
4.2

Measuring, reporting and verification of NAMAs and their support

Considering capacity, corruption and commitments

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Although industrialized nations are widely agreed to be historically responsible for climate change, it has become increasingly evident that mitigation efforts by these countries alone will be insufficient to ensure that greenhouse gases (GHGs) do not cause a global temperature rise of more than 2°C above pre-industrial levels. GHG emissions from developing and emerging economies (non-Annex I countries) are growing rapidly. In absolute quantities, China is now the world's largest emitter,² and projections suggest that, by 2025, emissions from developing countries including Brazil, China, India and Mexico could outpace those of developed countries.³

While the principle of 'common but differentiated responsibilities' has been interpreted to mean that developed countries should take the lead on emissions reductions, international negotiations have in recent years recognized that developing countries⁴ also need to work towards reducing emissions and developing their infrastructure along a low-carbon pathway. The 2007 Bali Action Plan called for developing countries to consider undertaking measurable, reportable and verifiable (MRV) 'nationally appropriate mitigation actions' (NAMAs).⁵ The agreements reached at COP 16 in Cancún in 2010, called the Cancún Agreements, reconfirm that commitment by clearly stating that developing countries will introduce NAMAs to achieve a deviation in emissions relative to business-as-usual emissions in 2020. Unlike the somewhat ambiguous acceptance of the Copenhagen Accord, the Cancún

Agreements' broad support boosts emerging countries' incentives to design and implement mitigation actions.

The Cancún Agreements also provide the tools needed for NAMAs to be accomplished. They call for a registry to match finance, technology and capacity-building support from developed countries, with NAMAs from developing countries – also to be listed in the registry – that require the international support. The Cancún Agreements further agreed that NAMAs receiving international support would be subject to domestic and international MRV following guidelines still to be developed, while NAMAs that required no international support would be subject to domestic MRV also following as yet undetermined guidelines.

How these terms – NAMA and MRV – are developed in practice continues to be discussed in the international arena, just as they are being operationalized in many national and local contexts. Broadly speaking, NAMAs can be any range of activities by a developing country to reduce GHG emissions, from cap-and-trade programmes or carbon taxes to technology deployment programmes or sustainable development initiatives. Although more precise categories continue to be negotiated, three general types might be envisaged: unilateral NAMAs, requiring no international funding; supported NAMAs, using international financing, capacity-building or technology support from developed countries; and credited NAMAs, earning credits from the international carbon market.⁶

Box 4.2 Major sources of public financing for developing-country mitigation

Public support for mitigation financing currently comes through a variety of channels. Bilateral support from developed countries (Annex II)⁷ under the United Nations Framework Convention on Climate Change is reported through national communications,⁸ or via the Global Environment Facility (GEF). Between 2003 and 2006 the GEF's annual funding to climate change projects was about US\$163 million, and between 2003 and 2007 OECD Development Assistance Committee members contributed an annual average of US\$3.5 billion specifically for climate change mitigation.⁹ Multilateral development banks (MDBs) also fund climate change mitigation in various ways: average annual commitments to clean energy and energy efficiency in developing countries totalled some US\$4 billion annually in 2006 and 2007,¹⁰ and the World Bank also purchases GHG emissions reductions credits derived from mitigation projects based in developing countries.

The MDBs, via the World Bank, also contribute to the Climate Investment Funds (CIFs) – financing instruments aimed at driving low-carbon and climate-resilient development. By July 2010 the Clean Technology Fund (CTF), one programme under the CIF umbrella, had allocated over US\$4 billion to investment projects related to 13 investment plans in countries that are ODA-eligible.¹¹ Plans include the development of wind power (Egypt), concentrated solar power

(Middle East and North Africa), energy-efficient transport (Mexico) and geothermal energy (Indonesia).¹² Non-governmental organizations (NGOs) have noted a lack of transparency in the process used to select country investment plans, and have called for greater involvement from civil society in the development of investment plans.¹³ The newer Scaling-up Renewable Energy Programme in Low-income Countries, established at the Copenhagen conference in December 2009, had received almost US\$300 million in pledges by mid-2010.¹⁴ Discussion regarding the governance and transparency of bilateral funding and the CIFs – which also include funds for adaptation – are discussed more broadly in part 5 (see Rebecca Dobson, section 5.1.1).

