



# **Initiative for Climate Action Transparency - ICAT -**

**Mozambican National Enhanced Transparency Framework** 





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Deliverable #6

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# **Abbreviations and Acronyms**

AC: Adaptation Communication

**BTR:** Biennial Transparency Report

**DMC:** National Directorate of Climate Change "Direcção Nacional de Mudancas Climáticas"

**ENMAMC:** National Climate Change Mitigation and Adaptation Strategy "Estratégia Nacional de Mitigação e Adaptação as Mudanças Climáticas"

**GHG:** Greenhouse gas

**GIIMC:** Inter-institutional Group on Climate Change "Grupo Inter-institutional de Mudanças Climáticas"

**ICAT:** Initiative for Climate Action Transparency

ITMOs: Internationally Transferred Mitigation Outcomes;

INAM: National Institute of Meteorology "Instituto Nacional de Meteorologia"

**INDC:** Intended Nationally Determined Contributions

**INGC:** National Institute for Disaster Management "Instituto Nacional de Gestão de Calamidades"

**MADER:** Ministry of Agriculture and Rural Development "Ministério da Agricultura e Desenvolvimento Rural"

**MCTESTP:** Ministry of Science Technology Higher Education and Professional Technical Education "Ministério de Ciencia e Tecnologia, Ensino Superior e Técnico Profissional"

MGCAS: Ministry of Gender, Children and Social Action "Ministério do Género, Criança e Acção Social"

MIC: Ministry of Industry and Commerce "Ministério da Indústria e Comércio"

**MIMAIP:** Ministry of the Sea Interior Waters and Fisheries "Ministério do Mar Águas Interiores e Pesca"

**MIREME:** Ministry of Mineral Resources and Energy "Ministério dos Recursos Minerais e Energia"

MISAU: Ministry of Health " Minstério da Saúde"

**MOPHRH:** Ministry of Public Works, Housing and Water Resources "Ministério das Obras Públicas e Habitação e Recursos Hídricos"

MTA: Ministry of Land and Environment "Ministério da Terra e Ambiente"





**MTC:** Ministry of Transport and Communication "Ministério de Transportes e Comunicações"

**NC:** National Communication;

NDC: National Determined Contribution

**NIR:** Nation Inventory Report

NGO: Non-Governmental Organization;

PA: Paris Agreement

**RI-ENMAMC:** Report of Implementation of National Climate Change Mitigation and Adaptation Strategy "Relatório de Implementação da Estratégia Nacional de Mitigação e Adaptação as Mudanças Climáticas"

**RI-CCAMA:** Report of Implementation of Climate Changes Adaptation and Mitigation Actions

**RFs:** Reporting Formats

SNMAMC: National System for Monitoring and Assessing Climate Change "Sistema

Nacional de Monitoria e Avaliação das Mudanças Climáticas"

**UNFCCC:** United Nations Framework Convention on Climate Change





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# 1. Introduction

Parties to the UNFCCC meeting in Warsaw in November 2013 agreed to each prepare an official statement of Greenhouse gas (GHG) emission reductions that the party was willing to undertake in the period up to 2030 (Bakhtiari, Hinostroza, & Puig, 2018). These statements, which were referred to as Intended Nationally Determined Contributions (INDCs), would be made available ahead of their 2015 annual meeting.

The 2015 conference of the parties to the UNFCCC concluded with a declaration, dubbed "the Paris Agreement" (Bakhtiari, Hinostroza, & Puig, 2018). The Agreement includes a global goal for climate change mitigation (Article 2.1), namely "holding the increase in the global average temperature to well below 2°C above preindustrial levels" (Bakhtiari, Hinostroza, & Puig, 2018). In addition, the Agreement sets out a long-term, global goal on climate change adaptation (Article 7.1), namely "enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate adaptation response in the context of the temperature goal" (Bakhtiari, Hinostroza, & Puig, 2018).

With the entry into force of the Paris Agreement, the INDCs of all those parties that have signed and ratified the Agreement became those parties' official contributions to implementing the Agreement. To signal this change in status, the INDCs have since been referred to as Nationally Determined Contributions (NDCs). The implementation periods of the various NDCs vary: some parties have submitted NDCs that span a five-year period (2021 to 2025), whereas in other cases the NDCs span a ten-year period (2021 to 2030) (Bakhtiari, Hinostroza, & Puig, 2018).

Mozambique is a country particularly vulnerable to the impacts of climate change and has been taking action to increase its resilience and to take advantage of mitigation opportunities and to pursue low-carbon development. Mozambique is part of the United Nations Framework Convention on Climate Change (UNFCCC) and has already ratified the Paris Agreement, with its INDC, submitted in October 2015, having passed to NDC (CAOS, 2018).

Additionally, Mozambique developed the National Climate Change Strategy and National "Estratégia Nacional de Adaptação e Mitigação de Mudanças Climáticas" (ENAMMC) National System for Monitoring and Assessing the of Climate Change "Sistema Nacional de Monitoria e Avaliação das Mudanças Climáticas" (SNMAMC), documents published in 2012 and 2014, respectively. These two guiding documents were developed to ensure that the national and international goals on climate changeare met.

In compliance with paragraph 24 of decision 1/CP.21, Mozambique updated its NDC, Mozambique's Nationally Determined Contribution 2020 - 2025, and formulated the respective Operational Plan that specifies actions required to achieve the NDC target, which





was approved by the Council of Ministers in November 2018. The NDC Operational Plan of Mozambique includes information on past, present and future mitigation and adaptation actions, estimates of reduction of emissions, and, however limited, it proposes some elements for tracking the implementation of future actions, such as indicators and targets (CAOS, 2018).

The UNFCCC Decision 18/CMA.1 defines the "Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement" (MPG) (UNFCCC, 2019), including the information required to track the implementation and achievement of NDCs, and report this to the UNFCCC. Even though the NDC Operational Plan for Mozambique was developed, the limitations of the indicators and targets defined, and lack of information on the values of indicators in base year (2020).

Nevertheless, the efforts on implementing and reporting the implementation of climate change mitigation and adaptation actions, the institutional arrangement for MRV of Mozambique is not well stablished and the climate change reports are prepared by hired consultants and the data for reporting is not collected systematically. This limits improvements in data collection system and reporting.

Institutional arrangements for the national MRV system on climate change were developed recently to allow systematic data collection and reporting that is expected to be implemented soon. However, there is a need of having an Enhanced Transparency Framework compared to the set up and system previously defined, to ensure that the reports produced meet the requirements of the Paris Agreement, as defined in the Decision 18/CMA.1.

