

Making Climate Actions
Transparent and Accountable

Imprint

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CONTENTS

Introduction	03
Measurement, Reporting and Verification (MRV): concern for enhancing transparency in the climate actions	05
Reporting Requirements of the Annex I and non-Annex I Countries: different modalities but indifferent objective	06
Evolution of MRV in the Climate Change Discourse: from a flexible option to fundamental requisite	09
MRV in the post-Paris Climate Regime: striving on establishing a smart monitoring on climate actions	13
Deepening Understanding of MRV: Steps and Scopes	17
Conclusion and Recommendation	19
References	21
MRV in the Climate Convention and COP Decisions	23

ACRONYMS

AOSIS	Alliance of Small Island States
AWG-PA	Ad Hoc Working Group on the Paris Agreement
BAP	Bali Action Plan
BUR	Biennial Update Report
CBDR&RC	Common but Differentiated Responsibilities and Respective Capabilities
COP	Conference of the Parties
GHG	Greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
LDC	Least Developed Countries
LULUCF	Land Use, Land-Use Change and Forestry
MOP	Meeting of the Parties
MRV	Measurement, Reporting and Verification
NAMA	Nationally Appropriate Mitigation Actions
NAP	National Adaptation Plan
NAPA	National Adaptation Programme of Action
NC	National Communication
NDC	Nationally Determined Contributions
REDD	Reducing Emissions from Deforestation and forest Degradation
SBI	Subsidiary Body for Implementation
SCF	Standing Committee on Finance
SBSTA	Subsidiary Body for Scientific and Technological Advice
SIDS	Small Island Developing States
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change



MRV in the Climate Change Discourse

Making Climate Actions Transparent and Accountable

Introduction

Measurement, reporting and verification (MRV) has become one of the key concerns in the contemporary climate change discourses. Literally, the term MRV indicates a smart and standardized mechanism of enhancing transparency in the implementation of climate actions objectively to help the Conference of the Parties (COP) to track progress (or regress) towards achieving Convention's (UN Framework Convention on Climate Change) ultimate objective of addressing climate change.

While the term MRV was not literally mentioned in the Convention, yet the Convention introduced/included several specific reporting requirements for the country Parties to enable the COP to monitor and evaluate national actions towards achieving Convention's goals. For instance, the Convention, by its article 4, established a binding requirement for all the country Parties to routinely develop national inventories on GHGs emission and communicate emission reduction strategies, measures, efforts etc. to the COP for their reviewing and strategizing further actions.

However, the Convention didn't explicitly define the ways and methodologies for establishing as well as enhancing transparency in climate actions, many of which were discussed, elaborated and agreed upon in the consecutive COP negotiations. The important COP decisions on establishing transparency in the climate actions were: a) Decision at the first Conference of the Parties (COP 1) held in Berlin in 1995 established requirement for in-depth reviewing of the national communications (NCs) submitted by the Annex I Parties, b) Decision at COP 2 held in Geneva in 1996 required the country parties to follow IPCC prescribed guideline and formats while estimating national greenhouse gas inventories and reporting, c) Decision at COP 3 held in Kyoto in 1997 on the development of modalities, rules and guidelines, for verification, reporting and accountability of emissions trading under the Kyoto Protocol¹.

While those COP decisions didn't include the term 'MRV' as such, but they all aimed at establishing and promoting a national mechanism so that ambiguities and loopholes in GHGs accounting are avoided and emission reductions efforts and actions are strengthened in regards to minimizing emission reduction gaps

¹ the Kyoto Protocol operationalizes the UNFCCC by committing industrialized countries and economies in transition to limit and reduce greenhouse gases (GHG) emissions in accordance with agreed individual targets. The Protocol was adopted on 11 December 1997 and entered into force on 16 February 2005.

coherent to achieving Convention's ultimate goal (Article 2) of limiting Earth's average temperature rise².

It's at COP 13 held in Bali in 2007 wherein the requirement of MRV was first introduced in the context of tracking/monitoring developing country's emission reduction within the scope of their Nationally Appropriate Mitigation Actions (NAMA)³ implementation. In regards to transparency, the Bali Action Plan adopted at COP 13 required that the emission reduction under the scope of NAMA is 'measurable, reportable, and verifiable'. The COP also called the developed country Parties to make supports e.g., technology, finance, capacity-building etc., towards mitigation actions in a measurable, reportable and verifiable manner. Henceforth, over the years, the MRV has been evolved as a key requisite in enhancing transparency and accountability in the climate actions, and lately at COP 21 held in Paris in 2015 this became a mandatory requirement in the implementation of the Nationally Determined Contributions (NDCs) by which the country Parties communicated their emission reduction targets under the Paris Agreement.

The Agreement emphasized establishing a universal and harmonized MRV provisions under a common transparency system for emission reduction and supports towards developing countries to facilitate achieving their emission reduction targets and goal. Though the country Parties listed under non-Annex I category are provided with flexibilities in accordance with the Convention's CBDR&RC (Common but Differentiated Responsibilities and Respective Capabilities) principle, but reporting of national GHGs emission scenario and GHGs emission reduction are equally applied to all the country Parties irrespective of developed and developing ones. The scope of MRV is not just to track implementation of the climate actions, but also also to establish legitimacy and credibility in the implementation of the Paris Agreement. Yet, there is a lack of understanding to its meaning, type and its implication in the context of national policies and institutional settings. There is also a dilemma whether MRV would serve a standalone mechanism only for the climate actions or be mainstreamed to the national/sectorial monitoring and reporting system.

“MRV became a mandatory requirement in the implementation of the Nationally Determined Contributions (NDCs) by which the country Parties communicated their emission reduction targets under the Paris Agreement. The scope of MRV is not just to track implementation of the climate actions, but also also to establish legitimacy and credibility in the implementation of the Paris Agreement.”

This briefing paper attempts to provide a thorough understanding on the evolution of MRV in the climate change discourse, and to inform the policy stakeholders on the significance of developing a robust MRV system for transparent and effective climate actions. This paper is also expected to mobilize broad-based opinion of the CSOs and policy experts towards establishing an enabling policy environment and institutional mechanism for mainstreaming MRV to the national monitoring and reporting system.

2 Article 2 of the UNFCCC stated the ultimate objective of the Convention, which is the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

3 Bali Action Plan adopted at COP 13 in 2007 introduced the provision of MRV on the implementation of developing country's mitigation actions within the scope of NAMA.

Measurement, Reporting and Verification (MRV): concern for enhancing transparency in the climate actions

Literally, transparency concern in the climate actions has been enshrined in the UN Convention on Climate Change (UNFCCC), though not as a terminology of 'MRV'. The Convention, putting high importance in mitigation actions, included several obligations/requirements for the country Parties to routinely report national GHGs emission scenario and emission reduction strategies, efforts and actions. Article 4 of the Convention⁴ stated that

[‘all Parties shall develop, periodically update, publish National Inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol and shall make available to the Conference of the Parties (COP)’] (UN, 1992).

Parties were also asked to calculate emissions

⁴ This articulates the ‘commitments’ to be implemented by all the Parties under the Convention for achieving the objective of the Convention.

by sources and removals by sinks applying best available scientific knowledge and methodologies agreed by the COP (ibid). The routinely development and submission of National Inventories (and National Communications), as required by the UNFCCC, however, established a kind of monitoring on the increase or decrease of national GHGs emission compared to the reported baseline. The National Inventories were also to provide a clear understanding to the UNFCCC / COP on national emission reduction strategies and efforts undertaken by the country Parties.

While the Convention made the country Parties obligated to routinely develop and report National Inventories, the decisions of the subsequent Conference of the Parties established/introduced reviewing of the submitted Inventories to ensure the accuracy, consistency and comparability of the information on emission reduction communicated by the Parties. For instance, one of the key decisions, Decision 2/CP.1, paragraph 2(a), of the very first COP held in Berlin in 1995 agreed upon conducting an in-depth review of the National Communications submitted by the Annex I Parties

Reporting Requirements of Article 4 of the UNFCCC

In accordance with Article 4, paragraph 1, each Party shall communicate the following elements of information to the Conference of the Parties through the secretariat. They are;

- A National Inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, to the extent its capacities permit, using comparable methodologies to be promoted and agreed upon by the Conference of the Parties (UNFCCC, Article 12, Paragraph 1(a));
- A general description of steps taken or envisaged by the Parties to implement the Convention (UNFCCC, Article 12, Paragraph 1(b)); and
- Any other information that the Party considers relevant to the achievement of the objective of the Convention and suitable for inclusion in its communication, including, if feasible, material relevant for calculations of global emission trends (UNFCCC, Article 12, paragraph 1(c)).

(UNFCCC, 1996). On completeness, transparency and comparability of the National Inventories, COP 2 held in Geneva in 1996 directed the Annex I Parties to follow IPCC Guidelines while estimating National Greenhouse Gas Inventories and use IPCC prescribed formats while reporting inventory data (ibid). Those decisions in a way established a mechanism to make the National Inventories and National Communications consistent, transparent and comparable.

However, transparency in GHGs emission reduction became a key concern following the adoption of Kyoto Protocol⁵ at COP 3 held in Kyoto in 1997. The flexible mechanisms of the 1997 Kyoto Protocol established a ‘functional carbon market’ so that the developed countries could fulfil their obligatory emission reduction targets through carbon trading. Given the context, one of the decisions of COP 3 (Decision 1/CP.3, paragraph 5/b) directed the UNFCCC’s Subsidiary Bodies (e.g., the Subsidiary Body for Scientific and Technological Advice SBSTA, and the Subsidiary Body for Implementation-SBI) to guide the secretariat on the verification, reporting and accountability of emissions trading, pursuant to Article 17 of the Protocol⁶ (UNFCCC, 1998). The COP (COP 3) by its Decision 1/CP.3 (Annex, Article 12, paragraph 7) also directed the COP/MOP (Conference of the Parties serving as the Meeting of the Parties to the Protocol) to elaborate modalities and procedures with the objective of ensuring transparency, efficiency and accountability through independent auditing and verification of emission reduction measures/activities (ibid).

Reporting Requirements of the Annex I and non-Annex I Countries: different modalities but indifferent objective

The Convention (in its article 4.1 and Article 12) required all the Parties to prepare and submit National Inventories and National Communications, however, the reporting requirements of the Annex I and non-Annex I country groups are different. According to the Convention’s CBDR&RC (Common but Differentiated Responsibilities and Respective Capabilities) principle, the non-Annex I countries are justifiably privileged on the ground of their unlike and historical responsibilities of causing climate crisis, so as of reporting requirements.

