Initiative for Climate Action Transparency (ICAT)

Stocktaking of Climate Change Initiatives in the Philippines: A Focus on MRVs and Transparency

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ABREVIATIONS

AFOLU	Agriculture, forestry and other land uses
AWIT-FE	Agriculture, Waste. Industry, Transport, Forestry, Energy
B-LEADERS	Building Low Emission Alternatives to Develop Economic Resilience and Sustainability
BRT	Bus Rapid Transport
BUR	Biennial Update Report
BR	Biennial reports
BTR	Biennial Transparency Report
CBA	Cost-Benefit Analysis
CGE	Computable General Equilibrium
CCC	Climate Change Commission
CCO	Climate Change Office
CDM	Clean Development Mechanism
CERs	Certified Emission Reductions
CCET	Climate Change Expenditure Tagging
CBFM	Community-Based Forrest Management
CMP	Community Mortgage Program
COP	Conference of Parties
DA	Department of Agriculture
DBM	Department of Budget
DENR	Department of Environment and Natural Resources
DILG	Department of Interior and Local Government
DOF	Department of Finance
EMB	Environmental Management Bureau
ER	Emission Reduction
ETF	Enhance Transparency Framework
ETS	Emission Trading System
FIR	First Interim Report
FMB	Forest Management Bureau
DNA	Designated National Authority
DOE	Department of Energy
DOTr	Department of Transportation
DRRM	Disaster Risk Reduction Management
ER	Emission Reductions
GHG	Greenhouse Gases
GHGI	Greenhouse Gas Inventory
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HLURB	Housing and Land Use Regulatory Board
HUCs	Highly Urbanized Cities
I/NDC	Intended Nationally Determined Contribution
IA	Institutional Arrangements
IAR	International assessment and review
ICA	International Consultation Analysis
ICC	Independent Component Cities
IPCC	Intergovernmental Panel on Climate Change

IPPU	Industrial Process and Product Use
ICAT	Initiative for Climate Action Transparency
LEAP	Long-range Energy Alternatives Planning
LEDS	Low Emission Development Strategies
LDRRMO	Local DRRM Offices
LGU	Local Government Unit
LUCF	Land Use Change and Forestry
MA	Mitigation Action
MCA	Multi-Criteria Analysis
MPGs	Modalities, Procedures and Guidelines
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MR	Monitoring Report
MRV	Measurement, Reporting and Verification
MWh	Megawatt Hour
NAMA	Nationally Appropriate Mitigation Action
NC1	1st National Communication
NC 2	2nd National Communication
NDC	Nationally Determined Contribution
NDCCO	Nationally Determined Contribution Coordinating Office
NEDA	National Economic Development Authority
NEECP	National Energy Efficiency and Conservation Program
NFSCC	National Framework Strategy on Climate Change
NGAs	National Government Agencies
NCCAP	National Climate Change Action Plan
NICCDIES	National Integrated Climate Change Database Information & Exchange System
NMM	New Market Mechanism
NREP	National Renewable Energy Program
NSWMC	National Solid Waste Management Commission
O&M	Operation and Maintenance
PA	Paris Agreement
PEP	Philippine Energy Plan
PGHGIMRS	Phil. Greenhouse Gas Inventory Management & Reporting System
PMU	Project Management Unit
PPFP	Provincial Physical Framework Plan
PLCs	Publicly Listed Companies
QA	Quality Assurance
QC	Quality Control
RA	Republic Act
RE	Renewable Energy
REDD	Reduction of Emissions from Deforestation and Forest Degradation in Developing countries
RBMES	Results-Based Monitoring and Evaluation System (RBMES
REMB	Renewable Energy Management Bureau
SEC	Securities and Exchange Commission
SHFC	Social Housing Finance Corporation

SB	Standardized Baseline
SD	Sustainable Development
SIR	Second Interim Report
TCCCA	Transparency, Completeness, Consistency, Comparability, Accuracy
TWB	Technical Working Board
TWG	Technical Working Group
UNFCCC	United Nations Framework for Climate Change Convention
UNOPS	United Nations Office for Project Services
UNDP	United Nations Development Program
USAID	United States Agency for International Development

1.EXECUTIVE SUMMARY

The Philippines, as a signatory Party under the United Nations Framework Convention on Climate Change (UNFCCC), has made significant efforts in mitigating the country's GHG emissions with available resources and capabilities. It submitted its first National Communication (NC1) to UNFCCC for the inventory year 1994 and, its second NC (NC2) for the year 2000 inventory on 19 May 2000 and on 29 December 2014, respectively. The Philippines has submitted its Intended Nationally Determined Contributions (INDC) on October 2015 with the intention to undertake GHG (CO2e) emissions reduction of about 70% by 2030 relative to its BAU scenario of 2000-2030. Reduction of CO2e emissions is expected to come from energy, transport, waste, forestry, and industry sectors. The Country has signed the Instrument of Accession to the Paris Agreement on 22 April 2016 and ratified it on 23 March 2017. The Philippines has initially developed in 2010 its National Greenhouse Gas Inventory (GHGI) and this is the basis for the first NDC that would be submitted to the UNFCCC. Currently, the
Philippines is currently working on its Nationally Determined Contribution (NDC) with its second stakeholder's consultation held last February 2021. The Climate Change Commission is leading the development from the INDC to the NDC utilizing a whole-of-government, whole-of country approach with emphasis on adaptation as the anchor strategy, and the goal of mitigation as a function of adaptation.

One of the components in providing credibility in the operationalization of the Paris Agreement is the Enhanced Transparency Framework (ETF). This is designed to strengthen the current measurement, reporting and verification (MRV) reporting requirements under the Convention. This is because the ETF specifies how Parties to the Paris Agreement must report on progress in climate change mitigation, adaptation measures and support provided or received. It also provides for international procedures for the review of the submitted reports. Information collected via ETF is provided as an input to the Global stock take which assess the collective progress towards the long-term climate goals. And responding to the critical need to support improved transparency and capacity under the Paris Agreement, The United Nations Office of Project Service (UNOPS) Initiative for Climate Action Transparency (ICAT) was founded. ICAT is designed to help improve the availability and quality of data and enable countries like the Philippines to promote efficient, cost-effective policies.

This inception report provides an inventory and review of all related available reports (both completed and on-going) in the Philippines highlighting the different climate policies and actions and its related MRV/transparency approach.

As the Philippines is in the process of transitioning INDC to NDC, initial document review shows that the Philippines has already tried to address the initial requirements of ETF through its initial work on MRVs. It has created policy mechanism for GHG inventory via Philippine Greenhouse Gas Inventory Management and Reporting System (PGHGIMRS) and the National Integrated Climate Change Database and Information Exchange System (NICCDIES) though much work has needs to be done to have an annual reporting of its major sectors' emission profile like. energy, industry, agriculture, waste, etc. in a national inventory. The Philippines has received several

climate change related sectoral supports and has several reporting mechanisms. It has the National Climate Change Action Plan (NCCAP) being monitored. The USAID-funded Building Low Emission Alternatives to Develop Economic Resilience and Sustainability (B-LEADERS) Project managed by Engility Corporation provided the initial Cost-Benefit Analyses (CBA) that covers all GHG emitting sectors in the including agriculture, energy, forestry, industry, transport, and waste. The assessment is carried out relative to a 2010-2050 baseline projection of the sector- specific GHG emissions levels. The evaluation of the mitigation options covers the period spanning 2015-2050, except for the forestry where costs are assessed starting in 2010.

In line with the ETF, there is a need to develop a robust institutionalize domestic MRV system with a progress tracker (identification of sources sector and activities contributing to GHG emissions, understanding trends in emissions and removals) that would be regularly updated as well as policy formulation (with developed cost-effective mitigation measures) that could promote convergence and provision of finance monitoring progress towards policy goals. Moreover, using the ICAT assessment guide framework, some gap areas for improvement includes impact assessment methodologies for assessing the GHG, sustainable development and transformational impacts of policies at the sectoral level -in this case, energy, transport, solid waste and agriculture and a methodology for integrating the impacts of non-state and subnational actions.

2. INTRODUCTION

The Philippines is one of the countries that successfully advocated for the integration of the 1.5C warming cap at the 21st Conference of Parties to the United National Framework Convention on Climate Change (UNFCCC), otherwise known as the Paris Agreement.

Per the latest Special Report released by the Intergovernmental Panel on Climate Change (IPCC), limiting global warming to 1.5 degrees is still possible and will help stop some of the worst-case climate change scenarios. But this will require strong, fast, and serious mitigation actions to curb greenhouse gas (GHG) emissions by 45% in 2030, and possibly meeting a net zero emission by 2050 using the base year 2000.

Pursuant to its mandate under the Republic Act 9729 or the Climate Change Act of 2009, the Climate Change Commission or CCC, is tasked with the development of the National Climate Change Action Plan (NCCAP) in accordance with the National Framework Strategy on Climate Change (NFSCC) in coordination with government agencies and various sectors such as civil society organizations, business sector, and the academe. The Philippines regards mitigation as a function of adaptation and has been very active in identifying measures to mitigate climate impacts by avoiding further GHG emissions. On 19 May 2000, the Philippines submitted its first National Communication (NC1) to UNFCCC for the inventory year 1994 and on 29 December 2014, its second NC (NC2) for the year 2000 inventory. The inventory serves as a measure to quantify sources of GHG emissions and potential carbon sinks, and as a

guide to lawmakers in crafting appropriate policies and strategies to reduce GHG emissions and climate change risks.

The Philippines signed the Instrument of Accession to the Paris Agreement on 22 April 2016 and ratified it on 23 March 2017. Critical to this agreement is the Nationally Determined Contributions (NDC) which highlights the national climate related strategies, policies, and actions to operationalize the global temperature goal. The Philippines has initially developed in 2010 its National Greenhouse Gas Inventory (GHGI) and this is the basis for the first NDC to be submitted to the UNFCCC.

Since then, and with the support of many international partners like Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), United Nations Development Program (UNDP), United States Agency for International Development (USAID) and others, the Philippines has always exercise multi-stakeholder consultations and has always been inclusive in determining adaptation and climate change mitigation measures and GHG emission reductions. A climate change budget tracker has also been implemented. This ensures transparency of action and the tracking of climate related support in the Philippines.

Moreover, responding to the critical need to support improved transparency and capacity under the Paris Agreement, The United Nations Office of Project Service (UNOPS) Initiative for Climate Action Transparency (ICAT) was founded. ICAT is designed to help improve the availability and quality of data and enable countries to promote efficient, cost-effective policies. A platform for countries such as the Philippines, to share lessons learned and build mutual confidence in their climate actions is envisioned in this Initiative.

2.1 Rationale

The ICAT helps countries assess the impacts of policies and actions. In this case, the ICAT project is designed to assess and help build the Philippines' institutional capacity on understanding the different methodological frameworks available, help develop tools and implement appropriate MRV/M&E tools both for mitigation and adaptation and climate finance.

2.2 Goals and Objectives

This main goal of this inception report is to provide an initial documentation, rapid review, and assessment of all the existing mechanisms/frameworks used in the development of similar MRV/ transparency initiatives in the Philippines and provide an overview of the different international transparency/MRV/M&E tools at the international level. The report also aims to help build the case in determining how to maximize the synergies, avoid duplication, and mobilize the appropriate support for identified needs and priorities and a baseline needed for the ICAT support in providing a menu of tools and/or propose a fit-for-purpose tool needed by the Philippine government. It is important to highlight that the Instrument of Accession signed by the President was accompanied by a Declaration of State that the "accession to and implementation of the Paris Agreement by the Republic of the Philippines is for the

purpose of supporting the country's national development objectives and priorities," which include: 1) sustainable and industrial development, 2) eradication of poverty and provision of basic needs; 3) securing social and climate justice and 4) energy security

Based on communicated needs of the different government agencies from previous consultations and meetings of CCC, the focus of the review and assessment are the four major (4) sectors: Solid Waste and Wastewater, Energy, Transport, Agriculture. These four sectors are critical as they are part of the driving forces in sustainable development and ensuring green economy. Other sectors like forestry and industry could benefit as well as these four main sectors could have cross-cutting impacts.

2.3 Study Approach, Framework, and Methodology

This inception report is expected to provide an inventory and review of all related available reports (both completed and on-going) in the Philippines as well as give an overview of the different MRV/transparency approach at the international level and those at currently used by other countries in the context of climate actions.

The concepts of MRV and transparency will be defined at the international and national level. A quantifiable, credible, and accepted as well as agreed measurement with regards to MRV of emissions is expected. It is thus, important that countries understand GHG sources and trends, design mitigation strategies and take other policy actions.

As highlighted earlier, the priority for MRV and transparency review and assessment are the four sectors: 1) Solid Waste 2) Energy 3) Agriculture 4) Transport

The transparency aspect is analyzed using the following indicators:1) green economy; 2) Resilient communities and an approach to disaster risk reduction (to possibly include the current pandemic issue); 3) Inclusiveness; and 4) sustainable development goals (SDGs).

2.4 Expected Outputs

This report is expected to come up with an initial comprehensive inventory of existing initiatives the Philippine government with regards to transparency and MRV of climate change actions. A review and analysis of this comprehensive inventory of climate related activities and actions to determine the gaps and actions needed towards increased transparency and MRV capacities for climate change actions will be provided. The report is expected to guide the Philippine government in identifying specific tools and methodologies applicable to and appropriate for its needs and priorities with regards to MRV and transparency and be in line with the national policy and planning frameworks as well as reporting requirements as Party to the UNFCC and the Paris Agreement.

3. OVERVIEW OF INTERNATIONAL MRV AND TRANSPARENCY FRAMEWORKS AND MECHANISMS FOR CLIMATE ACTION AND SUPPORT

At the Conference of Parties (COP) 21 in 2015, the Parties aimed at stronger global action to the threat of climate change adopted the Paris Agreement and through it, established the enhanced transparency framework.

3.1 UNFCCC Paris Agreement and the Enhanced Transparency Framework

Since the goal of the Paris Agreement (2015) is to limit the increase in global average temperatures to below 2°C relative to pre-industrial levels and to pursue efforts to limit warming to 1.5°C, each country then, ideally should aim to reduce its national GHG emissions while also adapting to the impacts of climate change. On this regard, the Paris Agreement under Article 13 established an Enhanced Transparency Framework (ETF) for action and support to build mutual trust and confidence among the Parties and to promote the effective implementation of the Paris Agreement. The ETF is designed with built-in flexibility, which takes consideration of the Parties' different capacities and builds upon the collective experience of transparency under the Convention (UNFCCC). The implementation is followed in a facilitative, non-intrusive, non-punitive manner that is respectful of national sovereignty and is designed to avoid placing an undue burden on the Parties.[1]

In the case of the Philippines, Table 3.1 presents the UNFCC table for developing countries with the applicable process and corresponding submissions expected.

[1] Source: ICAT (2019) Our Approach Available at https://climateactiontransparency.org/about/ Accessed on 11 Nov. 2019

Table 3.1. UNFCC Process and expected report submissions[2]

	Developing countries (Non-Annex I Parties)
Reporting	• National Communication • Biennial update report • GHG inventory as part of the two above
	International Consultation and Analysis Process (ICA)
Technical Review/ Analysis	Technical Analysis of Biennial Update Reports
Multilateral Process	Facilitative sharing of views.

It is important to note that the modalities, procedures, and guidelines (MPGs) of the ETF is expected to replace reporting of biennial reports (BRs) and biennial update reports (BURs) and the international assessment and review (IAR) and international consultation analysis (ICA) processes for Paris Agreement (PA) Parties. Under the current MRV system, the final BR of developed countries is expected to include GHG inventory data for 2020 and thus allow assessment of whether the party met its 2020 economy wide emission target. The final BURs by developing countries shall be those that are submitted not later than 31 December 2024. This means that a developing country Party may submit their final BUR prior to 31 December 2024. On the other hand, in the talks on transitional arrangements, some developed and developing countries like Chile noted that they may submit their first BTR already in 2022 with a view to inform the first global stock-take (GST) that is expected to take place in 2023. Early submissions by Parties could be helpful in giving more experience and information for the first GST in 2023, while understanding that developing countries may have capacity issues in doing so.[3]

Financial, technical, and capacity-building support is noted to be provided by bilateral and multilateral organizations, including one of the formal channels under the Convention process, the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention for developing countries that lack the capacity and required institutional set-up to track the progress of climate actions at the national level.[4]

One of the challenges that developing countries face is meeting the test of reaching development goals while at the same time lessening their GHG (greenhouse gas emissions) to address climate change. This is especially true with solar/PV making up 80% of new electricity markets and the cost of electricity from wind and solar/PV (without subsidies) being competitive with electricity of fossil fuel (with subsidies), low emission development appears to be the new to reach developing goals by countries.[5]

[2] Source:World Resource Institute, 2020 Available at https://www.wri.org/blog/2016/08/insider-untangling-measurement-reporting-and-verification-mrv-paris-agreement and https://files.wri.org/s3fs-public/MRV_101_0.pdf Date Accessed 10 July 2020

[3] Source: UNFCC, 2020, Moving Towards ETF Available at https://unfccc.int/enhanced-transparency-framework#eq-1 Accessed on 05 January 2021

[4] Source: UNFCC,2020 What is Transparence and Reporting Available at https://unfccc.int/process-and-meetings/transparency-and-reporting/the-big-picture/what-is-transparency-and-reporting Accessed on 11 September 2020

[5] Source: IEA WEO, 2020. World Energy Outlook 2020 Available at https://www.iea.org/reports/world-energy-outlook-2020 Accessed on 10 July 2020

This is especially the case as fossil fuel prices are crumbling over the past months and still is.

And when it comes to climate action, understanding its MRV is important since effective climate change mitigation would need an understanding of the greenhouse gas (GHG) emissions and their sources, and regular monitoring of mitigation strategies and their impacts. The practice of MRV integrates three independent but related, process of *measurement or monitoring (M)* which means data and information on emissions, mitigation actions, and support; *reporting (R)* or a compilation of information in inventories and other standardize forms making it accessible to a range of users and facilitate public information disclosure; and *verification (V)*- periodically subjecting the reported information, could be an independent assessment to establish complete ness and reliability.[6]

The following are the three (3) types of MRVs:[7]

1. *MRV of GHG emissions* is conducted at national, organizational and/or facility levels to understand an entity's emissions profile and report it in the form of an emissions inventory. This is illustrated in countries reporting their emissions from energy, industry, agriculture, waste, etc. in a national inventory. On an annual basis at organizational-level inventories, companies may measure and report emissions from their activities.
2. *MRV of mitigation actions* is usually related to policies or projects where MRVs are used to assess GHG effects and sustainable development (non-GHG) effects, as well as to monitor implementation. Estimating the change in GHG emissions or other non-GHG variables is the focus for this kind of MRV. An example of a national policy is that of sustainable transport policy where a country assesses its effect on traffic congestion, air pollution, mobility, GHG emissions and employment.
3. *MRV of support* where support can come in many forms, including climate finance, technology transfer and capacity building. This kind of MRV helps track provision and receipt of climate support, monitor results achieved and assess impact. For example, a country could track financial support provided towards mitigation efforts and building capacity. At the same time, the recipient country could also track support received for various climate and other initiatives[8].

The above is summarized and illustrated as Figure 3.1.

