Institutional Readiness Towards an Enhanced Transparency Framework for Climate Change Reporting

Analysis of the Transport sector in Kenya
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The Project Context

This study is made possible through support from the 'Advancing Transport Climate Strategies' (TraCS) project funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety's International Climate Initiative. The project aims to support developing countries in systematically assessing GHG emissions from transport, in analysing emission reduction potentials and in optimising the sector's contribution to the mitigation target in countries' NDC. TraCS feeds into other international cooperation projects run by the Government of Germany.

List of Abbreviations

APR	Annual Progress Report
ATCC	Automatic Traffic Counter and Classifier Systems
ADT	Average Daily Traffic
ACERT	Airport Carbon and Emissions Reporting Tool
BTR	Biennial Transparency Reports
CCD	Climate Change Directorate
CMA	Capital Markets Authority
CCCU	Climate Change Coordination Unit
EPRA	Energy, Petroleum Regulatory Authority
ETF	Enhanced Transparency Framework
EPZ	Export Processing Zones
EEOI	Energy Efficiency Operation Index
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GPU	Ground Powered Units
HDM-4	Highway Development and Maintenance Management System
HGV	Heavy Goods Vehicles
IRA	Insurance Regulatory Authority
ISO	International Organization for Standardization
ICAO	International Civil Aviation Organization
KNBS	Kenya National Bureau of Statistics
KAA	Kenya Airports Authority
KPA	Kenya Ports Authority
KRA	Kenya Revenue Authority
KCAA	Kenya Civil Aviation Authority
KMA	Kenya Maritime Authority
KRC	Kenya Railways Corporation
KQ	Kenya Airways

KeNHA	Kenya National Highway Authority
KURA	Kenya Urban Roads Authority
KeRRA	Kenya Rural Roads Authority
LGV	Light Goods Vehicles
MDAs	Ministries, Departments and Agencies
MRV	Monitoring, Reporting and Verification
MTP	Mid Term Plans
MRTS	Mass Rapid Transit System
MTCC	Maritime Technology Corporation Centre for Africa
MARPOL	The International Convention for prevention of Marine Pollution for Ships
NDC	Nationally Determined Contributions
NIMES	National Integrated Monitoring and Evaluation System
NCCAP	National Climate Change Action Plan
NEMA	National Environment Management Authority
NTSA	National Transport and Safety Authority
ORRC	Oil pollution preparedness, Response and co-operation
PSV	Public Service Vehicles
RBA	Retirement Benefit Authority
RUE	Road User Effect
RDWE	Road Deterioration and Works Effects
SDoT	State Department of Transport
SDG	Sustainable Development Goals
UNFCCC	United Nations Framework Convention on Climate Change

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Executive summary

This report is an analysis of Kenya's transport sector response to climate change, with a focus on climate change reporting and data sharing arrangements (see chapter two). Several policies exist in relation to reporting and data sharing, including overarching policies such as the Constitution of Kenya, the Statistics Act (2016), the Public Archives Act and Documentation Service Act. These documents provide the basis for data sourcing and data sharing in Kenya. Policies (and guidelines) that directly address climate change reporting include the Climate Change Act, the National Environment Management Authority sustainability guidelines, and the Handbook of National Reporting Indicators. In as much as such guidelines exist, there are gaps that still need to be addressed to fulfil Climate change Act reporting requirements. One major gap in the current reporting regime is the absence of national level regulations on climate change reporting.

This review provides an overview of existing guidelines and regulations around reporting. It covers both the national and sectoral (transport) level guidelines. It points to the fact that mainstreaming of climate change reporting in the transport sector will require leveraging on the already existing data collection and reporting processes, both at the State Department of Transport (SDoT) level and at the subsector level (see chapter three). One example of such a reporting instrument is the so-called Annual Progress Report; the report facilitates tracking of Medium-Term Plans and ultimately implementation of Kenya's economic blueprint - vision 2030. At the subsector level, each state agency has a work plan based on the institution's strategic plan. Reporting on the implementation progress of these workplans is done to the respective institution's accounting officer.

Key data relevant for greenhouse gas (GHG) calculations collected by different agencies at the subsector level include; fuel data (total imports, sales), vehicle sales records, and activity data on passenger and freight volume for rail and aviation. This is further described in chapter four of this report. Much of the available data is spread out in different agencies and departments. Therefore, there is a clear need for clarity on data needs and for guidance on the format the collected data should take.

One of the key national agencies housing data that is relevant for climate change reporting, particularly data for GHG emission quantification, is the Kenya National Bureau of Statistics (KNBS). KNBS is the principal agency responsible for collecting, analysing and disseminating

statistical data in Kenya. KNBS records top-down performance data including fuel sales data. Information collected is published in annual economic surveys and statistical abstracts reports providing a basis for estimating sectoral and sub sectoral fuel distribution.

Key recommendations have been made in chapter five; they aim at enhancing transparency framework of climate change actions in Kenya's transport sector. The recommendations are drawn from the experiences gained during the preparation of Kenya's first climate change annual report, as well as from discussions with sector experts.

The recommendations cover the need for resource allocations for MRV activities, need for inclusion of climate change reporting in the ministry's performance contracts, as well as a need for development of a template detailing data requirements for climate change reporting at agency level. Some of these gaps are already being addressed by ongoing project activities such as the Advancing Transport and Climate Strategies Project (TraCS) and the Low Emission Climate Resilience Development project (LECRD) among others. However, despite such actions, this report concludes that there is still a need for national level climate changing reporting regulations. This will need to be anchored on existing instruments such as the National Environment Management Authority sustainability guidelines and the handbook of national reporting indicators, among others.

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1. Introduction

The Climate Change Act, 2016 requires that all state agencies shall (a) report on sectoral greenhouse gas emissions for the national GHG inventory, (b) regularly monitor and review the performance of integrated climate change functions through sectoral mandates and (c) report annually to the Climate Change Council (established under the Act) on the status and progress of performance and implementation of all assigned climate change duties and functions. To comply with these requirements, requisite mechanisms and arrangements at the sector level are needed. This include a data and information sharing framework (arrangement) focused on climate change reporting, with clearly defined roles and responsibilities for specific agencies and state departments.

As a signatory to the Paris Climate Agreement, Kenya has submitted its Nationally Determined Contribution (NDC), i.e. its national climate targets, under the United Nations Framework Convention on Climate Change (UNFCCC). The first Kenyan NDC has set a target of reducing emissions by 3.46 $MtCo_2e$ by 2030 in the transport sector and a nation-wide target of 30% against the business as usual scenario by 2030 across all sectors. To track progress on NDC implementation, the Parties to the UNFCCC have agreed to build on existing Measurement, Reporting and Verification (MRV) mechanisms under an Enhanced Transparency Framework (ETF). This covers reporting on NDC implementation, updating greenhouse gas inventories, and providing information on support received or provided for NDC implementation. It also introduces a new reporting mechanism known as the Biennial Transparency Report (BTR), which will supersede the incumbent Biennial update reports as the main reporting tool to the UNFCCC, this will be alongside the ongoing National Communications[1] reporting. Submission of the first BTR to the UNFCCC is expected by 31st December 2024 (United Nations Climate Change Secretariat, 2019).

