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N O R D I C W O R K I N G P A P E R S

Exploring practical experience of Nationally Appropriate Mitigation Actions (NAMAs) and Measurement, Reporting and Verification (MRV) requirements

Report from the side event at the COP18 in Doha, Qatar on 3.12.2012

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Exploring practical experience of Nationally Appropriate Mitigation Actions (NAMAs) and Measurement, Reporting and Verification (MRV) requirements

Notes from the side event
organised by the Nordic Council of Ministers
and the Nordic Environment Finance Corporation (NEFCO)
during the UN climate conference at Doha, Qatar
on 3 December 2012



Photo: Charlotte Nording Gabrielson



Notes prepared by: Hanna-Mari Ahonen, GreenStream Network Plc



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List of abbreviations

CDM	Clean Development Mechanism
EE&C	Energy efficiency and conservation
FIRM	Facilitating Implementation and Readiness for Mitigation
FSF	Fast-start finance
GCF	Green Climate Fund
GHG	Greenhouse gas
ICA	International Consultation and Analysis
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
LEDS	Low-Emission Development Strategy
MAIN	Mitigation Action Implementation Network
MAPT	Measurement and Performance Tracking
MRV	Measurement, Reporting, Verification
NAMA	Nationally Appropriate Mitigation Action
NEFCO	Nordic Environment Finance Corporation
NMM	New Market-Based Mechanism
NPI	Nordic Partnership Initiative
ODA	Official Development Assistance
PBA	Programme-based approach
REDD+	Reducing Emissions from Deforestation and Forest Degradation in developing countries
SBSTA	Subsidiary Body for Scientific and Technological Advice
SD-PAMs	Sustainable Development Policies and Measures
SME	Small- and medium-sized enterprises
UNFCCC	UN Framework Convention on Climate Change

1. Introduction and background

This section provides an introduction to key issues and concepts relevant to the side event.

1.1 Nationally Appropriate Mitigation Actions (NAMAs)

Concept

The concept of Nationally Appropriate Mitigation Actions (NAMAs) was first introduced in the UN climate negotiations by the 2007 Bali Action Plan which calls for “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” (MRV’ble) manner.¹ Under the 2010 Cancún Agreements, it was agreed that developing countries would take such action, “aimed at achieving a deviation in emissions relative to ‘business as usual’ emissions in 2020”.²

In short, NAMAs describe how developing countries plan to contribute to climate change mitigation. They serve as building blocks for national Low-Emission Development Strategies (LEDS) of developing countries.

Diversity

As of 1 December 2012, 101 developing countries have voluntarily submitted 112 NAMAs to the secretariat of the UN Framework Convention on Climate Change (UNFCCC).³ In addition, Lebanon and Dominican Republic submitted pledges during the Doha climate conference in December 2012.⁴

These submissions cover a great variety of actions. NAMAs can be categorised for example according to funding source or action type. NAMAs can be funded unconditionally by the developing country (unilateral NAMA) or they can be conditional on receiving international support (supported NAMA). For some actions, funding is expected to be sourced from global carbon markets (credited NAMA). Although credited NAMAs are not explicitly recognised in international negotiations, provision of complementary NAMA support by a new market-based mechanism (NMM) is under negotiation by UNFCCC Parties.⁵ The NMM “must meet standards that deliver real, permanent, additional and verified mitigation outcomes, avoid double counting” and achieve net mitigation.⁶ Action types range from strategies to policies and projects, as well as capacity and institution building and awareness raising for NAMA readiness, design and implementation. This said, many emerging NAMAs constitute a blend of several action types and funding sources, making their definition and categorisation a challenge.

Three dedicated UN workshops have been organised in 2011 and 2012 to understand the diversity of submitted NAMAs.⁷ Developing countries have been invited to submit further information on NAMAs, including underlying assumptions and methodologies, support needs for the implementation of nationally appropriate mitigation actions and estimated mitigation outcomes.⁸ To date, only a handful of submissions have been received.⁹

The Annual NAMA Status Report and the NAMA Database provide useful overviews of the current status of NAMAs that have progressed to Feasibility Study, concept, proposal and implementation stages. As of December 2012, the NAMA Database included 35 NAMAs and 28 Feasibility Studies in 27 countries.¹⁰

Support

The scale and deployment of international climate finance will determine the extent and pace of implementation of supported NAMAs in developing countries. To support mitigation and adaptation in developing countries, developed countries have committed to mobilising 30 billion US dollars (23 billion euros) of fast-start finance (FSF) during 2010-12, to be scaled up to 100 billion US dollars (75 billion euros) annually by 2020. This funding should be “new and additional” to existing financial commitments.¹¹ While FSF was publically sourced, the long-term finance will come from a variety of different sources, including the private sector.

Box 1. International NAMA support

For activities closely linked to NAMA preparation, roughly 100 million euros support has been provided to date, largely funded by FSF.¹²

Financing NAMA implementation is another, and less clear, matter. On the one hand, mitigation actions have been implemented in developing countries with international support even before the NAMA concept was coined. On the other hand, it is not clear how much, how and when international climate finance will be mobilised in the future.

Many ongoing NAMA-like mitigation activities are funded by the Global Environment Facility (GEF) and the Climate Investment Funds (CIF), although the activities are usually not labelled as NAMAs nor the funding as NAMA support. Mexico's Ecocasa programme, with over 50 million US dollars of support from the World Bank's Clean Technology Fund (CTF) approved in August 2012, may be considered the first (component of a) NAMA to have received international support for implementation. In June 2012, Norway announced its intention to support the implementation of Ethiopia's renewable energy and energy access NAMA via the Energy+ Initiative by 1.8 billion US dollars from 2015 onwards.¹³

In December 2012, UK and Germany launched a 70 million-euro NAMA facility explicitly aimed at supporting the implementation of “transformational” NAMAs. A Mexican NAMA on sustainable new housing is the first action to be financed by the Facility.¹⁴

In the future, a significant share of international climate finance is expected to be channelled through the Green Climate Fund (GCF) which was established in Cancún in 2010 and launched in Durban in 2011. Upon the expiration of FSF in December 2012, developed countries pledged at the Doha conference to maintain international climate finance during 2013-15 at least at its 2010-12 level. However, there is currently no clarity on how finance is to be scaled up to its 2020 target level.¹⁵

Registry

Parties have decided to set up a registry to record NAMAs “seeking international support and to facilitate matching of finance, technology and capacity-building support for these actions”.¹⁶ A NAMA registry prototype, which was under development in 2012, is expected to be launched in April 2013.

