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MitigationMomentum

Measuring, Reporting and Verifying Nationally Appropriate Mitigation Actions

Reflecting experiences under the Mitigation Momentum Project

Discussion paper

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The Mitigation Momentum Project

Mitigation Momentum provides assistance to five governments for the preparation of NAMA proposals:

- In Kenya, the NAMA proposal will combine a finance mechanism and capacity building to incentivise private sector engagement in large scale geothermal energy production.
- In Indonesia, Mitigation Momentum works with the national government and the provincial government of North Sumatra to develop a NAMA proposal for small scale renewable energy projects, as part of the provincial climate change action plan (RAD-GRK).
- In Chile, the NAMA proposal centres around a finance mechanism and technical support programme to stimulate adoption of renewable energy systems for self-supply (SSRE) across the industrial and commercial sectors.
- In Peru, the NAMA proposal focuses on a comprehensive programme to scale up waste-to-energy activities in the agricultural sector in the context of the country's wider renewable energy strategy.
- In Tunisia, the project supports the development of a NAMA in the building sector to drive energy efficiency and building integrated renewable measures.

Country	Kenya
NAMA topic	NAMA on accelerated geothermal electricity development
Key partners	Ministry of Environment and Mineral Resources, Climate Change Secretariat and Ministry of Energy
Summary	The development of a Kenyan geothermal NAMA proposal is anchored in the National Climate Change Action Plan 2013-2017, as geothermal is identified as a 'big win' in terms of abatement potentials in the electricity generating sector. Kenya has a defined goal with regard to the development of geothermal power generation, and key policy documents are well aligned in that respect, however the development of an additional 4500 MW by 2030 remains ambitious. The involvement of the private sector and the capacity of actors (Geothermal Development Company; Ministry of Energy; Ministry of Environment and Mineral Resources) to manage and drive the growth in the sector appear to be the most critical elements to achieve Kenya's geothermal goals that can feasibly be supported by a pilot NAMA in this country.

Country	Indonesia
NAMA topic	NAMA to support small and medium scale renewable energy in the provinces North Sumatra and West Nusa Tenggara
Key partners	Ministry of Energy (ESDM), Ministry of Planning (Bappenas), and provincial equivalents
Summary	The development of two pilot NAMAs for Indonesian provinces are anchored in the national and provincial climate change action plans (RAN-GRK/RAD-GRK). Although there is a feed-in tariff for renewable energy projects between 1-10 MWe, the uptake is slow and independent power producers (IPPs) face various barriers. This NAMA aims to establish a package of policies and actions that address these barriers and make the investment climate more attractive. The two provinces are strikingly different, and provide a good basis for analysing which elements need to be province specific, and which can be common. The aim of the national government is to use these NAMAs as pilots for the development of a national renewable energy NAMA.

Country	Chile
NAMA topic	Self-supply energy systems based on renewable energy
Key partners	Centro de Energías Renovables (CER), Chilean Ministry of Environment, Fundacion Chile
Summary	The objective of the NAMA is to reduce emissions by fostering self-supply renewable energy projects and contributing to the long-term development of the renewable energy industry in Chile. The NAMA will achieve the objectives through a comprehensive program of measures to remove barriers and incentivise SSRE investments with three components: a financial component, a technical support component and an outreach component. The financial component provides incentives to investment, the technical support component aims to improve national capacities in SSRE technologies and the outreach component aims to increase awareness of self-supply renewable energy options to stimulate demand.

Country	Peru
NAMA topic	Scaling up waste-to-energy activities in the Peruvian agricultural sector
Key partners	Ministry of Environment
Summary	<p>Agricultural activities contribute significantly to Peru's economy, some examples being the sugar cane industry, rice or coffee plantations and cotton. Substantial amounts of wastes occur and in most cases are disposed of locally, either burnt or left to rot on the fields.</p> <p>The objective of the NAMA is to promote the increased adoption of self-supply waste-to-energy technologies in the Peruvian agricultural sector to contribute to rural sustainable development and to global climate change mitigation. The NAMA wants to facilitate farmers' and agro-industries' access to capital to cover (up-front) investment costs of self-supply technologies, build capacity of beneficiaries of the NAMA program to establish, operate and maintain technologies and infrastructure to ensure their efficient and long-term use, and to promote the establishment of a waste-to-energy services and technology market in Peru.</p>

Country	Tunisia
NAMA topic	NAMA for energy conservation (energy efficiency and renewable energy) in the building sector
Key partners	Agence Nationale pour la Maîtrise de l'Énergie (National Energy Agency) and Ministry of Environment
Summary	<p>The proposed NAMA for energy conservation (energy efficiency and renewable energy) in the building sector in Tunisia aims to reduce the demand for fossil fuel based energy in buildings, in particular that used for heating and cooling of buildings. It sits within the wider Tunisian national energy strategy and builds on existing national energy conservation programs in the building sector.</p> <p>The NAMA will comprise a program of activities and measures to address key barriers (financial, technology, knowledge barriers) to the implementation of energy conservation measures in the building sector. It also aims to achieve wider development benefits, including the creation of skilled jobs in the energy technology and building sector as well as reducing the country's dependence on fossil fuels.</p>

Executive Summary

Nationally Appropriate Mitigation Actions (NAMAs) are one of the cornerstones of the international climate negotiations. The term was first introduced in the Bali Action Plan of 2007¹, where all Parties to the UNFCCC agreed to negotiate on “*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.*”

The Mitigation Momentum project aims to support the development of NAMAs. It contributes to the concrete design of NAMA proposals in five countries (Peru, Chile, Indonesia, Tunisia, and Kenya). A further aim is to foster cooperation and knowledge exchange within the NAMA community while advancing the international climate policy debate on mitigation and related issues, including approaches for the Measurement, Reporting and Verification (MRV) of NAMAs.

The objective of this paper is to identify open issues for the MRV of NAMAs pertaining to key dimensions of MRV, as recognised by MRV literature and UNFCCC texts, namely: transparency, robustness and feasibility and cost-effectiveness. It pays particular attention to NAMAs with a supported component² and reflects relevant experiences with developing NAMA proposals in the five Mitigation Momentum countries (i.e. using country examples where appropriate). As MRV systems for these NAMAs are still under development or at their preliminary stage, we hope to share further lessons learned in a subsequent discussion paper.

Key challenges analysed in this paper include: How to design a MRV system that satisfies both host countries’ and funders’ expectations while complying with United Nations Framework Convention on Climate Change (UNFCCC) reporting requirements? How to draw the line between the MRV approach for unilateral components and the MRV approach for supported components, given that many NAMAs are likely to have both unilateral as well as supported elements? How to design a pragmatic, implementable MRV system in line with a country’s capacities, which is robust at the same time? What does robustness mean in the context of the MRV of NAMAs?

Transparency of mitigation actions and their impacts is a key principle in reporting progress on implementation to the UNFCCC and is a necessity for those stakeholders involved in the NAMA who need to assess its effectiveness from various perspectives. For instance, host countries would expect to use MRV to track progress towards domestic objectives - which could be either GHG related or non-GHG related - to improve policy design and implementation and to increase trust amongst NAMA stakeholders, in addition to complying with UNFCCC and funder requirements. On the funders’ side, more clarity is needed on the ideal level of transparency that reporting and verification processes should seek as well as on their expectations on the MRV of specific NAMA aspects, such as transformational impacts. Another finding on transparency is that attempting to link emission reductions to specific activities funded by multiple sources raises many issues, since emission reductions resulting from those activities could overlap.

¹ The Bali Action Plan is the name given to the Decision 1/CP.13, which is the first Decision adopted by the Conference of the Parties to the UNFCCC (COP) in December 2007 at the 13th COP.

² In many cases, supported NAMA will include both components that benefit from international support and components that are domestically supported.