The Paris Agreement further introduces a periodic process of taking stock of progress and achievements, grounded on the common goal of keeping global temperature rise below 2 degrees Celsius and strengthening global response to climate change. This Global Stocktake will be taking place every five years, with the first one expected in 2023. It will cover mitigation, adaptation and

[1] The National Communications cover the national circumstances, the GHG inventory, mitigation actions, adaptation actions. It should be submitted every 4 years. The First National Communication was submitted in 2002 while Second National Communication was submitted in 2015. Currently, a GHG inventory for the Third National Communications is being prepared

support offered and received towards climate action and will largely be informed by the BTRs and National communications (NCs).

Kenya's national climate change response framework is the National Climate Change Action Plan (NCCAP); this is the main NDC implementation instrument for the country. The action plan aligns with the overall five-year planning cycle of the country tied to Kenya's long-term development blueprint -Vision 2030. It covers key mitigation and adaptation actions that are updated in five-year cycles in all key climate change sectors in the country.

At the national level, in order to better coordinate climate actions and monitor progress of NCCAP implementation, as well to comply with the international requirements under the Paris Agreement, Kenya is in the process of developing a national Measurement, Reporting and Verification (MRV) system. However, while this system and several other efforts are underway at the national level, including set up of an online MRV tool and development of an NCCAP reporting template, sectoral arrangements to comply with the MRV requirements are yet to be developed. For the transport sector for instance, there is no defined framework for climate change reporting and data sharing; this includes the absence of templates for data collection and reporting specific for climate change. Such a framework would go a long way in ensuring a regularly maintained transport database is available, which would guarantee the availability of relevant data for annual reporting on sectoral greenhouse gas emissions and climate actions at the sector level.

To bridge this gap, the Advancing Transport Climate Strategies project is supporting the State Department of Transport (SDoT) to develop such a framework. The objective is to propose a self-sustaining system that is aligned to existing arrangements and structures. It is however understood that to fully institutionalize a credible MRV system, additional resources will be required. Such resources would support implementation and regular data maintenance of the data sets and the established system. It would also support training of personnel or outsourcing the data management process where necessary.

This study explores how data sharing is currently set up in the transport sector. The focus is on what type of activity data, relevant for climate change reporting, is collected and where this data documented/stored. The study includes recommendations of required steps for sectoral climate change reporting towards fulfilment of the requirements of the Climate Change Act 2016 and ultimately the Paris Agreement. The study also includes lessons learned as well as opportunities and challenges to support annual climate change reporting.

The information was collected from an intensive month-long research in September 2019. The research involved discussions and consultations with the climate change coordination unit

representatives from the transport sector. Agencies represented in the transport sector climate change coordination unit include: the State Department of Transport (SDoT), the Kenya National Highways Authority (KeNHA), the Kenya Urban Roads Authority (KURA), the Kenya Rural Roads Authority (KeRRA), the Kenya Railways Corporation (KRC), the Kenya Ports Authority (KPA), Kenya Maritime Authority (KMA), the Kenya Airports Authority (KAA) and the Kenya Civil Aviation Authority (KCAA).

The study engaged focal points from the transport sector climate change coordination unit that is comprised of individuals nominated by their respective agencies. Part of the focus of the project has been to strengthen this unit and ensure its operationalization in accordance with requirements of the Climate Change Act 2016. Figure 1 below shows the constitution of the unit comprising of focal points from agencies listed above who represent mobility related sub sectors under different state departments within the Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works

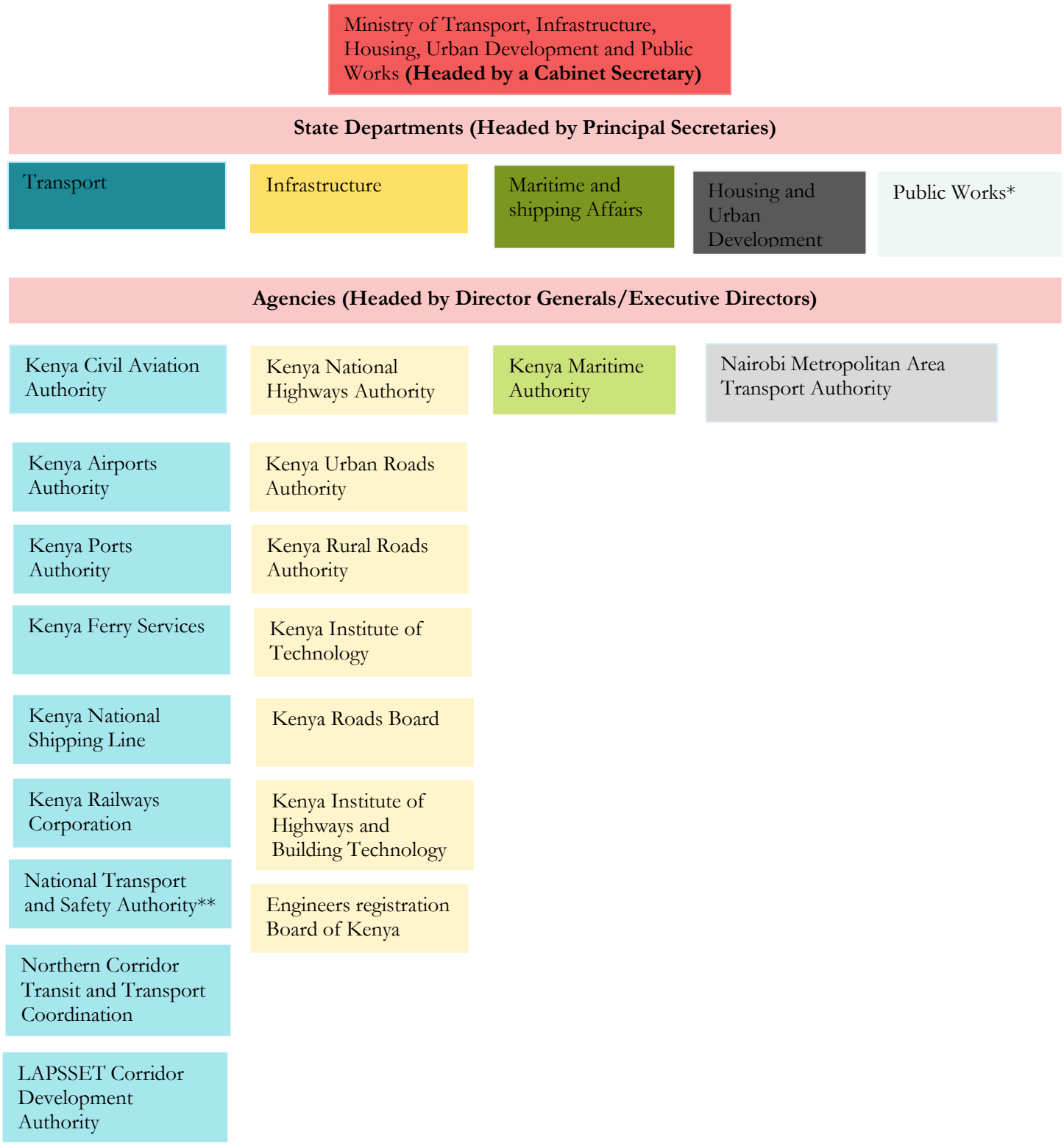

Figure 1 Kenya's transport sector current structure (GIZ, 2019)

**Agencies from Public Works are not included as they do not necessarily handle mobility related issues.*
*** The National Transport and Safety Authority is newly housed in the Ministry of Interior and Coordination of National Government*

2. Current policies and frameworks guiding reporting and data sharing

This section outlines policies and frameworks that are relevant for climate change reporting in Kenya. It highlights existing mechanisms guiding data collection and information sharing within the national government. This analysis will form a good basis for determination of how a sectoral MRV system can be set up and aligned to the current systems.

