



Nationally Appropriate Mitigation Actions

A Technical Assistance Source Book for Practitioners

IMPRINT

As a federally owned enterprise, we support the German Government in achieving its objectives in the field of international cooperation for sustainable development.

Published by
Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

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Photo credits
Photographs provided by Asian GIZ environment and climate projects

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Jakarta, Berlin, Hamburg, August 2012

This source book brings together GIZ experiences on building capacity for climate change mitigation policies and measures in several countries. The source book development team would like to thank GIZ advisors for their contribution and review.

Nationally Appropriate Mitigation Actions

A Technical Assistance Source book for Practitioners

Version 1.0

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Abbreviations

ADB	Asian Development Bank
BAPPENAS	Ministry of National Development Planning, Indonesia
BAU	Business-as-usual
BMU	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
BMZ	Federal Ministry for Economic Cooperation and Development
BUR	Biennial update report
CCAP	Center for Clean Air Policy
CCBS	Climate, Community and Biodiversity Standards
CCF	Climate Change Fund
CDM	Clean Development Mechanism
CEF	Clean Energy Fund
CFU	Carbon Finance Unit
CTF	Clean Technology Fund
CH ₄	Methane
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
COP	Conference of the Parties
DECC	United Kingdom's Department for Energy and Climate Change
DKTI	German Climate Technology Initiative
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EC	European Commission
ECN	Energy Research Center of the Netherlands
EnDev	GIZ Energising Development Programme
ER	Emission Reductions
ERS	Emission Reduction Scenario
EU	European Union
FICAM	Financial and Cost Assessment Model
FOVISSSTE	Housing Fund of the Institute of Social Security and Services for Government Workers
GCCA	Global Climate Change Alliance
GCF	Green Climate Fund
GEF	Global Environment Facility
GHGs	Greenhouse Gases
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GJ	Gigajoules
GRI	Global Reporting Initiative
GWP	Global Warming Potential
ICA	International Consultation and Analysis
ICI	German International Climate Initiative
ICLEI	International Council for Local Environmental Initiatives
IEA	International Energy Agency
IFEU	Institut für Energie- und Umweltforschung
InfraFund	Inter-American Bank's Infrastructure Fund
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
KfW	Kreditanstalt für Wiederaufbau
LAO PDR	Lao People's Democratic Republic



LCDS	Low Carbon Development Strategy
LDCs	Least Developed Countries
LEDs	Low Emission Development Strategy
LGU	Landfill gas utilisation
LGUs	Local Government Units
LTMS	Long Term Mitigation Scenarios
m ²	Square metre
MAC	Marginal Abatement Cost
MAPS	Mitigation Action Plans and Scenarios
MCDA	Multi Criteria Decision Analysis
MEMR	Ministry of Energy and Mineral Resources
MoA	Ministry of Agriculture
MoF	Ministry of Finance
MoFor	Ministry of Forestry
MoI	Ministry of Interior
MOP	Meeting of Parties
MRV	Measuring, Reporting and Verification
MW	megawatt
MWh	megawatt per hour
N ₂ O	Nitrous Oxide
NAMA	Nationally Appropriate Mitigation Action
NAMAC	Non-Annex I Marginal Abatement Cost
NFSCC	National Framework Strategy on Climate Change
NGO	Non-Governmental Organisation
NPVs	Net Present Values
OECD	Organisation for Economic Co-operation and Development
PFC	Perfluorocarbons
PoA	CDM Programme of Activities
PPIAF	Public Private Infrastructure Advisory Facility
PU	Ministry of Public Work
RAN	Indonesian National Action Plan for GHG reduction
RAN-GRK	Indonesian Mitigation Action Plan on greenhouse gas emission reduction
RECs	Regional Ecology Centers
SECCI	Sustainable Energy and Climate Change Initiative
SHF	Federal Mortgage Company
SWM	Solid Waste Management
SWM4LGU	Solid Waste Management for local government units
t	Tonne
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
WACC	Weighted Average Cost of Capital
WB	World Bank
yrs	Years

Introduction

At present, GIZ advisory services support a range of greenhouse gas (GHG) mitigation policies and instruments in Asia and the rest of the world, such as the clean development mechanism (CDM) and its programme of activities (PoA) in Pakistan and Thailand, unilateral and internationally supported nationally appropriate mitigation actions (NAMAs) in Indonesia, and GHG inventories in China. Given the ever more pressing need for mitigation actions and support in developing countries, efforts in climate change mitigation policy and measures, especially NAMAs, are likely to increase over the next years. A number of countries have already established Low-Emission Development Strategies (LEDS) or similar policy instruments^[1] to identify the sources of GHG emissions and prioritise options for their mitigation in accordance with cost-benefit analyses and political and socio-economic criteria. LEDS can help to ensure that NAMAs create synergies and support each another.

The TUEWAS Working Group on NAMAs and Market Mechanisms (TUEWAS WG) acts as a knowledge platform for GIZ advisors in Asia by facilitating the exchange of expertise and experience in supporting the development and implementation of LEDS and NAMAs. In October 2011, the working group agreed to develop a source book on NAMA development compiling and reviewing GIZ's experience in building capacity for mitigation action in Asia and the rest of the world.

In order to write a robust, GIZ-specific guidebook, twelve interviews were held with GIZ and KfW

employees who work around the world on NAMAs, the CDM or other approaches to emission reductions. The interview results were then combined with general NAMA information as well as with the GIZ Capacity WORKS tool and the GIZ NAMA tool. GIZ documents were the main source of information, but information from elsewhere was added where appropriate.

This input culminated in a holistic source book that offers guidance to GIZ employees and non-Annex I countries responsible for implementing NAMAs.

[1] There are a number of other similar policy instruments, such as Low Carbon Development Strategies, Climate-Compatible Development Plans and National Climate Change Plans.



1. Approach

Interviews with representatives from NAMA-related GIZ projects showed that there are five key themes for a successful NAMA. The source book will be structured according to these themes:

1. Political process;
2. Stakeholders and cooperation;
3. Technical factors;
4. Support; and
5. Implementation.

This source book also includes a second element, which highlights the relevant success factors and Capacity WORKS tools. Capacity WORKS is GIZ's management model for sustainable development. It was introduced to GIZ projects worldwide in 2009–2010 and contains a toolbox of management methods and instruments that can be applied by various stakeholders in different sociocultural contexts and sectors. Capacity WORKS is suitable for complex projects and programmes at all stages; it aims to steer these project and programmes towards^[2]:

- The concept of 'sustainable development';
- Objectives and results; and
- The application of five success factors.

Capacity WORKS is structured around five success factors which are similar to NAMA success factors.

The Capacity WORKS success factors are:

1. Strategy: Negotiate and agree on the strategic orientation;
2. Cooperation: Network with people and organisations to facilitate change;
3. Steering structure: Negotiate the optimal structure;

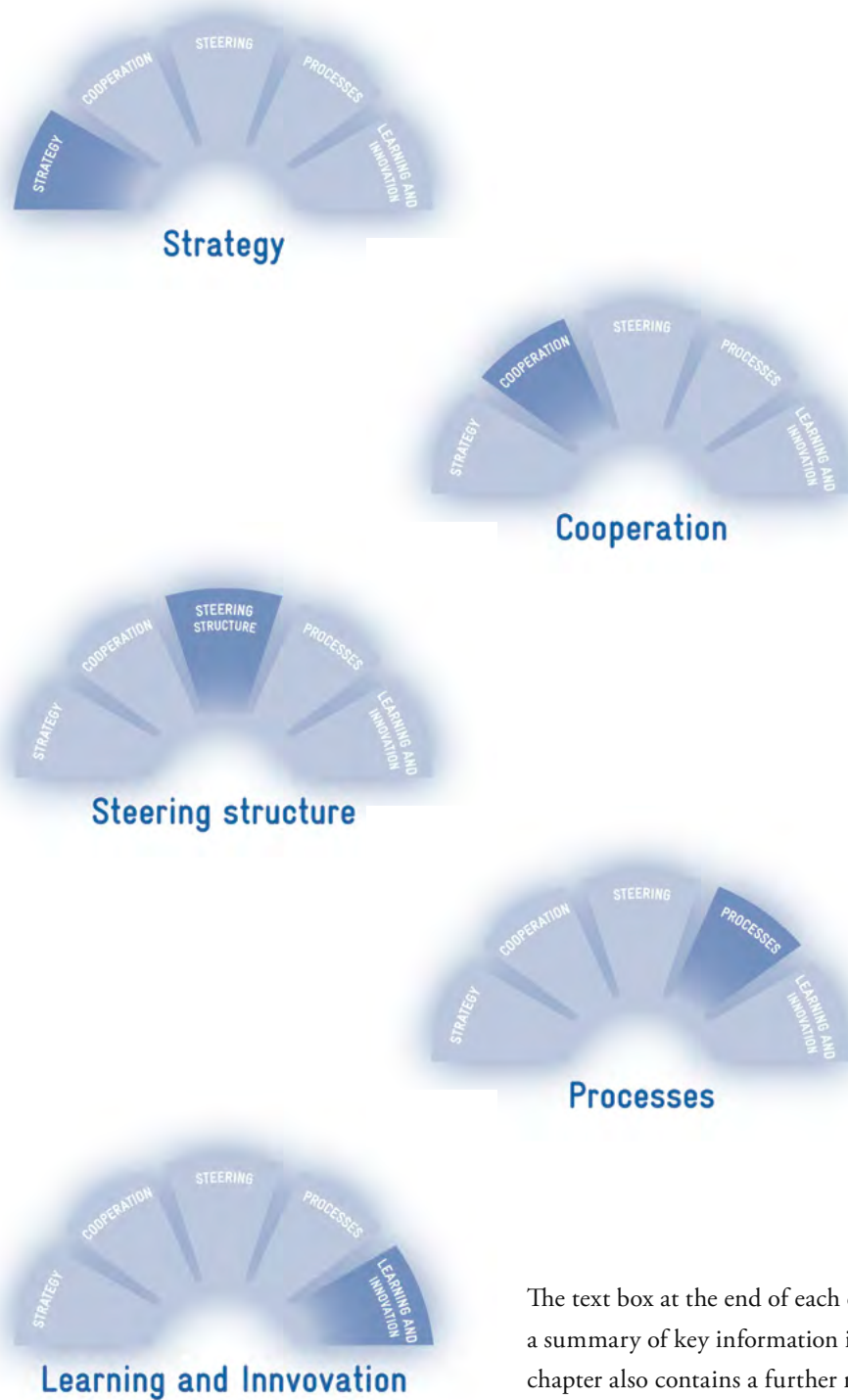
4. Processes: Manage processes for social innovation; and
5. Learning and innovation: Focus on learning capacities.

As mentioned above, Capacity WORKS is integrated throughout the entire source book in text boxes at the end of each section. In addition, the interviews conducted during the development phase of the source book took into account the Capacity WORKS success factors.

To assist the reader in following the Capacity WORKS management practices, a Capacity WORKS icon with the relevant component highlighted will be included in the text box. The symbols stand for the following Capacity WORKS components:

^[2] All information on Capacity WORKS is taken from: GIZ (2009): Capacity WORKS. The Management Model for Sustainable Development. Eschborn.

Figure 1: *Capacity WORKS* management practices



Source: GTZ (p.10ff, 2009)

The text box at the end of each chapter also includes a summary of key information in the chapter. Each chapter also contains a further reading box with references also included in detail in the reference section.

