoUs for data sharing between agencies, as well as between lead agency and other agencies acting as data providers.
- The various government ministries/departments have stakeholders that they work with and have relations with. Once the departmental or ministerial focal points are strengthened and capacitated, it will be easier for them to liaise with their respective stakeholders and get data from them.
- Build trust in mainstreaming data and exchange. Such committees, e.g., NCCC and Inter- ministerial committees should meet on quarterly bases to give updates of the NDC measures being tracked.

A transparency framework will be critical to institutionalise the roles and responsibilities of the various stakeholders and promote its timely, effective, and efficient coordination and collaboration.

- Key issues are to build arrangements for data collection, in areas where no data is currently available and data sharing, where data collected outside of government structure, e.g., the Botswana Power Corporation and clearly define responsibilities along the data flows.
- Substantial investment in both capacity and infrastructure by the Botswana Government. Generally paying attention to levels of computer literacy that is low in Botswana in that regard. While the Government has used the COVID-19 pandemic as an opportunity to push for the digitalisation of service provision, this push requires substantial reinforcement of support service delivery, along with training in various relevant associated IT platforms.
- Digitisation of data collection, which requires both full distribution of field data collection instruments (laptops, tablets, etc.), as well as the skills required to set up databases, will ensure data quality, and set up mechanisms for scheduled data updates, collation and storage.
- Groupings such as Business Botswana or BOCONGO have a role to play in mobilizing their members except those organizations not affiliated to the structures would be hard to reach.

Data collection, data quality assurance/control expertise

In terms of experts that should be within the data providers and analysis for GHG Inventory, GHG Mitigation and

QA/QC, there is agreement across most of the stakeholder organizations that they should have expertise in statistics/science/engineering sometimes with specialization of database systems, IT and environmental/GIS expertise.

For financial resource assessment, it was presented that MFED can lead that process but those in project management and M&E will be best suited to undertake the financial resource tracking.

Cross-cutting

Policy/legal framework to enhance institutional arrangement

Transport stakeholders were of the view that the Botswana National Climate change policy should be considered as it identifies priorities, KPIs and targets to be achieved and guide on roles and how to achieve the priorities. The climate change legislative and its regulations will follow as to operationalise the Act and its enforcement. The MoU / MoA will be covered by the policy framework as it will give the role details for each key sector.

The other important policy/legislation considered important are Botswana Energy Regulatory Act of 2016, Petroleum (Exploration and Production) Act; Energy Act²⁶, Customs Act and the Atmospheric Pollution Act and Environmental Impact Assessment Act.

There is also a strong view that, much of the work on NDC MRV can be realised through MoU/MoAs with relevant institutions, especially the private sector. For Public entities, a directive could compel them to be compliant with MRV requirements – as this will also be one way of operationalizing the Climate Change policy. Since the main actors in this institutional arrangement come from government there is no need for a legal instrument or Act to mandate them to be involved in the NDC MRV process. What is required is a Cabinet Directive that sets up the institutions at the higher level, e.g., ministerial level expert/technical committee. The other committees can be instituted through drafting of Terms of References outlining what is required from them, who they liaise with, on what, and how. The TORs should also have an equivalent document that talks to the budgets of NDC MRV tasks within the various ministries and the source of funding for such activities. Currently, the different government Ministries have a way of engaging one another and this same route can be used.

The structure proposed for the Climate Change Unit directs how the institutional arrangement could be with:

- i. Legalization of the national institution as an autonomous body responsible for Climate Action
- ii. Institutionalization of MRV in government planning activities such as national budgets and development plans. With high level political support and long-term funding to install the institutional arrangements and mainstream the transparency framework in the climate agenda and sectoral plans.

Linking transport sectorial structures and the national MRV structures

The transport stakeholders realize the importance of the sectorial structures as not stand-alone as it may lose link but that sectoral representatives are members to NCCC and TMU. This will help in relay of information from NCCC and TMU to the sector as well. The sectoral activities and meetings will be preparatory to NCCC and TMU where the sectoral members will solicit information before the up structures meetings.