[6] Source: WRI, 2016
[7] Source: Ibid.
[8] WRI, 2020 Untangling MRV Paris Agreement Available at https://www.wri.org/blog/2016/08/insider-untangling-measurement-reporting-and-verification-mrv-paris-agreement and https://files.wri.org/s3fs-public/MRV_101_0.pdf Accessed on 07 July 2020

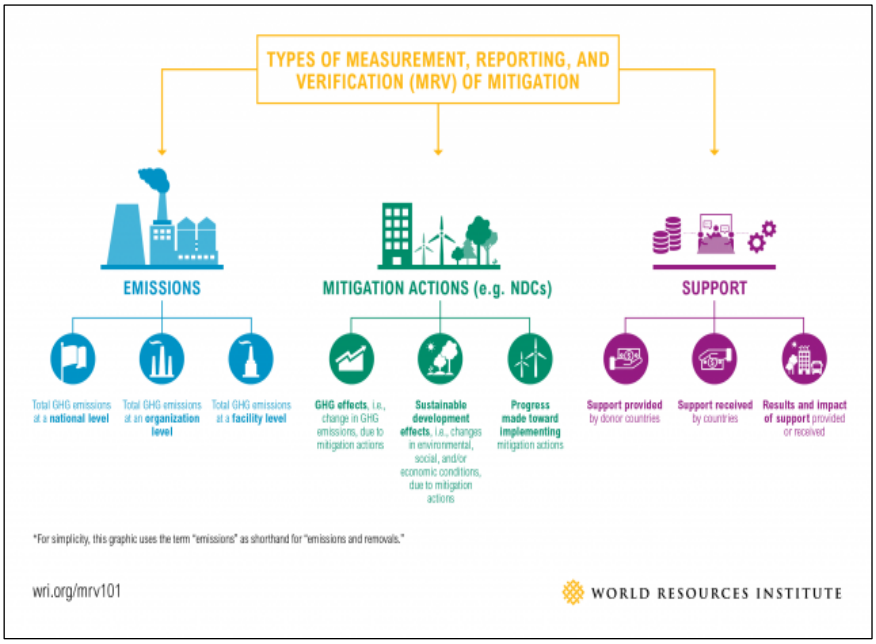


Figure 3.1. Type of MRV Mitigation, an Illustration2016[9]

ICAT published Assessment guides in 2020 which is a series of methodologies for comprehensively evaluating the GHG, sustainable development and transformational impacts of policies and actions in an integrated and comprehensive manner across all levels of governance. This includes GHG impacts such as changes in carbon dioxide and other GHG emissions by sources, and removals by sinks. It also looks at positive sustainable development impacts from improved healthy due to air pollution reduction, job creation, poverty reduction, increased energy access gender equality etc. This also includes policy impacts resulting to transformational change e.g., New technologies, behavioral change for a zero-carbon society. Summary assessment guides is provided in figure 3.2.

Fundamental in the series is the impact assessment methodologies for assessing the GHG, sustainable development and transformational impacts of policies, including a methodology for aggregating the impacts of non-state and subnational actions. The GHG impact assessment methodologies focus on commonly implemented policies and fill the gaps in existing guidance instead of covering all policies. Methods are provided for identifying the scope of the assessment, defining baseline and policy scenarios, and monitoring indicators and parameters for estimating policy impacts. These methodologies are supported by process guides covering stakeholder participation and technical review (light blue in the illustration). These address core aspects of successful policymaking, including using stakeholder participation to strengthen policy design and implementation, and using technical review as a tool for learning and improvement in impact assessments. There is a guide for each sector as illustrated in figure 3 .2 and each could be used on their own or together with other like Transport Pricing Methodology could be used with the Sustainable Development

[9]Source: WRI, 2016. MRV Available at https://www.wri.org/resources/charts-graphs/3-types-measurement-reporting-and-verification-mrv. Accessed on 11 September 2020

Methodology to assess both the GHG and the broader environmental, social, and economic impacts of a new transport policy.

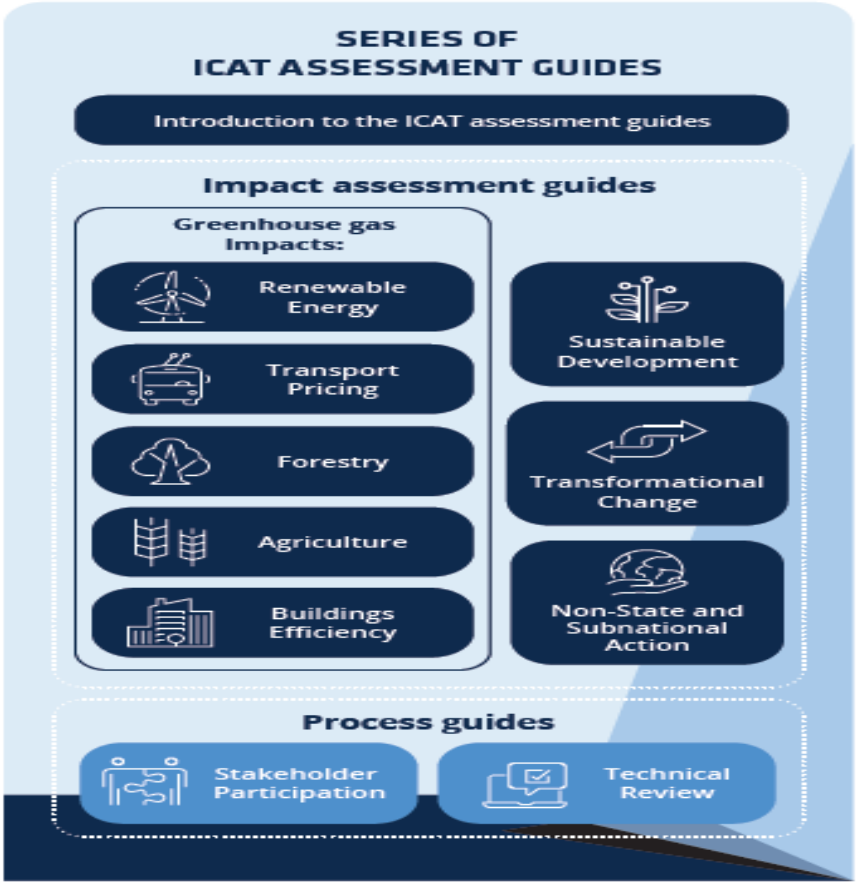
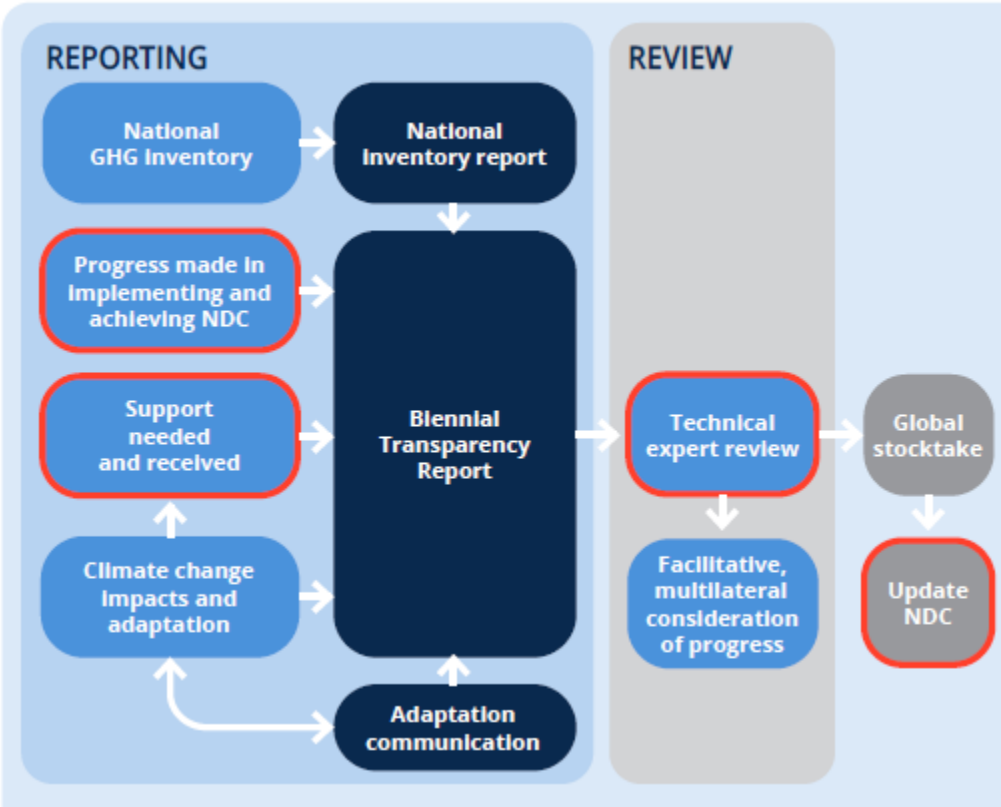


Figure 3.2 ICAT Assessment Guides in a nutshell[10]

ICAT helps policymakers evaluate the impacts of policies using assessment guides that track implementation progress and further develop NDCs to become more ambitious. The flowchart of which is illustrated in figure 3.3.

[10] Source:ICAT, 2019. Climate Action Transparency Available at https://climateactiontransparency.org/wp-content/uploads/2019/11/ICAT-MPGs-publication-final.pdf Accessed on 10 July 2020



Note: Blue: reporting inputs and aspects of the transparency framework
Dark blue: reports or documentation under the transparency framework
Red: ICAT assessment guides can help with reporting inputs and aspect of transparency framework

Figure 3.3 Understanding ICAT Support[11]Flowchart

3.2 ICAT Support and Practices of countries with similar contexts[12]

To date, there are 40 countries in four regions including Asia including the Philippines that have been invited and have accepted the offer of ICAT. These countries are selected based on existing MRV capacity and the climate ambition and sustainable development goals.

The ICAT 2020 report shows that at present there is no common methodological framework to measure, report and verify the progress made through the GHG mitigation measures that is suitable for all sectors and countries. The focus of ICAT support is based on its stocktaking and gap analysis identified through consultations conducted with the country's need in mind.

[11] Source: ICAT 2020, Availablehttps://climateactiontransparency.org/wp-content/uploads/2019/11/ICAT-MPGs-publication-final.pdf
[12] Source: ICAT 2020 Accessed on 11 November 2020

In Asia, Bangladesh, Cambodia, China, India, Maldives, Philippines, Sri Lanka, Thailand, and Vietnam are the countries getting assistance from ICAT. Cambodia, Philippines, Thailand, and Vietnam are members of the ASEAN. Vietnam and the Philippines are also part of the 48 nations in the Climate Vulnerable Forum (CVF).

Thailand Experience

Thailand pledged its first Nationally Appropriate Mitigation Actions (NAMAs) to the UNFCCC on 29 December 2014. Their NAMA proposal aims to reduce its GHG emission in the range of 7-20% (20% with international support) below the business-as-usual (BAU) level particularly in the energy and transportation sector by 2020. Thailand submitted its NDC in 2016 where in for its mitigation component, reduction of GHG emissions by 205 from the project BAU level by 2030. The level of contribution is expected to increase up to 25 %, subject to adequate and enhanced access to technology development and transfer, financial resources, and capacity building support through a balanced and ambitious global agreement under the UNFCC.

As per Thailand's Nationally Determined Contribution Roadmap on Mitigation 2021-2030 (NDC Roadmap), the building sector is classified as a sub-sector under the energy and transportation sector, and it covers the commercial and public buildings. With ICAT support, recommendations to strengthen MRV in in building and industrial sector were provided. It is expected that the GHG emission reductions through energy efficiency measures (EEMs) from these commercial and public buildings would contribute to around one million tCO2 by 2030.

Vietnam Experience

Vietnam submitted its NDC in 2016 where in for mitigation component, its unconditional commitment by 2030 with domestic resources is reduction of GHG emission by 8% compared to BAU (estimated at 62.65MTCo2e), in which emission intensity per of unit of GDP is expected to be reduced by 20% compared to the 2010 levels and forest cover is expected to increase to the level of 45T. Its conditional commitment could be increased to 25%, if there is international support through bilateral and multilateral cooperation including the implementation of new mechanism under the Global Climate Agreement, in which emission intensity per unit of GDP is to be reduced by 30% compared to 2010 levels. Based on its gap analysis, the focus of ICAT support is on MRV/Transparency in the energy and AFOLU sectors including synergies with other support initiatives.

Cambodia Experience

Cambodia submitted its NDC in 2017 where in for mitigation component it intends to undertake actions with the impact sectors: energy, industries, manufacturing, transport) of which a maximum reduction of 3, 100Gg CO2eq compared to baseline emissions of 11, 600 GG CO2eq by 2030 is expected. It also plans to undertake voluntary and conditional actions to achieve the target of increasing forest cover to 60% of national land area by 2030.The focus of ICAT project is strengthening the MRV framework for the RE subsector.

4. FRAMEWORK CONDITIONS FOR MRV AND TRANSPARENCY OF CLIMATE ACTION AND SUPPORT IN THE PHILIPPINES

With regard to climate action and support, the Philippines has several policies and implementation mechanisms in place to help set up the framework conditions for MRV and transparency.

4.1 Policies driving national, subnational, and private sector adaptation and mitigation initiatives[13]

More than a decade ago, in response to the immediate concern for climate change action, the Philippines passed Republic Act 9729 or the Climate Change Act of 2009. This is anchored on the constitutional provision that states that "it is the policy of the State to afford full protection and the advancement of the right of the people to a balanced and healthful ecology… to fulfill human needs while maintaining the quality of the natural environment for current and future generations". This led to the establishment of the Climate Change Commission, an independent and autonomous body that has the same status as that of a national government agency. As noted in Section 4 of the policy, the CCC is under the Office of the President and is the "lead policy-making body of the government which shall be tasked to coordinate, monitor and evaluate the programs and action plans of the government relating to climate change pursuant to the provisions of this Act.". Under Section 5, the President of the Republic of the Philippines serves as the Chairperson, with three (3) Commissioners appointed by the President, one of whom serves as the Vice Chairperson of the Commission. Under Section 14, the LGUs are expected to act as frontline agencies in the formulation, planning, and implementation of climate change action plans in their respective areas. They are expected to formulate their Local Climate Change Action Plan, consistent with the provisions of the Local Government Code, the Framework, and the National Climate Change Action Plan. Moreover, inter-local government unit collaboration is expected to be maximized in the conduct of climate- related activities.

[13] Source: CCC,2020 Climate Laws and Policies Available at https://climate.gov.ph/knowledge Accessed 12 November 2020

Table 4.1.1 Mandates of the Climate Change Commission

(a) Coordinate and synchronize climate change programs in consultation with national government agencies and other stakeholders; (b) Formulate a Strategic Framework on Climate Change to serve as the basis for a program for climate change planning, research and development, extension, and monitoring of activities on climate change; (c) Exercise policy coordination to ensure the attainment of goals sat in the strategic framework and program on climate change; (d) Recommend legislation, policies, strategies, programs on and appropriations for climate change adaptation and mitigation and other related activities; (e) Recommend key development investments in climate-sensitive sectors such as water resources, agriculture, forestry, coastal and marine resources, health, and infrastructure to ensure the achievement of national sustainable development goals; (f) Create an enabling environment for the design of relevant and appropriate risk-sharing and risk-transfer instruments; (g) Create an enabling environment that shall promote broader multi-stakeholder participation and integrate climate change mitigation and adaptation; (h) Formulate strategies for mitigating GHG emissions, anthropogenic sources and enhance removal by sinks; (i) Coordinate and establish a close partnership with the National Disaster Risk Reduction and Management Council in order to increase efficiency and effectiveness in reducing the people's vulnerability to climate-related disasters; (j) In coordination with the Department of foreign Affairs, represent the Philippines in the climate change negotiations, constitute and lead the Philippine panel of negotiators to the UNFCCC and the formulation of official Philippine positions on climate change negotiation issues, and decision areas in the international negotiation arena; (k) Formulate and update guidelines for determining vulnerability to climate change impacts and adaptation assessments and facilitate the provision of technical assistance for their implementation and monitoring; (l) Coordinate with local government units (LGU's) and private entities to address vulnerability to climate change impacts of regions, provinces, cities, and municipalities; (m) Facilitate capacity building for local adaptation planning, implementation, and monitoring of climate change initiatives in vulnerable and marginalized communities and areas; (n) Promote and provide technical and financial support to local research and develop merit programs and projects in vulnerable and marginalized communities and areas; (o) Oversee the dissemination of information on climate change, local vulnerabilities and risks, relevant laws and protocols and adaptation and mitigation measures; (p) Establish a coordination mechanism with the concerned government agencies and other stakeholders to ensure transparency and coherence in the administration of climate funds taking into consideration the official Philippine position in international negotiations; (q) Perform such other functions as may be necessary for the effective implementation of the Ac

With the vision of a climate-resilient and climate smart Philippines with highly adaptive communities, its mission is to take the lead in the development and mainstreaming of

evidence-based climate adaptation and mitigation policies through optimum coordination among key stakeholders towards achieving a climate-resilient and climate-smart Philippines with healthy, safe, prosperous, and self-reliant communities.

It is also important to note that the Instrument of Accession signed by the President in 2016 and ratified in 2017 was accompanied by a Declaration of State that the "accession to and implementation of the Paris Agreement by the Republic of the Philippines is for supporting the country's national development objectives and priorities," which include:

1. Sustainable industrial development.
2. Eradication of poverty and provision of basic needs.
3. Securing social and climate justice; and
4. Energy security

The Philippine government has a proactive stance with regard to policy and governance challenges to climate change by having relevant legislations which are entrenched in various laws and government issuances. This is shown in Table 4.1.

Table 4.1.2 Philippines Laws on Climate Change Mitigation and Adaptation

Law	Objectives	Sector/s
AFOLU		
The Agriculture and Fisheries Modernization Act of 1997 (RA 8435)	To consider climate change, weather disturbances, and annual productivity cycles to forecast and formulate suited agricultural and fisheries programs. (Note: For the Department of Agriculture (DA) and other concerned agencies)	Agriculture, forestry and other land uses (AFOLU)
The Philippine Clean Water Act of 2004 (9275)	To reduce water pollution through better management of sewerage and sanitation, industrial effluents, and agricultural and residential wastewater	All sectors
Environment		
The Philippine Clean Air Act of 1999 (RA 8749)	To prepare and implement national plans to regulate emissions in accordance with UNFCCC (Note: for Department of Environment and Natural Resources (DENR), local government units (LGUS) and other concerned agencies	All sectors
The Ecological Solid Waste Management Act of 2000 (RA 9003)	To prepare and implement solid waste management (SW) plans including promotion of waste to energy technologies (For Department of Environment and	Waste

	Natural Resources (DENR), local government units (LGUS) and other concerned agencies	
Energy		
The Biofuels Act of 2006 (RA 9367)	To pursue energy self-sufficiency	Energy and Industrial Processes (IP)
The Renewable Energy (RE) Act of 2008 (RA 9513)	To promote the development, utilization and commercialization of RE resources	Energy
Cross-cutting		
The Climate Change Act of 2009 (RA 9729)	To mainstream climate change into government policy formulations, establishing the frameworks strategy and program on climate change	All sectors: DENR DOF DILG
People Survival Act (RA 10174)	To mainstream climate change into government policy formulation and to introduce the People's Survival Fund. To ensure the annual allocation of PSF amounting to at least PhP 1 Billion from the General Appropriations Act to provide long stream finance for local government units (LGUs) and local/community organizations to implement climate change adaptation projects that will better equip vulnerable communities to deal with the impacts of climate change. It supplements the annual appropriations allocated by relevant government agencies and local government units for climate-change-related programs and projects.	All sectors
Green Jobs Act (RA 10771)	To get incentives for green jobs; CCC tasked to develop the standards and accreditation system	All sectors
Philippine Disaster Risk Reduction and Management Act of 2010	To provide the updated mandates for national and local disaster risk reduction and management (DRRM) authorities, with a strong focus on preparedness. It tasked Local DRRM Offices (LDRRMOs) with taking the lead in responding	All sectors LDRRMOs are headed by Disaster Risk Managers who have

	to and recovering from disasters in their provinces. within their localities	responsibility for disaster preparation and recovery

To support the implementation of these national laws, several policies were also formulated which consider measures for climate change mitigation and adaptation. These policies were particularly developed in the AFOLU sector as well as in the energy and IPPU sectors. Examples of such policies are shown in Table 4.1.3.