2. What are NAMAs?

A nationally appropriate mitigation action (NAMA) is a voluntary measure for mitigating GHG emissions. NAMAs can be implemented in developed or developing countries, but this source book will focus on NAMAs in developing countries. NAMAs can be supported by the implementing country or by developed countries; the support can come in various forms, such as financing, technology transfer and capacity building. As no internationally agreed definition for NAMA exists yet, NAMA activities are generally not limited as long as they are in line with national development plans, result in the mitigation of GHG emissions, and have an impact that can be measured, reported, and verified (MRV) (UNFCCC, 2007). Potential measures under a NAMA are thus varied and can be a mix of activities over various sectors, policies, strategies, programmes and/or projects.

The political framework for NAMAs may still be evolving, but NAMAs are becoming a standard element of the international climate policy regime. NAMAs entered the climate policy agenda through the 2007 Bali Action Plan, when the Conference of Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) agreed on using them to address mitigation on a broader scale. Beginning in early 2010, right after the Copenhagen Accord was adopted, some developing countries submitted initial NAMA concepts. These ranged from lists of potential activities up to highly elaborate strategies.

At the COP in Cancun at the end of 2010, it was agreed that developing countries can apply NAMAs to achieve a deviation from business-as-usual (BAU) emissions by 2020. Many countries submitted

NAMA concepts to the UNFCCC^[3] and a number of countries are currently preparing detailed NAMA proposals. These NAMAs address various sectors such as transport, energy, waste, industry, buildings, forestry and agriculture and cover activities ranging from drafting LCDS to developing plans for introducing certain policies and/or commencing specific projects. Information on ongoing NAMA developments can be found in resources such as the UNEP Risoe NAMA Pipeline Analysis and Database^[4] or Ecofys' NAMA Database.^[5] In terms of NAMA scope, there is a broad understanding that NAMAs generally go beyond individual investment projects. NAMAs should advance policies aimed at lowering barriers to investment and implementation in and across key mitigation sectors. The implementation of certain NAMA elements may require financial and/or technical support.

It has been proposed in the international negotiations that developing countries should formulate NAMAs as part of their LEDS. A LEDS is a strategic plan that is meant to support the transition of a country towards low-carbon economic development and socio-economic sustainability. In addition to a strategic vision, it should comprise a concrete set of measures leading to GHG emission reductions, the quantification of emission reductions for each measure, and the financial requirements to implement the measures. The set of measures can be expressed as NAMAs. As deliberations on LEDS and NAMAs are still ongoing, the question is still open as to whether LEDS would be required under the post-2012

[3] <http://unfccc.int/resource/docs/2011/awglca14/eng/inf01.pdf>

[4] <http://namapipeline.org>

[5] <http://www.nama-database.org>

international framework or whether they would remain voluntary for non-Annex I countries.

The Cancun Agreements recognise two categories of NAMAs – those developed using domestic means (domestically supported NAMAs) and those requiring international support (internationally supported NAMAs). NAMAs do not necessarily only seek financial assistance; support can also comprise elements of technology transfer and/or capacity building. International support can be provided through bilateral or multilateral sources ('donors') or through financial mechanisms of the UNFCCC, support mechanisms such as the Global Environment Facility (GEF) and – once operational – the Green Climate Fund (GCF). Additional support can be provided by the private sector, for instance through financial markets or even carbon markets. Whether internationally supported or financed through domestic means, it is important that NAMAs emerge from a country-driven and participatory stakeholder process that creates ownership among the stakeholders involved.

In terms of carbon markets, supported NAMAs could receive complementary funding in the form of carbon credits for emission reductions (often called 'NAMA crediting'). This would build upon work already undertaken towards establishing the carbon market. While the concept of credited NAMAs has not been acknowledged in UNFCCC documents, results-based financing approaches and payment for verified results are being considered in the contexts of the GCF and the new market mechanisms, which were defined at COP 17. Further information on new market mechanisms can be found [here](#).

At COP 17 in Durban, Parties made a number of NAMA-related decisions, including the setup of a prototype NAMA registry and an international measuring, reporting and verification (MRV) process.

International guidelines for the reporting and verification of developing countries' GHG emissions at national level have been put in place through the 'biennial update report' (BUR) and 'international consultation and analysis (ICA) system. Further information about BURs and ICAs can be found in the COP 17 Outcome of the work of the Ad-hoc Working Group on Long-term Cooperative Action, available [here](#). However, no international agreement on MRV guidelines at NAMA level has been reached. Actors developing NAMAs and those supporting NAMAs (national or international) are therefore free to design MRV plans for NAMAs that suit the needs of the parties involved. Development cooperation experience in project monitoring, sectoral experience in measuring and reporting, and CDM experience in verification provide valuable lessons learned for NAMA developers.

The NAMA Registry was initially conceptualised as a central log for NAMAs with an MRV component, but was finally set up as a voluntary 'dynamic' and web-based matchmaking platform for developing countries proposing NAMAs, international donors and other relevant stakeholders. The Registry offers developing countries the opportunity to attract international support and increase transparency while showcasing the NAMAs. However, the Registry is a voluntary tool: The development of NAMAs, and in particular the interaction with donors, can also take place without using the Registry. A web demonstration of the UNFCCC NAMA Registry prototype was released in May 2012^[6].

There are a number of benefits of implementing NAMAs instead of CDM projects or programmes

[6] <https://unfccc.webex.com/unfccc/ldr.php?AT=pb&SP=MC&rID=1152697&rKey=06E9F7B152173878>

of activities (PoAs). Since NAMAs can comprise such a wide range of measures, they are better suited than the CDM to address small, dispersed and non-stationary GHG emission sources such as those produced in the transport and agricultural sector. While the CDM focuses on specific projects or programmes, NAMAs can encompass a wide variety of activities that reduce GHG emissions – this can include policies, programmes, projects or other instruments. Furthermore, NAMAs are to be designed in ways that are much more suitable to an implementing country's needs. This means that baselines can be established in a country-specific manner with the involvement of necessary stakeholders, and that MRV systems can be designed in accordance with implementing countries' capacities and needs. In the CDM, MRV consists of accounting for emission reductions on a tonne by tonne of CO₂ equivalent basis. For NAMAs however, MRV can be conducted in a less precise manner – though still a manner that maintains high environmental integrity – or they may apply different metrics, especially with regard to the MRV of policies.

NAMAs can also be carried out domestically with or without international partner involvement. Additionally, most NAMAs will have government involvement as opposed to the CDM where the majority of projects and programmes were private sector-led with limited government involvement. Government involvement is required for a NAMA to be uploaded to the voluntary UNFCCC NAMA Registry because the UNFCCC focal point is the only person authorised to do so.

Further information can be found in this factsheet: [CDM and NAMAs – Overviews and Differences](#).

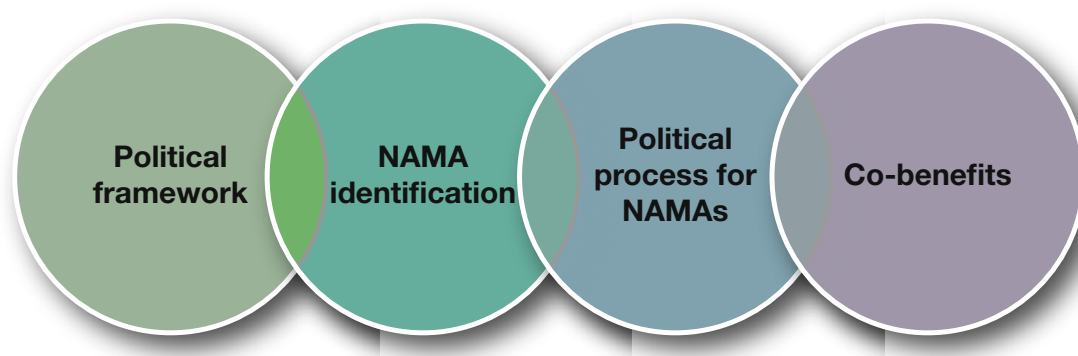




3. Political process

This chapter analyses the important aspects of the political process in relation to the development and implementation of NAMAs.

Figure 2: Key aspects of Chapter 3



Source: adelphi/PCC

To this end the following guiding questions will be addressed:

3.1 How can NAMAs be linked with the political framework of the partner country?

On one hand, this section looks at how NAMAs can be embedded into existing LEDS or national mitigation strategies. On the other hand, it describes how a NAMA can be developed if there is no LEDS or mitigation strategy planned or in existence.

The section also highlights general barriers to climate policy implementation that affect NAMA development and gives initial suggestions on how NAMAs can help to overcome these barriers. In addition, it examines internal and external drivers for NAMA development in the implementing countries.

3.2 How are NAMAs identified and conceptualised?

This section includes a list of resources that provide further information on identifying NAMAs for the implementing countries. This is followed by an overview of potential NAMA sectors and categories and options for NAMA support. The section highlights the benefits or the added value of NAMAs (especially unilateral) for implementing countries as well as the strengths and weaknesses of credited NAMAs. An initial overview of important criteria in selecting successful NAMAs is also provided.

3.3 What is required to start the political process on NAMA development?

This section provides examples of and guidance on how a national NAMA steering structure could be designed.

3.4 What needs to be considered regarding co-benefits?

As NAMAs present an opportunity to align GHG emission reduction goals with sustainable development, this section describes ways of considering potential co-benefits in the NAMA development process and information about which resources can provide guidance on sustainable development criteria.

UNDP has developed a guide on the relationship between LEDS and NAMAs, identifying three possible linkages: '*How-to Guide Low-emission Development Strategies and Nationally Appropriate Mitigation Actions*'.

<http://www.undp.org.mk/content/Publications/lowemission.pdf>

3.1 How can NAMAs be linked with the political framework of the partner country?

» How can NAMAs be embedded in existing LEDS or national mitigation strategies?

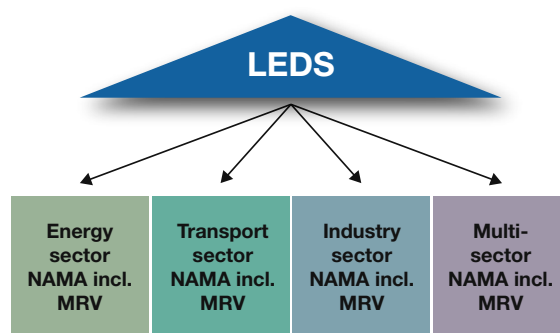
In order to decouple economic growth and social development from an increase in GHG emissions, the Cancun Agreement encourages developing countries to draw up low-carbon development strategies or plans in the context of sustainable development (Cancun Agreement, 2010).

LEDS or similar policy instruments^[7] are crucial in guiding decision-making on national mitigation activities, identifying sources of the country's GHG emissions and prioritising options for their mitigation. Since LEDS should be linked to other national strategies, such as those on sustainable development, poverty eradication or economic growth, they provide a strategic context for mitigation activities

that consider cost-benefit aspects as well as political and socioeconomic criteria. As countries will try to receive international recognition for their mitigation activities such as NAMAs, LEDS can be an important instrument in ensuring that such activities are in line with national priorities.

Following a top-down approach, NAMAs are developed based on the pre-defined priority sectors in the LEDS. In those cases, a LEDS acts as an umbrella for the NAMAs as shown in the Figure 3.

Figure 3: Top-down LEDS approach



Source: GIZ 2 (p. 2, 2011)

[7] There are a number of similar policy instruments, such as the Low Carbon Development Strategy, Climate-Compatible Development Plan, or National Climate Change Plan.