Robustness raises the question of the ideal level of comprehensiveness towards which a MRV system should strive in order to demonstrate credible information on NAMA impacts and progress as well as on support received. The paper concludes that the level of robustness of a MRV system will depend on the selected purpose of the MRV approach and the scope of the NAMA. Robustness does not necessarily mean that all impacts and activities are monitored, but rather that the most relevant ones are selected for monitoring on the basis of a pragmatic judgement which takes into account the capacities of relevant stakeholders. Robustness should therefore be interpreted within the limits of a country's capacities and may be considered as a progressive objective of a MRV system. Designing implementable MRV systems enables NAMA stakeholders to assess the NAMA from their own perspective and priorities and thus provides them with appropriate incentives to implement the NAMA MRV system. Another finding is that existing institutions, methodologies and guidelines provide a good starting point to develop MRV systems for NAMAs and key principles for the monitoring of GHG impacts. Pragmatism, understood as the balance between robustness, feasibility and cost-effectiveness, is crucial to adapt these methodologies and principles to the specificity of each NAMA. In such case, proportionality of effort should be a guiding principle. Some level of standardisation of NAMA specific methodologies is expected over the coming years to respond to some MRV challenges. However, a similar level of top-down standardisation as for Clean Development Mechanism (CDM) methodologies bears the risk of threatening the diversity of NAMAs and acting as a deterrent for countries to put forward innovative or "complicated" NAMAs. In some cases it may be more relevant to adapt NAMA specific methodological approaches developed for one country to the context of different countries without necessarily prescribing this approach at the international level.

Feasibility and cost effectiveness of the MRV system are also important aspects to consider when designing the MRV system. Taking into account the NAMA's characteristics and country's MRV capacities enables the design of feasible and customised MRV system and process, which facilitates their effective implementation. Funders' expectations regarding MRV can be managed through a tiered approach, under which MRV capacity improvements would lead to strengthened MRV systems and processes overtime, possibly following an agreed schedule with the funder if MRV capacity building activities are budgeted in the NAMA financial proposal. Furthermore, to ensure cost-effectiveness, cost management options could be considered, and possibly be discussed amongst funders and host countries.

The MRV dimensions discussed here are of importance to different NAMA stakeholders, including the host country and funder(s). Although, expectations may differ in terms of indicators for judging effectiveness, they all could be met through a single MRV process. Meeting these expectations can, however, prove challenging if the MRV approach lacks feasibility or cost-effectiveness and does not allow stakeholders to assess the NAMA's effectiveness from their own perspective. Therefore, to design implementable systems and processes, MRV needs to be considered a supporting tool to implement and improve actions overtime by its users, rather than a burdensome system established for an external purpose.

Although standardised solutions may provide useful common grounds for some MRV issues, in most cases the diversity of NAMAs may require approaches tailored to the selected purpose of the MRV system and to the host country's capacities. Sharing experiences with applying such approaches will provide further clarity on expectations from different stakeholders on the level of transparency, robustness, feasibility and cost-effectiveness for MRV systems. A second paper based on more advanced and final MRV plans for the five Mitigation Momentum countries will aim to share concrete lessons learned from NAMA related experiences. Besides, decades of development cooperation may provide valuable lessons and best practices on programme and impact assessment systems, which may be adapted to the context of NAMAs.

1. Introduction

The Mitigation Momentum project aims to support the development of Nationally Appropriate Mitigation Actions (NAMAs). It contributes to the concrete design of NAMA proposals in five countries (Peru, Chile, Indonesia, Tunisia and Kenya). A further aim is to foster cooperation and knowledge exchange within the NAMA community while advancing the international climate policy debate on mitigation and related issues, including approaches for the Measurement, Reporting and Verification (MRV) of NAMAs.

MRV enables the assessment of the effectiveness of both internationally supported NAMAs (*supported NAMAs*) and domestically supported NAMAs (*unilateral NAMAs*) by tracking NAMA impacts including greenhouse gas (GHG) emission reductions and non-GHG related impacts such as sustainable development benefits. MRV also supports improved policy design and decision making through systematic progress reporting and is a key tool to ensure accountability of NAMA stakeholders. Both host countries and funders share the common interest of having strong, implementable MRV systems in place. From both perspectives, this raises a number of questions, as well as potential challenges, on how to adapt the MRV approach to the specific circumstances of each NAMA.

The objective of this paper is to identify open issues for the MRV of impacts of NAMAs, understood here as implementable actions, i.e. a project, a policy, a programme or a strategy. It pays particular attention to NAMAs with a supported component³ and reflects relevant initial experiences with developing NAMA proposals in the five Mitigation Momentum countries (i.e. using country examples where appropriate). As MRV systems for these NAMAs are still under development or at their preliminary stage, we hope to share further lessons learned in a subsequent discussion paper.

Key challenges analysed in this paper include: How to design a MRV system that satisfies both the host country's and funder's expectations while complying with United Nations Framework Convention on Climate Change (UNFCCC) reporting requirements? How to draw the line between the MRV approach for unilateral components and the MRV approach for supported components given that many NAMAs are likely to have both unilateral as well as supported components? How to design a pragmatic, implementable MRV system, which is also robust? What does robustness mean in the context of the MRV of NAMAs?

Current NAMA experiences show that responding to these challenges requires taking into account the variety of NAMAs, as illustrated by those submitted to the UNFCCC (including economy-wide GHG reduction goals, sectoral strategies, mitigation policies, individual projects, etc.), and countries' capacities. Although this paper does not aim to provide practical guidance, it will highlight areas where common guidance would be valuable to deal with such challenges. It will also point out areas where such guidance is limited *de facto* and where pragmatic approaches i.e. seeking a balance between robustness, feasibility and cost-effectiveness, may prove valuable to design feasible yet still robust MRV systems.

Although this paper does not answer all questions it raises, it aims to offer innovative ways to respond to open issues, including through learning from country experiences. After a short introduction to basic MRV concepts and to the current status of discussions and experiences on MRV (Chapter 2), the paper is organised around key dimensions of MRV as recognised by MRV literature and UNFCCC texts: transparency (Chapter 3), robustness (Chapter 4), and feasibility and cost-effectiveness (Chapter 5). Challenges pertaining to these MRV dimensions are further explored in each chapter.

³ In many cases, supported NAMA will include both components that benefit from international support and components that are domestically supported.

2. MRV for NAMAs: status of discussions and experiences so far

NAMAs are one of the cornerstones of the international climate negotiations. The term was first introduced in the Bali Action Plan of 2007⁴, where all Parties to the UNFCCC agreed to negotiate on “*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.*” Following this definition, a NAMA and support provided to the NAMA should be both subject to MRV according to the UNFCCC guidance.

Most of the MRV guidance and requirements in the context of NAMAs that is available today have emerged from negotiations under the UNFCCC. Although this guidance has not necessarily been designed specifically for supported NAMAs, it provides a good indication of elements on which a MRV system for NAMAs should focus. In parallel to international MRV debates, in-country experiences with the development of MRV systems for NAMAs and on-going discussions among the community of potential NAMA funders provide insights into the status and challenges that relate to the MRV of NAMAs today. From such experiences and existing high-level guidance, key MRV principles and concepts for NAMAs can be deduced. The following “ABC of MRV” aims to clarify the basic MRV concepts to provide the basis for the subsequent discussions in this paper.

The ABC of MRV

MRV stands for Measuring (sometimes referred to as Monitoring)⁵, Reporting and Verification. In the context of NAMAs, useful definitions of these concepts are:

- Measuring involves tracking the actions and the impacts of the NAMAs;
- Reporting involves transparent disclosure of selected information to national stakeholders and/or the international community, including NAMA funders; and
- Verification aims to ensure that the reported information is correct and complete.

For each NAMA, an MRV approach that describes both the *MRV system* and *MRV process* is needed. The MRV system aims to assess the impacts of the NAMA, the progress in implementing activities under the NAMA and the support provided to the NAMA. Setting up the MRV system involves identifying the NAMA impacts and activities that will be monitored through specific quantitative or qualitative indicators. The *MRV process*, on the other hand, describes the ways in which the MRV system is implemented. Both require specific institutional arrangements, which will vary from one country to another. While both MRV system and process are designed by the host country, specific expectations from funders are often taken into account when designing system and process for supported components.

⁴ The Bali Action Plan is the name given to the Decision 1/CP.13, which is the first Decision adopted by the Conference of the Parties to the UNFCCC (COP) in December 2007 at the 13th COP.

⁵ In the past years, the “M” of MRV has interchangeably stood for Measuring or Monitoring. The line between both terms is fine as one or the other could describe a specific action (e.g. installing a metering device to measure electricity consumption) or a more analytical task (e.g. processing and analyzing data from collected electricity bills).

Another important distinction to make when defining the MRV approach is between the types of NAMAs. The approach may differ depending on whether the NAMA relates to:

- a project (i.e. specific actions, typically localised capital investments in either infrastructure, technology or machinery undertaken by private or public organisations, with a pre-defined timeline);
- a policy or programme (i.e. concrete measures implemented by a government in order to promote or discourage technology options, impact economic activity or change consumer behaviour); or
- a strategy associated with a target (i.e. a framework under which mitigation measures and actions will be undertaken).