Table 4.1.3 Supporting Policies to Implement National Mandates on Climate Change Mitigation and Adaptation

Policy	Description	Sector
EO No. 263, Series of 1995	The Community-Based Forrest Management (CBFM) Strategy focuses on the protection and conservation of existing carbon pools and with them participation of local communities as the official strategy for sustainable forest management and social justice. In the context of climate change mitigation, the CBFM's mandate, facilitated by the DENR in partnership with LGUs and NGOs, is to solve the problem of forest land degradation, which is also one of the country's measures to mitigate emissions.	AFOLU
EO No. 320, Series of 2004	Appoints the DENR as the National Authority for Clean Development Mechanism (CDM)	All sectors
EO No. 881, Series of 2010	For CCC to include Reducing Emissions from Deforestation and Forest Degradation – Plus (REDD+) and other similar mechanisms in its scope of coordination with the DENR serving as the operational implementer of REDD+	Forestry
National Framework Strategy on Climate Change 2010	Adopts the Philippine Agenda 21 for sustainable development and provides the basis for basis for climate change planning, research and development, extension, monitoring of activities, and climate financing, to protect vulnerable and	All sectors

	marginalized communities from the adverse effects of climate change.	
Executive Order 43 Creating the Cabinet Cluster on Climate Change Adaptation and Mitigation, Series of 2011	Creates an executive level group composed of cabinet secretaries designed to work on climate change, adaptation, and mitigation measures.	All sectors
National Climate Change Action Plan 2011	Provides the country's agenda for adaptation and mitigation from 2011-2028 as guided by the NFSCC based on extensive consultations with stakeholders	All sectors
Joint Memo Circular of CCC and Department of Budget and Management (DBM) 2013-01	Gives the guidelines for monitoring and tracking national government allocation and expenditures on CCA and mitigation	All sectors
Joint Memo Circular of CCC Department of the Interior and Local Government (DILG) and DBM 2014-01	Gives the guidelines for monitoring and tracking programs and expenditures of LGUs on CCA and mitigation	All sectors
EO No. 174, Series of 2014	Institutionalizes the Philippine GHG inventory management and reporting system. CCC is tasked to take the overall lead in implementing the EO, in collaboration with the following lead agencies: DOE for the energy sector (except transport sector), DOTC (now DOTr) for the transport sector, DA and the Philippine Statistics Authority (PSA) for the agriculture sector, and the DENR for LUCF, IP and Product Use (IPPU), and waste sector. Concerned LGUs, academe, and private/public institutions are also involved by participating, complementing, and assisting in the implementation of EO 174.	All sectors
Revised Guidebooks for CLUP (HLURB, 2013-2014),	CLUP Guidebook revisions including CC	
Revised Joint Memo Circular Of DBM-DILG-CCC 2015-01	Revise guidelines and typologies to guide LGUs in tagging their budget for CCA and mitigation	All sectors
DBM-CCC JMC 2015-01	Amendments include the following: Submission by the local government unit (LGU) of electronic copy of their climate - change (CC)	All LGUs

	expenditure tagged Annual Investment Program (AIP) directly to the CCC, in addition to their submission to the DBM and DILG during the budget preparation process. Transferring the responsibility of operating the CCET helpdesk from the DILG to the CCC; Streamlining the CC typologies by simplifying, consolidating, and eliminating redundant typologies to be consistent with the national typologies; and • Introduction of the Quality Review and Assurance (QAR) tool to ensure the quality of the climate change expenditure data	
Resolution No. 2011.3 Revised Implementing Rules and Regulations for RA 9729 as amended by RA 101742015 (2011)	Includes the formulation of a National Strategic Framework on Climate Change based on climate change vulnerabilities, bio-physical profiling and characterization, socio-economic impact assessments, specific adaptations needs and mitigation potential, and in accordance with international agreements	All sectors
Supplemental Guidebook for mainstreaming CC-DRR (HLURB, 2015),	Guidebook to mainstream CC-DRR	LGUs
Philippine Science and Technology Priority Agenda on Climate Change for Agriculture Food and Natural Resources (AFNR) 2010-2016 of the DOST	The measure has the following prescriptions: • Develop marginal abatement cost curve (MAC curve) for potential mitigation options in agriculture • Study the efficient use of nitrogen fertilizer (precision farming) and practices that reduce its application (and, thus, also of N2O emissions) which enhance crop productivity and environmental quality • Study the economics of recycling agricultural residues for bioenergy and the economics of growing energy crops • Develop a crop–livestock–forestry integration system as an effective	AFOLU

	and sustainable approach to reduce GHG emissions. • Develop a package of mitigation technologies or agriculture which considers the technical and economic mitigation potential	
CCC Resolution 2016-001	Resolution on the Development of a Clear Policy on Coal-Fired Power Plants in Pursuit of a Low Carbon Development Pathway in the Philippines. The CCC, together with other national government agencies and stakeholders shall facilitate a national policy review and framework on energy in accordance with a low-carbon development pathway and national goals and targets for CCA, mitigation, disaster risk reduction (DRR) and SD.	Energy
EO 24 s.2017, Philippine Climate Change Adaptation Strategy 2010-2022	Adoption of the Philippine Climate Change Adaptation Strategy	National
Housing and Land Use Regulatory Board (HLURB) Resolution No. R-962, Series of 2017	Approves the National Urban Development and Housing Framework (NUDHF), 2017-2022 wherein climate resilience is considered as a basis for spatial structuring and sectoral development. The NUDHF also provides sections on the importance of mitigation in spatial and sectoral development planning.	AFOLU
LCCAP Guidebooks 3&4 (DILG, 2017)	as additional enabling policies for mainstreaming CC at the sub-national landscape	LGUs
EO 24, Series of 2017, reorganized the Cabinet Clusters, and the Cabinet Cluster on CCAM became the Cabinet Cluster on Climate Change Adaptation, Mitigation, and Disaster Risk Reduction (CCAM-DRR).	Focus on the conservation and protection of the environment and natural resources and shall serve as a venue for building synergy among cluster member-agencies in discussing inter-related concerns on climate change and DRR. The Cluster shall also take the lead in the effective coordination, harmonization and complementation of policies and programs on climate risk	Chaired by the DENR, and co-chaired by the Department of National Defense. The Climate Change Commission (CCC) acts

	management, DRR, and sustainable development.	as the secretariat
Program Convergence Budgeting- Risk Resiliency Program (PCB-RRP)	Formerly known as Program Budget Approach is a significant innovation adopted by the Department of Budget and Management (DBM). PCB provides an opportunity to strengthen convergence amongst National Government Agencies and aids in scaling up climate response	DENR (lead)
CCC Commission Resolution 2018-003	Guidance document in institutionalizing the Philippine GHG Inventory Monitoring and Reporting System	CCC
CCC Commission Resolution 2019-001	Adopting the National Climate Risk Management Framework (NCRMF) to address intensifying adverse impacts of climate change".	CCC

4.1.2 The National Framework Strategy on Climate Change 2010-2022

The 2010-2022 National Framework Strategy on Climate Change (NFSCC) is the Philippines' basis for climate change planning, research and development, extension, monitoring of activities, and climate financing, to protect vulnerable and marginalized communities from the adverse effects of climate change. It adopts the Philippine Agenda 21 for sustainable development design to fulfill human need while maintaining the quality of the natural environment for current and future generations. This Framework as illustrated in Figure 4.1.2.4. was developed based on climate change vulnerabilities, specific adaptation needs, and mitigation potential, and in accordance with the international agreements. In the Philippine context, adaptation is the anchor strategy and priority, and climate change mitigation is a function of adaptation.

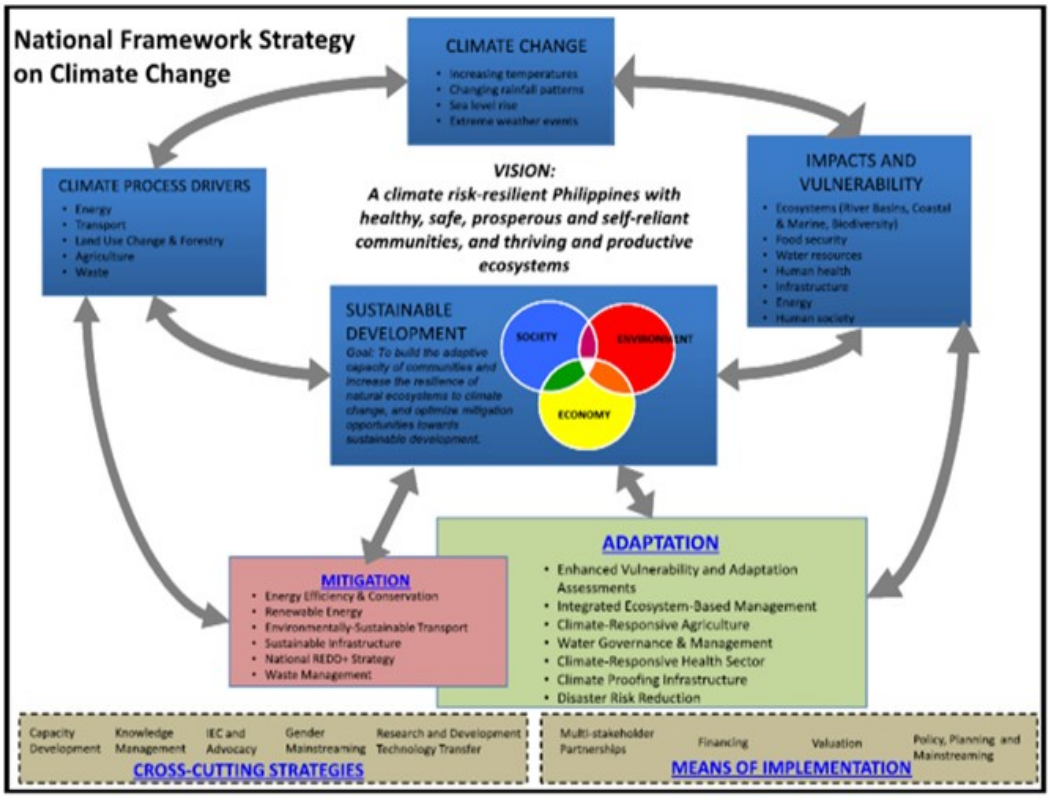


Figure 4.1.2.1 National Framework Strategy on Climate Change[14]

4.1.2 The National Climate Change Action Plan (NCCAP)

The formulation of the National Climate Change Action Plan (NCCAP) is in accordance with the National Framework Strategy on Climate Change (NFSCC) in coordination with government agencies and various sectors such as civil society organizations, business sector, and the academe led by CCC.

The NCCAP provides the country's agenda for adaptation and mitigation from 2011-2028 and this is based on technical analyses and consultations with government agencies and stakeholders. Its key actions focus on the seven thematic outcomes – food security, water sufficiency, ecological and environmental stability, human security, climate-smart industries and services, sustainable energy, and knowledge and capacity development. Gender and development, technology transfer, research and development, IEC and capacity building are the cross-cutting areas as illustrated in Figure 4.3.2.1. This serves as the operational plan of the NFSCC.

The NFSCC and NCCAP are to be reviewed and updated every three (3) years as mandated by law. As part of updating the NFSCC and NCCAP, indicative

[14] Source:

work streams have been identified to ensure that the synergies between adaptation and mitigation are captured in the updating of these two documents. It is important to note that the Philippines is listed as one of the most vulnerable to climate change and it can benefit more from exploring and leveraging on the opportunities in synchronizing efforts in adaptation and mitigation to speed up climate action.

Figure 4.1.2.1 National Climate Change Action Plan 2011-2028[15]

4.1.3 Nationally Determined Contributions (NDCs)

Pursuant to the mandates under the Climate Change Act, as amended, and the General Appropriations Act, CCC is leading the coordination, development, and finalization process of the Philippine NDC as a response when the Philippines ratified the Paris Agreement in 2015. The Philippines submitted its Intended Nationally Determined Contributions (INDC) to UNFCCC in October 2015 with a target of 70% reduction by 2030 relative to its business-as-usual scenario (BAU) of 2000-2030 contingent on financial support from developed countries.

For the NDC, mitigation is pursued as function of adaptation. And that the implementation of NDC is for supporting sustainable industrial development, poverty eradication and provision of basic needs, securing social and climate justice and energy security.

In developing the Philippine NDC, the parameters used in the INDC submission to UNFCCC is revisited and updated methodologies, datasets, parameter, assumptions as well as adaptation and mitigation measures are reconstructed with the plan of every five (5) years NDC reporting using the MRV system being developed to track, monitor,

[15] Source:Grantham Research Institute on Climate Change and the Environment (2020) National Climate Change Action Plan 2011-20218. Available https://climate-laws.org/geographies/philippines/policies/national-climate-change-action-plan#:~:text=The%20National%20Climate%20Change%20Action,current%20situation%20and%20projected%20impact. Accessed 20 November 2020

and evaluate progress and redefining national, subnational, and local development targets as reflected on overarching policy and planning frameworks. The following analytical tools were utilized: 2006 IPCC Inventory Software, Economic Modeling (CGE), Long-range Energy Alternative Planning System (LEAPS), Sectoral models, Cost-Benefit Analysis (CBA) and Gender Analysis. Its development is currently a work in progress with CCC leading the efforts to complete the technical process of NDC and has vetted sectoral mitigation options by DENR, DOTr and DOE for NDC target consideration. This is intended to be the Philippines' investment strategy for a low-carbon development.

4.2 Policies, mechanisms, and tools for monitoring and reporting on climate actions planned and implemented, as well as their results

The following list the policies, mechanisms and tools that monitors and reports on climate actions whether planned or implemented.

4.2.1 Transparency Seal

In terms of transparency[16], the country, in general, ties this with its budget such that there is a Transparency Seal as a provision directed by the National Budget Circular 542, issued by the Department of Budget and Management on August 29, 2012, which reiterates compliance with Section 93 of the General Appropriations Act of FY2012. Every agency must maintain for a Transparency Seal in their official website. The objective is to enhance transparency and enforce accountability. The transparency seal shall contain the following information:

1. the agency's mandates and functions, names of its officials with their position and designation, and contact information.
2. annual reports, as required under National Budget Circular Nos. 507 and 507-A dated January 31, 2007 and June 12, 2007, respectively, for the last three (3) years.
3. their respective approved budgets and corresponding targets immediately upon approval of this Act.
4. major programs and projects categorized in accordance with the five key results areas under E.O. No. 43, s. 2011.
5. the program/projects beneficiaries as identified in the applicable special provisions;
6. status of implementation and program/project evaluation and/or assessment reports; and

[16] Source: DOF, 2020, Transparency Seal Available at https://www.dof.gov.ph/transparency-seal/ Accessed 22 November 2020

7. annual procurement plan, contracts awarded and the name of contractors/suppliers/consultants.

In 2014, the Executive Order 174 was signed establishing the Philippine Greenhouse Gas Inventory Management and Reporting System (PGHGIMRS) which institutionalized. the planning, preparation, and management of the country's GHG inventory. This is in response to the mitigation effort which is among the key approach to addressing climate change which aims to reduce greenhouse gas concentration in the atmosphere. This policy specifies the need to conduct, document, archive and monitor the sector specific GHG emissions and reporting this to the CCC. This Greenhouse Gas Inventory Program supports science-backed mitigation policy and action development, planning, implementation, and monitoring as this is an estimate of all emissions and removals of GHG from given sources and sinks within a defined spatial and temporal dimension. It helps in identifying source sectors and activities contributing to GHG emissions, understanding trends in emissions and removals, developing cost-effective mitigation measures and monitoring progress. This CCC led Greenhouse Gas Inventory Program supports policy makers and decision makers at the national and subnational levels by providing then wit technical information on and supporting capacity building on coming up with science-based references for climate action planning to reach the policy goal of maximizing mitigation opportunities towards sustainable development.

To date, the Philippines has two official GHG accounts for inventory years 1994 and 2000 and these have been included in the Philippines' First and Second National Communication (I/S NC) to the United Nations Framework Convention on Climate Change (UNFCCC) submitted in 2000 and 2014, respectively. Under the Convention to which the Philippines is a party, NCs are part of the reporting requirements of member countries.

4.2.2 The Philippine GHG Accounts Inventory

Based on the GHG Manual, the concept of transparency includes the provision of activity data, emission sources, emission factors and accounting methodologies that are fully documented and with disclosure for verification purposes. The information provided should be enough for those outside the inventory process to use the same source of data and derive the same results. All other exclusions should be clearly identified and justified.[17]

The 1994 GHG Inventory

The 1994 inventory was done before the CCC was established was done through a joint effort among public and private institutions with support from development partners. It is important to note that under the Convention, Parties are required to communicate to the UNFCCC through the NCs the following: national circumstances, a national inventory of anthropogenic emissions by sources and removals by sinks of

[17] Source: DENR 2020, Tracking Greenhouse Gases: An Inventory Manual Available at http://climate.emb.gov.ph/wp-content/uploads/2016/06/GHG-Manual.pdf Accessed 25 November 2020

all greenhouse gases, vulnerability and adaptation assessment, mitigation assessment, financial resources and technology transfer, and education, training, and public awareness. This inventory came out with an inventory manual and workbook detailing the entire inventory process in a step-by-step guide to enable other public and private entities to facilitate the same. This inventory covers Energy (includes the Transport sub-sector), Industrial Processes, Agriculture, Land-Use Change and Forestry (LUCF), and Waste. For this, the Revised 1996 IPCC Guidelines were used in accounting for GHG emitted in 1994. The Guidelines provided the methodological basis in estimating GHG emissions from the identified source sectors. Moreover, the methodology furnished end-users with default activity data and emission factors, but country-specific data were used in place of these default figures whenever available and applicable.

The 2000 GHG Inventory

The year CCC was established was also the time the on GHG Inventory in the Second National Communication (SNC) was completed. This 2000 GHG inventory was produced utilizing the 1996 IPCC Guidelines for National Greenhouse Gas Inventories, Good Practice and Uncertainty Management in National Greenhouse Gas Inventories 2000, and the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. It covers the same sectors as in the 1994 national inventory: Moreover, GWP values provided in the IPCC's SAR were used in calculating the relative amount of GHGs.

The Current 2010 GHG Inventory

The PGHGIMRS was institutionalized in November 2014, and with this the lead sectoral agencies convened to agree on the details of the updated inventory. Training workshops on the National GHG Inventory for each sector using the 2006 IPCC Worksheets and Software were conducted to build up the capability of the agencies in doing the national inventory. By May 2019, the PGHGIMRS with assistance from the UNFCCC Secretariat has conducted a quality assurance/ quality control or QA/QC Capacity-building on the 2010 GHGI. Incorporating the improvements and addressing the concerns on methodological issues arising from the QA/QC training on GHGI in May 2019 is one of the CCC's identified actions as its way forward.

4.2.3 Related General Appropriations Act Provisions

As part of the government's commitment in addressing climate change, the CCC was also mandated to coordinate, monitor, and evaluate climate change adaptation and mitigation in the programs, and action plans of the government, especially the Climate Change-related GAA Provisions. DBM and CCC have led the development and adoption through a Joint Circular linked to the Budget Call of a standardized framework for use in the planning, budgeting, monitoring and reporting of public CC expenditures. Reliable approaches for tagging at national and local levels facilitate a comprehensive national assessment of climate response and gaps across all sources of budget financing.

In 2013, via Joint Memorandum Circular 2013-01 updated by Joint Memorandum Circular 2015-01, the DBM and the CCC established the common framework for Climate Change Expenditure Tagging (CCET) across government consisting of policy-based definitions of CC response aligned with the NCCAP including a common method for tagging CC expenditures focused on accountability and the assignment of roles and responsibilities to Agencies.

The National Government Agencies (NGAs) have further prioritized climate change expenditures in their 2015 budget proposals resulting in a continued increase of the climate budget of the Government. The Program Budget Approach offers an opportunity to strengthen and scale up Government Climate Response. It incentivizes coordination and convergence among National Government Agencies (NGAs) in the planning, budgeting, and implementation of priority programs by focusing the available fiscal space on them.

In the same year, over 80% PBA is focused on addressing climate risks which accounts for about half of the climate expenditures in the national budget. This approach was also downloaded at the LGU level when the DBM issued Local Budget Memorandum 68 encouraging LGUs to tag climate expenditures in their Annual Investment Plans.

At the subnational level, Joint Memorandum Circular 2014-01, updated through Joint Memorandum Circular 2015-01 (co-signed by DBM, CCC, and DILG) included guidelines and CC typologies for local CCET.

