Rwanda Environment Management Authority

Integrated methodological framework to assess GHG impacts and transformational change of Rwandan climate policies

Final version

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List of abbreviations

BTR	Biennial Transparency Report
BUR	Biennial Update Report
CA	Corresponding Adjustments
CH_4	Methane
CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
CO_2	Carbon Dioxide
CoK	City of Kigali
COP	Conference of the Parties
EDCL	Energy Development Corporation Limited
ETF	Enhanced Transparency Framework
ETS	Emission Trading System
GHG	Greenhouse gas
GoR	Government of Rwanda
HH	Household
ICTU	Information needed for clarity, transparency and understanding
IPP	Independent Power Producer
KPI	Key performance indicator
LDC	Least Developed Country
LPG	Liquefied petroleum gas
MEP	Member of the European Parliament
MINAGRI	Ministry of Agriculture and Animal Resources
MINALOC	Ministry of Local Government
MINECOFIN	Ministry of Finance and Economic Planning
MINICOM	Ministry of Trade and Industry
MININFRA	Ministry of Infrastructure
MoE	Ministry of Environment
MOF	Ministry of Finance
MoH	Ministry of Health
MRV	Measurement, Reporting and Verification
NC	National Communications
NDC	Nationally Determined Contributions
NIR	National Inventory Report
NIRDA	National Industrial Research and Development Agency
NISR	National Institute of Statistics of Rwanda
PSF	Private Sector Federation
QA/QC	Quality Assurance and Quality Control

RBD	Rwanda Development Board
RE	Renewable Energy
REG	Rwanda Energy Group
REMA	Rwanda Environment Management Authority
RHA	Rwanda Housing Authority
RRA	Rwanda Revenue Authority
RSB	Rwanda Standards Board
RTDA	Rwanda Transport Development Agency
RURA	Rwanda Utilities Regulatory Authority
SE4all	Sustainable Energy for All
SIDS	Small Island Developing States
t/year	tones per year
TBC	To be confirmed
TC	Transformational Change
$tCO_{2\ eq}$	tonnes of CO2 equivalent
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
WASAC	Water and Sanitation Corporation Ltd.

1. Executive summary

Article 4 and Article 13 of the Paris Agreement (PA) define the requirements for Parties in terms of reporting and information that must be made available. New reporting requirements are set; Article 13 that establishes the Enhanced Transparency Framework (ETF): i.e. the biennial transparency report (BTR) and a national inventory report (NIR) to be submitted by each country. While the main information and data to be provided are very similar to those under the National Communications (NCs) and Biennial Update Reports (BURs) that Parties already now submit to the United Nations Framework Convention on Climate Change (UNFCCC), the great difference is in the additional request under the BTR to track the progress towards the goals of the Nationally Determined Contributions (NDCs).

The methodology described in the following sections is a step-by-step tool that is tailored to help relevant institutions (such as line ministries) in collecting relevant information on mitigation policies in key economic sectors in Rwanda (i.e. energy, building, industry, transport and waste sectors) to enable tracking of the GHG and transformational change impacts. The key tools for the implementation of the methodology are the checklists: these are excel-based tools that are designed to structure the assessment of policy instruments/mitigation measures. Generic targets and broad strategic documents are excluded, as they will not trigger direct GHG mitigation impacts or transformational change.

Assessment of policies will shed light on their effectiveness and will support policy makers in enhancing the policy design phase, building on the lesson learnt from the assessment of existing climate policies. The assessment starts with general information on the sector, actual implementation status of the policy and underlying policy instruments, and then it provides the actual parameters that must be collected and monitored over time to assess the actual impacts of the policies. Checklists can be adapted to the specific context in which they are applied: the set of parameters to be monitored can be expanded or reduced, depending on how the assessment is designed by the relevant institution, bearing in mind the need to ensure transparency and accuracy of the information provided. A transparent assessment of the mitigation policies is a key element for tracking progress towards NDC implementation and for communicating to the international community. The checklists provide also a set of Key Performance Indicators (KPI): these are designed to provide at a glance the picture of the key impacts of a policy and it effectiveness in achieving its targets. Hence, also KPIs can be adapted to the specific context in which the checklists are used (e.g. to factor in data gaps for instance) and depending on the specific purpose of the assessment performed.

The final element of the proposed methodological approach refers to the institutional arrangements. In order to ensure proper utilization of the methodology, roles and responsibilities of different institutions and stakeholders are proposed for each of the selected sectors. Key institutions in charge of gathering and processing data are identified, which will be then tasked to provide the information to the Rwanda Environment Management Authority (REMA), which reports to the UNFCCC. The most important institutions at sectoral level regarding policy assessment fall within the Ministry of Infrastructure (MININFRA) for the energy, waste and transport sectors while those within Ministry of Local

Government (MINALOC) and Ministry of Trade and Industry (MINICOM) are key in the building and industry sectors, respectively. Other relevant institutions that have a contributing role for the data collection and processing, including on the transformational change impacts of the selected mitigation policies, are identified as well.

2. Introduction

The main objective of this report is to clearly present the methodological approach used to define the framework for the assessment of climate policies in the key economic sectors in Rwanda, i.e. energy, transport, building, waste and industry. It presents the reporting requirements under the UNFCCC related to the NDCs and to the ETF of the PA (i.e. Article 4 and Article 13). The report consolidates the outputs of previous tasks performed under this project and integrates the lessons learned from the active participation of the stakeholders in the workshop held on February 21st and 22nd in Kigali. By introducing the sectoral checklists, this report intends to provide clear guidance on the use of the checklists for gathering the required information and data for performing a transparent and accurate assessment of the GHG impacts and transformational change (TC) impacts of climate policies.

Furthermore, the report identifies institutional arrangements to ensure the effectiveness of the methodology by stablishing the basis for the correct implementation and continuously application of the proposed methodology.

2.1. Outline of the report

Section 3 of this report presents the reporting framework under the UNFCCC. An overview of the information needed for clarity, transparency and understanding (ICTU) defined in the context of mitigation actions under Article 4 is presented. Furthermore, differences in reporting between country categories and a summary of the reporting requirements of National Communications (NC), the Biennial Update Report (BUR) and the requirements as defined under the ETF of the PA is presented.

Section 4 of the report presents the development of the approach to assess GHG and transformation change impacts. A definition and characteristics of policies and instrument of policies that trigger direct GHG mitigation impacts is discussed. The principles guiding the proposed methodology as well as its key components are presented in this section. Finally, the application of the methodology is explained: the description of how to make use of the sectorial checklists and essential information that is needed to complete the assessment is provided.

Section 5 describes the institutional arrangements needed to assure a successful implementation of the methodology and data collection needs of each relevant sector.

Section 6 concludes.

3. The transparency framework under the PA

Transparency is a key component of the Paris Agreement[1]. It serves two main purposes: to strongly incentivize Parties to achieve their promised mitigation contribution as described in the NDCs and to facilitate a continuous improvement of the available data. In addition, it shall information to support decision makers and enhance the planning process. Transparency increases trust among Parties and it serves also to increase comparability of the information provided by different countries. The latter enables the assessment of the global efforts and results related to mitigation and contributes environmental integrity for instance in the international carbon market mechanisms. Requirements under the PA are defined by Article 4, which identifies the information needed for clarity, ICTU, and Article 13, establishing the so called enhanced transparency framework (ETF).