Why MRV?

There are many reasons for wanting robust MRV systems. Most importantly, MRV helps to track progress towards the achievement of the goal of the NAMA, to assess its impacts and the use of support. It enhances the transparency of policy making, building trust of in-country stakeholders as well as funders. At the national level, MRV systems help stakeholders to understand support needs and enable national policymakers to improve policy design and implementation. At the international level, comprehensive and consistent MRV systems can help to avoid double counting of emission reductions and help countries to demonstrate efforts towards the goal of limiting global temperature to 2°C.

How to MRV?

As the implementation of MRV systems and processes depends on each country's capacities as well as particular national circumstances, there is no "one size fits all" format on how to MRV NAMAs. Principally, MRV is done through indicators which can be quantitative or qualitative variables, which are typically associated with a target value. For each goal of the NAMA (e.g. reducing the expected energy consumption increase in the residential building sector) one or more indicators need to be defined. The choice of indicators is an important step of the MRV system as the assessment of the NAMA impacts and implementation progress will be based on those indicators. The MRV approach will define how to monitor the indicators (i.e. how to collect the information), report the information and verify it.

Applying the Specific, Measurable, Achievable, Relevant and Timely (SMART) principles to the goals of the NAMA will facilitate the implementation of MRV processes and help select SMART indicators (see Box 1).

Box 1: The SMART principles

An effective MRV system requires goals and indicators that are SMART: Specific, Measurable, Achievable, Relevant and Timely. SMART indicators facilitate development of a robust system that is adapted to local circumstances and the selection of realistic target values for each indicator. More specifically, the dimensions of the SMART principles mean:

- **Specific:** Definitions need to be precise, so that there is no room for interpretation whether the target associated with the indicator has been achieved or not.
- **Measurable:** It needs to be possible to assess the value of a dimension during or after the implementation of the activity.
- **Achievable:** The target needs to be realistically reachable through the activities within the set timeframe.
- **Relevant:** The indicator is helpful in showing whether the desired outcome has been achieved.
- **Timely:** The timeframe for reaching the target is clear.

What to MRV?

MRV enables the assessment of both GHG and non-GHG related impacts of the NAMA, as well as the progress of activities under the NAMA. A third dimension of NAMA MRV is tracking the resources needed and support received from funders and spent on the NAMA.

While direct emission reductions are often seen as the most obvious impact of the NAMA, transformational changes and sustainable development benefits are also of prominent importance (see Figure 1). These transformational changes could lead to indirect emission reductions and increased mitigative capacity. Mitigative capacity refers to the ability of a country to reduce GHG emissions through using the NAMA to address structural changes, which enable emission reductions in the long term, sometimes even outside the scope of the NAMA (e.g. establishing a strong MRV system for several sectors, designing a consistent legal framework, or supporting conditions on financial markets, etc.).

Besides GHG mitigation impacts, a NAMA will usually aim to contribute to the achievement of sustainable development benefits (as being “nationally appropriate”, NAMAs are in line with, and support, a country’s development objectives). Sustainable development benefits include positive environmental impacts such as better air and water quality or decreased soil erosion, etc. They may also include social impacts (e.g. rural development, health, gender equality, access to education, etc.) and positive economic impacts such as employment, creation of markets, development of industries etc. For instance, sustainable development impacts assessed for the self-supply renewable energy NAMA in Chile include: the creation of jobs through renewable energy projects financed by the NAMA; reductions in environmental pollutants, noise and noxious odours from project sites; the reductions in energy usage and costs and the improvement of energy security at the national and local level.

NAMAs can also have unintentional negative impacts, such as increased costs in a certain area or disadvantages for groups not targeted by the NAMA, which could be accepted as a trade off for low carbon development. Those, and other unexpected negative externalities, need to be MRVed as well in order to collect knowledge necessary for comprehensive evaluation and improvement of the NAMA.

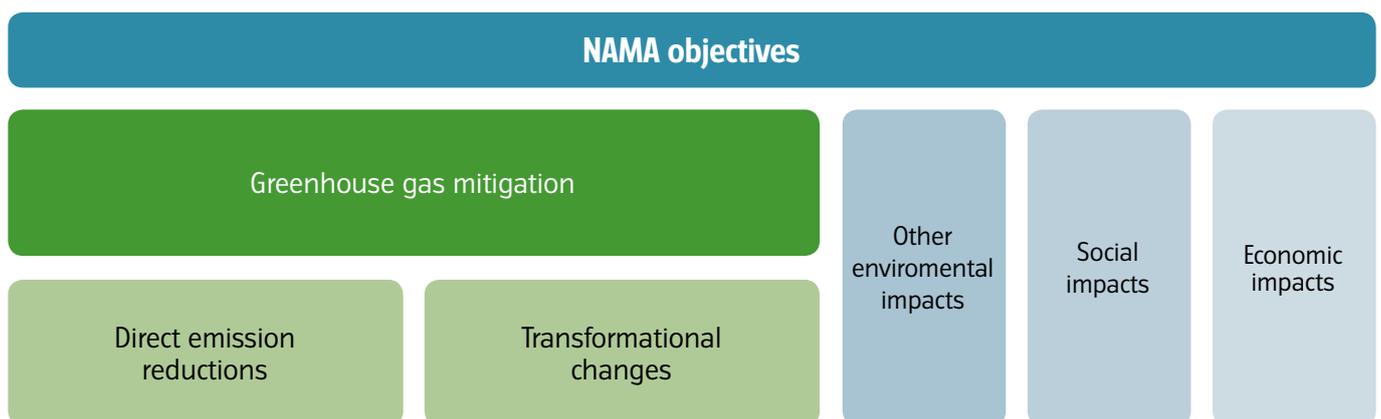


Figure 1: Desired NAMA impacts to consider for MRV

In addition to monitoring the impacts of the NAMA, it is useful to monitor progress of implementation of the activities under the NAMA. While MRV of impacts monitors the achievement of objectives through impact indicators (e.g. tCO₂e reduced, reduction in energy consumption, number of banks offering suitable loans for energy efficiency, etc.), MRV of progress looks at whether the planned NAMA activities have been fully implemented at the time foreseen through progress indicators (e.g. trainings delivered, strategy on subsidisation developed, etc.). Both dimensions are important for the success of NAMAs and learning for future activities. However, they need to be approached differently and with distinct sets of indicators.

Additionally, the MRV system should reflect the support received (financial, technological and capacity building) and track those flows, including how support relates to the different components of the NAMAs. Transparently disclosing where resources are spent significantly increases trust and enables possible redistribution of support where needed. Transparency does not necessarily mean that disclosure is made to the general public; disclosure of sensitive information can be limited to specific host country and funding institutions.

Status of the MRV issues under the negotiations

MRV is a key pillar of both the UNFCCC and the Kyoto Protocol. It is also a sensitive issue that is still being discussed at the international level, especially with regards to the scope of international guidelines to assess progress of mitigation actions and their impacts. It is also a key aspect of the discussions on Reducing Emissions from Deforestation and forest Degradation (REDD-Plus), for which MRV systems are being developed for the forestry sector in developing countries on the basis of international guidelines and existing forest monitoring systems.

Under the Kyoto Protocol, MRV is essential to keep track of emission reductions of countries with legally binding commitments, and it is a core aspect of the Clean Development Mechanism (CDM). While the UNFCCC does not provide specific requirements for the measurement or monitoring of NAMAs, it has produced guidance for reporting and/or verification purposes of mitigation actions in general (thus including NAMAs). For instance, on reporting, National Communications that are required from developing countries every four years (or on a discretionary basis for Least Developed Countries and Small Island Developing States) should include basic information on mitigation actions and their progress. National GHG Inventories that are included in the National Communications are also expected to reflect impacts from mitigation actions.

More detailed reporting and verification requirements have been adopted and further developed since 2010, including the submission of the Biennial Update Report (BUR), which is subject to the process of International Consultation and Analysis (ICA) six months after the BUR submission (BURs are also submitted on a discretionary basis by Least Developed Countries and Small Island Developing States). Developing countries are required to indicate in the BUR specific information on mitigation actions, including both domestic and supported NAMAs⁶. In addition, the UNFCCC NAMA Registry provides another opportunity to submit voluntary information on NAMAs. Although the Registry does not constitute or support any MRV process, information that countries submit to the Registry on their NAMAs may overlap or complement the information submitted through the BUR⁷.