2.1. Overarching frameworks

Two major policy documents provide the overall political impetus for climate change reporting and climate change data and information sharing in Kenya. These include the Climate Change Act 2016 and the Constitution of Kenya 2010.

2.1.1. The Constitution of Kenya

The Government of Kenya is mandated to operate on a transparent model in as far as public information is concerned. The right of access is cemented under Article 35 of Kenya's constitution and guarantees every citizen access to information held by the state. The constitution further states that the government shall publish and publicise important information (affecting the nation) on a regular basis. This openness is ensured through frequent publications on social and economic issues produced by the Kenya National Bureau of Statistics (KNBS) and the launch of the open data portal by the government of Kenya, among others.

This guarantee of access is not limited to citizens; there is provision for information exchange between agencies and ministries. However, the study did not find a specific policy that governs how data between agencies is shared, the only legal guidance that comes close is the Access to Information Act. The Act delegates the responsibility of facilitating information access to the Chief Executive Officers of any public entity. In practical terms, this means that to (formally) access data, one must go through either the Principal Secretary or Director General of a public institution, who would then typically delegate the task to the responsible officer. This is the approach embedded in most government to government modalities when seeking information from public institutions, including between the different transport departments at state levels.

With regards to the enhanced transparency framework, there is an obligation placed on the presidency to submit a report to the National Assembly on the progress made in fulfilling the

international obligations of the Republic. With Kenya being a signatory of the Paris Agreement, and considering the significant role transparency plays in the successful implementation of the agreement, an effective MRV system will make it easy to track and prepare the necessary report on implementation of the Paris Agreement to meet this national reporting obligation.

2.1.2. Climate Change Act (2016)

The Climate Change Act of 2016 (section 15) outlines reporting expectations on climate change for state departments and national government public entities.
These responsibilities include:

a. Reporting on sectoral greenhouse gas emissions for the national inventory
b. Regularly monitoring and reviewing performance of integrated climate change functions through sectoral mandates
c. Reporting annually to the climate change council on the status and progress of performance and implementation of all assigned climate change duties and functions.
    a. This includes reporting on progress of implementation of climate change actions- both mitigation and adaptation.

In principle, this Act provides a legal basis for advancing a transparent greenhouse gas and climate actions reporting system.

Section 22 of the Act provides for the development of regulations to guide the reporting and verification of climate change actions. While this is yet to be actualised, work on development of data collection tool for NCCAP implementation reporting is already under way. This is being supported by the Low Emission Climate Resilient Development (LECRD) project at the Ministry of Environment and Forestry. At the sector level, the transport sector has been the first in the country to officially prepare and submit a climate change report covering both an emissions inventory and climate change actions in the sector.

Another tool that has also been applied in an effort to meet the reporting requirements of the climate Change Act, is the Environmental Sustainability Guidelines of the National Environmental and Management Authority. The guidelines provide environmental sustainability indicators for Ministries, Departments and Agencies (MDAs) to use for carrying out sustainability audits and reporting; part of this is an audit area on climate change. The component on climate change covers reporting on mitigation and adaptation actions including compliance with the Climate Change Act, 2016. It has been communicated that this reporting is no longer happening but is expected to be brought back again. These guidelines are discussed in good detail in the subsequent sections.

2.2. Policies and guidelines relevant for climate change reporting

There are several policies and legal frameworks governing data and information access (and sharing) in Kenya. This section highlights those that have been considered relevant for climate change reporting.

2.2.1. Handbook of National Reporting Indicators

The handbook for national reporting indicators is developed by the State Department of Planning and is used to track implementation of the country's medium-term plans (MTP) and Vision 2030.

Vision 2030 is Kenya's long-term development blueprint, which aims to transform the country into middle-income status by 2030 providing high quality life for all its citizens. The vision is implemented in successive five-year plans through the MTPs.

The handbook defines indicators to be used in monitoring MTP implementation progress covering implementation of flagship projects, progress in gender equity, human rights, and several other outcomes. So far, the first and second indicator handbooks have been developed in line with the first and second MTP; preparation of the third one is underway. With every MTP, the focus area and priorities change; meaning the indicators that are developed reflect priorities of the respective MTP. For instance, indicators for human rights were included in the second MTP but not in the first one. This shows a progressive willingness for inclusion of emerging issues that may have been left out in previous versions.

The handbook provides a tracking mechanism for annual reporting through the National Integrated Monitoring and Evaluation System (NIMES), and the County Integrated Monitoring and Evaluation System (CIMES). Key elements of climate change mitigation contained in the second handbook include increasing forest coverage, establishment of carbon trading schemes, renewable energy investments and development of a Mass Rapid Transit System (MRTS). At national level, implementation of these actions is tracked through two major reporting channels; annual reports produced under NIMES, and quarterly reports produced by the Vision 2030 delivery secretariat which mainly focuses on flagship projects.

The third medium term plan (2018-2022) has made specific mention of climate change and acknowledged its impacts on the society. The plan has also highlighted MRV as a key area of focus for this five-year period and is therefore expected to include climate change indicators as part of the monitoring instruments for the third MTP. The State Department of Planning under the

National Treasury and Planning has confirmed the inclusion of climate change specific indicators under this handbook. The handbook will be released in mid-2020.

2.2.2. Environmental Sustainability Guidelines

The National Environment Management Authority developed Environmental Sustainability Guidelines in compliance with Environmental Management and Coordination Act of 1999. The guidelines provide a framework for environmental sustainability audits for Ministries, Departments and Agencies (MDAs) and were introduced as part of the annual performance contracts for MDAs, this is meant to integrate environmental sustainability elements into their institutions, while implementing their internal mandates.

The guidelines include a checklist for MDAs to conduct a self-audit on environmental sustainability compliance, based on a set of indicators which they then submit to the National Environment and Management Authority (NEMA) through quarterly reports. The focus of the indicators are on six areas; environmental sustainability planning, waste management and pollution control, climate change mitigation and adaptation, environmental ecological enhancement, environmental education and awareness, and promoting environmental protection and conservation through Partnerships with Stakeholders. The climate change component has an indicator that monitors compliance with the Climate Change Act of 2016.

The direct relationship between these guidelines and climate change reporting, which is a requirement of the Climate Change Act, makes it necessary for an assessment to be done to evaluate how these reporting requirements can be aligned for efficient climate change reporting.

2.2.3. Statistics Act (2006)

The Statistics Act of 2006 establishes the Kenya National Bureau of Statistics (KNBS), the agency responsible for collecting, analysing and disseminating statistical data in Kenya. KNBS is responsible for maintaining a comprehensive and reliable national socio-economic database, as well as authorize and coordinate all official statistical programmes undertaken within the national statistical system.

The Act gives KNBS exclusive rights to access public records/documents in fulfilment of its overall objective. It outlines areas in which information will be collected, including; environment, transport, communication, energy, among others. This information is periodically reported in the

annual economic survey reports, as well as other statistical compilations produced periodically by the agency.

The annual economic survey reports as well the statistical abstract reports released by the agency, are the two major sources of statistical information for the country. These documents provide information on transport and energy statistics that can be used for emissions calculation. However, this is not at the level of detail required for effective calculation of emissions in the transport sector.

