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MRV : a climate concept applied to the aviation sector

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Main topics to be discussed

- MRV for climate change
  - Main issues
    - MRV principles
      - MRV as applied to the aviation
        - MRV under SARPs

WHAT IS MRV? FOR CC

The climate tool applied to the aviation sector

MRV FOR CLIMATE CHANGE

UNFCCC Parties agreed at COP 13 (2007) that also developing countries should engage in the MRV activities. In line with that decision and in view of promoting transparency and accountability at global level under the UNFCCC umbrella, an MRV framework for non-Annex I Parties was set up.

With the Paris Agreement on climate change, the MRV is gaining further importance. **Indeed, for the first time common MRV requirements are set out and parties are requested to develop specific modalities and guidelines by 2018.**

MRV IN MORE DETAILS

-**It is a toll** which allows tracking progress towards climate change-related targets and steer mitigation actions so that the targets can be achieved.

-MRV provides information about emission sources and trends, it helps e.g. companies to increase their energy efficiency and take decisions where to reduce their emissions.

-MRV systems are the key elements to guarantee transparency, precision and comparability on climate change information.

-A robust MRV system is the backbone of every carbon pricing mechanism regardless if it is a carbon tax, a cap and trade system (EU ETS, China ETS) or a reduction certificate system (CDM, VER).

WHAT IS MRV?

M of MEASUREMENT stands for the direct or estimated calculations following strict guidance and protocols. This can include direct measurement using devices or estimation using simple method or complex models.

R of REPORTING stands for documentation intended to inform all interested parties. This includes information on methodologies, assumptions and data.

V of VERIFYING stands for the specific procedures and/or expert review used to verify the quality of the data.

Verification will apply at internal and external level.

WHY MRV?

UNFCCC requires all Parties, taking into account their responsibilities and capabilities, to formulate and implement programmes containing measures to mitigate climate change.

MRV of mitigation actions is the pivotal element for meeting UNFCCC reporting requirements – specifically relevant to National Communications (NCs), Bienniel Update Reports (BURs) & Nationally Determined Contributions (NDCs) following Paris Agreement (COP21) 2015.

MRV OBJECTIVES:

1) **Tracking achievement of existing policy targets**: Countries pursuing emissions reductions targets need to know if they are taking the appropriate actions and meeting their own policy objectives with respect to GHG emissions.
2) **Informing future policymaking**: Policy operates within a dynamic environment; even a well-designed policy portfolio will need to be adjusted over the time. Emissions data and policy tracking can inform the adjustment of current policies and influence the design of future measures by providing an accurate picture of performance and trends. Good data can also help identify where additional mitigation support may be required, both across countries and at the sub-national level.

MRV OBJECTIVES:

3) **Informing domestic and international stakeholders**: To guide their own decisions, stakeholders at both the domestic and international levels need to have confidence in a country's emissions data and claimed policy outcomes.

MRV BENEFITS

UNFCCC requires mitigation activities to be reported through NCs, BURs & NDCs

BENEFITS OF DEALING MA through MRV:

-Identify, & focus on, national policies & priorities, which, in turn, should help define climate change mitigation actions

-“Ex-ante” (before the project) MRV helps to prioritize any mitigation action relative to other actions

-Helps track progress towards achieving national objectives

-Helps provide QA on effects of mitigation actions

MRV MAIN PRINCIPLES: TACCC

Transparency: sufficient and clear documentation. Assumptions and methodologies used as a basis for reporting should be clearly explained

Accuracy: lowest possible uncertainty.

Comparability: using common reporting tables.

Consistency: estimates of different years using same method and data sources

Completeness: data completeness.

HAVING A LOOK AT THE MRV AT NATIONAL LEVEL

The MRV can be regarded as **the system where institutional, regulatory, technical and sectoral bodies interact to track down the quantity of GHG emissions, the quality of GHG inventory and monitoring, the effectiveness of mitigation actions and support received** (e.g. both at domestic and international level).