Meanwhile, the secretariat has set up a website¹⁷ to enable early submissions by developing countries of NAMAs seeking international support for preparation (6 submission to date) or implementation (2) as well as those seeking recognition (3), including information on the timeframe, costs, estimated emission reductions, other indicators of implementation and co-benefits.¹⁸ Developed countries and other entities may submit information on available support (0 submissions to date). The website provides standard templates for, and access to early submissions.

1.2 Measurement, Reporting and Verification (MRV)

Concept

Measurement¹⁹, Reporting and Verification (MRV) refers to the standards and processes to measure and ascertain the realised impact of an action or commitment. For any action, MRV is a key element for obtaining credibility and recognition.

The concept of MRV is not new: monitoring and evaluation of policy implementation and the use of development finance, and of company accounts and compliance with environmental standards, is commonplace worldwide. Implementation of a MRV system of sufficient standard is increasingly a pre-condition for receiving results-based finance.

MRV serves several key functions throughout a NAMAs lifetime, contributing to effective design, providing access to funding, tracking progress, ascertaining performance and securing international recognition of NAMAs.²⁰

Guidelines

Developing countries are required to submit national communications every four years as well as biennial update reports every two years, including a national GHG inventory and information on NAMAs, needs and support received.²¹ The first biennial update is due by December 2014. To enhance transparency of NAMAs and their effects, a non-intrusive International Consultation and Analysis (ICA) of biennial reports will be carried out. The ICA focuses on technical aspects, such as the analysis of the NAMAs' impacts and underlying methodologies and assumptions, as well as progress in implementing domestic MRV. The ICA does not discuss policy issues such as the appropriateness of domestic policies and measures.²²

Parties have decided that supported NAMAs will be MRV'd domestically and subjected to international MRV in accordance with international guidelines while unilateral NAMAs will be MRV'd domestically in accordance with general international guidelines. These guidelines for domestic and international MRV shall be developed under the UNFCCC by the Subsidiary Body for Scientific and Technological Advice (SBSTA).²³

Pending agreement on such guidelines, MRV criteria for early supported NAMAs are agreed on a bi- or multilateral basis between hosts and sponsors.

Design

Various aspects of NAMAs can be MRV'd: the extent of implementation; the greenhouse gas (GHG) and non-GHG impacts of NAMAs, including the validity of the relevant baseline; financial, technological and capacity building needs and efforts; and financial support received or provided.²⁴

MRV approaches and metrics vary across different types of actions and funding sources. MRV metrics may be quantitative or qualitative in nature, depending on what is measured. For example, under a capacity building element of a NAMA, the number of training sessions could be MRV'd whereas under a NAMA implementing wind farms, the capacity installed, electricity fed to the grid and greenhouse gas emissions avoided could be MRV'd. In addition, the number of permanent jobs created, the extent of technology transfer achieved and the reduction in local air pollution may be MRV'd to capture the non-greenhouse gas impacts of the NAMA.

Compared with unilateral and supported NAMAs, credited NAMAs typically would face stricter MRV standards, since the NAMA's GHG impact needs to be quantified accurately and attributed to the NAMA to avoid excess credit issuance. It is worth noting that credited NAMAs do not yet exist and they are not explicitly recognised in current UN negotiations. Given that credits are typically used to compensate for increased emissions elsewhere, excess credit issuance would lead to higher emissions globally. A NAMA's GHG impact needs to be compared with a baseline which reflects the emission trend in the absence of the NAMA or some other reference scenario. Inflated baselines can also lead to excess credit issuance. Thus, to safeguard environmental integrity of NAMA crediting, baselines must be conservative and based on credible data and assumptions.

1.3 Experience and early initiatives on MRV and NAMAs

Experience in MRV

Traditionally, MRV has focused on national or installation-level GHG emission levels (inventories) and the GHG impacts of individual projects compared to pre-determined baselines. There is, however, also some experience in MRV'ing GHG impacts at programme or sector level as well as MR(V)'ing non-GHG impacts, both of which are relevant to NAMAs.

Over the past decade, the Kyoto Protocol's Clean Development Mechanism (CDM) and Joint Implementation (JI) have created valuable MRV capacity and institutions through learning-by-doing. In close cooperation with the private sector, dedicated UN bodies have developed MRV and baseline standards and templates; project registration and credit issuance processes; and a scheme for accrediting entities to perform independent third party *ex ante* validation of the project and *ex post* verification of the projects' GHG impact. Under CDM, the duties of host countries have been limited to project approval, whereas under JI, host countries have potentially a much larger role in providing "nationally appropriate" MRV criteria, procedures and even verification services. In that sense, JI offers particularly relevant lessons for NAMAs. JI experience has shown that nationally tailored JI can be a valuable tool for discovery and implementation of cost-effective emission reductions, but the mechanism is only as effective and credible as the underlying processes, MRV system and national capacity.²⁵

Also of particular relevance to NAMAs are CDM's and JI's contributions to programmatic and standardised approaches to baseline setting and MRV, represent a shift away from individual projects to upscaled action in broad segments of the economy (such as sectors or geographic regions).²⁶ While mitigation policies were deemed ineligible under CDM, there is no such restriction under JI. Ongoing CDM and JI reforms aim to incorporate and institutionalise accumulated experience and intelligence, and offer valuable insights also to the design of NAMAs and MRV.

MRV standards of other carbon offset schemes also offer valuable experience for designing effective and appropriate MRV systems for NAMAs.²⁷ The Gold Standard, for example, has developed voluntary standards for MRV'ing also the non-GHG sustainable development impacts of emission reduction projects which can be relevant to NAMAs driven by non-GHG goals.²⁸

However, past analysis and discussions also shed light on the challenges ahead for MRV of NAMAs. There is extensive literature on the difficulties of attributing observed GHG (or non-GHG) impacts to a particular policy or measure. This challenge of attributability is relevant whenever payments are made or credits are issued against results achieved by a specific action, and it is inherently more difficult for policies than for concrete projects. Literature on policy CDM and Sustainable Development Policies and Measures (SD PAMs) is thus highly relevant also to NAMAs.²⁹

NAMA and MRV initiatives

Recently, MRV initiatives with a specific focus on NAMAs (and/or Low-Emission Development Strategies, or LEDS) have emerged. Many of these initiatives have been funded by bi- and multilateral fast-start finance and focus on capacity building and NAMA and MRV readiness.