The Annex I Parties were obligated by the Convention and by the subsequent COP decisions to annually submit National GHG Inventory along with

“Considering unlike responsibilities of the non-Annex-I country Parties for causing climate change and to encourage their voluntary engagement in emission reduction (under the NAMA), the country group was provided with flexible reporting requirements compared to the developed ones listed under Annex-I country category of the UNFCCC.”

5 The Protocol made the developed countries legally obligated to reduce GHGs emission by 5.2 percent from the level of 1990 within its commitment period from 2008 to 2012.

6 This mandated the Conference of the Parties to define the relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability for emissions trading.

National Communications (UNFCCC, 2014b) and Biennial Reports (BRs) once every two years while using systematized data table, common reporting format and guidelines as developed/suggested by the IPCC (IPCC, 2008).

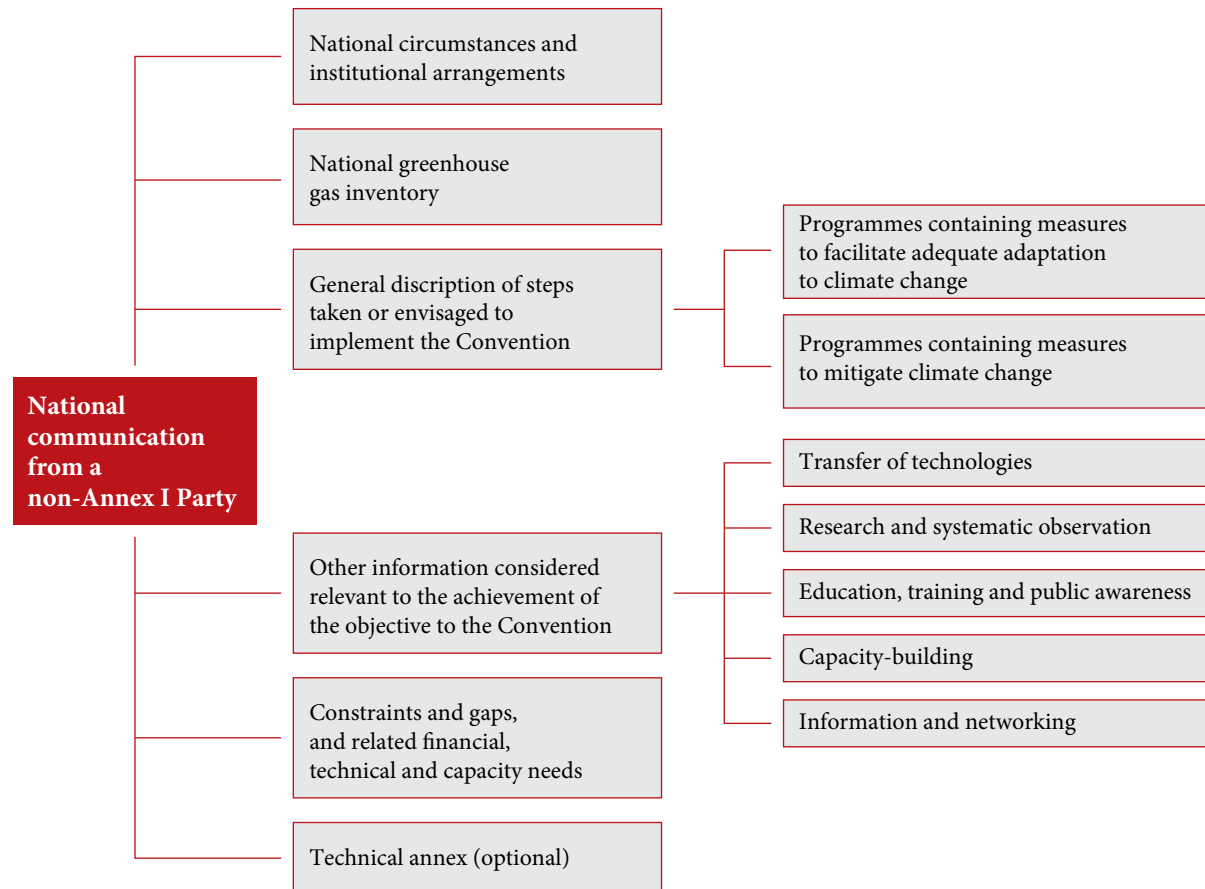
The country group was also required to collate biennial submissions on their upgraded policies and plan of actions on the increase of climate finance and other supports towards the developing country Parties (UNFCCC 2019).

On the other hand, repoting requirements for

the non-Annex 1 Parties were relatively flexible in terms of regularity or time-frame of report submission. Figure 1 presents the elements of the non-Annex-I Party’s National Communication.

Considering unlike responsibilities of the non-Annex-I country Parties for causing climate change and to encourage their voluntary engagement in emission reduction (under the NAMA), the country group was provided with flexible reporting requirements compared to the developed countries (Wartmann et al, 2014). However, with the rise of

Figure 1: Key elements of non-Annex I parties national communications

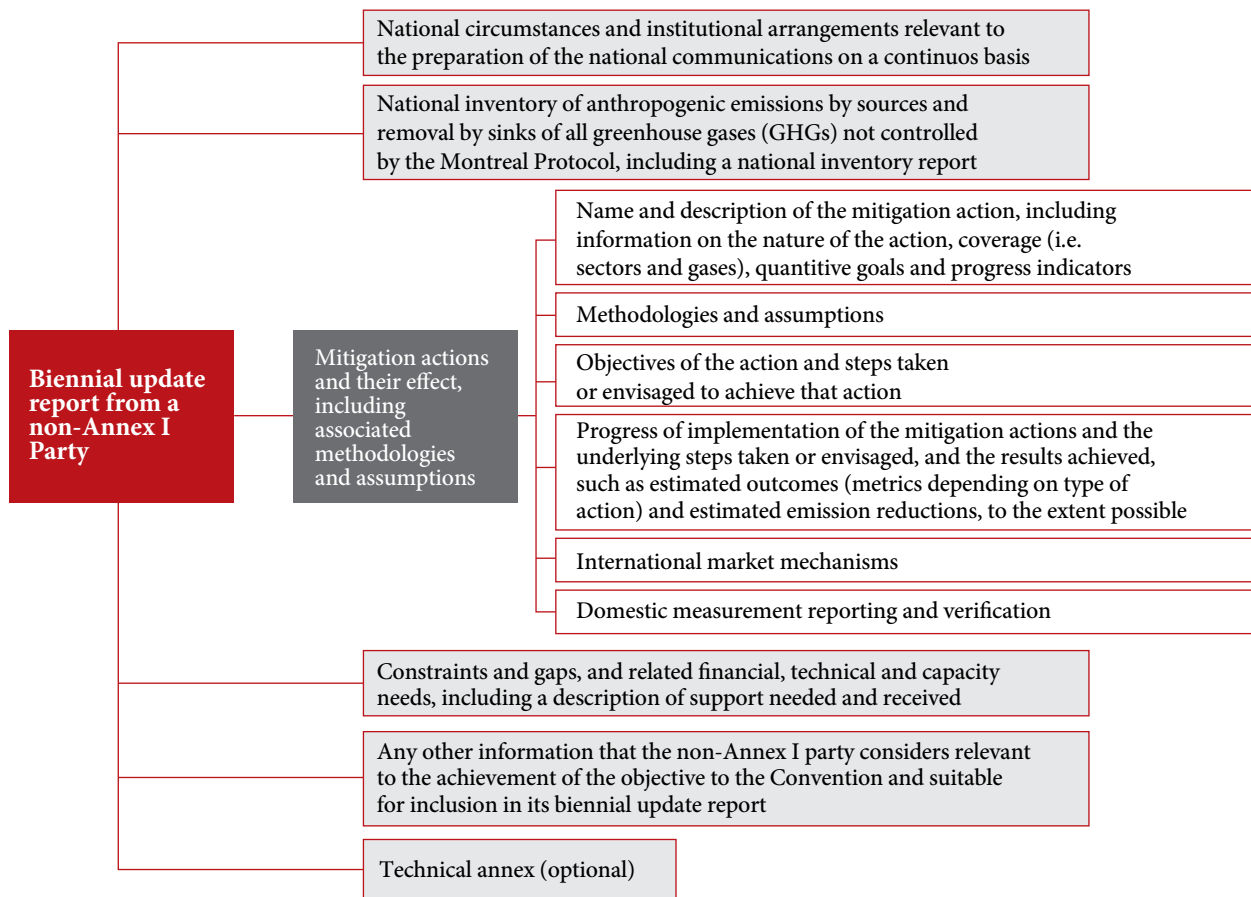


Source: UNFCCC (2014a)

GHGs emission, especially from the advanced developing countries listed under non-Annex I, this country group has been brought under a regular schedule on the submission of National Communication, including GHGs inventories in every four years and Biennial Update Reports (BURs) once every two years (UNFCCC, 2011a). The corresponding decision of COP 16 (Section 60(a) of 1/CP16) stated that:

[the BURs submitted by these countries are expected to incorporate “updates of national greenhouse gas inventories, including a national inventory report” through taking into account their “capabilities and the level of support for reporting”](UNFCCC, 2011a).

Figure 2: Key elements of the Biennial Update Reports (BURs) from the non-Annex I countries.



Source: UNFCCC (2014a)

There is exception for the LDCs (Least Developed Countries) and the AOSIS (Alliance of Small Island States) who were allowed to submit BURs at their own preference/schedule. Figure 2 presents the key elements of the Biennial Update Reports (BURs) from the non-Annex I countries.

Evolution of MRV in the Climate Change Discourse: from a flexible option to fundamental requisite

Understandably, the Convention provided due emphasis on the transparency of climate action while making the country Parties obligated for developing and communicating their National GHGs Inventories and National Communications. However, the Convention didn't explicitly mention specific requirements on the measures and methodologies that would enhance transparency, also didn't use the term 'MRV' as such.

The term 'MRV' was first introduced in the Bali Action Plan (BAP) adopted at COP 13 held in Bali in 2007. With an aim to enhancing developing country's GHGs emission reduction (mitigation actions), the Bali Action Plan introduced a shared vision for Long-term Cooperative Action⁷ and Nationally Appropriate Mitigation Actions (NAMA) as the cornerstone elements of implementing the vision. The relevant decision of BAP (Paragraph I/b/ii) required the developing country Parties to undertake Nationally Appropriate Mitigation Actions in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner (UNFCCC, 2008).

