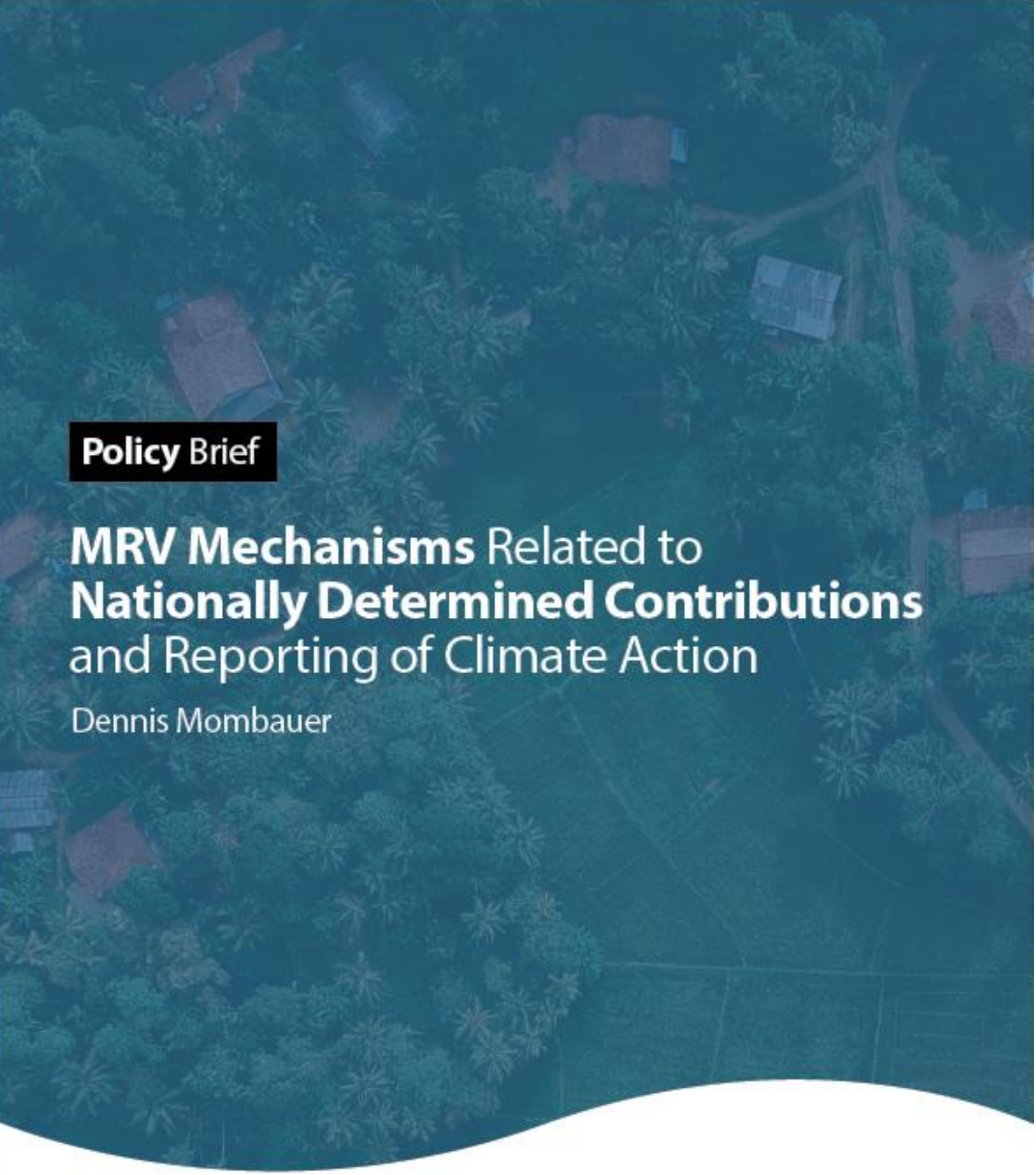

**Policy** Brief

# **MRV Mechanisms** Related to **Nationally Determined Contributions** and Reporting of Climate Action

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## Disclaimer



## Highlights

- The lack of an effective MRV system has been identified as a central gap for NDC implementation and the reporting of climate action in general.
- Both the IPCC and the UNFCCC have published guidelines for MRV and national greenhouse gas inventories that mainly focus on the mitigation aspect of NDCs. A global MRV system for adaptation actions is not available yet.
- Data collection should be integrated with existing national mechanisms so as to facilitate effective and accountable MRV systems for NDC implementation.

## Introduction

Robust MRV systems have been identified as a common gap for the NDC processes of many countries, especially when it comes to adaptation actions. A functional and effective MRV system should be able to continuously gather data and integrate with pre-existing national and sub-national mechanisms. It is faced with different kinds of challenges involving people, data, calculations, quality assurance, and the reporting itself.

Measurement, reporting, and verification (MRV) is an important component of the implementation of Nationally Determined Contributions (NDCs), especially for developing countries. The ability to track and report on the outcomes and effectiveness of mitigation actions, adaptation actions, and climate finance, is required under the Paris Agreement and necessary to evaluate the success of NDC implementation and establish feedback loops. MRV is also crucial for transparency and accountability and provides the basis for informed decision-making and national planning. A well-functioning MRV system allows for better coordination and communication between sectoral agencies, local administrations, and the national government. It can highlight lessons learned and good practices, and help to access additional international support and climate finance.

