



MRV for NAMAs: Tracking Progress while Promoting Sustainable Development

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Executive Summary

International experience with Measurement, Reporting, and Verification (MRV) has focused on accounting of greenhouse gas (GHG) emissions at the national and project levels. National reporting of emissions has centered on the preparation of national communications which are required every four years for developed countries. While national communications are currently voluntary for developing countries, they will be required every four years under the Cancun Agreements. Project level MRV has centered on projects proposed by developing countries under the Clean Development Mechanism (CDM) and includes detailed emissions reporting and verification. Nationally Appropriate Mitigation Actions (NAMAs), though loosely defined in the UN negotiations so far, have the potential to catalyze large-scale change (e.g., sector-wide) within a country and can achieve significant GHG and sustainable development benefits. Supported and Unilateral NAMAs, the focus of this paper, are a new construct that can help achieve much-needed GHG reductions by developing countries that are counted towards their own Cancun Accord pledges; unlike CDM credits, they are not used to help Annex I countries meet their targets.

MRV for NAMAs is being discussed both as a way to track the implementation and success of actions supported through bilateral agreements as well as in the official UNFCCC context. Accordingly, this paper seeks to address MRV of NAMAs in two distinct contexts: 1) bilateral reporting of progress on supported NAMAs based on agreement between NAMA host countries and developed country NAMA financial supporters, and 2) MRV of NAMAs required by the UNFCCC as part of reporting on national emissions by developing countries. The MRV process between NAMA implementers and NAMA supporters is potentially quite flexible and can be tailored to the specific NAMA under development as well as to the needs of both Parties. For example, while GHG reduction is a key goal of NAMAs, demonstrating progress on sustainable development may be important to garnering domestic political support for NAMAs and attracting domestic investments necessary for implementation. In contrast, the international MRV process will focus on GHG emissions and on building the capacity of developing countries to collect, report and verify emissions over time. This paper offers recommendations for effective MRV in each context.

In the context of bilateral agreements, CCAP proposes a broader approach to MRV for NAMAs that includes metrics for: 1) Actions and Progress, 2) GHGs and 3) Sustainable Development (economy,

health, equity, etc.). Action metrics are particularly helpful in the early stages of NAMA implementation, and can demonstrate the NAMA is being implemented as planned, whereas progress metrics can show meaningful progress against a reliable historic baseline. GHG metrics can illustrate the rough magnitude of emissions reductions stemming from the NAMA or from a larger set of actions within a sector. However, estimates of emissions reduced will be less accurate than other metrics of progress due to uncertainties in projections of business-as-usual (BAU) emissions. Sustainable development metrics can facilitate tracking the impacts of greatest interest to the host countries. This broader approach to MRV could help “sell” NAMAs to domestic and international audiences and enhance policy performance, thus shifting MRV from a perceived burden to a valuable asset.

Beyond reaching agreement on an approach to MRV, bilateral agreements should consider the following design features to support effective NAMA implementation:

- Climate finance should leverage private and public funds, and NAMA proposals to donors should describe plans for financial leveraging.
- NAMA funding could be disbursed in tranches as MRV milestones are reached.
- Capacity building to support planning, development and implementation of MRV metrics should be integrated into the NAMA financing plan.

In the international UNFCCC reporting context, CCAP agrees with the flexible approach outlined in the current negotiating text on MRV for NAMAs, including the notion that countries should report on projected emissions for the sector, estimated outcomes, and quantitative goals and progress. The text offers an appropriate level of flexibility in the methods and metrics that are used, allowing Parties to decide whether to report on a single NAMA or a suite of NAMAs. This latter issue is important in cases where there is more than one NAMA within a particular sector. In such instances, it would be extremely difficult to isolate the impact of a single NAMA.

While we agree that reporting on emissions outcomes is necessary to give a general sense of the impacts and progress, the UNFCCC should be realistic about the level of accuracy that might be expected. In particular, GHG reductions are estimated based on baseline projections that may reflect a high degree of uncertainty. We would encourage developing countries to reflect this uncertainty through development of alternative baseline scenarios and/or to present alternative metrics that provide a more accurate picture of implementation progress and impact.