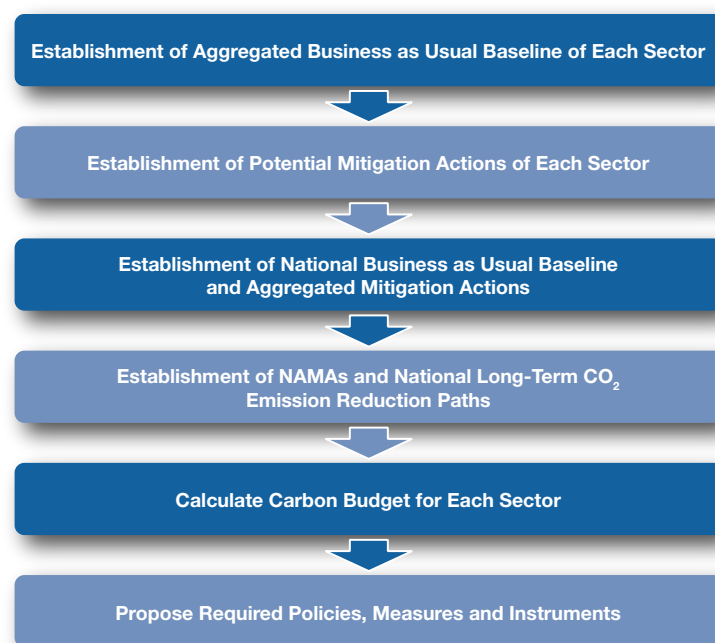
One of the advantages of a top-down approach to NAMA development is that key political actors are more likely to take strategic ownership of the process. Also, the existence of a LEDS or national mitigation strategy usually implies that a steering structure to coordinate national climate mitigation activities may already be in place. However, this does not guarantee that the current structure is sufficient. In addition, a national strategy with clear targets is useful for orientation and as a benchmark for the level of ambition of any NAMA.

LEDS and NAMA development in Indonesia

The National Mitigation Action Plan on Greenhouse Gas Emission Reduction (RAN-GRK) was launched in Indonesia by presidential decree in 2011, providing the foundation for the implementation of mitigation actions by various ministries, governmental institutions and local governments. The Government of Indonesia intends to achieve its national GHG emission reduction target by implementing NAMAs, thus ensuring high-level political commitment towards the NAMA process. Against this background, GIZ supports the Indonesian Government in establishing a Climate Change Secretariat with sectoral working groups to monitor the implementation of the RAN-GRK, including the development of potential NAMAs.

Besides showcasing the process of establishing a LEDS and a respective national steering structure, the Indonesian case provides information on the required steps for deriving NAMAs from LEDS, which were developed in a comprehensive study supported by GIZ.

Figure 4: Main tasks in Indonesia's national integrated processes for furthering NAMAs



Source: GIZ/BAPPENAS (p. 32–33, 2011)

» Can a NAMA be developed if there is no LEDS or mitigation strategy planned or in existence?

A LEDS or national mitigation strategy can provide a useful framework but it is not a prerequisite for NAMA development. In the case that data for a comprehensive analysis of mitigation potential is not available, or if there is a lot of interest and motivation from key sector stakeholders to implement mitigation actions, bottom-up approaches for NAMA development may be more suitable.

Philippines: Solid waste management towards pursuing a NAMA approach without an established LEDS

The Philippines has been very active in strategising climate change; its Climate Change Commission (CCC) under the President approved a National Framework Strategy on Climate Change (NFSCC), and National Climate Change Action Plan (NCCAP) guidelines with provisions for Local Climate Change Action Plans (LCCAP). However, the CCC has yet to make announcements about targets or NAMA plans/frameworks as the members are awaiting more clarification on NAMAs. Meanwhile, the CCC has taken a bottom-up approach, allowing the sectors to propose their own mitigation targets/plans for potential NAMAs that emphasise co-benefits.

Prior to this, the National Solid Waste Management Commission (NSWMC) already recognised the applicability and relevance of NAMAs for their sector in their National Solid Waste Management Strategy. The NSWMC endorsed NAMAs in solid waste management and has started strategising for NAMAs in the sector. These include technologies for enhancing compliance among local authorities and a multimillion dollar (USD) finance window for solid waste management.

NAMA development in Tunisia: Deriving NAMAs from sectoral strategies

An approach to developing NAMAs without a pre-existing LEDS would be to consider relevant sector-specific strategies (e.g. national energy or waste management strategy) as starting points.

The Tunisian Solar Plan of 2009 served as a basis for the Tunisian Government for formulating NAMA activities. The plan includes clear emission reduction targets and describes 40 projects focusing on energy efficiency and renewable energies for 2010–2016 that are mainly financed domestically and could be considered as unilateral NAMAs. However, some of these pre-defined projects require international support and would fall under the category of internationally supported NAMAs.

**»» How do barriers to implementing climate policy affect NAMA development?
How can NAMAs help overcome these barriers?**

Similar to other mitigation activities, NAMA development can be affected by the financial, institutional, economic, technical, information and capacity barriers listed in Table 1. However, there are a number of approaches listed below that can help to overcome these barriers, thus facilitating the development of NAMAs. These approaches are split into direct ‘project actions’, which can guide activities on the ground, and wider, longer-term ‘policy-based frameworks’ that address key aspects in an overall enabling environment.

Table 1: Barriers to the implementation of NAMAs

	Project action	Policy-based framework
Financial barriers		
<ul style="list-style-type: none"> ■ High upfront costs, small project sizes ■ Split incentives (e.g. of owners and users) ■ Misallocation of resources for investments (e.g. subsidies for conventional technologies) 	<ul style="list-style-type: none"> ■ Start action on the ground ■ Connect partners to share risks and costs ■ Produce value-added 	<ul style="list-style-type: none"> ■ Provide long-term financing
Institutional barriers		
<ul style="list-style-type: none"> ■ Limited access to capital ■ Monopolies/Limited access to markets 	<ul style="list-style-type: none"> ■ Integrate partners 	<ul style="list-style-type: none"> ■ Abolish monopolies and regulatory market access barriers
Economic barriers		
<ul style="list-style-type: none"> ■ Externalities 	<ul style="list-style-type: none"> ■ Create opportunities for free communication ■ Inform policy makers through bottom-up processes 	<ul style="list-style-type: none"> ■ Adjust market prices and internalise externalities
Technical barriers		
<ul style="list-style-type: none"> ■ High transaction costs 	<ul style="list-style-type: none"> ■ Connect partners with complementary capacities and resources 	<ul style="list-style-type: none"> ■ Provide technology access
Information barriers		
<ul style="list-style-type: none"> ■ Limited awareness of options ■ Lack of knowledge/access to knowledge 	<ul style="list-style-type: none"> ■ Connect actors to knowledge holders ■ Install gatekeepers for information flows ■ Increase transparency and openness 	<ul style="list-style-type: none"> ■ Education and awareness raising campaigns ■ Educational curricula
Capacity barriers		
<ul style="list-style-type: none"> ■ Lack of skilled labour ■ High transaction costs 	<ul style="list-style-type: none"> ■ Select (international) partners with needed capacities 	<ul style="list-style-type: none"> ■ Establish capacity building institutions

Source: TRANSfer (p. 30, 2012).

In order to overcome these barriers, domestic and international drivers need to be considered. Such domestic drivers at national level are:

- National mitigation targets that have to be achieved within a certain time frame;
- Sector-specific public pressure (e.g. for improved public transportation);
- High-level political commitment by an institution and/or stakeholder that is a ‘game changer’ or

‘authoritative key driver’ (GIZ TUEWAS (p.18, 2011));

- Improved credibility and standing of sectors and/or companies in the national context; and
- A NAMA as a ‘business/innovation opportunity’ resulting in both mitigation of climate change and increased competitiveness (win-win scenario) (GIZ/BAPPENAS (p.21, 2011)).

International drivers for NAMA development may include:

- Expectation among the international community for mitigation efforts;
- Improved credibility and standing of sectors, companies and/or the country within the region and globally;
- Opportunity for international support and/or revenues; and
- Existing partnerships aimed at implementing environmental and climate policies that further evolve based on international climate policies.

Despite remaining barriers to NAMA development (including some uncertainty regarding the international NAMA framework), there are good reasons for partners to engage in NAMAs at an early stage ('early movers'):

- Flexible rules and the potential to shape the emerging NAMA regime;
- Increased chances for support within a post-2012 framework;
- (Domestic) NAMAs may include little additional long-term economic costs for an implementing country if they focus on low-hanging fruit or no-regret options; international support could then be used for scaling up actions under supported (or credited) NAMAs;
- International recognition when partner governments engage in unilateral NAMAs;
- Considerable non-climate development benefits such as social housing retrofitting; and
- Fulfilment of government strategies.



Hints for NAMA project planning and management

To successfully develop and implement NAMAs, strategic orientation is needed in terms of the existing policy framework, potential barriers, and drivers for NAMA development in the partner country. Climate mitigation policies and instruments need to be aligned with national development goals in order to create synergies and minimise the risk of conflicts between different policy goals.

Recommended Capacity WORKS tool

SF4: PROCESS – 01 Process Landscape

This instrument can be used to provide a strategic overview of the various processes and process levels within the policy field.

Benefits of the tool for NAMA development

- Provides an overview of processes that are relevant to NAMA development and implementation (e.g. LEDS, sustainable development strategies, domestic and international drivers);
- Helps sort processes in categories and hierarchies; and
- Decides which of the processes in the policy field are relevant (i.e. core and auxiliary processes) and which are not.

Further reading

- GIZ 1 (2012) – Nationally Appropriate Mitigation Actions (NAMAs). Steps for moving a NAMA from Idea to Implementation. NAMA Tool 7.0.
- GIZ 6 (2012) – Factsheet ‘Low-Emission Development Strategy (LEDS)’. Environment and Climate Change. Available online at (last accessed 18.10.2012): http://www.spc.int/lrd/index.php?option=com_docman&task=doc_download&gid=1651&Itemid=535
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- GIZ/BEE (no year) – Lessons learned. Bachat Lamp Yojana (BLY) Experience, India. PoA for NAMA.
- GIZ TUEWAS (2011) – NAMAs and Market Mechanisms. Workshop Report.
- Ministère de l’Environnement et du Développement Durable (2010) – Tunisian ‘Nationally Appropriate Mitigation Action’ NAMAs. Preliminary Proposals. Available online at (last accessed 18.10.2012): http://www.jiko-bmu.de/files/basisinformationen/application/pdf/nama_proposals_tunisia.pdf

3.2 How are NAMAs selected?



What resources are available for finding additional information on identifying NAMAs?

The following sources (when available) can help identify NAMAs:

- National mitigation strategy/LEDS – pre-defined focus areas for mitigation activities and objectives;
- Sectoral strategies – pre-defined sectoral focus areas for mitigation activities and sectoral objectives;
- National development plans – potential source for identifying co-benefits, ensuring that NAMAs are aligned with national development priorities;
- Consultations with relevant sectoral stakeholders (*e.g.* thematic champions);
- CDM PoA projects that can potentially be scaled up;
- [NAMA suggestions submitted to the UNFCCC](#);
- [UNFCCC climate change technology needs assessment reports](#);
- [Technology needs assessments and technology action plans](#);
- [NAMA suggestions submitted to the UNFCCC](#);
- Low carbon growth studies, *e.g.* the [World Bank study](#).