Ongoing initiatives on NAMA and MRV readiness include, but are not limited to:

- International Partnership on Mitigation and MRV (founded by South Africa, Korea & Germany, 2010)

- Enhanced Capacity Building for Low Emission Development Strategies (US government, 2011)
- Mitigation Action Implementation Network (MAIN) (CCAP & World Bank, 2011)
- Nordic Partnership Initiative (NPI) (Nordic governments with Peru and Vietnam, 2011)
- Mitigation Momentum (ECN & Ecofys, 2012)
- Measurement and Performance Tracking (MAPT) (World Resources Institute, 2012)
- Facilitating Implementation and Readiness for Mitigation (FIRM) (UNEP, 2012)
- Low Emission Capacity Building Programme (UNDP, 2012)
- International Partnership on NAMAs (various, 2012)?
- Greenhouse Gas Protocol for policies and mitigation actions (first draft published in November 2012)³⁰
- GIZ's MRV tool (under development)

The World Bank's Partnership for Market Readiness (PMR), launched in 2011 to support developing countries' readiness to utilise market-based tools in mitigation, is also relevant for NAMAs and MRV, given that MRV is a key element in developing credible market-based approaches.

2. Notes from the Nordic side event at Doha

This section constitutes of the notes from the presentations of the side event.

2.1 Introduction: NAMAs and MRV

Introduction

Mr Ash Sharma, Vice President, Nordic Environment Finance Corporation (NEFCO)

Mr Sharma noted that there are many practical ongoing NAMA activities underway, applying the learning-by-doing approach, such as the Nordic Partnership Initiative (NPI) to promote NAMA readiness in Peru and Vietnam.

Mr Sharma pointed out that, for donors, confidence is key, and MRV is, in turn, key for confidence. MRV is needed to access financial support and safeguard environmental integrity. Key issues to be considered include minimum standards for MRV and the extent of MRV needed.

Mr Sharma concluded with a brief introduction of the NPI which aims to demonstrate how climate finance can be mobilised in practice for developing country mitigation action.

2.2 The context: MRV under UNFCCC

MRV of NAMAs in the broader context of MRV under UNFCCC

Mr Claudio Forner, Team leader – Mitigation, Data and Analysis, UNFCCC Secretariat

Mr Forner pointed out that MRV covers a broad set of concepts, and both action and support need to be MRV'd under the UNFCCC.

Regarding actions, MRV can be of national or action level. Considerable progress has been achieved under the UNFCCC on national-level MRV. The Bali Action Plan significantly enhanced reporting by developing countries by introducing regular reporting requirements (national communication every four years, biennial update every two years). Previously, developing countries had prepared national communications at random, infrequent intervals. Another key achievement of the Bali Action Plan was International Consultation and Analysis (ICA), which adds an element of international scrutiny to the process, rather than stopping at reporting. Existing guidelines are general but help to keep reports consistent and comparable, at least in terms of format. Actions are divided into two categories: domestically and internationally funded NAMAs. When a NAMA is international supported, host countries are more open to enhanced MRV requirements and openness than in the case of domestically funded action.

While general guidelines exist for national reporting, no UN guidelines have been agreed to date for domestically or internationally supported NAMAs. At the moment, MRV standards of internationally supported NAMAs are negotiated bilaterally between the host country and the donor.

NAMAs have gained status, and developing countries are ready to develop and implement mitigation action if promises of funding, technology transfer and capacity building are fulfilled.

Looking ahead, Mr Forner lists the following mitigation trends emerging in developing countries:

- 1) The role of developing country governments gets bigger (compared with e.g. CDM)
 - Governments prepare national communications and update reports
 - Governments prepare national plans and low-emission development strategies
 - Governments develop associated indicators and processes
- 2) Streamlined MRV is needed across governmental institutions
 - Governments have established processes and standards for quality control that did not exist before
 - Governments require tools to ensure that NAMAs contribute to national goals
- 3) Attention shifts to a broader set of indicators than just GHG mitigation
 - Besides indicators tracking GHG mitigation impact, a set of sustainable development indicators will also be developed

2.3 Developing country perspectives: Peru and Mexico

NAMAs and MRV from the perspective of developing countries

Mr Eduardo Durand, Director General Climate Change, Ministry of Environment, Peru

Mr Luis Muñozcano, Deputy Director General for Climate Change Projects, SEMARNAT, Mexico

Peruvian perspective

Mr Durand began by welcoming ideas on how to define and characterise NAMAs – their meaning is by no means clear. He continued by presenting the backdrop against which Peru is developing its NAMAs. Although Peru is a small country with relatively low emissions, Peru believes that de-linking economic development from GHG emission growth leads to a better future. Within its boundaries, Peru harbours 70% of the world's climates and is already experiencing the impacts of climate change: Peru's glaciers are melting and water is becoming scarce.

Peru has submitted three NAMAs, defining sectoral mitigation goals for forestry, energy and waste. Mitigation action in the waste sector is being developed in cooperation with the Nordic governments under the NPI. The 2009 GHG inventory is now available, and offers a useful basis for NAMA development. The ongoing NAMA initiatives will help to further improve the inventories. Mr Durand emphasised that, besides absolute direct emission reductions, NAMAs offer valuable co-benefits through initiating behavioural change. These changes are important for promoting new models of development and avoiding emissions associated with merely copying past models of development.

Mr Durand noted that learning-by-doing has shown that NAMAs are complex and require the engagement of, and capacity building in various levels from government and congress to municipalities. In 2010, a country study on MRV of climate change mitigation in Peru, funded by the European Commission, identified gaps and barriers, and recommended ways forward.³¹ Peru has also received support from UNDP for NAMA formulation, and from the Government of Japan for MRV and possible bilateral crediting of NAMAs.³² Peru is a member of the Mitigation Action Implementation Network (MAIN) and the International Partnership on Mitigation and MRV, and participates in the Mitigation Action Plans & Scenarios (MAPS) project.

According to Mr Durand, the 2009 inventory has facilitated growing interest in long-term planning of Peru's mitigation action. Currently, Peru has five NAMA initiatives under work, many of which have significant MRV components. In the waste sector, Nordic governments are supporting (through NEFCO) a NAMA readiness pilot aiming to carry out a detailed waste sector GHG inventory, identify and design priority NAMAs, and set up an MRV system.³³ The waste sector NAMA readiness pilot programme, supported by NEFCO, will begin the new year 2013. The Feasibility Study was prepared in 2011.³⁴ In the energy sector, the Global Environment Fund is supporting the development of sub-national GHG inventories, a MRV system and a national NAMA registry, as well as the elaboration and implementation of NAMAs. The British Embassy is supporting the design of low-carbon transport policies and capacity for their implementation. Environment Canada is supporting a low-carbon and sustainable housing NAMA, and Ecofys has developed a NAMA concept on waste-to-energy in the agricultural sector.

Mexican perspective

Mr Luis Muñozcano told that through learning-by-doing, Mexico has made many mistakes that have lead to practical improvements in designing MRV instruments for NAMAs. A key challenge is to ensure effective sharing of these experiences.