3.1. Article 4: information needed for clarity, transparency and understanding (ICTU)

Article 4 defines the set of information that Parties have to provide for the ICTU, which defines the requirements for the NDCs. All Parties will have to provide their NDCs and progresses will be tracked against the targets set. Parties shall provide information on the time frames and/or periods for implementation of the NDCs, scope and coverage, planning processes, assumptions and methodological approaches applied. Parties will also have to provide clear definition on the mitigation targets, specifying whether it is a multi-year or single-year target. This element is very important, as Parties with single-year targets will be allowed to perform the Corresponding Adjustments (CA) only with Parties with single-year targets as well. Also, Parties are required to clearly state their intention to make use of the market mechanisms. Information on the adaptation co-benefits of the mitigation activities shall be provided as well.

Biennial Transparency Reports (BTRs) will have to be submitted by Parties and will provide information on the status of implementation of the NDC goals as well as policies: this applies from the second NDC round. it will replace the replaces the current biennial reports and biennial update reports. Consistency with Article 13 requirements is to be considered: Parties shall ensure that accounting prevents double counting and. Additionally, information on how the NDC is defined as fair and ambitious is to be provided as well. During the COP24 (Conference of the Parties) it has been agreed that these rules will be revised in 2028.

It is important to note that negotiations are still open with regards to certain elements under Article 4. One major example is the guidance on the features of NDCs, which is key for enhancing comparability of the different NDC that currently is undermined by the different approaches used by Parties: this

[1] For the purpose of this report, the focus is on mitigation and this chapter presents the requirements under the PA related to this.

element has been deferred to 2024. Another important feature on which further work is needed is the definition of common timeframes for NDCs that will be applied by Parties by 2031. However, rule setting is still open and no clear timeline for its completion has been provided.

3.2. Article 13: the ETF

Article 13 establishes the ETF for action and support, taking into account the different circumstances of the Parties. At COP24 in Katowice the modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the PA were agreed upon (UNFCCC 2018). The key pillars of the ETF are the BTR and NIR to be submitted as a stand-alone reports by all countries, or as a component of the BTR. It is important to note that the majority of information to be reported under the BTR and NIR are already within the reporting requirements for NCs and BURs and build upon these established reporting requirements. The main difference is that the BTR shall provide all information necessary to track progress made in implementing and achieving the NDCs under Article 4 of the PA. Recent developments at COP24 saw the end of the so called "bifurcation" characterizing the Kyoto Protocol which defined differentiated requirements for developed and developing countries. In accordance with the bottom up approach and nature of the PA, all Parties are now required to report through the BTR and through the NIR from 2024. It is established that the NIRs shall apply the 2006 Intergovernmental Panel on Climate Change (IPCC) guidelines and use common global warming potentials from the IPCC 5th Assessment Report[2]. However, a certain level of differentiation is still kept: while industrialized countries have mandatory commitments; other countries have more flexibility with regards to the reporting requirements, with Least Developed Countries (LDCs) allowed to report "at their discretion" while other Parties (i.e. Parties that are neither industrialized nor LDCs) can report in a self-determined manner (UNFCCC 2018). The following table summarizes the different requirements for Parties.

Table 1: Differences in reporting between country categories

Topic	Industrialized	Developing	LDCs / SIDS
Key category threshold	95%	85%	Discretion
Significance threshold	0.5 Mt CO_2/0.05% nat. emissions	1 Mt /0.1%	Discretion
Gases covered	Kyoto gases	CO_2, CH_4 and N_2O	Discretion
Time series	1990-2 years bp	2020-3 years bp	Discretion
Emission projections	15 years beyond next round year	Voluntary, until end of NDC period	Discretion
Climate finance provided	Mandatory	Voluntary	Discretion

Source: author's elaboration

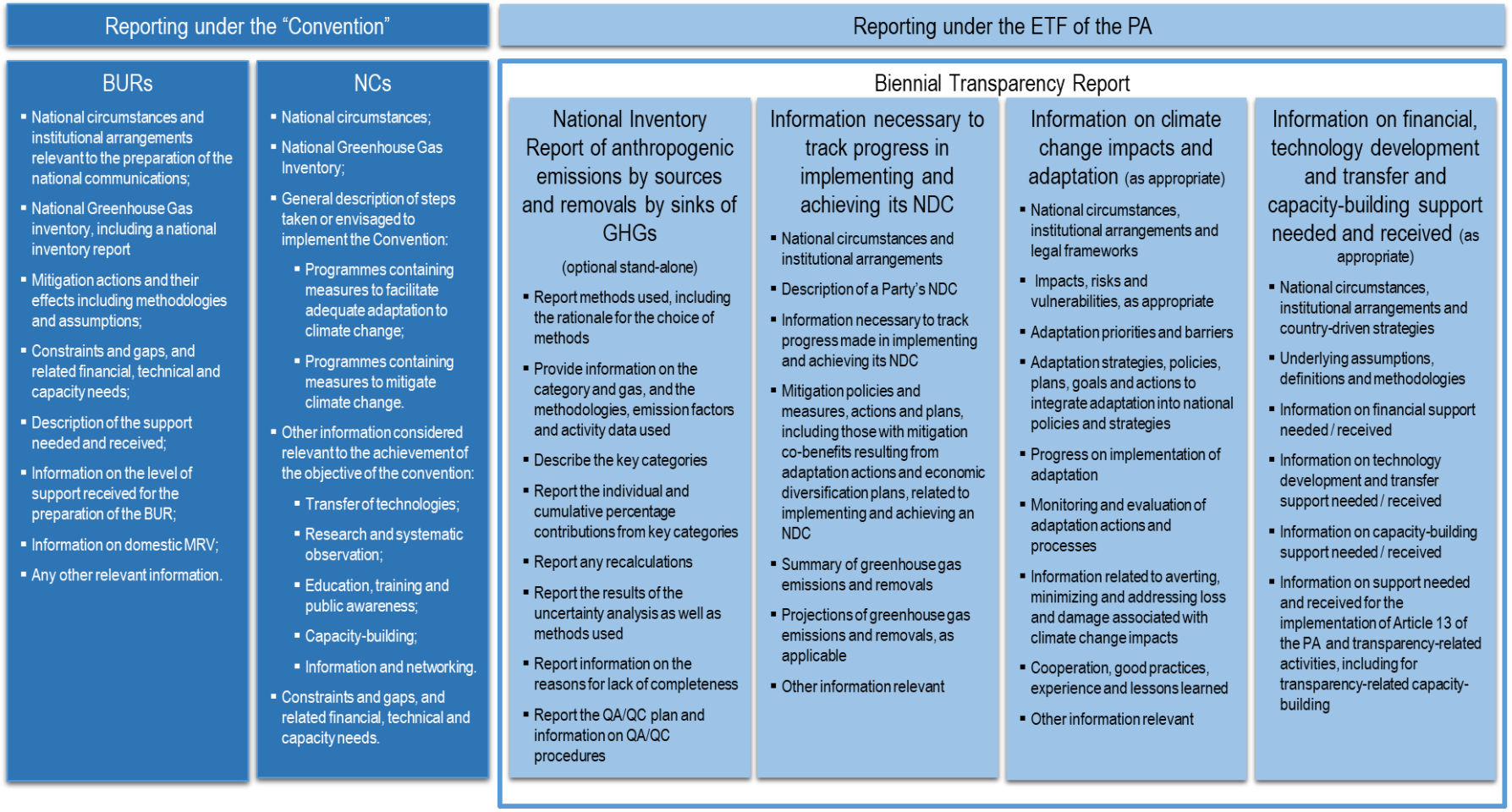
[2] To be updated by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA), according to the publication of new versions by the IPCC

One element of the Article 13 has great importance: all Parties have mandatory reporting requirements related to the use of the market mechanisms and accounting: transfer of units will be reflected by the CA to be performed by Parties. Reporting on the sustainable development benefits and environmental integrity is also required. The mandatory reporting requires Parties to provide information on the mitigation policies, while Parties implementing adaptation measures with mitigation co-benefits have to report on the impacts of mitigation policies of other countries ("response measures").