Finally, given the expectation that the reported GHG emissions reductions will not be exact, we also believe that a key purpose of this reporting should be to facilitate capacity building on MRV. While there may be a tendency to simply add up the NAMA impacts to assess recent progress, we have considerably more confidence in the national inventory data as a means to evaluate whether the international community is on track to achieve the desired emissions and stabilization pathways.

I. OVERVIEW

Nationally Appropriate Mitigation Actions (NAMAs) present a compelling opportunity to advance developing country sustainable development and GHG reduction efforts. NAMAs hold the promise of catalyzing transformative changes on a broad scale, such as entire economic sectors, that will help bend the emissions curve and steer developing country economies onto low-carbon pathways. Given the projected future growth in developing-country emissions, the world can only meet its goals for stabilization of GHG concentrations in the atmosphere if developing countries reduce their emissions intensity alongside more stringent developed country targets. The measurement, reporting, and verification (MRV) of NAMAs is crucial to assess progress in achieving these outcomes.

Two types of NAMAs are internationally approved, with a third currently under discussion for the future:

- Unilateral NAMAs – autonomous actions taken by developing countries to reduce domestic GHGs;
- Supported NAMAs – actions undertaken with financial or other external support to reduce domestic GHGs; and
- Credit-Generating NAMAs – actions that produce credits for sale in the global carbon market to offset Annex I country GHGs (not yet approved).

Unilateral and supported NAMAs are not offsets, but are designed to achieve GHG reductions in developing countries that are additional to Annex I commitments and contribute to the global reduction goal. In contrast, credit-generating NAMAs, if approved, would not produce any net global GHG emission reductions. In comparison to the CDM, under a credit-generating NAMA, it is anticipated that credits would be earned against a more stringent baseline that reflects achievement of unilateral and/or supported actions.

Advancing Sustainable Economic Development is Key. Sustainable development (SD) is a top priority for developing countries. NAMAs with significant SD benefits (economic growth, health, equity, access to clean energy, etc.) are most likely to garner political and investor support, as they address core public concerns. Tracking progress on SD will help improve the effectiveness of SD policies over time, make the case for replication and attract private and public investments to leverage NAMA finance.

MRV in Context. Historically, international MRV discussions focused on accounting of GHG emissions at the national and project levels (e.g., national communications and CDM). At the project level (under the CDM), emphasis is placed on ensuring that climate funds achieve “additional” reductions beyond what would have happened in a business-as-usual (BAU) reference case. Because the CDM results in credits for emissions reductions that are sold into the carbon market and used to offset emissions from Annex I countries, emissions baseline and reduction estimation methodologies strive for conservative assumptions so as not to over-estimate reductions. If offset credits are granted for “phantom reductions” that did not actually occur, the Annex I country relying on the offsets would emit a higher level of GHGs that would not be counter-acted by developing country reductions.

II. MRV OF NAMAS—TWO DISTINCT CONTEXTS

MRV for NAMAs is being discussed both as a way to track the implementation and success of actions supported through bilateral agreements as well as in the official UNFCCC context. Accordingly, this paper seeks to address MRV of NAMAs in two distinct contexts:

- ***Bilateral MRV agreements between NAMA host countries and developed country NAMA financial supporters.*** In this case, metrics and indicators are decided bilaterally as appropriate to national circumstances, the nature of the NAMA, and the particular needs of the donor and host countries. Reporting occurs bilaterally.
- ***International MRV through the UNFCCC process.*** In this case, the required metrics, data, and indicators are decided by the international negotiating community and reported in Biennial Update Reports of the national communications which contain the national greenhouse gas inventory. The standards for MRV reporting in the UNFCCC context will be more rigid than those used in bilateral MRV agreements.

In Sections III and IV below, CCAP makes recommendations for how MRV should be addressed in each context. Section III discusses and recommends approaches to MRV NAMAs under bilateral agreements between NAMA host countries and developed country NAMA financial supporters. Section IV discusses MRV of NAMAs as part of the UNFCCC-required reporting on national emissions by developing countries. Key considerations include ensuring accurate data to track how well NAMAs are helping developing countries to meet international mitigation goals while at the same time minimizing reporting burden on developing countries so that MRV does not deter NAMA development.