Developing countries in Africa have been showing increasing interest in establishing robust institutional arrangements and systems of transparency for climate change actions in the context of the implementation of the Paris Agreement. Kenya is in a well-developed stage and already has an iTool for the proposed MRV system and Rwanda presented on the second half of 2020 the roadmap for the establishment of a robust institutional arrangements for the MRV system (Nyokabi, 2021; Pearl, 2021).

The Ministry of Land and Environment, suggested to develop an ETF that allow reporting internationally but also nationally. Thus, the Enhanced Transparency Framework is developed to produce systematically the following final reports: Biennial Transparency Report (BTR), National Communication (NC) and Report of Implementation of National Adaptation and Mitigation of Climate Change "Relatório de Implementação da Estratégia Nacional de Mitigação e Adaptação às Mudanças Climáticas" (RI-ENAMMC), including as intermediate reports, the National Inventory Report (NIR), Report of Implementation of National Determined Contribution (RI-NDC) and Adaptation Communication (AC).





# 1.1 Objectives

The objective of the ICAT activities crystallizing in this deliverable are related to the development of an Enhanced Transparency Framework for Mozambique, which encompass a Climate Change Adaptation and Mitigation Actions Tracking Framework, particularly for the NDC, including the institutional arrangement for implementation and tracking the achievement of the NDC, the procedures for data collection from various stakeholders, and the procedures for monitoring the progress in implementation of NDC and its achievement. These objectives are considered in relation to the other activities and deliverables provided under the ICAT activities.





#### 2. Methods

The main activities conducted to define an Enhanced Transparency Framework for Mozambique are the review of findings from earlier ICAT activities, review of relevant literature and climate change documents<sup>1</sup>, design of appropriate alternatives for the creation of sustainable institutional arrangements for transparency in Mozambique, and consultations with stakeholders, including three workshops for consultation, selection and validation of the final design of institutional arrangements and NDC tracking elements.

The stakeholders' consultation was done mainly through two workshops. The first workshop was conducted in 8 and 9 of October with about 50 participants. The first day, and the morning of the second day of the workshop was dedicated to revision and validation of NDC tracking elements, but the afternoon was used to introduce the stakeholders to the MRV System and collecting ideas to propose two options of institutional arrangements. A second workshop conducted on 21st and 22nd of December was dedicated to present and validate the objectives of institutional arrangements for MRV, present two options of institutional arrangement and select the most appropriate, evaluate the data flow mechanisms and implementation plan. A centralized and decentralized approach proposed in this document was presented to the participants and they agreed that the centralized approach should be implemented first and slowly move to decentralized approach. However, these two workshops were conducted for reviewing the NDC Tracking Elements Matrix and the Institutional arrangement for MRV System, they were important to get the participants expectations for the development of the Enhanced Transparency framework.

The third workshop was conducted on July 15, 2021 to present, discuss and for preliminary validation of the proposed Enhanced Transparency Framework. It was predicted to have four different parts for this workshop, that included: (1) presentation of the proposed Enhanced Transparency Framework, (2) presentation of proposed adaptation and mitigation climate changes actions reporting templets, (3) group work to analyse the proposed Enhanced Transparency Framework and reporting templates, and (4) plenary discussion of the proposed documents.

<sup>&</sup>lt;sup>1</sup> Documents and literature include amongst other: NDC Operational Plan 2020-2025; National Climate Change Mitigation and Adaptation Strategy; National System for Monitoring and Assessing Climate Changes; Paris Agreement; Technical handbook for developing country Parties on Preparing for implementation of the enhanced transparency framework under the Paris Agreement (UNFCCC, 2020); Decision 18/CMA.1 defines the "Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement"; Decision 17/CP.8 - Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention and Unfolding the reporting requirements for Developing Countries under the Paris Agreement's Enhanced Transparency Framework (Maso & Canu, 2019).





In addition to this activities, physical meetings were conducted regularly with professional from the DMC at the MTA and the ICAT-Project Coordinator in Mozambique to discuss administrative and technical aspects of the project. Virtual meetings were also conducted with professionals from DMC, the Project Coordinator and the facilitators of the UNEP DTU Partnership in Denmark.

# 3. Review of tracking elements in the NDC Operational of Mozambique

The Mozambican NDC Operational Plan presents Adaptation and Mitigation actions in two chapters with titles: (1) Contribution for Adaptation and Management of Climate Risk "Contribuição para a Adaptação e Gestão de Riscos Climáticos" and (2) Contribution for Mitigation and Low Carbon Development "Contribuição para a Mitigação e Desenvolvimento de Baixo Carbono". Each chapter presents a description of past, present and future actions. Future actions, are actions planned for the period 2020-2025.

Future adaptation actions are classified in eight categories: (1) Communication, education, training, raising awareness and coordination; (2) Climate risk reduction (including early warning system) (3) Water resources; (4) Agriculture and forestry, fisheries, food security and nutrition; (5) Social protection; (6) Health; (7) Biodiversity; and (8) Infrastructure, urban areas, other settlements, and Tourist and Coastal Areas. In the executive summary of the operational plan, the same number of categories are presented, however in some cases the names are similar but not same: the name of category, Agriculture and forestry, fisheries, food security and nutrition was shortened to Agriculture and forestry, fisheries and Climate risk reduction was presented as Early warning system.

The Chapter Contribution for Mitigation and Low Carbon Development presents a summary of GHG emissions trends, and the expected cumulative reduction of emissions due to the implementation of the NDC mitigation actions, estimated to be 31.19 MtCO<sub>2</sub>eq for the period 2020-2025. Four categories are presented as contributing to the reduction of emissions: (1) Waste management, (2) Forestry and land use, (3) Energy production and (4) Energy use. The category that is contributing most of the reduction of GHG emission is the Forestry and land-use, with about 30.0 MtCO<sub>2</sub>eq. The other categories combined are contributing with 1.9 MtCO<sub>2</sub>eq, with Waste management contributing with 0.6 MtCO<sub>2</sub>eq, Electricity production with 1.2 MtCO<sub>2</sub>eq and Energy use with 0.1 MtCO<sub>2</sub>eq.

The categories used to define the future actions are not the same as the ones used to estimate the reduction of GHG emissions. Mitigation actions are presented in two categories, (1) Energy and transport; and (2) Waste. In the executive summary the actions from category Energy and transport are split in two categories (1) Energy and (2) Transport.

The categories used to estimate the reduction of GHG emissions are not the same as the ones used to present future mitigation actions in the NDC Operational Plan. Additionally, the contribution of each mitigation action for reduction of GHG emissions are not presented in the description sheet of the actions Appendixes V, VI and VIII.