Regarding verification processes, ICA provides an official process to “increase transparency of mitigation actions and their effects” and consider “the progress made in their implementation”⁸, without distinguishing between supported and unilateral NAMAs. It also aims to provide an opportunity to share views with other countries and may eventually contribute to building MRV capacities of developing countries. As no country has undertaken the ICA process yet, consequences and depth of the analysis remain unclear today.

Therefore, current UNFCCC guidance provides an indication of the information required for international reporting and verification. The voluntary MRV guidelines for unilateral NAMAs, to be adopted at 19th Conference of the Parties (COP) in Warsaw, are also anticipated to provide guidance for setting up national MRV processes, from which any MRV system for NAMAs could benefit. However, additional NAMA specific information and guidance are needed to design and implement a NAMA MRV system, such as monitoring requirements or expectations from funders on MRV. Current MRV experiences, including those that do not relate to NAMAs, are valuable sources of information in that regard.

Overview of MRV experiences so far

While MRV of NAMAs is still in a fledgling state, the general concept of MRV of actions has been commonly used in policy making and development cooperation for a long time. Some countries have gained knowledge on how to track progress of specific measures in terms of resources spent according to indicators. In many cases, governments also track their pathway to achieving certain targets such as the Millennium Development Goals or, more generally, economic growth. The level of experience with such practices varies from country to country.

⁶ According to Decision 2/CP.17 (UNFCCC, 2011), Annex III, developing countries shall indicate for each mitigation action the following information :

- Name and description of the mitigation action, including information on the nature of the action, coverage (i.e. sectors and gases), quantitative goals and progress indicators;
- Information on methodologies and assumptions;
- Objectives of the action and steps taken or envisaged to achieve that action;
- Information on the progress of implementation of the mitigation actions and the underlying steps taken or envisaged, and the results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emissions reductions, to the extent possible;
- Information on international market mechanisms.

⁷ According to Decision 2/CP.17, countries are invited to indicate the following information for NAMAs for which they seek international support:

- A description of the mitigation action and the national implementing entity, including contact information;
- The expected time frame for the implementation of the mitigation action;
- The estimated full cost of the preparation;
- The estimated full cost and/or incremental cost of the implementation of the mitigation action;
- The amount and type of support (financial, technology and capacity-building) required to prepare and/or implement the mitigation action;
- The estimated emission reductions;
- Other indicators of implementation;
- Other relevant information, including the co-benefits for local sustainable development, if information thereon exists.

⁸ UNFCCC (2011), Decision 2/CP.17, Annex III, para. 1 and 3.

Some developing countries have had exposure and gained familiarity with MRV through CDM projects, GHG Inventories for National Communications and through applying Global Environmental Facility (GEF) methodologies to calculate GHG benefits of GEF funded projects. The practical knowledge of basic MRV principles gained from monitoring GHG emission reductions is, however, primarily limited to technical aspects of specific projects, which tends to exclude two key features of NAMAs, namely the monitoring of impacts of policies and of sustainable development benefits. Various international initiatives to build NAMA MRV capacities of developing countries and share knowledge are underway. Examples include the GIZ NAMA tool⁹, the UNDP's Low Emission Capacity Building Programme (LECB)¹⁰, the United States Government's Enhanced Capacity for Low Emissions Development Strategies program¹¹, the World Resources Institute's (WRI) Measurement and Performance Tracking (MAPT) project¹², and the International Partnership on Mitigation and MRV¹³, which organised, for example, the Autumn School "MRV: Today, Tomorrow, and the Future" in 2012¹⁴.

Despite the lack of experience and international guidance on the MRV of NAMAs, most countries that are developing NAMAs expect to design and implement MRV plans. Although none of them have complete and detailed MRV systems yet, some NAMAs are more advanced than others in terms of MRV. For example, the Chile NAMA for self-supply renewable energy includes an advanced monitoring plan (Box 2).

Box 2: Example of an advanced MRV system for supported NAMAs: Chile NAMA for self-supply renewable energy

As the coordinating agency of the NAMA, the overall MRV responsibility of the Chile NAMA for self-supply energy will rest with the Renewable Energy Centre (CER) of Chile. CER is part of the Chilean government's economic development agency (CORFO) and implementing agency of the Energy Ministry.

The NAMA monitoring will be fully integrated into the MRV system currently being set up at the CER which in turn will be fully integrated into national MRV systems and help comply with international MRV requirements. MRV will take place at three different levels:

- Installation level - data collection on sites where self-supply renewable energy projects take place
- Programme level - validation and aggregation of installation level data, monitoring of programme-level indicators, reporting of compiled data
- National and international level:
 - Reporting at national level through a domestic mitigation registry
 - Reporting at the international level
 - Aggregation of data on NAMA support provided

Different indicators have been selected to assess some key objectives of the NAMA. Regarding GHG emission reductions, indicators include renewable energy capacity installed and produced, as well as energy consumption determined at the feasibility stage (which also contributes to setting the baseline). This requires the collection of specific data such as energy production data, default emission factors for fuels used and default grid factors for power consumption. Regarding sustainable development benefits, reduction of energy costs will be monitored through collecting data on energy produced on site, operational costs, amount of total energy needed and energy market prices.

⁹ <http://mitigationpartnership.net/nama-tool-steps-moving-nama-idea-towards-implementation>. GIZ (2013).

¹⁰ http://www.undp.org/content/undp/en/home/ourwork/environmentandenergy/focus_areas/climate_strategies/undp_projects_thatcontributeetogreenlecrds/national_sub-nationalstrategies/low_emission_capacitybuildingprogram.html

¹¹ [http://en.openei.org/wiki/Enhancing_Capacity_for_Low_Emission_Development_Strategies_\(EC-LEDS\)_Program](http://en.openei.org/wiki/Enhancing_Capacity_for_Low_Emission_Development_Strategies_(EC-LEDS)_Program)

¹² <http://www.wri.org/project/low-carbon-development/measurement-and-performance-tracking>

¹³ <http://mitigationpartnership.net>

¹⁴ <http://mitigationpartnership.net/autumn-school-%E2%80%98mrv-%E2%80%93-today-tomorrow-and-future%E2%80%99-berlin-15%E2%80%93october-2012>.

3. Transparency

Transparency of mitigation actions is a key principle in reporting progress on implementation to the UNFCCC and a necessity for those stakeholders involved in the NAMA who need to assess its effectiveness from various perspectives. From a NAMA standpoint, transparency aims to satisfy both funder and host country expectations and ensure their respective accountability. Reporting and verification processes are essential tools for the transparent assessment of effectiveness and to ensure NAMA stakeholders remain accountable.

Host countries' expectations towards the MRV of NAMAs and associated support

Some developing countries have built certain capacities to track development indicators in order to assess the effectiveness of various public policies and programmes. For instance, several countries have worked on the formulation of sustainable development indicators, such as the Philippines, which started developing indicators in September 1996¹⁵. Although those often do not relate to GHG impacts, monitoring and evaluation processes are not a new concept for most developing countries.

From a developing country's perspective, MRV of mitigation actions is expected to support efforts to comply with UNFCCC reporting requirements (i.e. to submit National Communications and BURs) and, if applicable, with funders' requirements. For example, Chile is planning to implement a domestic mitigation registry to comply with UNFCCC reporting requirements. Besides, MRV is also expected to help track progress towards domestic objectives, such as either GHG related goals (e.g. national emission reduction goal) or non-GHG related goals (e.g. the decrease of poverty or the creation of local businesses).

Country example 1: Monitoring progress of mitigation actions towards Chile's economy-wide GHG target

Chile has a GHG target of 20% below the business-as-usual scenario by the year 2020. The country is implementing a national registry of all domestic and supported mitigation actions, including NAMAs, to track its progress towards achieving this goal. The registry will track basic information on each action with a consistent methodology that will allow Chile to fulfil international reporting requirements.

The tracking of non-GHG related development objectives is also of great importance to host countries. Indicators that relate to sustainable development (e.g. improved energy security) are therefore essential to assess the effectiveness of the NAMA from the host country's standpoint. Furthermore, there are many other indicators that are linked to GHG emission reductions, such as energy and fossil fuel subsidy savings, which could be used to assess both climate and development effectiveness.

