Synthesis report: Outcomes of Phase 1 for the implementation of ICAT activities in CUBA

ICAT Initiative for Climate Action Transparency

Initiative for Climate Action Transparency – ICAT
Synthesis report: Outcomes of Phase 1, lessons learned, and relation to Phase 2

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Table of contents

Introduction

The Republic of Cuba signed the United Nations Framework Convention on Climate Change (UNFCCC) in Rio de Janeiro in June 1992 and ratified the instrument on 5 January 1994, making it a party to the Convention since its entry into force on 5 March 1994.

Cuba has submitted three National Communications (NCs) to the UNFCCC: the First (NC1) in September 2001; the Second (NC2) in October 2015 and the Third (NC3) in November 2020.

One of the fundamental components of the National Communication is the National greenhouse gas inventory. In the NC1, Cuba prepared and reported the inventory for the years 1990 and 1994. In the NC2, using 1990 as the base year, the country prepared the inventory for the even-numbered years of the time series 1990-2002, with an update of the information presented in the NC1. Finally, the NC3 was prepared in conjunction with the First Biennial Update Report. For these reports, the inventory for the year 2016 and the time series 1990-2016 were prepared.

Concerning mitigation, different studies were carried out in the context of the NC1 and the NC2 to identify possible climate change mitigation options, using the gross CO2 emissions reported in the INGEI for the years 1990 and 1994 as a starting point.

Cuba has made significant efforts to execute actions and programs that have led to the reduction of greenhouse gas emissions. However, there was no system in place in the country to identify, formulate, implement, and track such actions clearly and systematically.

The first collective effort focusing on identifying mitigation actions and involving the different sectors and different levels of the government was carried out during the formulation of the country's INDCs in 2015. The result of this process had an important impact on the formulation and approval of priorities related to mitigation, which were then included in the National Plan for Social Economic Development to 2030 (PNDES) and in the State Plan to fight climate change, known as Tarea Vida. At the same time, a general approach for the design and implementation of an Enhanced Transparency Framework as established under the Paris Agreement was taking shape in the country.

The development of the First Biennial Update Report (BUR1) was an unprecedented effort for Cuba in terms of collective effort. It led to deepening the country's actions, commitments, and challenges in terms of mitigation. The BUR1 was submitted together with the country's NC3 in November 2020 and covered mainly the period from 2014 to 2018. The inventory for the 2016 year was prepared under the BUR1, which also included the annual national emissions and removals for the time series 1990-2016 series for four sectors: Energy, AFOLU, IPPU, and Waste. Three GHGs were analyzed in the inventory: Carbon Dioxide (CO2), Methane (CH4) and Nitrous Oxide (N2O). For the first time, the 2006 IPCC Guidelines for the preparation of inventories was used in the country. By reporting the year 2016 in 2020, the country complied with the provisions of the UNFCCC on the BUR, which establishes that the last year of the GHG inventory by developing countries, should not be more than 4 years before the year in which it is submitted.

The total gross emissions in 2016 for Cuba was estimated as 50,213.7 kt CO2eq. CO2 removals were 27,147.2 kt CO2eq, resulting in about 23,066.5 kt CO2eq. of net emissions. Figure 1 shows the share of GHG emissions in 2016 (expressed in percentage) among the different sectors. Energy is the sector with the highest emissions level (70.52%), followed by AFOLU- Agriculture, Forestry and Land Use Change (20.13%), Waste (7.80%) and IPPU (1.55%).

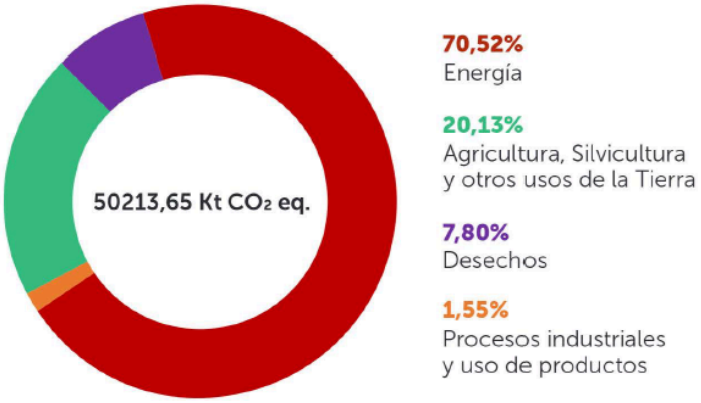

Figure [11]. Share of GHG emissions for the year 2016 (expressed in percentage) between Energy, AFOLU, Waste, and IPPU.