III: BILATERAL MRV AGREEMENTS BETWEEN NAMA HOST COUNTRIES AND DEVELOPED COUNTRY NAMA SUPPORTERS

Bilateral agreements between NAMA host countries and developed country NAMA supporters offer flexibility in determining how the NAMA impact is measured to meet the needs of both parties and to overcome challenges in estimating absolute GHG emissions reductions from NAMAs.

GHG Emissions Reduction Estimates for NAMAs Entail A Degree of Uncertainty. While GHG emissions reductions are a key outcome of NAMA implementation, due to uncertainties involved with projecting future emissions, the process of measuring GHG reductions from the NAMA may entail more uncertainty than with national and project-level emissions measurements. Also, some NAMAs may be implemented in stages, and the full emissions outcome may not be apparent in the early phases. This uncertainty is acceptable considering that the emissions reductions are not being made to offset

developed country emissions. In contrast, measurement of aggregate GHG emissions (e.g., using data on fuel use and forested land) can and should be conducted with a high level of accuracy.¹

- Before emissions reductions from NAMAs can be estimated, it is first necessary to project the business-as-usual emissions absent the NAMA. Because these projections involve making assumptions about future market, behavioral and technological factors that are outside the direct control of the NAMA implementing countries, there is inherent uncertainty in these baseline projections. Therefore, calculating the NAMA impact—the difference between the baseline emissions and actual emissions in the sector(s) addressed by the NAMA—also builds in uncertainty.
- Further, the full NAMA impact may not be immediately visible, particularly in cases where emissions reductions are dependent upon changes in behavior or where implementation is staged across successive NAMAs over a longer period. In such cases, emissions reporting alone may not present a complete picture of the expected NAMA impact. Extra considerations might include whether the NAMA advances low-carbon development and supports developing countries to expand and replicate the policies.
- Finally, because Supported and Unilateral NAMAs are not sold as offsets, there is no risk that “phantom” reductions will replace more certain reductions from Annex I countries, nor that such NAMAs will undermine the credibility of the carbon market.

Addressing Uncertainty for GHG Measurement of NAMAs. Whereas precise measurement of the GHG impact of NAMAs may not be possible, use of alternative “action” and “progress” metrics (discussed in the next section) can provide confidence that the desired supported actions are taking place and that real progress is being made that will lead to GHG reductions. At the same time, it is possible to develop bounded estimates of the tons of GHGs reduced as a result of the NAMA using plausible baseline scenarios. For example, NAMA proposals could consider several baseline scenarios (e.g., low, medium, high) reflecting different assumptions about market, behavioral and technological factors and present a range of GHG savings estimates. NAMA proposals would then discuss the conditions necessary for achieving the various levels of policy effectiveness and penetration. Such NAMA proposals would indicate success and risk factors to date (e.g., stage of policy development and implementation), and define milestones and performance indicators useful for assessing the emissions trajectory over time. After implementation, GHG savings estimates could be periodically refined based upon progress indicators and other influencing factors to reassess the likely emissions trajectory.

MRV Metrics for NAMAs (Under Bilateral Agreements). NAMA funders and implementers are concerned with getting effective, accountable actions underway as soon as possible. NAMA design should include definition of *meaningful* metrics that address key host and donor country concerns and that can be *practically* tracked over time. It is crucial that the metrics track factors that can be measured with certainty and are within a country’s policy control. CCAP proposes a broader approach to MRV for

¹ The Wuppertal Institute makes similar arguments in “Current Developments in Pilot Nationally Appropriate Mitigation Actions of Developing Countries (NAMAs),” August 2011, p. 25.