Transport data captured in the economic surveys include total cargo handled at the ports, passenger numbers handled by airports, rail traffic for both passenger and freight transport, information on number of registered vehicles and motor vehicles, as well as breakdown of fuel consumption figures in different sectors of the economy. A detailed breakdown of the information reported is captured in chapter 3.

As mentioned, transport data reported in the economic survey makes it possible to carry out top down greenhouse gas emission calculation, although this comes with some level of difficulty. See figure 2 below for the methodology used in top-down and bottom-up emission calculation.

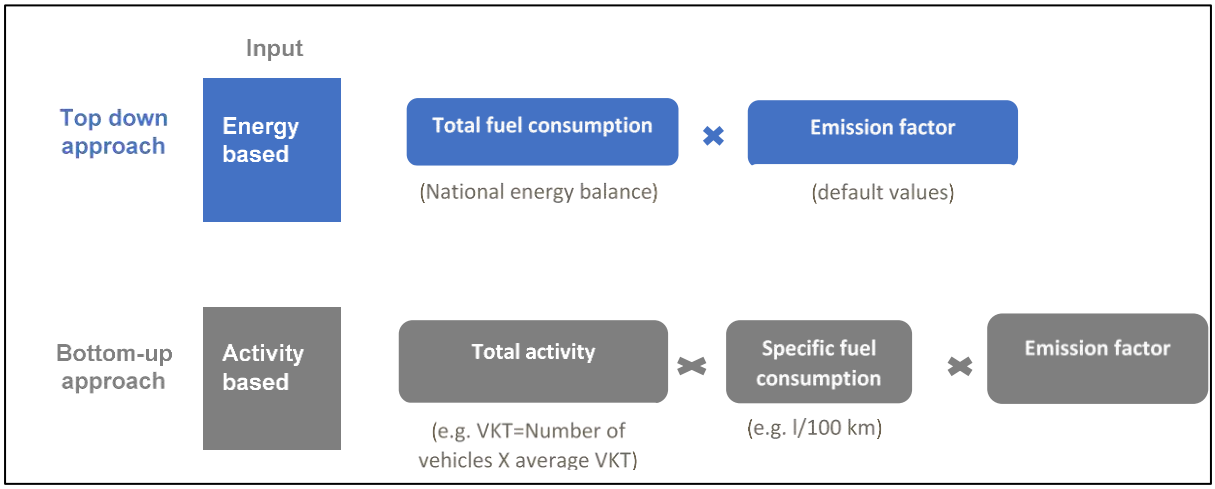

Figure 2 Top down vs Bottom-up emission calculation methodology

The breakdown of fuel demand in the road subsector as reported under the "Retail pump outlets and road transport" user category, is not by fuel type i.e by diesel and petrol, but a cumulative value capturing the total mass of fuel sold. Since diesel and petrol have different emission factors, it becomes difficult to directly calculate emissions from the road category. On the other hand, the data on fuel consumption for aviation and maritime is also not broken down by whether it is consumed within the domestic or international space. With a better breakdown of this data and by use of default emission factors from the IPCC, top down emission calculation would be very

straightforward. However, the current reporting makes it necessary to still do further estimates and use assumption to populate disaggregated fuel consumption data per subsector.

It is therefore recommended that fuel demand data for road, air and maritime transport categories is further disaggregated into the different fuel types used by the varying modes in the three subsectors. This includes;

a. Breakdown of fuel from the "Retail pump outlet and road transport" category by fuel type
b. A clear breakdown of total fuel consumed (by fuel type) for domestic water borne transport
c. A clear breakdown of total fuel consumed (by fuel type) for domestic air transport

Activity data to facilitate GHG calculations for bottom-up greenhouse gas emission calculation is not yet captured under the economic survey reports. Main data requirements for road transport include vehicle statistics (for active fleet) and mileage data (average annual vehicle kilometres travelled by different types of vehicles) (See figure 3 below for breakdown of data needed for bottom up calculation).

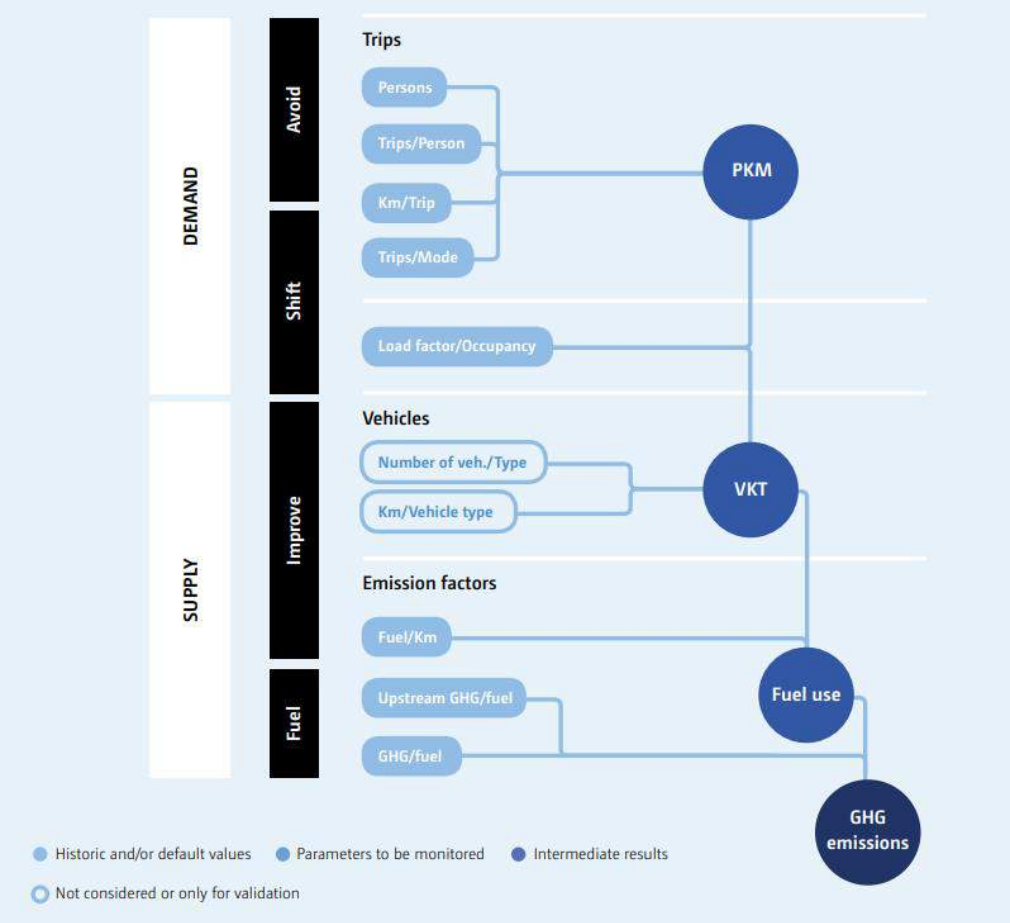

Figure 3 Bottom-up model for greenhouse gas calculation.

Source: Baseline Compendium, (United Nations Framework Convention on Climate Change, 2018)

2.2.4. Access to Information Act (2016)

The Access to Information Act No. 31 of 2016 recognizes the right to access information held by the state as is provided in the constitution. This includes facts used in policy formulation, information on public fund expenditure and any other information of significance to public interests. It provides a framework for both public and private bodies to disclose information in line with constitutional principles relating to accountability and transparency. This Act is in accordance with transparency principle under the Paris Agreement.