In order to provide flexibility, Parties can voluntarily report on other elements that they deem important if this increases the overall transparency under Article 13. Parties have to report on how the level of concessionality of finance is determined: in this context, finance is additional if there is a clear causal link between the public intervention provided and the volume of private finance mobilized and that would not have been mobilized in the absence of the Party's intervention. Also with regards to finance, information on how double counting is avoided shall be provided and it has been agreed that purchase of emission reduction is not to be accounted as climate finance.

The following table provides an overview of the current requirements for Parties under the UNFCCC, such as the BUR and NC, and the requirements as defined under the ETF of the PA. One key difference is the requirement for Parties to provide within the BTR all information necessary to track progress made in implementing and achieving the NDCs under Article 4 of the PA.

Table 2: Overview of the reporting requirements of the NC, BUR and ETF.



Source: Author's elaboration

4. Methodology development

4.1. Definition of GHG mitigation policies and specific policy instruments

In their NDCs, countries define their climate policy objectives as well as climate policy instruments (or "mitigation measures"). Optimally, NDCs are based on an assessment of the mitigation potential in each sector or subsector – such as sector "transport" and subsector "road transport". A country may define a policy objective as a "20% reduction of GHG emissions from road transport by the year X". At the same time, it is essential that the country simultaneously defines policy instruments/mitigation measures that effectively impact emissions – e.g. policies that change the behaviour of emitters – so that the GHG-reductions of the policy objective can materialize. Policy objectives alone do not lead to any GHG reductions, they need to be backed by effective policy instruments, e.g. carbon taxes, energy efficiency regulations, subsidies for low carbon technologies etc.

For this reason, Art. 4 (2) of the PA specifically requests Parties "*to pursue domestic **mitigation measures**, with the aim of achieving the objectives of [NDCs]*".

Consequently, the methodology developed by the consultants focusses on the assessment of policy instruments/mitigation measures. Generic targets and broad strategic documents are excluded, as they will not trigger direct GHG mitigation impacts or transformational change.

4.2. Principles underpinning the methodology

When developing the methodology, one needs to consider international requirements and practical aspects.

According to Art. 4.13 of the Paris Agreement, "*in accounting for anthropogenic emissions and removals corresponding to their nationally determined contributions, Parties shall promote environmental integrity, transparency, accuracy, completeness, comparability and consistency, and ensure the avoidance of double counting*". Those principles refer directly to NDCs, and therefore should also be considered for the assessment of policy instruments/mitigation measures.

With regard to environmental integrity, the methodology needs to ensure that all relevant aspects of a policy instrument are properly considered. That means that the "impact area" of a policy instrument – one could also call it "policy boundary" – is defined correctly, both in geographical terms as well as in terms of impacted GHGs. The methodology also needs to cover spill-over effects. For example, if a policy instrument leads to a reduction of GHG emissions in *region A* but to an increase in *region B* in the same country, then both effects need to be covered. Similarly, if a policy instruments leads to a reduction of CH_4-emissions but to an increase of CO_2 emissions, one needs to account for both.

Transparency can be ensured through a proper description of procedures related to data gathering, analysis, calculations and reporting. In essence, the checklists developed as part of this project are an

important cornerstone for demonstrating transparency. This also applies to the criteria of comparability and consistency: one should use the same approaches over time to ensure that results are not altered due to methodological variations.

Accuracy, robustness and completeness of data cannot be ensured through a methodology. Instead, a country needs to implement rules and processes that support these criteria. The methodology, however, needs to ensure that all relevant areas influence by a given policy instrument, are considered completely (also see discussion on environmental integrity above).

Besides these external requirements, the methodology also needs to reflect practical aspects. It should be comprehensive but yet easy to handle, and it also should give flexibility to consider specific features of a given policy instrument. The more data one needs to monitor, the more work-intensive reporting and policy assessment will become. At the same time, an assessment of policy impacts is not possible if relevant data is missing or of insufficient quality. Hence, in practical terms, one needs to find practical compromises.

For those reasons, the proposed methodology combines standardised elements with policy instrument-specific elements.

The proposed timeframe for the assessment is the period 2020-2030, to ensure alignment with the first NDC of Rwanda, which defines the mitigation targets up to 2030. The proposed methodology will thus contribute to tracking the progress towards the achievement of the national targets.

This study builds up on the ICAT series of guidance for assessing the GHG and transformational impacts of policies and actions (ICAT, 2018a), (ICAT, 2018b), (ICAT, 2018c).

1.1. Key components of the methodology

1.1.1. Introduction to sectoral checklists

In order to establish a well-organised, easy-to-oversee methodological framework to assess the impacts of policy instruments implemented by Rwanda, we have developed a set of checklists – with one separate checklist for each of Rwanda's mitigation priority sectors (energy, transport, industry, waste and forestry).

These sectoral checklists aim to support the process of assessing the impacts of policies and actions in the context of climate policies in Rwanda. In particular, they help creating an overview of different policies for each relevant sector. For each policy instrument, they help summarising the following parameters:

- Status of policy (planned / already implemented)

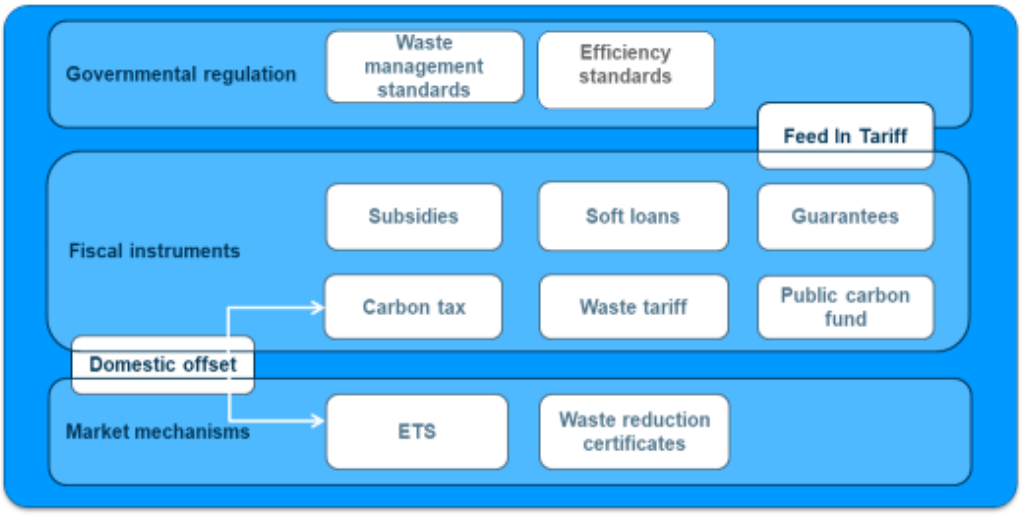
- Next steps in the implementation process
- Responsible institutions & relevant stakeholders
- Financial and institutional needs
- Barriers
- Expected GHG mitigation effects, and
- Expected co-benefits (e.g. sustainable development, transformational change)

For operational policies, the checklists will provide:

- An overview of measurement, reporting and verification (MRV) requirements: data needs and monitoring frequency
- Information regarding collaboration of institutions with regard to data exchange & analysis
- Data required to calculate baseline emissions/ER and international reporting

Given the diverse nature of policy instruments, the methodological approach is to create one individual checklist policy instrument. This considers the varying nature of policy instrument types (see Figure 1).