In fact, LGUs and the League of Local Governments have been fully supportive and engaged in the piloting and adoption of the CCET system. The initial LGUs who joined acknowledged the importance of CCET, support piloting the system with their 2015 Annual Investment Plans and have expressed willingness to champion its scale up in 2016 through examples of how they have integrated CCET into their budgeting processes. This is critical as this builds the business case for LGUs to access finance from the very recent Government created People's Survival Fund that supports communities and local governments to adapt to the impacts of climate change.[18]

Current CCC works included the gathering of climate-change related provisions from the 2019 GAA and circulating the document to relevant agencies. Under the 2019 GAA, there are seven (7) Climate Change-related General Provisions, and 32 Climate Change-related Special Provisions from 25 National Government Agencies.

CCC is commencing the monitoring of climate change-related provisions in GAA, which includes the harmonization of monitoring and reporting for Climate Change-related Provisions and the Climate Change Expenditure Tagging for the 2020 GAA Climate Change Provisions.

[18] Source: World Bank, 2020 . Mobilizing Budget for Climate Change in the Philippines. Available at https://www.worldbank.org/en/country/philippines/publication/mobilizing-budget-for-climate-change-in-philippines Date Accessed: 10 September 2020

4.2.4 Monitoring via PDP Results Matrix by NEDA

One of the accompanying documents of the Philippine Development Plan (PDP) is the PDP Results Matrices 2017-2022[19] which contains indicator statements and targets to be achieved for the next six years. Chapters 11. Reducing Vulnerability of Individuals and Families, Chapter 12 Building safe and secure communities and Chapter 20 Ensuring Ecological Integrity Clean and Healthy Environment while not directly stating climate change are chapters that has strong role in achieving climate targets. However, in all these three chapters, Chapter 20 has sub-chapter outcome 1.3 Adaptive capacities and resilience of ecosystems and communities increased where CCC is in charge for the Local Climate Change Action Plan and the GHG Emissions per sector: energy, industrial, agriculture, LUCF, waste and transport.

In 2018, NEDA signed declaration of Climate change and adopted green strategy. NEDA affirms the agency's commitment to conserve the environment and natural resources.

4.2.5 Monitoring via SDG monitoring by Philippine Statistical Authority

A new global plan of action entitled, "Transforming Our World: The 2030 Agenda for Sustainable Development" was adopted by the Member States of United Nations in September 2015. The 2030 Agenda, its 17 Goals and 169 targets are a universal set of goals and targets that aim to stimulate people-centered and planet-sensitive change. The Sustainable Development Goals (SDGs) and targets are integrated and indivisible, global in nature and universally applicable, and are designed to consider different national realities, capacities and levels of development and respecting national policies and priorities. And each member's government are expected to take ownership and establish national frameworks, set nationally owned targets guided by the global level of ambition but taking into account country-level circumstances for the achievement of the 17 goals agreed upon.

In response to the international commitment, the Philippine Statistical Authority (PSA) Board issued PSA Resolution No. 04 Series of 2016, Enjoining Government Agencies to Provide Data Support to the Sustainable Development Goals (SDGs). In this Resolution, all concerned government agencies are enjoined to provide the necessary data support to monitor the country's performance vis-à-vis the SDGs based on the indicator framework determined by NEDA, PSA, and other government agencies.

Fig. 4.2.5.1 shows the illustration adopted from the PSA report on tracking the SDGs. There are 17 SDGs, one of which is No. 13 climate change. The other related ones are No. 7 affordable and clean energy, 11. Sustainable cities and communities, among others.

[19] Source:NEDA, 2020. PDP Results Matrices 2017-2020. Available at https://www.neda.gov.ph/pdp-results-matrices/2017-2022/ Date Accessed: 15 February 2020

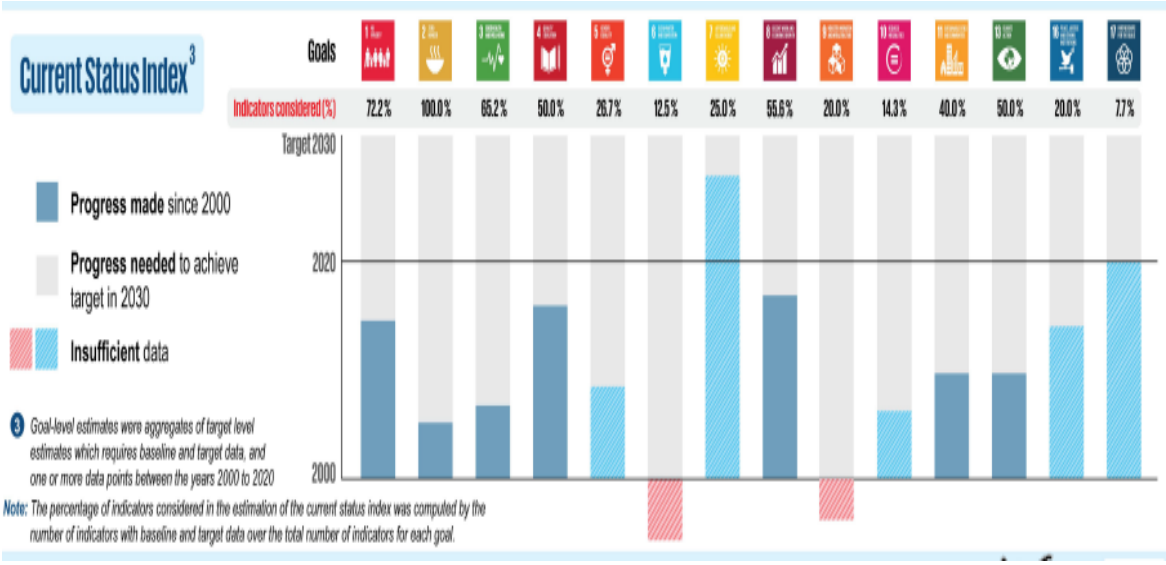


Figure 4.2.5.1 Philippine SDGs: 2020 Pace of Progress

Climate Change is so far on track, but the rest is slow to progress, and more data is needed. However, it is also important to note how interrelated one SDG is to another.

4.2.6 Sustainability Reporting by the Securities and Exchange Commission

A very recent development is the announcement of the Securities and Exchange Commission (SEC) with regards to Memorandum Circular No. 4, Series of 2019 on the Sustainability Reporting Guidelines for Publicly Listed Companies (PLCs) on 15 February 2019. This Memorandum Circular took effect on 8 March 2019 and was applied to the 2019 Annual Reports that are to be submitted in 2020.This Memorandum Circular mandates PLCs to submit their Sustainability Report together with their Annual Report. A “comply or explain” approach is being adopted for the first 3 years of the submission of the required Sustainability Reports.

SEC goal is to raise awareness for PLCs on sustainability reporting with the following objectives:

1. To make sustainability[20] reporting relevant and value adding to Philippine PLCs
2. To help PLCs to identify, evaluate, and manage their material Economic, Environmental and Social risks and opportunities
3. To help PLCs to assess and improve their non-financial performance across Economic, Environmental and Social aspects of their organization to optimize business operations, improve competitiveness and long-term success

[20] Sustainability as defined in the memorandum circular s the development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Relative to this definition, Sustainability Reporting is an organization’s practice of reporting public

4. To provide a mechanism that would allow the PLCs to communicate with their stakeholders, including investors or its potential investors
5. To enable PLCs to measure and monitor its contributions to universal targets of sustainability such as the United Nations Sustainable Development Goals and the Ambisyon Natin 2040 (the long- term vision statement released by the Philippine National Economic and Development Authority).

As Veloso and Vallada (2019[21]) explained in the Global Compliance News article, the Sustainability Reporting Guidelines (Guidelines) focuses on the economic, environmental, and social disclosures which are in addition to the governance disclosures that are embodied in the Integrated Annual Corporate Governance Reports. These Guidelines relates to disclosures that contribute to describing and measuring the company's sustainability performance. Broadly, sustainability performance is measured in the way the corporation conducts its business and how it manages its key economic environmental and social impact.

4.2.7 National Climate Change Action Plan (NCCAP) Monitoring and Evaluation: Implementation Period: 2011 – 2016

One of the Government programs and activities for adaptation and mitigation in line with national development plan is the National Climate Change Action Plan (NCCAP) of 2011-2016. This long-term plan was developed through a multi-sectoral and multi-stakeholder consultation and covers the thematic priorities of food security, water sufficiency, ecosystem and environmental stability, human security, climate smart industries and services, sustainable energy, knowledge, and capacity development as illustrated in Fig. 4 highlighting the seven (7) strategic priorities.

NCCAP in general albeit, in broad strokes establishes the planned phasing of implementation. The impact pathways are to be accomplished in three implementation phases of five years each, starting 2011 and ending in 2028, as follows:

- Short term (2012-2016) - mainstreaming of climate change actions at the policy and system level or governance preparedness actions
- Intermediate term (2017-2022) – identification and operationalization of adaptation and mitigation (CCAM) flagship programs or implementational CCAM actions
- Long Term (2022 – 2028) – adaptation at the local level targeting ultimate beneficiaries including the vulnerable

[21] Source: Veloso and Vallada (2019)

Figure 4.2.7.1 Seven Strategic Priorities of the National Climate Change Action Plan (2011-2028)[22]

This is the document in which the development of national commitments and disclosures such as Nationally Determined Contributions (NDC) and the National Adaptation Plan (NAP) is based.

A Results-Based Monitoring and Evaluation System (RBMES) was formulated to measure the progress of the NCCAP for the period 2011-2016 implemented by national government agencies in 2017 and this report noted the readiness/ preparedness of the Philippine Government in mainstreaming climate change into its decision-making processes (i.e., policies, institutional arrangements, knowledge and information systems, flagship programs). Results of the M&E exercise demonstrates milestones by the Philippine Government in issuing climate change policies, achieving institutional arrangements, using climate information in decision-making, strategic targeting of beneficiaries, and implementing flagship adaptation programs. It highlighted the Government's preparedness in implementing successful and adequate adaptation while capturing mitigation co-benefits. GIZ Support CCC Project II is its Development partner.

As noted in the review of Ms. Lucero (2020)[23], RBMES was designed to be 1) outcome-oriented, measuring for shared and convergent resilience and well-being targets embedded in thematic theories of change (TOCs) and, 2) processed-focused especially on the early years to facilitate adaptive management and assist in the characterization of successful (relevant, effective, adequate) adaptation and their governance requirements as well as, 3) capture mitigation co-benefits.

It is important to note too as highlighted in consultancy report of Ms. Lucero that the RBMES preceded the NDC Roadmap/Framework (NDCR/F) preparation, and

[22] Source: CCC (2020). National Climate Change Action Plan Available http://climate.emb.gov.ph/wp-content/uploads/2016/06/NCCAP-1.pdf Accessed 20 November 2020

[23] Source: Lucero, S (2020) Review and Enhancement of the Philippines National M & E Systems for NAP-NDC Consultancy Final Report (unpublished)

differences between the two documents at the level of indicators can be expected. In this relation, the relevant mitigation measures, milestones, and targets in the Draft NDC (consultations on going as of this writing) were reviewed for their uptake in the RBMES. The assessment results are to inform the country's various disclosures, of which some are immediately due, and which the CCC intends to submit in 2020 (NDC), 2021 (BUR), 2022 (NC) and 2024 (Biennial Transparency Report and NC).

The report also indicated that indicators in the draft NDC Roadmap framework is not yet included in the RBMES. The Draft NDCR/F links climate change action to PDP outcomes, i.e., links low carbon development to the country's sustainable development goals. While the document is generally aligned with the RBMES, they differ in the following: the level of detail of the indicators in the NDCR/F, because it ties the indicators to specific mitigation options measures (technologies, processes, and practices); some of the NDCR/F are scale-sensitive specifying geographical, program and industry targets and the indicators are framed as mitigation, rather than mitigation with adaptation benefits.

4.3 Policies, mechanisms, and tools for assessing and communicating support needed and received

This section lists the policies, mechanisms, and tools to understand, assess and communicate the needed and received support. They are the necessary supporting policies and systems to have the information and data needed for the country to translate its INDC into NDC.

4.3.1. Process guidance for Intended Nationally Determined Contributions (INDCs)

To facilitate clarity, transparency and understanding the INDC ideally includes relevant reports such as Biennial Update Reports (BUR); National Communications; national greenhouse gas inventory; national mitigation assessment studies; Clean Development Mechanism (CDM) project documents; NAMAs; national or sectoral climate change strategies or action plans; new analysis undertaken during the INDC process. The Philippines in 2015 submitted INDC with the intention to undertake GHG (CO_2e) emissions reduction of about 70% by 2030 relative to its BAU scenario of 2000-2030 where deduction of CO_2e emissions is expected to come from energy, transport, waste, forestry, and industry sectors.[24]

[24]Source: Philippine INDC Available https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Philippines/1/Philippines%20-%20Final%20INDC%20submission.pdf Accessed on 20 September 2020

4.3.2 National Integrated Climate Change Database and Information Exchange System (NICCDIES) Implementation Period: 2017 – Present

For CCC to track the actions necessary to address climate change issues, an integrated climate information portal – NICCDIES was created. This is the primary enabling platform of the CCC in consolidating and monitoring, data and information on climate change and climate action from sources and actors coming from both public and private sector and other stakeholders, allowing for decision-makers to access, distribute, and exchange these data for use in policymaking, development planning, and investment decision-making. The primary components of NICCDIES include database and information systems for the following: Greenhouse Gas (GHG) Inventory; Climate Change Mitigation: Measurement, Reporting, and Verification (MRV) System; Climate Change Action Plans: NCCAP and LCCAP; Climate Finance, including Climate Change Expenditure Tagging (CCET); Climate Reports.

As illustrated in Figure 4.3.2.1, CCC is worked on enhancing the data ecosystem of NICCDIES by adding modules that will consolidate, monitor, and report of, but not limited to, the following: private sector, entities, and individual level climate actions.

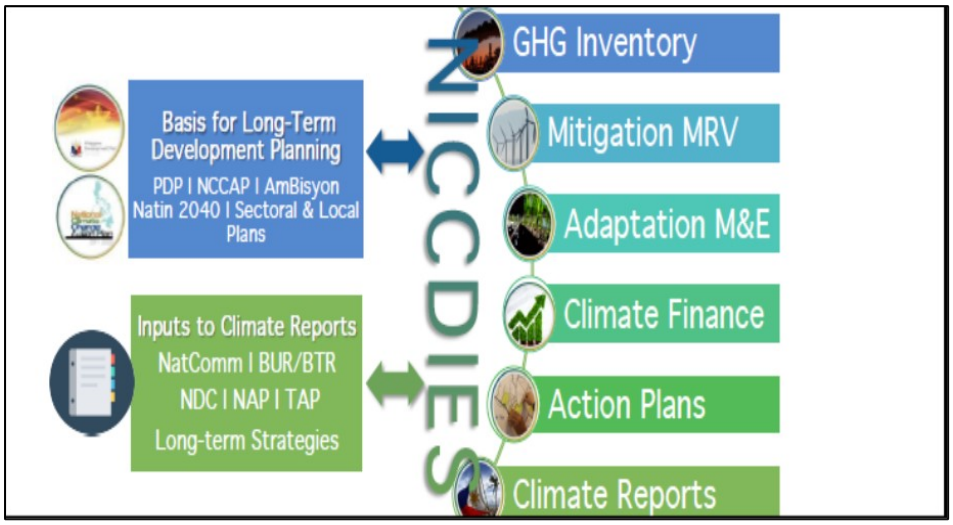


Figure 4.3.2.1 Transparency System for Climate Action and Support[25]

In 2017, the Philippines joined NDC Partnership, the global coalition of countries and institutions collaborating to drive transformational climate action while enhancing sustainable development. In 2018, the Philippines sent 25 requests for support letters where 12 (48%) were for mitigation, 3 (12%) for adaptation and 10 (40%) cross cutting. 7 (28%) in the energy sector, 6(24%) in the transport sector, 4 (16%) in the Forestry sector, 3 (12%) in the waste and industry sector and 5 (20%) in the multi-sector. Many partners responded to this request, with Germany providing many of the required support as seen in Table 4.3.2.1 below:

[25] Source: Illustration lifted from CCC Report on NICCDIES, 2020

Table 4.3.2.1 Germany's Response to the Philippines RFS to NDC Partnership, 2019

Priority Area	Component	Related Projects/ Programs	Status
Forestry	National Forest Resource Assessment (NFRA)	Forest and climate protection project in Panay [Forest and Climate Protection Project Phase II (ForClim II)	On-going
	NFRA, Fuelwood consumption study, and determination of National and Provincial FREL	Global Forest Survey (GFS)	On-going
		National Land Monitoring and Information System for a Transparent NDC Reporting	Completed
	NFRA & National and Provincial FREL Can Contribute to: Wastes and Industry	Improved ecosystem services and reduced vulnerability to climate change through ecosystem-based management and application of ecosystem values in two river basins in the Philippines	Planned
Waste and Industry	Support to Establishment of Online Database System	Cool Contributions Fighting Climate Change (C4 Project)	On-going
Energy	Mitigation pillar & Component 1: Enhancement of GHG Emission Inventory Mainstreaming of Adaptation to Climate Change into energy policies and management planning strategies and tools	Ambitious City Promises (ACP): Commitments for low-carbon urban-development in Southeast Asian Large cities	On-going
	Mitigation pillar & Component 2: MAs for Energy Sector	Distributed Solar Power NAMA Support Project	
	Mitigation pillar & Component 3 Design and Implementation of Mas	CapREG“Capacity Development on Renewable Energy and Grid Integration”	On-going
		Green Banking: Capacity building on Green Energy and Climate Finance	On-going

		Philippines Green Climate Fund Readiness Program	On-going
	Mitigation pillar & Component 4 MRV System for Mas	Information Matters – capacity building for ambitious reporting and facilitation of international mutual learning through peer-to peer exchange	Completed
		MRV system for National and Sub-National Climate Change Policies and Actions under the MRV Trust Fund (implemented by UNOPS)	On-going
Transport	Route Rationalization Study	Towards climate-friendly transport technologies and measures (TRANSfer II)	Completed
	Development of Public Transport Information and Management Center		
	Route Rationalization Study	Integrating 2&3 Wheelers into Existing Urban Transport Models in Developing and Transitional Countries (Implemented by UNEP)	Ongoing
Cross-cutting	Can Contribute to Energy sector Components: Sectoral and Economy-wide Transition Plan for NDC implementation Capacity development in formulating bankable climate projects Development of Criteria and indicators for adaptation / resiliency measures (for planning, implementation, and M&E)	Support to the Philippines in shaping and I implementing the International CC Regime (Support CCC Phase II)	Completed
		Low Emission Capacity Building Programme - Philippine Project (LECB PHL Project)	On-going

	Same Components as above 3,4, & 5 Can contribute to: Waste and Industry Forestry	South-South Center of Excellence Project	Planned
	Components 2. Planning Support for the appropriate government departments for Cost Analysis of Climate Actions & 5. Development of Criteria and indicators for adaptation / resiliency measures (for planning, implementation, and M&E) Can contribute to: Waste and Industry Forestry	Mainstreaming EbA – strengthening ecosystem based adaptation in planning and decision-making Processes	On-going
	Component 3. Sectoral and Economy-wide Transition Plan for NDC implementation	Vertical Integration and Learning on Low Emission Development (V-LED) Project	
	Component5. Development of Criteria and indicators for adaptation / resiliency measures (for planning, implementation, and M&E) Can contribute to: Waste and Industry Transport	Strengthening Natural Hazard Disaster Risk Management through Ecosystem-based Adaptation and Insurance Protection	Planned

4.3.3 Linkages with monitoring and reporting under Philippine Development Frameworks and Sustainable Development Goals

The Philippine Development Plan (PDP) 2017-2022 is anchored on the dual goals and principles of sustainability and inclusivity. The PDP was crafted around the time the Philippines adopted the 2030 Agenda for Sustainable Development and the results of nationwide survey conducted in late 2015 about the long-term aspiration of Filipinos also known as Ambisyon 2040: work-life balance, a comfortable, secure, and peaceful life. The PDP aids in the strategic development roadmap of every administrative term. It is developed and coordinated by NEDA with consultation from different line agencies of government and other non-government stakeholders.