NAMAs that addresses the needs for accountability and supports assessment of the NAMA impact and contribution to sustainable development:

1. **Action and Progress metrics** would demonstrate that NAMAs are being implemented and producing results. Sample action metrics could include approval of a renewable energy feed-in tariff, installation of a specific climate-friendly industrial technology, or construction of a bus rapid transit (BRT) line. Progress metrics could include penetration rates, such as percentage of electricity generated from renewable sources, percentage of steel plants with dry gas quenching technology, or the share of trips taken on public transit. Of note, many of these metrics are also necessary to calculate GHG impacts. Progress metrics should ideally be compared to historic data and trends to evaluate overall effectiveness and avoid uncertainties associated with BAU forecasts.
2. **GHG metrics** fall into traditional MRV constructs and would include measures of aggregate GHG emissions, reference levels, and reductions. GHG intensity metrics are especially useful in the context of growing economies, including economy-wide (GHG/GDP) and sectoral metrics: electricity (GHG/MWh), steel (GHG/tonne), or transportation (transport GHG/capita).
3. **Sustainable Development metrics** could include median incomes, the amount of leveraged private and public investment (e.g., in wind turbines or new development near transit), household travel time and cost savings, expanded access to clean energy, better air quality, and health improvements.

Capacity building. Capacity building is one of the ways that international support will be delivered to developing countries to support climate mitigation and adaptation. It is anticipated that capacity support will typically be provided as part of a Supported NAMA funding package, including support to ensure that the NAMA ultimately fosters an improved ability to measure the effects of the actions. In the context of the recommended broader approach to MRV for NAMAs developed through bilateral agreements between NAMA host countries and developed country NAMA supporters, it will be important for the capacity support to cover measurement capacity, data quality and program evaluation efforts, as needed, for all the agreed metrics.

Accountability for NAMAs. The proposed broader approach to measurement would provide the necessary information to ensure accountability for NAMA implementation and to assess and improve the effectiveness of NAMAs through domestic policy adjustments. Accountability for Supported and Unilateral NAMAs would be demonstrated by execution of the actions specified in the NAMA proposal, making progress on overcoming barriers and achieving expected outcomes. As discussed below, we propose that NAMA funding installments be conditioned upon achievement of specific Action and Progress milestones. MRV using Action and Progress metrics could comprise an important and useful component of bilateral agreements for Supported NAMAs, with the details agreed between developing country and the funder.

Effectiveness of NAMA. A variety of effectiveness measures could be worthwhile, including net outcomes (GHGs, SD), progress metrics (e.g., penetration rates), cost effectiveness and amount of leveraged finance. Cost effectiveness could be considered by the traditional \$/ton measure, as well as outcome-based metrics (e.g., \$/MWh of renewables, \$/transit trip) and comprehensive measures that include broader economic and SD benefits. Tracking direct and indirect finance for NAMA implementation would indicate how effectively climate funding is being leveraged, whether from public or private source. Climate funders should consider a variety of such effectiveness measures when deciding which NAMAs to fund. We encourage climate funders to prioritize NAMAs that present a compelling case that they will deliver tangible short-term changes and foster the conditions for major GHG and SD benefits over the medium and longer term.

IV. MRV of NAMAS IN THE UNFCCC

MRV of NAMAs is also being discussed in the context of developing country reporting under the UNFCCC. International MRV will take place within three separate venues: Biennial Update Reports, National Communications, and International Consultation and Analysis. The UNFCCC Secretariat and parties continue to consider ideas and proposals on expectations for MRV of NAMAs and on the venue(s) where this reporting will take place. The current draft negotiating text is fairly consistent with the ideas already presented in this paper on MRV for NAMAs, and offers considerable flexibility.

Biennial Update Reports (BURs) National Communications submitted to the UNFCCC every four years entail reporting of national greenhouse gas inventories as well as emissions breakdowns by sector. Biennial Update Reports (BURs), to be submitted every two years between National Communications, will add further detail, including the most relevant and recent numbers on inventories, mitigation actions, support needed and received, a table summarizing previous inventories, the use of IPCC guidelines, and the state of implementation of mitigation actions. Specifically on NAMAs, the current negotiating text calls for reports of projected emissions for the sector, quantitative goals and progress indicators, and to the extent possible, estimated emissions reductions. This text does not specify the “outcomes” metrics to be used, suggesting instead that they will “depend on type of action”. This language appears to allow developing countries to decide whether to report on metrics they are already planning to track in the context of their bilateral agreements with donor countries.

The current text also offers flexibility on whether to report on a single NAMA or a suite of NAMAs. This issue is important in cases where there is more than one NAMA within a particular sector, for example, if there are multiple NAMAs (e.g., energy efficiency, renewable energy) that all seek to reduce emissions from the country’s electric power sector. In such instances, it would be extremely difficult to separately isolate the impact on emissions of a single NAMA.