From the description in the NDC Operational Plan, it is possible to link the categories used to estimate the reduction of emissions to the categories used to classify the future activities. The expected contribution for reduction of GHG emissions from Forestry and land use, Energy production and Energy use (31.3 MtCO<sub>2</sub>eq) are due to future actions of the Energy and Transport categories, while the expected contribution for reduction of GHG emissions from Waste management (0.6 MtCO<sub>2</sub>eq) are due to future actions allocated to the Waste category. With the description available in the NDC Operational Plan it is difficult to split the contribution of Energy and Transport categories. This makes also difficult to define the targets for each action in the matrix of elements for tracking the NDC of Mozambique presented in the Appendix 2.

Given the fact described in the paragraph above, GHG emissions reduction targets in the matrix (Appendix 2), are not specified and they are described as "mitigation overall contribution". A detailed study on reduction of GHG emissions due to implementation of the mitigation actions presented in the Mozambican NDC is required for allowing more precise estimates of the GHG emissions that can be avoided and defining more accurate targets.

Some indicators for monitoring the actions in the NDC Operational Plan are proposed in the actions description sheets in the appendixes of the same document. However, these indicators have several problems, e.g. the indicators and targets are not always aligned and thus difficult to track, and in some cases the indicators were not defined at all. Other issues were also identified, such as, actions that are listed in the NDC Operational Plan without a description sheets in the appendixes, and vice versa, description sheets of NDC actions and projects in the appendixes that do not fit into actions listed in the NDC Operational Plan. Specific issues found in the NDC Operational Plan that can compromise the tracking of the NDC actions are listed in the sub-sections 3.1 and 3.2.

#### 3.1 Review of adaptation actions

As described above, the main issues identified were, (1) indicators not defined, (2) indicators not appropriate to track the actions, (3) indicators not aligned with targets proposed. To overcome these issues, new indicators and/or targets were proposed for the actions listed in the Mozambican NDC. A new indicator was included to all actions, aiming to track the financial resources allocated to implement the activities. This new indicator was included to allow comparison of the results obtained in different actions to the financial resources allocated. This indicator, although not a mandatory MPG requirement, is of high importance to track at the national level, in order to assess the effectiveness of allocated finance against GHG and non-GHG indicators related to the NDC actions.

# 3.1.1 Water Resources

Some actions listed in the Water resources category, in the NDC Operational Plan do not match the actions and/or projects in the description sheets in its appendix and summary. Other issues of this category are related to alignment between the indicators and targets, as described above. The specific issues identified for the Water resources category are listed below:





- In the description sheet, in the appendix of the NDC Operational Plan, it is stated that, the action "Increase in storage capacity per capita at all levels (domestic, community, urban, national) to guarantee water supply to the population and economic sectors 4.6.1.2.2.3" was planned for the period 2018-2020. It is not known if this action has been extended to 2020-2025, the implementation period of the Mozambican NDC.
- For the actions" Conservation of rainwater in excavated and underground reservoirs, mainly in the South area 4.6.1.2.4", and "Construction of agro-hydraulic infrastructures in the main surface courses and small dams that are easy to maintain for the purposes of irrigation and drinking of animals 4.6.1.2.6" the indicators proposed and targets are not aligned.
- The action "Promotion of low water consumption systems and reducing wastage in the urban water distribution network 4.6.1.2.1.8" is listed in the executive summary of the NDC Operational Plan, but it does not have description sheet in the appendix.

# 3.1.2 Agriculture, fisheries and forest

The category Agriculture, fisheries and forest has few issues, all actions listed in the NDC Operational Plan under this category have description sheets in the appendix. Only issues related to alignment of indicators and targets were identified. Other indicators and targets were proposed for allowing tracking of implementation of action of this category. The specific issues identified for this category are:

- Indicators not aligned with targets in the description sheets of the following action lines:" Transition to a resilient Blue Economy in the western Indian Ocean region new"; and "Development of tools for integrating adaptation into the fisheries planning and budgeting process new";
- Indicators not defined in the description sheets of the following action lines: "Diffusion of improved agricultural production technologies, agro-forestry systems, natural resource management, conservation agriculture, irrigation, vaccinations, artificial insemination, reduction of post-harvest losses and processing of products of plant and animal origin, and food and nutrition education new"; "Establishing and increasing the adoption of integrated agro-forestry systems (agro-silvo-pastoral); use of multiple-use forest species: shade / nitrogen fixation / forage (REDD +, MozBIO, Sustenta, payment for carbon credits in Zambézia) 4.6.2.3.2.2"; and "Rehabilitation of degraded ecosystems and pastures through landscape rehabilitation new".

#### 3.1.3 Early warning system

This category does not have issues with actions without description sheets and projects with description sheets not fitting to the actions listed in the NDC Operational Plan. The main issues were related to indicators not being defined, indicators without targets, and targets not aligned with indicators. The specific issues identified for this category are:





- Indicators are missing in the description sheets of the following action lines: "Establishment of standards for the development and coordination of early warning systems for multiple events new", "Strengthening of the climate and meteorological information system for drought new", "Improving preparedness for imminent climate disasters 4.6.1.1.2.1", "Strengthening INGC's role in coordinating climate disaster response and recovery operations 4.6.1.1.2.2", and "Strengthening the role of CLGRC in reducing climate risk at the local level new"; and
- Indicators and targets not aligned in the following action lines: "Improvement of the system for the dissemination of early warnings at the local level new"; and "Strengthening of the early warning system for the agriculture sector new".

# 3.1.4 Social protection

This category has few actions and all action lines have description sheets with indicators proposed. However, in most cases the indicators proposed are not aligned with the targets. A review of tracking elements for actions of this category should focus on defining indicators aligned with the targets.

#### **3.1.5** Health

The health category has much less issues. A review of tracking elements in this category should focus on aligning the indicators to the targets and defining additional relevant indicators if deemed relevant.

# 3.1.6 Biodiversity

Beside of issues related to indicators not being defined for certain action lines, and indicators and targets not being aligned, this category has issues with actions without description sheets and projects with description sheets not fitting to the action lines. The main issues identified in this category are:

- The action: "Identification and implementation of adaptation actions that guarantee the protection of species of flora and wildlife at risk of extinction 4.6.1.6.1.2" does not have description sheet; and
- There are actions and/or projects with description sheets that are not listed in the main document of the Mozambican NDC and/or do not fit in the actions lines proposed: "Establishment of cross-border conservation areas to maintain the functions of ecosystems and allow migrations of wildlife 4.6.1.6.1.3"; "Reclassification and resizing of conservation areas, identifying areas at risk of loss of biodiversity"; and "Promotion of the raising of knowledge about the contribution of biodiversity to the increase of carbon stock, with a view to mitigating and adapting to climate change".

### 3.1.7 Infrastructures, urban areas, settlements, and tourist and coastal areas

All action lines of this category have description sheets but the indicators and targets are not defined. There is a need for defining tracking elements for all actions in this category.