The right of access is guaranteed for information held by the state or private entities. The Act designates the Chief Executive Officer of a public or a private entity as the information access officer (this includes Managing Directors, Principal Secretaries and General Managers). Therefore, any requests for information, including climate change-related information, must be addressed to the CEOs of public entities who are essentially obliged to provide the same, as long as the information cannot justifiably be withheld in accordance with separate provisions of the Act. While the Act implies similar rules apply to private as in public entities, the focus of right to access is heavy on public entities.

2.2.5. Public Archives and Documentation Service Act

The Act provides for record keeping of all publications produced by state departments and state corporations (including local authorities) at the National Archives. Every Principal Secretary, head of government department or chief executive of state corporation or local authority shall supply to the archives two copies of every publication produced by them. It also compels the national archives to publish and circulate, every six months, a list of reports and documents acquired, to all the major libraries in the country. This Act can therefore be used by public entities and the Climate Change Directorate to archive publications and to circulate information about them and on climate change to all major libraries in the country. It is also a good basis for facilitating future research on historical developments on climate change response in the country.

2.2.6. National Climate Change Resource Centre

The National Climate Change Resource was established as part of a climate change knowledge management component under the National Climate Change Action Plan 2013-2017. The centre

hosts the Climate Change Directorate[2]of the Ministry of Environment and Forestry and is considered the national repository for climate change information. The directorate is responsible for coordinating climate change reporting in the country and will therefore be a host of a lot of information once the entities comply with reporting. This means it may be necessary for such information to be shared with the national archives for distribution to libraries across the country. The directorate will also play a major role in lobbying KNBS to include much more disaggregated data to support emissions quantification and GHG reporting at the sector level.

A climate change knowledge portal[3] has also been developed with the intention of collecting and sharing climate change information in a web-based portal for ease of access.

2.3. Policy review summary

While the above policies/guidelines give the necessary grounding for data sourcing within the country, a reference regulation as required by the Climate Change Act, that would provide a clear methodology on climate change reporting, both at national and sector level, is yet to be actualised. Such a regulation would facilitate reporting both to the national government, through the mandated annual climate change reports, as well as to the international community through the development of National Communications and Biannual Transparency Reports.

There already exist mechanisms supporting climate change reporting prior to the climate change reporting regulations which have facilitated data collection at the sector and national level. This has been necessitated by a need to monitor implementation of the NCCAP, track emissions at sector level, as well in preparation to meet international and national reporting requirements set out in the Paris Agreement and the Climate Change Act respectively. This has partly been made possible by the documents listed in table 1 below:

[2] The Climate Change Directorate is the agency responsible for provision of leadership, guidance and coordination on matters relating to climate change in the country,
[3] http://www.kcckp.go.ke/

Table 1 Regulations and guidelines relevant for climate change reporting

	Regulation/guidelines	**Relevance to Climate change reporting**
1.	Handbook of national reporting indicators	• Climate change is a thematic area in the third MTP and will therefore be part of the monitored actions, based on a set of climate change reporting indicators contained in the third handbook.
2.	Environment Sustainability Guidelines	• The guidelines include an audit area on compliance with the climate change Act.
3.	Statistics Act	• Empowers the Kenya National Bureau of Statistics to collect data
4.	Access to Information Act	• Guarantees access to information that may be relevant for climate change reporting
5.	Public Archives Document Act	• Relevant for storage and distribution of compiled information/reports

It is well understood that once regulations are in place, the necessary guidance on how existing systems will interact to ensure reporting at national and county level is well implemented, will be provided. But until this happens, sectoral arrangements facilitated by guidance of the Climate Change Directorate will apply.

3. Hierarchy of reporting within the State Department of Transport

At a state department level, reporting is officially coordinated through the Principal Secretary (the designated information access officer). This is the case as well for agencies, where the Chief Executive Officers, or Director Generals of respective agencies are the designated information access officers. External data request should thus be formally channelled through them.

Key documents that necessitate exchange of data and information between departments and agencies, and which may be relevant to the climate change reporting process include:

a. **Annual Progress Reports (APRs):** These are developed every year for tracking implementation of vision 2030 Medium Term Plans. They are coordinated by the State Departments of Planning and National Treasury
    - The APR is based on ministerial annual monitoring and evaluation reports, ministerial quarterly progress reports and official reports from research institutions and county government. They focus on indicators in various sectors as guided by the National Reporting Indicator Handbook earlier mentioned.
    - Now that Climate change is part of the MTP thematic area, part of the information collected through a sectoral MRV will be reported here. However, these APRs would also be sources of information for climate change reporting, particularly on climate action.

b. Annual workplan and annual procurement plans: These are internally produced through meetings and information request via the principal secretary and directorate heads. It is through these plans that annual activities on climate change will be implemented and monitored. They are therefore very fundamental to the reporting process.

c. **Annual economic survey and Statistical Abstract reports:** These are developed by the Kenya National Bureau of Statistics to highlight the country's economic performance for the year.

   For the transport sector, data submitted to the KNBS is through the Energy and Transport Statistics Committee. This committee has representation of the different state agencies including the Central Bank, Energy and Petroleum Regulatory Authority (EPRA), Insurance Regulatory Authority (IRA), the Capital Markets Authority (CMA), Kentrade, Kenya Power, Kenya Airports Authority (KAA), Kenya Civil Aviation Authority (KCAA),

Retirement Benefit Authority (RBA), Kenya Revenue Authority (KRA), Kenya Ports Authority (KPA), Kenya Maritime Authority (KMA), Export Processing Zones (EPZ) and Kenya Railways Corporation (KRC). This committee is permanent and includes officials appointed by name. There are no other contractual arrangements for data sharing with KNBS, as this is not necessary since the Statistics Act gives KNBS the needed authority to source for information from these institutions.

KNBS economic surveys record top-down performance data and therefore has a variety of avenues through which such data can be retrieved. This includes import records from KRA or sales data from the EPRA.

Transport data reported in the economic surveys (and statistical abstracts) include the following:

Table 2: Transport data reported in the annual Economic Surveys

Data type	Description
a. Total petroleum imports and exports	○ Includes crude (until 2013) ○ Includes total adjustments (stock exchange)
b. Breakdown of total demand by fuel type	○ Motor gasoline (premium) ○ Aviation spirit ○ Jet/turbo fuel ○ Light diesel oil ○ Heavy diesel oil ○ Fuel oil ○ Refinery usage (until 2013)
c. Net sales of fuel by consumer category (tonnes) **(not differentiated by fuel type)**	○ Road transport (and retail outlets) totals ○ Rail transport ○ Marine ○ Aviation (excl. Government) ○ Government ○ Sales to tour operators
d. Numbers of newly registered vehicles (by type) including two and three wheelers	
e. Traffic accident statistics as well as PSV licenses issued	
f. Railway transport: (Sector performance-earnings and activity data)	○ Total passenger and freight transported ○ Tonnes, tonne-Km, Revenue, Revenue per tonne-Km ○ Journeys, Passenger-Km, Revenue, Revenue per passenger-Km
g. Water transport	○ Total cargo throughput at port, vessels docked at port, ○ Imports and exports ○ Total fuel sold for marine usage
h. Pipeline transport	○ Volumes of petroleum transported on the line (for export and import) ○ Figures exclude those transported by other modes ○ Includes values for Motor spirit (premium), Motor Spirit (Regular), Kerosene Illuminating Oil, Light Diesel Oil, Jet Fuel.
i. Air Transport	○ Passenger traffic numbers (differentiated by domestic and international) ○ Disaggregated by airport ○ Cargo and mail traffic ○ Cargo volumes are reported (not differentiated into domestic and international) ○ Airport landings and take offs (disaggregated by domestic and international) ○ Licensed operator numbers are also recorded. (includes values for domestic and international)

As earlier mentioned, there is an urgent need for further breakdown of the collected data, mainly by fuel type for each consumer category. For instance, the category "Road transport (and retail

outlets) totals", records total fuel consumed in the roads sub sector, but does not provide a breakdown by fuel type. Such a breakdown will help with making it easier for top down emission calculations for road transport.