The proposal is that the TMU should be managed by some of the members of the NCCC, and thematic working groups should also be made up of some of the officers under the TMU.

It is realized that if each key stakeholder has membership in the NCCC, TMU and Thematic working groups, there will be clear linkage from sector to national MRV structures. The scheduled regular meetings e.g., monthly, or quarterly, of each category of structures will enhance understanding of what is required and needs to be done.

For linkages with national development goals, reporting to SDG committees is considered essential hence a single,

²⁶ Energy Act compels energy user for provision of information

comprehensive system should be put in place, covering all the requirements of the ETF, and allowing an easy compilation of the data necessary to report National Communications and BTRs as well.

QA/QC system in place

Currently transport stakeholders are aware that there is no robust QA/QC system in place for climate change data except the one used by Statistics Botswana. The stakeholders thus pointed out that current structure needs to be centralized and coordinated to cater for information being collected from various sources feeding into the centralised data point.

An ideal structure must have a head of data management who ensures the quality of data and manage QA/QC system to guarantee the quality.

The proposal was that QA/QC system should be made up of officers from NCCC, TMU and Thematic working groups and should have expertise in statistics, sciences, engineering, data management, Modelling and M&E.

Technical Management Unit should also be resourced with personnel that have experience on data management systems (people with expertise on statistics, economics). Additionally, the MRV Sectoral Working Groups are to be capacitated by Statistics Botswana to ensure that proper systems are in place at sector level for quality assurance.

The Data Processing Centre, such as SB is also to have data management specialists and statisticians tasked with the responsibility of ensuring that data is credible and of good quality.

It is considered important to set up the system first with personnel skills required in data collection and handling at organizational level for QA, then migrate up the structures with QC support to SB level that will have a Centralised data storage facility for archiving data and thematic groups can conduct data processing and analysis deriving GHG Inventory, GHG Mitigation Impacts and resource tracking.

There are no ideal structures but dependent on the choice adopted as per the country. Experts' needs are also dependent on other factors, such as resources. An ideal would probably be the one affordable and sustainable and serves the purpose for the country, as well as provide the necessary information to do monitoring, reporting and verification.

Discussions of the key findings from the consultation

National perspectives

The current role played by MENT and DMS are considered adequate apart from perhaps adding resources for the NDC MRV. The NCC is considered an inter-ministerial organ, but it is realized that its legal status and effectiveness is limited at the moment. The SB is considered well placed apart that it may have to establish an NDC/MRV desk to manage information related to climate action. The GHG Inventory team is considered relevant but must include other sectors not represented and private sector participation.

The proposal is that any inter-ministerial body for NDC/MRV should have power to make binding decisions and can agree on resource allocation.

Such a body would be technically supported by a Technical Management Unit comprising of various experts that can inform decision making by the inter-ministerial body and policy/strategy formulation. The TMU is to have required expertise and be guiding the NCCC/inter-menstrual body on the approval. It would lead development and reviews of NDC/MRV reports before submission to both NCCC and UNFCCC/Paris frameworks.

Overall private sector participation is seen as inadequate and requiring strengthening with some of the champions leading the way to engage and mobilize their members to provide data and participate in NDC and MRV activities.

Supporting any institutional strengthening at national level is seen as potentially funded by government budgets where public institutional participation is involved. Both private sector and ICP support can be mobilized where activities of common interest such as capacity building are required.

The key points are that the NCCC needs to be strengthened if it is to act as the Inter-ministerial body making concrete decisions and intensifying its coordination role.

There is motivation for an TMU- that is below the NCCC but above the thematic groups (GHG Inventory, GHG Mitigation, Adaptation, Resource tracking) and Sectoral Groups (transport, energy, etc.) and can play a crucial role on advising on technical issues but should be well stocked with necessary expertise and well-resourced as well.

Transport stakeholders have indicated that they have not been active in the NCCC and GHG Inventory team and are seeking participation, although some of them have been supplying transport statistics.