Still, from the host country's perspective as well as from the perspective of other national NAMA stakeholders, MRV is expected to provide the necessary information and tools to track the effective implementation of NAMA activities, including policy and regulatory interventions, and the distribution of responsibilities, if necessary. Therefore, MRV would enable the collection of evidence through reporting systems and sharing feedback. If associated with appropriate decision making processes, it would contribute to the improvement of policies overtime. MRV is also a key tool to systematise engagement with NAMA stakeholders in order to discuss improvements and responsibilities and to identify best practices. In some cases, MRV is also expected to provide a system for NAMA stakeholders, including private entities, to assess their performance against their own objectives.

¹⁵ UNDESA (2007).

In terms of support, although MRV of both international and domestic support aims to respond primarily to international requirements (i.e. from funders and the UNFCCC), it also fulfils host countries' expectations. MRV helps to assess the effectiveness of domestic support and the alignment of the delivery of support with national priorities on a regular basis.

Funders' expectations towards the MRV of NAMAs and associated support

Funders' expectations on MRV raise the question of funding decision criteria, which helps identify indicators of importance to funders. As of today, multiple funding opportunities exist; however, funding criteria have not been clearly or consistently set for all of them. Although they are likely to be funder specific and be inspired from criteria used for development projects, yet some common themes are emerging. As the primary objective of NAMAs is to reduce GHG emissions, it is anticipated that NAMA funders will assess effectiveness of support based on the NAMA outcomes in terms of emission reductions. For funding sources like the Green Climate Fund (GCF), which is clearly mandated to support mitigation actions, GHG emissions and costs are likely to be important criteria. However, it is increasingly clear that NAMA funders will also expect to assess transformational changes related to long term mitigation impacts due to increased mitigative capacity and will look at the potential of the NAMA to be replicated in other sectors (see Chapter 2). For example, the NAMA Facility has designed a system that allows ranking projects according to their overall level of ambition, including potential for transformational change, co-benefits, financial ambition and mitigation potential¹⁶.

This consideration of mitigation potential may raise the following potential issue, which has been faced by some CDM projects already. If direct emission reductions are the funders' focus, NAMAs with low direct mitigation impacts in the short term and large indirect mitigation potential in the longer term may encounter difficulties accessing climate finance. As under the CDM, where modalities to ensure balanced geographical repartition of projects were adopted, innovative solutions to ensure that climate finance does not neglect NAMAs with lower immediate GHG impacts may be needed. This is a likely discussion in the coming months under the GCF and probably within other funding institutions.

Sustainable development benefits may also be of interest to funders, especially for development institutions such as development banks and agencies, which have experience in tracking development impacts. To harmonise efforts on assessing GHG impacts, some multilateral development banks and international financial institutions are working towards a Framework for a Harmonised Approach to Greenhouse Gas Accounting¹⁷.

In line with the UNFCCC traceability requirements for support (i.e. domestic vs. international support and public vs. private support), funders will also expect to track the use of the support they provide (including, for example, the leverage ratio for private sector funding) and the associated impacts through robust MRV systems. Expectations from funders towards "robustness" are not yet clear: this is discussed in the next Chapter.

Current experiences point at challenges to differentiate between the impacts of various sources of support, including between domestic and international support and between various international sources of support. Attempting to link emission reductions with specific activities funded by multiple sources raises many issues, since emission reductions resulting from those activities could overlap (see Figure 2). For instance, in many countries, capacity building activities are an indispensable enabler of emission reductions. In most cases, it is not possible to attribute specific emission reductions to those activities (see also Chapter 4).

¹⁶ DECC (2013).

¹⁷ https://www.nib.int/filebank/a/1358516702/86247517d51b1706d7963cecbe5421ea/2792-IFI_CO2_framework.pdf.

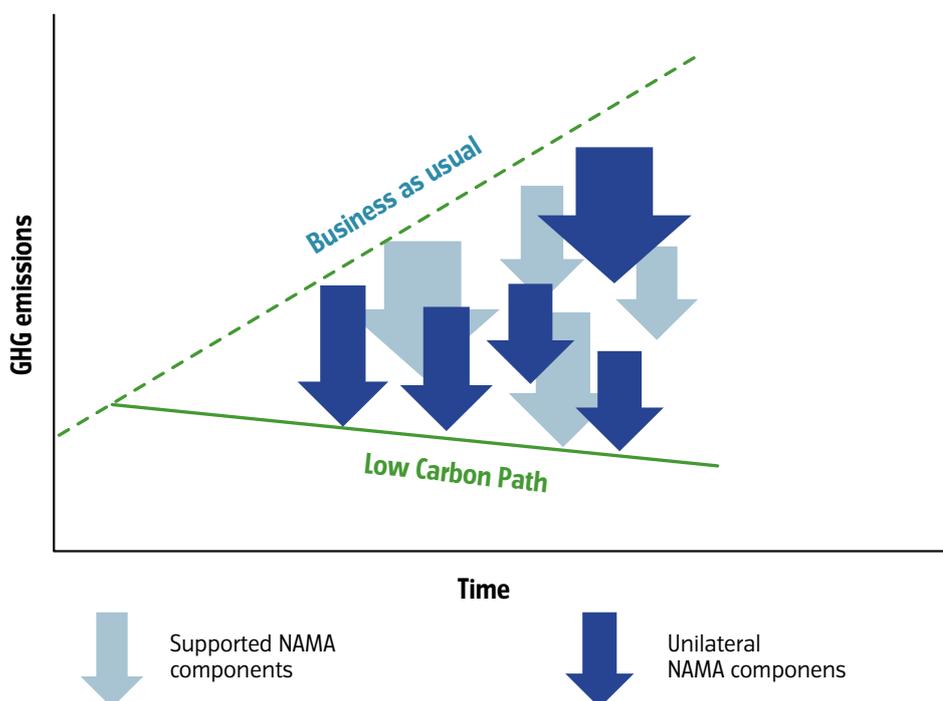


Figure 2: Possible overlaps between supported and unilateral NAMA components

To overcome such challenges, standardised guidance or methodologies will likely be insufficient, given the specificity of each NAMA. Funders and countries should, therefore, expect to discuss this challenge as early as possible in the NAMA development process and explore solutions, such as attributing emission reductions on a pro-rata basis related to funding.

Country example 2: The challenge of associating emission reductions to specific activities in Tunisia

In Tunisia, capacity building of service providers (e.g. certified technology providers and installers) is necessary to ensure proper installation and functioning of technologies. Besides, a communication programme is also needed to advertise access to a subsidy/loan programme. Although emission reductions will result from the concrete use of efficient technologies, this could not happen without training installers, certifying technology providers and outreach activities. If different funding sources were to finance the capacity building component of the NAMA, outreach activities and technology installation, it will prove challenging to associate the emission reductions with each specific source of support.

Some funders may favour result-based approaches and therefore make support conditional on the achievement of specific outcomes rather than the effective implementation of actions. In such cases, they would expect an MRV system based on impact indicators (see Chapter 2). Although no publicised NAMA is yet applying for result-based funding, this approach raises important questions regarding the accountability of the host country and the consequences of non-performance against specific milestones. This approach would therefore generate additional expectations from funders.

Accountability: rationale and limits

In different ways, both funders and host countries are accountable to each other as well as to national stakeholders. As funders and host countries are likely to use public budgets to support NAMAs, they are accountable to domestic institutions or taxpayers regarding how public funding is used. In addition to domestic accountability, host country institutions that receive international support are accountable to the funder(s). MRV is a key tool to implement the principle of accountability at different levels, including provincial or local levels, and trigger relevant processes especially in case of budget related issues.

Country example 3: Indonesia domestic reporting practices on the progress of provincial-level actions

In Indonesia, a national monitoring, evaluation and reporting framework is being designed to allow each province to internally monitor and report back to the national level on progress for individual actions such as NAMAs. The MRV system will build on existing practices rather than create parallel processes. This will also facilitate MRV of the delivery and use of international support at both the national and provincial levels.

The scope of the host country's accountability is likely to differ depending on the NAMA type. Under a non-result-based NAMA, the host country has the obligation to implement the actions for which it receives funding regardless of the outcomes (obligation of means). Under a result-based approach, the recipient is accountable for the outcomes of the NAMAs, regardless of the actions being implemented (obligation of result). Under result-based approaches, outcomes may be expressed in GHG terms but could also include other types of outcomes, such as the amount of energy saved or the number of persons trained and certified through a capacity building programme. If the outcomes are not reached by a certain date, the funder has the option to reduce or cancel the financing for the next phase. Since this concept is new, no precedent has been set yet on corrective actions in case of underperformance. This approach raises a number of questions on accountability, including: what would happen if a NAMA does not deliver a specific outcome while, on the other hand, it overachieves on another front? How to consider force majeure events, which could prevent the NAMA from reaching its objectives?