Mexico's NAMAs are based on the Special Climate Change Programme (PECC) of 2009 which includes 86 specific mitigation goals amounting to a reduction of 50.6 Gt compared to business as usual. Mr Munozcano illustrated the difficulty of defining NAMAs by wondering whether the programme constitutes one NAMA or 86 NAMAs.

Mexico's MRV design has been a step-wise process: a national emission baseline was developed in 2009, agency and federal level monitoring and reporting was launched the following year. Reports were submitted every two months in spreadsheet format until an online reporting registry (SIAT-PECC) was established. Validation procedures were also developed and, in 2011, the first external evaluation of the system was carried out by a Mexican and international auditors (INCO and DNV), the latter accredited under the CDM. This preliminary evaluation provided useful information on the monitoring and reporting system, confirming a good confidence level, reasonable traceability of actions and high (80%) additionality of actions.

Despite ample CDM experience and technical support, setting up a national MRV system has been a slow process. Although highly sophisticated, CDM's MRV systems imposed only light national requirements to the host country. By contrast, each NAMA requires tailored national MRV, with

requirements linked to funding sources, implying a much greater burden for national authorities compared with CDM. A key challenge is striking a balance between adequacy and practicability: the MRV set-up needs to be robust without becoming excessively burdensome.

Mexico is one of the most active NAMA developers, with some 12 NAMAs under work. The country is keen to combine supported and credited NAMAs. Lessons from the most advanced (housing) NAMAs with MRV in place show that MRV needs to be differentiated by action type and evolve over time.

Critical success factors for MRV include:

- Transparency and credibility of data;
- Standardisation of baseline and monitoring methodologies and reporting formats;
- Reporting of co-benefits;
- Realistic timelines for monitoring and verification; and
- Clarity of stakeholder roles and responsibilities.

Barriers to MRV include the costs and lack of capacity and technical tools, and the need for new institutional arrangements. A national market for verification services is also required, for which the CDM experience is very helpful.

A question from the audience concerned the reporting of co-benefits: if they are not funded externally, is MRV required? Mr Muñozcano responded that Mexico has a desire to include co-benefit indicators in their national MRV but there is still a long way to go. Mexico's climate package includes 66 goals on adaptation where tracking is more complex. As a first step, milestones will be developed to track progress, to be replaced later by more complicated co-benefit indicators.

2.4 Fast-start cooperation: Denmark and Vietnam

NAMAs supported by fast start climate finance – The Danish Vietnamese Energy Efficiency Programme

Dr Tran Thuc, Director General, Vietnam Institute of Meteorology, Hydrology and Environment

Ms Ulla Blatt Bendtsen, Senior Adviser, Danish Energy Agency

Vietnamese perspective

Dr Tran Thuc noted that Vietnam's energy sector emissions are growing rapidly in tandem with the country's industrialisation. In 2000, the energy sector's share of total emissions was 35%. A decade later it had almost doubled to 67% and increase further to 90% by 2030. In absolute terms, energy emissions are expected to more than double by 2020 and more than quadruple by 2030, compared with the 2010 level.

Vietnam has responded to emission growth by preparing a National Target Programme to Respond to Climate Change (2008), a National Strategy (2011) and National Action Plan (2012) on Climate Change, as well as a National Green Growth Strategy (2012). The goal is the mainstream sustainable development into national policy while strengthening social economic development. Vietnam has set national mitigation targets (1.5-2% annual reduction of energy intensity and 8-10% annual reduction in GHG intensity of GDP) as well as sectoral mitigation goals (-8% in energy from 2005 level by 2020).

Although these targets have not (yet) been formally submitted as NAMAs to the UNFCCC, Vietnam has received international support for NAMA readiness from a range of actors, such as the Nordic

governments through NPI (for the cement sector), Japan (MRV training and waste), UNDP, UNEP and the Asian Development Bank for general institutional support.

The Vietnam Energy Efficiency Programme (VNEEP), which is supported by the Danish government, is in line with NAMA definitions as well as the green growth strategy, and thus, offers a valuable replicable model for other NAMAs in Vietnam. The programme's first (start-up) phase ran from 2006 to 2010, and the second (elaboration and expansion) phase was launched in 2011.³⁵

Danish perspective

Ms Bendtsen pointed out that the content of NAMAs is not a new invention although the NAMA label is relatively recent. Since the Danish fast start finance for the VNEEP program meets basic NAMA criteria, it can be called a NAMA although not officially reported by Vietnam to the UNFCCC as such.

Ms Bendtsen recalled that Denmark and Vietnam have a 40-year history of cooperation, with FSF boosting climate cooperation increasing in the past year. Denmark has supported the VNEEP since 2009, and Phase 2 support of 10 million US dollars over three years was agreed in November 2012. Based on needs and host country priorities, Denmark has focused its support on the building sector and on small and medium-sized enterprises (SMEs) in the bricks and ceramics industries (with a third industry to be identified), with strong emphasis on setting up robust MRV.

Box 2. Outputs and indicators for supported NAMA on energy efficiency

	SMEs (ceramics, bricks, third tbd)	Building sector (Building Code)
Outputs	• 500-1000 SMEs aware of energy saving potential, technical solutions, sources of technical and financial support within at least three sectors • 30-50 service providers competent and available for the 3 sectors • 150-250 EE investment projects implemented • Long-term commercial partnership established	• Mechanism established for regulation: Building Code (BC) and supporting circular • Capacity enhanced at Ministry of Construction and related agencies for implementing BC, gradual compliance for all new buildings by 2015 • Fundable proposal prepared for a demonstration project by end of project • Partnership mechanism established enabling access to state-of-the-art policy and regulatory competence from Denmark within energy efficiency and low-carbon transition in buildings
Indicators	Qualitative • Energy managers network established by end 2013 • Benchmarks established for each sector • Information on EE&C technologies • Long-term commercial partnership in place Quantitative • No. of energy audits performed • No. of enterprises implementing EE measures • No. of awareness campaigns completed • No. of enterprises receiving technical assistance and investment support • No. of energy service providers trained on Energy Service Company (ESCO) business model	Qualitative • Building Code and supporting circular prepared and adopted • Fundable demonstration project proposal presented by end 2015 • Partnership mechanism in place Quantitative • No. and % of new buildings applying EE measures as regulated • No. of workshops/training events to promote EE standards and design • No. of trainings held for EE managers • No. of trainings held for building staff to apply BC and building design • No. of trainings held for enforcement staff

According to Ms Bendtsen, the future MRV systems will build on indicators already developed under the wider national programme. However, no system for measuring the GHG or energy impact of actions is yet available. This ongoing work will be a key step forward for MRV of NAMAs.