Transport sector perspectives

Some relevant sectoral working groups exist but if they are to be adopted, they will require strengthening and capacity building to perform the NDC MRV / climate change activities function. Sectoral activities would entail collection of data at sector level working with organizations' specialized units in those sector organizations that are already tasked with that function. Such units would have support of SB and other outsourced entities to establish internal data quality assurance. The collected data could be signed for by senior officer to the sectoral working group chairperson.

Coordination of data requirements and quality will also be handled with inputs from thematic groups and TMU above to have alignment throughout the NDC MRV system. The TMU will have to be appropriately resourced to enable it to guide and solicit appropriate information from the Sectoral working Group members.

For effective participation of the private sector in the NDC MRV system, the public stakeholders with links in private sector can mobilize private sector participation through their contacts. The role of private sector groupings such as Business Botswana can also champion mobilization of their members to provide required data and be involved in sectoral groups, thematic groups, TMU and even NCCC. Indications are that private sector participation has been thin in the NCCC and GHG Inventory team so far.

Raising of awareness with private sector on the NDC/MRV process, is considered crucial to ensure active participation by those that have not been involved before. For instance, from public side, organizations such as BERA in partnership with Dept. of Energy, DMS, and DRTS would raise awareness on the importance of data for NDC MRV.

For purpose of data provision, a recommendation is made to sign Memorandum of understanding (MoUs) with data providers including private sector and involve them in the committees for their active participation to prioritise data.

Support will be required to build capacity especially where data are currently not available. Quality assurance assistance and ensuring data confidentiality should be maintained as required by data providers. Equipment may also be required by data providers for purpose of data collection and preliminary processing e.g. in terms of software and hardware and key types of expertise such as statistics/science/engineering sometimes with specialization of database systems, IT and environmental/GIS expertise.

Policy/legal framework to enhance institutional arrangement



So far the Botswana Climate Change Policy and the ensuing CC bill are considered important policy framework to guide the formulation of the CC Institutional framework particularly the mentioned Climate Change Unit.

Participation of stakeholders and provision of data will be covered under other sectoral important policy/legislation considered important are such as the Botswana Energy Regulatory Act of 2016, Petroleum (Exploration and Production) Act; Energy Act²⁷, Custom Act and the Atmospheric Pollution Act and Environmental Impact Assessment Act.

There is also a strong view that, much of the work on NDC MRV can be realised through MoU/MoAs with relevant institutions, especially the private sector. For Public entities, a directive could compel them to be compliant with MRV requirements – as this will also be one way of operationalizing the Climate Change policy.

Linking Transport sectorial structures and the national MRV structures

For effective linkages between sector and national structure, the proposal is that sectoral working groups, thematic groups would not be in isolation but should have representatives as members in the TMU and NCCC for purpose of bottom up and top-down communication.

The proposal is that the TMU should be managed by some of the members of the NCCC, and thematic working groups should also be made up of some of the officers under the TMU.

For linkages with national development goals, reporting to SDG committees is considered essential hence a single, comprehensive system should be put in place, covering all the requirements of the ETF and allowing an easy compilation of the data necessary to report National Communications and BTRs as well.

QA/QC system in place

So far QA/QC system for NDC MRV data purposes is considered inadequate in some cases non-existent. The QC provided by SB is currently the main source, but none is seen at lower levels apart that some organizations may have their internal processes for data collection and quality assurance. The proposal is that capacity is built from the data providers and a possible third-party entity can support QC prior to SB level that is expected to head the national central data storage and management system.

The Data Processing Centre, such as SB is also to have data management specialists and statisticians tasked with the responsibility of ensuring that data is credible and of good quality. Similar necessary capacity can be supported and resourced at lower levels.

Conclusions and recommendations

Findings from benchmarking and recommendations

There are useful experiences that have been realized from benchmarking with other countries. Some of the key findings from that exercise include:

1. The needed but usually lacking coordination of central government with regional institutions, semi-state and non-state organization that can also participate in data provision and implementation of GHG mitigation measures. In relation to transport, transport associations and bus operators in relation to public transport have been cited in other countries as important stakeholders. Funders may not be in the main stream NDC MRV system but can be a source of tracking resources allocated to projects in the countries.

²⁷ Energy Act compels energy user for provision of information.