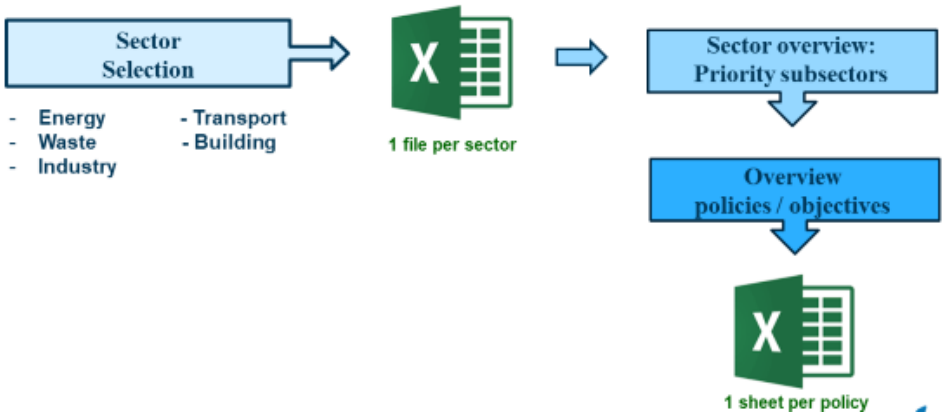
Figure 1: Types of policy instruments relevant for the methodology



1.1.2. Structure of sectoral checklists

With the objective to keep the approach easy-to-handle, we have developed one Excel-based checklist for each of Rwanda's priority sectors, see Figure 2. Each Excel-file will cover all policy instruments/mitigation measures relevant for its sector.

Figure 2: Sector selection for checklist-methodology



It must be noted that a comprehensive assessment of the full impacts of policies is a highly complex endeavour that requires a lot of work and in-depth policy assessment. For some policies, this goes beyond what a checklist can deliver[3]. Nevertheless, the checklists are valuable to assist:

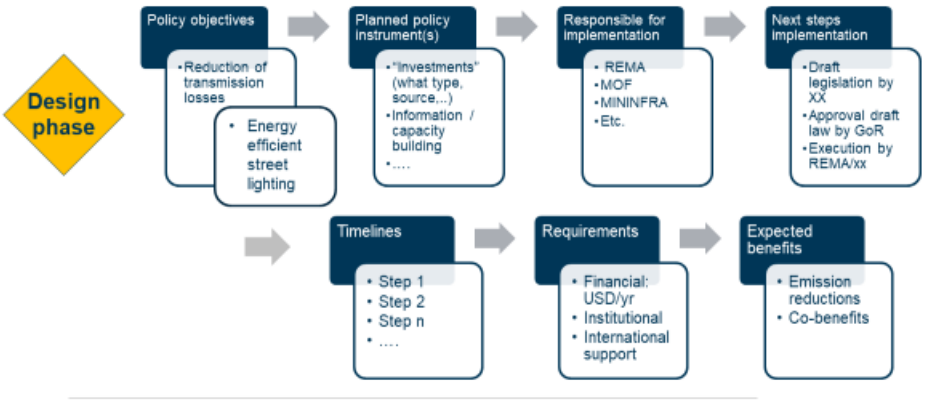
- The process of implementing policy instruments that are not yet operational
- For operational policies:
    - The data collection & management process to meet the international reporting requirements
    - Steps to identify and monitor key performance indicators (KPIs)

For applying the checklist for a given policy instrument, the user is first guided to a pre-check. This pre-check will help the user to determine the policy-readiness level, i.e. look at the question if the policy is already (fully) operational or still in a planning phase.

For policy instruments that are still in planning stage, the checklist will help to systematically collect valuable data that do not only provide an overview of the current status of the policy instrument and relevant stakeholders, but that also summarise the next step towards implementation. For details see Figure 3.

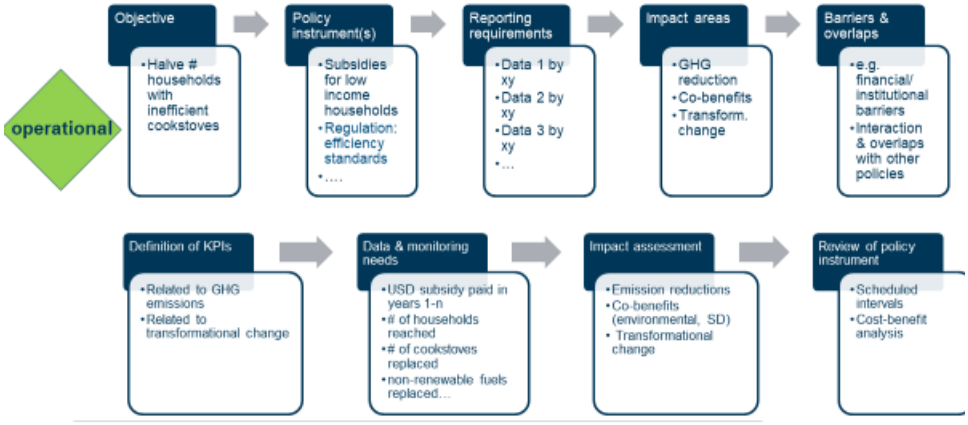
[3] Note that countries like Germany run sophisticated models for some of their policy instruments with the objective to appropriate reflect all relevant aspects and to exclude external effects such as weather conditions, changes in international fuel prices etc.

Figure 3: Checklist overview - planned policies



The checklist for operational policies starts with a comprehensive overview, defines key performance indicators, data and monitoring needs and provides room for the impact assessment – differentiated into GHG mitigation, co-benefits (such as related to sustainable development and other environmental benefits), and transformational change benefits. For details see Figure 4.

Figure 4: Checklist overview - ongoing policies



1.2. Applying the methodology

As mentioned above, there is one separate Excel-Sheet for each of Rwanda's priority sectors. Each Excel-Sheet has an overview sheet. Once the checklists for each policy instrument in the given sector have been filled and once the impacts of policy instruments have been determined, the overview sheets can provide a comprehensive overview of all measures taken and impacts achieved in this sector. Figure 5 exemplarily shows the summary sheet for the energy sector.

Figure 5: Summary sheet energy sector

Policies overview - Sector: Energy								
Name of policy	*Subsector 1*	*Subsector 2*	*Emission reduction potential (tCO2 eq)*	*Time period for estimation of reduction potential (20xx-20yy)*	*Operational (yes/no)*	*Implementation date (For operational policies)*	*Intended starting date (for planned policies)*	*End date*
Efficient cooking and biomass demand supply balance	Energy efficiency	Forestry	to be calculated	to be defined	yes (to be confirmed)	2018 (to be confirmed)	2018/19	2024
Increase transmission efficiency	Energy efficiency	Transmission and distribution						
Standards and labels	Energy efficiency	Energy efficiency						
Grid extensions	Renewable energy	Energy efficiency						
Energy access	Renewable energy	Energy efficiency						
Rural electrification	Renewable energy	Energy efficiency						
SE4all	Renewable energy	Energy efficiency						
Efficient street lighting	Energy efficiency							
Subsidies for IPPs	Renewable energy	Energy efficiency						
SREP	Energy access	Energy efficiency						
Minimum standards for solar Home systems								
Forest policy								
Biomass Energy strategy								
Energy Sector Strategic Plan								
Energy Efficiency Strategy								
Parameter # - *Add more rows if needed								

Each policy instrument gets its own sheet. Each sheet starts with general information on the policy instrument, it stage (planning, operational), responsibilities and *expected* impacts, see Figure 6.