While we agree that reporting on emissions outcomes is necessary to give a general sense of the impacts and progress, the UNFCCC should be realistic about the level of accuracy that might be expected. In particular, GHG reductions are estimated based on baseline projections that may reflect a high degree of uncertainty. We would encourage (though not require) developing countries to reflect this uncertainty through development of alternative baseline scenarios and/or to present additional metrics that provide a more accurate picture of implementation progress and impact.

The current text strikes the right balance in that international MRV should not be too much of a burden for developing countries at the beginning, while offering the international community an initial sense of the level of effort and rough emissions reduction impact achieved under the NAMA framework.

International Consultation and Analysis (ICA)

International Consultation and Analysis (ICA) allows the international community to gain greater understanding of the actions taken in different developing countries as reported in the Biennial Update Reports, and to assess where capacity support can help improve the methods and metrics used for reporting. Importantly, the ICA does not call for additional data beyond what was already reported to the UN. Purposes of ICA include providing for transparency of NAMAs, sharing of best practices to facilitate NAMA development, implementation and MRV, and identifying needs for capacity support. According to the UNFCCC, the ICA should be non-intrusive, non-punitive, facilitative, take into account national circumstances, not be overly burdensome, not be more onerous than the review process for developed parties, and not impose new commitments on developing countries.

While the specific process to assess BURs through the ICA is still under debate, it appears that ICA of BURs will involve technical analysis of: BUR/GHG inventories and methodologies, NAMAs and status of their implementation, the domestic MRV system, and information on support received. The analysis will try to (1) determine if the required information has been submitted, (2) determine if actions are implemented (3) understand methodologies used, and (4) identify difficulties in NAMA planning, implementation and MRV.

V. USING MRV TO SUPPORT NAMA IMPLEMENTATION

Beyond MRV, bilateral agreements should consider the following design features to support effective NAMA implementation:

- **Financial leveraging.** To enhance the overall impact of the NAMA, climate finance should leverage private and public funds, and NAMA proposals to donors should describe plans for financial leveraging.
- **Make funds contingent on action.** NAMA funding could be disbursed in tranches as MRV milestones are reached.
- **Capacity support for MRV metrics.** Capacity building to support planning, development and implementation of MRV metrics should be integrated into the NAMA financing plan.

Progress-Based Funding Tranches for Domestic Implementation. Supported NAMA funding should be disbursed in tranches, using the metrics that make sense for the host country. NAMA narratives would identify key implementation steps, propose the level and type of support needed for each step, and identify metrics to evaluate implementation and progress. Below are some general descriptions of how funding tranches might be defined, including examples for specific sectors.

Tranche 1. Design, Initial Implementation and Capacity Building. The first funding installment would come up-front and focus on initial implementation steps. It would be predicated upon domestic policy and funding commitments to complement climate funds and would include capacity enhancement support for measurement and program evaluation. *Sample* milestones could include:

- Renewable energy NAMA: development and approval of a feed-in-tariff
- Urban Transport NAMA: construction of a BRT line, changes to land use zoning rules around stations, pedestrian accessibility improvements
- Forestry NAMA: initiation of pilot projects and development of an MRV system

Tranche 2. Full-Scale Implementation. Upon achievement of milestones agreed to for Tranche 1, the Tranche 2 funding would be disbursed to enable broader implementation. Developing countries would commit to execute specific actions and/or achieve specific progress levels. They would also track impacts on GHGs and SD. *Sample* metrics:

- **Renewable energy NAMA**
 - Action: Delivery of financing to developers
 - Progress: X% of new generation from renewable energy
 - GHGs: Average GHG/MWh
 - Economy: Amount of private investment in renewables
 - Cost-Effectiveness: \$ per MW of renewable capacity
 - SD: % of population with access to clean energy
- **Urban Transport NAMA**
 - Action: Construction of 2nd BRT line, tax incentives for transit-oriented development (TOD)
 - Progress: Y% of trips in the corridor on transit
 - GHGs: Average transportation GHG per capita
 - Economy: Amount of private investment in TOD
 - Cost-Effectiveness: Cost per transit rider
 - SD: Reduction in travel times and costs, pedestrian safety
- **Forestry NAMA**
 - Action: Policy strategy to scale up from small pilot projects
 - Progress: Z% of forested land protected
 - GHGs: Hectares protected x CO₂ sequestered annually/hectare
 - Economy: Incremental economic value compared to deforestation