Overall, this is to satisfy both vertical and horizontal coordination of key stakeholders that should participate in an NDC MRV institutional framework.

2. Another important aspect of the NDC/MRV system is the creation of a national integrated Climate Change Information and database systems similar to what is being proposed for SB to enhance in addition to its already important role in support data sets for the GHG Inventory.
3. Another interesting aspect is that the drive for such NDC/MRV work is dictated from the highest level in the countries and that even Sectoral Group meetings are signed off by senior officials before the reports are considered at a higher level.

The recommendation is to consider such experiences when designing own NDC/MRV Institutional framework to ensure participation of all key stakeholders in the process and have high level participation to ensure binding decision making and allocation of resources. Funders' data bases can be useful sources of resources allocated to climate change projects, augmenting the information already within the Ministries in charge of Finance and the NDAs.

Findings from stakeholder consultations and related recommendations

In summary to the stakeholder views and inputs are that existing institutional framework is functional but will require strengthening by involving other players that are important but not currently involved especially from the private sector. The importance of TMU, Thematic Groups and Sectoral working groups are highlighted and should be considered for creation by the NCCC but ensuring that members of these groupings are engaged in the hierarchy of these institutions for purpose of continuity of information flow and sharing of experiences. The involvement of key experts that are knowledgeable in the subjects and can support with relevant data collection, analysis and reporting is recommended. This is to say, the various groupings should not operate in isolation but feed into each.

The recommendation is to undertake a process of stakeholders' workshop to agree if the proposed hierarchical groupings proposed in these findings will be endorsed and who should be particularly in the Transport data providers and sectoral working groups and the required capacity building and resources required. This process is necessary before the Roadmap is developed so that actions that should be implemented to establish desired institutional framework are included in the Roadmap.

There is importance mentioned to involve participation of stakeholders that have not been involved before e.g., private sector and mobilizing them through their business groupings e.g., Business Botswana. Government offices are also encouraged to reach out to their contacts in such organizations (public and private) that need to be included in the stakeholder groups proposed in this ICAT study. Raising of awareness to such stakeholders is considered important for their active participation. Some resources will also be required to equip such organizations to be able to provide the needed data and for their effective participation as well.

The Recommendation is to undertake stock taking of key stakeholders to indicate who should support the structures of the NDC MRV system particularly currently in the NCCC, GHG Inventory Team and then in the proposed TMU, Thematic Groups and Sectoral Groups when adopted. This will consider private sector participation alongside their public counterparts and the required awareness by each stakeholder category and other resources required.

QA and QC needs such support from organizational units undertaking data collection and as the data are being shared in a bottom-up approach culminating with the SB making final QC before the data are used for GHG Inventory and GHG Mitigation by the relevant Thematic Groups. The MFED will also have final QC for the support provided including international, public(budgets) and privately mobilized financing for the transport sector.

The recommendation is to set up a QA/QC that is aligned from data providers to the central CC Information and database information system, with SB providing guidance to the lower organizations and this may be executed through a training workshop of identified data providers and analytical teams in sectoral working groups and Thematic groups and even TMU.

Annexes

Annex 1: Stakeholder consultation questionnaire

Deliverable 2: Report consolidating the inter-institutional consultations and policy/strategy analysis. This consultation is a follow-up of the situational analysis consultation. The purpose of this consultation is to seek guidance and inputs from the stakeholders on the establishment of an institutional arrangement for Measuring, Reporting and Verification (MRV) system that will track implementation of the Nationally Determined Contribution (NDC). It is important that stakeholders have input in the institutional arrangements to ensure adequate representation in the MRV system and to have ownership and buy-in from all the relevant stakeholders.

Objectives of the consultations:

- a. To examine existing institutional arrangements for the climate change MRV and strengthen them to enhance country’s MRV transparency
- b. To assess additional institutional organs/agencies/structures that will be required to enhance the intended MRV system, their roles (TOR) and constitution
- c. To assess the existing policy/strategy/legal framework and how they can be improved to enhance the MRV system

Name	
Position	
Institution	
Mandate	
Email	
Website	
Phone	

NATIONAL LEVEL MRV INSTITUTIONAL FRAMEWORK

1. The current coordinating body/lead institution is the Botswana Ministry of Environment, Natural Resource Conservation and Tourism (MENT), with the coordinating body housed at the Department of Meteorological Services (DMS) and guided by the National Climate Change Committee (NCCC). Statistics Botswana houses statistics for GHG Inventory and the National GHG Inventory team prepares the GHG Inventory.