Figure 6: General policy information

0. General information on the policy				
Item	*Description*	*Comments*	*Documentation/Source*	*Guidance*
Name of the policy				
Objectives				
Policy instrument(s)				Please be more specific on how the policy instrument works (instruction to Rwanda team)
Detailed description of the policy/policy instrument				
GHG targeted				
Expected impacts of the policy on GHG emissions/emission reductions				
Responsible institution for the legal aspects/legislation related to the policy				
Responsible institution for the budget allocation and management				
Responsible institution for the policy implementation and monitoring				
Do supporting programmes /activities exist?				
Policy level (national, regional, local)				
Targeted entities/beneficiaries				
Other involved stakeholders				
Reporting requirements under UNFCCC				

The applicability check is applied, following the indication provided in the specific policy sheet, as shown in Figure 7.

Figure 7: Applicability check table

1. Applicability check				
Item	*Description*	*Comments*	*Documentation/Source*	*Guidance*
Is the policy implemented? Yes/no. If yes please describe the activities implemented so far				
Implementation date (if applicable)				
Are the financial requirements for the policy implementation quantified? If yes, please provide the volume (breakdown by source - domestic/international and public/private). Please clarify which source is already secured				
If activities have been already implemented, is their performance monitored? If yes, please provide information (i.e. responsible entity, initial results, monitoring system, etc.)				
Is the planned policy instrument(s) already functioning? If not, please describe the elements and barriers that are still preventing its implementation				
If the policy is not implemented yet, please list further steps required for its entry into force and who is responsible for what (step-by-step analysis)				e.g. approval of specific legislation needed, allocation of resources from national budget to the entity implementing the policy; enforcement of an existing law, etc.
If the policy is not implemented yet, please provide the tentative date for the implementation of the policy				
If the policy is not implemented yet, please list the financial requirements and intended sources (domestic funding, international support, etc)				
If the policy is not implemented yet, please list the institutional and other requirements				

The next section of the checklist provides an overview of the impact areas of the policy instrument, both in terms of GHG-reduction and in terms of co-benefits and transformational change, see Figure 8.

Figure 8: Impact areas of the policy instrument under consideration

2. Definition of impact areas of the policy instrument				
Relevant GHG impacts	***Likelihood (possible, likely, very likely)***	***Relative magnitude (minor, moderate, major)***	***Included/excluded***	***Explanation***
Reduction of emission from cooking due to higher efficiency	very likely	major	included	Major impact of the policy
Reduction of emissions due to the introduction of alternative fuels	possible	major	included	Actual impact of the alternative fuels on emissions to be assessed
Parameter # - *Add more rows if needed				
Relevant co-benefits	***Likelihood (possible, likely, very likely)***	***Relative magnitude (minor, moderate, major)***	***Included/excluded***	***Explanation***
Health benefits due to reduced indoor smoke pollution	likely	major	included	
Recovery of national tree coverage / avoidance of forest degradation for fuel wood collection	likely	moderate - major	included	
Contributions to transformational change			included	Consider scaling-up/replication potential; contribution to a faster and/or a significant shift from one state to another; catalytic effects.
Parameter # - *Add more rows if needed				

Section 3 of the sheet then provides an overview of the barriers that either prevent implementation or proper functioning of the policy instrument. Knowledge about such barriers is highly relevant for policy makers in their attempts to further push climate policies in Rwanda. It is therefore a good investment to spend some time for a proper evaluation and summary of barriers. For details see Figure 9.

Figure 9: Barrier assessment of the policy instrument under consideration

3. Barrier assessment: how can the policy instrument help to overcome barriers?					
Barrier type (technical, economic and financial, market, institutional/regulatory, capacity/awareness, infrastructure, public	*Description of the barrier*	*Severity (minor, medium, major)*	*Likelihood of addressing the barrier (very likely, likely, possible, not likely, very unlikely*	*Effect of the barrier on the implementation potential (short, medium, long term)*	*Comments/additional information*
Financial	Low income households do not have sufficient resources to switch to more efficient cookstoves	Major	Very likely		The subsidy for the HH is expected to reduce the overall cost and allow also low-income HH to switch to more efficient stoves.
Public acceptance	Low acceptance by HH, reluctance to switch to a different fuel given the current availability of free/cheap firewood	Major	Likely		
Barrier #3 - to be to be filled by the user					
Barrier #4 - to be to be filled by the user					
Barrier #5 - to be to be filled by the user					
Barrier # - *Add more rows if needed					

The next section of the checklist explores the implementation potential of the given policy instrument, see Figure 10. Estimating the maximum potential of a policy instrument with regard to later assessment. E.g. if one finds that the maximum potential of a policy promoting highly efficient cookstoves is 2 million households but actually the policy only reaches 500,000 households, then the assessment can cover both the potential and the actual performance. Comparing those two parameters can provide important policy recommendation.

Figure 10: Implementation potential of a given policy instrument

4. Implementation potential of the selected policy				
Item	*Description*	*Comments, additional information*	*Reference/source*	*Guidance*
Estimation of the maximum potential of the policy, considering technical potential and financial/economic potential	The policy aims at reducing the number of people relying on fuelwood for cooking needs to 42% by 2024 and to reach over 2,240,000 HH using alternative fuels			If a target/cap is set by the policy, then it is the maximum potential. Examples of technical or economic limitations are: . E.g. production capacity of efficient stoves is not sufficient to reach the policy annual target (technical). Distribution and maintenance costs of efficient cookstoves are too high for a certain remote area, and hence dissemination will be more limited than planned (economic).
Design elements that affect policy impacts				For instance if a subsidy is given only to a specific alternative fuel (e.g. only to LPG)

Similarly, information on the interaction with other policy instruments (see Figure 10) can be helpful to understand and assess reinforcing and contradictory effects of different instruments.

Figure 11: Interaction of policy instruments

5. Interaction of the selected policy with existing ones				
Relevant policy	*Type of interaction*	*Impact on the policy under assessment*	*Comments, additional information*	*Guidance*
SE4all strategy	Overlapping, as they goals are similar, inter alia: dissemination of efficient stoves, promotion of alternative fuels, close the gap between supply and demand of biomass	Reinforcing		This information can help understand in more details the effectiveness of one policy and the interaction with other policies targeting similar objectives
Standards and labelling	This policy could cover also efficient stoves, i.e. setting ambitious MEPs	Reinforcing		
Other relevant policy # - *Add more rows if needed				

The core of the assessment of any policy is the proper and structured monitoring of all relevant data. Each policy instrument will have individual data needs, depending on its actual design and effects. It is critical for high-quality results that at the beginning of the assessment process, sufficient time and focus is put into defining the right parameters for monitoring and analysis. Figure 12 summarises key data that are required for policies promoting the use of highly efficient cook-stoves. Note that Figure 12 only provides part of the data required. For a full overview, please refer to the final checklist provided by the consultants.