MRV in its current form started in 2007 at the UNFCCC COP13 in Bali, Indonesia, where the Bali Action Plan stated that climate change mitigation actions should be implemented in a “measurable, reportable and verifiable” way. The Intergovernmental Panel for Climate Change (IPCC) published its Guidelines for National Greenhouse Gas Inventories after its 44th session in Bangkok in October 2016.

These guidelines have been updated and refined at the 49th IPCC session in May 2019.

In addition, the UNFCCC has published a Handbook for Measurement, Reporting, and Verification for Developing Country Parties in 2014 that offers detailed guidelines for MRV. The Enhanced Transparency Framework (ETF) under the Paris Agreement adds to this based on national experiences, best practices, and lessons learnt. The UNFCCC system is focused on mitigation actions to assess the current progress in reducing GHG emissions and projections for future GHG emissions at national and sectoral level. For adaptation, the MRV system is not yet completed.

## Functional and Effective MRV Systems

A functional and effective MRV system should be able to continuously gather data and integrate with pre-existing national and sub-national mechanisms. It is faced with different kinds of challenges involving people, data, calculations, quality assurance, and the reporting itself.

MRV is important for international reporting requirements as well as domestic planning and evaluation purposes. National Communications and other reports under the UNFCCC and the Paris Agreement require an MRV framework, but it is equally important to report to national parliaments, policy-makers, and the public.

Any MRV system should contain SMART objectives connected to concrete and meaningful indicators. SMART objectives should be specific, measurable, achievable, relevant, and time-bound, while indicators need to contain a baseline value, a target value, and a timeline over which to progress from the former to the latter.

Every country has established systems to gather information and monitor at least some of the data points required for MRV. Integrating these systems into a comprehensive MRV system offers advantages but poses challenges at the same time. If the system can be linked up and integrated with existing national and sub-national M&E processes, it will be able to access the established systems of data collection and continuous measurement.

## MRV for Mitigation and Adaptation

Because every sector from industry to agriculture and from energy to transport creates emissions, a national greenhouse gas inventory is as complex as the entire national economy. Currently, there are approximately 20,000 data points needed within the UNFCCC reporting framework, making it an immense task for developed and developing countries alike.

Almost every economic activity, from agriculture to industry and waste management, emits greenhouse gases into the atmosphere. To accurately measure and report these emissions in a transparent and methodical way is the main task for MRV systems on mitigation.

Climate change mitigation is the main objective of the Paris Agreement, but for many developing countries, adaptation measures hold at least equal importance. For countries like Nepal or Sri Lanka, the contribution to global GHG emissions is small while the impacts of climate change

disproportionately affect these countries and their vulnerable populations in particular.

Measurement, reporting, and verification are not only important for the mitigation sector, where there is already a well-established IPCC and UNFCCC methodology. For developing countries, adaptation is at least as vital as mitigation and requires MRV as well. A thorough MRV system for adaptation is likely to be highly complex and require a large number of data points, many of which could be less straightforward than the ones for mitigation.

An MRV system is not limited to mitigation efforts but could and should be applied as well to the adaptation actions of a country. At the moment, adaptation reporting is not completely finalised, and no one can say how many data points it will require. It is likely that it will be slightly less complex than mitigation reporting but require a large number of data points as well.

## Gaps and Needs

Many countries face challenges in setting up effective MRV systems for reporting on climate change actions, especially MRV systems for adaptation action. Data is needed from the local as well as the national level, and an effective MRV system needs to account for that. Some data has to be collected in the field, potentially in remote areas with bad or no internet connection, therefore data entry should be available offline as well as online.

If data is entered by non-experts, such as members of local or indigenous communities, a complicated interface will hinder data collection. Language barriers can further complicate the data collection process if the MRV tool is only available in English.

Because of the large amounts of data involved, it is not possible to check every data point by hand. Errors in entering data or wrong data formats can introduce inaccuracies into the reporting process. If there are inaccuracies, the ability to track their origin and modify them becomes important. Data trails are necessary in general to assure transparency and accountability.

## Conclusion and Recommendations

MRV is crucial for the long-term implementation of NDCs and climate action. It enables countries to fulfil their reporting commitments under the Paris Agreement and to accurately assess their national greenhouse gas emissions as well as the success of adaptation components of their NDCs.

To be effective and address the identified gaps and needs, an MRV system should contain the following elements:

1. Reviewing existing national MRV systems and integrating them with reporting under the Paris Agreement is of high importance. Setting up a separate institutional framework for MRV has proven to be beneficial and effective in coordinating the pre-existing data collection mechanisms with UNFCCC and Paris Agreement reporting.
2. An effective MRV system should have a simplified and intuitive interface for

data entry that works online as well as offline or with unreliable internet access.
3. The data entry interface should be available in local languages.
4. The MRV tool should have basic "plausibility checks" built in to flag wrong data formats or implausible numbers by comparing it to neighboring countries or other similar entities.
5. For reporting purposes, it should store an audit trail for all entries and be able to track and access all data points in a transparent manner.
6. An MRV system and tool for reporting adaptation actions as part of NDCs needs to be finalized and employed, especially by developing country parties.

An MRV system is required for reporting under the UNFCCC and the Paris Agreement, but it also offers a range of co-benefits. Better availability of domestic data, better informed national and subnational planning processes, and better access to international climate finance are among the advantages of a comprehensive MRV system.

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