Towards greater trust and cooperation

Though progress was made in Cancún, international negotiations over MRV systems have been particularly contentious. Although, historically, reporting has been a common feature in multilateral environmental agreements, the verification of such data has not.¹⁵ Implementing MRV systems could be seen to be leading developing countries towards the eventual introduction of binding emissions reductions targets,¹⁶ or placing undue hardship on developing countries.¹⁷ Acknowledging these potential problems, the Cancún Agreements explicitly decided that content and frequency of national communications from non-Annex I parties would ‘not be more onerous than for [Annex I States]’. To achieve this, as has been the case with national communications, developed countries will provide financial support for developing countries’ reporting. One would view this as the first and basic step that ensures trust-building and signals commitment towards cooperation.

Robust implementation of MRV systems should be welcomed as a tool for enhancing trust between both Annex I and non-Annex I countries and between citizens and their governments. It is also important to acknowledge that a number of countries that are likely to rely on external support for mitigation activities are also those for which perceptions of corruption are high.¹⁸ For developed countries, therefore, a robust MRV system may provide assurances that resources for mitigation actions will be managed responsibly, even in countries or regions sometimes perceived as demonstrating lower levels of government accountability. Further, within countries that will receive international support for NAMAs, MRV may provide citizens with an added layer of accountability to ensure that their governments are implementing effective mitigation strategies and programmes.

Developing countries also stand to benefit from an MRV system that keeps closer tabs on support from developed countries. Experience from development aid demonstrates that support often has been delivered against timescales ill-suited to

their intended projects and that allocation may be managed by multilateral organizations that inadequately represent the interests of developing countries.¹⁹ Tracking commitments in the context of climate change can be particularly difficult. One study examining pledges for mitigation and adaptation made by the European Union in 2001 found that it was impossible to say with any certainty whether commitments had been met by 2009.²⁰ A strong MRV system that links mitigation actions to specific funding commitments will help alleviate much of the financing uncertainty faced by developing countries. For both parties, rigorous measuring, reporting and verifying of NAMAs and of their support should help develop trust and facilitate cooperation. Creating such a system presents some challenges, however.

Overcoming challenges in measuring, reporting and verifying NAMAs and their support

Developing capacity

Among the biggest challenges for implementing MRV systems for NAMAs will be obtaining sufficient financing and technological support to ensure reliability and accuracy and to enable the development of in-country expertise. At the national level, the experience of self-reporting in other governance regimes suggests that developing in-country expertise in monitoring and reporting can fall short even after decades. For example, 20 years after the World Trade Organization's (WTO's) Trade Policy Review Mechanism was introduced, only one-fifth of 70 developing countries had independent agencies to undertake policy reviews.²¹

Within the climate regime, developing and developed countries alike have struggled with accuracy in their national communications, and long delays between submissions have not been uncommon.²² Funding and support for developing countries' national communications have been sporadic, making it difficult to develop ongoing systems for monitoring and reporting on emissions.²³ With regards to reporting frequency, the Cancún Agreements state that non-Annex I parties will submit national communications and inventories every four years, along with biennial update reports on GHGs (least developed countries and small island developing States will have greater flexibility in meeting these timelines). While the Agreements state that this should be done according to capacity, enhanced reporting can be expected to place strain on a country's financial and technical resources. In mid-2010, the expert group²⁴ that provides technical support for the development of national communications noted a lack of technical support for non-Annex I countries undertaking their third national communications.²⁵ Thus, as guidelines for domestic and international MRV are developed, a simultaneous challenge will be to ensure

that national institutions tasked with measuring, reporting and verifying mitigation actions in developing countries are given the support they need – both from developed countries and civil society – to build domestic-capacity.

For supported NAMAs, international MRV systems could include in-country visits by expert reviewers, allowing for more accurate verification of emissions and policy actions, though this would require significant resources.²⁶ Centralized reviews, which the UNFCCC currently coordinates for Annex I countries, will need further resources for reliably gauging mitigation policies in developed and developing countries. Insufficient capacity to support international or domestic MRV systems will result in lower accuracy in tracking the progress of mitigation efforts.

Designing adaptable MRV models

A second challenge for the years ahead will be to develop MRV guidelines that accurately capture diverse mitigation efforts and low-carbon development strategies. Some mitigation actions will not lend themselves to measurement against emissions targets – a plan to implement broad multi-sector energy efficiency policies, for instance. Ensuring that these efforts are nevertheless subject to measurement and review that allows comparison between countries, while allowing for differences in national contexts, will be crucial to ensuring that MRV systems are both relevant and fair.²⁷ Efficient and complete reporting will play a critical role in this aspect.

