Initiative for Climate Action Transparency - ICAT -

Achievements and Lessons Learned in the First Phase of ICAT Ghana

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Deliverable 1

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1. Introduction

1.1 The country context

Ghana is a lower-middle-income developing country in the West African-sub-region of Africa. It has a varied geography and a changing tropical climate. Despite the consistent, steady economic growth over the last decade, the threats of the impacts of climate change militate against the prospects of doubling Ghana's GDP by 2024..

The country has been an active player in the international climate regime, ratifying the Paris Agreement in 2016, and committing to implement an ambitious Nationally Determined Contribution (NDC). Ghana's emission reduction goal is to unconditionally lower its GHG emissions by 15 per cent relative to a business-as-usual (BAU) scenario emission of 73.95 MtCO2e2 by 2030. An additional 30 percent emission reduction is attainable on condition that external support is made available to Ghana to cover the full cost of implementing the mitigation action (finance, technology transfer, capacity building). With this external support, a total emission reduction of 45% (i.e. both conditional and unconditional) below the BUA emission levels can be achieved by 2030.

Ghana has so far submitted four (4) National Communications and two(2) Biennial Update Reports (BURs) to the United Nations Framework Convention on Climate Change (UNFCCC). The focal point to the UNFCCC is the Environmental Protection Agency (EPA), under the Ministry of Environment, Science, Technology and Innovation (MESTI). Ministry of Finance is the National Designated Authority (NDA) for the Green Climate Fund (GCF) whereas the Forestry Commission serves as the REDD+ focal point. It is worthy of recognising the works by the ministries of energy, transport, agriculture, land and natural resources, water and sanitation and local government for taking concrete steps to highlight climate change as a priority area of action.

The ministries have either incorporated climate change into their sector policy and plans or established structures to deliver the climate outcomes. The Agencies under the above-mentioned ministries have also prioritized climate change in their work programmes. Some are already implementing concrete programmes on the ground towards achieving sector goals. For example, the Ministry of Food and Agriculture prepared the national climate-smart agriculture action plan and has been able to secure funding for the implementation of sustainable land and water management for farmers in the vulnerable savannah drylands. Another example is the initiative the Ministry of Energy is championing to diversify from liquid fuel to natural gas for electricity generation in Ghana.

Similarly, the Ministry of Finance (MoF) and the National Development Planning Commission (NDPC) play facilitating roles. Both the MoF and the NDPC work closely with MESTI as the lead ministry of climate change. While the NDPC sets the broad policy framework to incorporate climate change, MESTI and EPA coordinate the policy and technical work on climate change and then MoF leads in mobilising of climate finance.

In 2013, the Environmental Protection Agency (EPA) launched the Ghana Climate Ambitious Reporting Programme (G-CARP). It aims to facilitate the setting up of an integrated climate data management system that meets both national and international reporting standards as

well as to track national policy implementation. The components of the G-CARP are institutions, data management, tools and method and capacity development work together to report on GHG inventories, mitigation action and their effects, support and as expected in future under the Enhanced Transparency Framework (ETF), NDC progress and adaptation.

But the improvements in the G-CARP components has not been at the same level. Generally, the MRV of GHG, mitigation action and support elements have seen relative improvements due to EPA reforms. Among them, the GHG aspect is the most advanced compared to the other two components. The arrangement for the MRV of mitigation actions has seen some improvements in the areas of developing data collection templates, assigning roles and responsibilities as the adoption of the GACMO tool for evaluating the effectiveness of mitigation actions.

The functional assessment of the impacts mitigation policies and measures has seen significant improvement with the adoption of the GACMO model. After the successful application of the GACMO tool, Ghana adopted the tool as the primary analytical software for the revision of the NDCs as well as for the continued climate reporting to the UNFCCC. Furthermore, Ghana further developed an NDC progress monitoring tool by building on the MRV sheet of the GACMO tool in a full-fledge standalone application. Now, the national institutions are using the GACMO tool and NDC progress monitoring tool as a software package for the G-CARP system.1.2 Objectives and outcomes of ICAT Ghana Phase 1 projectIn 2020, the Environmental Protection Agency Ghana (EPA) completed the first phase of a project funded by the Initiative for Climate Action Transparency (ICAT) aiming at the setup of a champion sub-structure for data sharing, and using this structure to develop the first NDC for Ghana.

An excellent overall structure of the MRV system in Ghana had already been designed. However, more good work on the ground needed to be implemented on tracking implementation of the NDC for Ghana. To facilitate NDC implementation, the structure of champions was implemented. These sectoral champions were to assist in facilitating the sectoral implementation programs for the NDC, the tracking, monitoring, and communication of these programmes.