Considering the sectoral contribution to the national GHG inventory, the most important sectors to induce mitigation of GHG emissions are the energy and agriculture sectors. Therefore, the country's efforts have been concentrated on the identification and implementation of mitigation measures in those two sectors.

In the BUR1, a total of six main mitigation actions were reported:

1. Increase up to 10% of electricity generation by renewable energy sources based on solar, wind, and hydropower in Cuba's electricity matrix by 2030.
2. Increase up to 14% of the country's electricity generation by 2030 based on sugarcane and forest biomass.
3. Increased energy efficiency.
4. Reduction of fossil fuel consumption in the country's motor transport.
5. Increase the country's forest cover to 31% by 2018.
6. Reduction of GHG emissions in the pig sector in Cuba

For each of those mitigation actions, the BUR1 included the following information: the sector/scope of the action; the objective/actions it comprises; the executing entity; the status of the action (formulation, implementation, etc.); the base year/target year for the action; the value of the base indicator / the target value; a brief description of the action; the results obtained; the potential for

[1] Sosa C y J. Bolufé. 2019: Inventario Nacional de Gases de Efecto de Invernadero. Serie Entendiendo el Cambio Climático. ISBN: 978-959-300-175-5. Editorial AMA.

scaling up the mitigation action.

The BUR1 identifies also some of the main barriers related to the establishment of a transparency system and processes: the need to incorporate the mitigation dimension into the strategies, plans and projects of sectors and territories; the lack of personnel with sufficient knowledge on the topic of climate change and mitigation, specifically in the different sectors, territories, and development projects where the mitigation dimension should be taken into account; information collection systems designed for other purposes that are inadequate for mitigation purposes; lack of consistent data and insufficient systematization of the methodologies and calculation for ex-ante evaluations, systematic monitoring, and ex-post evaluations, in line with the new requirements of the Enhanced Transparency Framework established under the Paris Agreement; lack of MRV systems required for the sectors to monitor the actions and projects with a high impact on mitigation.

Finally, the Cuban nationally determined contribution (NDC) was prepared and submitted to the UNFCCC in 2020 from an update of the previous INDC and integrating the main mitigation listed in the BUR1. The time horizon of the NDC is the year 2030.

Background and Rationale for the work proposed under ICAT Phase 1

Cuba has already a certain level of institutional arrangements in place linked to monitoring and reporting from the point of view of climate transparency. Cuba has prepared three National Communications. The third one was submitted to the UNFCCC secretariat in 2020 together with the BUR1. The preparation of those reports, as well as the related inventory, is under the responsibility of a national technical team made up of experts from different institutions including the Meteorological Institute (INSMET), the National Statistics Office (ONEI), the Research Institute for Agro-Forestry (INAF), Centre for Information Management and Energy Development (CUBAENERGIA), Center for Environmental Research and Implementation of Transport (CIMAB), Center for the Study of Process Engineering (CIPRO-ISPJAE). Cuba also developed and submitted its first NDC in 2016 and communicated its First Updated NDC in 2020.

The energy sector (as defined by IPCC: including Generation, Combustion, and Transport) and AFOLU sector (Agriculture, Forests, and other land uses) are priority sectors for Cuba in terms of mitigation and transparency.

While working on the development of the national reports Cuba has been moving along the identification and implementation of mitigation measures in those two sectors, and the assessment of the impacts in terms of GHG emissions reductions. For those assessments as well as for the calculations related to the national GHG inventories, the best estimation methods were applied using data available in the country. In general, they may be subdivided into two groups:

- Level 1 Methods, where country data and default factors from IPCC Guidelines or other acknowledged methodologies were used.
- Level 2 Methods, usually based on models developed from country data in addition to factors

calculated from national data and research results. These methods were mainly used in key inventory categories.

However, Cuba is still facing different challenges regarding those two sectors in particular the lack of consistent data and insufficient systematization of the methodologies and calculations for ex-ante evaluations, systematic monitoring, and ex-post evaluations.