# 3.1.8 Communication, education, training and raising awareness

This category has issues with indicators not being defined and aligned with the targets. The specific issues identified for this category are:

- Indicators not defined for the following action line: "Promotion of studies and research on climate change with the aim of reducing climate risk and GHG emissions (or low carbon development)"; and
- Indicators not aligned with the targets for the following action lines: "Implementation of the communication and awareness plan for adapting and mitigating climate change"; and "Integration of subjects and development of programmatic content on climate change in school curricula from 1st to 12<sup>th</sup> grade".

# 3.2 Review of mitigation and low carbon development actions

As well as in the adaptation actions, the main issues identified were: (1) the indicators defined not being appropriate to track the action; and (2) indicators not being aligned with targets defined in the description sheets in the appendix of the NDC Operational Plan. To overcome these issues, the targets or indicators should be adjusted to be aligned with the indicators, and in some cases new indicators can be proposed. As for adaptation actions an indicator to track the financial resources was included for all actions.

### **3.2.1 Energy**

In addition to the issues listed above, for this category, some projects in the description sheets in the appendix do not fit into the action lines listed in the NDC Operational Plan. As the NDC of Mozambique has been approved by the Council of Ministers, new actions cannot be included. Specific issues are listed below:

- The indicators ad targets defined were not aligned for the following action line "Promotion of the use of renewable energy sources PV 4.6.2.2.1.3".
- The project "Construction project for a floating natural gas processing unit (FLNG) in area 4 under development" has a description sheet in the appendix, but it does not fit into any action line defined in the energy category.
- The NDC Operational Plan was developed in 2018 and for the action line" Development of micro power generation projects and programs in commercial and residential buildings (4.6.2.1.4.2)" an indicator was defined as "Number of photovoltaic and / or wind lighting systems installed" with the value of indicator in 2018, 1290, is this value still the same in 2020?;
- Two action lines defined in the NDC Operational Plan (1) "Encouraging the use of solar thermal systems in large commercial and industrial buildings, public and residential buildings (4.6.2.1.4.3)" and (2) "Encouraging the replacement of incandescent lamps with low consumption lamps (4.6.2.1.4.4) "do not have projects description sheets in the appendixes;
- The project "Productive use of energy fish conservation ", with description sheet in the appendix, does not fit into the action lines defined in the NDC Operational Plan;





• The NDC Operational Plan was developed in 2018 and the action line" Promotion of the use of efficient appliances - new" has an indicator, which is "Number of glacier systems based on photovoltaic and / or wind turbine systems", the actual value of this indicator in 2018 was 108. It means that activities under this actions were being implemented already, the baseline value for this indicator needs to be updated to the value in 2020.

# 3.2.2 Transport

The transport category also has one project that does not fit into the action lines indicated in the NDC Operational Plan. A specific issue of this category is:

• A project "Adoption of social and environmental sustainable transport system/ Metro-bus expansion to the country's main capitals", that has description sheet in the appendix does not fit into action lines listed in the NDC Operational Plan.

#### **3.2.3** Waste

The waste category, with only one action line, has less issues compared to Energy and Transport Categories. However, a new indicator was proposed that is to be used to measure the income gained due to implementation of waste management activities, called "Income from sustainable waste management".





# 4. Stakeholders Consultation

Stakeholders consultation was determinant for the development of the proposal of the robust institutional arrangements for national MRV System and the following Enhanced Transparency Framework for Mozambique. Three workshops were conducted that lead to the following ETF.

In the first workshop, specific comments were collected which resulted in the matrix of elements for monitoring the NDC, attached to this document, appendixes 1 and 2. The second workshop ended with the selection of a combined, centralized and decentralized approach for the National MRV System, published in a separate document entitled "Institutional Arrangement for the National MRV System for Mozambique".

The matrix of NDC tracking elements and the Institutional Arrangement for National MRV System are the bottom-line for the development of the following ETF for Mozambique. The RFs for monitoring the implementation of NDC are created based on the indicators and validated during the workshop for development of the NDC tracking elements.

The main recommendations of the last workshop are including detailed timeline for the preparation of the climate change reports, and specify in this document, that the statistics sector will be responsible on all statistical procedures and that the MRV experts should contact the statistics sector whenever any statistical procedure has to be used, such as defining sample sizes, to ensure comparability of estimates and that this results are further accepted by statistical sector during verification. It was also discussed, which steps and their duration has to be taken for preparation of climate change reports, resulting on the timeline in the appendix 8. Additionally, it was also discussed the possibility of submitting the NIR and AC as separate documents to the UNFCCC, and it was agreed that these documents will be submitted only as appendix to BTR and NC, to reduce the workload for the different actors of the MRV System.





# 5. Enhanced Transparency Framework

The Enhanced Transparency Framework (ETF) for Mozambique presented in this document is based on the Institutional Arrangement for MRV System developed recently (figure 1) through ICAT activities, international agreements and national climate change documents. The ETF of Mozambique suggests a system that will allow continuous collection of information on (1) National Circumstances, (2) GHG emissions by sources and removals by sinks, (3) monitoring the implementation of the ENMAMC, (4) NDC and (5) adaptation actions, for allowing the preparation of six climate change reports: (1) GHG National Inventory Reports (NIR), (2) National Communications (NCs), (3) Adaptation Communication (AC), (4) Biennial Transparency Reports (BTRs), as well as, the reports of implementation of (5) NDC and (6) ENMAMC, figure 2.

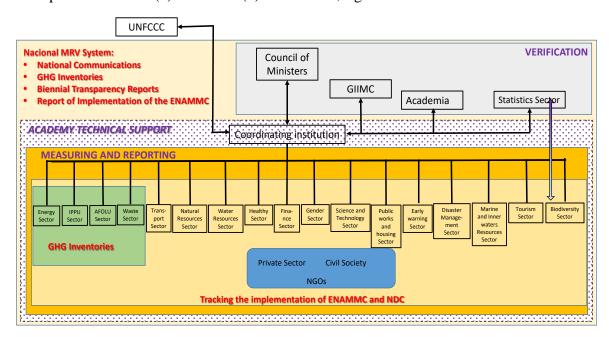


Figure 1 Information sharing mechanism for robust institutional arrangement for National MRV System [UNFCCC: United Nations Framework Convention on Climate Change; GIIMC: Grupo Inter-institutional de Mudanças Climáticas (Inter-Institutional Group of Climate Change); NGOs Non-Governmental Organizations; Climate Change Coordinator IPPU: Industrial Processes and Products Use; and AFOLU: Agriculture Forest and Other Land Use]

According to figure 2, the Climate Change reports will be prepared using the (1) Decision 17/CP.8 Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention, (2) Paris Agreement and (3) National System for Monitoring and Assessing the Climate Change of Mozambique. The sectors indicated in the institutional arrangement for National MRV System, under coordination of Coordinating Institution (Currently MTA, through DMC), are responsible on collecting information required for reporting climate change, as described in the Paris Agreement,





Decision 17/CP.8 and National System for Monitoring and Assessing Climate Change of Mozambique and National System for Monitoring and Assessing the Climate Change of Mozambique, as applicable, see figure 2. The coordination institution will be responsible on compiling the updated NIR, RI-NDC, ACs based on primary information submitted by the sectors and submitted for revision by the statistics sector and academia.