NAMAs that allow the measurement of emissions impacts may also stretch the boundaries of the current structures in place for accounting and verifying emissions. Credited NAMAs, for example, would present a threat of double-counting if a mitigation project was counted both as a reduction in a developing country's emissions while simultaneously creating emissions reductions credits used by an Annex I nation to count against its own emissions. Proposals to avoid this outcome include 'walling off' the emissions reductions from pre-existing Clean Development Mechanism (CDM) projects so that they cannot count against the emissions reductions goals of supported NAMAs.²⁸

If proposals for the crediting of NAMAs move forward (see Wagner, Keohane and Petsonk, section 4.3.5 in this volume), entire industrial sectors in developing countries will be expected to reduce emissions collectively. This approach could present a number of challenges for MRV systems. In China, for instance, an estimated 1200 companies make up the iron and steel sector, the largest of which provided only 6 per cent of domestic crude steel production in 2007.²⁹ Relying on so many small producers to provide the data necessary to determine emissions reductions could present significant accuracy and resource challenges for MRV. Rules for the

measurement and reporting of a broad menu of mitigation actions must be agile enough to accurately address such nuances.

Addressing external and internal corruption

As NAMAs become operational, internal and external corruption and accountability risks are likely to present themselves. The establishment of CDM projects throughout the developing world has already highlighted examples of independent verification companies undertaking lax or inaccurate assessments of mitigation projects (see section 4.3 in this volume). There are also concerns that criteria determined by the host countries to assess the sustainable development benefits of CDM projects are vague, that the approval process is vulnerable to corruption and that, in some cases, conflicts of interest are a risk if the authorities entrusted to review CDM projects can also advise on project proposals.³⁰

NAMAs that have no direct emission reduction target should nevertheless have quantifiable milestones for project implementation. MRV of these projects could thus create a more structured system of oversight that increases project accountability. Failure to design measurements that are objective and demonstrable could increase the incentives for those engaged in the project to siphon off funding for personal gain at the cost of project effectiveness. Large-scale mitigation projects involving significant financial flows may also prove susceptible to corruption throughout the project cycle if domestic verifiers have an incentive to create favourable reports. A truly independent system with public oversight will need to be implemented to ensure that MRV systems do not become the final stage of complicity in a corrupt process.

As the form of mitigation actions expands in developing countries, corruption risks may also multiply. Sectoral crediting that commits entire sectors of industry to an emissions cap could, in a worst-case scenario, lead to collusion among businesses in establishing an inflated emissions baseline or manipulating emissions measurements and reports. Such activities would not be unique to developing countries; in 1998 the US Environmental Protection Agency (EPA) agreed a settlement with companies in the diesel engine industry for over US\$1 billion for selling engines equipped with software that disabled the engine's emissions control system during highway driving.³¹ Especially in countries where technical expertise is lacking to monitor and measure mitigation technologies adequately, such risks may be expected to increase.

Confronting these risks in order to ensure a reliable reflection of emissions will require a similar arsenal of tools to those used by anti-corruption practitioners. The implementation and enforcement of the United Nations Convention against Corruption (UNCAC) and regional anti-corruption conventions can contribute to

the penalization of corruption while sending a clear message of zero tolerance with regard to corruption to private sector actors. Integrity pacts, in which both government departments and bidding parties for a public sector contract agree not to accept or offer bribes or engage in collusion, have been used successfully in Asia, Latin America and Europe to discourage corruption in public procurement. Such tools could be modified to stimulate a culture of trust and transparency in developing and implementing NAMAs, or to ensure that any verifying agencies that are established adhere to high standards of integrity. Although citizen oversight may prove difficult in an area as technically complex as GHG emissions, citizen monitoring may help ensure that international funding for NAMAs is appropriately accounted for at national and local levels or that milestones for project completion are met. In this regard the registry established by the Cancún Agreements could provide a basis for comparing project milestones and costs and thereby help in identifying potential sources of corruption.