- Cost-Effectiveness: Cost per acre protected
- SD: Income levels near protected areas

Tranche 3. Replication. Tranche 3 funding would enable deeper penetration levels and replication efforts through domestic policy, financing for expansion, and efforts to overcome barriers with continued tracking of Progress, and SD.

Leveraging NAMA Finance through Careful Planning. Developing countries will spend trillions of dollars in public and private funds for energy, industrial and transportation infrastructure over the coming decades. The type, design, and location of infrastructure built will have major impacts on GHGs and SD. Some of these investments will be “green” and decrease GHG emissions (wind turbines, BRT), others will be “brown” (coal plants, highways) and increase emissions, and still others will be neutral. NAMA finance, even at the \$100 billion per year level pledged by developed countries by 2020, is likely to cover only a small portion of “green” investments. Thus, NAMAs will be most effective when climate finance is deployed to leverage private and public funds to maximize green investments and minimize brown ones. NAMA narratives should describe strategies and plans for leveraging NAMA finance like reducing private sector risks² or shifting government funding priorities to favor low-carbon infrastructure.

VI. CONCLUSION

NAMAs present a compelling opportunity to advance developing country sustainable development and GHG reduction efforts. The recommended method to MRV these actions will depend on the context. International climate negotiations have not clearly defined NAMAs and their MRV, and there is reluctance by developing countries to develop a prescriptive approach to MRV within the UNFCCC reporting venues. That said, use of metrics other than GHGs can add significant value to measure the wide range of NAMA impacts. Bilateral agreements on funds for supported NAMAs offer an opportunity for innovation in crafting NAMAs and proposing effective and practical evaluation approaches. In summary, we offer the following ideas for consideration by developing country policymakers, climate negotiators, climate funders and other interested parties:

1. Supported and Unilateral NAMAs produce GHG emission reductions that constitute a developing country’s contribution to protection of the atmosphere as well as producing sustainable development and other co-benefits.
2. Since Supported and Unilateral NAMAs are not offsets and the scope will typically be broader, a high level of precision in estimating the reference case or BAU level of emissions is not critical and may not be possible.
3. Bilateral MRV of individual Supported NAMAs should take a broader approach by incorporating metrics for Actions and Progress, GHGs, and Sustainable Development. These broader metrics

² For example: writing down costs of innovative technologies so that investors can get a reasonable return, providing risk insurance against currency and other risks, or providing the “glue” that puts a deal together, such as finance to overcome specific barriers (e.g. bank inexperience with energy efficiency investments).

tailored to local priorities can help leaders to “sell” climate-friendly policies to the public and to investors.

4. The UNFCCC approach to MRV for NAMAs should also be flexible, allowing use of various metrics and methods in reporting projected emissions, estimated outcomes and quantitative goals and progress. Parties should also be permitted to decide whether to report on a single NAMA or a suite of NAMAs.
5. The UNFCCC should be realistic about the level of accuracy that might be expected in reports of emissions reductions from NAMAs. Developing countries can express this uncertainty through development of alternative baseline scenarios. They can also present additional or alternative metrics that provide a more accurate picture of implementation progress and impact.
6. A key purpose of reporting NAMA outcomes under the BUR and in consultations via the ICA should be to facilitate capacity building on MRV.
7. NAMA finance should be provided in tranches that consider the various implementation steps and use Action and Progress indicators.
8. NAMAs will be most effective when climate finance is deployed to leverage private and public funds, such as working to reduce private sector risks and change government funding priorities.
9. Capacity building will be needed to enhance measurement ability, support use of broader MRV metrics, and improve data breadth and quality. Capacity assistance can also support improved program evaluation efforts, improving the effectiveness of the NAMA and shifting MRV from a perceived burden to a valuable asset.



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