In addition, as a reaction to the lack of MRV systems required for the sectors to monitor the mitigation actions and projects, Cuba is currently working on the development of procedures and guidelines for the monitoring of its NDC.

It is in this context that the ICAT project came to support the national efforts to establish an enhanced transparency framework at the national level. In particular, the ICAT phase 1 project in Cuba focused on standardizing the methodologies and calculations for ex-ante evaluations in the Energy and AFOLU sectors, reviewing the scenarios for these two sectors in the context of the preparation of the updated NDC, and developing procedures and templates for the monitoring of the mitigations actions in the two sectors.

Approach and key results of ICAT Phase 1

The ICAT Phase 1 was implemented in Cuba between September 2020 and August 2023. The official counterpart of the project in Cuba was the Centre for Information Management and Energy Development (CUBAENERGIA). In addition to its role in preparing national climate reports such as NC or BUR/BTR, CUBAENERGIA is also responsible for the establishment and coordination of an enhanced transparency framework at the national level.

The ICAT Phase 1 project had two main Results:

a) Developed a new baseline and mitigation targets for the five mitigation contributions of the Energy and AFOLU sectors identified in the NDC updated in 2020.

b) Established a monitoring, reporting, and verification framework (institutional arrangements, data, information, and methodologies) for the five mitigation contributions included in the NDC, taking into account the international reporting requirements for NC, BTR, and Inventories.

To achieve those results, the ICAT Phase 1 project was built along 3 main components:

Component 1: Data collection and data management methodologies and procedures for NDC tracking are developed for the three targets corresponding to the sub-subsectors of the Energy sector (Renewable Energy; Energy Efficiency; Transport). This component included the main activities:

- Diagnostic study of the current situation of the energy sector, analysing the institutional arrangements for data collection and management, current procedures, methodologies, and the identification of barriers and challenges related to the MRV and data collection processes.

- Development of standardized procedures and methodologies for the collection and

management of data for the energy system, and its integration into the existing MRV structure of the country.

- Recalculations of the baseline and mitigation scenarios for the three sub-subsectors Renewable Energy, Energy Efficiency, and Transport.

Component 2: Data collection and data management methodologies and procedures for NDC tracking are developed for the two targets of the AFOLU target (Forestry; Livestock/Pigs). This component included the main activities:

- Diagnostic study of the current situation of the AFOLU (forestry & pigs) sector, analysing the institutional arrangements for data collection and management, current procedures, methodologies, and the identification of barriers and challenges related to the MRV and data collection processes.

- Development of standardized procedures and methodologies for the collection and management of data for the AFOLU (forestry & pigs) system, and its integration into the existing MRV structure of the country.

Component 3: Stakeholders involved in the generation and processing of data in the Energy and AFOLU sectors for the monitoring of the NDC mitigation targets receive training in the use of methodologies and procedures for data collection and management. This component included the main activities:

- Development of training materials to develop capacities for the operationalization of data collection and management procedures, and for the methodological reasoning behind data collection proxies and their interpretation.

- Implementation of national capacity-building workshops for relevant national and sectoral actors related to the establishment and monitoring of each of the Energy and AFOLU targets of the NDC.

All the results achieved through the 3 components were compiled into a methodological guide for the monitoring of the five mitigation targets contained in the NDC, including the description of the procedures and processes taking into account international reporting requirements. This guide was published as the final deliverable of the ICAT Phase 1 project and will be used by the country's main actors as the standard guide for the implementation and tracking of the national NDC.

Impacts of ICAT Phase 1 on Cuban national transparency system

Overall, the impacts of the ICAT Phase 1 project in Cuba have allowed to strengthen the national MRV system in Cuba both from a methodological and institutional processes point of view. At the same time, those outcomes have also strengthened the national capacities for the preparation of the first BTR due in December 2024 as well as for the preparation of the next NDC due in 2025.

In line with those impacts, the ICAT Phase 1 project in Cuba allowed to achieve direct outcomes:

- Established standardized methodologies based on the 2006 IPCC methodologies for the calculation of the five mitigation targets (Renewable Energy; Energy Efficiency; Transport; Forestry, Livestock/Pigs) defined in the NDC.