Creating transparency and predictability in financing

In the climate change arena, resources provided by developed countries to developing countries have proved to be difficult to track. UNFCCC guidelines for reporting climate financing have not been updated in over a decade, parties use various budget and accounting methods and they may have an unclear assessment of their climate financing if it is provided through multiple government agencies.³² Other channels for reporting climate funding, such as the OECD's Development Assistance Committee (DAC) Creditor Reporting System (CRS), are unable to capture a full picture of financing: aid is recorded on the basis of intent rather than project implementation; multilateral organizations do not always report to the OECD; and financing passing through multilateral organizations often separates donors from specified projects or aid objectives.³³

A number of suggestions have been made for improving reporting guidelines. These include incorporating the OECD's Rio Markers – designed to help identify official development assistance targeted for climate change mitigation³⁴ – for use in national communications from developed countries, thus allowing cross-checking with the OECD's CRS;³⁵ development of an alternative marker system for classifying funds; and introduction of a standardized format for non-Annex I countries to report on assistance needs and sources in national communications.³⁶ Relating to the importance of capacity-building outlined above, it has also been noted that improving capacity must extend to the development of enhanced financial reporting structures in both developed and developing countries to enable cross-checking of financial commitments.³⁷ Most urgently, perhaps, pledges from donor countries should be

specific and time-bound, offering greater certainty and accountability to developing countries relying on such funding.

Encouragingly, the Cancún Agreements reflect some of these suggestions and concerns, calling for enhanced reporting on financial, technological and capacity-building support to developing countries, which would include reporting under a common framework. Civil society and academic groups can also play a key role in developing tools that keep track of whether developed countries are meeting their support commitments. Initiatives that create oversight in the public sphere can provide added accountability. Websites that enable visitors to search levels of aid assistance by donor countries or by specific sectors or project type provide a strong model that could be tailored directly to developed country support of NAMAs.

Prepared for change?

Although the Cancún Agreements lay the foundations for an enhanced reporting system for NAMAs and their support, the question for the years ahead is whether rigorous MRV systems can be introduced and implemented in a way that is sufficiently fair, transparent and flexible to be meaningful for a wide range of needs and projects. By anticipating some of the challenges today, relating to capacity, corruption and commitments, MRV systems can be designed to be robust. The challenges are significant – but so are the rewards: an effective MRV system can increase trust between industrialized and developing nations and between developing nations and their citizens. That trust ultimately fuels enhanced mitigation ambitions and enables long-term planning for mitigation strategies.

Notes

1. At the time of writing Juan Pablo Osornio was manager of sectoral projects for Mexico at the Center for Clean Air Policy. Ingmar Schumacher is currently an economist at the Banque centrale du Luxembourg. The authors have written this article in their personal capacity and the opinions expressed are not necessarily shared by CCAP or the Banque centrale du Luxembourg. Krina Despota is a contributing editor to the *Global Corruption Report*.
2. It merits mention that Chinese per capita emissions remain below those of developed countries, and it is also worth noting that almost a quarter of China's emissions were produced in the manufacture of goods that are ultimately exported. See National Public Radio (US), 'For developing nations, exports boost CO₂ emissions', 8 March 2010.
3. Kevin Baumert et al., 'Navigating the Numbers: Greenhouse Gas Data and International Climate Policy' (Washington, DC: WRI, 2005), p. 18.
4. These are referred to in the UN Framework Convention on Climate Change (UNFCCC) as non-Annex I parties.