Figure 12: List of monitoring parameters (example of cookstoves policies)

6. List of monitoring parameters (parameters in green are relevant for GHG emissions impacts, parameters in grey are relevant for the assessment of the						
Parameter	Unit	Responsibilities for data	Actually monitored	Monitoring frequency and	Relevant for baseline	Relevant for
Total cumulated subsidy volume	USD/year	MININFRA	yes	Annually	no	yes
HH using firewood (as % of the total)	%	REG	yes	At least annually	yes	yes
Share of alternative fuels (as % of the total) by fuel	%	REG	no	Annually, through surveys	yes	yes
HH using alternative fuels, by type	Number	REG	yes	Annually, through surveys	yes	yes
# of inefficient stoves replaced by an efficient one	Number	REG	yes	At least annually	yes	yes
Volume of alternative fuels introduced in the market (by type)	Litres, tons, m3, depending on the fuel	REG	yes	Annually, through surveys	yes	yes
Efficiency of the new stoves	%	RSB/REG	yes	At program start, to certify the efficiency stoves. Periodically over the duration of the program	yes	no
Non-renewable biomass replaced (or fossil fuel)	Tonnes/year	REG	yes	Annually, through survey	yes	yes
Number of stove in operation every year	Number/year	REG	yes	Once a year, through surveys	yes	yes
Carbon content of alternative fuels, by type (i.e. emission per unit of fuel)	tCO2/tonne (or litre, m3, depending on the alternative fuel)	REG/RSB	yes	Once every two years, through sampling	yes	yes
Volume of subsidy provided per year	USD/year	MININFRA	yes	At least annually	no	yes
Number of demonstration/outreach activities to showcase benefits of efficient cookstoves and alternative fuels (and combination of both) to the HH	Number/year	MININFRA	yes	Annually	no	
Number of coordination meetings between relevant institutions	Number/year	MININFRA	yes	Annually	no	yes
Number of joint activities/official documents production by relevant institutions	Number/year	MININFRA	yes	Annually	no	yes
Tree cover in the country	ha	To be identified	yes	Annually	no	yes
Reduced pressure on forests (non-renewable biomass replaced)	Tons/year	To be identified	yes	Annually, through survey	yes	yes
# of households suffering from cooking-related indoor smoke pollution	number	To be identified	yes	annually	no	yes
Share of population suffering from repeating respiratory diseases, by gender	%	MoH (TBC)	no	Information/data from relevant institution or organizations (e.g. MoH)	no	yes

Section 7 Monitoring of relevant parameters then provides room for inserting monitored and calculated data for each year. Section 8 then summarises the KPIs both in terms of GHG reductions and related to transformational change, see Figure 13.

Figure 13: Overview of Key Performance Indicators (KPIs)

8.1 Key performance indicators (KPI) related to GHG emissions/emission reductions					
Parameter	*Unit*	*Latest available value*	*2020*	*2021*	*2022*
Number of HH reached and using efficient stoves	Number				
Non-renewable biomass replaced	t/year				
Total cumulated subsidy volume	USD				
Emission reductions (efficient stoves)	tCO2/year				
Emission reductions (alternative fuels)	tCO2/year				
KPI # - Add more rows if needed					
8.2 Key performance indicators (KPI) related to transformational change					
Volume of private finance leveraged towards clean cooking and balancing demand	USD/year				
Abatement cost per t/CO2	USD/tCO2				
Number of joint activities/official documents production by relevant institutions					

Sections 9 and 10 of the checklist provide a structured approach for making baseline and emission reduction calculations, and for assessing transformational change. This information will then feed into the KPI overview summarised in Figure 13 above.

To conclude, the Excel-sheets provide comprehensive and yet easy-to-overview checklist that can facilitate a well-structured, in-depth assessment of the climate policy instruments introduced by Rwanda. The information collected in the checklists can nicely fit into national reports due under the UNFCCC framework – such as BTR, NIR.

2. Institutional arrangements

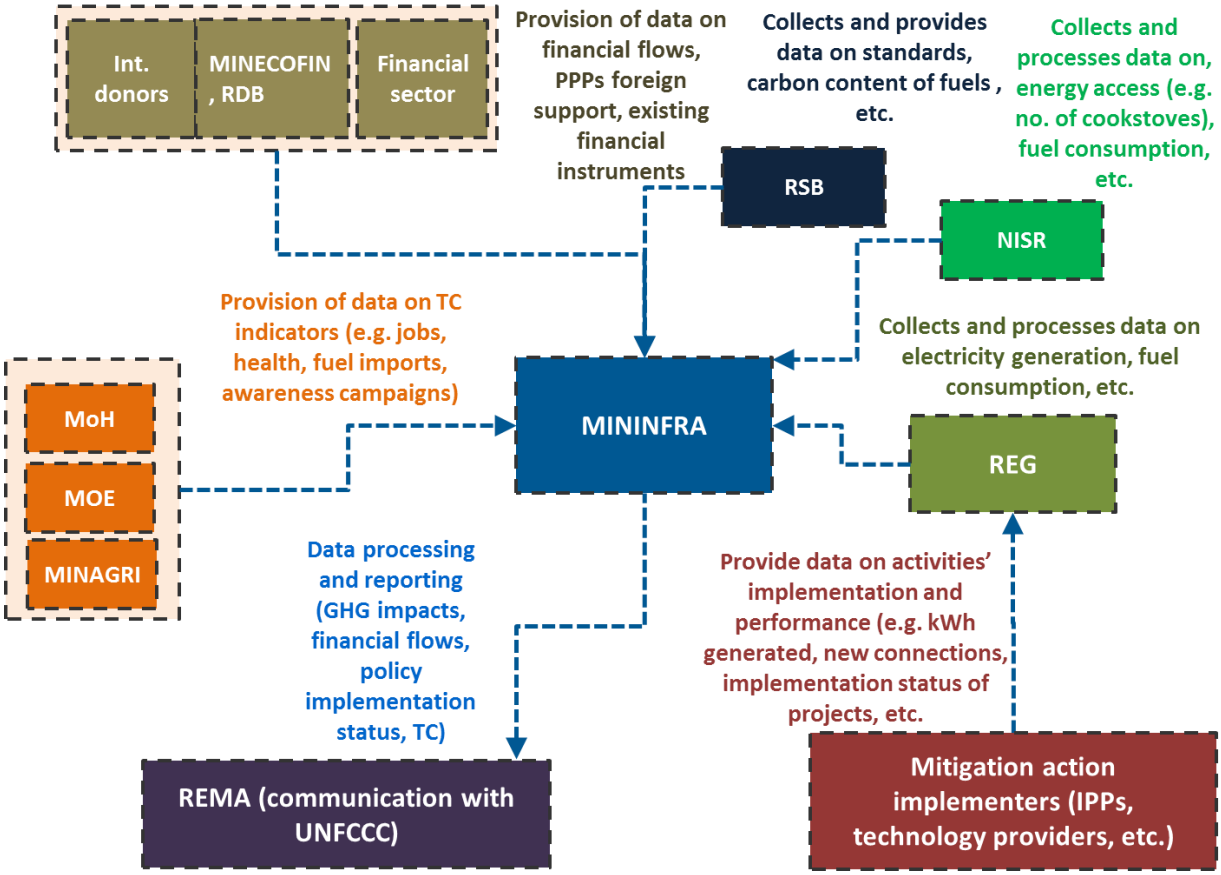
Definition of the institutional arrangements for the assessment of the GHG impacts and transformational potential of Rwandan policies is very important to define clear roles and responsibilities for the entity involved in each sector. Effective monitoring and supervision of the policy implementation especially regarding the instruments, actual impacts and barriers encountered will allow policy makers to understand the performance of the assessed policy, inform the identification of corrective actions when needed, and will enhance institutional capacity in policy design. Each sector will require a specific set-up, however a national layer is to be considered; this will allow the Government of Rwanda to gather full information on the impacts of the implemented policies to track contribution to the NDC targets and communicate these transparently to the international community. The following section will present the main actors relevant for the implementation of the proposed methodology for each of the selected sectors to ensure proper data collection and processing.