- Improved the accuracy of the three mitigation targets of the NDC corresponding to the sub-subsectors of the Energy sector (Renewable Energy; Energy Efficiency; Transport) by calculating those targets with the standardized methodologies and data.

- Defined clear templates and procedures for the data collection process for the calculation of the five mitigation targets (Renewable Energy; Energy Efficiency; Transport; Forestry, Livestock/Pigs) defined in the NDC.

- Defined clear roles and responsibilities among national stakeholders responsible for the production and collection of the data related to the five mitigation targets (Renewable Energy; Energy Efficiency; Transport; Forestry, Livestock/Pigs) defined in the NDC.

- Increased the technical knowledge of national stakeholders responsible for the production and collection of the data related to the five mitigation targets (Renewable Energy; Energy Efficiency; Transport; Forestry, Livestock/Pigs) defined in the NDC.

Those impacts and outcomes contributed directly to some of the key KPIs of the ICAT MELU framework, among others:

- *KPI 5 "new or refined GHG inventory; new of refined MRV framework, new or refined NDC tracking framework"*

  Through the standardization of the methodologies for the calculation of the five mitigation targets, Cuba has also improved the quality of key data required to develop the GHG inventory for the Energy and AFOLU sectors. In addition, the direct outcomes of the project listed above contribute directly to refining the NDC tracking framework.

- *KPI 8 "**Number of ICAT partner countries that improve the quality of their reporting to the UNFCCC"***

  The outcomes of the project listed above will be taken into account for the preparation of the first BTR which is under development as well as for the preparation of the next NDC.

Expected Outcomes and Approach of the ICAT Phase 2 in Cuba

Considering the results achieved with the ICAT Phase 1 project in Cuba, the Government of Cuba and the ICAT Secretariat agreed on extending the collaboration by implementing a second phase of ICAT in the country. The focus of the ICAT Phase 2 in Cuba was defined between August and September 2023 as a direct continuation of Phase 1 and integrated into the national context described above.

The ICAT Phase 2 will aim to increase the ambition of the mitigation targets of the NDC, improve the accuracy and completeness of the reporting made under the enhanced transparency framework, and keep strengthening the national MRV- data collection processes.

To achieve those objectives, the ICAT Phase 2 was built along 4 main components:

- *Component 1*: Projections of the mitigation scenario towards 2030 for the 5 contributions of the NDC:

As a direct continuation of the results from the ICAT Phase 1, national mitigation scenarios will be built towards 2030 based on the five mitigation targets recalculated under Phase 1. The scenarios will be built using the GACMO tool developed by the UNEP-CCC and available as part of the ICAT toolbox.

- *Component 2:* Review of the 5 contributions to increase the ambition of the mitigation targets:

The five mitigation targets (Renewable Energy; Energy Efficiency; Transport; Forestry, Livestock/Pigs) will be analysed in terms of mitigation actions and scales in order to increase the ambition of the targets in the context of the preparation of the next NDC. In the case of the transport sector, the analysis will involve the use of the TRACE tool developed by the New Climate Institute and available as part of the ICAT toolbox. New projections will then be established as a mitigation scenario with additional measures.

- *Component 3:* Analysis to define the possibilities of reporting F-gases in 2026:

As of now, Cuba does not have the capacity to report data on F-gases. This component will look at identifying and removing the barriers to the reporting on F-gases in terms of methodologies, lack of data, and institutional arrangement and processes, with the aim to include the report on the F-gases in the second BTR due in 2026.

- *Component 4:* Development of a legal framework to enforce the data collection processes related to the 5 contributions:

As a direct continuation of the results from the ICAT Phase 1, this component will look at developing a legal framework to enforce the data collection processes related to the 5 contributions based on the roles and responsibilities defined under Phase 1 for the national stakeholders responsible for the production and collection of the data related to the five mitigation targets.

- *Component 5:* Diagnostic for the establishment of a data management platform:

As of now, Cuba does have a national electronic platform allowing the automatization of the data collection and management processes. As a first step to establishing such a platform, this component will analyse the current context in terms of existing data collection systems and processes to propose a structure for such a platform.

The ICAT Phase 2 in Cuba will be implemented between September 2023 and November 2024. The official counterpart for the project is CUBAENERGIA.