Although only practical experience will help respond to those issues, transparent MRV systems are indispensable to put in practice the principle of accountability and consider corrective actions at the earliest possible stage. Standardised solutions to possible underperformance cases are difficult to imagine at the moment, given the specificity of each NAMA and each country's circumstances.

Means of transparency: reporting and verification

This section emphasises the importance of reporting and verification for transparency purposes and highlights the challenges in aligning expected reporting and verification requirements from both the UNFCCC and funders.

Reporting forms the basis of the verification process. In terms of transparency, verification ensures that reported information is accurate, clear and detailed enough to enable outsiders to assess both NAMA progress and impacts. However, transparency does not necessarily mean that disclosure is made to the general public or that all data or information is disclosed (e.g. raw data). Rather, disclosure of raw data or sensitive information can be limited to specific host country and funding institutions. As applied in various other contexts, including CDM and other development programmes, verification by a third party would also guarantee a minimum level of transparency. However, uncertainties remain on the level of transparency sought by the UNFCCC and funders for both reporting and verification purposes.

Currently, developing countries are asked to indicate key information on NAMAs in the BUR and are invited to submit similar and complementary information to the UNFCCC Registry (see Chapter 2). For supported NAMAs, developing countries should also expect to comply with funder specific reporting requirements, which are unknown yet and unlikely to be standardised. Therefore,

as overlaps of information are likely to occur with different reporting channels, coherence of reported information is important for building trust with potential and existing funding partners.

Country example 4: Streamlining national and international reporting efforts in Chile

Chile has been active in submitting information to the UNFCCC NAMA registry. In the past months, they have submitted information on NAMAs seeking support for implementation and recognition using the standard UNFCCC NAMA registry templates. These templates are the basis for other reporting standards used within their national NAMA activities.

There is a lack of clarity regarding the process(es) for verification. Under the UNFCCC, ICA could be considered a verification process. However, it remains unclear how deep the analysis will be: will it examine the methodologies used to quantify GHG emission reductions? What would be the consequences if mitigation actions are not being implemented as stated in the BUR or emission reductions are not documented well enough?

In addition to the UNFCCC process of ICA, NAMA specific verification processes may be required by funders, e.g. through third party verification. The extent of such verification cannot be anticipated today and will depend on the MRV system agreed upon by funders and host countries. As this process will be funder specific, experience sharing is key to provide further guidance and to encourage countries to better prepare for such processes. Capacity building may also be part of the verification process required by funders, which would favour trust building.

Box 3: Transparency: wrap up messages

Although the concept of monitoring and evaluation is not new to most developing countries, MRV of NAMAs will require new capacities and knowledge.

In addition to complying with UNFCCC and funder requirements, host countries would expect to use MRV to track progress towards domestic objectives - which could be either GHG related or non-GHG related - to improve policy design and implementation and to increase trust amongst NAMA stakeholders.

MRV of the actions receiving support and their outcomes in terms of emission reductions are a priority for most funders in order to assess effectiveness of support. However, attempting to link emission reductions with specific activities funded by multiple sources raises a number of issues, since emission reductions resulting from those activities could overlap. Interest in transformational changes and sustainable development will vary from funder to funder.

Both host countries and NAMA funders are accountable to each other and to national stakeholders (i.e. taxpayers). Transparency on the use and impact of (public) funds is a key objective of MRV. The principle of accountability in case of non-performance still needs to be refined through practice and experience sharing, especially with regards to result-based approaches.

More clarity is expected from funders on the ideal level of transparency that reporting and verification processes should achieve. For instance, the lack of standardisation of reporting formats can pose challenges especially with regards to the coherence of information reported through various channels. Practical examples and experience with NAMA implementation will also help this.

4. Robustness

The degree of robustness raises the question of the ideal level of comprehensiveness a MRV system should strive for demonstrating credible information on NAMA impacts and progress, as well as support received. This issue includes the challenging question on the selection and application of methodologies and the demonstration of the causal connection between the NAMA activities and their impacts. It appears that both require a high sense of pragmatism to find the right balance between feasibility, proportionality of effort, cost-effectiveness and need for information.

How detailed and comprehensive should an MRV system be?

When answering this question, it is important to define the purpose of the MRV system according to the SMART principles (see Box 1), which could differ from one NAMA to another. Is the purpose to verify that specific activities are implemented? Is it to track the impacts of each activity (i.e. through a bottom-up approach)? If so, which ones: GHG impacts and/or non-GHG related impacts? Is this feasible for all activities based on current capacity levels and cost-effectiveness? Is the monitoring of the overall GHG impacts of policies and measures in a given sector sufficient to meet the purpose of the MRV system and to satisfy the host country's and funder's need for information (i.e. through a top-down approach)?

Both experts and non-experts would agree that MRV approaches need to serve a clear purpose. The main purpose of a CDM MRV approach, for example, is to track the direct emission reductions of a specific activity in order to ensure that “a tonne is a tonne” and therefore guarantee the integrity of a market. Is this MRV approach to emission reductions appropriate for all NAMA activities and for all NAMAs, some of which aim to achieve transformational changes in one or several sectors of the economy?

In most cases, especially for policy-based NAMA, a top-down approach may be sufficient to demonstrate GHG impacts for a sector or subsector. Such approaches are particularly helpful when MRV of emission reductions at an activity level may not be possible for all activities (i.e. because of a lack of data or capacities). This is even more relevant for countries or NAMAs with low mitigation potential or low capacities, where monitoring of GHG impacts of each NAMA activity is neither feasible nor cost-effective. Therefore, it may be preferable to take a balanced view when deciding the MRV approach. The scope of the NAMA and the specific capacities of institutions in charge of MRV in the host country are key factors to consider. For instance, a bottom-up approach may be more suitable for a NAMA with limited scope, e.g. project based NAMA, while a top-down approach could suit policy-based NAMAs. Some argue that both approaches could be combined under one NAMA, however this could considerably increase monitoring efforts.

In other words, robustness does not necessarily mean that all impacts and activities are assessed but rather that the most relevant are selected on the basis of a pragmatic judgement by NAMA stakeholders, i.e. seeking a balance between robustness, feasibility and cost-effectiveness. It is preferable to have only a few, simple indicators monitored properly, rather than setting up a complex and non effective system which could raise challenges that would threaten the robustness and implementation of the overall MRV system. If necessary, the MRV system could be improved overtime using a tiered approach (see Chapter 5) and following the country's progress on building its MRV capacities. Robustness should therefore be interpreted within the limits of a country's capacities and should be considered as a progressive objective for a MRV system.

Country example 5: Taking a pragmatic decision on MRV of activities in Tunisia

In Tunisia, many energy conservation technologies are envisaged for the NAMA. The idea is to propose to homeowners a menu of technology options from which they would choose. The main monitoring tool for assessing GHG impacts of the NAMA are the energy bills. However energy bills would not allow us to differentiate emission reductions due to each specific technology in case different technologies are implemented. If different funders are willing to support the implementation of specific technologies, it will prove challenging to associate emission reductions with specific technologies. In such case, benchmarking could be used, although it would remain extremely difficult to add up assumed emission reductions resulting from each technology. A decision will need to be made on whether monitoring of the overall impacts of the implementation of various technologies may be sufficient to assess the effectiveness of the NAMA.

MRV of both GHG and non-GHG related impacts could also help to assess if the support is still relevant and sufficient. For instance, MRV could help identify where additional support is needed to strengthen a specific activity, or where it is no longer needed.

Country example 6: Monitoring processes to identify further improvements and areas of support focus in Indonesia

In Indonesia, the monitoring, evaluation and reporting framework is based on an existing system to monitor development indicators and government's performance towards planning processes. It is being used to support the implementation of the Indonesian national and provincial GHG mitigation action plans, including possibly NAMAs. While this domestic system has the primary goal of measuring progress at the national, sectoral and provincial levels, it is also seen as a way to assess which specific programmes can be enhanced and which face barriers, as well as where to focus domestic climate support.