5. While the scope of this paper is limited to MRV in the context of NAMAs and their support, it is important to note that the Bali Action Plan also called for the MRV of mitigation commitments or actions from developed country parties.
6. See, for example, Center for Clean Air Policy (CCAP), *Nationally Appropriate Mitigation Actions by Developing Countries: Architecture and Key Issues* (Washington, DC: CCAP, 2009), pp. 7–10.
7. Annex II parties consist of the Organisation for Economic Co-operation and Development (OECD) members of Annex I, except those countries with economies in transition.
8. National communications include information on emissions and removals of GHGs, as well as information on what steps the party has taken to implement the convention. National communications might include, *inter alia*, information on national circumstances, vulnerability assessments, financial resources, and public education and awareness.
9. Jan Corfee-Morlot, Bruno Guay and Kate M. Larsen, *Financing Climate Change Mitigation: Towards a Framework for Measurement, Reporting and Verification* (Paris: OECD/ International Energy Agency, 2009, pp. 17–18).
10. *Ibid.*, p. 23.
11. Bretton Woods Project, 'Update on the climate investment funds' (London: Bretton Woods Project, July 2010), p. 4.
12. See www.climateinvestmentfunds.org.
13. CCAP (2009); Smita Nakhooda, *The Clean Technology Fund: Insights for Development and Climate Finance*, working paper (Washington, DC: WRI, 2010), p. 8.
14. Bretton Woods Project (July 2010), p. 1.
15. Clare Breidenich and Daniel Bodansky, *Measurement, Reporting and Verification in a Post-2012 Climate Agreement* (Arlington, VA: Pew Center on Global Climate Change, 2009), p. 7.
16. See Arunabha Ghosh and Ngaire Woods, *Governing Climate Change: Lessons from Other Governance Regimes*, working paper 2009/51, Global Economic Governance Programme, Oxford University. A final version of the article is included in Dieter Helm and Cameron Hepburn (eds), *The Economics and Politics of Climate Change* (Oxford: Oxford University Press, 2009), pp. 454–477.
17. Third World Network (TWN), 'Developing Countries Mitigation and MRV – Call for Balance in Negotiations', TWN Bonn News Update no. 10 (Penang, Malaysia: TWN, 5 June 2010).
18. David Frame and Cameron Hepburn, 'An Issue of Trust: State Corruption, Responsibility and Greenhouse Gas Emissions', *Environmental Research Letters*, vol. 5 (2010).
19. Ngaire Woods, 'Making Climate Financing Work: What Might Climate Change Experts Learn from the Experience of Development Assistance?', in Richard Stewart et al. (eds), *Climate Finance: Regulatory and Funding Strategies for Climate Change and Global Development* (New York: New York University Press, 2009), pp. 206–210.
20. Marc Pallemmaerts and Jonathan Armstrong, *Financial Support to Developing Countries for Climate Change Mitigation and Adaptation: Is the European Union Meeting Its Earlier Commitments?* (London: Institute for European Environmental Policy, 2009), p. 16.
21. Arunabha Ghosh and Ngaire Woods (2009), p. 16; for more, see Arunabha Ghosh, 'Developing Countries in the WTO Trade Policy Review Mechanism', *World Trade Review*, vol. 9 (2010), pp. 419–455.
22. Ghosh and Woods (2009), p. 15.
23. Breidenich and Bodansky (2009), pp 13–14.
24. Under the UNFCCC, the Consultative Group of Experts on National Communications from Parties not included in Annex I was established to improve the process of national communication development by non-Annex I parties.

25. UNFCCC, 'Progress Report on the Work of the Consultative Group of Experts on National Communications from Parties Not Included in Annex I to the Convention', Document FCCC/SBI/2010/INF.2, 10 May 2010.
26. Breidenich and Bodansky (2009), p. 23.
27. Ibid., pp. 21–22.
28. See Ellina Levina and Ned Helme, *Nationally Appropriate Mitigation Actions by Developing Countries: Architecture and Key Issues* (Washington, DC: CCAP, 2009), p. 4.
29. Ned Helme et al., *Global Sectoral Study: Final Report* (Washington, DC: CCAP, 2010), p. 30.
30. Aaron Cosbey et al., *Realizing the Development Dividend: Making the CDM Work for Developing Countries: Phase 1 Report* (Winnipeg: International Institute for Sustainable Development, 2005), pp. 43–44; Jørund Buen and Axel Michaelowa, 'View from the Inside – Markets for Carbon Credits to Fight Climate Change: Addressing Corruption Risks Proactively', in TI (ed.), *Global Corruption Report 2009* (Cambridge: Cambridge University Press, 2009), pp. 41–45; *Financial Times* (UK), 'Beijing races to profit from fledgling trade', 2 December 2009. The last article cites the example of an individual who serves on the expert group approving CDM proposals in China while simultaneously acting as a consultant for CDM projects in the country. It is worth noting that this article only highlights the conflict of interest risk associated with serving these dual purposes simultaneously, making no suggestion that the individual has acted inappropriately in either capacity.
31. EPA, 'DOJ, EPA announce one billion dollar settlement with diesel engine industry for clean air violations', press release, 22 October 1998.
32. Dennis Tirpak, *Guidelines for Reporting Information on Climate Finance*, working paper (Washington, DC: WRI, 2010), pp. 4, 6; Breidenich and Bodansky (2009), p. 16.
33. Dennis Tirpak (2010), p. 9.
34. See, for example, OECD, 'Measuring Aid Targeting the Objective of the United Nations Framework Convention on Climate Change' (Paris: OECD, 2009), at: www.oecd.org/dac/stats/rioconventions.
35. Breidenich and Bodansky (2009), p. 26.
36. Tirpak (2010), p. 9.
37. See Remi Moncel et al., 'Counting the Cash: Elements of a Framework for the Measurement, Reporting and Verification of Climate Finance' working paper (Washington, DC: WRI, 2009), pp. 13–14.