In which sectors can NAMAs be implemented?

NAMAs can be undertaken in a wide variety of sectors where there is potential for GHG emission reductions and possible co-benefits. The IPCC^[8] suggests categorising GHG emissions along seven

[8] <http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-ts.pdf>

emitting sectors: energy supply, residential and commercial buildings, transport and its infrastructure, forestry, waste management, agriculture, and industry. As forestry and agriculture are sectors relevant for

NAMAs, the box below describes the relationship of NAMAs to the mitigation strategy Reducing Emissions from Deforestation and Forest Degradation (REDD+).

NAMAs and REDD+: Interactions and key issues for consideration

NAMAs and REDD+ are two strategies for mitigating climate change. Both are highly relevant for developing countries and are still being discussed under the UNFCCC. There has been no final clarity on their eventual modalities, and dealing with the relevance of the two concepts is thus very difficult. This is particularly challenging because the concepts are dealt with in two different negotiation tracks, enabling different methodological approaches, modalities and expert communities to evolve.

Despite the lack of conceptual clarity, developing countries need to deal with NAMAs and REDD+ in an integrated manner while setting up a coherent national strategy for the mitigation of climate change.

UNFCCC discussions and decisions relating to REDD+ are already fairly advanced in terms of eligible activities, carbon accounting, funding sources and MRV implications. At the same time, developed countries have been investing heavily in a long list of countries with a significant amount of forests. These investments have funded readiness processes to set up the required government infrastructure for participating in a REDD+ mechanism. Interestingly, real activities on the ground to reduce emissions under REDD+ are still virtually absent and are mostly

limited to so-called demonstration activities in the style of forest protection projects for voluntary carbon markets.

UNFCCC decisions related to NAMAs seem to be much less specific than those related to REDD+. Also, there is no widespread and significant investment from developed countries in readiness for NAMAs yet. There is, however, much ongoing activity for designing pilot initiatives that would reduce GHG emissions; these initiatives are more abundant than activities for REDD+. They are also in many cases of a different quality as they are not limited to (re-packaging) project-based approaches but are increasingly moving towards policy-level activities of developing country governments.

When comparing early REDD+ and NAMA developments side by side, different approaches seem to be taken for the two concepts. If REDD+ is based on decisions taken by the UNFCCC, the approach may have the characteristics of a mechanism, while the approach for unilateral NAMAs may be principally bottom-up, initiated by developing countries. For supported and credit-generating NAMAs, more top-down structured regulations by the UNFCCC that refer to MRV and Registry issues might be expected.

In order to address the question as to whether and how REDD+ measures and NAMAs could be integrated and mutually reinforced by developing countries, the following key questions will have to be answered:

- How do NAMAs and REDD+ measures differ in terms of scope for eligible mitigation activities and sectors, carbon accounting approaches, funding sources (market-based and/or fund-based) and modalities, as well as MRV aspects?
- What are the differences and similarities between NAMAs and REDD+ in terms of overall ‘character’? Do they refer to UNFCCC mechanisms and projects (along the lines of e.g. CDM) or more to national policies and related frameworks?
- What would be key advantages or disadvantages of combining NAMAs and REDD+ measures in UNFCCC negotiations?
- What are the implications of the relationship between NAMAs and REDD+ measures for in-country policy makers and practitioners (such as GIZ advisors)?

- What are objective key messages that should be included in GIZ climate change policy advice on the international discussion to be considered by partner countries?

As the example of some countries shows, a possible integration or harmonisation of NAMAs and REDD+ approaches is desirable for situations in which a national REDD+ strategy outlines different timelines, implementing structures and institutions and methodological hints for reference emission levels, carbon accounting and MRV than it is the case for an overall national NAMA and LEDS strategy. For example, Indonesia submitted NAMAs to the UNFCCC in January 2012 containing all sectors, including LULUCF. However, on national and subnational levels, two different strategies and implementation structures were created and these may need to be harmonised during the process of implementation.

If implementing country already has a national mitigation strategy or LEDS in place, the focus sectors for mitigation activities are usually determined in therein.

Indonesia's multi-sectoral national mitigation strategy

The RAN-GRK defined the following seven major focus areas comprising 52 activities as potential NAMAs for achieving the 26% national emission reduction target compared to BAU by 2020:

- Peat land management
- Forestry
- Agriculture
- Energy efficiency
- Renewable energies
- Waste
- Transportation

» How can NAMAs be categorised? What is the range of the NAMA activity spectrum?

Generally, there are different approaches for categorising NAMAs, for example by source of funding, type of action (key elements of the NAMA), or by the focus, *i.e.* whether the NAMAs are policy-based, target-based or project-based.

NAMAs can be categorised according to their source of funding as illustrated by Figure 5:

Figure 5: NAMA categories by source of funding

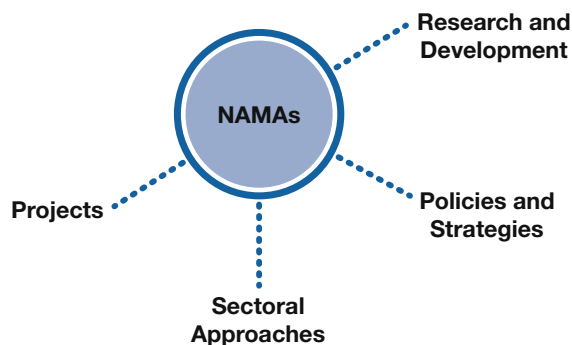
Unilateral	Supported	Credited
<ul style="list-style-type: none"> To be financed domestically 	<ul style="list-style-type: none"> To receive international support (finance, technology and/or capacity building) 	<ul style="list-style-type: none"> To receive private sector funding that results in carbon credits

Source: based on GIZ 1 (p. 2, 2011)

Unilateral and supported NAMAs are currently the two recognised NAMA categories; the concept of credited NAMAs is under discussion.

As a NAMA relates to any action that ultimately contributes to GHG emission reductions while addressing the development needs of a country, it can encompass a wide range of elements as illustrated in the Figure 6.

Figure 6: Potential NAMA scope



Source: Based on GIZ 1 (p. 2, 2011)

Another option of categorising NAMAs would therefore be in accordance to the type of action(s) they address, such as:

- Data collection, studies, research;
- Strategy development on national/regional and sectoral level;
- GHG mitigation projects/programmes;
- Definition, implementation and enforcement of regulations;
- Capacity and institutional development;
- Provision of financial incentives;
- Investment programme; and
- Awareness raising/campaigns.

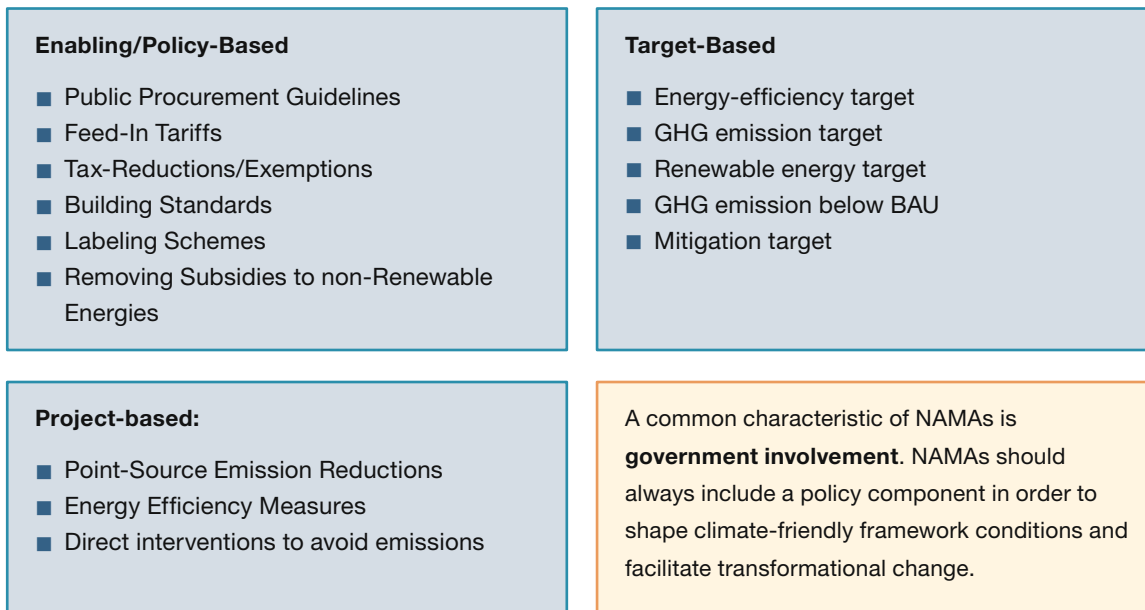
In addition, NAMAs can also be categorised by their respective focus, *i.e.* whether the NAMAs are target-based or project and/or policy-based. Target-based NAMAs generally relate to sectoral or national mitigation strategies with clear GHG emission reduction targets to be measured against a BAU scenario. Project-based NAMAs do not necessarily relate to an overall strategy but are part of pre-defined sets of activities for achieving specific project objectives. Many NAMA projects were included in the document 'Compilation of information on nationally appropriate mitigation actions to be implemented

by Parties not included in Annex I to the Convention. Note by the secretariat' (UNFCCC 1 2011). Ethiopia, for instance, submitted NAMAs related to individual hydropower, wind and geothermal plants. Policy-based NAMAs focus on achieving an enabling policy framework. Objectives include establishing guidelines, tariffs, standards and other legal and policy instruments that contribute to promoting

GHG emission reductions for various economic activities. Although the focus of NAMAs can vary, all three focus types presented here include government involvement. NAMAs should include a policy component in order to shape climate-friendly frameworks and facilitate transformational change towards low-carbon development.

Figure 7: List of NAMA examples by focus

Project, Enabling/Policy, and Target-based NAMAs



Source: GIZ 1 (p. 31, 2012)



What kind of support is needed for NAMAs?

It is expected that the majority of NAMAs will seek some kind of support from Annex I countries, be it financial, technical or capacity-building. However, it is unlikely that most supported NAMAs will be

funded entirely by international support and will therefore include some form of unilateral funding.

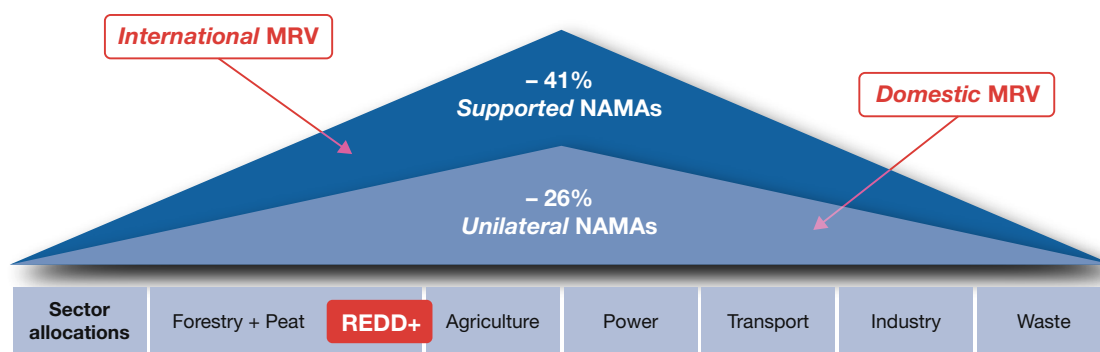
A number of countries are already planning to undertake domestically supported NAMAs to meet domestic targets.