An integrative approach in the implementation of the SDGs is being utilized by the Philippines. This approach aims to maximize existing processes and human resources for the implementation of the SDGs. Critical to this approach is the mainstreaming of the SDGs in the Philippine Development Plan (and the Results Matrices). Sustainable development requires long term planning and consistent in which present development should never be at the expense of future generations and this is a precondition to the Filipino ambition of matatag (strongly rooted), maginhawa (comfortable), and panatag (secure). The country's long-term vision, which necessitates inter-generational equity, is consistent with the core principles of the SDGs of sustainable development and leaving no one behind.

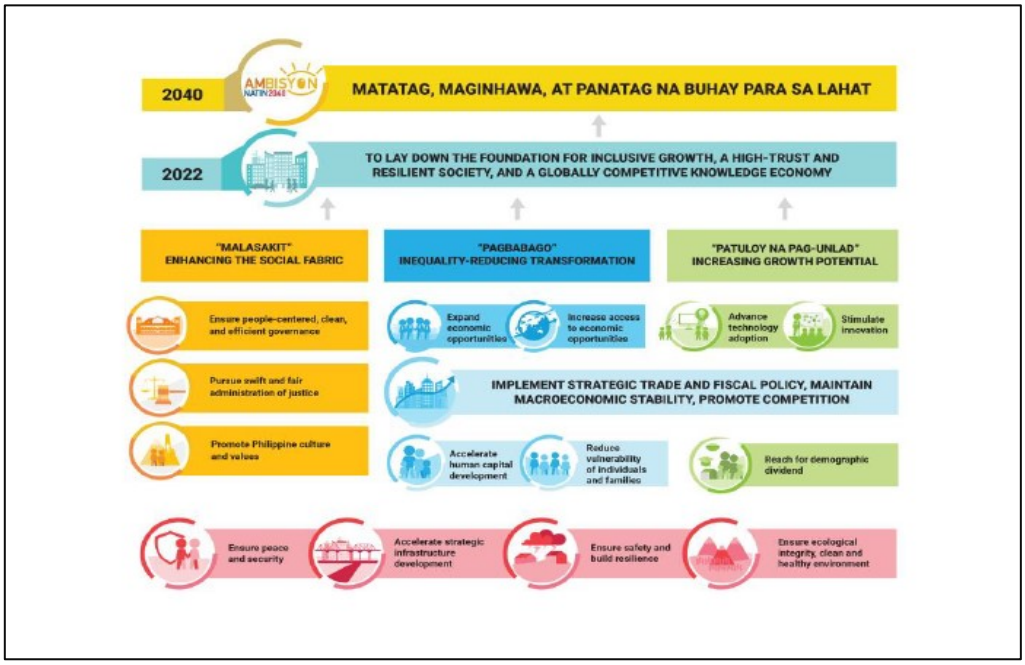


Figure 4.3.4.1 PDP 2017-2022 Strategic Framework[26]

[26] Source: NEDA, 2020, Illustration Available at https://sdg.neda.gov.ph/ Date Accessed 11 September 2020

A detailed review of these 17 SDGs highlighted the following goals which is very much in line with the climate change goals.

Figure 4.3.4.2 Some related and relevant Climate Change Action SDGs[27]

In SDGs, goal 13 is about climate action and climate change is considered a real and critical threat to the entire civilization. This highlights the actions are need now more than ever. In the Philippines, this means strengthening resilience and adaptive capacity to climate-related hazards and disasters esp. since the country is considered as one of the most vulnerable to climate change. This means integrating climate change measures into national policies, strategies and planning which is the current practice. Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

In line with this, the key government actions to contribute to this climate action goal include:

1. Geological Assessment for Risk Reduction and Resiliency Program- This is implemented by the DENR-Mines and Geosciences Bureau (MGB) with the objective to capacitate communities to adapt to geologic hazards and to provide critical data on groundwater resources.
2. Automation of Flood Early Warning System for Disaster Mitigation in Metro Manila- a project by the Department of Science and Technology-Philippine Atmospheric, Geophysical, Astronomical Services Administration (DOST-PAGASA) whose objective is to develop an enhanced flood early warning system (FEWS), and to boost the capacity of mandated agencies to monitor and manage the worsening problem of flood in Metro Manila
3. Weather Research and Forecasting (WRF) Providing High Resolution (5km) Climate Change Projections in the Philippines is another project by the DOST-PAGASA that aims to provide a high-resolution (5km) climate change projection using WRF model, covering the entire Philippines, using the RCP4.5 and RCP8.5 climate change scenarios, for both precipitation and temperature.

[27] Source: Ibid

The outputs from the system are expected to contribute to the updating of the LGUs' CC-DRR-enhanced local plans (i.e., CLUP, LCCAP)

4. Survival and Recovery (SURE) Assistance Program- is from the DA-Agricultural Credit Policy Council which aims to support the government's goal of helping agricultural households in calamity-affected areas regain their capacity to earn a living; and provide immediate relief to small farmers and fisher folk through loan and grant assistance. DA's SURE Loan Program is expected to restore the normalcy in the livelihood of farmers and fishermen by helping lessen the burden of being left on their own and recover from their losses. The project is expected to build resilience of the poor and those in vulnerable situations by reducing vulnerability to disasters and the economic shock that comes with it. All these projects are designed to strengthen the resilience and adaptive capacity of communities and ecosystems to climate-related hazards and natural disasters by providing timely and accurate disaster and climate information that will support risk-informed planning, particularly at the local level

One of the sectors that the government works on and related to the climate change action is goal 7 which is about affordable and clean energy. This means looking at renewable energy solutions and noting that current reliance of fossil fuels is not sustainable and even harmful to the environment. This would mean trying to reach by 2030 that a universal access to affordable, reliable and modern energy services is ensured, increasing substantially the share of renewable energy in the energy mix, doubling the rate of improvement of energy efficiency, enhancing international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology and expanding infrastructure and upgrade technology for supplying modern and sustainable energy services.

A functioning and resilient infrastructure is the strong basis of successful community and this is where goal 9 on innovation and infrastructure comes in. To meet future challenges, the industries and infrastructure must be upgraded on in climate change, future-proof. This would need innovative sustainable technologies and equal access to such.

The identified projects by the government responding to this goal includes most of DOTr projects:

1. New Cebu International Container Port which aims to add to the current Cebu International Port twenty-foot equivalent unit (TEU) container yard capacity of 7,373 TEUs to 14,400 TEUs. The new international port shall be built on a 25 ha. reclaimed land (Barangay Tayud, Municipality of Consolacion, Cebu), with 500 m berth length to accommodate two 2,000 TEU vessels; 4 quay cranes and superstructures (operation building, gate complex, weigh bridge, maintenance factory; and 1,450 m inland access road and 300 m offshore bridge;
2. Subic-Clark Railway Project, a project with Bases Conversion and Development Authority (BCDA) involves the construction of 71.13-km rail

located in the western section of Central Luzon running on an exclusive ROW parallel to SCTEX with some sections adjacent to it. It is divided into two (2) major sections: a. Mainline – This is a 64.19-km railway connecting Subic Bay Freeport Zone and Clark Freeport Zone; and b. Spur Line – This is a 6.94-km railway connecting the Subic Bay Port, New Container Terminal to the Mainline;

3. Clark International Airport Expansion Project, also with BCDA involves the development and construction of a new 82,600 square meter (sqm) Passenger Terminal Building (PTB) of the CIA and the installation of all the required equipment, machineries, and associated facilities to support the operations of the new PTB and its integration with the existing PTB;
4. Metro Manila Subway Project – Phase 1 involves the construction of a 25.3-km underground rail which serves as a north-south rail backbone for the Greater Capital Region (Manila, Bulacan, Cavite, Laguna);
5. Regional Airports Project involves the provision of additional facilities and other necessary improvements to enhance safety, security, access, passenger, and cargo movement efficiency at the airport, excluding Air Traffic Control, Air Navigation and associated services for Iloilo International Airport, New Bohol Airport, Bacolod-Silay International Airport Project, Laguindingan International Airport, and Davao International Airport.
6. Mindanao Rail Project (Phase 1) – Tagum Davao Digos Segment involves the construction of 102-km, non-electrified, single-track rail running through Digos, Davao City and Tagum in Region 11.

Another much related goal is that of no. 11 on sustainable cities and communities. This takes account of the increasing population and the need to accommodate all. This goal emphasizes ensuring access for all to adequate, safe, and affordable housing and basic services including inclusive (taking note of the needs of those in vulnerable situations, women, children, persons with disabilities and the elderly) sustainable transport. Substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels is also highlighted in this goal.

Some of the projects identified by the government responding to the goal of making cities and human settlements inclusive, safe, resilient, and sustainable include:

1. The Community Mortgage Program (CMP) implemented by the Social Housing Finance Corporation (SHFC), which is a mortgage financing program designed to assess legally organized associations of residents of blighted or depressed areas to own the lots they occupy, providing them security of tenure and eventually improve their neighborhood and homes to the extent of their affordability.
2. Assistance to LGUs in the Completion of the Comprehensive Land-Use Plans (CLUPs), under Executive Order (EO) No. 72 provides for the preparation and implementation of the Comprehensive Land Use Plans (CLUPs) of LGUs pursuant to the Local Government Code of 1991. CLUPs determine the specific uses of land and other physical and natural resources, both private and public, within their territorial jurisdiction including areas co-managed with the national

government and, as appropriate, management plans for ancestral domains, critical watersheds, river basins, and protected areas. The Housing and Land Use Regulatory Board (HLURB) (i) provides technical assistance to LGUs/Highly Urbanized Cities (HUCs)/ Independent Component Cities (ICC) in the formulation/updating of their CLUPs; and (ii) also reviews and approves Provincial Physical Framework Plans (PPFPs). As of 2017, out of the 1,634 LGUs, 1,569 or 96 percent already have approved CLUPs. This help ensures rational land use and sustainable urban and regional development.

3. Resettlement Program (RP) by the National Housing Authority (NHA) is a program involved in the acquisition and development of large tracts of raw land to generate serviced lots and/or housing units for families displaced from sites earmarked for government infrastructure projects and those occupying danger areas such as waterways, “esteros” and railroad tracks.
4. Metro Manila Flood Management Project is a joint project of the Department of Public Works and Highways (DPWH) and Metro Manila Development Authority (MMDA) with assistance from the World Bank and Asian Infrastructure Investment Bank which was approved in September 2017 aims to improve flood management in selected areas of Metro Manila. The project will modernize 36 existing pumping stations on top of building 20 new ones; minimize solid waste dumped in waterways; as well as provide housing to resettle affected individuals and communities. The project will help increase the resilience of Metro Manila by building reliable infrastructure to reduce losses from flooding.
5. Parametric Insurance Pilot by the Department of Finance (DOF), Government Service Insurance System (GSIS), and the World Bank (WB) allows 25 provinces to access quick-disbursing payouts based on the estimated loss triggers determined through the Philippines’ Catastrophic Risk Model. The ₱1 billion insurance fund also facilitates better response of these provinces to calamities through easier access to funds without a lengthy claims process. It increases the capacity of provinces to respond to disasters.
6. Humanitarian Assistance and Disaster Response Readiness Enhancement Program is from the Philippine Navy which includes procurement of lacking search and rescue retrieval equipment, firefighting equipment, personnel protective equipment (PPE) and emergency medical team equipment for the Search and Rescue Retrieval (SRR) Teams of the Philippine Navy through its Naval Installation Facilities nationwide. These SRR Teams will support the NDRRMC in the event of disasters save lives and further restore various affected lifelines such as water, power, communications, and other utility services. The project is contributing to the building resilience of country through provision of modern and state-of-the-art technology which can be used for timely and accurate disaster response.

Related is goal 15 on life on land that promotes sustainable use of our ecosystems and preserving biodiversity. This ensures the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, This aims combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world an ensure the conservation of mountain ecosystems, including their biodiversity

by 2030, in order to enhance their capacity to provide benefits that are essential for sustainable development.

Some of the projects identified by the government to respond to this goal includes:

1. Enhanced National Greening Program by the DENR – Forest Management Bureau (FMB). Consistent with the updated Master Plan for forestry (2016-2028) to harmonize all forest development activities that will encourage and enhance development of forest plantations with the participation of private sector, local government units and People's Organizations, the objective is to reforest the estimated 7.1 million hectares of unproductive, denuded and degraded forestlands through the participation and investment if private sector towards enabling private companies to achieve carbon neutrality. of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation.
2. Protection and Conservation of Wildlife, a program by the DENR-Biodiversity Management Bureau (BMB) which deals with the preservation, conservation, and protection of wildlife, and/or maintenance, restoration, and enhancement of their habitats. Top activities under this program include enforcement of wildlife laws, rules and regulations, establishment and management of critical habitats, and conservation of threatened wildlife species such as the marine turtles, dugong, tamaraw, Philippine raptor, crocodile, tarsier, Philippine cockatoo, and spotted deer. This aims to protect and prevent the extinction of threatened species.
3. Protected Area Development and Management Program covers the main in-situ measures to conserve biodiversity within and adjacent to protected areas. It will ensure that the current NIPAS coverage is rationalized by retaining and prioritizing those with high biodiversity values while providing appropriate governance regime for the protection of Key Biodiversity Areas (KBAs) such as through Local Conservation Areas (LCAs) with the LGU concerned and through Indigenous Community Conserved Areas (ICCAs).

5.STOCKTAKING OF EXISTING MRV TOOLS AND TRANSPARENCY SYSTEMS IN THE PHILIPPINES

The following list the existing available reports and studies with regards to MRV tools and Transparency systems.

5.1 Sectoral: Solid Waste and Wastewater, Energy, Transport, Agriculture

The policy Executive Order No. 174 s. 2014 directed the CCC in leading the coordination and consolidation of the Philippine National GHG Inventory. The office created institutional arrangements and coordination mechanisms with the following mandated agencies to lead the monitoring, documenting, and archiving the sector-specific GHG emissions: Department of Environment and Natural Resources (DENR) for the waste, industrial processes &; product use, and forestry & other land use sectors; Department of Energy (DOE) for the energy sector; Department of Transportation (DOTr) for the transport sector and the Department of Agriculture (DA) and Philippine Statistics Authority (PSA) for the agriculture sector. Moreover, CCC has also initiated on collaborative engagements with other national government agencies, actors, and development partners, such as, but not limited to National Economic and Development Authority (NEDA), Philippine Statistics Authority (PSA); University of the Philippines (UP); Securities and Exchange Commission (SEC), Local government units (LGUs) and the United Nations Framework Convention on Climate Change (UNFCC).

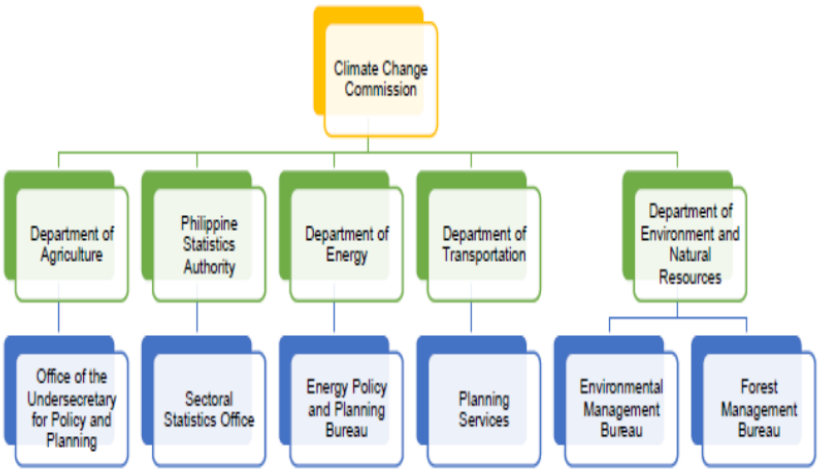


Figure 5.1.1 Current Institutional Arrangement for PGHGIMRS[28]

5.1.1 Solid Waste and Wastewater Sector (DENR-EMB)

The waste itself, generated by the general population is the source of most of the GHG emissions from the waste sector. Population is the key reason for the GHG emissions in this sector. The source of waste is further segregated as solid waste and wastewater.

NSWMC (2014) reported the residential sector with 57% of solid waste generated, contributes the most to solid waste emissions. The total 2010 base year emissions from the waste sector includes 6.88MtCO_2e from solid waste and 8.66 Mt CO_2e from wastewater for a total contribution of 15.54MTCO_2e.

Solid waste could also be classified based on types of solid waste facility:

1. Open dumpsite- indiscriminate disposal of waste
2. Controlled disposal facility (CDF)-wastes are deposited at the minimum prescribed standards.
3. Sanitary Landfill (SLF)-use of impermeable liners that prevent liquid discharges from polluting ground and surface water.

Wastewater like solid waste is best quantified by the amount of degradable organic material and type of wastewater treatment.

For the solid waste, the primary GHG concern is methane. It is mainly calculated from the capacity of solid waste disposal sites where solid waste may come from residential, commercial, institutional, or industrial establishments. Material mix of solid waste is paper, metal, plastic, other organics, hazardous waste, and special waste.

For the waste sector, Table 5.1.1.1 are the mitigation options identified with the corresponding calculated mitigation potentials using CBA in solid waste:

Table 5.1.1.1 Proposed Mitigation Actions and Potentials in Solid Waste using CBA

Mitigation Actions	Description	Assumptions	Mitigation Potential (Cumulative), 2015-2030, MtCO2e

[28] Source: CCC, 2020 Illustration lifted from
Commission Resolution No. _ Resolution Adopting the Guidance Document Institutionalizing the Philippine Greenhouse Gas inventory Management and Reporting System of EO 174 No.s 2014 Available at https://climate.gov.ph/public/ckfinder/userfiles/files/Resolutions/Resolution%202018-003_%20Resolution%20on%20GHG%20Inventory%20Guidelines.pdf
Date accessed 03 November 2020

Municipal Solid Waste (MSW) digestion of Organic waste	Anaerobic digestion is the preferred method to degrade the organic material. The waste consumed is expected to reduce emissions from landfills as these are diverted.	-1000 tons per day of biodegradable waste is diverted from sanitary landfills (SLF) by 2025 with phasing in beginning 2018. -MSW digestion is constructed between 2018 and 2023 to consume 1000 short tons of organic MSW per day, equivalent to 116 megawatts electricity. - MSW plants are built per US and European technical standards, with electrostatic precipitator as the pollution control technology. -The capacity from the electricity generated from this option is deployed in the baseline power model, thus displacing baseline generation and some endogenously built capacity.	7.48
Methane recovery from medium dumpsites for flaring	The capacity from the electricity generated in this option is deployed in the baseline power model, thus displacing baseline generation and some endogenously built capacity.	The % of emissions subject to recovery is assumed to be the same as their overall disposal capacity. 50% of landfill gas is CH4 (IPCC 2006) 50% capture efficiency (IPCC 2006) Implementation is phased in between 2018-2030 with the achievement of full potential by 2030 Capital cost=$ 17/ton of capacity deploying methane recovery capability in each year from 2018-2030 Operating cost=$ 3/ton capacity deploying methane e recovery	2.79

Methane recovery form sanitary landfills for electricity power generation	Methane is recover from large SLFs for electricity power generation by 2030 Expansion of landfill gas (LFG) power at landfills where it is deemed economically viable.	Methane is recovered from Category 4F SLFS % of emissions subject to recovery is assumed to be the same as overall disposal capacity of category 4 sites. Category 4 site comprise 56% of SLF capacity (Gerstmayer and Krist,2012) 50% of landfills gas is CH4 (IPCC, 2006) 50% capture efficiency (IPCC, 2006) Implementation is phased-in between 2018-2030 with full potential achieved by 2030 Capital cost for methane recovery=$24.46/ton of SLF capacity getting methane recovery capabilities (2010 $)(UNFCC,2012) Power generation: New landfill gas generation capacity is constructed to utilize additional fuel This capacity is deployed into the baseline power model displacing baseline generation and some endogenously built capacity.	11.46
Methane recovered from large dumpsites for electricity power generation	Methane is recovered from large OD and CDF for electricity power generation by 2030.	Methane is recovered from Category 4SLFs % of emissions subject to recovery is assumed to be same as overall disposal capacity of Category 4 sites Category 4 sites comprise 50% of SLF capacity (Gertmayer and Krist, 2012) 50% of landfill gas is CH4 (IPCC, 2006)	2.49