The other decision of BAP (Paragraph I/b/I)

required the developed countries to undertake measurable, reportable and verifiable mitigation commitments or actions, including quantified emission limitation and reduction objectives. While the Action Plan required/provisioned differentiated mitigation commitments (or actions) e.g., nationally appropriate for the developing country Parties and economy-wide quantified emission reductions for the developed country Parties, however MRV requirements on mitigation actions was commonly been applied to both the country groups. The corresponding decisions of COP 13 read:

[Decides to launch a comprehensive process to enable the full, effective and sustained implementation of the Convention through a long-term cooperative action, now, up to and beyond 2012.....by addressing, inter alia:

- a) Enhanced national/international action on mitigation of climate change, including, inter alia, consideration of:
 - (i) Measurable, reportable and verifiable nationally appropriate mitigation commitments or actions, including quantified emission limitation and reduction objectives, by all developed country Parties, while ensuring the comparability of efforts among them, taking into account differences in their national circumstances;
 - (ii) Nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner] (UNFCCC 2008).

Though the requirement of MRV has been contextualized from a NAMA/Emission Reduction centric discussion, however, over the years, MRV evolved to a cross-sectorial concern- encompassing

⁷ A shared vision for long-term cooperative action, now, up to and beyond 2012, including a long-term global goal for emission reductions, to achieve the ultimate objective of the Convention, in accordance with the provisions and principles of the Convention.

mitigation, adaptation, finance technology transfer and capacity building support etc. through the subsequent COP discussions and decisions. The following paragraphs summarize major decisions of the Conference of the Parties (COPs) on MRV:

- The Copenhagen Accord adopted at COP 15 in 2009 required rigorous, robust and transparent reporting on emission reduction and financing by the developed country Parties in accordance with the existing and the guidelines to be adopted by the Conference of the Parties (Decision 2/CP.15, paragraph 4) (UNFCCC, 2010).
- The Cancun Agreements adopted at COP 16 in 2010 required the developed countries to improve the reporting of information on the provision of financial, technology and capacity-building support to the developing country Parties (Decision 1/CP.16, section III(A), paragraph 40(c)) (UNFCCC 2011b).

With regard to NAMA, COP16 decided that the internationally supported mitigation actions in the developing countries would be measured, reported and verified domestically and would be subject to international measurement, reporting and verification in accordance with the guidelines to be developed under the Convention (Decision 1/CP.16, section III(B), paragraph 61).

COP 16 encouraged emission reduction from the developing country's forest sector by reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests; enhancement of forest carbon stocks (Decision 1/CP.16, section III(C), paragraph 70(a-e)).

However, an important decision at COP 16 on MRVs was establishing a Standing Committee to assist the COP in exercising its functions with respect to the financial mechanism and measurement, reporting and verification of support provided to the developing countries (Decision 1/CP.16, section IV(A), paragraph 112).

- COP 17 held in Durban in 2011 requested the SBSTA to develop general guidelines for domestic measurement, reporting and verification for the developing country's mitigation actions under NAMA (Decision 2/CP.17, section II(B), paragraph 37). The COP directed the Standing Committee (established at COP 16) to develop a set of guidelines, which include: a) MRV of the support provided by the developed countries to the developing ones; b) Biennial reporting guidelines on providing consistent, transparent, comparable, accurate

“An important decision at COP 16 on MRV was establishing a Standing Committee to assist the COP in exercising its functions with respect to the financial mechanism and measurement, reporting and verification of support provided to the developing countries.”

and complete information on fulfilling Annex I Party's commitments under Articles 4 and 12 of the Convention and, c) Biennial update reporting guidelines on domestic measurement, reporting and verification arrangements of mitigation actions by the Parties not included in the Annex I to the Convention (UNFCCC, 2012).

- COP 18 held in Doha in 2012 decided to establish a Work Programme under the SBSTA to provoke quantified economy-wide emission reduction targets of the developed country Parties and clarify MRV issues in reporting mitigation actions (Decision 1/CP.18, section II(A), paragraph 8) (UNFCCC, 2013).

The COP also reiterated that the NAMA implementing in the developing countries should be supported by financial, technology and capacity-building means in a measurable, reportable and verifiable manner. Moreover, COP 18 requested the Standing Committee to initiate its first biennial assessment on the flow of climate finance, and to develop measurement, reporting and verification standards in terms of tracking flow of climate finance (Decision 1/CP.18, section V, paragraph 71).

- COP 19 held in Warsaw in 2019 adopted general guidelines to be used the voluntarily on measurement, reporting and verification of domestically supported nationally appropriate mitigation actions by the developing country Parties (Decision 21/CP.19, paragraph 1). COP 19 also encouraged the developing country Parties to voluntarily establish domestic processes, arrangements or systems for the domestic measurement, reporting and verification of domestically supported

NAMAs (Decision 21/CP.19, Annex, section A, paragraph 3). COP 19 made a significant decision on the MRV of LULUCF and REDD activities (UNFCCC, 2014c).

COP 19 required the Parties to establish a robust National Forest Monitoring System with a view to providing data and information that are appropriate for measuring, reporting and verifying anthropogenic forest-related emissions by sources and removals by sinks, forest carbon stock and forest-area changes resulting from the implementation of the activities referred to decision 1/CP.16, paragraph 70 (Decision 11/CP.19, paragraph 3) (UNFCCC, 2014d).

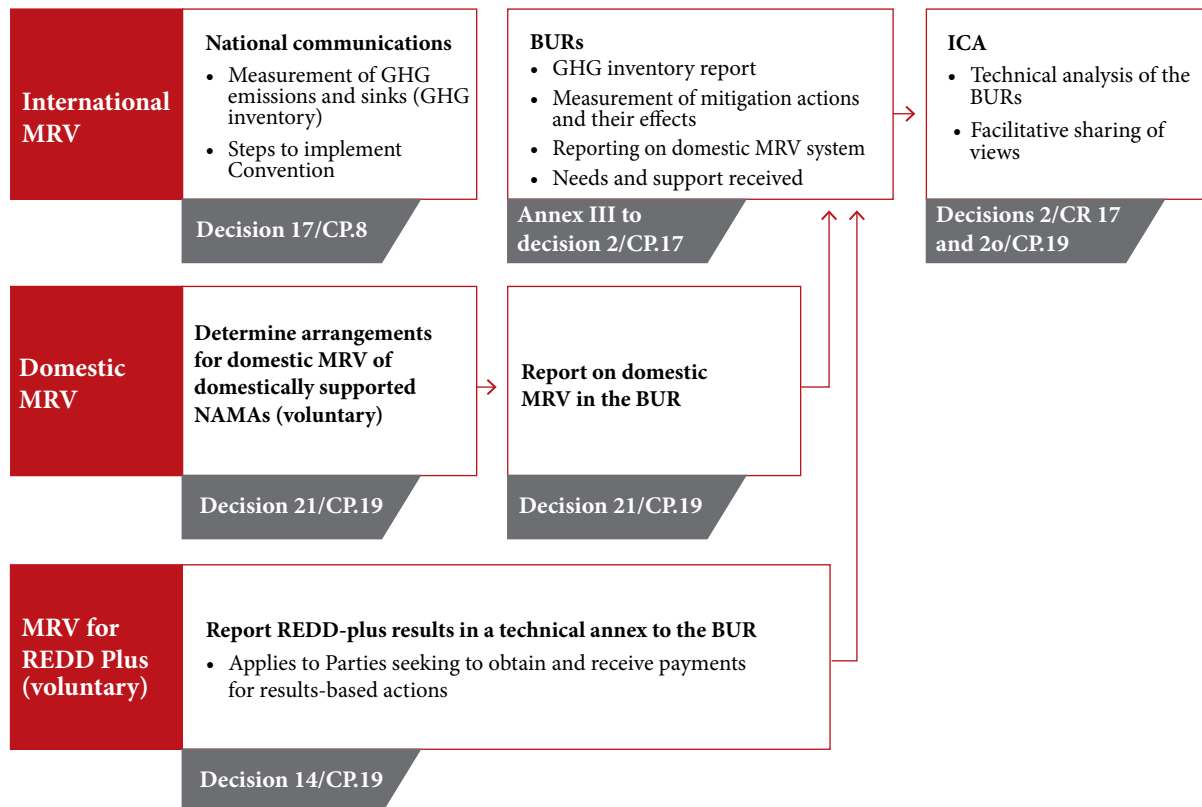
The COP also recognized the capacity gaps of the developing countries in terms of measuring, reporting and verifying of anthropogenic forest-related emissions and removals and directed the developed countries to extend support to the developing countries for their capacity building (Decision 14/CP.19, paragraph 2) (ibid).

- Under the Lima Call for Climate Action, adopted at COP 20 held in Lima 2014, Parties made a commitment to ensure transparent, measurable, reportable and verifiable implementation of their mitigation commitments / contributions / actions as demarcated in their successive nationally determined contributions e.g., NDCs (Decision 1/CP.20, Annex, section D, paragraph 16, options: 1, 2, 3). The COP also requested the Parties to develop a common framework with common MRV provisions applicable to all Parties, or a single system with common MRVs on the basis of self-differentiation and national capacity of the Parties (UNFCCC, 2015).

The decisions of the post-Bali conferences (COPs) established MRV requirements beyond the scope of NAMA and tied MRV to other issues and actions. For instance, COP 16 and COP17 respectively held in Cancun in 2010 and in Durban 2011, emphasized transparent reporting of information on providing financial, technology and capacity-building support to the developing countries. Again, on this, COP 19 held in Warsaw in 2019 emphasized establishing robust National Forest Monitoring System, along with an all-encompassing data repository, for measuring, reporting and verifying anthropogenic emissions from the forest area changes and removals by sinks, forest carbon stocks etc.

Yet, many scholars and experts urged that elucidation of MRV is quite broad and inexplicit though all the MRV measures are objectively to promote transparency, accountability and eliminate ambiguities in national climate actions. Figure 3 presents key elements of MRV framework.

Figure 3: Key elements of the MRV framework



Source: UNFCCC (2014a)

MRV in the post-Paris Climate Regime: striving on establishing a smart monitoring on climate actions

Understandably, climate negotiations since the Bali COP in 2007 established MRV as an essential requirement to assess climate actions in terms of their robustness, effectiveness and comparability in comparison to their baseline scenario. This has become a common as well as a mandatory concern of all climate actions ranging from the sectorial GHG emission to economy-wide aggregated emission accounting, from industrial GHGs emission reduction to carbon sink and storage by the forests and ecosystems, from providing adaptation and capacity building supports by the developed countries to the effective utilization of supports by the developing countries and so on.

Lately, the Paris Agreement adopted at COP 21 in 2015 set forth a common MRV system for enhanced reporting especially on fulfilling emission reduction targets communicated by the NDCs and on adaptation, technology and capacity building supports towards the developing countries.