Carbon markets may play a role in helping finance NAMAs. Frameworks and platforms which have already been established for the current carbon market can then be adapted and utilised. However, the key issue surrounding NAMA ‘credits’ is demand. In order for NAMA ‘credits’ to be a bankable commodity, there must be buyers willing to purchase the credits.

Unilateral versus supported NAMAs in Indonesia

Under the RAN-GRK, the Indonesian Government has defined clear targets to be achieved with domestically financed mitigation activities (unilateral NAMAs) and with international support (supported NAMAs).

Figure 8: Mitigation targets in Indonesia compared to BAU to be achieved by 2020



Source: GIZ 2 (p. 4, 2012)

What criteria are important in selecting NAMAs?

Based on expertise mainly gained from GIZ-supported NAMA development in Tunisia, the following five key factors have been identified as highly important when deciding on and developing a successful NAMA:

1. **Local commitment is crucial.** The NAMA needs to be developed within the country. The process to identify and select NAMAs should be led by the government. Broad involvement of relevant stakeholders in a participatory process is important in increasing acceptance. This holds particularly true for high-level commitment early on in the NAMA process.
2. **The NAMA needs to be measurable, reportable and verifiable.** The NAMA should demonstrate GHG emission reductions for the short or the long-term. One advantage of the NAMA concept is that long-term emissions savings can be considered. MRV can be done at sector level for NAMAs with large boundaries or at the level of an activity. Irrespective of the type of NAMA activity, a simple yet comprehensive and solid methodology for MRV should be provided.
3. **Clear determination of support needs.** To obtain international support, it is important to identify what part of the NAMA needs direct support and

who could provide this support. This allows the country to evaluate what they can contribute and for the donor countries to have a clear picture of what support is needed.

4. **High leverage of private investments.** It is essential for international donors and governments to engage with the private sector and leverage additional sources of support. Therefore, a good NAMA has potential for leveraging private investments.
5. **High sustainable development benefits.** As specified in the Bali Action Plan, NAMAs should not only target GHG emission reductions, but should significantly contribute to the country's sustainable development. This includes job creation, capacity building, pollution reduction and health benefits, etc.
6. **Coordination between involved sectors.** NAMAs may involve stakeholders in a variety of sectors. In order to ensure sound inter-ministerial coordination and to allow for the active participation of the private sector and civil society, an agency mandated to steer the process is required. It is also important to provide the stakeholders with opportunities to meet and exchange information and ideas and to keep them updated at all stages of NAMA development and implementation.

Further information on 'Criteria for Evaluating Supported NAMAs' proposed by CCAP can be found here (Center for Clean Air Policy (2012)).



Hints for NAMA project planning and management

A government's decision as to whether or not to participate in developing a NAMA depends strongly on the benefits and/or added values. In addition, partners need to assess various strategic options related to NAMAs, including potential sources of support, the sectoral focus and types of NAMA activities.

Recommended Capacity WORKS tool

SF1: STRATEGY – 03 Scenarios

The purpose of this tool is to facilitate the exchange of different perspectives and experiences. This enables relevant factors and their effects on NAMA options to be assessed and then ultimately consolidated.

Benefits of the tool for NAMA development

- Provides an overview of the scope for possible developments on the basis of best and worst case scenarios, thus helping partners start the political NAMA process; and
- Provides a basis for formulating an overall strategy for NAMA development and implementation, plus potential sub-strategies.

Further reading

- GIZ TUEWAS (2011) – NAMAs and Market Mechanisms. Workshop Report
- Ministère de l'Environnement et du Développement Durable (2010) – Tunisian 'Nationally Appropriate Mitigation Action' NAMAs. Preliminary Proposals. Available online at (last accessed 18.10.2012): http://www.jiko-bmu.de/files/basisinformationen/application/pdf/nama_proposals_tunisia.pdf
- New Mechanisms Information Platform (2012) – Information on NAMAs. Available online at (last accessed 18.10.2012): <http://www.mmechanisms.org/e/namainfo/index.html>
- UNEP (no year) – Nationally Appropriate Mitigation Actions (NAMAs). Perspective and Activities. PowerPoint Presentation. Available online at (last accessed 18.10.2012): http://www.unep.org/climatechange/mitigation/sean-cc/Portals/141/doc_resources/Network%20meetings/Third-Meeting/S5_NAMAs_Garg.pdf

3.3 What is required to start the political process on NAMA development?

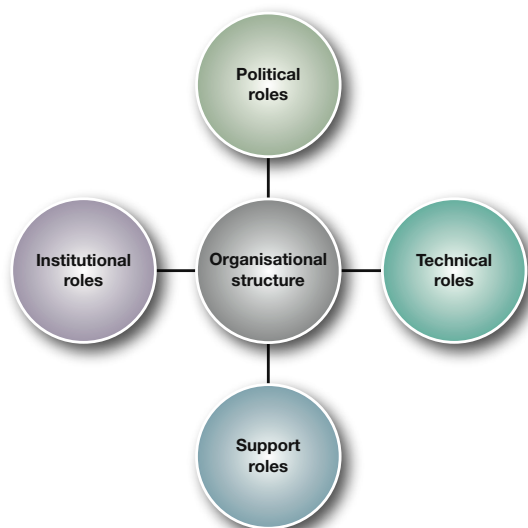
» How can national NAMA steering structures be designed?

Generally, there are different levels at which a NAMA steering structure can provide support. These levels include a programme-based approach (see example below of a housing scheme in Mexico), a sector-based approach (see example below from the transport sector), and a national approach (see example below for Indonesia).

In general, there is no formal requirement for setting up a designated entity to facilitate NAMA development and implementation and there is no guarantee for support if this happens. However:

- Having an agency oversee NAMAs is generally perceived as a success factor. Some countries have already put such organisational structures in place or are planning to do so (*e.g.* Mexico).
- Options for such organisational structures could be a new institution, a new mandate for an existing institution, an inter-institutional committee or designated working group.
- The organisational structure should have more of a facilitating role rather than steering NAMA development top-down, as facilitation may prove to be more efficient. Decentralised expertise and activities in the NAMA process should be utilised.

Some possible roles of an organisational structure are shown in the following diagram.

Figure 9: Organisational structure

Source: GIZ 1 (p. 20, 2012)

Table 2 shows exemplary responsibilities of the different roles (these may vary):

Table 2: Potential responsibilities of different roles in NAMA structures

Political roles (e.g. by national ministries and/or other government agencies at different levels) <ul style="list-style-type: none"> ■ Checking national appropriateness of planned actions ■ Stocktaking of relevant policies and measures ■ Creating incentives for investment ■ Setting priorities for NAMA development ■ Creating visibility of mitigation actions 	Technical roles (e.g. by experts within government agencies, external technical consultants and/or universities) <ul style="list-style-type: none"> ■ Helping establish baselines ■ Conducting cost-benefit analyses ■ Setting national standards for the MRV of NAMAs ■ Overseeing MRV requirements ■ Managing technical challenges ■ Connecting NAMAs with national development goals
Institutional roles (e.g. by designated national authorities and/or similar institutions) <ul style="list-style-type: none"> ■ Liaising with UNFCCC ■ Liaising with public and private sectors ■ Sharing knowledge/managing information ■ Coordinating amongst line ministries/sub-national entities 	Support roles (e.g. by government agencies and/or external consultants) <ul style="list-style-type: none"> ■ Identifying support options, including in financing, technology and capacity-building ■ Establishing public-private dialogues and promoting public-private partnerships ■ Organising outreach activities and liaising with potential domestic and international providers of support/investors to help match support with NAMAs ■ Identifying and promoting relevant public finance mechanisms which could catalyse private investment flows (e.g. investment guarantee agreements)

Source: GIZ 1 (p. 23-26, 2012)

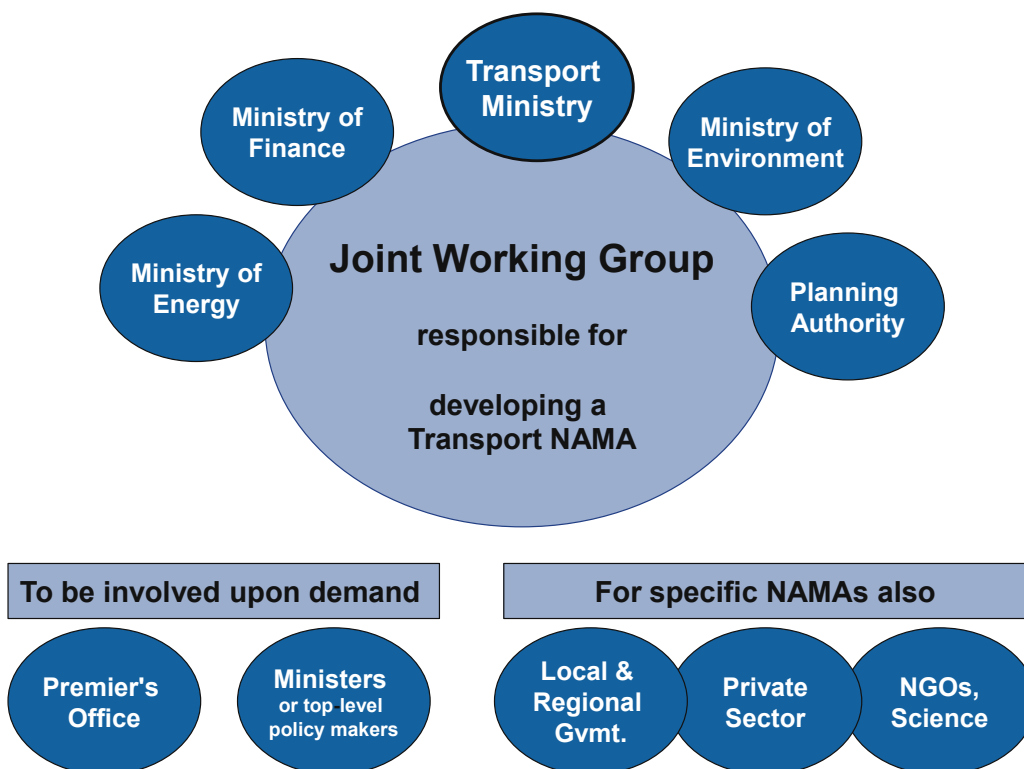
Some examples for steering structures for different types and levels of NAMAs are provided below.

The transport sector: Joint working group (sector level)

Ministries of Transport are generally best placed to develop and implement a transport NAMA. Nonetheless, other ministries could be in charge of the overall NAMA development (e.g. the Department of Environmental Affairs in South Africa and the National Development Planning Agency (BAPPENAS) in Indonesia). In addition, other ministries such as

ministries of finance and national planning authorities often have expertise that is essential for a successful NAMA proposal. An 'inter-ministerial coordination process' put in place through, for example, an 'inter-ministerial working group' (see Figure 10), is useful in implementing transport NAMAs.

Figure 10: Inter-ministerial working group for NAMAs



Source: GIZ/Wuppertal Institut (p. 6, 2012)



Hints for NAMA project planning and management

In order to start the NAMA political process, a steering unit to coordinate it and manage the involved stakeholders can be helpful. The NAMA steering structure should be aligned with the institutional set-up of the partner country, taking into account existing institutional arrangements, mandates and processes. The competencies and capacities of the institutions or bodies that are to be in charge of NAMA development and implementation need to be evaluated at the beginning in order to offer tailor-made assistance.