Every two years the Coordinating Institution will also compile the BTR based on the NIR and part of information in the RI-NDC and AC, already reviewed by statistics sector and academia and submit for revision and approval by GIIMC, followed by the Council of Ministers. After approval the BTR will submitted to the UNFCCC. While, every four years the Coordinating Institution will also compile the NC according to the Decision 17/CP.8, including already verified information, by statistics sector and Academia in the NIR, RI-NDCs and ACs, and submit for verification and approval by GIIMC, followed by the Council of Ministers. After approval of the NC by the Council of Ministers, it will be submitted to the UNFCCC. Finally, the RI-ENMAMC will be compiled every five years based on the National System for Monitoring and Assessment of Climate Change, NIR, RI-NDC and AC revised by the statistics sector and academia. The compiled RI-ENMAMC will be submitted for verification and approval by GIIMC and the Council of Ministers.

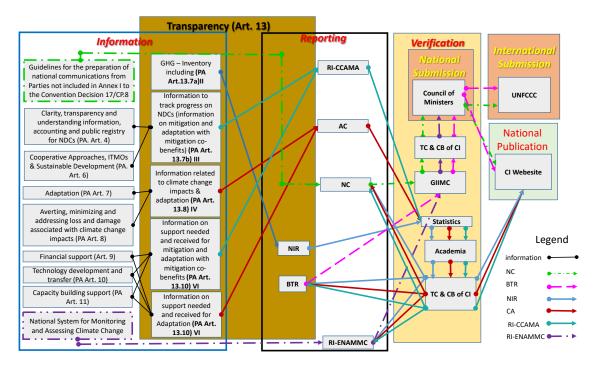


Figure 2 Enhanced Transparency Framework for Mozambique [NDC: National Determined Contribution; UNFCCC: United Nations Framework Convention on Climate Change; GIIMC: Grupo Inter-institutional de Mudanças Climáticas (Inter-Institutional Group of Climate Change); ITMOs: internationally Transferred Mitigation Outcomes; GHG: Green House Gases; PA: Paris Agreement; NC: National Communication; AC: Adaptation Communication; RI-CCAMA: Report of Implementation of Climate Change Adaptation and Mitigation Actions; NIR: Nation Inventory Report; BTR: Biennial Transparency Report; RI-ENMAMC: Report of Implementation of National Climate Change Mitigation and Adaptation Strategy "Relatório de Implementação da Estratégia Nacional de Mitigação e Adaptação as Mudanças Climáticas"; CI: Coordinating Institution ]





The officially verification process is clearly presented in figure 2. However, after compilation, all reports have to be validated by technicians of the MRV System in a meeting before submitting for subsequent verifications and approval.

The schedule for the preparation of climate change reports is presented in the appendix 8. The activities for preparation of the NIR, Report of Implementation of Climate Change Adaptation and Mitigation Actions (RI-CCAMA) and CA will be carried out in parallel. The submission of data by the sectors indicated in figure 1, must be done by March of each year. Then, the Coordinating Institution, currently MTA, follows the process of compiling the reports for the next three months. The month of July is reserved for the technical validation of the reports, for this purpose, the compiled reports must be sent to all technicians of the National MRV System seven days before a meeting with them, for validation. After technical validation, follows the verification by the statistics sector, academia, and Technical Council (TC) and Consultative Board (CB) of the Coordinating Institution. Finally, the reports are published on the Coordinating Institution's website. The time for the execution of each activity is presented in the activities timeline, appendix 8.

Preparation of BTR and NC will follow the sequence: compilation, technical validation by the technicians of the National MRV System, verification by the GIIMC, TC and CB of the Coordinating Institution, and the Council of Ministers. After verification, the documents are submitted to the UNFCCC and published on the Coordinating Institution's website. Details on the execution time of each activity are presented in the timeline of activities, annex 8.

Finally, the RI-ENAMMC is elaborated using the same sequence of activities as the BTR and CN. However, this is not submitted to the UNFCCC.

# 5.1 National inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases

The National Inventory Report should contain the following chapters: A) Definitions, B) Description of the national circumstances and institutional arrangements, C) Methods (including: (1) Methodologies, (2) Parameters and data, (3) Key category analysis, (4) Time series consistency and recalculations, (5) Uncertainty assessment, (6) Assessment of completeness and (7) QA/QC), D) Metric, E. Reporting guidance on information to be reported (including: (1) Information on methods and cross-cutting elements, (2) Sectors and gases, (3) Time series). Detailed information on what should be included in each document section is provided in the Decision 18/CMA.1 II.

The recently developed Institutional Arrangement for the National MRV System for Mozambique contains an information sharing system to the report the GHG inventories, Figure 1. Only the Energy, IPPU, AFOLU and Waster Sectors will be responsible on doing GHG inventories.

As described in the Institutional arrangement for the MRV System, these sectors will be responsible on collecting data a filling the CRFs of the GHG Inventories, but also on





preparing additional information requires to prepare the national inventories reports, including the national circumstances, as response to a request by the Coordination Institution.

The information sharing system for the GHG Inventories, excluding the reporting on ENMAMC, NCs, and BTRs is presented in figure 2. The system included a subsystem for Measuring and Reporting, and a subsystem for Verification, using the same sharing mechanism, as for the other Climate Change reports.

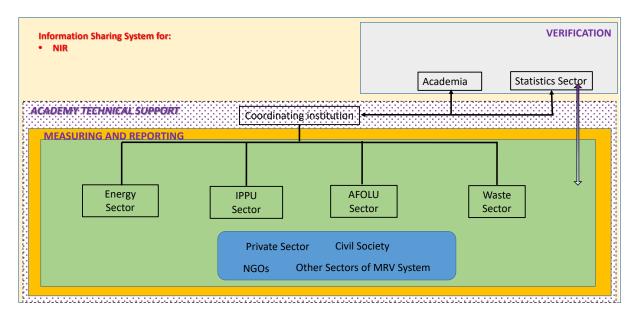


Figure 3 Information sharing mechanism for the GHG Inventories [UNFCCC: United Nations Framework Convention on Climate Change; GIIMC: Grupo Inter-institutional de Mudanças Climáticas (Inter-Institutional Group of Climate Change); NGOs Non-Governmental Organizations; Climate Change Coordinator IPPU: Industrial Processes and Products Use; and AFOLU: Agriculture Forest and Other Land Use]

The institutions responsible on each sector of the GHG inventories are allocated in the MRV System and they can be updated, if necessary. As explained in the document of Institutional Arrangement for the MRV System, the institutions responsible on the sectors will be updated if there is a changes in the government and changes in allocation of sectors to the institutions should be approved by the GIIMC.