Overall, the data provided by the KNBS report are a good base for estimating sectoral fuel distribution, however, it is not adequate for emission quantification in the sector.

Further information needed for emission quantification in the transport sector is as follows:

a. Aviation
    i. Fuel breakdown by type: Currently jet fuels are not disaggregated by type i.e jet gasoline and jet kerosene
    ii. Share of fuel consumed by domestic flights
b. Road transport
    i. Breakdown of "Road transport (and retail outlets) totals" by fuel fuel type (i.e diesel and petrol)
    ii. Mileage data for different vehicle categories
c. Maritime
    i. Breakdown of fuels by type for marine fuel
    ii. Share of fuel consumed by marine vessels in the domestic waterways

4. Activity data collected at subsector level

This section gives a breakdown of key data items and sub-sectoral arrangements that govern how data is collected, documented and shared within the transport sector.

4.1. Rail transport subsector

Rail transport is managed by Kenya Railways Corporations. Their key mandate is to provide skills and technology for the railway sector, provide efficient and effective railway services as well as promote, facilitate and participate in national and metropolitan railway development.

Kenya Railways regularly collects performance data for their annual reporting as mandated by the Kenya Railways Act (see table 2 below for indications of data collected). This data is also necessary for the agency's annual performance appraisal and for external data sharing as may be requested by the line ministry (Ministry of Transport) and/or the National Treasury.

The Railway Operations and Maintenance department collects most of the performance data which may be necessary for bottom-up greenhouse gas emissions calculations; this includes information on train operations and fuel consumption. The agency also has an environmental department that mostly addresses project related issues covering development and compliance with environmental impact assessment reports. In addition, there is a Research and Planning Department which is the key contact point for KNBS.

Internally, all collected data is stored at department level and is easily shared with other departments upon request. However, submission of data to external parties is through the Managing Director of the Agency.

Table 3 Data type and arrangements for climate change data collection in Railway

Item	Description
Type of data regularly collected	○ Number of trains operating daily ○ Number of passengers on the train ○ Type & amount of cargo transported ○ Amount of fuel (light diesel) consumed ○ Safety aspects
Data collection templates at sector level	○ Templates for collection of data exists at data collection points ○ Standard format for reporting is also in place
Office responsible for data collection and reporting	○ Different departments are responsible for collection of different data items. ○ The department responsible for operations and maintenance is key when it comes to data relevant for climate change reporting (bottom-up data)
Gaps and proposals for climate change reporting	○ A data sharing framework defining how climate change data should be shared within the sector is essential ○ If regulations on reporting are developed, it is expected that this gap will be filled as it will provide a legal basis on which data can be sought (including from private companies operating rail lines)

4.2. Road transport subsector

Road management in Kenya is a cross-agency affair, this is dependent on the type of road in question, i.e. whether rural, urban or highways. Key agencies involved are Kenya Rural Roads Authority (KeRRA), Kenya Urban Roads Authority (KURA) and Kenya National Highways Authority (KeNHA), all established by the Kenya Roads Act 2007. KURA manages, develops, rehabilitates and maintains national urban trunk roads. KeNHA does the same for national trunk roads and KeRRA for rural roads. These agencies are mandated to report to the Cabinet Secretary in charge of road transport through production of their respective annual agency reports. The reports are linked to performance targets set during development of performance contracts. Requisite data to comply with this reporting requirement is therefore collected on a regular basis and is mostly tied to specific projects. Such data includes number of kilometres of roads constructed, traffic counts on specific corridors, Kilometres of NMT facility constructed, among others (see table 3 for a breakdown of the data that is regularly collected in the subsector). The annual reports also indicate the types of data that were collected for the year being reported on.

KeNHA has installed Automatic Traffic Counter and Classifier Systems (ATCC) in 10 different locations country wide. These include Athi River, Nakuru, Voi, Garissa, Embu, Njoro, Kabarak, Narok, Kisian and Kakamega. This data generates Average Daily Traffic (ADT) and is mainly used for pavement design. Similarly, KURA carries out traffic data collection in urban areas on a quarterly basis. This is by means of both ATTC and manual counting. In annual reports to the Cabinet Secretary, the agencies are only compelled to report the number of traffic counts carried out (ADT summary), and not the results of the traffic counts. This data is mostly relevant for project level activities.

KeNHA has an HDM-4 computer software, otherwise referred to as the Highway Development and Maintenance Management System. This is a decision-making tool that checks the engineering and economic viability of the investments in road projects. It is also used in estimations of emissions generated from Road User Effect (RUE) model and a Road Deterioration and Works Effects (RDWE) model. This takes into consideration road use elements including traffic volume and its composition, type and geometry of the road section, vehicle operating speed, fuel type and vehicle life, to produce exhaust emissions, highlighting various gases including carbon dioxide. The analysis is done at project level and helps in the final decisions on whether investment is feasible. Emission factors used in the model are from world bank studies and are integrated in the model. It is necessary to see whether the national level emission factors developed under the Advancing Transport and Climate Strategies project can be used herein.

KeNHA has also recently installed high speed weigh-in motion scales and automation systems to link weighbridges to a central control system. This is part of the automation and modernization of the vehicle weighing process to ensure compliance with axle road limits on Kenyan roads.

KeRRA also carries out project-based traffic surveys and routine maintenance reporting, as well as environmental and social impact assessments for the various projects being implemented. This type of assessment provides information that may be necessary for climate change reporting particularly on issues of resilience building. Detailed reporting requirements are firmed up in the performance contract signed with the Ministry of Transport.

Table 4 Roads subsector type of data regularly collected

Data type	Description
Type of data regularly collected	○ Automated traffic counts in 10 locations (captures vehicle numbers by size class). ○ Rainfall data (at project level) ○ Road Roughness index ○ Weighbridge data: Type of vehicle, Axle load, load capacity ○ Non-Motorised Transport coverage (Kilometres constructed) ○ Air quality information (project level)

Data collection templates at sector level	○ Different reporting templates exist based on the specific reporting level i.e whether reporting is for performance contracting, the annual progress report or the environmental sustainability report to NEMA
	○ Different templates are available at points where data is being collected
	○ Traffic survey template (from Kenya Roads Board) has the following vehicle categories
	  ○ Motorcycles: motorcycles with or without sidecars e.g. motor tricycles
	  ○ Saloon car <= 5 seats, Large car 4WD <= 9 seats, Minibus/Matatu <= 23 passengers, Pick-up/Van/LGV <1.5t unladen, Light truck: 2 axles (single rear wheels) 3-6t payload, Medium truck: 2 axles (double rear wheels) 7-10t payload, Heavy truck/HGV 3-4 axles rigid, Articulated trucks >= 5 axles, Small bus 24-40 passengers, Large bus > 40 passengers
	  ○ Non-Motorised Traffic Bicycle, cart and pedestrian