		50% capture efficiency (IPCC, 2006) Implementation is phased in bet. 2018-2030 Capital cost for methane recovery =$24.46 /ton of SLF capacity getting methane recovery capabilities (2010 $) (UFCC 2012) Operating cost for methane recovery=$0.013m3 of landfill gas subject to recovery (2010 USD(UNFCC) Power Generation: New landfill gas generation capacity is constructed to utilize additional fuel This capacity is deployed into the baseline power model displacing baseline generation and some internally built capacity	
Sewerage and septage	Improve and expand septage management in MWSS concessionaire e areas, highly urbanize cities (HUCs) outside NCR and rural areas. Actions includes improvement of septic tank management through frequent desludging.	Covers domestic wastewater produced by 80% of the urban population to 17 HUCs and eight cities Additional aerobic treatment facilities need to be constructed and operation starting 2022 NSSMP target areas don not overlap with population in the Mandamus compliance 2011,2012,2012 and 2015 population estimated using annual population growth rates at five-year interval from PSA (2006 data) Initial capital cost=PhP223.02 per covered person	3.91

		Capital cost allocation, 80% plant facilities and 20% hauling/logistics Operating cost is calculated as a % of initial capital cost Annual operating cost is assumed from 2022-2030 High uncertainty in this mitigation option since this is highly dependent on design capacity of the facility and the land cost.	
Eco-efficient cover at small dumpsites	Eco-efficient soil cover (methane oxidizing cover) is deployed in small OD and CDF by 2030	Eco-efficient cover is deployed at 50% of small dumpsites by 2030, with a phase-in beginning in 2018 Small dumpsites are defined as Category 1and 2 sites 70% emission reduction for a portion of small dumpsites that obtain eco-efficient cover in each year (Gerstmayer and Krist, 2012) Cost of biocover per ton CO2e mitigated=$100 (IPCC 2014) No additional dumpsites are closed.	9.45
Composting	Maximize the use of biodegradable materials to support the goal of a “zero waste” Philippines Increase in composting results to additional biodegradable waste diverted from landfills, thus reducing CH4 emissions and overall disposal requirements.	Additional biodegradable waste, amounting to 120million tons is diverted to composting National waste diversion rate increases from 19% (baseline) to 41.8% by 2050. Materials Recovery Facility (MRF) and Transfer Station Capital Cost @ $0.3 /ton (NEDA/NSWMC, 2008) Composting Technology Capital and Operating Costs	11.35

		-70% bioreactor technology, 30% mix of box, window and vermi composting -Bioreactor capital cost=$19,650 per 1 ton reactor (ADB, 2003) -Bioreactor Operating Cost=$11,056 (ADB 2008) Box, windo and vermi capital cost=40.94/ton compost product (Paul et al, 2008) Implementation cost -separate collection of biodegradable waste=$ 38.55 /ton (2010 USD) (Gerstmayer and Krist, 2012) Landfill disposal cost savings=$13.33/ton (ADB,2003)	
Mandamus compliance	Compliance to the Mandamus ruling by expanding domestic wastewater collection and creating a centralized treatment facility in the Manila Bay region. Biogas is recovered from the treatment facility and will be used for flaring or power generation.	700% of population covered by the Mandamus ruling will have access to centralized, domestic wastewater treatment by 2037 Population growth estimated from a five-year average growth rate for all age population (PSA, 2076) Impact of the emissions from this option is evaluated using linear progression so that by 2037, 700% of population in the Mandamus region is covered by centralized wastewater treatment Wastewater treatment	16.81

		undergoes aerobic treatment Urban residents generate 0.72 m3/wastewater/day (World Bank, 2073) Capacity of the new treatment facility is 700,000 m3/wastewater/day Capital cost for new facility will be based on an average cost of PHP 30,624/m3/wastewater r/d ay Annual operating expense = 77.5% of capital cost New facilities are assumed to have been constructed and become available when projected increases in wastewater volumes will exceed existing treatment capacity	

It is important to note that the cumulative mitigation potentials are based on individual scenarios approach which does not consider the interaction between mitigation options. This is one point that should be taken into consideration as one of the gaps in the accounting and monitoring of emissions.

5.1.2 Energy Sector (Department of Energy, DOE)

By 2030, the DOE expects the country's peak demand for electricity to reach 30,189 megawatts (MW), or nearly 70% more than the current dependable capacity. Most capacity additions in the pipeline are coal power plants. Out of the committed and indicative power plant projects, 13,265 MW stem from coal, 2,500 MW from natural gas, and 254 MW from oil-based technologies. On the other hand, the combined total capacity of renewable energy (RE) projects in the pipeline amounts to 5,435 MW (Wind 2,136; Hydro 1,554; Solar 1,314; Geothermal 253; Biomass 178). If all projects are built, fossil fuel-based plants (15,569 MW) are expected to dominate the electricity generation sector. However, it is important to note that with current developments of

solar/PV being referred to as the new 'King' of electricity markets globally, by the International Energy Agency (IEA) in the recently released World Energy Outlook, it offers a great opportunity to achieve needed development but in an environmentally benign manner. As indicated earlier and with solar/PV making up 80% of new electricity markets, cost of electricity from wind and solar/PV (without subsidies) being competitive with electricity of fossil fuel (with subsidies), low emission development appears to be the new preferred option to reach development goals by countries (IEA WEO, 2020). This is especially the case as fossil fuel markets are crumbling over the past months and is still crumbling.

On this regard, the leading contributors for the total GHG emissions from energy sector are estimated at 55.7 million metric tons CO2e (MtCO2e) and this came from: electricity generation 31.7MtCO2e from on and off-grid plants to industry 11.9 MtCO2e and the residential sector at 5.3 MtCO2e. Combustion emission from other sources of energy demand and emission from the production of fossil fuels and charcoal make up the remaining of the total. It is important to note that the increase in emissions is driven by a growing national population and economy. The economy plays a crucial role and that the rising GDP and industrial and commercial value added induce significant growth in energy demand.

The sources of emissions from the industrial use came from manufacturing, mining, and construction. Secondary emissions due to electric consumption as well as other emission from use of gaseous fuel and biomass for cooking are the sources of energy from residential use. Secondary emissions due to on-grid and off-grid electricity use are the source of emissions from commercial energy use. The emission from agriculture, forestry and fishing sectors are mostly from primary emissions due to combustion of conventional non-renewable fuels. The emissions from international bunkers are from primary emissions due to fuel use in marine and civil aviation subsectors.

Table 5.1.2.1 Proposed Mitigation Actions and Potentials in the Energy Sector using CBA

Mitigation Actions	Description	Assumptions	Mitigation Potential (Cumulative, 2015-2030, MtCO2e
Home lighting improvements	Models a moratorium on sales of incandescent, linear fluorescent, and circular fluorescent lightbulbs for residences; starts in 2020.As the old bulbs wear out, they are replaced	Assigned average wattages; Incandescent 32.2W; liner/circular fluorescent lightbulbs 27.1W Beginning in 2020, the shares of these tech in the total stock of residential bulbs decrease linearly, reaching	2.60

	with more efficient CFL and LED equivalents.	0% after 10K hours (incandescent) or 20K hours (fluorescent) The market share is absorbed by CFL (15.25W) and LED (9.89W), deployed in the same ratio as observed in the baseline scenario.	
Home appliance improvements	Switching to more efficient home appliances. CRT and non-CRT televisions to LED and LCD models; efficient refrigerators freezers and fans. Deploying efficient split and window air conditioning units. Beginning 2020, the new technologies are assumed to completely eclipse their inefficient counterpart after the lifetime of the old technology has elapsed.	Televisions: LED and LCD television are expected to draw 74W, about 21W less than non-CRT and 29W less than CRT models. CRT TVs are assumed to have a 10year lifetime, nonCRT TVs 8yrs. Refrigerators: Efficient refs can reduce energy consumption by 47%, 15 yr lifespan Freezers: ENERGY STAR certified freezers reduce energy consumption by 10% over conventional model, 22 yr lifespan.	28.44
Energy efficient street lighting with HPS technology	As the old bulbs wear out, they are replaced with more efficient CFL and LED equivalents		3.15
National Energy Renewable Program (NREP)	For updating		Geothermal-110.29 Wind-49.42 Large Hydro-74.63 Small Hydro-7.91 Ocean-4.14 Solar-6.01

Advance New Coal	This option assumes that all new coal plants constructed in or after 2020 use state-of-the-art ultra-supercritical pulverized coal combustion technology with best available air pollution controls. Advanced coal plants incorporate state-of-the-art pollution controls, lowering air pollution and health impacts. These advanced coal plants are also more efficient than conventional coal plants.	Committed coal plants built after 2020 use the ultra-supercritical technology. Electricity demand and total electricity production are not affected.	57.53
Nuclear Power	Construction of a 7 GW nuclear power plant by2027.	The nuclear capacity is deployed into the baseline model.	22.56
Substitution Natural Gas for Coal	Natural gas power has potential climate and air pollution benefits relative to coal. These stems from the chemical composition of gas as well as the efficiency advantages of combined gas cycle plants. Disallow the addition of coal capacity beyond existing and	The capacity substitutions are the only change to the baseline power model.	222.25

	committed capacity. Resulting capacity shortfalls are filled primarily with new natural gas combined cycle plants.		

National Policy Review on Energy (NPRE)

In 2016, the Climate Change Commission (CCC) issued a Commission Resolution No. 2016-001 entitled "Resolution on the Development of a Clear Policy on Coal-Fired Power Plants in Pursuit of a Low Carbon Development Pathway for the Philippines." This resolution called for a national policy review and framework development on energy, through a whole-of-nation approach. The Review adheres to the envisioned low carbon development pathway and accounts for national goals and targets for climate change adaptation and mitigation set in the National Climate Change Action Plan for 2011-2028.

The following are the identified key areas to consider advancing renewable energy development from this Review[i].

1. Renewable energy support scheme – there are several policy mechanisms under the Renewable Act that have yet to be fully implemented. This includes the mandatory imposition to power suppliers to carry a minimum share of renewable energy in their supply portfolios, including in off-grid areas. Channeling the universal charge for missionary electrification (UCME) to fund hybridization of diesel generator sets in off-grid areas, rather than just providing subsidy for high diesel prices should be implemented.
2. Defining "least-cost" electricity - The current definition of "least cost" ignores a decisive portion of the cost for fossil fuel usage. Long-term purchase agreements with a pass-through of fuel costs lead to distortions of competition. The definition of least cost should be reviewed to ensure that the current investments do not put a burden on consumers in the future.
3. Integrating fluctuating wind and solar – It is observed that electricity supply from wind and solar sources is fluctuating. With the projected high future shares of renewables, adjustments to the operation of power plants and the electricity grid are needed. While there is no immediate danger for system security, appropriate measures need to be undertaken in the mid to long term. A grid integration roadmap can ensure that these actions are addressed in a timely and efficient fashion.
4. Cost of Renewable Energy- Around the world, the cost for RE projects are often at par or better than coal power. The cost of RE are anticipated to continue their rapid decline, while coal price developments beyond a 3-5 years' time frame remain highly volatile. While new coal power plants might seem to offer cheaper electricity prices in the near term, they cannot offer

a guarantee of low prices over the long term. To be bankable, independent producers assert on 'pass through clauses' in power purchase agreements. Factoring the increases in coal prices and the weakening of the Peso since 2017, coal power plants might not be competitive with RE even in the medium term. Since a typical lifetime of a coal power plant is 40-50 years, overdevelopment of coal power infrastructure therefore carries a significant risk of stranded investments for the private sector and high electricity tariffs for consumers, as fuel costs in the Philippines are being passed on to consumers.

5. Renewable Energy and Green Jobs- It is a given that higher shares of RE sources can provide the Philippines with healthy environment and clean air. Moreover, it can guarantee the achievement of GHG reduction goals and activate economic growth through having renewable industry and energy access in remote areas. Many related international studies noted that RE technologies especially solar energy and biomass, have significantly higher labor intensity (jobs-years per kWh) than fossil energy[29]. This implies greater job creation as noted in many countries that have identified the promotion of RE as an efficient way of addressing poverty by creating additional incomes, new jobs, and new enterprises. Data shows that word-wide, more than 10.7 million people work in the RE sector in 2017.[30]

5.1.3 Transportation Sector (Department of Transportation, DOTr)

The transport sector emissions were at 23.6MtCO2e in 2010. This is projected to increase to 72.6MTCO2e by 2030 under the business-as usual scenario. Because of the expected population and economic growth in the Philippines, emissions are increasing in all sectors with energy and transport sectors experiencing the most obvious increase. Both direct and indirect GHG emissions from energy consumption in the transport sector is the reason for this. Vehicle themselves are also called tailpipe or "tank-to-wheel" emissions and or direct emissions. Production of transport fuels including fossil fuels, biofuels, and electricity are what makes indirect emissions and this fall under the energy sector.

Transport emissions come from road, rail, domestic aviation, and domestic shipping. Between 2015 and 2030, 85% or more of demand and emissions is expected to come from the road sector. It is important to note that while UVs and trucks constitute a minority of the projected vehicle demand, the average usage is high resulting to bigger share in vehicle activity. The intensive usage coupled with high energy requirements per kilometer traveled is what makes for greater shares of final energy demand and GHG emissions of about 80% for the two categories.

[29] Source: International Renewable Energy Agency (IRENA). (2011). Renewable Energy Jobs: Status, Prospects & Policies.

[30] Note: The University of the Philippines National Engineering Center (UP NEC) has been requested by CCC to conduct an independent and unbiased Technical Assessment Report which is to be circulated to executive and legislative offices as basis for energy policy reform.

Table 5.1.3.1 Proposed Mitigation Actions and Potentials in the Transport Sector using CBA

Mitigation Actions	Description	Assumptions	Mitigation Potential (Cumulative, 2015-2030, MtCO2e
Biofuels	Based on the 2012-2030 Philippine Energy Plan (DOE)where Bioethanol (8.3% and biodiesel (2%) pathways are evaluated at historical levels	In 2010, ethanol generally constituted 3.6% of the transport gasoline supply in energy terms while biodiesel made up at most1.8% of the transport diesel supply in energy terms. Technology cost of biofuels are evaluated apart from the impacts of any particular biofuel policy.	85.70
Buses and BRT	Changing and expanding road-based public transport in Metro Manila and other urban cities nationwide, including C5 and Manila bus rapid transport systems: express buses with dedicated lanes and facilities; ITS that support bus monitoring, priority signaling and remote traffic enforcement.	Yearly vehicle sales of buses for projected years were calibrated to align with estimates of the projected vehicle stock. Road vehicle stock is expected to increase five times from 2010-2015. Annual capital cost of $340M. Annual cost from $1.8M in 2016 to $480M in 2025.Scale with bus services equal to the sum of capital, O&M and fuel costs.	9.50
Compressed Natural Gas (CNG)*	15000 CNG buses on the road is the target for 2030. New CNG buses are assumed to be purchased in place of conventional diesel buses.	New CNG buses meet the same emission standards as the diesel buses Diesel and CNG buses are each assumed to consume 40L/100km.	0.31

	The assumption is the CNG buses meet the same emission standards as the diesel buses they replace but the benefits could be higher if these were required to meet Euro VI equivalent standards.	CNG buses are assumed to cost about $10,130 more than conventional diesel buses. Fuel prices are assumed to reflect the cost of delivering CNG and diesel. While future costs are uncertain, current prices indicate potential savings with CNG buses.	
Congestion Charging	This is modeled after London's congestion charging scheme. The scheme will levy a charge on four-wheeled traffic during specificized hours. The program is assumed to reduced nationwide four-wheeled vehicle activity by 5.1% in 2030.	Applied to 39% of four wheeled vehicles, with charging hours that cover 66% of daily vehicle activity with expected phase in from 2026-2030. Implementation cost will be $50M. O&M cost is $5M per year.	4.61
Driver Training	Fuel -saving best practices training (maintaining a steady speed and avoiding unnecessary acceleration and braking) for drivers	$4M for a national program to compile eco-driving tips, train driving instructors and develop training curriculum. Assume to reduce fuel use of affected vehicles by 5%.	9.83
Electric Light Duty Vehicle	Includes fiscal incentives that increase the share of LDVs that are battery electric vehicles. EVs have lower fuel costs than gasoline models.	EVS assumed to reach 15% of LDV sales by 2030. Incremental costs to manufacturers to decline from $11000 in 2015 to $3000 in 2030 for EVs	0.86

		Fuel costs reflect the switch from gasoline to diesel to electric charging.	
Electric Motorcycle and tricycle (MC and TC)	Fiscal incentives promote the sale of electric MC and TC.	Sales increase to meet the target of 1M BEVs on the road by 2020; TC are assumed to account for 20% of this target. MC: $841 for gasoline, $766 for electric TC $2090 for gasoline $ 740 for electric Annual maintenance cost for MC: $61 for electric MC assuming replacement of lead acid batteries every two years. Fuel cost reflects the switch from gasoline to diesel to electric charging.	3.10
Euro IV MVIS	Includes MVIS along with the implementation of Euro 4 standards for new LDV, buses, trucks and MC/TC starting in 2016, ensuring availability of 50ppm sulfur gasoline and diesel.	Brand new vehicles are assumed to account for 70%of new LDV registrations, 20% for buses and trucks and 100%for MC and TC. The incremental cost of emission control technologies to meet Euro 4 compared to Euro 2 vary by vehicle and fuel type. The cost can range from about $15 for motorcycles to $3,800 for diesel buses.	13.34
Light Duty Vehicle Efficiency	LDVs are required to meet more stringent fuel efficiency requirements based on standardize testing to gain approval.	With the assumption of 70% new registrations, standards for brand new LDVs phase in model years 2020 to 2035 resulting in efficiency improvements of 26% in 2025 and 47% in 2030	4.13

		compared to baseline assumption of 10L/100km Vehicle efficiency labeling and baseline studies of new LDV efficiency in the Philippines could support the development of standards.	
Jeepney Modernization		Older diesel jeepneys are scrapped and replaced with battery electric modes. Sales of EJeeps reach 10% of new UV registrations by 2020 and 25% by 2030 Capital cost: Ejeeps - PhP800K each plus PhP150K for scrapping O&M cost: Ejeeps PhP20K per year for maintenance if lithium-ion batteries are replaced every 7-8 years.	20.93
Motor Vehicle Inspection System (MVIS+	MVIS tests and regulates emissions of in-use vehicles to ensure compliance with emissions standards to which they are certified. Establish new testing facilities nationwide and improving system-wide reliability to improve vehicle efficiency.	Enhanced MVIS facilities reduce fleet-wide fuel consumption by 3%starting 2019.Assumes 30% reduction in PM emission rate applying to 25% of LDVs, 100% UVs and 30% of buses and trucks. Capital cost: est. at 430M to 488M to design and construct MVIS facilities over 12 years.	11.54
Rail	Considers impacts of six rail projects in the DOTr's project pipeline: MRT3 capacity expansion, Mass	Completion of the 6 planned projects reduces annual sales of LDVs, buses, jeepneys by 4900, 270, and 950, respectively, by 2025.	4.72

	transit system loop, LRT7 south expansion, MRT7, LRT2 east and west extensions, and expansion of the north-south railway.	Operating system capacity increases from 50% in 2079 to 90% in 2027 and 700% in 2025. By 2025, the new systems carry 7.74 million passengers per day. Investments in electrified rail add 745 million kWh in annual electricity demand by 2025. Combined cost to build 6 rail projects is 72.4B USD in 2079	
Road Maintenance	Poor road quality increases vehicle operating costs and associated fuel use.	Improved maintenance of ex1st1ng roads is modeled as a 7% improvement in the IRI international roughness index, reducing road vehicle fuel consumption by 3.6% Cost 23 Billion in 7999PHP	23.36
Two-stroke replacement	Two strokes engine is a type of internal combustion engine which completes a power cycle with two strokes (up and down movements) of the piston during only one crankshaft revolution, causing more emission as compared to a four-stroke engine.	Tricycles assumed to account for 20% of 3.7 million registered MC/TC nationwide, with 20% this having two-stroke engines. ¼ of estimated 720,000 two-stroke tricycles a re assumed to be scrapped and replaced with a new battery electric model in 2076. Capital Cost: 2090 USD for gasoline and 5740 USD for electric	0.15

Note: *An option for reconsideration

5.2Non-sectoral: Transformational Change/Sustainable Development, Non-State and Subnational Action, Stakeholder Participation

As part of the process, CCC guided by the Climate Change Act of 2009 has been active in engaging the non-sectoral aspect of climate change by ensuring stakeholder participation in all its engagements.