MRV SET UP-CC-

3 LEVEL OF SET UP: OFFICIAL SET UP, INSTITUTIONAL SET UP, PROCEDURAL SET UP

-Each one has dedicated features and requires

OFFICIAL SET UP: How the system has been fixed at national level? MOU? Act, Regulation? Enforced if any

INSTITUTIONAL SET UP: how each involved stakeholder cooperate, the flow of information at sector level and at national level

PROCEDURAL SET UP: how the data collection plan is working, the standardized templates used to share information

OUTCOMES OF THE MRV-CC-

-Quality data to help evaluate and report climate policy and action.

-Quality data for UNFCCC reporting;

-Promote transparency of GHG reporting;

-Clear picture of national priorities, strengths and weaknesses provides clarity on future capacity building needs and financial support;

-Help reporting entities to asses they climate risks and opportunities.

DETERMINE THE LIST OF MITIGATION ACTIONS AS PER NDC-CC-

-to prepare a full list of mitigation actions that will effectively be part of Cambodia's INDC (NOW NDC)

-Each mitigation action will require its own unique metric by which the baseline and the progress of the action can be measured

-Great part of the data for each mitigation action's baseline will be obtained from the country's GHG inventory. However, the inventory is not renewed annually, or even biannually.

-It is the task of the domestic stakeholders involved in policy implementation, statistics and data collection, and in economic, econometric, and energy modeling to brainstorm and determine the right mix of baseline data and progress data for each mitigation action.

PROCESS TO ESTABLISH THE MRV FRAMEWORK-CC-UNFCCC

5 MAIN STEPS

STEP 1: ESTABLISH INSTITUTIONAL ARRANGEMENTS AND PROCESSES

To identify institutional responsibilities for policymaking, data collection, data analysis, reporting, and quality control and quality assurance (QC&QA). These responsibilities must be clearly defined in order to assure quality of data collection, monitoring of mitigation policy and action, and reporting

STEP 2: DEFINE GHG MITIGATION ACTION ACCOUNTING STANDARDS

No one size fits for all, Cambodia should perform an assessment and therefore decide how to proceed.

Based on the analysis' results, the Country may choose among several options that will be available.

Examples:

-to develop its own and unique mitigation action accounting standards. The advantage of this approach would be tailor-made accounting tool that will reflect on the country circumstances, in terms of data quality and data availability.

- To use policy and standards, methodologies developed from other academic institutions (World Resources Institute to account specifically for tracking changes over time of mitigation policies and goals)

BUT these ones will not reflect the national context and they will be more tailored for sectoral approached rather than single mitigation projects.

STEP 3: DEFINE MONITORING & DATA COLLECTION RESPONSIBILITIES

-To define who is doing what, how, when, how to share at different level of involved stakeholders to guarantee transparency

-To fix how to collect data through agreed standardized templates

STEP 4. ESTABLISH REPORTING PROCESSES AND OBLIGATIONS

The Reporting to the UNFCCC is standardized procedure and performed by n. 1 institution, generally UNFCCC focal point at the level of the ministry in charge of environment

HOWEVER

Each ministry and/or agency involved in the exercise shall have its own responsibilities and duties in terms of timing for reporting to allow the UNFCCC focal point to have information by the required deadlines

STEP 5. ENSURE VERIFICATION, DATA ANALYSIS AND QUALITY ASSURANCE

-To verify if the information reported meets the requirements and that the methods and assumptions used are reasonable.

Suggestions:

-Full third party verification of few key policy instruments with significant impact in GHG emissions.

-“In house” quality control/quality assurance, using protocols and quality assurance guidelines.

MRV AT TRANSPORT LEVEL

Transport Sector		
Item	Available/Not Available/Partially Available	Capacity Building Needs Transport
Availability of reporting template of data relevant to GHG estimation		Data to be reported, reporting frequency, and data validation
Availability of reporting template for GHG estimation		
Availability of trained personnel for data collection		
Availability of trained personnel for GHG estimation		Methodological options for GHG estimation
Availability of reporting system for data relevant to GHG estimation		The country's institutional setup for GHG reporting, and the role of each stakeholder
Availability of reporting system for GHG calculations		
Availability of procedures for the flow of data		
Availability of clear roles and responsibilities for different stakeholders		
QA/QC system for the reports		QA/QC system for the development of GHG inventories
Availability of archiving system		
Documentation of data sources, assumptions, and calculation methodologies		Transparency requirements as per Paris Agreement

MRV IN THE AVIATION SECTOR

-UNFCCC decided that emissions from international aviation should not be included into the national inventories. Instead, the Kyoto Protocol requested Parties to work through ICAO to reduce emissions from the sector.