Recommended Capacity WORKS tool

SF3: STEERING STRUCTURE – Tool 01 Steering Model

This tool can help to develop, select and decide on a suitable steering model, and can be used to guide the entire steering process.

Benefits of the tool for NAMA development

- Ensures transparency and clarity concerning roles and responsibilities;
- Helps develop a tailor-made steering structure adjusted to the conditions and stakeholder needs in the partner country.

SF1: STRATEGY – Tool 05 Consultancy Strategies in Capacity Development

This tool helps identify interdependencies between various interventions on the four dimensions of capacity development (individual, organisation, network, system).

Benefits of the tool for NAMA development:

- Defines a coherent capacity development strategy addressing a partner's competency at all dimensions relevant to NAMA development;
- Choice of relevant interventions on a phase-to-phase basis (e.g. set-up of NAMA steering structure, development of NAMA implementation plans, MRV).

SF4: PROCESSES – Tool 04 Process Optimisation

This tool is designed for general process monitoring and improvement.

Benefits of the tool for NAMA development:

- Analyses political processes related to NAMA development and implementation and defines potential for optimisation (e.g. transaction costs); and
- Defines process owners and introduces new efficient processes for the steering and managing of NAMA development.

NAMA development in Indonesia: Integrator and coordinator role (national level)

The development and implementation of NAMAs can involve various sectors and government entities. In addition, the impacts of NAMAs should not be limited to GHG mitigation alone (see co-benefit sections). Therefore, Indonesia decided that NAMA planning needed a method based on integration and coordination. Consistent with the nationally integrated processes, BAPPENAS can act as a national ‘integrator’ and the Economic Coordinating Ministry as a national ‘coordinator’.

BAPPENAS is the logical candidate for integration since climate change policies and measures should ideally be united with national development programmes. Its tasks include:

- Setting medium and long-term goals;
- Developing a national BAU baseline based on accumulated sector data and analysing routes for national emission reduction;
- Identifying potential mitigation actions and their combined mitigation potential;
- Establishing carbon budgets for each sector;
- Assessing investment and mitigation costs, system abatement costs, financing and support requirements, and lead time for implementation and impact; and
- Providing assistance with the design and implementation of policies, measures and instruments.

Housing scheme in Mexico: Institutional set-up and NAMA administration (programme level)

One of the components of the NAMA housing scheme in Mexico is the establishment of an inter-institutional platform to communicate requirements for sustainable housing. NAMA support measures therefore include establishing and running a ‘NAMA Programme Office Unit’. In addition, technical assistance will be provided to the Housing Fund of the Social Security and Services Institute for State Workers (FOVISSSTE) and the Federal Mortgage Company (SHF) to create their institutional set-up for NAMA implementation.

Further reading

- GIZ/Gobierno Federal Mexico (2011) – Supported NAMA for Sustainable Housing in Mexico. Mitigation Actions and Financing Packages. Available online at (last accessed 18.10.2012): <http://www.conavi.gob.mx/viviendasustentable>

3.4 What needs to be considered regarding co-benefits?

» How can potential co-benefits in the NAMA development process be identified?

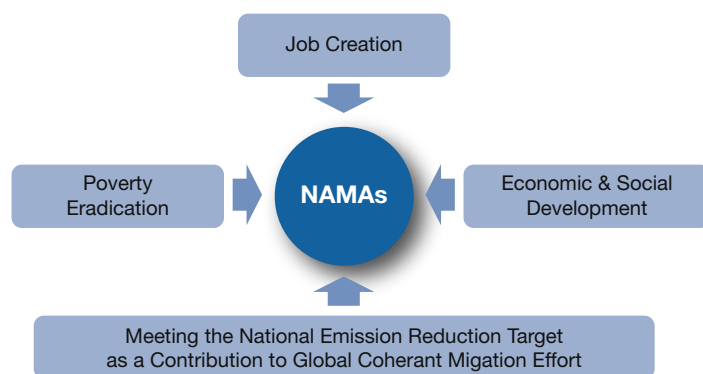
NAMAs provide an opportunity to jointly pursue sustainable national development alongside mitigation actions.

It is specified in the Bali Action Plan that NAMAs should take into account the broader concept of sustainable development. NAMAs should therefore not only target GHG emission reductions but also aim to support a country's development priorities.

Therefore, when developing and selecting potential GHG mitigation actions, socio-economic criteria should also be considered and form an essential part of strategic decision-making regarding NAMAs. There will be countries – particularly least developed countries (LDCs) – that regard social-economic criteria as being more relevant to their development goals than GHG mitigation. While it is understood that NAMAs must always contribute to GHG mitigation, it can be justifiable in a development context to support NAMA developers that see GHG mitigation as a co-benefit.

Approach for developing the Indonesian NAMA framework

Figure 11: Considerations for establishing NAMAs



Source: GIZ/BAPPENAS (p. 33, 2011)

Figure 11 shows the co-benefits to be expected while meeting the national emission reduction target defined in Indonesia's RAN-GRK. These co-benefits include: (i) poverty eradication, (ii) job creation, and (iii) sustainable economic growth and social development. Screening criteria for potential co-benefits of mitigation activities should cover the four pillars

shown in Figure 11 while considering further aspects as mentioned in the UNFCCC Resource Guide Module 4 (http://unfccc.int/resource/docs/publications/08_resource_guide4.pdf) for developing national communications: (i) consistency with national development goals; (ii) consistency with national environmental goals; (iii) data availability and quality; (iv) political and social feasibility; (v) replicability, *i.e.* adaptability to different geographical,

socio-economic-cultural, legal, and regulatory settings; and (vi) macro-economic considerations, such as impact on GDP, number of jobs created or lost, effects on inflation or interest rates, implications for long-term development: sustainable economic growth & social development, and poverty eradication; foreign exchange and trade, etc.

Further to the examples provided above for Indonesia, co-benefits may also include a wide range of national development goals, such as access to energy or transport, improved water or air quality, or conservation of biodiversity. This may also include

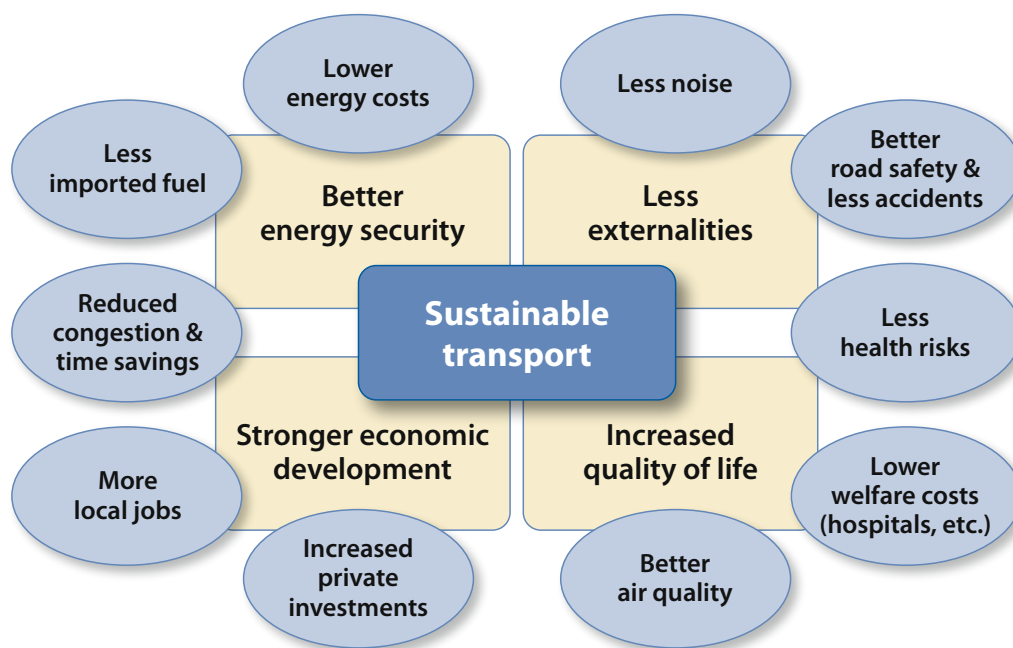
improved ‘mitigative capacity’, such as institutional arrangements promoting low-carbon development, strengthened capacities or an improved policy environment for low-emission development.

Potential co-benefits in the transport sector

Transport NAMAs can provide co-benefits in terms of sustainable development, such as to the economy, environment and/or public health. Such co-benefits should also be included in

monitoring plans to increase the transparency of the overall effectiveness of the mitigation action. Figure 12 further illustrates potential co-benefits for the transport sector.

Figure 12: *Potential co-benefits for the transport sector*



Source: GIZ/Wuppertal Institut (p.4, 2012)*

*) The publication 'TRANSfer. Navigating Transport NAMAs: Practical handbook for the design and implementation of NAMAs in the transport sector' by GIZ and the Wuppertal Institute is currently being revised. An updated version will be available by the end of 2012.



Hints for NAMA project planning and management

The alignment of NAMAs with national development goals is crucial. Therefore, co-benefits need to be integrated in the decision-making process on NAMAs and have to be monitored against a baseline and a robust set of indicators.

Recommended Capacity WORKS tool

SF1: STRATEGY – 04 Strategic Options

The tool helps partners select the right option by evaluating strategic options according to a fixed set of criteria.

Benefits of the tool for NAMA development

- Analyses the operational-strategic orientation of the project according to a set of criteria that are based on national development goals;
- Visualises strategic options according to the chosen criteria, enabling an open discussion on the most suitable NAMA option considering the co-benefits; and
- Consolidates of the coherence of the NAMA strategy with national development goals.

»» What resources provide guidance on sustainable development criteria?

General information on sustainable development criteria:

- International Human Development Indicators can be found in the United Nations Development Programme's (UNDP) Human Development Report and the accompanying [statistics databases](#).
- The Organisation for Economic Co-operation and Development (OECD) provides a set of green growth indicators [here](#).
- The Global Reporting Initiative (GRI) provides a framework for sustainability reporting that can be used by organisations of any size, sector or location. The economic, environmental and social performance indicators within this [framework](#) can provide ideas for criteria. Sectoral guidance is available [here](#).

For co-benefits in mitigation projects:

- A supplementary tool for rating the co-benefits of mitigation measures in a marginal abatement cost (MAC) curve is currently under development by a LEDS Global Partnership (formerly CLEAN) working group: Development Impact Assessment Tool (Source: GIZ 1 (p.39, 2012)).
- Further evaluation criteria for potential mitigation actions can be found in the UNFCCC Resource Guide Module 4 for Developing National Communications [here](#) (UNFCCC (2008)).
- The CDM Gold Standard also includes the contribution of a project towards sustainable development, *i.e.* through a series of twelve Sustainable Development Indicators in three categories. The accompanying toolkit can be accessed [here](#). (CDM Gold Standard (2012)).
- UNEP has developed a handbook on '[CDM Sustainable Development Impacts](#)' including

guidance to be used at project level, such as indicators and tools. (UNEP 1 (2012)).