REMA is in charge of the communication with the UNFCCC, hence for each sector, the main entity in charge of data gathering and processing for the assessment of GHG impacts and transformational change impacts will communicate these to REMA so that the reporting obligations under can be fulfilled. For the energy, waste and transport sectors, MININFRA will play a pivotal role in the policy assessment process, while MINALOC and MINICOM are identified as the key entities in the building and industry sectors, respectively.

2.1. Energy sector

The following figure presents the key stakeholders in the energy sector relevant for the implementation of the proposed methodologies and defines also their roles and responsibilities. The key entity is the MININFRA: it is tasked with the collection of data from different stakeholders and with the processing of the received information to enable the policy assessment.

Figure 14: Institutional arrangements, energy sector

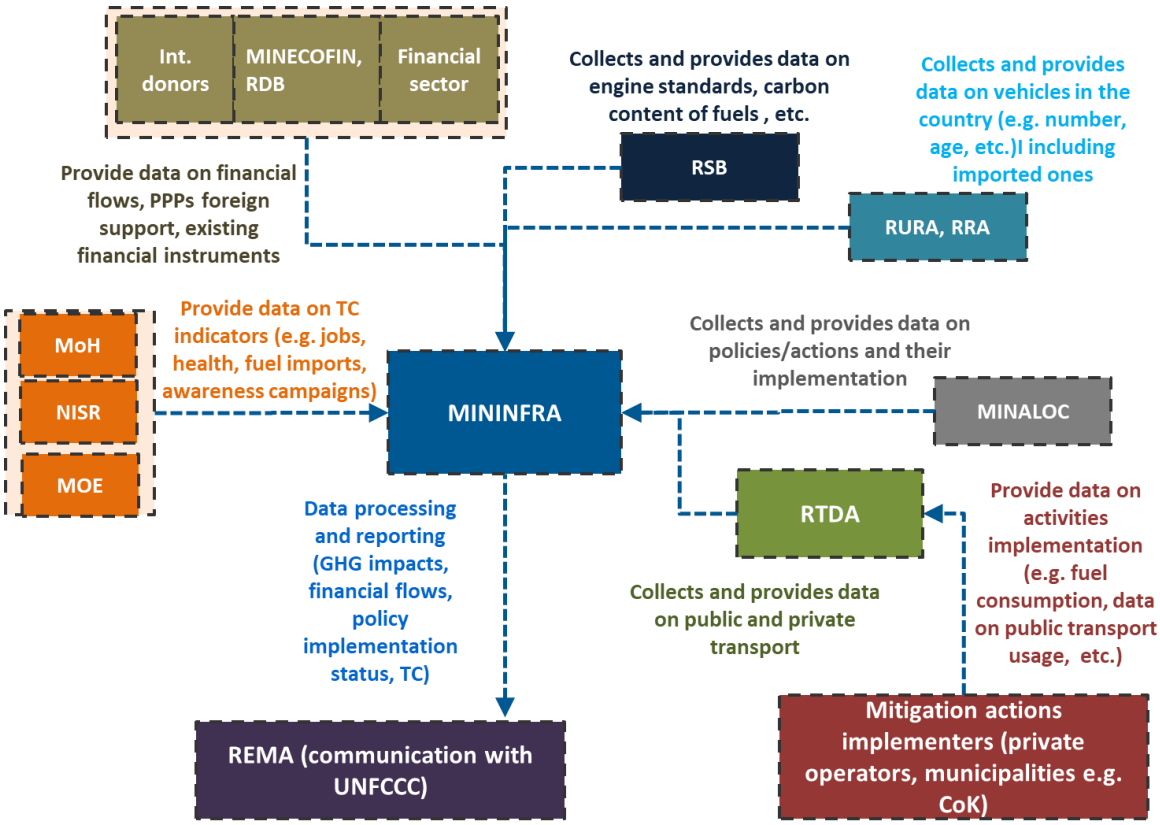


Source: Author's elaboration

2.2. Transport sector

In the case of the transport sector, the key institution is MININFRA, tasked with the collection of data from different entities and its processing for the assessment of the GHG and transformational change impacts of selected policies. The proposed institutional arrangements are presented in Figure 15.

Figure 15: Institutional arrangements, transport sector

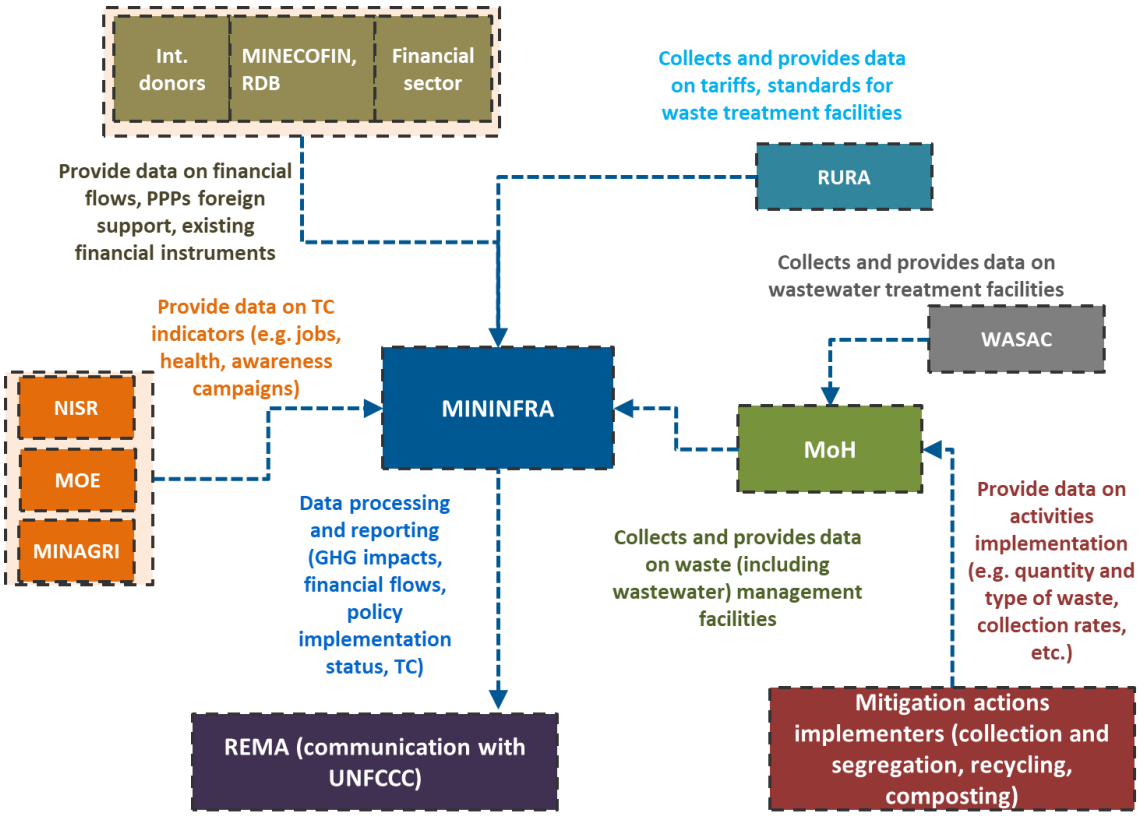


Source: Author's elaboration

2.3. Waste sector

MININFRA is the institution in charge of the collection and processing of data from different sources to perform the assessment of the mitigation policies in the waste sector. Other relevant actors are presented in Figure 16.