5.2.1 Climate Change and Gender

The Philippine government's Climate Change policy has declared to incorporate a gender-sensitive, pro-children and pro-poor perspective in all climate change and renewable energy efforts, plans, and programs. Even the amendments to the Climate Change law in 2012 have noted that all projects should be responsive to gender-differentiated vulnerabilities, among other considerations.

In fact, Climate Change Commission in its implementation of this policy has ensured and promoted the following:

1. Active involvement of women in decision-making and this is through its multi-stakeholder consultations, capacity-building initiatives, and participation in international climate negotiations);
2. Integration of gender concerns and perspectives in policies and programs through the development and updating of plans); and
3. Assessment of the impact of climate-resilient development policies and interventions on women (through monitoring and evaluation reports and gender analysis of projects for funding under the People's Survival Fund and other climate finance facilities.

In 2019, the CCC adopted the Commission Resolution 2019-02, designed to strengthen gender-based approaches in the formulation and implementation of climate change policies, plans, programs, and activities in the country, including the generation of sex-disaggregated data and conduct of gender analysis. It has also resolved to coordinate with agencies concerned in promulgating policies, directives, and initiatives supportive of the collaborative approach to accomplish the objectives of the Resolution.

It is also very important to note that employment of gender considerations and safeguards in the review and evaluation process of project proposals submitted to the People's Survival Fund (PSF). Moreover, as stipulated in Republic Act 10174, the Chairperson of the Philippine Commission on Women (PCW) is designated among the members of the PSF Board.

To align with the national gender equality and women empowerment goals, CCC established a deep convergence with the Philippine Commission on Women. The

agency also has an initiative with the support of NDC Support Program of the plan to conduct a NDC gender analysis that will pave the way in ensuring that gender-responsive initiatives are incorporated in the Philippines' first NDC.

It is also important to note that CCC has also ensured that gender-balance and women representation is present within the organization. Its Revised Implementing Rules and Regulations has noted that, the Commission should be composed of four Commissioners, including the President as ex-officio Chairperson with at least one of the Commissioners -a woman. There's also a GAD Focal Point System to monitor the GAD mainstreaming efforts of the Commission in climate actions, and appointed gender focal points to international fora i.e., UNFCCC and IPCC.

With regards to environment and ecological stability, the National Reducing Emissions from Deforestation and Forest Degradation (REDD+) system for the Philippines 2012-2017 reported that 43% of the over 13,000 trained on safeguards information system, land use planning and forestry assessment were women.

Moreover, the CCC undertakes gender-responsive capacity-building initiative for national government agencies, higher educational institutions, and local government units through the Communities for Resilience and Support to Climate Field Schools programs. It also ensures the gender balance of participants, trainers, experts, and coordinators involved in activities like capacity building on proposal development, access of LGUS to climate finance like the People's Survival Funds. Likewise, indigenous cultural communities who are particularly vulnerable were among the beneficiaries in its knowledge-sharing and capacity-building programs. It has supported efforts of the national agencies like the DA in sustaining its Climate Resiliency Field Schools (CrES) piloted by the Rice Watch Action Network (R1) in select partner municipalities in 2017. The CrFS was recognized for engaging women and youth, promoting diversification of income sources, and capacitating women on activities traditionally dominated by men and has won the Gender-Just Climate Solutions Award, Transformational Climate Solutions category, from the Women and Gender Constituency of the United Nations Framework Convention on Climate Change (UNFCCC) in 2018. In November 2019, the CCC in collaboration with the NDC Partnership conducted a Peer-to-peer learning exchange on Mainstreaming Gender Equality in the NDC in the Asia Pacific Region. This workshop provided an enabling platform for the countries in the Asia Pacific region to discuss how to mainstream gender in their NDC development process.

With regards to climate smart industries and services, the Philippines has enacted the Green Jobs Act of 2016 and this is designed for the just transition to a low carbon green economy. The law defined "green jobs" as "employment that contributes to preserving or restoring the quality of the environment, be it in the agriculture, industry or services sector," and "decent jobs that are productive, respect the rights of workers, deliver a fair income, provide security in the workplace and social protection for families, and promote social dialogue." The CCC, under the Green Jobs Act of 2016, was mandated to develop and administer appropriate standards for the assessment and certification of green goods and services, and green technologies and practices for the purpose of regulating the access of incentives under the law. In the development of said standards, the CCC has engaged the Philippine Commission on

Women as one of the key stakeholders to ensure that gender consideration is included in the certification process.

In international climate change negotiations, the Philippines is highly regarded in the negotiation process at the Conference of the Parties (COP) to the UNFCCC as a leader of developing countries. In several instances, the Philippines has been nominated by the Parties to facilitate a negotiating group. It has led as Chair of the Climate Vulnerable Forum in 2015, the Philippines, on behalf of 48 developing countries, the advocacy for the ambitious global warming threshold of 1.5^0C, now enshrined in the Paris Agreement as its long-term temperature goal (stated as: "limiting global average temperature to well below 2 °C and to pursue efforts to limit the temperature increase to 1.5 °C").

The Philippine advocacy for a highly ambitious climate goal has upheld the fundamental principles of common but differentiated responsibilities and respective capabilities, as well as historical responsibilities, and climate justice. There is gender balance in the Philippine delegation to COP with 40% women, including senior negotiators, experts, and technical staff.

The Philippines has proactively supported the development of a Gender Action Plan of the UNFCCC. In 2016, the Philippines, through a formal submission to the UNFCCC, proposed elements and guiding principles for the advancement of the Lima Work Program on Gender and Climate Change, including (i) development of skills and capacity-building training programs on gender and climate change for both UNFCCC Secretariat and State Parties; and (ii) mainstreaming a gender perspective in the Guidelines on National Communication, including financial commitments of Parties that are in line with women's human rights and gender equality.

At COP23 in 2018, Parties adopted a Gender Action Plan and invited the Secretariat and relevant organizations to undertake the activities under priority areas - capacity-building, knowledge sharing and communication, gender balance, participation and women's leadership, consistent implementation of gender-related mandates and activities, and gender-responsive implementation and means of implementation.

In 2017, the Philippines designated its National Gender Focal Point to the UNFCCC to assist with all gender-related decisions and mandates under the UNFCCC processes.

In 2018, the Philippines nominated two gender focal points to the Intergovernmental Panel on Climate Change (IPCC) Task Group on Gender, with the aim of developing a framework of goals and actions to improve gender balance and address gender-related issues within the IPCC. The IPCC is the lead scientific body serving the UNFCCC.

The Philippines secured a seat as an alternate member of the Green Climate Fund Board from 2019 to 2022, providing an opportunity to shape the policies of the Board and its funding decisions. Then Senator, now congresswoman Loren Legarda serves as the Philippine representative, and most of her advisers, are women.

In 2019, the CCC, together with the PCW and other agencies, represented the Philippines in the Asia Pacific Ministerial Review of the Beijing Declaration and Platform+25. The Commission as part of the working group on developing the Asia Pacific Ministerial Review Document ensured that the Philippine national policy on climate change is present Ministerial Document.

The CCC, as the National Designated Authority to the Green Climate Fund (GCF), leads the development of the Philippine Country Program to the GCF for the period 2018 to 2022, in consultation with various stakeholders, including the Philippine Commission on Women. The GCF is a global fund created to support developing countries in responding to climate change.

5.2.2 On Sustainable development goals (SDGs) and Technology Needs Assessment for Climate Change Mitigation

The Philippine National Climate Change Action Plan (NCCAP) for 2011-2028 notes the role of technology in the context of climate change, echoing the aspirational imperatives of the Technology Framework and the Technology Mechanism espoused under the Paris Agreement and the United Nations Framework Convention on Climate Change (UNFCCC), respectively.

It highlights that technology can either contribute to the increasing concentration of greenhouse gases (GHG) in the atmosphere, or help the country pursue a low-carbon development pathway. And that it is important to identify climate technologies and maximize their potential as tools in addressing climate change.

In the Philippines, data shows that the projected GHG emissions is projected to be predominantly led by the energy and transport sectors due to the expected population and economic growth in the country. Effective mitigation entails early and vigorous actions to curb these emissions.

By considering the country's National Communication Reports submitted to the UNFCCC, and the Strategic Framework and Action Plan on Climate Change, three major economic sectors were identified in the TNA as the priority for climate change mitigation: energy, transport, and waste sectors.

The lead national agency for this Project is the Climate Change Commission, which acts as the over-all coordinator of the consultation and assessment activities. The National TNA Team consists of the Technical Working Group (TWG) of the Government's Climate Change Adaptation and Mitigation Cluster and the consultant-experts. Representatives from the private sector and the civil society are also included.

From a long list of technologies in the sectors, technology fact sheets were prepared for selected technologies that are deemed appropriate and applicable for the Philippines. These are then subjected to the criteria for prioritization, considering costs versus benefits. The cost of technology was grouped into capital investment and operations & maintenance. Benefits of using the technology include: (i) Greenhouse

gas emissions reduction potential; (ii) Economic benefits; (iii) Social benefits; and (iv) Environmental benefits.

Priority sectors as agreed by the TNA Team and stakeholders included those that have been already considered in the country's Intended Nationally Determined Contributions or INDCs and previous assessments and studies in the Energy, Transport and Waste sectors.

Prioritized technologies for the Energy sector include (i) Testing laboratory for Electric Vehicles, (ii) Solar Thermal System, and (iii) Waste Heat Recovery System. For the Transport sector, these are the Motor Vehicle Inspection System (MVIS) and Biogas for Transport. In the Waste sector, the prioritized technologies are Eco-Efficient Soil Cover Using Composts, and Anaerobic Digester.

5.2.3 Climate Financing

This section looks at climate financing of the Philippines.

5.2.3.1 Climate Financing and the Philippines National Government

Climate finance in the Philippines is defined by law as resources that have been reserved or may be utilized towards climate change adaptation and mitigation national and its vulnerable community requirements. Climate finance becomes more important since the country is among the most disaster- prone and climate vulnerable countries in the world. This vulnerability to natural disasters is attributed to factors like lack of land barriers, increased environmental deterioration, unsustainable development practices and increasing natural disasters. The country experienced 410 natural disasters which led to over 40,000 deaths and $23 billion worth of damages between 1985-2015. The 2010-2015 data showed a total of 96 climate-related disasters struck the country in this five-year period. This consisted of 44 floods, 51 storms, and one drought. Eleven million people per year were affected by these disasters during that period, with damage to property, crops, and livestock amounting to PHP 750 billion (15.1 billion USD) and took up almost 9% of the country's annual national budget. To date, disaster and climate risk financing depend mostly on public funds, especially for recovery and rehabilitation. Thus, government incurs opportunity costs. This means that large amounts of public resources go to disaster risk reduction (DRR) and climate change adaptation (CCA) projects rather than other basic public services or public investments for development. Thus, Alampay, E and de la Torre, D (2020) in their article raised a question on whether the Philippines' climate and disaster financing policies effectively addressing climate impacts in the country, especially in its poor municipalities and communities and found out the following:

1. Relevance of climate change expenditure tagging (CCET) experience: data shows that less than two percent of its climate financing is in the form of grants. This means that international commitments have been lacking

showing that the rest of the world does not share in this burden. While some argue the need to shift responsibility towards subnational and non-state actors is consistent with the principle of subsidiarity, these are not necessarily what want with respect to climate financing, given that local communities and vulnerable local government units (LGUs) often do not have the funds for it.

2. Role of insurance in LGUs in the Philippines is a critical proactive financing measure for alleviating disaster and climate risks. Most public assets in the country remain uninsured or under-insured. Given that the Philippines more and even stronger natural disasters, the need for a working and effective insurance model becomes more important, most especially for highly vulnerable LGUs. Even if there are local sources that can be leveraged in the meantime (e.g., DRR Funds), these may not be enough to cover all critical facilities of vulnerable LGUs. This is where support from national funds such as the People's Survival Fund (PSF) and related public funds such as subsidies for state insurance institutions can come in.

It is important to note the accomplishments of PSF on this regard. As the country's domestic financing mechanism to date, a total of six (6) approved projects amounting to PhP 310.34 Million, has been approved and disbursed to the following project beneficiaries:

- Siargao Climate Field School for Farmers and Fisherfolks - Municipality of Del Carmen, Surigao del Norte
- Disaster Risk Reduction and Management (Ridge to Reef) as an Adaptation Mechanism to Resiliency - Municipality of Lanuza, Surigao del Sur
- Building Resilience through Ecology-Based Farming - Municipality of San Francisco, Cebu (Camotes Islands)
- Promoting Resiliency and Climate-Informed Gerona - Municipality of Gerona, Tarlac
- Establishment and Sustainable Management of River Ecosystem in Kitcharao, Agusan del Norte - Municipality of Kitcharao, Agusan del Norte
- Saub Watershed Ecosystem Rehabilitation and Flood Risk Reduction for Increased Resilience - Province of Sarangani

3. Impact of the climate emergency on livelihoods specially among the most vulnerable like farmers and fisher folks: The authors cited the 2015-15 El Nino crisis experiences which provided proof that the kinds of impacts and areas likely to experience such impacts were already known and forecasted to end in massive loss and damage in agriculture but the timely delivery of assistance to affected areas were affected by slow release of funds for Disaster and Emergency funds due to bureaucratic process of approvals and strict parameters. The interventions were not done proactively with urgency by the national agencies. This was the opposite of what were mandated by both the country's Climate Change Act of 2008 and the Disaster Risk Reduction and Management Act of 2010 (NDRRM)

to create a taskforce that would carry out the policy and planning functions on climate change and disaster risk reduction.[31ii]

5.2.3.2 Role of Private Sector and International Organizations

Apart from what the government is doing responding to climate financing aspect, the private sector contributions also played a big role in increasing climate investments (i.e., issuance of green bonds, concessional loans, green investment portfolio of banks and financial institutions). According to SEC (2020), the rapid growth of growth of green bond market is led primarily by the private sector. In fact, this is what differentiates the Philippines from other green markets, where sovereign borrowers have played a more active primary mover role. According to ADB (2020) report, currently, the total Philippine sustainable bond issuances stand at US$3.4 billion equivalent – both on and offshore – 90% of which have been issued by Philippine banks, renewable energy, infrastructure, and real estate companies. Currently, there are four domestic banks, the Bank of the Philippine Islands (BPI), Rizal Commercial Banking Corporation (RCBC), China Ban and BDO Unibank, have issued green bonds in three currencies: US Dollar, Philippines Peso and Swiss francs with issuance in each currency amounting to USD600m, PHP15bn (USD309m), and CHF100m (USD108.6m) worth of green bonds. Interestingly the Philippines is the 3rd largest green bond issuer in the ASEAN. The biggest issuer of green bonds in the Philippines is AC Energy, with four green bonds outstanding, ranging in size from USD75m to USD400m. Two more bonds by Arthaland and AC Energy were issued in 2020. Arthaland, a publicly listed company developing green properties in the Philippines, issued a PHP3bn (USD59.1m) issuance with the use of- proceeds for green buildings. AC Energy issued a USD60m green bond with the use-of-proceeds for renewable energy. This brings the cumulative green bond issuance in the Philippines to USD2.6bn.

The Philippines is also a recipient of climate financing support from Global Environment Facility (GEF), the financial mechanism of the environmental conventions such as UNFCC, UNCBD, UNCCD) where DENR serves as the operational focal point. For the 5th Cycle 2010-2014), the Philippines has $8.8M allocation where two projects were approved: DOE's Development of Renewable Energy Application Mainstreaming and Market Sustainability Project and DOTr's Promotion of Low Carbon Urban Transport System Project. There is also the Adaptation Fund (AF) which is financed through the 2% share of CERS of the CDM where DOF applied as NIE. The other one is Green Climate which has pledge $10.2 B. There is also the CTCN with different forms of technical assistance and funds are not directly provided to countries with assistance ranging from $50,000 to $ 250,000 where request is either quick response (50,000) and implementation is by the expert team with duration of less than a year or a response project ($50,000 to $250,000) with implementation done by a network member and could be multi-year.

[31] Source: Alampay E and De la Torre, 2020. Available https://sites.law.duke.edu/thefinregblog/2020/08/06/financing-in-the-time-of-a-climate-emergency-in-the-philippines/? Date Accessed 12 September 2020

5.3.2.3 Stakeholder Participation

Alampay and Dela Torre (2020) also noted the movement of responsibility towards subnational and non-state actors. Accordingly, this shift towards subnational actors apparently based on an application of the long-held principle of subsidiarity, or the primacy of local governments in frontline implementation which in the Philippines is consistent with the principles of devolution and local autonomy. Civil society organizations like OXFAM and Institute for Climate and Sustainable Cities, a local NGO are usually called non-state actors "in recognition of the dominant role they play in Philippine democracy, especially on empowerment, transparency, accountability, and whole-of-society mobilization, in addition to mobilizing external development financing to flow to vulnerable communities".[32]

6. SUMMARY ANALYSIS MRV AND TRANSPARENCY POLICIES AND SYSTEMS IN THE PHILIPPINES

The ETF assessment framework is used in rapid analysis. The MRV and transparency policies and systems in the Philippines were reviewed. It is important to note that the that the institutional arrangements are also crucial as they play a major role in regularly updating the information that meets enhanced reporting requirement as well as needed for decision making and stakeholders' implementing support.

The ETF is important since it is the major component that provides credibility in the operationalization of the Paris Agreement. It will strengthen the current measurement, reporting and verification (MRV) reporting requirements under the Convention. This is because ETF specifies how Parties to the Paris Agreement must report on progress in climate change mitigation, adaptation measures and support provided or received. It also provides for international procedures for the review of the submitted reports. Information collected via ETF is provided as an input to the Global stock take which assess the collective progress towards the long-term climate goals.

As noted in many references, transparency and accountability have always been part of the basic tenets of Philippine governance. These are easily seen in climate finance thru tracking fund flows (e.g., CCET), and safeguarding delivery of funds to climate-vulnerable sectors.

Alampay, E. and De la Torre, D. (2020) noted though that in climate change, there is a need to consider adaptation as similar with that of mitigation. This parity between adaptation and mitigation shows the difference in stand between developed and developing countries.

[32] Ibid.

The assumption is that developed countries prioritize mitigation actions because they are already resilient, while developing countries like the Philippines are more vulnerable to climate impacts, and have weaker or less resilient economies, and have prioritize adaptation actions. On this regard, public financing in the Philippines prioritize adaptation in terms of budget allocation, while mitigation is pursued as a function of adaptation. This policy is enshrined as a guiding principle under the 2010-2022 National Strategic Framework on Climate Change, which states that: "The national priorities, and therefore, the pillars, of the National Framework Strategy on Climate Change shall be adaptation and mitigation, with an emphasis on adaptation as the anchor strategy. Whenever applicable, mitigation actions shall also be pursued as a function of adaptation."[33].