With Danish support, SMEs in pilot provinces will have access to energy audits, a MRV system and a financing mechanism for investing in energy efficiency and conservation (EE&C) projects. In the building sector, Danish support focuses on the Building Code for new buildings and facilitating its full implementation by the end of 2015, coupled with access to state-of-the-art technology.

Ms Bendtsen presented a comprehensive sets of indicators and outputs have been agreed bilaterally by Denmark and Vietnam (see Box 2). There is also a system in place for reporting to the international donors supporting mitigation action in Vietnam, including a mid-term evaluation.

Next steps to improve the MRV framework include development of methodologies for measuring the GHG mitigation and co-benefit impacts, as well as other aspects of sustainability, including replicability, revolving funding and maintaining robust MRV.

2.5 Protecting forests: Norway and Guyana

REDD+ –payments for verified emission reductions – The Guyana Norway Partnership on REDD

Mr Andreas Tveteraas, Deputy Director, Norwegian International Climate and Forest Initiative

Mr Tveteraas introduced Norway's International Climate and Forest Initiative, which was launched at the Bali conference in 2007 and pledges to provide up to 500 million US dollars of support annually for reducing emissions from deforestation and forest degradation in developing countries (REDD+).

One of the initiative's objectives is to support early action resulting in cost-effective and verifiable emission reductions while enabling sustainable use of the forests for livelihood. Norway has set up results-based partnerships with various countries, including Guyana, and also provides support for REDD+ via multilateral initiatives. Norway contributed 30 and 40 million US dollars in 2010 and 2011, respectively, to the Guyana REDD+ Investment Fund. Based on positive, verified results during 2010-11, Norway decided on a further contribution of 45 million dollars in December 2012.³⁶

Mr Tveteraas noted that Norway and Guyana have developed a detailed MRV roadmap through a multi-stakeholder process, including a set of interim performance indicators detailed in a Joint Concept Note (JCN). MRV development is a step-wise process: high-level capacity for accurate reporting must be built up and indicators updated to incorporate lessons learned, tracking progress towards achieving the standards set by the Intergovernmental Panel on Climate Change (IPCC). Results are verified by independent verifiers. According to Mr Tveteraas, the gradual improvement approach is useful; the MRV system need not be perfect from day 1.

Mr Tveteraas informed that the MRV system tracks two components: deforestation and forest degradation. It is possible to estimate the gross deforestation rate (annual changes against benchmark) at relatively high precision based on satellite imagery. Measuring forest degradation is more challenging. Current interim indicators include loss of "intact forest landscapes", logging scheme, indirect forest loss from new infrastructure and forest fires. At the outset, an extremely conservative default value has been adopted for illegal logging, which may be updated if Guyana can demonstrate a lower rate of illegal logging. Future indicators relate to the impacts of subsistence farming and shifting cultivation and increased sink capacity of forested and non-forested land.

Mr Tveteraas pointed out that, although Guyana has not yet experienced deforestation, Guyana's forests are expected to face increasing pressure as REDD policies of neighbouring countries restrict

logging. Instead of extrapolating historical data, the reference level for deforestation is a combination of global and national deforestation rates, which is set to decrease over time. Although avoided deforestation is benchmarked against the reference level (0.275), Guyana's allowed deforestation rate is capped at 0.1 which is above the current level of 0.056 to leave some room for economic development.

Mr Tveteraas noted that two annual reports have been received and verified thus far, and the JCN will be updated soon to incorporate the lessons learned. While preparing the first reports, international consultants also develop local reporting capacity through training.

2.6 Credited NAMAs: Market-grade MRV

MRV of NAMAs in a new market based mechanism

Mr Jochen Harnisch, Head of Division Environment and Climate, KfW Development Bank

Mr Harnisch pointed out that although credited NAMAs are not explicitly recognised in international negotiations, there are many expectations for NAMAs to overlap with a new market-based mechanism (NMM) that is being negotiated under the UNFCCC. Mr Harnisch also noted that both NAMAs and NMM are poorly defined, so credited NAMAs in particular currently lack a firm basis for further development.

On MRV, Mr Harnisch noted that, although the term was introduced in Bali in 2007 alongside NAMAs, the concept itself has a much longer history. For example, MRV forms the backbone of the CDM which was established in 1997 by the Kyoto Protocol. Mr Harnisch expects MRV and national reporting to be a part of new global climate agreement and sees a role for NAMAs and MRV in paving way for the agreement's credibility also pre-2020.

Level of ambition	National interest & ownership
- Significant GHG reduction potential and cost effectiveness of emission reductions - Potential for transformation (e.g. replicability, potential for sectoral change, use of national systems)	- Initiative for financing from national actors and broad ownership among different ministries - NAMA embedded in an existing climate and development strategy - Co-benefits
Maturity and bankability	MRV system
- Financial viability + sustainability - Financial capacity of implementation partners - Comprehensiveness and conclusiveness	- Conclusive MRV approach, incl. indicators for actions, baselines, milestones - Availability of data for MRV-system - Costs of proposed MRV approach

Figure 1. German criteria for supporting NAMAs

Germany has developed a set of criteria for supported NAMAs, with the intention to avoid unhelpful relabelling. Instead, a NAMA must display ambition, ownership and maturity, and it must have a MRV system in place (see Figure 1). Preferably, a NAMA represents a shift away from project-based to programme-based activities (PBAs). Mr Harnisch highlights REDD, "the mother of NAMAs", as a good example of moving from project-level to national support. Support for programme-based

action (PBA) is well-established in development cooperation, ranging from coordinated programmes, common pooled funds and basket financing to budget support and policy loans.

KfW's NAMA agenda includes the establishment of implementation standards and capacity building within KfW; implementing pilot projects such as Mexico's Ecocasa; establishing a NAMA project pipeline with partners; and supporting the international standardisation process.

Mr Harnisch presented key MRV elements for activities that display clear causality between action and reductions, and noted that it may be difficult to demonstrate such attributability for NAMAs focused on policy support. Mr Harnisch highlighted some of CDM's valuable lessons on MRV and expects the CDM rulebook to serve as an important reference point for NAMAs and NMMS. In particular, the CDM reform has made significant progress towards sector-level standardisation. However, Mr Harnisch pointed out that standardisation has its limits and cannot substitute effective government structures. CDM has also learned to deal with shortcomings in data and associated uncertainties in data applying conservative assumptions and ambitious baselines. Finally, the CDM has shown that private sector participation requires predictability of regulative set-up and cash flow.

To succeed, NAMAs must be ambitious, scalable and economically and politically sustainable. Mr Harnisch points out that, from the perspective of developing countries, mitigation is the co-benefit of other policies, and not the other way around. MRV must be effective and avoid imposing high transaction costs or other heavy burdens. On the other hand, while standardisation offers important lessons, MRV should always be tailored to be nationally appropriate. Finally, Mr Harnisch notes that donor criteria serve as useful check lists for host countries that are developing NAMAs.