The NDCs that communicate country-specific emission reduction targets and plans to the UNFCCC are considered as the key means of achieving Agreement's global political goal of limiting Earth's average temperature rise well below 2 degree C, preferably to 1.5 degree C from the pre-industrial level.

A fundamental requirement of NDC's implementation is to maintain utmost transparency in accounting and reporting system. The Agreement established a mandatory requirement for all the country Parties to regularly provide National Inventory of anthropogenic GHGs emissions by sources and removals by sinks, and provided a strong directive, applicable to all Parties. The corresponding COP decision (1/CP.21, Annex, Article 13, paragraph 7) also required all the

Parties to apply common methodologies accepted by the IPCC and agreed upon by the COP while accounting anthropogenic GHGs emissions by sources and removals by sinks (UNCCC, 2016).

In most of the cases, the Agreement included stronger inferences (e.g., mentioning that countries 'shall' provide/promote/do etc.) for ensuring transparency the in climate actions, especially in emission reduction. The corresponding decision reads:

- All Parties shall provide the information necessary for clarity, transparency and understanding in communicating NDCs in accordance with decision 1/CP.21 and any relevant decisions of the COP serving as the Meeting of the Parties to this Agreement (Decision 1/CP.21, Annex, Article 4, paragraph 8).
- All Parties shall promote environmental integrity, transparency, accuracy, completeness, comparability and consistency, and ensure the avoidance of double counting in regards to accounting anthropogenic emissions and removals in accordance with guidance adopted by the Conference of the Parties serving as the Meeting of the Parties (COP-MOP) to this Agreement (Decision 1/CP.21, Annex, Article 4, paragraph 13).
- Developed country Parties shall provide transparent and consistent information on the support towards the developing country Parties, provided and mobilized through public interventions biennially in accordance with the modalities, procedures and guidelines to be adopted by the COP serving as the Meeting of the Parties to this Agreement (Decision 1/CP.21, Annex, Article 9, paragraph 7).
- Developed country Parties shall, and other Parties that provide support should,

provide information on financial, technology transfer and capacity-building support provided to developing country Parties under Articles 9, 10 and 11 (Decision 1/CP.21, Annex, Article 13, paragraph 9).

Again, in regards to building mutual trust and confidence in the implementation of climate actions, the Agreement established an enhanced transparency framework for action and support, which would take into account Parties' different capacities and build upon collective experience.

The Framework aimed to provide a clear understanding on climate actions and to serve as a tool to track progress towards achieving Parties' individual NDC targets under Article 4, adaptation actions under Article 7 and clarity on support provided and received by relevant individual Parties for climate actions under Articles 4, 7, 9, 10 and 11⁸. The framework intended to provide, to the extent possible, a full overview of aggregate financial support provided, and to inform the global stock-take under Article 14 (Decision 1/CP.21, Annex, Article 13, paragraphs 5&6).

The Agreement emphasized for providing transparent, timely and accurate information on the supports towards building capacity of the developing countries on technology development, dissemination and deployment, access to climate finance, relevant aspects of education, training and public awareness (Decision 1/CP.21, Annex, Article 11, paragraph 1).

While the Paris Agreement (and the decisions of COP 21) provided utmost emphasis on the transparency of NDCs implementation (e.g., mitigation actions), the subsequent COPs e.g., COP 22 held in Marrakech in 2016, COP 23 held in Bonn in 2017, COP 24 held in Katowice in 2018 – all emphasized promoting transparency on the support provisioned by the developed country Parties towards promoting mitigation action in the developing countries. Figure 4 presents the key decisions of the Conference of the Parties on MRV.

“Enhanced Transparency Framework established under the Paris Agreement aimed to provide a clear understanding on climate actions and to serve as a tool to track progress towards achieving Parties' individual NDC targets under Article 4, adaptation actions under Article 7 and clarity on support provided and received by relevant individual Parties for climate actions under Articles 4, 7, 9, 10 and 11.”

8 *Article 4* of the Paris Agreement sketched the blueprint of achieving the long-term temperature goal through the reduction of GHG emissions. To this end it provided the country Parties to communicate their GHG emission reduction targets in line with CBDR&RC through Nationally Determined Contributions (NDCs) and put directives thereon. *Article 7* produced the global goal on adaptation and provided instructions and requirements for enhancing adaptive capacity, building resilience, and reducing vulnerability to climate change. *Article 9* required the developed country Parties and encouraged other Parties to provide financial resources to assist developing country Parties in both mitigation and adaptation. *Article 10* articulated a long-term vision on technology development and transfer to be guided by an overarching technology framework in order to improve resilience to climate change and to curb GHG emissions. *Article 11* delineated the directives on capacity-building of the developing country Parties, particularly to the LDCs and SIDS, to enable them to take effective climate actions for the implementation of the agreement.

Figure 4: Key decisions of the Conference of the Parties (COPs) on the development of MRV framework for the developing country Parties

1992/ 1994	The Convention establishes reporting obligations for all Parties and timelines for the initial national communications from developing country Parties (Article 12, paragraph 5, and Article 4, paragraph 3)
1996	COP 2 adopted the guidelines for the preparation of national communications from developing country Parties: scope, structure and content (decision 10/CP.2)
1997	COP 3: The first reporting under the Convention by developing country Parties through the initial round of national communications
1999	COP established the Consultative Group of Experts (CGE) on National Communications from Parties not included in Annex I to the Convention to assist the countries in their reporting obligations
2002	COP 8 adopted the revised guidelines for the preparation of national communications (decision 17/CP.8) and extended the term of the CGE for the period 2003-2007 with a broader mandate for technical assistance (decision 3/CP.8)
2007	COP 13 agreed to the principle of applying measurement, reporting and verification (MRV) to developing country Parties in the context of undertaking enhanced national/international action on mitigation of climate change (decision 1/CP.13)
2009	COP 15 reconstituted CGE for the period 2010-2012 to continue providing technical support and enhancing the capacity of developing country Parties to prepare their national communications
2010	COP 16 defined the frequency of the national communications every four years, and introduced additional elements of MRV (decision 1/CP.16): enhanced reporting in national communications, including inventories, on mitigation actions and their effects, and support received; biennial update reports (BURs) every two years; international consultation and analysis (ICA) of BURs; and domestic MRV of domestically supported mitigation actions
2011	COP 17 adopted the guidelines for the preparation of BURs and the guidelines and modalities for ICA: the first BUR to be submitted by December 2014, consistent with the capabilities and the level of support provided for reporting; least developed country Parties and small island developing States may submit this report at their discretion; the first BUR is to cover, at a minimum, the inventory for the calendar year no more than four years prior to the date of submission; ICA will commence within six months of the submission of the first round of BURs; ICA will include a two-part technical analysis and facilitative sharing of views

2013	COP 19 adopted several decisions on the elements of the MRV framework: composition, modalities and procedures for the team of technical experts under ICA (decision 19/CP.19); general guidelines for domestic MRV (decision 21/CP.19); seven decisions of the Warsaw Framework for REDD-plus; and the term of the CGE continued for the period 2014-2018 with a broader mandate
2014	COP20 adopted the Lima Call for Climate Action, which is aligned to the long-term global aspects of mitigation, required the Parties to communicate and implement their successive nationally determined mitigation commitments maintaining precision and transparency. Established international capacity building mechanism and prescribed various options on the outline of the transparency framework mainly built on MRV mechanism (decision 1/CP.20).
2015	COP21, marked by the adoption of the Paris Agreement, requested the ad-hoc Working Group on the Paris Agreement (AWG-PA) to develop recommendations on modalities, procedures and guidelines on reporting and transparency and decided that those would build upon and supersede the previous MRV system, following the submission of the final biennial reports and biennial update reports by the Parties to the Agreement. An enhanced transparency framework for action and support was established in this COP to build mutual trust and confidence and to promote effective implementation (decision 1/CP.21).
2016	COP22 requested the standing committee on finance (SCF), in fulfilling its function on the MRV of support, and in the context of its existing workplan, to cooperate with relevant stakeholders and experts and to consider the then ongoing work under the Convention and further action envisaged under the Paris Agreement and decided that the SCF would contribute, through its activities, to the progressive improvement of the measurement, reporting, and verification of the climate finance information in future biennial assessments and overviews of climate finance flows.
2017	COP23 requested the SCF to enhance its work on the MRV of support beyond the biennial assessment (Decision 7/CP.23) and also to, in fulfilling its function on MRV of support and in the context of extended work-plan, continue its cooperation with relevant stakeholders and experts.
2018	COP24 reaffirmed the decision of COP21 (decision 1/CP.21) on the supersession of the previous MRV system (based on decision 1/CP.16 and decision 2/CP.17) by the newly developed modalities, procedures, and guidelines, for the Parties to the Paris Agreement. It also reaffirmed that for the parties to the Convention but not to the Paris agreement, the reporting and transparency requirement would remain unchanged, but they were encouraged to follow the new system to enhance comparability of information. Moreover it took some important technical decisions and gave directives on the reporting and review of national communications.

Adapted from UNFCCC (2014a)

Deepening Understanding of MRV: Steps and Scopes

Despite establishing a well-convincing argument on MRV requirement for enhancing transparency of the climate actions, its usage has not been explicitly defined, and the term often appeared without a clear reference to the type of MRV and the scope of its implementation in diverse national context. There is lack of clarity also in defining measurable, reportable and verifiable to be acceptable and discernible to all. This often leads to confusion, because the underlying nature of MRV-related activities differs according to their context and application (Singh et al, 2016). Literarily, MRV involves three elements or steps: a) Measurement or Monitoring, b) Reporting, and c) Verification.

Broadly, measurement is recognized as a tool to not only conduct physical quantification but also evaluate on the basis of indicators.

Usually, measurement is concomitant to quantification; however, it may have scope for qualitative measures, as long as they can be

objectively calculated. By definition, whatever is measurable, is reportable. But whether the reporting is productive, is usually considered by the availability of reliable statistics as well as the extent to which it has been reported maintaining transparency and standard. Lastly, it is verification that goes through analysis and evaluation of the credibility of the reported data (Fransen et al., 2009: 2).

Again, on the basis of the distinct areas in the climate regime, MRV is delineated to three types, which are:

- MRV of GHG emission – performed at national, organizational, and/or facility level to comprehend economy-wide and/or sectoral emissions profile and report it in the form of an inventory;
- MRV of mitigation actions – policies, strategies and projects to evaluate their GHG effects and sustainable development (non-GHG) outcomes and to observe their execution;

STEPS of MRV

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.

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.