Another issue with robustness is the differentiation of the level of robustness required for unilateral NAMAs (expected to be lower) and supported NAMAs (which may be higher depending on funder requirements). In many cases, especially if the NAMA takes place at a sector level, the interrelatedness of domestic efforts and supported actions would make a differentiation almost impossible and would require both NAMA types to follow the same MRV process, especially for the monitoring requirements (i.e. however, only supported components would be subject to funder specific reporting and verification requirements).

Current methodological challenges

One of the first questions to answer when developing a NAMA is how to quantify and monitor the GHG emission reductions. Although many internationally recognised guidelines and methodologies exist for monitoring of both emissions and emission reductions, they typically do not take into account the specific characteristics of NAMAs.

Internationally recognised approaches, such as the Intergovernmental Panel on Climate Change (IPCC) Guidelines for national inventories, exist for quantifying emissions and provide general guidance on key principles to apply to quantification exercises. Also, many quantification and monitoring methodologies have been established for emission reduction projects under different carbon markets (i.e. for offset projects), including the internationally recognised CDM methodologies. Such methodologies translate well when assessing GHG emission reductions from projects, but do not provide guidance to monitor sustainable development benefits nor do they apply to policies and strategies. In some cases, such methodologies may provide a starting point - although it is not a requirement - for the monitoring of (direct) GHG impacts for project-based NAMAs.

For other NAMAs, especially policy- or strategy-based NAMAs, some methodologies have been developed or are under development outside the UNFCCC forum for the quantification of emission reductions, such as the GEF manuals for calculating GHG benefits for projects in different sectors (including transportation¹⁸ and energy¹⁹) and the Greenhouse Gas Protocol - Policies and Actions Accounting and Reporting Standard²⁰ of the World Resources Institute (WRI). This draft version of the WRI Standard helps quantify and monitor mitigation impacts from policies, including NAMAs, and respond to some current methodological challenges, such as setting up a baseline for a whole sector or preventing double counting with emission reductions resulting from other policies. It is currently being tested in various countries, which will contribute to increase its adaptability to the variety of NAMAs.

Existing methodologies and guidelines provide a good starting point and key principles for the monitoring of GHG impacts. However, it is crucial to adapt them to the specificity of each NAMA and come up with innovative approaches to address NAMA specific challenges, such as taking into account spill over or leakage effects, which are not yet addressed by existing methodologies. When considering different GHG methodologies it is also of paramount importance to take into consideration the capacities of the host country and the principle of proportionality of efforts.

Some level of standardisation of methodologies specific for NAMAs is expected over the coming years. Although this may be desirable, a level of top-down standardisation similar to CDM methodologies bears the risk of limiting the diversity of NAMAs and of creating undesirable complications, which may discourage countries to put forward innovative or “complicated” NAMAs (which may at the same time be most desirable in terms of transformational impact). While generic methodologies will provide necessary basic guidance, experience and best practice sharing may help to respond to specific methodological challenges. In some cases, it may be more relevant to adapt to a specific country’s context NAMA specific methodological approaches, which have been developed for another country, without necessarily prescribing this approach at the international level.

Finally, the lack of methodologies or guidance to measure and monitor sustainable development benefits in the context of NAMAs creates as many opportunities as challenges. As these benefits are very much country and sector specific, it would be difficult to capture them in standardised methodologies. In this field, existing monitoring and evaluation practices that countries use as well as experience from development cooperation could inspire NAMA specific practices. Besides, some organisations have developed approaches for monitoring/measuring co-benefits in the context of offset projects (e.g. the CDM Gold Standard²¹ and the Social Carbon Standard²²). Other organisations are also working towards the development of tools to facilitate the monitoring of sustainable development indicators for low carbon strategies²³ and NAMAs²⁴.

Country example 7: Indicators to MRV sustainable development benefits in Peru

In Peru, the focus of the NAMA is on agricultural waste-to-energy activities which are expected to generate sustainable development benefits, particularly in rural areas where access to energy is low. Increase in percent of households with access to renewable energy, decrease of energy costs due to fossil fuel substitution and reduced detrimental impacts on the environment due to controlled agricultural waste disposal are some of the indicators that will be used to measure sustainable development benefits.

18 http://www.thegef.org/gef/GEF_C39_Inf.16_Manual_Greenhouse_Gas_Benefits

19 <http://www.thegef.org/gef/node/313>

20 <http://www.ghgprotocol.org/mitigation-accounting>

21 <http://www.cdmgoldstandard.org>

22 <http://www.socialcarbon.org>

23 ECN (2012).

24 For example, see Winkelman S. et. al. (2011).

For supported NAMAs, it is unclear how much of an influence funders may have on the choice of methodologies. If specific requirements for robust systems are beyond the country's capacity, then the NAMA could also offer the opportunity to build technical MRV capacity. In any case, it is crucial to be pragmatic and design useful and implementable MRV systems. This will enable NAMA stakeholders to assess the NAMA from their own perspective and priorities (see Chapter 3) and thus provide them with appropriate incentives to implement the MRV system.

How to demonstrate causal connections between the NAMA's activities and its impacts?

To ensure robustness, a MRV system will aim to establish a causal connection between the NAMA activities and their impacts. As previously explained, this may be challenging, especially for indirect GHG impacts, and it may not be necessary to establish this connection for each NAMA activity and impact.

For some NAMA activities, the causality between the activity and the impact will be impossible to establish. This is the case of capacity building activities aiming at transformational changes. These activities are difficult to associate with emission reductions or other sustainable development benefits although they enable long term mitigation impacts through removing barriers (e.g. regulatory changes, strengthening of enforcement capacities, etc.). This is also the case for other types of enabling activities. For instance, conducting energy audits will not guarantee the concrete implementation of efficient technologies, which lead to emission reductions. A top-down MRV approach to mitigation impacts of several activities may therefore be more suitable to understand causality than a bottom-up MRV approach applied at the activity level.

Another important factor to take into account is the choice of indicators and objectives associated with those indicators. Selecting realistic objectives and indicators, which are under the control of the NAMA, will help to establish a causal connection. For instance, if a NAMA aims to contribute to the national climate strategy by reducing a specific amount of GHG emissions in a specific sector, the evolution of national emissions may not be the most appropriate indicator. If overall GHG emissions at the national level increase as a result of other sectors, the NAMA has no influence on the emissions development in these sectors. It is, however, important to take an overall perspective of the national emissions in order to assess the performance of efforts in comparison to NAMAs in other sectors.

Box 4: Robustness: wrap up messages

The level of robustness of a MRV system will depend on the selected purpose of the MRV approach and the scope of the NAMA. Robustness does not necessarily mean that all impacts and activities are monitored but rather that the most relevant ones are selected for monitoring on the basis of a pragmatic judgement which takes into account the capacities of relevant stakeholders. It may be preferable to have few, simple indicators monitored properly, rather than setting up a complex system which could raise challenges that would threaten the robustness of the overall MRV system. Robustness should therefore be interpreted within the limits of a country's capacities and should be considered a progressive objective of a MRV system.

Designing pragmatic and implementable MRV systems enables NAMA stakeholders to assess the NAMA from their own perspective and priorities and thus provides them with appropriate incentives to implement the NAMA MRV system.

MRV of the impacts of the overall NAMA may be sufficient if the NAMA aims to demonstrate transformational impacts at a higher level than the activity level. The decision to MRV the impacts of specific NAMA activities should be guided by a clear assessment of need and purpose.

While bottom-up approaches may be more suitable for a NAMA with limited scope, e.g. project based NAMA, a top-down approach, which applies well to policy-based NAMAs, can be sufficient especially if data availability and capacities are limited.

Existing methodologies and guidelines provide a good starting point and key principles for the monitoring of GHG impacts. They need to be adapted to the specificity of each NAMA, using proportionality of effort as a guiding principle.

Some level of standardisation of NAMA specific methodologies is expected over the coming years to respond to MRV challenges. However a similar level of top-down standardisation as for CDM methodologies bears the risk of threatening the diversity of NAMAs and acting as a deterrent for countries to put forward innovative or "complicated" NAMAs. In some cases, it may be more relevant to adapt to a specific country's context NAMA specific methodological approaches, which have been developed for another country, without necessarily prescribing this approach at the international level.

In many cases, the interrelatedness of domestic and supported activities would require all activities to follow the same monitoring process. Distinguishing supported components so that they could be subject to funder specific reporting and verification requirements may be challenging.

For some NAMA activities, the causality between the activity and its impact(s) will be impossible to establish.