# 5.2 National Determined Contribution Implementation Report

The report of implementation of NDC is prepared annually. This report is a compilation of indicators, included in the NDC Tracking elements table (Appendix 2) calculated based on the most updated information supplied by sectors responsible on implementing or promoting the implementation of actions included in the NDC. The information included in the RI-NDC is indicated in the ETF of Mozambique, figure 2. The proposed reporting formats (RFs) for monitoring the implementation of NDC of Mozambique are included in Appendix 5, 6 and 7. These tables will also include indicators to monitor actions included in the national climate change strategy that are not included in the NDC. Currently, the indicators for monitoring the Implementation of the ENMAMC can be added, see tables in Appendix 5, 6 and 7. The table in appendix 5 was designed to report the overall indicators





of climate measures, while the tables in appendix 6 were designed to report the implementation of specific action lines and appendix 7, to report information on support needed and received. These tables can also be updated based on the updates on reporting requirements of the UNFCCC. The table in appendix 5 was designed to report the overall indicators of climate measures, while the tables in appendix 6 were designed to report the implementation of specific action lines and appendix 7, to report information on support needed and received.

The Institutional Arrangement for the MRV System was developed to allow tracking of implementation of Climate Change Actions in general and NDC actions in particular. As described in the Institutional Arrangement for MRV System of Mozambique, all sectors are responsible on collecting the information for monitoring the implementation of NDC, figure 1. The information sharing system for monitoring the implementation of NDC is presented in **figure 3**. After compilation by the Coordinating Institution, validation in a meeting of the MRV System Technicians, the RI-CCAMA is submitted for verification by the Statistics Sector and Academia. All indicators are submitted for verification, including the ones for monitoring actions not included in the NDC, which are only part of the ENMAMC. This reported is not expected to be submitted for verification and approval by GIIMC and Council of Ministers.

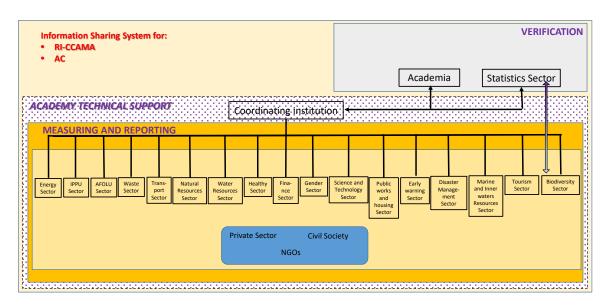


Figure 3 Information sharing mechanism for RI - CCAMA and AC [RI-CCAMA: Report of Implementation of Climate Changes Adaptation and Mitigation Actions; AC: Adaptation Communication; NGOs Non-Governmental Organizations;]

# 5.3 Adaptation Communication

The Adaptation Communication (AC) is compiled annually using the same Information Sharing System as the RI-CCAMA. The RFs in the Appendix 5 and Appendix 6, also include indicators to monitor the implementation of adaptation actions. The adaptation communication includes information indicated in the Paris Agreement Art. 13.8 IV & VI as shown in the ETF for Mozambique, figure 2.





# **5.4 Biennial Transparency Report**

The BTR is compiled every two years using the already revised information in the NIR, RI-CCAMA and AC as shown in the ETF of Mozambique, figure 2 and information sharing system in figure 4. The RFs used for compilation of RI-CCAMA includes also indicators of actions not included in the NDC, which are part of the ENMAMC only. At this stage, the indicators for actions not included in the NDC, included in the RI-CCAMA, should not be included in the BTR.

As all reports, after compilation of BTR, it should be validated by the technicians of the MRV System, in a technical meeting before submitting for verification and approval by GIIMC. After verification of the BTR by GIIMC the report is submitted for approval by Council of Ministers before submitting to the UNFCCC.

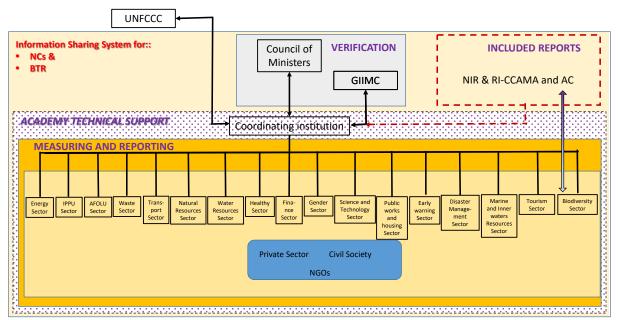


Figure 4 Information sharing mechanism for NC and BTR [NC: National Communication; BTR: Biennial Transparency Report; RI-CCAMA: Report of Implementation of Climate Changes Adaptation and Mitigation Actions; AC: Adaptation Communication; NIR: National Inventory Report; GIIMC: Grupo Inter-institutional de Mudanças Climáticas (Inter-Institutional Group of Climate Change); and NGOs: Non-Governmental Organizations; 1

### 5.5 National communication

The National Communication (NC) is compiled every using the same Information Sharing System as the BTR. Verified information included in the NIRs, RI-CCAMAs and ACs should be used to compile the NC. The NC should be compiled in accordance with the Decision 17/CP.8 - Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention.

After compilation of NCs, it should be validated by the technicians of the MRV System, in a technical meeting before submitting for verification and approval by GIIMC. After approval of the BTR by GIIMC the report is submitted for approval by Council of Ministers before submitting to the UNFCCC.





# **5.6** National Mitigation and Adaptation of Climate Change Strategy Implementation Report

The National Mitigation and Adaptation of Climate Change Strategy Implementation Report "Relatório de Implementação da Estratégia Nacional de Mitigação e Adaptação às Mudanças Climáticas" (RI-ENMAMC) is compiled based on the verified information in the NIR, RI-CCAMA and AC considering the indicators and requirements in the National System for Monitoring and Assessing Climate Change "Sistema Nacional de Monitoria e Avaliação das Mudanças Climáticas" (SNMAMC).

After compilation, the report should be validated by the MRV System technicians in a technical meeting before submitting for verification by GIIMC. After verification and approval of the report by GIIMC, the report will be submitted to the Council of Ministers, figure 5.