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

Source: Dagnet et al. (2014) cited by Singh et. al, (2016)

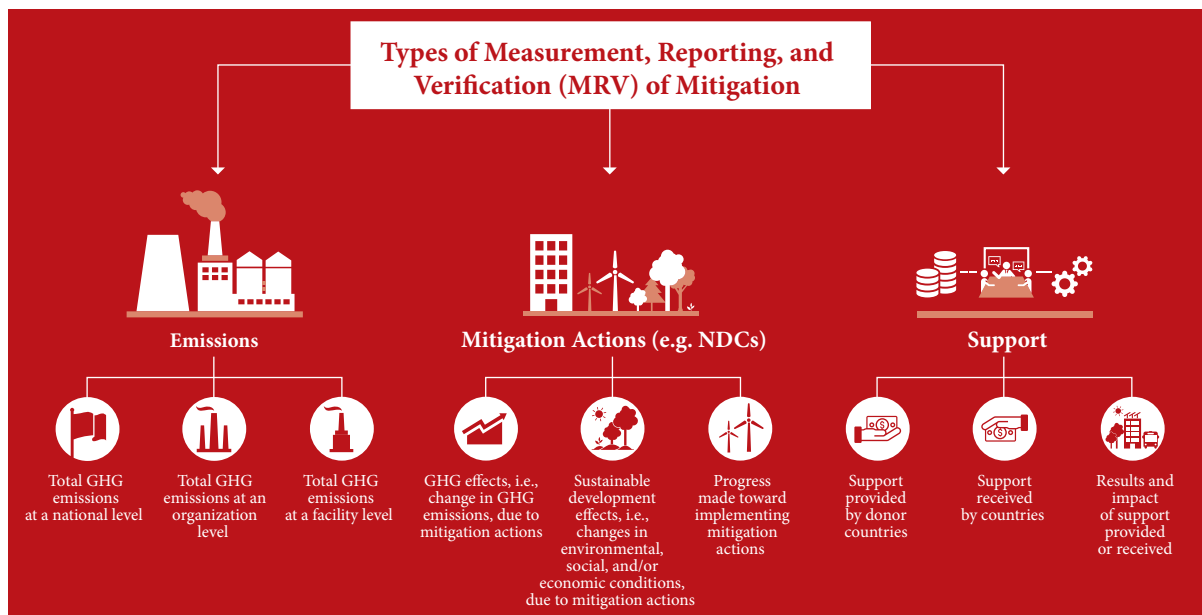
- MRV of support– such as climate finance, technology transfer, and capacity building support provided; this also include tracking fund received, monitor achieved outcomes, and measure impact (Singh et al, 2016; Wartmann et al, 2014:1).

Understandably, MRV of support is correlated to the commitments of the developed country Parties to support steady implementation of both adaptation and mitigation actions (e.g., NAPA, NAMA, NAP, NDC) in the developing countries and make the process faster towards achieving low carbon development pathway. Figure 5 presents types of MRVs for climate actions and support

Out of the three areas, MRV requirements for the Least Developed Countries (LDCs) are still not that robust owing to their low per capita emissions extent/level/volume.

Yet, in many ways, MRV has advantageous part to play that the LDCs could take into consideration. Wartmann et al (2014) stated that beyond the scope of emission reduction, a well-developed mitigation action could bring added

Figure 5: Type of MRVs for climate actions and support



Source: Singh et al, 2016

advantages by contributing to various areas such as health, job creation, rise in agricultural production and energy security. These factors are significantly more important to LDCs than mitigation itself (ibid). Therefore, Fransen et al (2009) argued that when it comes to arriving at an agreement, these advantageous roles of MRV are conceivably relatively more acceptable than its accountability role.

Again, MRV is not just to introduce and establish a smart monitoring on the transparency of climate actions, it is also to build mutual confidence among all countries” (UNFCCC, 2012). According to Breidenich and Bodansky (2009), MRV can contribute in a number of ways to accelerate climate actions and decelerate climate change in a new climate agreement. Measuring and reporting on emission reduction and support would much rather to activate preparing the groundwork and coordination internally throughout as well as between countries. According to Fransen et al (2008), MRV would establish a national system of data generation and could suggest options and most acceptable practices for efficacious mitigation in respect to sustainable development.

This also could accelerate pairing the proposed (by the LDCs) mitigation actions with the finance, technology and capacity building support. Ideally, MRV would describe countries’ GHGs emission scenario, emission reduction policies, strategies, goals, action plan etc., which also would enable the countries to effectively implement emission reduction actions while complying with the international reporting requirements such as National Communications (NCs), Biennial Update Reports (BURs), and National Greenhouse Gas (GHG) Inventories. Eventually MRV could enable the countries to demonstrate their progressive transition towards net-zero emission economy coherent to the broader climate change and sustainable economic development objectives.

Conclusion and Recommendation

MRV is not a new concept, it has been largely used in various contexts at both international and national levels to vouch on transparency and prop effective execution (Hinojosa et al., 2012).

In the climate change discourse, MRV has been perceived as a fundamental tool and practice to describe all measures taken by the countries. A strong MRV system is believed to facilitate countries to track progress, report outcomes transparently to the parties concerned and provide the scope of verifying authenticity and veracity of the the information provided. If done legitimately, MRV could reinforce country position in climate negotiations, while enhancing mutual trust and confidence in implementing climate actions.

However, country Parties, especially the developing ones, are yet to comprehensively understand the significance of establishing a well-accepted MRV system and operationalize this in the implementation of climate actions. While this briefing paper is meant to enhance understanding on the landscape of MRV, this also to provide recommendation to the national government for introducing an effective national MRV system blended with the existing ones;

Development of Comprehensive Understanding on MRV:

The inexplicitness of the definition of MRV, as pointed by Singh et al (2016), may pose a threat to designing robust MRV modalities for the countries. This may create lacunae in the MRV processes making those fragile and frustrating the ultimate objectives of installing it thereby. So, it should be foremost concern for the national policy stakeholders and CSOs to comprehensively understand the MRV and MRV requirements in climate actions. It is also important to evaluate country’s existing monitoring and evaluation system and identify the gaps and scopes for developing an appropriate and effective MRV framework and tools for the climate actions.

Establishing Information and Data Repository: A comprehensive MRV system should essentially be supported with reliable and authentic information and data source. A single lead institution might coordinate all national agencies and sectors for establishing data systems and data repository so that a baseline scenario could be established and progress could be monitored and measured.

Operationalizing and Enforcing MRV: Operation and enforcement of MRV to the sectorial projects and programmes are also critical concerns. Boule et al (2014) stated that operation and enforcement of an MRV system are potentially affected by the interaction among actors and institutions. Hence, the institutional setup should be designed meticulously putting special focus on transparency and collaboration and ensuring that different institutions are properly linked to each other to develop and follow a common monitoring, reporting and verification system and format.

Implementation of MRV: MRV should not be considered as an imposed burden to the developing countries (Fransen et al, 2009), rather they should be supported with necessary financial, technological and capacity building means so that countries could improve their GHG MRV capacity over time and can comply with the MRV requirements.

Peat swamp and Mangrove forest



Tropical peatlands and mangroves are the are the high-Carbon ecosystems, recognized for measuring, verifying and reporting (MRV) of carbon stocks and emissions in these ecosystems.

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MRV in the Convention and COP Decisions

United Nations Framework Convention on Climate Change

UN (1992):
<https://unfccc.int/resource/docs/convkp/conveng.pdf>

The UN Convention of Climate Change (UNFCCC) was adopted and ratified by the country Parties respectively in 1992 and 1994 has become the main basis for negotiations on the actions and supports for addressing climate change. The Convention set its ultimate objective of ‘stabilizing greenhouse gas concentrations in the atmosphere’ and entrusted the country Parties to identify and agreed upon relevant actions for implementation and establish a monitoring mechanism on the implementation of climate actions (as enshrined in Article 4 of the Convention). The COP, as the supreme authority of ensuring achievement of the Convention’s ultimate as well other goals and objectives of the COPs, has been being dedicated to devising the ways to exert transparency and accuracy in climate actions and bind the country parties to abide by the corresponding rules so as to make the actions effective and to reckon the progress achieved.

The following section provides an overview of how the modality of measurement, reporting, and verification and the related issues have been narrated in the UNFCCC and evolved in the decisions of the Conferences of the Parties (COPs) over the years.

The Convention, being determined to protect the climate system for present and future generations, required the parties under the Convention to follow:

- All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall:

- Develop, periodically update, publish and make available to the Conference of the Parties, in accordance with Article 12 of the Convention, national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, using comparable methodologies to be agreed upon by the Conference of the Parties (UNFCCC, Article 4, paragraph 1(a));
 - Communicate to the COP information related to implementation, in accordance with Article 12 of the Convention (UNFCCC, Article 4, paragraph 1(j)).
- In order to promote progress to this end, each of these Parties shall communicate, within six months of the entry into force of the Convention for it and periodically thereafter, and in accordance with Article 12, detailed information on its policies and measures on the projected anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol for the period referred to in subparagraph (a) of paragraph 2 of Article 4, with the aim of returning individually or jointly to their 1990 levels these anthropogenic emissions of carbon dioxide and other greenhouse gases not controlled by the Montreal Protocol. This information will be reviewed by the Conference of the Parties, at its first session and periodically thereafter, in accordance with Article 7 of the Convention (UNFCCC, Article 4, paragraph 2(b)).
 - Calculations of emissions by sources and removals by sinks of greenhouse gases should take into account the best available scientific knowledge, including of the effective capacity of sinks and the respective contributions of such gases to climate change. The Conference of the Parties shall consider and agree on methodologies for these calculations at its first session and review them regularly thereafter (UNFCCC, Article 4, Paragraph 2(c)).
 - The COP shall, at its first session, review the adequacy of subparagraphs (a) and (b) of paragraph 2 of Article 4 in the light of the best available scientific information and assessment on climate change and its impacts, as well as relevant technical, social and economic information (UNFCCC, Article 4, Paragraph 2(d)).
 - In accordance with Article 4, paragraph 1, each Party shall communicate to the Conference of the Parties, through the secretariat, the following elements of information:
 - A national inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, to the extent its capacities permit, using comparable methodologies to be promoted and agreed upon by the Conference of the Parties (UNFCCC, Article 12, Paragraph 1(a));
 - A general description of steps taken or envisaged by the Party to implement the Convention (UNFCCC, Article 12, Paragraph 1(b); and,
 - Any other information that the Party considers relevant to the achievement of the objective of the Convention and suitable for inclusion in its communication, including, if feasible, material relevant for calculations of global emission trends (UNFCCC, Article 12, paragraph 1(c)).