5. Feasibility and cost effectiveness

Tailoring the MRV system to the host country's capacities helps ensure that it is technically and economically feasible and that it is implemented in an efficient and robust way. As developing countries may lack specific technical and institutional capacities, the NAMA can offer the opportunity to design and channel support to tailored MRV capacity building efforts. A progressive - or tiered approach - would allow capturing progress by the host country on the MRV front and improve the MRV systems overtime according to an agreed schedule with the funder. Cost-effectiveness of the MRV system, which may also relate to the economic feasibility of the system, is an important aspect to consider when designing the MRV system. Appropriate cost management options can increase cost-effectiveness while ensuring that the MRV system is implemented in a robust way, e.g. focusing on impacts and indicators that generate credible results. In this sense, cost-effectiveness and robustness are therefore very much interlinked and compatible.

Taking into account developing countries' capacities and needs

As shown by experiences with the preparation of national GHG inventories and National Communications, institutions in charge of MRV processes in developing countries have different capacities and needs regarding MRV. Challenges can include:

- a lack of coordination between responsible entities to collect and/or manage data (e.g. no bilateral agreements have been signed between domestic institutions);
- the absence of information sharing systems;
- the lack of appropriate data storage or management systems;
- weak regulatory frameworks (e.g. targeted organisations don't have any regulatory obligations to report GHG emissions or such obligation is not enforced);
- the lack of technical capacity to apply specific methodologies or implement internal processes to ensure data quality; or
- the lack of institutional and human capacities to implement MRV processes.

While most countries face similar issues, MRV needs are institution and NAMA specific. Therefore it is important to design feasible MRV systems according to each NAMA's circumstances and the capacities of the institutions responsible for MRV. This is also crucial to manage expectations of potential funders.

Country example 8: Taking into account the various capacities of the Kenyan NAMA stakeholders

In Kenya, it is expected that the MRV process will require efforts from both the governmental institution leading the NAMA and the state-owned Geothermal Development Company involved in technology implementation. Both entities have various MRV capacity needs, which will require different efforts to ensure the feasibility of the MRV system. For instance, at the level of the state-owned Geothermal Development Company, specific MRV requirements may be integrated into the Company's internal processes, which will require training on data collection and management systems.

Tailoring NAMA specific MRV systems and processes may require a quick gap analysis on MRV capacity to identify potential areas where capacity building is needed and where improvements could be expected overtime. Funders may be open to support activities that strengthen MRV capacities for the NAMA, in which case costs incurred could be included in the NAMA budget. When considering such activities, a long term perspective is valuable to ensure that gained capacities remain in-country (e.g. costs for recruitment and training of personnel are budgeted over a sufficient period of time). Besides, as some organisations are currently undertaking MRV capacity building programmes in some countries, it would be valuable to align with such efforts where appropriate.

Progressive MRV: the tiered approach

Through the implementation of MRV systems for a specific NAMA, overall capacities of institutions responsible for MRV in host countries are expected to increase overtime. It is important to design systems that are sufficiently flexible to integrate such improvements. Capacity improvements in MRV should be viewed from an integrated perspective, also taking into consideration requirements for national reporting processes and requirements.

A tiered approach may be followed to increase the robustness of MRV systems overtime, in line with capacity improvements. This approach could encourage funders to provide support to a specific NAMA as well as to MRV capacity building activities. For instance, it could be planned to increase the number of indicators overtime or to strengthen data management processes. If a complex data management system is required for the NAMA and related costs are budgeted in the NAMA financial proposal, it is very likely that it will take some time before the system is fully operational. A tiered approach would take this into account and build an appropriate schedule based on the planned evolution of the host country's MRV capacities.

Cost management options

The scope and depth of a MRV system have a great impact on the costs of a NAMA. Those costs can be considered incremental for the supported component of the NAMA since they would not have been incurred otherwise. For the unilateral part, the incremental nature of the costs remains an open issue since it may be difficult to distinguish between the MRV system for the unilateral component of the NAMA and the supported component. Would the host country have implemented an equally stringent MRV system for the unilateral component alone?

MRV costs can relate to human (e.g. mobilising existing/new employees to implement the system), institutional (e.g. institutionalisation of cooperation between organisations) and/or technical capacities (e.g. training on new methodologies, development of data systems etc.). Recurring costs such as third party verification for supported NAMAs are also important to consider and discuss with the funder(s) early on in the process.

Fortunately, current MRV requirements are flexible enough to consider cost saving options in order to ensure the cost-effectiveness of MRV systems. Such options include:

- The use of lower tier quantification methodologies;
- Standardised assumptions, e.g. on operating hours of technical equipment, use of default emission factors or grid factors;
- Reduced frequency of data collection, e.g. only every three years, instead of every year; or
- Sampling, e.g. interviews with 20% of the participants after capacity building measures, monitor 15 out of 50 buildings in which energy efficiency measures were performed.

Discussions on those options will ensure that they reflect priorities of both host country and funder. Further options may be considered and shared by countries as experience with the development and implementation of MRV systems becomes available. Such options should not affect the robustness of a MRV system but rather give a guarantee that the system is implementable and cost-effective.

Box 5: Feasibility and cost-effectiveness: wrap up messages

Taking into account the NAMA's specific characteristics and each country's MRV capacities enables the design of a feasible and customised MRV system and process. This facilitates the effective implementation of the MRV system and process.

Expectations regarding MRV can be managed through a tiered approach. Under such approach, MRV capacity improvements would lead to strengthened MRV systems and processes overtime, possibly following an agreed schedule with the funder.

Robustness should be interpreted within the limits of a country's capacities and should be considered as a progressive objective of a MRV system in order to ensure it is feasible and cost effective. Cost-effectiveness, feasibility and robustness are therefore very much interlinked and compatible.

MRV capacity building activities can be part of the NAMA and can be budgeted in the financial proposal. Some cost management options exist and are expected to lead to discussions amongst funders and host countries.

6. Conclusion

All MRV dimensions are of importance to different NAMA stakeholders, including the host country and funder(s). Expectations may differ in terms of indicators for judging effectiveness, yet they all could be met through a single MRV process. Meeting these expectations can prove challenging if the MRV approach lacks feasibility or cost-effectiveness and does not allow stakeholders to assess the NAMA's effectiveness from their own perspective.

To design implementable systems and processes, it is valuable to consider MRV as a supporting tool to implement and improve actions overtime rather than a burdensome system established for an external purpose. In most countries, MRV is not an entirely new concept, and monitoring and evaluation practices for development programmes can provide a good starting point. Also, robustness does not necessarily mean that all impacts and activities are monitored, but rather that the most relevant are selected for MRV on the basis of a pragmatic judgement which takes into account the capacities of relevant stakeholders and cost-effectiveness. Taking into account each country's MRV capacities enables the design of a feasible and tailored made MRV system and process, which facilitates effective implementation and encourages countries to develop innovative NAMAs

Standardised solutions may provide useful common grounds on many aspects. For instance, harmonisation of reporting tools (e.g. standardised formats) is useful to ensure coherence of submitted information. Existing methodologies and guidelines also provide a good basis and key principles for the monitoring of impacts. However, for some issues, the diversity of NAMAs requires approaches tailored to the selected purpose of the MRV system and to the host country's context. Sharing experiences with applying such approaches will provide further clarity on expectations from different stakeholders on the level of transparency, robustness, feasibility and cost-effectiveness. It will also help identify innovative solutions to address various challenges such as addressing underperformance under a result-based approach; monitoring impacts of activities funded by multiple sources and establishing causality between specific NAMA activities and impacts.

In both cases - standardisation and experience sharing - the MRV capacities of the host country will influence the solutions to any MRV challenge. In many ways, the NAMA can offer the opportunity to strengthen MRV capacities, possibly through a tiered approach, and therefore improve policy design and decision making with regards to climate change mitigation. Under such an approach, MRV capacity improvements would lead to strengthened MRV systems and processes overtime, possibly following an agreed schedule with the funder.

Similar innovative solutions are expected on many MRV aspects through sharing NAMA-related experiences or experience of NAMA stakeholders with the evaluation of development programmes. A second paper based on more advanced and final MRV plans for the five Mitigation Momentum countries will aim to share concrete lessons learned from NAMA-related experiences. Besides, as development cooperation has a long track record of programme and impact assessment systems and processes, there may be an opportunity to learn from such experiences and replicate best practices in the context of NAMAs. These experiences may prove equally valuable for designing NAMA MRV systems as MRV methodologies under development.

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