Office responsible for data collection and reporting	○ Collection of activity data is mainly meant for planning and maintenance ○ Traffic data is limited to a specific department where necessary expertise is available ○ Different departments collect different types of data. The collected data is stored at department level and only shared out on request.
Gaps and proposals for climate change reporting	○ Capacity in terms of skills and necessary equipment are needed for the agency to be able to consistently collect activity data necessary for bottom up reporting. This is particular for mileage data. To be able to do bottom up calculations, mileage data by vehicle category is necessary. This is currently missing in the country. ○ Each agency to be made aware of the specific type of data they would need to report on ○ Clear guidance on specific data items that need to be reported ○ Climate Change reporting can be included as part of performance contracts

Information on road vehicles is collected and stored by the National Transport and Safety Authority (NTSA). They are the custodian of records on all types of registered vehicles in Kenya. The type of data available from NTSA includes

a. Vehicle registration data (total) per body type
    a. By town (Nairobi, Mombasa, Nakuru, Kisumu and others)
b. Vehicles data by year of manufacture per body type
    a. Listed by year from 2013-2018, and another category for all cumulative registrations earlier than 2012
c. Vehicle data by fuel type per body type
    a. Diesel, petrol, electric, solar and others

Obtaining data from NTSA is only through a valid justification as majority of the data available contains personal information.

A key data item that is missing in the roads sector at the moment is estimates on annual vehicle kilometres for the various vehicle classes in the country. This data will be essential when the country actively takes up bottom-up greenhouse gas emissions calculations and reporting. Apart from the study carried out by the TraCS project looking at vehicle characteristics in Kenya, there is limited source of regularly collected information at a national scale on vehicle mileage. It is anticipated that once the NTSA begins mandatory inspection of all vehicles in the country, mileage data could be recorded from annual odometer readings, which could be aggregated and anonymised and then be reported to KNBS. In addition, the proposed rollout of Radio Frequency Identification (RFID) stickers in vehicles all over the country, which allow for automatic mass data transfer, will also facilitate collection of disaggregated data necessary for bottom-up emission calculation.

4.3. Maritime subsector

Key agencies in this subsector are Kenya Ports Authority (KPA) and Kenya Maritime Authority (KMA). KMA's mandate is to regulate, coordinate and oversee maritime affairs, while KPA's is to maintain, operate, improve and regulate all sea and inland waterway ports in Kenya.

In the maritime subsector, KMA registers all vessels that are meant to operate on Kenya's waters. This include ships that are 24 metres or more and smalls vessels that are more than 4 metres. This is guided by the Merchant Shipping Act and Regulations of 2012.

KPA is currently implementing the green ports policy developed in 2015; the policy recommends several GHG reduction strategies focusing on (a) reduction of electricity and fuel consumption primarily by vessels, trucks and port equipment, (b) implementation of an equipment replacement policy with electric-powered or "clean fuel" equipment, (c) forestation and (d) complying with ISO 14001 certification. The environment department is in the process of developing an inventory of fuel consumption in the port as part of this policy.

The agency regularly carries out environmental audits in compliance with its Health Safety and Environment Policy, the Environmental Management and Coordination Act as well as the Occupational Health and Safety Act of 2007, Oil pollution preparedness, Response and co-operation (ORRC), International Maritime Dangerous Goods Code, Waste management regulations of 2006 and the Air Quality Act of 2004.

Data collection in the sector has mainly been for supporting compliance with regulatory requirements such as the sustainability reporting requirements by NEMA, ISO certification standards (e.g. ISO 14001 for KPA) and ongoing efforts towards domestication of MARPOL Annex VI that requires control of emissions from ships. There has been other initiative like the pilot Maritime Technology Corporation Centre for Africa (MTCC) project, and the Green Port Policy Program.

The MTCC Africa project is a European Union funded pilot project that facilitated data collection and reporting on fuel consumption and emissions for a select number of ships at the port of Mombasa. This was through equipping a select number of ships with tablets that provide real-time fuel consumption data which then calculates the Energy Efficiency Operation Index (EEOI) of the ships, which is an indicator of their GHG/CO_2 emission potential and efficiency. This targeted ships that dock at the port of Mombasa, meaning it is primarily information on emissions from international waterborne navigation.

Despite all the ongoing initiatives, it was reported that calculation of emissions from the domestic waterborne navigation and fishing is yet to be done. This has been due to lack of data and the complexity involved in coming up with a reasonable estimate of fuel consumption for the domestic vessels. It was decided that once a clear methodology has been agreed upon, the sector will explore possibilities of carrying out data collection from bunker stations in the different locations in the country.

Table 5: Maritime subsector data type regularly collected

Data type	Description
Type of data regularly collected	○ Inventory of items at the port ○ Port performance, including type of imports, exports, container traffic and total vessel calls ○ Data for carrying out health and safety audits ○ Record of vessels operating on Kenyan waters
Data collection templates at sector level	○ KPA publishes annual bulletin of statistics. Data reported include port throughput and cargo profile ○ MTCC has customized data collection templates for the project ○ Template for inspection of waterborne vessels every two to four years
Office responsible for data collection and reporting	○ Environmental departments at KPA and KMA ○ Managing Director's office at KPA produces the "Annual Review and Bulletin of Statistics" at the port ○ Inspection officers
Gaps and proposals for climate change reporting	○ Adopting a methodology for GHG calculation in the waterborne sector is needed ○ Develop a standard template for collection of data at agency level ○ Data collection based on clear guidelines ○ Designate staff for Climate Change units at the agency level and build their capacity.

As is the case with other agencies, sustainability reporting by these sub sector agencies to National Environment Management Authority (NEMA), was also done on a regular basis before it ceased being mandatory. After submission, agencies performance would be assessed and then awarded marks. This requirement had been included in the respective agency performance contract for the time it was mandatory.

4.4. Aviation subsector

Key agencies in the aviation subsector are Kenya Civil Aviation Authority (KCAA) and Kenya Airports Authority (KAA). KCAA plans, develops, manages and operates a safe economically sustainable and efficient civil aviation in line with Kenya's Civil Aviation Act (2013). KAA on the other hand provides infrastructure for aviation services between Kenya and other countries.

Data collection in the aviation sub sector is done on a regular basis and is required by several policy guidelines. This includes the Kenya Civil Aviation Act, ICAO statistics policies, KNBS Act, the Access to Information Act and respective environmental policies and strategic plans.

As for data for greenhouse gas emission calculations, data on domestic and international flights from the national airline (Kenya Airways) is readily available, however, it is much more difficult to get fuel consumption information from the other privately-owned domestic airlines. The regulators are however working on a reporting system that would require domestic airlines to regularly report on their fuel consumption to facilitate emission quantification in the sector. Several attempts have also been made within the subsector to estimate domestic fuel consumption in the country. This includes estimates outlined in KCAA's Action Plan for the reduction of CO_2 emissions and in the feasibility study on the use of sustainable aviation fuels. The feasibility study on the use of sustainable aviation fuels estimated that 7% of the total aviation fuel requirement is used in domestic operations.

The Kenya Action Plan for the reduction of CO_2 emissions in the aviation sector contains values of the fuel consumed in aviation for the years between 2010 and 2014 and total passenger numbers for the same period (domestic vs international), and projections until 2020. It also gives an overview of the local air transport situation including the list of major airports as well as an overview of the profile of the dominant airline in the country (Kenya Airways). According to the action plan, Kenya Airways (KQ) 'contributes 90% of the Kenyan registered operators' traffic; of this traffic, 72% of KQ flights are international while 28% is domestic'. (Government of Kenya, 2015) (White, 2018)

KAA also regularly collects data for calculation of carbon footprints for airports in the country with the aim of acquiring Airport Carbon Accreditation. KAA has over the past few months actively engaged in inventory development to gather relevant information for emissions calculation based on the Airport Carbon and Emissions Reporting Tool (ACERT). The collected information is limited to data relevant for direct GHG emissions from sources owned and controlled by the authority.