**COP 1
Berlin 1996**

UNFCCC
(1996)
<https://unfccc.int/sites/default/files/resource/docs/cop1/07a01.pdf>

Having reviewed Article 4, paragraph 2(a) and (b) of the UNFCCC, and having concluded that these subparagraphs were not adequate, the Conference of the Parties, at its first session, agreed to begin a process to take appropriate action for the period beyond 2000, including the strengthening of the commitments of the Parties included in Annex I to the Convention (Annex I Parties) through the adoption of a protocol or another legal instrument. The process was said to, inter alia:

- Aim to elaborate policies and measures for developed country/other Parties included in Annex I with a view to set quantified limitation and reduction objectives within specified time-frames, such as 2005, 2010 and 2020, for their anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol (Decision 1/CP.1, section II, paragraph 2(a)).
- Provide for a review mechanism (Decision 1/CP.1, section II, paragraph 2(f))

COP1 also decided that each national communication submitted by an Annex I Party should be subject to an in-depth review as soon as possible, but within one year of receipt by the secretariat, with the aim of completion by the second session of the Conference of the Parties (Decision 2/CP.1, paragraph 2(a)).

The purpose of the review of first communications from Annex I Parties was to review, in a facilitative, non-confrontational, open and transparent manner, the information contained in the communications from Annex I Parties to ensure that the Conference of the Parties has accurate, consistent and relevant information at its disposal to assist it in carrying out its responsibilities (Decision 2/CP.1, Annex I).

**COP 2
Geneva 1996**

UNFCCC
(1996):
<https://unfccc.int/sites/default/files/resource/docs/cop2/15a01.pdf>

Recognizing that anthropogenic emissions and removals by sinks of all greenhouse gases should be reported in a complete, transparent and comparable way that avoids double counting or incomplete counting, the COP decided that the review process be continued in accordance with the relevant decisions of the COP (Decision 9/CP.2, paragraph 8).

The COP prescribed guidelines for the preparation of communications by Annex I Parties. The guidelines were to facilitate the process of considering the national communications by encouraging the presentation of information in ways that are consistent, transparent and comparable (Decision 9/CP.2, Annex, paragraph 1(b)).

It was said that the transparency of national communications is fundamental to the success of the process for the communication and consideration of information and that this transparency is particularly important for inventories of emissions and removals of greenhouse gases and for projections and assessments of the effects of measures (Decision 9/CP.2, Annex, paragraph 7).

The COP also required the country Parties to use IPCC Guidelines for National Greenhouse Gas Inventories in estimating, reporting and verifying inventory data, and IPCC Guidelines recommended standard tables and formats for the presentation of data (Decision 9/CP.2, Annex, paragraph 14).

COP 3
Kyoto 1997

UNFCCC 1998
<https://unfccc.int/sites/default/files/resource/docs/cop3/07a01.pdf>

The Kyoto Protocol, adopted at COP 3 (Decision 1/CP.3, paragraph 1) was a legally binding instrument for emission reduction for the countries listed under Annex 1. Following the adoption of the Kyoto Protocol, the COP requested the Chairman of the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Chairman of the Subsidiary Body for Implementation (SBI), to provide guidance to the secretariat on the preparatory works including definition of relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability of emissions trading, pursuant to Article 17 of the Protocol, and to allocate work thereon to the respective subsidiary bodies as appropriate (Decision 1/CP.3, paragraph 5(b)).

The Parties to the Kyoto Protocol, being Parties to the UNFCCC, agreed as follows:

- The greenhouse gas emissions by sources and removals by sinks associated with those activities shall be reported in a transparent and verifiable manner and reviewed in accordance with Articles 7 and 8 (Decision 1/CP.3, Annex, Article 3, paragraph 3).
- The Conference of the Parties serving as the Meeting of the Parties (COP-MOP) to this Protocol may, at its first session or as soon as practicable thereafter, further elaborate guidelines for verification and reporting (Decision 1/CP.3, Annex, Article 6, paragraph 2).
- The Conference of the Parties serving as the Meeting of the Parties to this Protocol shall, at its first session, elaborate modalities and procedures with the objective of ensuring transparency, efficiency and accountability through independent auditing and verification of project activities (Decision 1/CP.3, Annex, Article 12, paragraph 7).
- The Conference of the Parties shall define the relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability for emissions trading (Decision 1/CP.3, Annex, Article 17).

COP 13
Bali 2007

UNFCCC
2008: <https://unfccc.int/sites/default/files/resource/docs/2007/cop13/eng/06a01.pdf>

The Bali Action Plan adopted at the COP13 Conference of the Parties (Decision 1/CP.13) decided to launch a comprehensive process to enable the full, effective and sustained implementation of the Convention through long-term cooperative action onwards up to and beyond 2012, by addressing, among other matters, enhanced national/international action on mitigation of climate change, including, inter alia, consideration of:

- Measurable, reportable and verifiable nationally appropriate mitigation commitments or actions, including quantified emission limitation and reduction objectives, by all developed country Parties, while ensuring the comparability of efforts among them, taking into account differences in their national circumstances (Decision 1/CP.13, Paragraph 1[b(i)]);
- Nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner (Decision 1/CP.13, Paragraph 1[b(ii)]).

COP 14
Poznan 2008

UNFCCC 2009:
<https://unfccc.int/resource/docs/2008/cop14/eng/07a01.pdf>

The COP emphasized negotiation on the Bali Action Plan, welcomed the progress that had been achieved by the Ad Hoc Working Group on Long-term Cooperative Action (AWG-LCA) under the Convention in addressing all the elements contained in paragraph 1 of decision 1/CP.13 (the Bali Action Plan).

Particular emphasis was given to progress negotiation on BAP so that an agreed outcome could be achieved at the fifteenth session of the conference (COP 15) on the full, effective and sustained implementation of the Convention (Decision 1/CP.14, paragraph 1).

COP 15
Copenhagen 2009

UNFCCC 2010:
<https://unfccc.int/sites/default/files/resource/docs/2009/cop15/eng/11a01.pdf>

The COP failed to agree upon an agreement on the basis of years long negotiation on BAP, rather adopted an accord called Copenhagen Accord in a controversial process. The Accord required the Annex I Parties to implement individually or jointly the quantified economy-wide emissions targets for 2020, also to further strengthen emissions reductions under the Kyoto Protocol. The COP decision required the developed countries to make their emission reduction activities and the delivery of supports (e.g., financing) in a manner that could be measured, reported and verified, and would ensure that accounting of emission reduction targets and finance would be rigorous, robust and transparent (Decision 2/CP.15, paragraph 4).

By this Accord, Non-Annex I Parties to the Convention were urged to implement mitigation actions which would be subject to their domestic measurement, reporting and verification the result of which would be reported through their national communications in every two years.

It was also stipulated that Nationally Appropriate Mitigation Actions seeking international support would be recorded in a registry along with relevant technology, finance and capacity building support and these supported nationally appropriate mitigation actions would be subject to international measurement, reporting and verification in accordance with guidelines adopted by the Conference of the Parties (Decision 2/CP.15, paragraph 5).

COP 16
Cancun 2010

UNFCCC 2011:
<https://unfccc.int/sites/default/files/resource/docs/2010/cop16/eng/07a01.pdf>

Cancun Agreements adopted at COP 16 (Decision 1 of the COP16) decided that:

- Developed countries should submit annual greenhouse gas inventories and inventory reports and biennial reports on their progress in achieving emission reductions, including information on mitigation actions to achieve their quantified economy-wide emission targets and emission reductions achieved, projected emissions and the provision of financial, technology and capacity-building support to developing country Parties (Decision 1/CP.16, section III(A), paragraph 40(a));
- Developed countries shall submit supplementary information on the achievement of quantified economy-wide emission reductions (Decision 1/CP.16, section III(A), paragraph 40(b));

- Developed countries shall improve the reporting of information on the provision of financial, technology and capacity-building support to developing country Parties (Decision 1/CP.16, section III(A), paragraph 40(c)).

The Conference of the Parties also decided to enhance the guidelines for the reporting of information in national communications by Annex I Parties, including the development of common reporting formats and methodology for finance, in order to ensure the completeness, comparability, transparency and accuracy of the information provided (Decision 1/CP.16, section III(A), paragraph 41).

COP 16 also launched a 'Work Programme' that would include, among other things, the revision of guidelines on the reporting of national communications, including the biennial report, which would focus on: the provision of financing, through enhanced common reporting formats, methodologies for finance and tracking of climate-related support (Decision 1/CP.16, section III(A), paragraph 46(a)).

COP 16 required the non-Annex I country Parties, consistent with their capabilities and the level of support provided for reporting, to submit biennial update reports (BURs), in addition to the National Communications, containing updates of national greenhouse gas inventories, including a national inventory report and information on mitigation actions, needs and support received (Decision 1/CP.16, section III(B), paragraph 60(c)).

The COP established reviewing of the of biennial update reports through a process of international consultations and analysis by the technical experts in consultation with the Party concerned and through a facilitative sharing of views (Decision 1/CP.16, section III(B), paragraph 63).

With regard to nationally appropriate mitigation actions (NAMAs) by developing country Parties, COP 16 decided that the internationally supported mitigation actions by developing country Parties would be measured, reported and verified domestically and would be subject to international measurement, reporting and verification in accordance with guidelines to be developed under the Convention (Decision 1/CP.16, section III(B), paragraph 61) and that domestically supported mitigation actions would be measured, reported and verified domestically in accordance with general guidelines to be developed under the Convention (Decision 1/CP.16, section III(B), paragraph 62).

The COP also decided that information on the progress in implementation and information on domestic measurement, reporting and verification, and support received (Decision 1/CP.16, section III(B), paragraph 64).

The COP agreed on a Work Programme for the development of modalities and guidelines for, inter alia: measurement, reporting and verification of supported actions and corresponding support; and domestic verification of mitigation actions undertaken with domestic resources (Decision 1/CP.16, section III(B), paragraph 66).

The COP 16, being aligned with the ultimate objective of the Convention, as stated in Article 2, encouraged developing country Parties to contribute to mitigation actions in the forest sector by undertaking the following activities, as deemed appropriate by each Party and in accordance with their respective capabilities and national circumstances: reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests; enhancement of forest carbon stocks (Decision 1/CP.16, section III(C), paragraph 70(a-e)).

The COP also requested developing country Parties aiming to undertake the activities referred to in paragraph 70, in the context of the provision of adequate and predictable support, to develop, inter alia, a robust and transparent national forest monitoring system for the monitoring and reporting of the activities referred to in paragraph 70 (Decision 1/CP.16, section III(C), paragraph 71).

It further decided that the activities undertaken by the Parties referred to in paragraph 70 should be implemented in phases evolving into results-based actions that should be fully measured, reported and verified (Decision 1/CP.16, section III(C), paragraph 73).