-While the Paris Agreement made no explicit reference to emissions from international aviation, it did put in place an ambitious and legally binding long-term global goal.

-It is therefore essential that all sectors of the economy contribute, including aviation.

-At the conclusion of COP21, the UN's International Civil Aviation Organisation (ICAO) – the international body which regulates the sector – and the aviation industry committed to substantial actions on aviation emissions and, in particular, they agree to develop a CO2 efficiency standard for new aircraft and a global market-based measure (GMBM) to stabilise emissions at 2020 levels.

-ICAO's 39th General Assembly has taken steps to achieve the global aspirational goal of carbon-neutral growth from 2020 onwards by recommending to adopt the final Resolution text for the new global market-based measure (GMBM) to control CO2 emissions.

MAIN FINDINGS OF THE MRV IN THE AVIATION SECTOR TO BUILD ON:

Using the MRV tool as applied to the aviation sector as a whole, a thorough job shall be carried out, focusing on correct measurement of Greenhouse Gas (GHG) data, data quality, completeness and accuracy.

MAIN FINDINGS OF THE MRV IN THE AVIATION SECTOR (UNFCCC+ICAO) TO BUILD ON:

-Considering the domestic EMISSION side, the MRV will provide the reliable data needed to track the actions and the impacts of GHG mitigation actions.

-Considering the international side and in particular the CORSIA system, MRV is regarded as the pre-condition in order to allow the CORSIA pilot phase working from 2021.

-MRV is the foundation upon which everything must be calculated, implying that MRV is not only about data and the CO2 emissions, but it is also about carbon credits, it has a strong reporting and verification function.

WHAT IS MRV FOR ICAO?

-It is the tool to allow states to collect CO2 emissions data from 2019.

-It comes from the need to set the CORSIA's sectoral baseline as the average emissions of 2019 and 2020.

-It is the backbone of CORSIA as it will allow to collect and report data, CO2 emissions and therefore accurate calculation of the baseline and of the offsetting requirements of individual aero-plane operators

WHAT IS MRV/CORSIA?

M= collection of fuel used, to be done by operators on fuel burnt, CO2 emissions.

When? on a continue basis

R= a collection of information throughout the year from operator to state, from State to ICAO to calculate sector growth factor and perform the necessary calculation for CORSIA implementation

When? Every year

V=ensure that CO2 information flowing into MRV is accurate and reliable

3 different level of verification and different timing

MRV REQUIREMENTS:

-The MRV shall start with an EMP to be approved by the state authority before starting of the monitoring of CO2 emissions in 2019-

- In the meantime, States had to be engaged in drafting the national legal framework to allow MRV working and to start exchanging communications with aeroplane operators

MRV IN STEPS

Based on the EMP, the operators will compile each year CO2 data and after internal verification, they have to provide this to an accredited verification body

The verified data is reported to the state both from the verifier and from the aeroplane operator

The State then checks the report, submits the relevant aggregated data to ICAO CORSIA central registry

ICAO consolidates the data, calculates and communicates the annual sectoral growth factor to States. This information will be used later by the States to calculate the offsetting requirements for operators for that year

MRV FOR ICAO APPLICABILITY:

- all aeroplane operators conducting international flights are required to monitor, report and verify CO2 emission from these flights every year starting on 1 January 2019.

BUT

The requirements for the MRV of CO2 emission is independent from participation in CORSIA offsetting where the applicability will apply from 2021 onwards when the pilot phase of CORSIA will kick in.

MRV FOR ICAO: APPLICABILITY

SARPs from Chapter 2 (MRV) shall be applicable only:

-to an aeroplane operator that produces ANNUAL CO2 EMISSIONS GREATER THAN 10.000 tonnes from the use of an aeroplane with a MAXIMUM CERTIFIED TAKE-OFF MASS GREATER THAN 5700 kg….CONDUCTING INTERNATIONAL FLIGHTS…on or after 01.01.2019

MRV FOR ICAO: APPLICABILITY

HUMANITARIAN, MEDIAL AND FIREFIGHTING FLIGHTS ARE EXEMPTED.