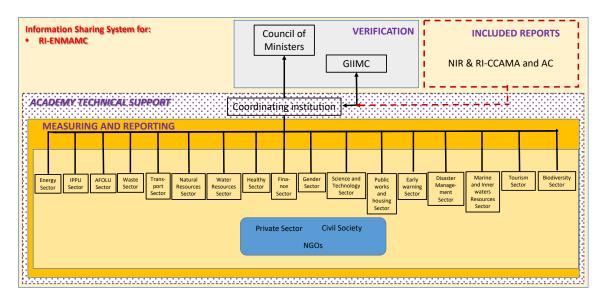


Figure 5 Information sharing mechanism for RI-ENMAMC [NC: National Communication; BTR: Biennial Transparency Report; AC: Adaptation Communication; GIIMC: Grupo Inter-institutional de Mudanças Climáticas (Inter-Institutional Group of Climate Change); RI-ENMAMC: National Adaptation and Mitigation of Climate Change Strategy Implementation Report "Relatório de Implementação da Estratégia Nacional de Mitigação e Adaptação às Mudanças Climáticas" NGOs: Non-Governmental Organizations;

# 7 Final Remarks

Enhanced Transparency framework, together with the MRV System of Mozambique, allow collection of information for reporting GHG emissions by sources and removals by sinks, as well as, the implementation of NDC and ENMAMC. The system is developed to ensure continues collection and verification of data and compilation of reports, thus reporting timely to the convention, and allowing for understanding the impact of climate change mitigation and adaptation actions, and enabling better planning. The NDC tracking framework adopts the UNFCCC CRFs for reporting the GHG emissions and removals, and includes reporting formats (RFs) to monitor the implementation of NDC.





The RFs proposed to monitor the implementation of NDC also have a room to monitor the implementation of ENMAMC. However, these indicators are not listed in the RFs proposed, Appendix 5 and Appendix 6, because that was not the scope of this work. These indicators will be included and updated continuously during the implementation of the MRV System and ETF for Mozambique.

The indicators proposed to track the implementation of NDC of Mozambique are also limited, with regard to baseline data and targets. These limitations are expected to be solved during the training of the system. Both the ETF and MRV System might be subject to limited updates during the training of the system, but the RFs for monitoring the implementation of NDC and ENMAMC will be shaped to facilitate the collection of information, and to adjust to the CRFs that are expected to be proposed to report the implementation of NDCs by the Secretariat of the Convention.

Additionally, for allowing systematic reporting, templates for each report should be adopted in future. Templates for reporting information at the international level through BTRs are expected to be provided by the UNFCCC at the next COP in 2021. Additional information for reporting can be considered for reporting at the national level e.g. in the RI-CCAMA. The other action that will allow systematization of the process is to develop a web-based data collection system in which each sectorial expert have access to fill-in the information in the RFs and reporting templates.





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# 8. Appendixes

# Appendix 1 – Overall indicators

|   | Overall NDC Indicators   |  |                         |  |   |   |   |  |  |  |  |
|---|--|--|-------------------------|--|---|---|---|--|--|--|--|
| No.   | Indicator  | Unit   | Responsible institution | Calculation<br>methodology   | Value of<br>Indicator in<br>base year<br>(2020) | Data<br>availability  | Terget (2025)   | Comments   |  |  |  |
| Financial resources Millions of 1 allocated USD MTA Speci |  | Specific                                     | Not available           | Not available  | Not defined                                     | This is the sum of all resources allocated to the NDC actions |   |  |  |  |  |
| 2   | Avoided GHG emission   | MtCO2eq                                      | MTA                     | Sum of GHG<br>emissions avoided<br>by implementing<br>mitigation actions | 0   | Available   | 31.19   | This indicator is total cumulative GHG emissions reduction   |  |  |  |
| 3   | Share of<br>renewables in<br>total energy<br>consumption<br>(SDG7)                     | Share of enewables in otal energy onsumption |                         | Specific   | Not available                                   | Not available   | Not defined   | This indicator is not related to a single action, is a result of combined actions and MIREME should develop specific method to calculate this indicator                                  |  |  |  |
| 4   | Amount of reserved water   | Liters/person                                | MOPHRH<br>(DNGRH)       | Specific   | Not available                                   | Not available   | Not defined   | This indicator is the amount of water reserved per person in Mozambique.   |  |  |  |
| 5   | Burned areas   | ha/year                                      | MADER and<br>MTA        | Specific   | 14.810.076                                      | Available   | 40% reduction<br>in the<br>prevalence of<br>uncontrolled<br>fires | The purpose of this indicator is to monitor the reduction area of land burnt per year.   |  |  |  |
| 6   | Restored mangrove area   | ha   | MIMAIP                  | Specific   | 1110  | Available   | 5000  |  |  |  |  |
| 7   | Losses due to<br>climatic<br>disasters per<br>number of<br>people in<br>affected areas | Millions of<br>USD per<br>capita             | MTA, INGC and INAM      | Specific   | Not available                                   | Not available   | Not defined   | This indicator is a result of combined actions of INAM, INGC, MADER and MOPHRH and it can only be calculatedd by MTA.  Consistant methodology should be created with a description sheet |  |  |  |





# Appendix 2 - Matrix of NDC tracking elements from Mozambique

(Document in a separate file)





# Appendix 3 – Groups for reviewing the NDC tracking elements formed in the workshop

| Grupo | Sector   | Institution                                      |
|-------|--|--|
| I     | Enegry and Transport   | MTA (2), MIREME (3); FUNAE (1); MTC (5);         |
|       |  | AUTOGÁS (1)                                      |
| II    | Waste  | MTA (2), MIC(1),                                 |
| III   | Agriculture, fisheries and forest and Biodiversity                 | MTA (3), MADER (6), MIMAIP (1)                   |
| IV    | Early warning system   | MTA (1), INGC (1), INAM (1), IMEF (1), MOPHRH(1) |
| V     | Social protection; Health; and Communication, education, training  | MTA (1), MCTESTP (1), MISAU-DSA (1), MGCAS(1)    |
|       | and raising awareness  |  |
| VI    | Water Resources and Infrastructures, urban areas, settlements, and | MTA (2), MOPHRH(1), UEM-FE (1) MTC(1)            |
|       | tourist and coastal areas  |  |