An important MRV gap was the difficulty and slow pace in establishing data sharing arrangement. For instance, the data compiled remained with the lead person for each sector and were not shared because there were no formal arrangements for this to take place. In order to overcome this barrier, the ICAT project assisted in the setup of the mentioned champion sub-structure. The ICAT project then focused on how the Renewable Energy Act was implemented through the renewable energy sector mitigation options in the NDC.

As part of the ICAT project, Ghana has established twenty data champions in nine sector ministries and CSOs to facilitate the smooth flow of mitigation data. The ICAT project also contributed to the enabling work of the data champions by first defining their clear roles and responsibilities and building their capacities.

As of now, the data champions are actively involved in reporting of progress of sector NDC and serve as contacts point for in their respective sectors during the preparation of the

international climate reports. They also play a critical role in the national effort to institutionalise the NDC implementation, monitor progress and reporting in sectors. Every year the network members fill the relevant sections of MRV template in the GACMO tool with data on the progress and achievement of the mitigation actions their respective areas.

Then, the EPA uses the completed data in the GACMO tool to estimate the effects of mitigation action. The network members also contributed significantly to the revision of the NDC baselines by supplying technology and policy data in the respective sectors. Another critical achievement of the ICAT project is about building the capacities of the MRV data champions. After the establishment of the MRV data champions, the member received training on the GACMO tool. In the coming years, Ghana will continue to maintain the data champions and more importantly, further strengthen the coordination of the work of the network. Another area of interest is the training of the champions, especially on new transparency topics.

Customising GACMO Model for Ghana:

GACMO is an open-source excel tool developed by UNEP-DTU Partnership in Denmark. The tool can be used in a wide range of areas because of the flexibility in its utility. In the case of Ghana, instead of only applying the GACMO to assess potential mitigation effects and co-benefits, it was decided that, the tool would be used to enhance the technical rigour of the NDC baseline. So, with the technical support of UNEP-DTU, Ghana developed its own version of the GACMO model, considering the unique circumstance of the country. The development of the model was not from scratch but rather the team built on the generic GACMO template by populating the sheet with relevant data from national and international sources. The construction of the Ghana version of the model was five stages as follows:

- Identification of NDC mitigation technology options
- Establishment of emission baselines from national GHG inventory results and projections factors
- Building a marginal abatement revenue curve based on technical and economic data.
- Aggregation of the mitigation potential of selected NDC technologies.
- Framing the overall emission reduction target
- Development of MRV tracking template

The significant benefits for improving the NDC baseline was that the GACMO model offered a transparent approach for developing the baseline using country data both as the national and sectoral level in a systematic manner. It really enhanced the confidence in the baseline emissions by clarifying and documenting the underlying methodology and assumption. The GACMO also allowed stakeholders to objectively review the data, methods and assumption behind the baseline and provide feedback. Besides, when they finished using the GACMO tool to reconstruct the baseline, the result would be available for the future team to build on it to make necessary revisions where it is needed.

To sum up, the outputs of the ICAT Ghana phase 1 project were:

- Output 1: Report describing the existing G-CARP MRV system in Ghana, including the new MRV Champions system setup, and providing recommendations on how best to remove the most significant data barriers.
- Output 2: Review the mitigation activities in Ghana; customising the GACMO Model for Ghana, aiming at actions in Ghana's NDC.
- Output 3: Provide recommendations on how to improve data collection and reporting for the renewable energy sector co-benefits.

2. Approach and key results

The objective of the ICAT phase 1 project in Ghana was to promote the first steps towards establishing a robust, transparent, and participatory MRV process to assess options for mitigation measures that enable the achievement of Ghana's NDC targets. The GACMO model was used for this purpose.

First, a "Start Year Balance" was produced for 2016. This was the latest year with data for all fossil fuels. It is a table with all data for the consumption in all the industry and transport sectors, and service, household, and agriculture. These tables exist in different units: mass units, TJ, tonnes of oil equivalent (toe), and CO_2 emissions. The emission tables also include the emissions of methane (CH_4) and nitrous oxide (N_2O) from agriculture, forestry and waste.

The tables of energy and emissions were then projected to 2020, 2025, and 2030 using growth factors for each sector, which were taken from the LEAP model runs for Ghana. For the non-energy sectors, where projections figures do not exist, the team used the five-year average of the historical emission for the projections in the baseline.

At that time, the GACMO model contained 93 mitigation options - and the most relevant 28 options were used for Ghana by inserting the size of the mitigation options in the sheets for 2025 and 2030. Finally a Marginal Abatement Revenue curve (MAR) was made by GACMO.