6.1 Preliminary assessment of preparedness/readiness to comply/provide data and information requirements under the Enhanced Transparency Framework (ETF)[34]

The following illustration shows what constitutes existing MRV arrangements for developing countries like the Philippines under the Paris Convention:

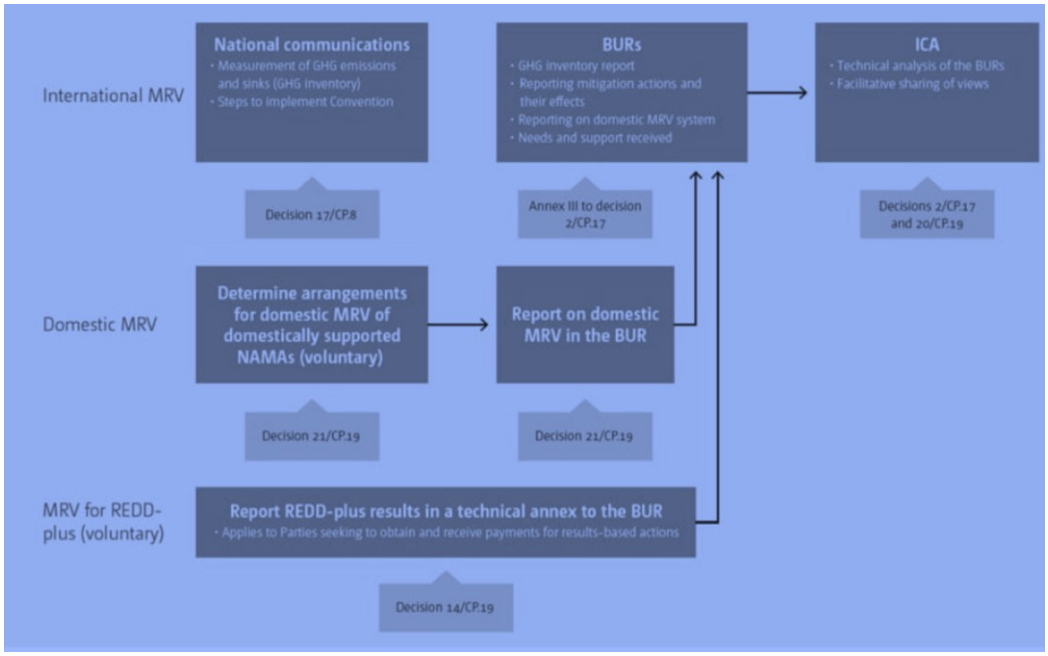


Figure 6.1.1 Reporting Requirements Agreed under COPs

[33] Source: CCC (2010) About the Commission Available in https://climate.gov.ph/our-story
[34] Source: UNFCC (2020) Figures available at Understanding ETF. Available https://unfccc.int/news/understanding-the-enhanced-transparency-framework-new-handbook-published-0 Accessed 21 January 2021

To clarify, the key areas of enhancement under ETF vis-à-vis existing MRV arrangements is that there is now one set of modalities, procedures, and guidelines applicable to all Parties with flexibility to those developing countries in the light of their capacities. This will supersede "BR/BUR and TA and MA FSV" with BTR and FMCP.

All Parties are required to have National inventory report (MPGs Chapter II) as a standalone report or a component of BTR. There should be information necessary to track progress in implementing and achieving its NDC[35] (MPGs Chapter III) as well as information on climate change impacts and adaptation under Article 7 of PA (MPGs Chapter 4). Specifically, for developing countries like the Philippines, information on financial, technology transfer and capacity-building support if available is encouraged to use MPGs Chapter V if not, support needed and received (MPGs Chapter VI).

In general, Article 13 of the Paris Agreement: transparency of action and support is illustrated below.

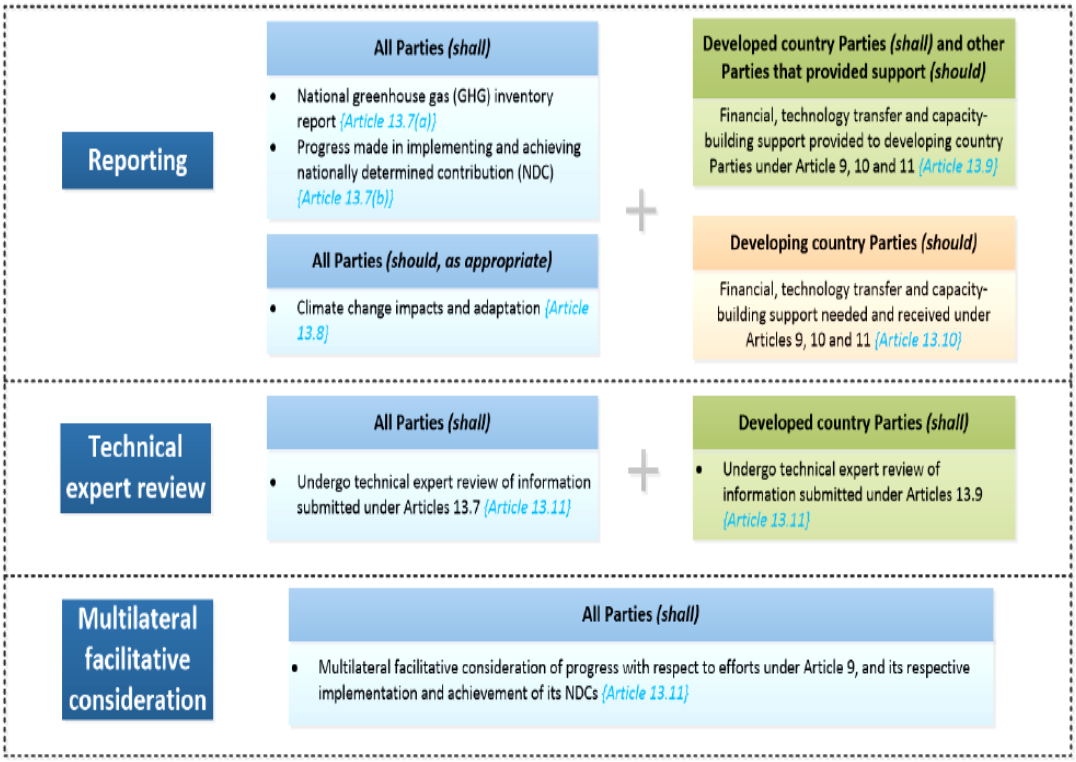


Figure 6.1.2 Transparency of Action Support Illustration

As illustrated in Fig. 6.1.2, In Article 13, the following 1) Reporting; 2) Technical Expert Review and Multilateral Facilitative Consideration are expected.

1. Reporting:
    - National entity/NFP with overall responsibility; institutional, legal and procedural arrangements
    - Information on methods

[35] The Philippines has yet to submit its NDC as of the date of this writing.

    - Mandatory to use 2006 IPCC Guidelines (may use national methodologies if they better reflect national circumstances) & 100-yr-time-horizon GWPs from IPCC 5thAR
    - Methodologies, gas and category, EFs, AD, key categories, individual & cumulative contributions from key categories, recalculations, results of uncertainty analysis, reasons for lack of completeness, QA/QC plan and procedures
- Sector and gases:
    - Estimates of emissions and removals for all categories, gases and carbon pools, including descriptive summary and trends; international aviation and bunkers as separate.
    - 7 gases (CO2, CH4, N2O, HFCs, PFCs, SF6 and NF3)

- Time series
    - consistent annual time series starting from 1990 (NDC reference year/period and a consistent annual time series from 2020 onwards);
    - latest inventory year –no more than 2 (3) years prior to the submission

It is also mandatory for each Party to also include:

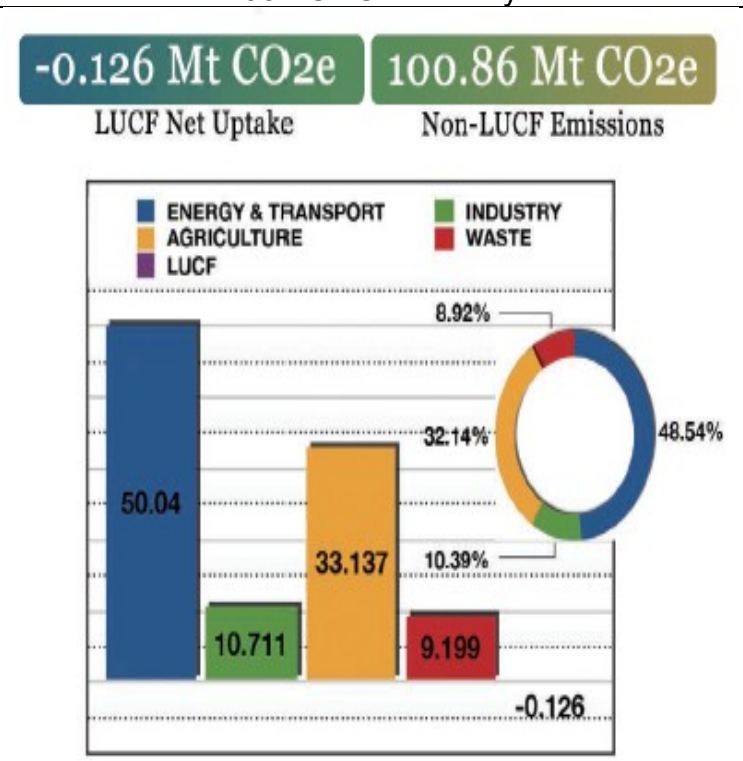
- National circumstances and institutional arrangements to track progress
- Description of NDC, including updates
- Information necessary to track progress (*indicators)*
- Mitigation PAMs and plans (including mitigation co-benefits)
- Summary of GHG emissions and removals
- Projections of GHG emissions and removals
- Any other relevant information (may)

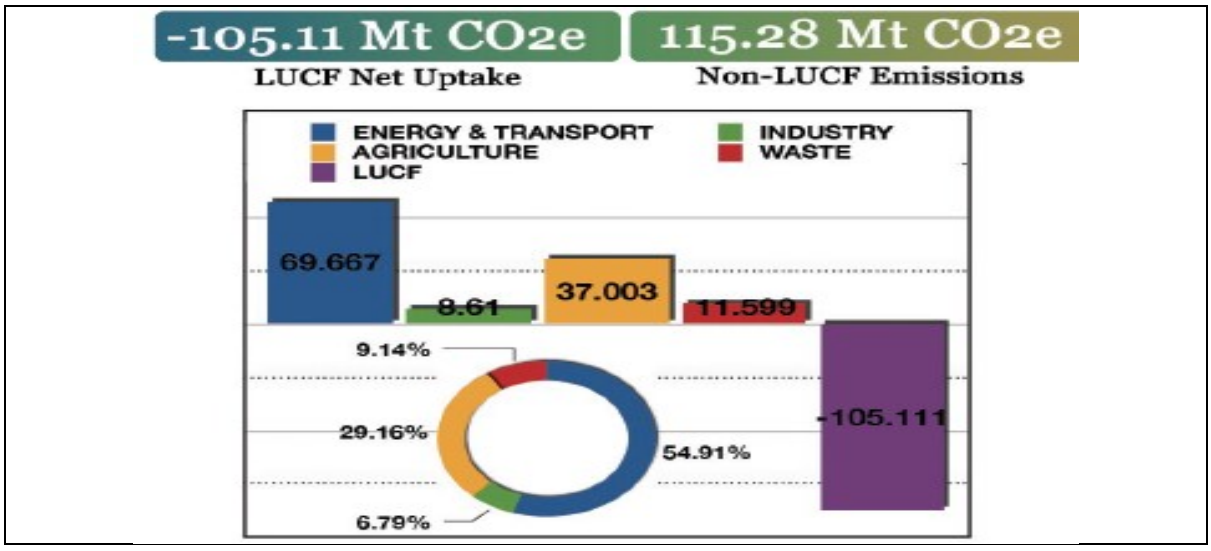
With regards to indicators, each Party is required to identify *the indicator(s)* that it has selected to track progress, e.g.;

- net GHG emissions and removals, or percentage reduction of GHG intensity
- relevant qualitative indicators for a specific policy or measure
- mitigation co-benefits of adaptation actions and/or economic diversification plans
- others *(e.g. hectares of reforestation, percentage of renewable energy use or production, carbon neutrality, share of non-fossil fuel in primary energy consumption and non-GHG related indicators)*

The information for each selected indicator reference point(s), level(s), baseline(s), base year(s) or starting point(s), as appropriate as well as the information for each selected indicator for previous reporting year during the implementation period and the most recent information for each selected indicator for each reporting year during the implementation period.

The Philippines has started the MRV of GHG emissions with the release of GHG Inventory Report in 1994 and 2000.

1994 GHG Inventory

2000 GHG Inventory



Note: All values are in million metric tons of carbon dioxide equivalent (MtCO2e)

Figure 6.1.3 Figure 6.1.3Phil. GHG Inventory Comparison

It is important to note that the 1994 national GHG account was done as a component of the Initial National Communication (INC) of the Philippines, which was submitted in 2000 to UNFCCC as per requirements. The 1994 inventory was done before CCC was set up and was done through a joint effort among public and private organizations with support from development partners. On the other hand, the same year that CCC was set up, the section on GHG Inventory in the Second National Communication (SNC) was completed. This marked the transition of the conduct of GHG inventory from consultants' external to the government to the sectoral national agencies. Thus, these two GHG data sets are not directly comparable. The reasons for this include the methodological changes and/or refinement.

GHG inventory plays an important role since it is an estimate of all emissions and removals of GHG from given sources and sinks within defined spatial and temporal dimensions.

Thus, the need for the country to develop a robust domestic MRV system could be summarize as 4Ps, as progress tracker (identification of sources sector and activities contributing to GHG emissions, understanding trends in emissions and removals) that would be regularly updated as well as policy formulation (develop cost-effective mitigation measures), promote convergence and provision of finance (monitoring progress towards policy goals.

2. Technical Expert Review (TER)

Ideally once there is an NDC, there should be TER that reviews the consistency of information, consideration in the implementation and achievement of its NDC as well as the support provided and that improvement areas to implement Article 13 are identified and the assistance in identifying capacity building needs. This should be centralized, simplified—in this case via CCC. It will include a national GHG inventory (in the case of the Philippines, there is a need to update), there should be a tracking

progress and support provided. There should be 1st BTR (min of 2 BTRs in 10 years—one containing the achievement and if not an annual inventory of report submitted.

3. Facilitative Multilateral Consideration of Progress (FMCP)

This process includes discussion on financing and progress the implementation and achievement of NDC. This takes place as soon that TER is out and that there is a Q&A format session followed by a working group session.

A quick review assessment based on the above system is in this table.

Table 6.1.1 Status of the Philippines vis-à-vis ETF

ETF	Content Details	The Philippines
1.Reporting	National circumstances and institutional arrangements	CCC has several institutional arrangements e.g., DBM, DILG
	NDC Description	Still ongoing, target 2021
	Indicators	Done per sector: Agriculture, Energy, Transport, Solid & Industrial Waste
	Mitigation Co-benefits	Methodology to be institutionalized; initial study done with the support of USAID on CBA studies in 2015
	GHG Emissions & Removals	Institutionalized via Philippine GHG Inventory Management and Reporting system but data must undergo regular updating. Each sector has to finalize its system of inventory.
	GHG Projections	Institutionalized via Philippine GHG Inventory Management and Reporting system but data must undergo regular updating. Each sector has to finalize its system of inventory.
	Other information like Gender, SDGs	Already being monitored by agencies like Phil. Statistical Office
2.Technical Expert Review (TER)	BTR	CCC has an Expert Panel that meets regularly
3.Facilitative Multilateral Consideration of Progress (FMCP)	Involves financing	DOF is already very much involved in the case of the Philippines

6.2 Preliminary gaps/areas for improvement identified[36]

Using the ICAT assessment guide framework, and the reality that the Philippines is still finalizing its NDC, some gap areas for improvement includes impact assessment methodologies for assessing the GHG, sustainable development and transformational impacts of policies at the sectoral level -in this case, energy, transport, solid waste, and agriculture. Including a methodology for aggregating the impacts of non-state and subnational actions is also an identified gap. This could be around climate finance especially having special attention to the most vulnerable to climate change. The Philippines policy on climate change already recognized the variance in the impacts of climate change, and the need of the vulnerable sectors, including the poor who bear the most burden on loss and damage due to climate impacts. Alampay E and dela Torres D (2020) noted the importance of institutional mechanisms that would establish fund flows in targeting and prioritizing the vulnerable.

In May 2020, in the EVI and ICLEI Interim Report on Development and Measurement, Reporting and Verification Plan for the Philippines Nationally Determined Contribution submitted to UNDP and CCC, the following gaps were identified and classified as: (1) legal, (2) institutional, and (3) procedural and has presented in a very comprehensive manner. Summary is edited here for brevity:

Table 6.2.1 Summary: Identified NDV MRV Gaps and Proposed Solutions[37]

Gap Types	ETF Requirements	Current	Gaps	Proposed Solutions
Legal	National inventory	EO 174 (PGHGIMRS) Sectoral SOs and DOs supporting EO 174	Guidance document for EO 174 is not yet implemented and awaiting the signature of the President of the Philippines Data-sharing arrangements among lead sectoral agencies and the private sector is needed	Proposed EO for NDC includes data sharing arrangements

[36] Check primer on MRV reference
[37] Source: EVI and ICLEI, 2020

	NDC	RA 9729 RA 10174	Roles and responsibilities of CCC in the NDC implementation and MRV have not been clearly defined in the existing policies	Proposed EO for NDC Implementation and MRV is included in this report
	Adaptation legal framework	RA 10174 RA 10121 EO 43 of 2011	Role of CCC in adaptation is not clearly defined in the existing policies	Proposed EO includes Adaptation MRV, defining the role of CCC
	Support needed and received	RA 10174 for climate finance	Policy implementation remains weak due to insufficient institutional resources and human capacity	Proposed EO includes establishing a training center for NDC implementation and MRV
Institutional	National focal point for GHG inventory	CCC as the lead agency for national GHG inventory, supported by lead sectoral agencies	A high turnover rate of technical personnel -In-depth capacity building is needed Data-sharing arrangements among lead sectoral agencies and the private sector is needed	Proposed EO will include a training center for NDC implementation and MRV Proposed EO for NDC includes data sharing arrangements
	NDC institutional arrangements	CCC as the lead agency for national GHG inventory, supported by lead sectoral agencies	Currently has no legal framework for NDC institutional arrangements	Proposed EO for NDC will include institutional arrangements Options for institutional arrangements

	Adaptation institutional arrangements	Existing NCCAP institutional arrangement	Roles of sectoral agencies in the institutional arrangements for adaptation need to be clearly defined	Proposed EO for NDC will include institutional arrangements Options for institutional arrangements presented in this report
	Support needed and received institutional arrangements	DOF for climate finance	Institutional arrangements for tracking support received needs to be established	Options for institutional arrangements
Procedural	Inventory preparation process	Lead sectoral agencies utilize their internal processes for inventory preparation	Meeting the timeframe required for international reporting is challenging	Guidance document for EO 174 may be adapted for the inventory preparation process
	Archiving of information	NICCDIES Lead sectoral agencies utilize their internal systems RA 10174 specified DENR for the climate change information management system and network	NICCDIES is not yet fully operational Lead sectoral agencies utilize different database management systems There is no central database for climate change information	Database capacities of existing government systems such as CCC,DENR, PSA, or DICT needs to be identified NICCDIES has been proposed to serve as a one-stop-shop for the submission of data from the lead sectoral agencies
	Process for official consideration and approval of inventory	CCC requires that reports from lead sectoral agencies are signed by the Department Secretaries	Approval timeframe is challenging	Approval timeframes need to be formalized and communicated to the lead sectoral agencies

	Adaptation strategies, plans	NCCAP Philippine Strategy On Climate Change Adaptation People's Survival Fund	NAP Process will be integrated into the updating of the NCCAP. The updated NCCAP will serve as the NAP	Harmonization of the NAP process into the NCCAP is ongoing
	M&E of adaptation actions	RBMES	RBMES is not yet integrated into the NICCDIES	Integration of RBMES in NICCDIES
	Support needed and received strategies, methodologies	CCET	Methodologies for tracking support needed and received needs to be defined	Proposed process for tracking support Needed and received is included in this report

As highlighted in the ICAT Guidebook, utilizing ICAT assessment guides got tools for assessing the impacts of policies and actions and can support the design and implementation of policies and actions by demonstrating the likely results. For instance, where the assessment of a planned policy suggests that the policy may not yield the expected results, the user can revise the policy design and repeat the assessment to see whether the revised design is likely to be more successful. The ICAT assessment guides complement the principles of the transparency framework7 laid out in Article 13.3 of the Paris Agreement. The assessment guides facilitate improved quality and transparency of the information that countries report. The voluntary, non-prescriptive nature of ICAT provides flexibility for countries to select the methods that are most appropriate for their national context and will enrich existing systems rather than create any burden.