Mr Harnisch emphasised the importance of clearly agreeing on NAMA MRV ex ante. While the MRV guidelines are to be developed under the UNFCCC framework, criteria on what to finance will remain donor-specific. Mr Harnisch believes that NAMA funding will become available, not just for capacity building but also for concrete implementation, even via the GCF. Indeed, a few days after the side event, Germany and UK launched a joint facility for financing NAMA implementation.

2.7 Looking ahead: Next steps for NAMAs and MRV

Way forward for MRV of NAMAs

Mr Michael Comstock, Manager, International Climate Dialogue Center for Clean Air Policy (CCAP)

Mr Comstock introduced the Mitigation Action Implementation Network (MAIN) that, for the past two years, has served as a network for policy-makers from 15 developing countries in Latin America and Asia to build cooperation for supported NAMAs. Mr Comstock summarised key lessons shared under MAIN from the developing country perspective.

Firstly, to get NAMAs implemented, the focus needs to be on the sustainable development benefits that add value to the host country and thus drive implementation. Progress towards these benefits should be measured as part of MRV.

Finally, Mr Comstock summarised success factors of NAMAs. A successful NAMA:

- is flexible and tailored to reflect host country circumstances
- is not overly burdensome
- builds on existing national criteria, data and indicators
- includes metrics for action, progress, sustainable development and GHG mitigation impact
- aligns metrics with national capacity, and builds capacity to bridge gaps

3. Reflections on the side event

This section provides a summary and reflections on the observations and lessons emerging from the side event. The views presented are the author's own and do not necessarily represent the views of side event organisers or other participants.

Why measure, report and verify?

A NAMA is as credible as its MRV scheme. Thus, a key step in NAMA implementation is setting up a robust MRV system. In fact, MRV systems can even be developed prior to having a specific NAMA in place since the process can provide valuable input for the design of effective NAMAs.³⁷

MRV serves various functions. MRV can facilitate the discovery of mitigation and co-benefit potential, effective design of NAMAs, incentivisation of private sector participation, and access to international funding; track and provide feedback on the performance of a NAMA; and help to obtain international recognition and political support for NAMAs by promoting credibility and visibility to the GHG and non-GHG benefits of mitigation action.

Building MRV readiness and capacity for priority policies and measures is a “no-lose” effort. MRV activities add value to any type of NAMAs since MRV is needed regardless of the action type, and interim MRV systems can contribute to the effectiveness of policy and measures. Rather than a burden and barrier, MRV could be viewed as a tool for discovering synergistic emission reduction potential and supporting its realisation.³⁸

What to measure, report and verify?

Various aspects of NAMAs can be MRV'd. The nature and required rigour of MRV metrics depends on type of action and source of funding. MRV may cover the implementation of NAMAs, the GHG and non-GHG impacts of NAMAs, support for NAMAs, and capacity building and readiness activities for NAMAs. The validity of baselines, against which a NAMA's impact is assessed, may also need to be MRV'd. The attribution of an observed impact to a specific NAMA may need to be demonstrated as well.

MRV of co-benefits is an important driver of NAMA implementation. There is growing acknowledgement that, from the perspective of the developing country, the GHG impact of NAMAs is the co-benefit, and non-GHG impacts are the NAMAs' main goals and key drivers for their implementation. Thus, developing MRV indicators also for non-GHG impacts can be a valuable tool to secure support and motivate action and replication.

The first MRV systems for NAMAs are developed bilaterally. Over time, international guidelines will become available and provide clarity on MRV requirements and standards. It is likely that the international guidelines will build on early bilateral experience.

How to measure, report and verify?

MRV is a step-wise process of learning-by-doing. Initially, MRV systems will be less than perfect, but as experience accumulates, lessons can be incorporated to gradually improve the MRV system and the associated NAMA. The lack of a flawless blueprint should not be used as an excuse to postpone MRV efforts.

MRV of NAMAs should build on existing structures, data and experience. MRV is not a new invention, so useful indicators, relevant data and useful capacity, institutions and processes are likely to be available already as a starting point. CDM, JI and other offset standards, as well as literature on Sustainable Development Policies and Measures (SD-PAMs) offer valuable insights and lessons for MRV of NAMAs which should be maximally studied and utilised. Effective sharing of experiences and best practices may also greatly facilitate MRV development efforts. Monitoring and Evaluation systems in traditional ODA programs also offer a good starting point for MRV of NAMAs.

MRV of NAMAs must be customised. In utilising past experience and existing structures, it is important to remain sensitive to the limits of extrapolation, the need for innovative thinking and tailoring systems to reflect national priorities and circumstances as well as the specifics of individual NAMAs. Use of standardised approaches is helpful in keeping the MRV system simple and practicable, but it has its limits and is no substitute for national customisation. Experience from CDM and SD-PAMs show that MRV of programmes and policies is inherently more challenging than that of national GHG inventories and individual projects. JI has demonstrated the diversity of national interpretations of an international mechanism, reflecting differences in national priorities and capacities.

What next for measurement, reporting and verification?

In the coming years, NAMA designers, practitioners and other stakeholders face the challenge of gradually moving from the readiness phase to implementation, with a need to focus on, *inter alia*:

- Building MRV systems gradually in tandem with national capacity and designing them to be facilitative rather than burdensome while ensuring sufficient levels of accuracy;
- Streamlining MRV approaches across institutions and levels, and mainstreaming NAMA and MRV development into national strategy and policy development;
- Assigning clear roles and responsibilities to relevant institutions and designating a lead institution for coordinating MRV;
- Making full use of past experience and existing indicators while bearing in mind the need to tailor “nationally appropriate” MRV systems;
- Utilising MRV to design NAMAs in ways that incentivise private sector participation;
- Learning by doing, and sharing experiences and best practices among all NAMA practitioners and stakeholders, bearing in mind that extensive capacity building is needed also in donor countries;
- Developing MRV metrics for, and turning spotlight to non-GHG impacts to enhance the visibility of sustainable development benefits and garner broad-based support for NAMAs, bearing in mind that co-benefits are often national key goals and thus, drivers for implementation; and
- Keeping in mind that challenges and complexities in developing NAMAs and MRV can be seen as the by-product of increasingly mainstreamed and nationally tailored climate policy which itself is a desirable trend.

