



**Launching Workshop on Cambodia's 1<sup>st</sup>  
BUR under the UNFCCC  
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**Domestic Measurement, Reporting and Verification**

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# Outline

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## **Domestic Measurement, Reporting and Verification**

- **Introduction**
- **MRV on GHG emissions**
- **MRV of CCCSP**
- **MRV of REDD+**
- **MRV of NAMAs**
- **MRV of Carbon market-based mechanism projects**
- **MRV of Support received**



# Introduction

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- **Measure or monitor** (M) data and information on emissions, mitigation actions, and support. This may entail direct physical measurement of GHG emissions, estimating emissions or emissions reductions utilizing activity data and emission factors, calculating changes relevant to sustainable development, and collecting information about support for climate change mitigation.<sup>1</sup>



# Introduction

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- **Report (R)** by compiling this information in inventories and other standardized formats to make it accessible to a range of users and facilitate public disclosure of information.



# Introduction

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- **Verify (V)** by periodically subjecting the reported information to some form of review or analysis or independent assessment to establish completeness and reliability. Verification helps to ensure accuracy and conformance with any established procedures, and can provide meaningful feedback for future improvement.



# Introduction

TYPE OF MRV	MEASUREMENT		REPORTING	VERIFICATION <sup>b</sup>
	Method <sup>a</sup>	Data Requirements		
National GHG inventory	<ul style="list-style-type: none"> <li>■ IPCC Guidelines for National Greenhouse Gas Inventories</li> </ul>	<ul style="list-style-type: none"> <li>■ Activity data and emission factor</li> <li>■ Data requirements associated with calculating emissions from some sources, particularly non-energy sources (i.e., AFOLU), can be significantly more complicated</li> <li>■ Data from continuous emissions monitoring system (CEMS) where feasible</li> </ul>	<ul style="list-style-type: none"> <li>■ To the UNFCCC as part of:               <ul style="list-style-type: none"> <li>□ National Inventory Reports for developed countries</li> <li>□ National Communications for developed and developing countries</li> <li>□ Biennial Reports (BR) for developed countries, and Biennial Update Reports (BURs) for developing countries<sup>c</sup></li> </ul> </li> <li>■ Countries may also develop inventories solely for domestic objectives</li> </ul>	<ul style="list-style-type: none"> <li>■ Prescribed by UNFCCC—International Consultation and Analysis (ICA) for developing countries, and International Assessment and Review (IAR) for developed countries<sup>d</sup></li> <li>■ The Paris Agreement sets up a technical expert review process for the information provided by countries</li> </ul>



# MRV of GHG emissions

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- The MRV of GHG emissions is performed through the national GHG emissions inventory which presents GHG emissions by sources and removal by sinks for the time series 1994-2016. The gases included in the inventory are CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, CO, NO<sub>x</sub>, NMVOCs and SO<sub>2</sub>;
- The data, methodology and results of the inventory including other key areas of national GHG emission inventory such as key category assessment and uncertainty analysis are presented in the NIR and reported in the specific chapters of the TNC;
- For the inventory edition of the year 2019, Cambodia has drafted and followed procedures that will be formalized for the update of the GHG Inventory on a continuous basis.



# MRV of CCCSP

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- The MRV of CCCSP, called climate change Monitoring and Evaluation (M&E) framework, evaluates success of the country's climate change response by measuring how well its institutions are in managing climate risks, and how successful climate interventions are in reducing vulnerability and encouraging low carbon development;
- The secretariat of the National Council for Sustainable Development through the DCC is responsible for the quality analysis and validation check;
- NCSD and TWGCC have key roles and responsibilities regarding the development and management of the national M&E framework for climate change response.





# MRV of REDD+

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- MRV of REDD+ is included into the National Forest Monitoring System (NFMS) which provides information about the forest condition and changes, focusing on emission by deforestation and forest degradation and the enhancement of forest carbon stock;
- In a first stage, the baseline of REDD+ activities and actions, called forest reference emission level and/or forest reference level, was measured and submitted to UNFCCC for a technical assessment;
- In a second stage, the actual result of REDD+ actions compared to the assessed FREL and submitted in the technical annex of the current first BUR to UNFCCC;
- MRV system for REDD+ is under the overall coordination of the GDANCP with the active participation of the MAFF and guidance from the Cambodia REDD+ taskforce, Technical Team and Consultation Group and Gender Group.