The aviation sub sector publicly reports to the annual economic survey with information on total jet kerosene, aviation spirit consumption, passenger traffic (domestic and international), cargo and mail traffic, landings and take-offs, and numbers of registered aircrafts.

Table 6: Aviation sub sector data type regularly collected

Data type	Description
Type of data regularly collected	○ Aircraft movement (landing and take-off) ○ Passenger and cargo traffic ○ Fuel usage by the national carrier ○ Record of airlines registered in the country (1,549 registered in Kenya, 800 in operation) ○ Data relevant for ACERT (sources owned by the Airport); generators, GPU, ground handling equipment, buses, fire training ○ Data on SDG integration
Data collection templates at sector level	○ Templates are available at data collection points ○ Template for reporting to the KNBS exists based on economic survey template ○ KNBS sends formal letter with data requirements and timeframe
Office responsible for data collection and reporting	○ Corporate planning department at KCAA ○ Airlines ○ Station officers ○ Environmental department coordinates annual environmental audits ○ Human Resources Department keeps record of all fuel consumed at the Airport for KAA
Gaps and proposals for climate change reporting	○ Develop a common template ○ Have a clearly defined reporting system ○ Coordination/integration of the existing reporting framework with arrangements and format for submission of the annual climate change report to the Ministry of Environment and Forestry, including clear details on the reporting timelines for the necessary data items for GHG calculations. ○ Emissions and climate change reporting to be included in the Performance contracts of the KAA management with the Ministry of Transport ○ Templates being developed to be linked to the ACERT model used at the Airports

5. Enhancing a transparency framework in Kenya's transport sector

The sector has set itself up as the reference sector on compliance with reporting requirements of the Climate Change Act. This include the operationalization of the Climate Change Coordination Unit (CCCU) and preparation of the first sectoral climate change report in the country.

Moving forward, the sector has prioritized resource mobilization (i.e. through budgetary allocation to the CCCU) and top-down GHG reporting as the first approach towards cementing climate change reporting. This approach will also be supported by agency level mitigation and adaptation action reporting that will include actions at both county and national level.

In order to further actualize the reporting requirements, the following actions are being explored:

- Ensuring climate change reporting is included in performance contracts for the Ministry of Transport and its respective state agencies;
- Development of a sectoral Climate Change Actions Implementation Matrix (2018-2022) based on current strategic plans and agency level actions plans;
- Development of a template detailing data requirements for climate change reporting at agency level;
- Resource mobilization from the exchequer to finance reporting needs highlighted above;
- Integrate sectoral arrangements with ongoing efforts at the Climate Change Directorate (CCD), particularly with the ongoing development of an MRV tool and an online national reporting template developed with support of the inter-ministerial climate change coordination committee.

The above efforts will ensure the sector has a well-established system for reporting. However, one of the major challenges being faced by the climate change coordination unit in the sector at the moment, has been difficulties in securing resources to ensure its smooth operations. Once relevant resources are secured, the sector will be in a better place to actualise other pending issues.

The other challenge in the sector has been the lack of clarity on what data requirements are necessary for climate change reporting at the agency level. This is partly due to a lack of sufficient capacity on the key elements of sectoral climate change reporting, as well as the absence of data collection templates in the sector. This makes ongoing efforts to develop data collection templates,

as well as enhance capacity of the sector representatives through the Advancing Transport and Climate Strategies (TraCS) project, very instrumental.

Another key aspect for consideration as far as institutionalizing climate change reporting is concerned, would be to assess how feasible it is to use the systems (if any) that were put in place under the Environmental Sustainability guidelines process, as well as evaluate whether to use the same reporting channels (with relevant modifications) for climate change reporting. Alternatively, it would be necessary to separate the climate change reporting functions from the sustainability guidelines, so as to ensure reporting on climate change does not happen at same level twice.

At the national level, focus has been put on development of GHG calculation and reporting tools, which will facilitate national data collection and compilation of relevant reports. However, a national MRV Framework which addresses institutional arrangements linked to legal /statutory requirements is still required. This will include formalization of responsibilities/roles, procedures as well as other related systems. The instrument expected to address this situation will be the establishment of climate change reporting regulations as proposed in the Climate Change Act 2016; this will provide guidance on reporting and verification of climate change actions in the country and by extension in the transport sector.

References

European Union. (2020). *MTCC Africa* . Retrieved from http://mtccafrica.jkuat.ac.ke/

Government of Kenya. (2010). *CONSTITUTION OF KENYA, 2010.* Retrieved from http://kenyalaw.org:8181/exist/kenyalex/actview.xql?actid=Const2010

Government of Kenya. (2012). *Merchant Shipping Act , NO. 4 of 2009* . Retrieved from http://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/MerchantShipping%20_Act%20No.%204of2009.pdf

Government of Kenya. (2012). *Public Archives and Documentation Service Act.* Retrieved from http://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/PublicArchivesandDocumentationServiceAct_Cap19.pdf

Government of Kenya. (2012). *Statistics Act, No.4 of 2006.* Retrieved from http://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/StatisticsAct_Cap112.pdf

Government of Kenya. (2014). *Second Handbook for National Reporting Indicators.* Retrieved from https://www.undp.org/content/dam/kenya/docs/energy_and_environment/second%20handbook%20of%20reporting%20indicators.pdf

Government of Kenya. (2015). *Kenya'S Action Plan for the Reduction of Co2 Gas Emissions in Aviation Sector.* Nairobi: Kenya Civil Aviation Authority.

Government of Kenya. (2016). *The climate Change Act, No. 11 of 2016.* Retrieved from http://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/ClimateChangeActNo11of2016.pdf

Government of Kenya. (2018). *Environmental Sustainability Guidelines for Ministries, Departments and Agencies (MDAs)* . Nairobi: National Environmental Management Authority.

Government of Kenya. (2019). *GUIDELINES ON ACCESS TO INFORMATION REQUESTS.* Nairobi: Commmunications Authority.

Government of Kenya. (2019). *Economic Survey 2019.* Nairobi: Kenya National Bureau of statistics.

Government of Kenya. (2019). *Transport sector climate change annual report: Performance and Implementation of Climate Change Actions.* Retrieved from https://www.changing-transport.org/wp-content/uploads/2019_Transport_Sector_Climate_Change_Annual_Report_Kenya.pdf

Government of Kenya. (2019b). *Statistical abstract 2019.* Nairobi: Kenya National Bureau of Statistics.

Kenya Ports Authority. (2015). *Development of a Green Ports Policy and Implementation Plan.* TradeMark East Africa .

United Nations Climate Change Secretariat. (2019). *FAQ's on the operationalization of the Enhanced Transparency Framework* . Retrieved from https://unfccc.int/sites/default/files/resource/FAQs_ETF.pdf

United Nations Framework Convention on Climate Change. (2018). *Compendium on GHG Baselines and Monitoring; Passenger and freight transport.* Bonn: GIZ.

White, D. (2018). *Feasibility Study on the use of Sustainable Aviation Fuels.* Nairobi: ICAO.

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