An important decision regarding the transparency and accuracy issues was establishing a Standing Committee under the COP to assist the COP in exercising its functions with respect to the financial mechanism of the Convention in terms of improving coherence and coordination in the delivery of climate change financing, rationalization of the financial mechanism, mobilization of financial resources and measurement, reporting and verification of support provided to developing country Parties (Decision 1/CP.16, section IV(A), paragraph 112).

COP 17
Durban 2011
UNFCCC 2012
Decisions part
1: <https://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>

With regard to nationally appropriate mitigation commitments or actions by developing country parties, COP 17 requested the SBSTA to develop general guidelines for domestic measurement, reporting and verification of domestically-supported nationally appropriate mitigation actions (Decision 2/CP.17, section II(B), paragraph 37).

Besides, the COP decided that the Standing Committee would assist the COP in exercising its functions with respect to the financial mechanism of the Convention in terms of improving coherence and coordination in the delivery of climate change financing, rationalization of the financial mechanism, mobilization of financial resources, and measurement, reporting and verification of the support provided to developing country Parties through a set of activities (Decision 2/CP.17, section IV, paragraph 121(a, e, f)).

Recalling developed country Parties' commitment to a goal of mobilizing jointly USD 100 billion per year by 2020 to address the needs of developing countries, the COP urged them to continue to enhance the transparency of their reporting on the fulfilment of their fast-start finance commitments (Decision 2/CP.17, section IV, paragraph 132).

The COP also developed UNFCCC biennial reporting guidelines for developed country Parties, with the objectives including: assisting Annex I Parties in meeting their commitments for reporting under Articles 4 and 12 of the Convention enhanced by decision 1/CP.16; ensuring the provision of consistent, transparent, comparable, accurate and complete information by developed country Parties (Decision 2/CP.17, Annex I, section I, paragraph 1).

Under the UNFCCC's biennial update reporting guidelines for Parties not included in Annex I to the Convention, with reference to mitigation actions, Parties should provide information on the description of domestic measurement, reporting and verification arrangements (Decision 2/CP.17, Annex III, section IV, paragraph 13).

COP 18
Doha 2012

UNFCCC 2013:
Decisions part
1: [https://unfccc.
int/resource/
docs/2012/cop18/
eng/08a01.pdf](https://unfccc.int/resource/docs/2012/cop18/eng/08a01.pdf)

This COP was inclined to exert measurable, reportable and verifiable nationally appropriate mitigation commitments or actions, including quantified emission limitation and reduction objectives by all developed country Parties, while ensuring the comparability of efforts among them, taking into account differences in their national circumstances. With regard to this, COP 18 decided to establish a Work Programme under the SBSTA to continue the process of clarifying the quantified economy-wide emission reduction targets of developed country Parties (Decision 1/CP.18, section II(A), paragraph 8).

With respect to nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, and subject to measurable, reportable and verifiable international support, the COP reiterated its invitation to developing country Parties that wish to voluntarily inform the COP of their intention to implement NAMAs in association with decision 1/CP.16, paragraph 50, to submit information on those actions to the secretariat (Decision 1/CP.18, section II(B), paragraph 16).

The CO also decided to establish a Work Programme to further the understanding of the diversity of the NAMAs, with a view to facilitating the preparation and implementation of those NAMAs, including on needs for financial, technology and capacity-building support for the preparation and implementation of specific measurable, reportable and verifiable nationally appropriate mitigation actions, as well as support available and provided (Decision 1/CP.18, section II(B), paragraph 19).

The COP requested the SBSTA to conduct a Work Programme to elaborate modalities and procedures for the mechanism (Decision 1/CP.18, section II(D(2)), paragraph 50) and consider possible elements of the mechanism referred to in paragraph 50, including requirements for the accurate measurement, reporting and verification of emission reductions, emission removals and/or avoided emissions (Decision 1/CP.18, section II(D(2)), paragraph 51(d)).

Moreover, the COP requested the Standing Committee, in initiating the first biennial assessment and overview of climate finance flows, to take into account relevant work by other bodies and entities on the measurement, reporting and verification of support and the tracking of climate finance (Decision 1/CP.18, section V, paragraph 71).

Regarding the composition, modalities and procedures of the team of technical experts (TTE) for undertaking the technical analysis of biennial update reports from Parties not included in Annex I to the Convention, it was outlined that, the “TTE shall ... conduct a technical analysis which considers the information on, among other things, domestic measurement, reporting and verification, and support received” (Decision 17/CP.18, Appendix, paragraph 20(c)).

**COP 19
Warsaw 2013**

UNFCCC 2014:
Decisions part
1: <https://unfccc.int/sites/default/files/resource/docs/2013/cop19/eng/10a01.pdf>

The Standing Committee on Finance (SCF) was invited to consider the ways to increase its work on the measurement, reporting and verification of support beyond the biennial assessment in accordance with its workplan for 2014–2015 and its mandates (Decision 7/CP.19, paragraph 9).

The COP also decided that robust national forest monitoring systems should provide data and information that are transparent, consistent over time, and are suitable for measuring, reporting and verifying anthropogenic forest-related emissions (Decision 11/CP.19, paragraph 3) and that measuring, reporting and verifying of these anthropogenic forest-related emissions and removals should be consistent with the methodological guidance provided in decision 4/CP.15, and any guidance on the measurement, reporting and verification of nationally appropriate mitigation actions by developing country Parties as agreed by the Conference of the Parties (Decision 14/CP.19, paragraph 1).

The COP also recognized the need to develop capacities for measuring, reporting and verifying the anthropogenic forest-related emissions and removals (Decision 14/CP.19, paragraph 2).

**COP 19
Decisions Part 2**

UNFCCC 2014:
<https://unfccc.int/sites/default/files/resource/docs/2013/cop19/eng/10a02r01.pdf>

COP adopted general guidelines for domestic measurement, reporting and verification of domestically supported nationally appropriate mitigation actions by developing country Parties (Decision 21/CP.19, paragraph 1) and the developing country Parties were invited to use the guidelines on a voluntary basis (Decision 21/CP.19, paragraph 2).

Under the general guidelines referred above, developing country Parties were encouraged to utilize existing domestic processes, arrangements or systems, including domestically available information, methodologies, experts and other aspects, for domestic measurement, reporting and verification. It was also provided that, developing country Parties might otherwise wish to voluntarily establish domestic processes, arrangements or systems for the domestic measurement, reporting and verification of domestically supported NAMAs. (Decision 21/CP.19, Annex, section A, paragraph 3).

COP 20
Lima 2014

UNFCCC 2015:
Decisions part
1: <https://unfccc.int/sites/default/files/resource/docs/2014/cop20/eng/10a01.pdf>

Lima Call for Climate Action adopted at COP 20 reinforced undertaking long-term actions on emission reduction in accordance with the principles of the Convention and its Article 4. Country Parties reaffirmed their commitments to prepare, communicate and implement successive nationally determined mitigation commitments / contributions / actions, (Decision 1/CP.20, Annex, section D, paragraph 16, options: 1, 2, 3), which can be quantified and aggregated, and which are comparable, transparent, measurable, reportable and verifiable (Decision 1/CP.20, Annex, section D, paragraph 16.1, options: 1, 2, 3).

In accordance with the guiding principles on finance, Parties / Developed country Parties and other Parties included in Annex II were to mobilize and provide financial resources for the enhanced implementation of the Convention under this agreement, in a manner that would be results-based / needs-based and deliver the greatest impact possible wherein emission reduction efforts and results of adaptation actions can be measured, reported and verified (Decision 1/CP.20, Annex, section G, paragraph 35.2(e)).

COP 20 established an international capacity-building mechanism (Decision 1/CP.20, Annex, section I, paragraph 63) which was said to comprise, among other things, a capacity-building committee with some functions including MRV of support received for capacity-building against needs identified by the developing country Parties (Decision 1/CP.20, Annex, section I, paragraph 63.2(a)).

COP 20 prescribed different options on how would be the transparency framework of action and support. According to those options, the transparency framework was said to be:

- Built on the existing MRV arrangements under the Convention;
- A common framework with common MRV provisions applicable to all Parties, built on the existing MRV system that is fit for purpose and offers appropriate flexibility / offers flexibility for developing country Parties in terms of the level and depth of the application of the common MRV provisions;
- A single system with common MRV provisions applicable to all Parties from 2020;

such that, all Parties shall, on the basis of self-differentiation and national capacity, report information through existing institutions, with no backsliding, and follow the procedural guidelines and provisions provided in the following review methods based on the following tiers: monitoring, review and verification under the Convention; monitoring, review and verification under the Cancun Agreements; monitoring, review and verification under the Kyoto Protocol (Decision 1/CP.20, Annex, section J, paragraph 66, options: 1 to 5).

**COP 20
Decisions Part 2**

UNFCCC 2015:
<https://unfccc.int/resource/docs/2014/cop20/eng/10a02.pdf>

COP 20 requested the Standing Committee of Finance (SCF) to further explore how it could enhance its work on the measurement, reporting and verification of support, based on the best available information on the mobilization of various resources, including private and alternative resources, through public interventions (Decision 6/CP.20, paragraph 11). With regard to the methodologies for the reporting of financial information by Annex I Parties, the COP requested the SCF, as a part of its work on measurement, reporting and verification of support beyond the biennial assessment and overview of climate finance flows, to include its recommendations on the methodologies for the reporting of financial information, as referred to in decision 2/CP.17, paragraph 19, in its annual report to the Conference of the Parties at its twenty-first session (Decision 11/CP.20, paragraph 6).

**COP 21
Paris 2015**

UNFCCC 2016:
Decisions part
1: <https://unfccc.int/sites/default/files/resource/docs/2015/cop21/eng/10a01.pdf>

Parties at COP 21 adopted the Paris Agreement under the Convention (Decision 1/CP.21, section I, paragraph 1), also decided, among other things, that the modalities, procedures and guidelines of the transparency framework referred to paragraph 91 and 92 of this decision would build upon and eventually supersede the measurement, reporting and verification system established by decision 1/CP.16, paragraphs 40–47 and 60–64, and decision 2/CP.17, paragraphs 12–62, immediately following the submission of the final biennial reports and biennial update reports (Decision 1/CP.21, section III, paragraph 98).

With this decision, the COP 21 tends to ensure the highest possible mitigation efforts in the pre-2020 period, while urging all the Parties to participate in the existing measurement, reporting and verification processes under the Cancun Agreements, in a timely manner, with a view to demonstrating progress made in the implementation of their mitigation pledges (Decision 1/CP.21, section 1, paragraph 105(e)).