- The ‘[Social Carbon Standard](#)’ from Ecologica Institute provides a framework for projects in smaller communities in Brazil. It certifies voluntary emission reduction projects for their contributions to sustainable development. (Ecologica Institute (2003)).
- The Ministry of the Environment of Japan has developed a ‘Manual for the Quantitative Evaluation of the Co-Benefits Approach to Climate Change Projects’, in particular for the sectors air quality, water and waste. It can be found [here](#). (Ministry of the Environment of Japan (2009)).
- The Institute for Global Environment Studies provides guidance on co-benefits in ‘Mainstreaming Transport Co-Benefits Approach: A Guide to Evaluating Transport Projects’, accessible [here](#). (Institute for Global Environment Studies (2009)).
- The ‘Climate, Community and Biodiversity Standards ([CCBS](#))’ can be used to assess co-benefits, especially in the forestry sector. (Conservation International (2012)).
- For ecosystem services in agroforestry projects, the ‘Plan Vivo Standard’ from the Scottish NGO Plan Vivo Foundation provides a system and standard [here](#). (Plan Vivo Foundation (2012)).

(Remaining sources: GIZ 8 (2012), p.20)

Further reading

- GIZ 2 (2008) – Accounting for Greenhouse Gas Emissions in Energy-Related Projects. Applying an Emission Calculating Tool to Technical Assistance. Available online at (last accessed 18.10.2012): <https://www.giz.de/Themen/en/SID-D5BDB246-8BA86957/dokumente/gtz2008-en-climate-ghg-emissions-accounting.pdf>
- GIZ 4 (2011) – Klimawirkungen. Das GIZ-Source book für klimaspezifisches Monitoring in der internationalen Zusammenarbeit. Available online at (last accessed 18.10.2012): <http://www2.gtz.de/dokumente/bib-2011/giz2011-0445de-klimawirkungen.pdf>
- GIZ 1 (2012) – Nationally Appropriate Mitigation Actions (NAMAs). Steps for moving a NAMA from Idea to Implementation. NAMA Tool 7.0.
- GIZ/BMZ (2011) – Integrating Climate Change Adaptation into Development Planning. A Practice-Oriented Training Based on the OECD Policy Guidance. Available online at (last accessed 18.10.2012): <http://www.oecd.org/dac/environmentanddevelopment/46905379.pdf>

4. Stakeholders and cooperation

This chapter outlines the identification, involvement and management of various stakeholders, all crucial components of a successful NAMA process.

Figure 13: Key aspects of Chapter 4



Source: adelphi/PCC

To this end, the following questions will be addressed:

4.1 Who are key governmental actors in NAMA development?

This section looks at which governmental actors and institutions should be involved in the NAMA development process. This includes identifying relevant ministries and other governmental entities and envisioning how inter-ministerial and cross-sectoral collaboration and coordination can be achieved.

4.2 How do I involve and manage NAMA stakeholders?

In order to increase the likelihood of country ownership and to take into account the various stakeholder perspectives, this section describes how non-governmental stakeholders like the private sector and civil society can be involved in the NAMA process.



4.1 Who are key governmental actors in NAMA development?



Who should be involved in the NAMA development process?

Government agencies usually lead the NAMA development process. However, it is important to recognise that other entities such as the private sector, non-governmental organisations (NGOs) and academic institutions may also play key roles in the development and implementation of NAMAs. Hence, the development and implementation of NAMAs should be a multi-stakeholder process where the timing and the extent of involvement of different actors varies from case to case. However, government leadership is always an essential prerequisite.

Who should be involved in a NAMA planning process should be determined on a case-by-case basis and may differ according country or sector. In general, stakeholders should comprise representatives from the following categories:

- Ministries involved in decoupling GHG emissions from economic growth (*e.g.* ministries of the environment to deal with the GHG-emission side and ministries of economic affairs for growth policies);
- Ministries involved in cross-sectoral issues (*e.g.* ministries of finance);
- Relevant government agencies and departments at different levels;
- Large emitters (*e.g.* companies from sectors such as transport, construction, electricity generation, ferrous metals and minerals, depending on the country);
- Private sector;
- Committed local, national and international NGOs;

- Potential financiers and international providers of support;
- Organisations providing technical assistance and capacity building;
- Academia; and
- Trade unions.

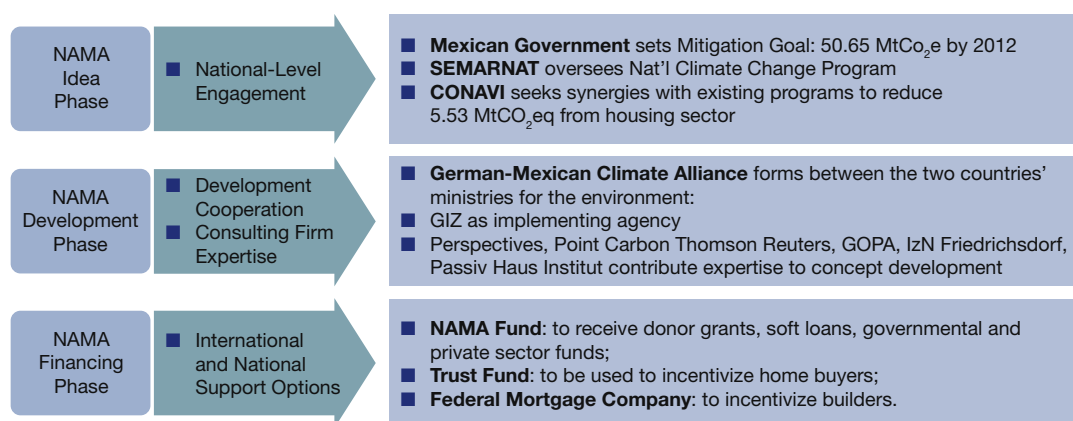
When mapping relevant actors, it is important not to overlook players that do not have the label ‘climate change’ or those that are ‘unusual’ actors (*e.g.* an association of public transport users for a transport NAMA). It is also essential to ensure the involvement of cross-sectoral actors as well as the involvement of those actors that initially do not seem relevant for NAMA activities but could play a role at a later stage (*e.g.* MRV).

In terms of cooperation, stakeholders should be involved from an early stage in the NAMA development process. When it comes to implementing the NAMA, the private sector should play a significant role in triggering additional investments. NAMA projects should therefore seek to develop partnerships with the private sector.

Mexico: Stakeholders for different NAMA phases

The figure below shows different stakeholder groups for a housing NAMA in Mexico according to the different NAMA stages.

Figure 14: Stakeholders in a housing NAMA in Mexico



Source: GlZ (2012, p. 42)

Which ministries and other governmental entities should be involved in developing and implementing NAMAs?

As NAMAs are in most cases sector-specific activities, the respective sectoral ministry is generally best positioned to develop and drive the implementation of a NAMA (*e.g.* ministries of transport for transport-specific NAMAs). In some countries, however, other ministries might hold the mandate for overall NAMA development vis-à-vis the international climate change process (*e.g.* the Department of Environmental Affairs in South Africa) or can bring in additional expertise (*e.g.* ministries of finance). Where the scope of a NAMA cuts across various sectors, government departments of all sectors addressed will need to be involved.

In addition to the sector-focus, NAMA development – or climate change policy formulation in general – should be aligned with the national development plan or other national planning processes to ensure that policies and instruments are consistent with each other and to minimise the risk of conflicts between policy goals. Therefore, it may make sense to involve additional ministries to help align the NAMAs with other national development goals (*e.g.* ministries of economy: creating job opportunities; ministries of health: decreasing respiratory diseases caused by air pollution).

However, the decision as to which ministries should be involved in the NAMA process must be based on the country's specific context. The extent to which inter-ministerial cooperation is needed and which

government departments should be involved depends partially on whether there is a ministry or other governmental institution with the capacity to coordinate the relevant stakeholders. In addition, it is crucial to assess whether those stakeholders to be involved have the capacity to actively engage in the process. Finally, there may be a need to clarify from the beginning if the entity in charge has also the capacity to carry out the follow up to the NAMA process within the government.

» **How can inter-ministerial and cross-sectoral collaboration and coordination be achieved?**

To ensure full and sustainable implementation of NAMAs, communication and cooperation among different ministries, departments and agencies across

all levels of government is crucial. This is especially the case when a national NAMA framework is under discussion. One way to address this challenge of coordinating and integrating governmental actors is to establish a central government institution in charge of coordinating communication processes and the implementation of national mitigation actions. From the cost-efficiency perspective, it may even be more appropriate to issue a new mandate for an existing institution. National ministries or institutions with a planning mandate may be in a well-positioned to coordinate national policy processes and help integrate different policy perspectives.

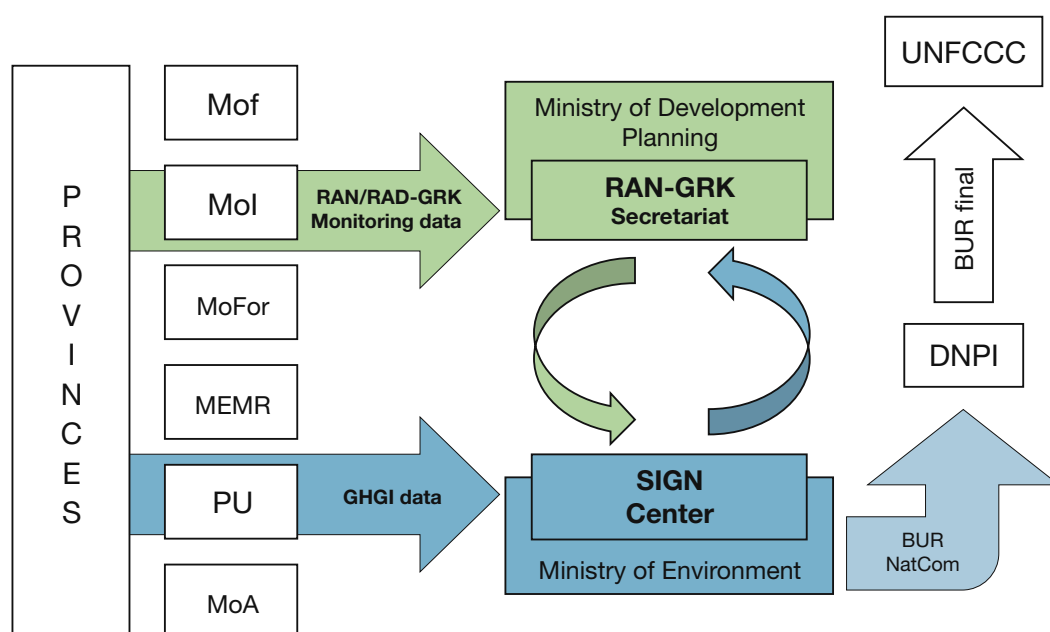
In addition, establishing an inter-ministerial working group or task force to foster communication and exchange between different governmental levels can help secure a successful NAMA development process.



Envisaged inter-ministerial cooperation on the MRV of NAMAs in Indonesia

In Indonesia, inter-ministerial cooperation for monitoring/reporting on mitigation actions is undertaken as part of the RAN-GRK through the steering structure shown in Figure 15.

Figure 15: Envisaged inter-ministerial cooperation on the MRV of NAMAs in Indonesia



Source: GIZ PAKLIM (2012, p.13)

BAPPENAS has the mandate to lead and coordinate the NAMA development process and also assumes the role of national integrator, ensuring that climate change policies and measures are aligned with national development programmes. Consequently, BAPPENAS is hosting the secretariat for implementing the RAN-GRK. Six sectoral ministries (Ministry of Finance (MoF), Ministry of Interior (Mol), Ministry of Forestry (MoFor), Ministry of Energy and Mineral Resources (MEMR), Ministry of Public Work (PU) and Ministry of Agriculture (MoA)) form sectoral expert panels that act as reviewers of the Provincial Action Plans. The Ministries, and potentially the provincial governments

in future as well, are providing sector-specific GHG emission data to the Ministry of Environment, which is in charge of submitting the national communication to the UNFCCC.