TRANSPARENCY IN MRV

Basic principle to fix who is doing what, when and how.

-This will allow to clarify roles and responsibility of each involved party in the MRV system.

-This will allow to identify common deadlines to report by fixed deadlines

-This will allow to be ready by 2021 with a baseline

IN PARTICULAR THE ROLES WILL BE THE FOLLOWINGS IN M,R,V, MONITORING

	Airline operator	STATE AUTHORITY/DGCA	ICAO
M	Route: Flight origin and destination; Large operators: Fuel monitoring methods based on actual fuel burn Small OPERATORS: Emissions estimation methods (ICAO tool) – simplified procedure **When:** For each international flight considering the calendar year	CORSIA Emissions report (annual) **When:** Annually	Consolidated data from member states **When:** Annually

REPORTING

	Airline operator	STATE AUTHORITY/DGCA	ICAO
R	Verified emissions report and a copy of the associated verification report **When:** Annually	1. Calculate and inform each aeroplane operator their average total CO2 emissions during the period considered 2. Consolidated aggregated data to ICAO CORSIA central registry 3. Evidence of the list of attributed aeroplane operators 4. Offsetting requirements and total offsetting to airline operators; 5. Evidence of emissions unit cancellation to ICAO **When:** Annually	Consolidate the data, calculate and communicate the annual sectoral growth factor to the competent State authority **When:** Annually

VERIFICATION

	Airline operator	Verifier	AVIATION STATE AUTHRITY/DGCAs	ICAO
v	Internal audit; **When:** Annually	External audit (ACCREDITED verifiers); **When:** Annually	Order of magnitude review and database cross-check **When:** Annually	

	Airline operator	STATE AUTHRITY/DGCA	ICAO
M	Route: Flight origin and destination; Large operators: Fuel monitoring methods based on actual fuel burn Small operators: Emissions estimation methods (ICAO tool) – simplified procedure **When:** For each flight	CORSIA Emissions report (annual) **When:** Annually	Consolidated data from member states **When:** Annually
R	Annual emissions report (guidelines available in ICAO's ETM) **When:** Annually	1. Consolidated report for all airlines verified reports as per report format from ICAO 2. Offsetting requirements to airline operators; 3. Evidence of total offsetting to ICAO **When:** Annually	Total emissions and Sectoral Growth Factor to Public and officially to state authority/DGCA **When:** Annually
V	Internal pre- audit **External audit (accredited verifier)** **When:** Annually	Order of magnitude review and database cross-check **When:** Annually	

BUT PRINCIPLES AND NOTES ARE NOT ENOUGH

-MRV AND THE WORK ON DATA SHALL BE REGARDED AND TACKLED AS AN ONGOING AND CONTINUOS IMPROVEMENT EXERCISE.

-ACCURACY OF DATA SHALL BE FOSTERED AT ALL LEVELS

-FROM THE DOMESTIC PERSPECTIVE, TIER 1 IS THE FIRST METHODOLOGY AND CO2 SHALL BE CONSIDERED AT THE BEGININNG….BUT THEN MRV SHALL BE EXTENDED TO OTHER GASES AS WELL

EXISTING CONTEXT IN CAMBODIA

FLOOR IS OPENED TO PARTICIPANTS

MRV LEGAL FRAMEWORK SHALL BE FIXED AND ENFORCED BEFORE 01.01.2019 when the MRV for CORSIA will start.

MAIN CONTENTS TO BE CONSIDERED:

-You have to involve the Ministry in charge of environment in order to harmonize with your existing legal system

-You have to decide if you want to deal with MRV only as per CORSIA and/or as per domestic side

-Opt for the most suitable legal framework considering SSCA position: legal act, regulation, by law etc.

AFTER DECIDING ON THE MAIN THREE POINTS YOU CAN WORK ON FIXING:

-Objectives

-Rules and responsibility for M,R and V

-Management of the MRV system: rules and duties of each involved Party-SARPs + existing national methodologies if MRV has to be tackled domestically as well

-Prohibited actions and sanctions in case of not compliance with

-Implementing rules

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Thanks a lot

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