Would you have any views on that current institutional arrangement and any strengthening or reconfiguration required to enhance their roles for MRV? Please list your views and proposals:

Institution	Reconfiguration/strengthening proposed
MENT	
DMS	
NCCC	
Statistics Botswana	
GHG Inventory Team	

- a. Do you think if the strengthening or reconfiguration would require additional budget? If so, what would be the best way to increase the budget?



2. Inter-ministerial body/steering committee (SC) is one of the important elements of the institutional arrangement for MRV. It promotes coordination across key stakeholders and information flow and data exchange across implementing entities/key sectors.

Is there any existing inter-ministerial steering committee that can be strengthened for MRV/ Enhanced Transparency Framework?

Yes____/No____

a. If yes, kindly describe its structure and duties/roles

b. How can the existing inter-ministerial steering committee be strengthened to facilitate and enhance MRV for GHG inventory, mitigation, and international support? (e.g. Who/stakeholders do you propose to be in such an SC; What size should the SC be)

c. If No to 2, kindly indicate the key institutions and personnel, their rank that must be represented in the inter-ministerial steering committee as part of institutional arrangements for MRV

3. Kindly highlight some of the expected duties and responsibilities of the inter-ministerial steering committee for NDC MRV

4. Institutional arrangement for the NDC MRV also requires creating a Technical Management Unit (TMU) to guide on NDC MRV sectoral technical issues. Is there already a structure that can act in this capacity in the departments that can function or be strengthened as the TMU for NDC MRV?

Yes____/No____

a. If yes, kindly indicate the structure/component of the existing technical management unit, and indicate how they can be strengthened to include NDC MRV under their Terms of reference



- b. If No, kindly indicate the ideal structure in terms of personnel, their rank of the technical management unit for the NDC MRV

SECTORAL MRV STRUCTURES - ENERGY or TRANSPORT

5. NDC MRV requirements is the creation of the sectoral working groups/thematic groups/thematic teams for MRV in sectors (e.g. Energy, Transport etc.). **Are there any existing sectoral working groups/thematic groups that can be proposed to undertake such NDC MRV/climate change?**

Yes____/No____

- a. If yes, kindly indicate the current structure/composition of the existing sectoral working groups/thematic groups/thematic teams and how they can be strengthened to perform NDC MRV function

- b. If No, kindly indicate the ideal structure and key experts for the sectoral working groups/thematic groups/thematic teams for the NDC MRV

6. How can the institutional arrangements be developed or strengthened to ensure that public and private sector involved in NDC implementation prioritize and mainstream data collection and exchange?

7. What expertise will be required within sectoral structures to support: data collection and provision, data quality assurance/control, GHG emissions preparation, GHG mitigation impact analysis, and tracking resources and resources used for MRV in the sectors?

Role within the sector	Expertise required
Data collection for NDC MRV	
Data QA/QC	
GHG Inventory preparation	
GHG Mitigation Impact analysis	
Resource requirements and allocation tracking	

8. What Policy/legal framework will be required to create and enable operations (e.g. enforcement) of the required institutional arrangement both at national and sectoral level (e.g. Act or constitution/MoU/MoA)? Please list your proposals below:



SYNERGY

9. Please propose how the sectoral structures would link up with the national MRV structures. E.g. participation of sectoral representatives in SC, TMU etc.

- _____

10. The quality of data and information is key for MRV/ETF and the QA/QC is a key process to guarantee or enhance the quality.

a. What overall QA/QC system is currently in place and is it being well enforced?

_____ -

b. Kindly indicate the current structure/composition of the existing QA/QC system and how it can be strengthened.

_____ -

c. Kindly indicate the ideal structure and expertise needed for the QA/QC system.