**The Paris
Agreement**

Regarding transparency issues, the Parties to the Paris Agreement, being Parties to the Convention, agreed-up the following issues:

- In communicating nationally determined contributions (NDCs), all Parties shall provide the information necessary for clarity, transparency and understanding in accordance with decision 1/CP.21 and any relevant decisions of the COP serving as the Meeting of the Parties to this Agreement (Decision 1/CP.21, Annex, Article 4, paragraph 8).
- In accounting for anthropogenic emissions and removals corresponding to their NDCs, Parties shall promote environmental integrity, transparency, accuracy, completeness, comparability and consistency, and ensure the avoidance of double counting, in accordance with guidance adopted by the Conference of the Parties serving as the Meeting of the Parties to this Agreement (Decision 1/CP.21, Annex, Article 4, paragraph 13).
- Developed country Parties shall provide transparent and consistent information on support for developing country Parties provided and mobilized through public interventions biennially in accordance with the modalities, procedures and guidelines to be adopted by the COP serving as

the Meeting of the Parties to this Agreement, at its first session, as stipulated in Article 13, paragraph 13. Other Parties are encouraged to do so (Decision 1/CP.21, Annex, Article 9, paragraph 7).

- Capacity building under this Agreement should enhance the capacity and ability of developing country Parties, in particular countries with the least capacity, to take effective climate change action, including, inter alia, to implement adaptation and mitigation actions, and should facilitate technology development, dissemination and deployment, access to climate finance, relevant aspects of education, training and public awareness, and the transparent, timely and accurate communication of information (Decision 1/CP.21, Annex, Article 11, paragraph 1).
- In order to build mutual trust and confidence and to promote effective implementation, an enhanced transparency framework for action and support, with built-in flexibility which takes into account Parties' different capacities and builds upon collective experience is hereby established (Decision 1/CP.21, Annex, Article 13, paragraph 1).
- The transparency framework shall build on and enhance the transparency arrangements under the Convention, recognizing the special circumstances of the least developed countries and small island developing states, and be implemented in a facilitative, non-intrusive, non-punitive manner, respectful of national sovereignty, and avoid placing undue burden on Parties (Decision 1/CP.21, Annex, Article 13, paragraph 3).
- The transparency arrangements under the Convention, including national communications, biennial reports and biennial update reports, international assessment and review and international consultation and analysis, shall draw from part of the experience drawn upon for the development of the modalities, procedures and guidelines under paragraph 13 of this Article (Decision 1/CP.21, Annex, Article 13, paragraph 4).
- The purpose of the framework for transparency of action is to provide a clear understanding of climate change action in the light of the objective of the Convention as set out in its Article 2, including clarity and tracking of progress towards achieving Parties' individual nationally determined contributions under Article 4, and Parties' adaptation actions under Article 7 and clarity on support provided and received by relevant individual Parties in the context of climate change actions under Articles 4, 7, 9, 10 and 11, and, to the extent possible, to provide a full overview of aggregate financial support provided, to inform the global stock-take under Article 14 (Decision 1/CP.21, Annex, Article 13, paragraphs 5&6).
- Each Party shall regularly provide national inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases, prepared using good practice methodologies accepted by the IPCC and agreed upon by the COP; and information necessary to track progress made in implementing and achieving its nationally determined contribution under Article 4 (Decision 1/CP.21, Annex, Article 13, paragraph 7).
- Each Party should also provide information related to climate change impacts and adaptation under Article 7, as appropriate (Decision 1/CP.21, Annex, Article 13, paragraph 8).

- Developed country Parties shall, and other Parties that provide support should, provide information on financial, technology transfer and capacity-building support provided to developing country Parties under Articles 9, 10 and 11 (Decision 1/CP.21, Annex, Article 13, paragraph 9).
- Developing country Parties should provide information on financial, technology transfer and capacity-building support needed and received under Articles 9, 10 and 11 (Decision 1/CP.21, Annex, Article 13, paragraph 10).
- The COP serving as the Meeting of the Parties to this Agreement shall, at its first session, building on experience from the arrangements related to transparency under the Convention, and elaborating on the provisions in this Article, adopt common modalities, procedures and guidelines, as appropriate, for the transparency of action and support (Decision 1/CP.21, Annex, Article 13, paragraph 13).
- Support shall be provided to developing countries for the implementation of this Article (Decision 1/CP.21, Annex, Article 13, paragraph 14).
- Support shall also be provided for the building of transparency-related capacity of developing country Parties on a continuous basis (Decision 1/CP.21, Annex, Article 13, paragraph 15).

**COP 21
Decisions Part 2**

UNFCCC 2016
<https://unfccc.int/sites/default/files/resource/docs/2015/cop21/eng/10a02.pdf>

In implementing the workplan, COP 21 requested the SCF to work on the measurement, reporting and verification of support beyond the biennial assessment and overview of climate finance flows, to continue to engage with relevant bodies under the Convention, multilateral and bilateral agencies, and international institutions (Decision 6/CP.21, paragraph 4).

Regarding the methodologies of reporting financial information by the Annex I Parties, the COP 21 welcomed SFC's work on the measurement, reporting and verification of support beyond the biennial assessment and overview of climate finance flows provided during the forty-third session of the SBSTA (Decision 9/CP.21, paragraph 4). Besides, COP requested the SCF to take into account the work on the methodologies for the reporting of financial information by Parties included in Annex I to the Convention in the context of its workplan on the measurement, reporting and verification of support (Decision 9/CP.21, paragraph 14).

**COP 22
Marrakech 2016**

UNFCCC 2017
 Decisions part 1
<https://unfccc.int/sites/default/files/resource/docs/2016/cop22/eng/10a01.pdf>

COP 22 requested the SCF in fulfilling its function on the measurement, reporting and verification of support, and in the context of its existing workplan, to cooperate with relevant stakeholders and experts and to consider the then ongoing work under the Convention and further action envisaged under the Paris Agreement (Decision 8/CP.22, paragraph 5).

COP 22 decided that the SCF would contribute, through its activities, to the progressive improvement of the measurement, reporting and verification of climate finance information in future biennial assessments and overviews of climate finance flows, to help address the challenges in collecting, aggregating and analyzing information from diverse sources and in comparing data (Decision 8/CP.22, Annex, section B, paragraph 7).

COP 23
Bonn 2017

UNFCCC 2018 Decisions part 1 <https://unfccc.int/sites/default/files/resource/docs/2017/cop23/eng/11a01.pdf>

SCF had extended the two-year workplan on the measurement, reporting and verification of support beyond the biennial assessment, and requested the SCF to enhance its work on the measurement, reporting and verification of support beyond the biennial assessment (Decision 7/CP.23, paragraph 7).

The COP also requested the SCF, in fulfilling its function with regard to the measurement, reporting and verification of support, and in the context of its extended workplan, to continue its cooperation with relevant stakeholders and experts (Decision 7/CP.23, paragraph 8).

COP 24
Katowice 2018

UNFCCC 2019 Decisions part 1 <https://unfccc.int/sites/default/files/resource/10a1.pdf>

COP 24 reaffirmed that, consistently with decision 1/CP.21, paragraph 98, for Parties to the Paris Agreement, following the submission of the final biennial reports and biennial update reports, the modalities, procedures and guidelines contained in the annex to decision 18/CMA.1 would supersede the measurement, reporting and verification system established by decision 1/CP.16, paragraphs 40–47 and 60–64, and decision 2/CP.17, paragraphs 12–62 (Decision 1/CP.24, paragraph 39).

It also reiterated that the reporting obligations under Articles 4 and 12 of the Convention and existing measurement, reporting and verification arrangements under the Convention shall continue to apply the Parties that are Parties to the Paris Agreement (Decision 1/CP.24, paragraph 44).

The COP also decided that the technical annex referred to the decision 14/CP.19, paragraph 7, containing modalities for measuring, reporting and verifying the activities referred to the decision 1/CP.16, paragraph 70, shall be submitted as an annex to the biennial transparency report (Decision 1/CP.24, paragraph 45).

The COP further decided that the technical analysis referred to the decision 14/CP.19, paragraph 11, containing modalities for measuring, reporting and verifying the activities referred to in decision 1/CP.16, paragraph 70, shall be carried out concurrently with the technical expert review under Article 13 of the Paris Agreement (Decision 1/CP.24, paragraph 46).

The SCF was mandated to assist the COP in exercising its functions with respect to the Financial Mechanism of the Convention, inter alia, in terms of measurement, reporting and verification of support provided to developing country Parties, through activities such as the biennial assessment (BA) and overview of climate finance flows (Decision 4/CP.24, Annex, section I, paragraph 1).

Subsequent to the 2014 Biennial Assessment, the COP requested the SCF to consider: the relevant work of other bodies and entities on measurement, reporting and verification of support and the tracking of climate finance; ways of strengthening methodologies for reporting climate finance. The COP also requested the Ad Hoc Working Group on the Paris Agreement, when developing the modalities, procedures and guidelines for the transparency framework for action and support, to consider, inter alia, information in the Biennial Assessment and other reports of the SCF and other relevant bodies under the Convention (Decision 4/CP.24, Annex, section I, paragraph 2).

The COP was also stated that the SCF would contribute, through its activities, to the progressive improvement of the measurement, reporting and verification of climate finance information in future BAs to help address the challenges in this regard (Decision 4/CP.24, Annex, section II, paragraph 10).



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About CPRD

Center for Participatory Research and Development–CPRD (www.cprdbd.org), a progressive think-tank in Bangladesh, has been consistent in implementing research, advocacy and capacity building activities for establishing climate and development justice. CPRD promotes alternative development ideas, build capacity of the NGOs/CSOs and supports development of knowledge-based youth leadership and facilitate their involvement and influence in the national and as well as global policy discourses on climate change and sustainable development.

So far, CPRD published a number of policy papers, articles, research briefs, journal articles, book chapters etc. on trade and globalization, food security and livelihoods, disaster risk reduction, climate justice, displacement and migration, loss and damage etc., many of which introduced new knowledge and debate in national and global policy discourses.

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MRV to Create Legitimacy and Credibility in the Climate Actions

Author's Pick

MRV is designed to ensure greater transparency, accuracy and comparability of climate change information; recognize and ensure visibility of mitigation achievements; attribute measured impacts to policies; account for national and international progress; identify gaps and needs in terms of international support; create and facilitate access to international public and private financing.

MRV is expected to continue as an imperative tool for creating legitimacy and credibility for implementing the Paris Agreement. If done legitimately, MRV would create a condition to build trust in the climate negotiations with enhanced mutual confidence in the countries' actions, thus allowing a robust collective effort under a new climate regime.