# **Appendix 4 – Workshop Participants**

| <u> </u> | <u> </u>                           |             |
|----------|------------------------------------|-------------|
|          | Name                               | Institution |
| 1        | Luís Miguel Samussone Tomás Buchir | MTA - DMC   |
| 2        | Eduardo Jorge Silva Baixo          | MTA - DMC   |
| 3        | Paula Salva Da Costa Panguene      | MTA - DMC   |
| 4        | Marilia Telma Antonio Manjate      | MTA - DMC   |
| 5        | Leonardo Sulila                    | MTA - DMC   |
| 6        | Cláudio dos Santos Quenhe          | MTA - DMC   |
| 7        | Fernando Tavares Caniua            | MTA - DMC   |
| 8        | Simplícia Assunção Zimila          | MTA - DMC   |





|    | Name                              | Institution   |
|----|-----------------------------------|---------------|
| 9  | Alberto António Langa             | MTA - DMC     |
| 10 | Julia De Azambuja                 | MTA - DNTDT   |
| 11 | Alima Issufo Taquidir             | MTA - DINAF   |
| 12 | Renato Timane                     | MTA-DINAF     |
| 13 | Samson Cuamba                     | MTA-DINAB     |
| 14 | Salvo Cossine Feliciano Tchamo    | MTA-DPC       |
| 15 | Aristides Baptista Muhate         | MADER-FNDS    |
| 16 | Anacleta Chiangua                 | MEF - DNMA    |
| 17 | Artur Francisco Chilaule          | MOPHRH-ANE    |
| 18 | Luisa do Ceu Ricardo da Conceicao | MOPHRH- DNGRH |
| 19 | António Jorge Raul Uaissone       | MCTESTP -DNT  |
| 20 | Sarah Chrispen Matches            | INGC          |
| 21 | Marcia Alice Andre Nrepo Matsinhe | MIMAIP-IIP    |
| 22 | Obadias Jacinto Cossa             | MTC-INAHINA   |
| 23 | Edmundo Mateus Arão Matesso       | AUTOGÁS       |
| 24 | Andre Baboy José                  | MTC-FTC       |
| 25 | Maura Cremildo Alberto Laice      | MTC-AICM      |
| 26 | Napoleão Salomão Sumbane          | MTC-INATTER   |
| 27 | Eugenio Ernesto Nhantumbo         | MTC-INAMAR    |
| 28 | Calido Naico                      | MTC-DNTS      |
| 29 | Anísio Pinto Manuel               | MIREME-DNE    |
| 30 | Dário Afonso Custódio             | MIREME-FUNAE  |
| 31 | Dércio Bento Sive                 | MIREME-DNGM   |
| 32 | Antonio Bento Sive                | MIREME-DPC    |
| 33 | Noemia Faustino Utxavo            | MEF-DPOH      |
| 34 | Clemencio M. Carlos Nhantumbo     |               |





|    | Name                         | Institution                       |
|----|------------------------------|-----------------------------------|
| 35 | Maria Sofia Manussa          | MADER - DPCI                      |
| 36 | Jose Mingos David Malunga    | MADER- INIR                       |
| 37 | Felicidade Macome            | MADER-IIAM                        |
| 38 | Hiten Jantilal               | MADER-                            |
| 39 | Ilidio Hele                  | MADER-DN Desenvolvimento Pecuário |
| 40 | Celso Pedro Banze            | MADER-DN de Assistencia A Agr. F  |
| 41 | Emilia Ines Come Zebra       | UEM-FE                            |
| 42 | Lidia José                   | DNSAB                             |
| 43 | Orlando Uamusse              | MGCAS                             |
| 44 | Jose Ernesto Hlunguane       | MEF - INE                         |
| 45 | Bungallah Baltazar Bungallah | MIC-DNI                           |
| 46 | Americo Angelo Paulo         | MISAU-DSA                         |
| 47 | Arminda Conde                | EDM                               |
| 48 | Acacio Joao Martins Tembe    | INAM                              |





**Appendix 5** – Sample of reporting formats for monitoring the implementation of NDC and ENAMMC (Overall indicators)

| A  | Appendix 5 – Sample of reporting formats for monitoring the implementation of NDC and ENAMMC (Overall indicators) |                                  |                                |  |           |            |                   |                     |             |      |   |                                      |                        |
|--|---|----------------------------------|--------------------------------|--|-----------|------------|-------------------|---------------------|-------------|------|---|--------------------------------------|------------------------|
| III.                                       | III. Overall NDC Indicators   |                                  |                                |  |           |            |                   |                     |             |      |   |                                      |                        |
| Indicators for actions included in the NDC |   |                                  |                                |  |           |            |                   |                     |             |      |   |                                      |                        |
| No.  | Indicator   | Unit                             | Responsibl<br>e<br>institution | Value of Indicator<br>in base year<br>(2020) | 2020      | Acti       | ual Value<br>2022 | e of Indica<br>2023 | 2024        | 2025 | Terget (2025)   | Description<br>of<br>methodolog<br>Y | additional<br>comments |
| 1  | Financial resources allocated   | Millions of<br>USD               | MTA                            | Not available                                |           |            |                   |                     |             |      | Not defined   |                                      |                        |
| 2  | Avoided GHG emission  | MtCO2eq                          | MTA                            | 0  |           |            |                   |                     |             |      | 31.19   |                                      |                        |
| 3  | Share of renewables in total energy consumption (SDG7)  | %                                | MIREME                         | Not available                                |           |            |                   |                     |             |      | Not defined   |                                      |                        |
| 4  | Amount of reserved water  | Liters/perso<br>n                | MOPHRH<br>(DNGRH)              | Not available                                |           |            |                   |                     |             |      | Not defined   |                                      |                        |
| 5  | Burned areas  | ha/year                          | MADER and MTA                  | 14.810.076                                   |           |            |                   |                     |             |      | 40% reduction in<br>the prevalence of<br>uncontrolled fires |                                      |                        |
| 6  | Restored mangrove area  | ha                               | MIMAIP                         | 1110   |           |            |                   |                     |             |      | 5000  |                                      |                        |
| 7  | Losses due to climatic disasters per number of people in affected areas   | Millions of<br>USD per<br>capita | MTA, INGC<br>and INAM          | Not available                                |           |            |                   |                     |             |      | Not defined   |                                      |                        |
|  |   |                                  | Ind                            | icators for actions not                      | t include | d in the N | DC                |                     |             |      |   |                                      |                        |
| No.  | Indicator   | Unit                             | Responsibl<br>e<br>institution | Value of Indicator<br>in base year<br>(2020) | 2020      | Act:       | ual Value         | e of Indica         | tor<br>2024 | 2025 | Terget (2025)   | Description<br>of<br>methodolog<br>y | additional<br>comments |
| 1  |   |                                  |                                | ,  |           |            |                   |                     |             |      | , ,   |                                      |                        |
| 2  |   |                                  |                                |  |           |            |                   |                     |             |      |   |                                      |                        |
| 3  |   |                                  |                                |  |           |            |                   |                     |             |      |   |                                      |                        |
| 4  |   |                                  |                                |  |           |            |                   |                     |             |      |   |                                      |                        |
| 5  |   |                                  |                                |  |           |            |                   |                     |             |      |   |                                      |                        |





**Appendix 6** – Sample of reporting formats for monitoring the implementation of NDC and ENAMMC (Indicators for specific actions) (Document in a separate file)





**Appendix 7** – Sample of reporting formats to track support needed and received (Document in a separate file)





**Appendix 8** – Timeline for reporting (Document in a separate file)