After the development of the GACMO model to suit Ghana's data, policy and capacity needs, through ICAT more than forty national stakeholders received training on the GACMO. The training programme was also an opportunity to share the GACMO model results to broader stakeholders for inputs. The training was well received by the participants and further suggested the need to organise a series of a training sessions for more stakeholders.

As part of the ICAT project, Ghana conducted a sustainable development impact for the solar rooftop programme. The SD assessment did not only make it possible to assess the socio-economic benefits of climate actions beyond emission reductions but also brought the financial benefits of the action. It was an innovative way to visualise the multiple impacts of climate actions in a single dashboard to help improve communication and appreciate the full benefits of the climate measures. The approach also highlighted the additional cross-sectoral benefits of climate actions over the implementation period. This new way of evaluating the effects of climate actions would inform the Ghana team when it starts to revise the current NDC. It would help to enhance the analytical rigour of the data undermining the revised NDC. In another important lesson from this exercise is about the need to beef up communication aspects. Most times, communicating climate action impacts skew towards energy and mitigation benefits without highlighting the additional social and economic issues. It is a critical gap that must be addressed head-on.

At least, the results from the sustainable development show far more other benefits of the solar rooftop programme are that usually not highlighted to policymakers when making decisions. At least, the assessment demonstrated that, the real socio-economics of the solar rooftop programme that the general public can relate to more than the energy and emission-led communication which is often difficult to understand.

The approach is crucial when it comes to making a compelling case to decision-makers in the finance and planning ministries for more allocation of financial resources to support the NDCs. With the sustainable development results, it is possible to articulate the emission reduction potential and the socio-economic benefits (investment savings, job prospects, access to clean energy), for specific NDC interventions

There were no obstacles to the implementation of the ICAT phase 1 project though some challenges regarding access to specific data have been met. It has to be noted that this will be considered under the Phase 2 of the project, which will look at the lack of data on some of the socio-economic parameters along the value chain.

3. Impacts of the project in the country

The project had impacts at different levels, which are explained in this section. A key contribution of ICAT phase 1 is that the project enabled the continuity of work and discussion on the implementation of the NDC in the country by using the substructure of champions that was implemented. These sectoral champions have assisted in facilitating the sectoral implementation programs for the NDC, the tracking, monitoring, and communication of these programmes.

The introduction of the GACMO model has been a great help for the country in being able to perform calculations for the greenhouse gas mitigation options in Ghana. For instance, it was used to make the emission calculation in the second Biennial Update Report (BUR). Here a template is completed for an individual mitigation action by the responsible data champion online and a copy is documented for the archive. The relevant data in the templates are transferred to the GACMO model that allows for the calculation of GHG effects of the individual mitigation action and their cost. The GACMO model emission projections, emission reduction targets and the aggregate effects of individual mitigation actions. With the GACMO model, it is possible to evaluate the emission reduction of individual actions, combined effects and the progress towards achieving the national target.

4. Lessons learned and recommendations

After building the GACMO model specifically for Ghana based on the available country data, it has become necessary to revise the emission figures in the NDC implementation before it is finally published. Besides, the MRV sheet in the GACMO has been adopted as the template the data champions will use to capture information on the progress of implementation of the mitigation actions in their respective sectors. Certainly, any future changes in the NDC emission figures will rely on the GACMO tool. The GACMO tool was main tool Ghana used in the assessment of mitigation actions and their effect when compiling its second biennial update report to the UNFCCC in 2018.

Once again, the section of the GACMO that allowed the assessment of individual mitigation actions and the MRV sheet were very useful in the BUR work. The Ghanaian team found that very helpful, easy-to learn, flexible and above all adaptable to suit the unique sectoral circumstances.

A workshop on the GACMO tool was organised at Mensvic Hotel in Accra on 23rd and 24th August, 2018. The purpose of the workshop was to introduce the GACMO to the data providers and collect feedback on the Ghana model. The workshop also afforded the team to train the data champions on how to use the tool and what is expected from them in the future. The workshop was organised by the Environmental Protection Agency (EPA) in close collaboration with the UNEP DTU. In all, forty people participated in the workshop. They were drawn from both public institutions, the academia and CSOs.

The majority of the participa were either the data champions or their representatives. Additionally, people from data providing institutions also attended the workshop. The workshop was timely because it also afforded the opportunity to allow the participants to scrutinise the analysis behind the Ghana NDCs and provide comments.

As Ghana prepares to develop its second NDCs, Ghana will get assistance from UNEP DTU under the ICAT phase 2 project in using GACMO for that. New "Start Year Balance" data will be used, projections will be changed and the data for the mitigation option will be improved, and new options might be added.