4. Useful resources on NAMAs and MRV

Material from side event “Exploring practical experience of NAMAs and MRV requirements”

- <http://www.norden.org/en/nordic-council-of-ministers/council-of-ministers/nordic-council-of-ministers-for-the-environment-mr-m/institutes-co-operative-bodies-and-working-groups/working-groups/the-nordic-working-group-for-global-climate-negotiations-noak/projects/nordic-partnership-initiative-on-up-scaled-mitigation-action/events/cop18-side-event-exploring-practical-experience-of-namas-and-mrv-requirements>

UNFCCC website on NAMAs (including links to key documents and workshops)

- <http://unfccc.int/focus/mitigation/items/7172.php>

NAMA databases

- NAMA database: <www.namadatabase.org>
- NAMA pipeline: <www.namapipeline.org>
- Temporary website on NAMA registry prototype: http://unfccc.int/cooperation_support/nama/items/6945.php

NAMA and MRV manuals

- 2011. Lütken et al. **Measuring Reporting Verifying. A Primer on MRV for Nationally Appropriate Mitigation Actions**. UNEP Risoe Centre. <http://namapipeline.org/Publications/MRV_PrimerNationallyAppropriateMitigationActions.pdf>
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- 2012. Perspectives Climate Change. **IRENA Handbook on Renewable Energy Nationally Appropriate Mitigation Actions (NAMAs) for Policy Makers and Project Developers**. IRENA. <http://www.irena.org/DocumentDownloads/Publications/Handbook_RE_NAMAs.pdf>

Reports on MRV

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- 2012. UNESCAP. **Nationally appropriate mitigation action, and measurement, reporting and verification**. UNESCAP. <http://www.unescap.org/esd/environment/lcgg/documents/roadmap/case_study_fact_sheets/Fact%20Sheets/FS-Nationally-Appropriate-Mitigation%20Action%20and%20measurement,%20reporting%20and%20verification.pdf>

Reports on NAMAs

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- 2007. Ellis et al. **SD PAMs. What, where, when and how**. International Energy Agency. <<http://www.iea.org/publications/freepublications/publication/SDPAMs.pdf>>
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- 2012. Hänsel et al. (eds.). **Annual NAMA status report**. [xxxx] <http://www.nama-database.org/images/6/6f/WEBPDF_-_Mitigation_Momentum_Annual_Status_Report.pdf>
- 2012. Württenberger. **Financing Supported NAMAs**. ECN & Ecofys. <http://mitigationpartnership.net/sites/default/files/20121022__ecn_policy_studies_wurtenberger_financing_support_ed_namas_threads.pdf>

NAMA initiatives (more comprehensive list available in Annual Status Report on NAMAs³⁹)

- **International Partnership on NAMAs**
<<http://www.namapartnership.org/>>
- **Mitigation Action Implementation Network (MAIN)**
<<http://ccap.org/programs/mitigation-action-implementation-network-main/>>
- **Facilitating Implementation Readiness for Mitigation (FIRM)**
<<http://www.unep.org/energy/Activities/FIRM/tabid/79475/Default.aspx>>
- **NAMA Facility**
<http://www.bmu.de/files/pdfs/allgemein/application/pdf/factsheets_nama_en_bf.pdf>
<http://www.decc.gov.uk/en/content/cms/news/pn12_159/pn12_159.aspx>
- **NAMAcademy**
<<http://www.namacademy.org/>>
- **Mitigation Momentum**
<<http://www.mitigationmomentum.org/index.html>>
- **Mitigation Action Plans & Scenarios (MAPS)**
<<http://www.mapsprogramme.org/>>

Annex 1. Side event invitation and agenda



INVITATION



PHOTO: IMAGE SELECT

Exploring practical experience of NAMAs and MRV requirements

Background

The concept of National Appropriate Mitigation Actions, NAMAs, is becoming increasingly important in the international climate negotiations and in combating climate change. Although it includes different approaches and scale of mitigation actions, NAMAs is and will be a vital part of developing countries low emission development strategies. All NAMAs should aim to demonstrate the climate benefits of the mitigation actions. Systems for measuring, reporting and verifying (MRV) the NAMAs would benefit from being as consistent, systematic and transparent as possible.

The side event on MRV of NAMAs will provide an opportunity to follow up on earlier discussions on NAMA finance. One issue that has been discussed is whether there should be some minimum requirements for MRV systems when it comes to NAMAs. There are different opinions on what these minimum requirements in such case should be, and what the role of the UNFCCC would be in this regards. Issues have also been raised on whether there should be a differentiation in the MRV system between different types of NAMAs – domestic and supported NAMAs respectively NAMAs as element in the new market based mechanism, or if the MRV framework required be equally comprehensive regardless of the type of NAMA.

Nordic Partnership Initiative on Up-scaled Mitigation Action, NPI

The Nordic Partnership Initiative on Up-scaled Mitigation Action (NPI) is an initiative between the Nordic Countries (i.e. Denmark, Finland, Iceland, Norway, Sweden), along with Peru and Vietnam. The aim of the NPI is to demonstrate in practice how international climate finance can be matched with up-scaled host country mitigation action through two programmes in Peru and Vietnam. It will therefore explore paths to new partnerships between the developed and the developing world to bring down CO₂ emissions. The Nordic Partnership Initiative was launched at COP17 in Durban.

www.norden.org/npi

www.norden.org/npi



The Nordic Council of Ministers is the official body of co-operation of the five Nordic countries and the three autonomous areas in the Nordic region: Denmark, Finland, Iceland, Norway and Sweden, along with the Faroe Islands, Greenland and Åland.





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Nordic Council of Ministers



INVITATION



Exploring practical experience of NAMAs and MRV requirements

Side event UNFCCC COP 18

Date: December 3rd
Time: 1.15–2.45 pm
Place: Qatar National Convention Centre, Doha, Qatar, Room no 10
Facilitator: Ash Sharma, Vice President, Nordic Environment Finance Corporation (NEFCO)

PROGRAMME

Introduction

Mr. Ash Sharma, Vice President, Nordic Environment Finance Corporation (NEFCO)

MRV of NAMAs in the broader context of MRV under UNFCCC

Mr. Claudio Forner, Team leader – Mitigation, Data and Analysis, UNFCCC Secretariat

NAMAs and MRV from the perspective of developing countries

Mr. Eduardo Durand, Director General Climate Change, Ministry of Environment, Peru
Mr. Luis Munozcano, Deputy Director General for Climate Change Projects, SEMARNAT, Mexico

NAMAs supported by fast start climate finance – The Danish Vietnamese Energy Efficiency Programme

Dr. Tran Thuc, Director General, Vietnam Institute of Meteorology, Hydrology and Environment
Ms. Ulla Blatt Bendtsen, Senior Adviser, Danish Energy Agency

The Governments of Vietnam and Denmark co-operate on implementing energy efficiency in Vietnam, and recently signed an agreement to support the second phase of the Vietnam Energy Efficiency Programme VNEEP (2011–2015) with a focus on energy efficiency in small and medium scale industries and in buildings. This is an example of a supported NAMA that includes monitoring and reporting requirements as well as reviews and evaluation of programme performance. A number of indicators have been developed under the VNEEP and focus is on putting in place a coherent national monitoring system that can be sustained once the supported project stops.