# MRV of NAMA

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- BAU scenario defines the emission that would have occurred in the absence of the NAMA action. This includes the total amount of current emissions along with the emissions assumed to occur in a certain period. The estimated emission reductions are the amount of reduced CO<sub>2</sub> that occur as a result of the NAMA;
- The key objective of the MRV system is to ensure accurate and reliable estimates of the GHG emission reductions that occur due to the implementation of the activities of each NAMA;
- Two NAMAs are in development in Cambodia, one of them has already developed a MRV plan (namely energy efficiency NAMA in the Garment Industry).



# MRV of Carbon Market-based Mechanism

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- In the case of CDM, JCM, and other voluntary market-based emission reduction (VERs), only pre-approved baseline and measurement methodologies are used. The objective of the MRV system is to measure the GHG emissions reduction achieved from the implementation of the project activities;
- A DNA has responsibility to authorise and approve participation in CDM projects. MoE acts as the Cambodian DNA for CDM has approved 13 CDMs projects;
- For JCM, Joint Committee was established for the overall management of JCM, integrated by MoE, MAFF, MME, MPWT, MISTI



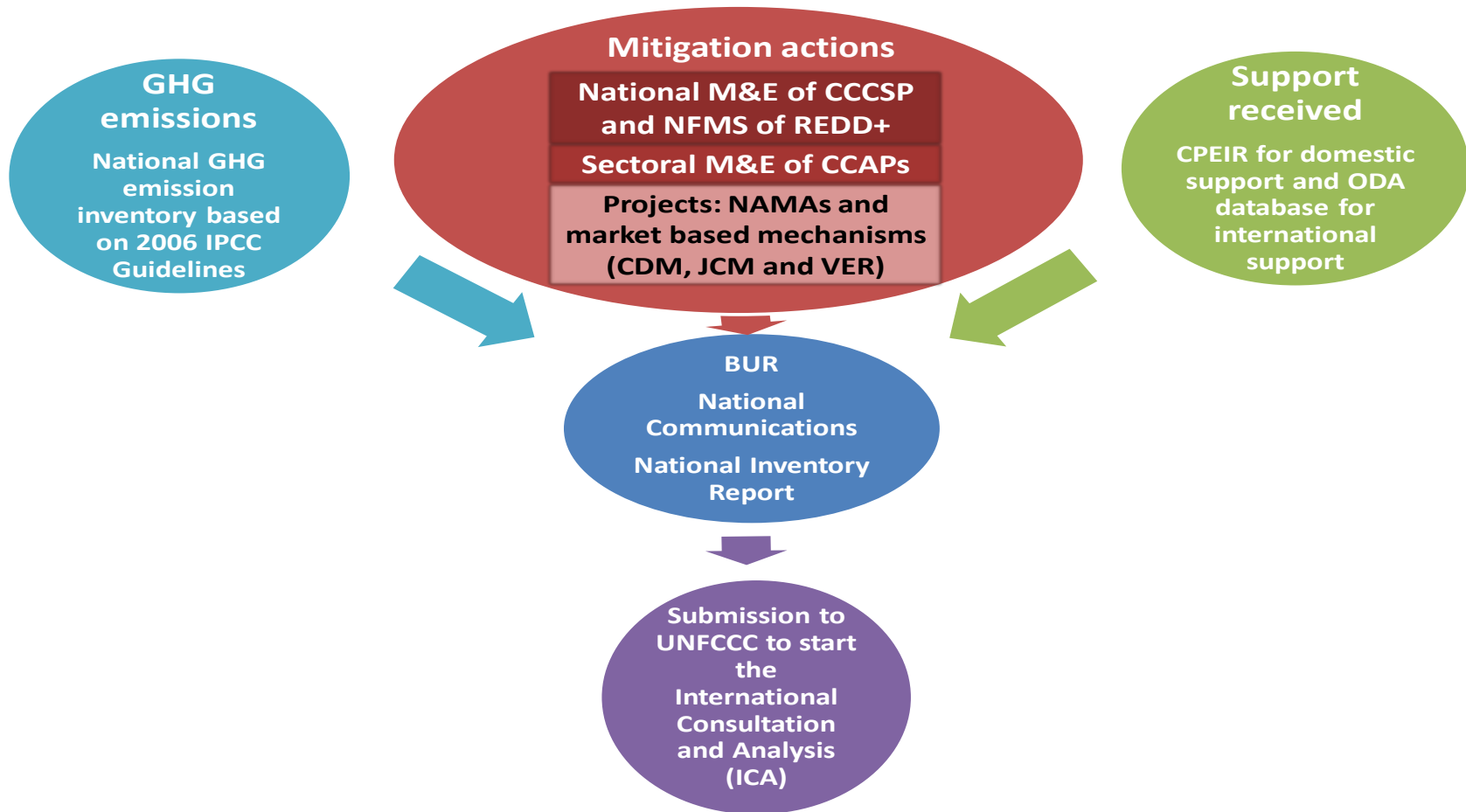
# MRV of Support

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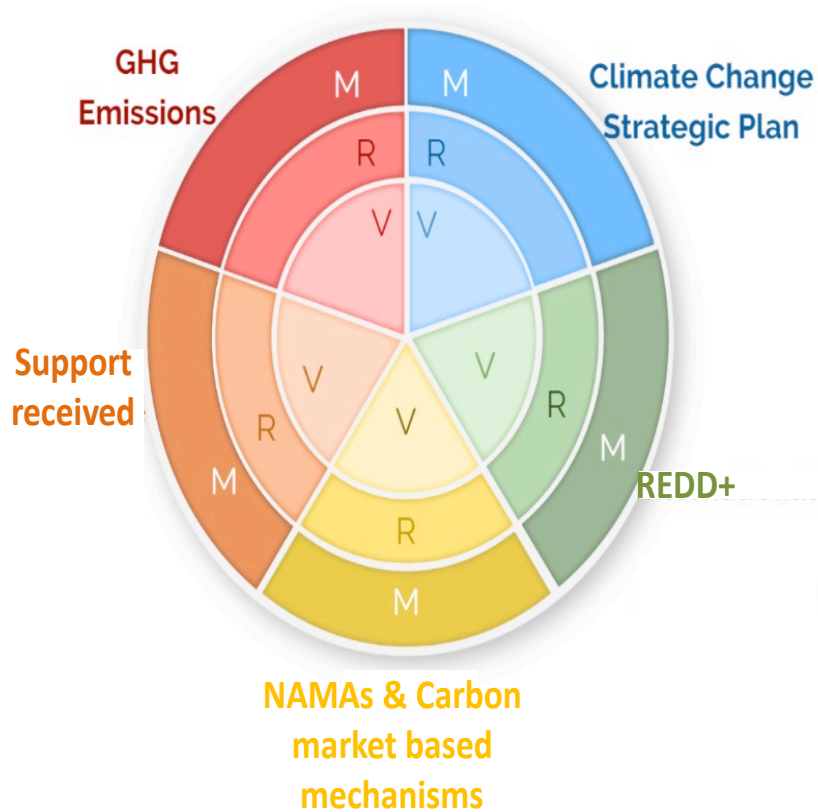
- Key elements of the MRV of support are the official Development Assistance database and the climate expenditure and institutional review. Through these elements, Cambodia measure, reports and verifies data on climate finance and ODA;
- NCSD, MoP, CDC/CRDB, MEF, NCDD-Secretariat and Subnational administration, DPs, and Line ministries and agencies



# Domestic Measurement, Reporting and Verification



# Domestic Measurement, Reporting and Verification



Cambodia has made significant efforts in addressing the establishment of robust information systems for the measurement/monitoring, reporting and verification of climate-change related data. At the time of the preparation of the first BUR, Cambodia has in place five well-established MRV systems (GHG emissions, CCCSP which includes adaptation and mitigation, REDD+, Project level MRVs for two planned NAMAs, 12 CDMs, 6 JCMs and 6 VERs and Support received), and is putting great emphasis in the development of an integrated and detailed MRV system aimed at achieving the implementation of the NDC.

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# Thank You

<http://ncsd.moe.gov.kh/>

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