Figure 16: Institutional arrangements, waste sector

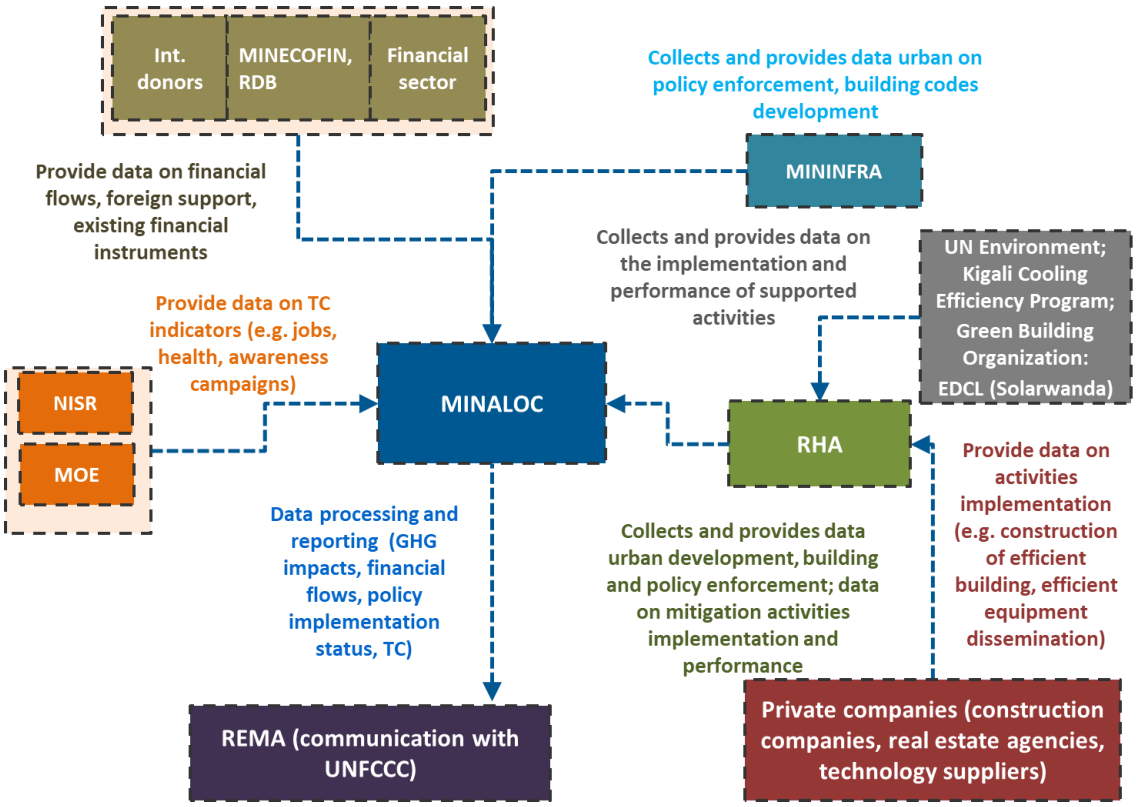


Source: Author's elaboration

2.4. Building sector

MININFRA is the institution in charge of the collection and processing of data from different sources to perform the assessment of the mitigation policies in the building sector. Other relevant actors are presented in Figure 17.

Figure 17: Institutional arrangements, building sector

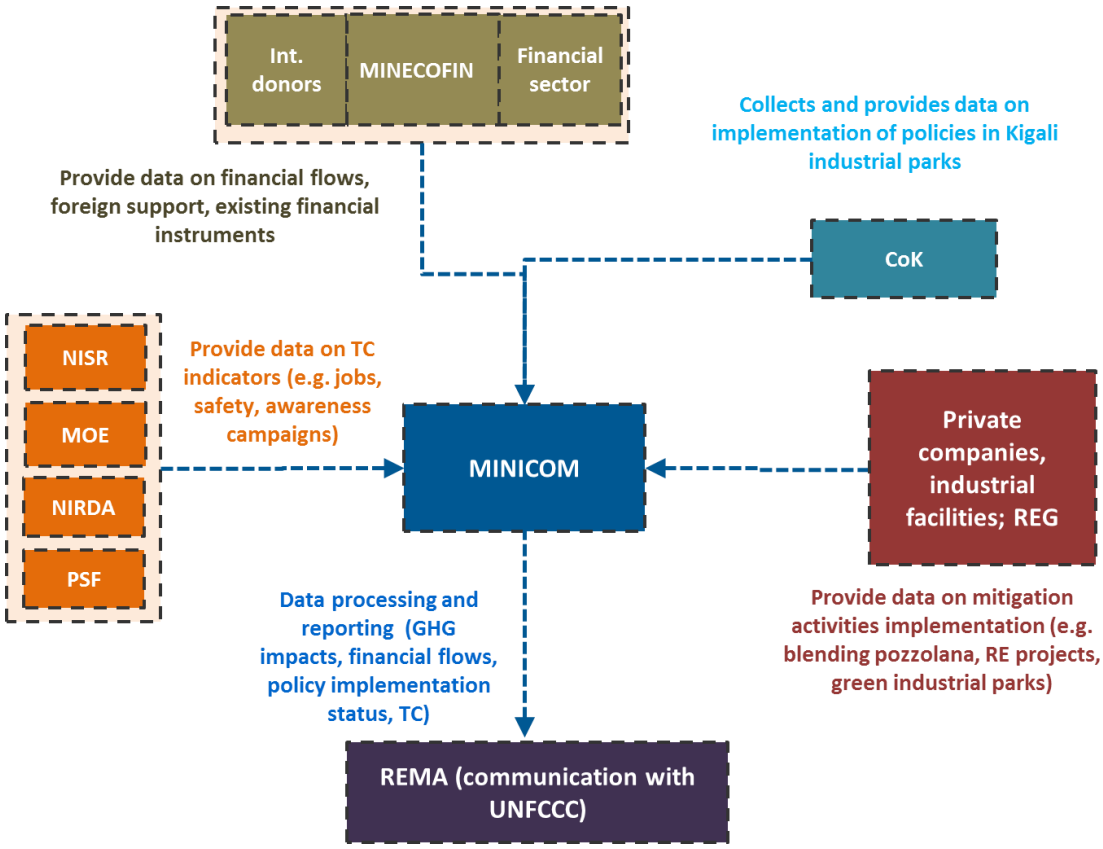


Source: Author's elaboration

2.5. Industry sector

MINICOM is the key stakeholder for data gathering and processing for performing the policy assessment. Other key stakeholders for the data collection are presented in Figure 17.

Figure 18: Institutional arrangements, industry sector



Source: Author's elaboration

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