REDD+ –payments for verified emission reductions – The Guyana Norway Partnership on REDD

Mr. Andreas Tveteraas, Deputy Director, Norwegian International Climate and Forest Initiative

Reduction of emissions from deforestation and forest degradation in developing countries (REDD+) is an area where there has been valuable experiences with setting up MRV systems to monitor GHG emissions. The Guyana-Norway partnership on REDD+ is a key case study on how a developing country can establish nearly from scratch a national MRV system for the monitoring of emission reductions from the forestry sector and how a donor country can pay for reduced emissions with confidence in the results delivered.

MRV of NAMAs in a new market based mechanism

Mr. Jochen Harnisch, Head of Division Environment and Climate, KfW Development Bank

Panel - Way forward for MRV of NAMAs

Mr. Michael Comstock, Manager, International Climate Dialogue Center for Clean Air Policy (CCAP)
Mr. Andreas Tveteraas, Deputy Director, Norwegian International Climate and Forest Initiative
Mr. Luis Munozcano, Deputy Director General for Climate Change Projects, SEMARNAT, Mexico
Mr. Jochen Harnisch, Head of Division Environment and Climate, KfW Development Bank

Closing

Organized by Nordic Council of Ministers: The Nordic Partnership Initiative on Up-scaled Mitigation Action, NPI



www.norden.org/npi

Endnotes

¹ Decision 1/CP.13, para 1(b)(ii)

² Decision 1/CP.16, para 48

³ UNEP Risoe NAMA Pipeline Analysis and Database (updated 1.12.2012). Online at <<http://www.namapipeline.org/>>

⁴ Höhne et al. 2012. Warnings of climate science - again - written in Doha sand. <http://climateactiontracker.org/assets/CAT_20121208.pdf>

⁵ Decision 1/CP.16, para 80(b)

⁶ Decision 2/CP.17, para 79

⁷ Workshop material online at <<http://unfccc.int/bodies/awg-lca/items/5928.php>> (April 2011) and <<http://unfccc.int/bodies/awg-lca/items/5988.php>> (June 2011) and <http://unfccc.int/meetings/bonn_may_2012/workshop/6660.php> (May 2012) and <http://unfccc.int/meetings/bangkok_aug_2012/workshop/7027.php> (September 2012).

⁸ Decision 2/CP.17, para 34

⁹ Online at <<http://unfccc.int/resource/docs/2012/awglca15/eng/misc02.pdf>> and <<http://unfccc.int/resource/docs/2012/awglca15/eng/misc02a01.pdf>>

¹⁰ Online at: <http://www.namadatabase.org/index.php/Main_Page>

¹¹ Decision 1/CP.16, paras 95 and 98.

¹² Cameron, 2012. Recent trends in support for NAMAs. In: Hänsel et al. (eds.), 2012. Annual Status Report on Nationally Appropriate Mitigation Actions (NAMAs). <http://www.nama-database.org/images/6/6f/WEBPDF_-_Mitigation_Momentum_Annual_Status_Report.pdf>

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¹⁴ Online at <http://www.decc.gov.uk/en/content/cms/news/pn12_159/pn12_159.aspx>

¹⁵ Fuhr & Schalatek, 2012. The "Doha Climate Gateway": Will the camel go through the eye of the needle? <http://www.boell.org/downloads/HBF_Doha_Outcome_Analysis.pdf>

¹⁶ Decision 1/CP.16, para 53

¹⁷ Online at <http://unfccc.int/cooperation_support/nama/items/6945.php>

¹⁸ Decision 2/CP.17, para 46.

¹⁹ Sometimes, the "M" in MRV refers to monitoring.

²⁰ Levin et al. 2012. MRV of NAMAs. In: Hänsel et al. (eds.), 2012. Annual Status Report on Nationally Appropriate Mitigation Actions (NAMAs). <http://www.nama-database.org/images/6/6f/WEBPDF_-_Mitigation_Momentum_Annual_Status_Report.pdf>

²¹ Decision 2/CP.16, para 60

²² Decision 2/CP.16, para 63-64

²³ Decision 1/CP.16, paras 61-62

²⁴ van Tilburg et al., 2011. Paving the way for low-carbon development strategies. <<http://www.ecn.nl/docs/library/report/2011/e11059.pdf>>

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²⁶ See e.g. South Pole, 2011. How to develop a NAMA by scaling-up ongoing programmatic CDM activities. On the road from PoAs to NAMAs. <http://www.southpolecarbon.com/public/SouthPole-KfW_PoA_to_NAMA.pdf>

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- ³⁰ Online at <<http://www.ghgprotocol.org/feature/release-first-draft-mitigation-accounting-standards>>
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- ³² Online at <http://www.mapsprogramme.org/wp-content/uploads/2011/11/Mitigation-Action-Case-Study_Peru.pdf>
- ³³ Online at <<http://www.mapsprogramme.org/country-projects/peru/>>
- ³⁴ Online at <http://www.nefco.org/files/NOAK-NEFCO_FS_Final_Report_2011-08-08_FINAL_approved_to_NEFCO.pdf>
- ³⁵ Online at <<http://www.tietkiemnangluong.com.vn/en/>>
- ³⁶ Online at <<http://www.regjeringen.no/en/dep/md/Selected-topics/climate/the-government-of-norways-international-guyana-norwaypartnership.html?id=592318>> and <<http://www.regjeringen.no/en/dep/md/press-centre/Press-releases/2012/norway-announces-new-contribution-to-guy.html?id=710846>>
- ³⁷ GIZ, 2012. Nationally Appropriate Mitigation Actions. A Technical Assistance Source Book for Practitioners. Online at <http://www.adelphi.de/files/uploads/andere/pdf/application/pdf/nama_source_book.pdf>, p. 57>
- ³⁸ Lütken et al., 2011. Measuring Reporting Verifying. A Primer on MRV for Nationally Appropriate Mitigation Actions. <http://www.namapipeline.org/Publications/MRV_PrimerNationallyAppropriateMitigationActions.pdf>
- ³⁹ Hänsel et al. (eds.), 2012. Annual Status Report on Nationally Appropriate Mitigation Actions (NAMAs). p. 15. http://www.nama-database.org/images/6/6f/WEBPDF_-_Mitigation_Momentum_Annual_Status_Report.pdf