In the Indonesian case, it proved useful to initiate inter-sectoral dialogue at governmental level while relying on a cross-sectoral institution (e.g. BAPPENAS) to coordinate stakeholders. While the established coordination process is rather new and the structure is currently mainly donor-financed, GIZ is advising the Indonesian Government in institutionalising the structure and standardising the respective procedures.



Hints for NAMA project planning and management

It is important to have a clear definition of all stakeholders and their respective roles. While government agencies are key players, it is crucial to also involve other stakeholders such as the private sector, academia and civil society at an early stage. Multi-stakeholder cooperation arrangements should be discussed with the partner organisation while considering the country's specific context and looking beyond the 'usual' actors.

Recommended Capacity WORKS tool

SF2: COOPERATION – Tool 01 Internal/external Stakeholder Map

This instrument can be used for the identification and classification of all relevant stakeholders that have an influence on the planning, implementation and success of NAMAs.

Benefits of the tool for NAMA development

- Defines different categories of stakeholders according to sectors (private/society/state) and their importance to the NAMA process; and
- Visualises existing relationships between stakeholders to identify potential lines of cooperation.

Further reading

- GIZ/BAPPENAS (2011) – Development of the Indonesian NAMAs Framework. Background Study. Available online at (last accessed 18.10.2012): <http://www.paklim.org/wp-content/uploads/downloads/2011/12/GIZ-PAKLIM-Indonesian-NAMA-framework-development-full-report.pdf>
- GIZ PAKLIM (2012) – Das RAN-GRK Sekretariat. Unterstützung im Aufbau eines NAMA Office in Indonesien.
- TRANSfer (2012) – Navigating Transport NAMAs. Practical handbook for the design and implementation of NAMAs in the transport sector. Available online at (last accessed 18.10.2012): <http://www.mitigationpartnership.net/transfer-2012-navigating-transport-namas-practical-handbook-design-and-implementation-namas-transport>

4.2 How do I involve and manage NAMA stakeholders?

» Why involve stakeholder beyond the national and cross-sectoral sphere in NAMA development and implementation?

In order to create ownership among the involved stakeholders of NAMAs, NAMAs should emerge from a country-driven and participatory stakeholder process. This may also include the involvement of stakeholders at the local and regional level. In addition, a sector-specific approach focusing on MRV systems may be the starting point instead of establishing a national framework.

Stakeholders working on collecting data, developing a GHG baseline or establishing an MRV system may, in a second step, consider it as useful to use this knowledge to develop NAMAs in this area. During the development of the baseline or MRV system, stakeholders may come up with suggestions

for sector-specific NAMAs based on their knowledge of policy gaps and available technologies. Another aspect in this regard, especially in larger countries, is involving provinces or states in the implementation of NAMAs. It will be virtually impossible to develop baselines, select emission reduction strategies or identify relevant stakeholders and financial support using a process driven only by a central government.

» How could wider stakeholders groups be involved in the NAMA selection process?

Generally, planning and implementation activities for NAMAs will be more self-sustaining if a broad range of stakeholders are included in the process. Joint working groups, specific coordinating institutions or designated NAMA focal points can engage relevant stakeholders in the NAMA process. Different forms of stakeholder liaison can be set up depending on the development stage of the NAMA concepts, the specific sectors and types of decisions to be taken. The stakeholder interaction can be supported by interactive decision support tools (*e.g.* mind maps, process charts, system analysis tools) that can facilitate the understanding of the consequences of various actions.

In order to advance the selection processes, it may be useful to organise workshops involving scientific partners (*e.g.* universities) and sector-specific stakeholders (*e.g.* industry associations) to identify and communicate relevant co-benefits of different NAMA activities. However, sufficient budget allocations are needed to hold periodic stakeholder consultations; these consultations will ensure the programme runs smoothly.

Generally, guiding several institutions along the strategic orientation of mitigation actions and establishing sustainable processes and procedures is often regarded as challenging. There can also be a general

Indonesia: Local Action Plans

As part of the RAN-GRK, each province will need to develop a Local Action Plan on Greenhouse Gas Emission Reduction (RAD-GRK). The contributions of provincial governments are expected to include:

- Calculation of mitigation potential and construction of a provincial BAU baseline;
- Development of a strategy for emission reduction;
- Proposal for selected local GHG mitigation actions; and
- Identification of the key stakeholders/institutions and financial resources.

lack of exchange between the public and private sector; this could influence the practicability and ease of implementing the NAMA. A culture of open discussions can prove useful if culturally appropriate. Effective cooperation mechanisms could be inter-institutional steering committees.

‘National Consultation Process’ for transport planning

The general guidance below from the transport sector provides an exemplary approach of involving different stakeholders at different levels.

Once transport objectives are identified and a set of preferred measures has been drafted, the proposed measures are consulted and developed in detail as part of a so-called ‘National Consultation Process’. This involves the following key levels of stakeholders/ decision-makers:

1. High-level, *political decision makers*: To ensure buy-in at this political level, the respective decision makers should be involved at an early stage. When prioritising and selecting different transport options, the choices made also depend on the availability of support or political preferences in addition to the technical characteristics.
2. *The respective governmental departments (also including local and regional departments)*: An

iterative consultation process should be established that involves the relevant technical experts to gather information and decision-makers to ensure support for further planning and subsequent implementation. This is important as transport planning is linked with a wide range of further government action.

3. *Stakeholders from civil society, private sector, local communities*: As transport planning is strongly interlinked with the interests of a variety of stakeholders, these need to be involved throughout. Relevant stakeholders provide valuable local knowledge to optimise the planning process and ensure acceptance.

A joint working group set up amongst the relevant ministries and other key stakeholders plays a crucial role in this consultation process.



Hints for NAMA project planning and management

After identifying the relevant stakeholders to be involved in the NAMA process, the cooperation process with partners and stakeholders must be defined. A NAMA steering structure should be developed according to the specific NAMA approach and country context with the aim of creating ownership among national change makers. It is advisable to involve multiple stakeholders at an early stage in the process to ensure their support and buy-in.

Recommended Capacity WORKS tool

SF2: COOPERATION – 03 Forms of Cooperation and Roles

This instrument can be used to help analyse the stage of development of cooperation within the NAMA project, and to identify patterns and roles within the cooperation system.

Benefits of the tool for NAMA development

- Analyses the cooperation system and assesses the functionality of the existing patterns of cooperation;
- Identifies areas of potential conflict; and
- Analyses potential gaps in the cooperation system regarding the performance of stakeholders involved and the potential lack of additional stakeholders to be integrated.

Further reading

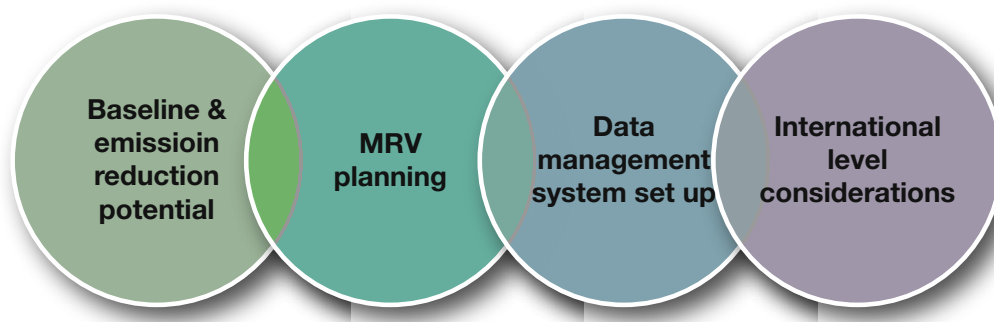
- GIZ 8 (2012) – Factsheet ‘Nationally Appropriate Mitigation Action (NAMA)’. Environment and Climate Change. Available online at (last accessed 18.10.2012): http://mitigationpartnership.net/sites/default/files/factsheet_minderung__namas_en.._2012-02-17.pdf
- GIZ 1 (2012) – Nationally Appropriate Mitigation Actions (NAMAs). Steps for moving a NAMA from Idea to Implementation. NAMA Tool 7.0.
- GIZ/BEE (no year) – Lessons learned. Bachat Lamp Yojana (BLY) Experience, India. PoA for NAMA.
- GIZ TUEWAS (2011) – NAMAs and Market Mechanisms. Workshop Report.
- TRANSfer (2012) – Navigating Transport NAMAs – Practical handbook for the design and implementation of NAMAs in the transport sector. Available online at (last accessed 18.10.2012): <http://www.mitigationpartnership.net/transfer-2012-navigating-transport-namas-practical-handbook-design-and-implementation-namas-transport>



5. Technical factor

The previous chapters served to set the framework for NAMA implementation. The focus of this chapter is to provide information and guidance on the technical factors related to NAMA development and implementation, especially with respect to baseline development, the MRV structure and the NAMA registration process under UNFCCC.

Figure 16: *Key aspects of Chapter 5*



Source: adelphi/PCC

To this end the following questions will be addressed:

5.1 How is the baseline established and how can the emission reduction potential be evaluated?

This section first provides information and resources on establishing baselines, including their purpose and how to include non-GHG co-benefits, and on emission reductions accounting. The section then discusses additionality and what it entails with regard to NAMAs, although this issue is still under consideration at international level.

5.2 What needs to be considered when designing an MRV plan?

This section discusses designing a MRV plan so that it is aligned with the needs and requirements of

the implementing country, donor country and the UNFCCC. Lessons learned on MRV in the CDM will be provided as well as information on involving local institutions.

5.3 What are key components of data management systems?

This section covers the components that should be included in a data management system and the benefits of such a system.

5.4 What needs to be considered at international level when planning NAMAs?

This section discusses the steps involved in bringing NAMAs to a UNFCCC level.

5.1 How is the baseline established and how can the emission reduction potential be evaluated?

» What is the purpose of the baseline? What should be considered when setting a baseline?

A baseline for a NAMA is necessary in order to know what would occur in absence of a NAMA. Setting a baseline makes it possible to compare relevant metrics before and after NAMA implementation. A baseline can be set in a number of different ways, depending on the purpose of doing so (*e.g.* to set a goal/target or to measure performance), how the baseline will be defined (including scope; metrics, which can be either absolute or relative; historical reference data; and project assumptions), and the environmental ambition of the baseline in relation to BAU (OECD/IEA 2011).

Baselines can be measured in a range of units depending on the NAMA. If baselines use GHG

emissions as their MRV metric, it may be useful to use GHG inventories as sources of information on historical emissions. GHG inventories are particularly useful if baselines are being set at a sectoral level. National communications to the UNFCCC that contain GHG inventories should be available for most developing countries in accordance with UNFCCC regulations. Each non-Annex I Party will have submitted its initial communication within three years of the entry into force of the UNFCCC for that Party, or based on the availability of financial resources (except for the least developed countries, who may do so at their discretion) (UNFCCC, 2011). The submitted non-Annex I national communications can be found [here](#). It should be noted that non-Annex I Party reporting will be done on a biennial basis in future through the BUR. See Section 5.2 for further details.

The baseline can be established based on either historical emissions or on a projected BAU level of emissions. Baselines using historical emissions may utilise the historical emissions' intensity level (*e.g.* tonnes CO₂/gross domestic product or tonnes CO₂/sector

Figure 17: Baseline using historical emissions intensity: China's mitigation goal for 2020

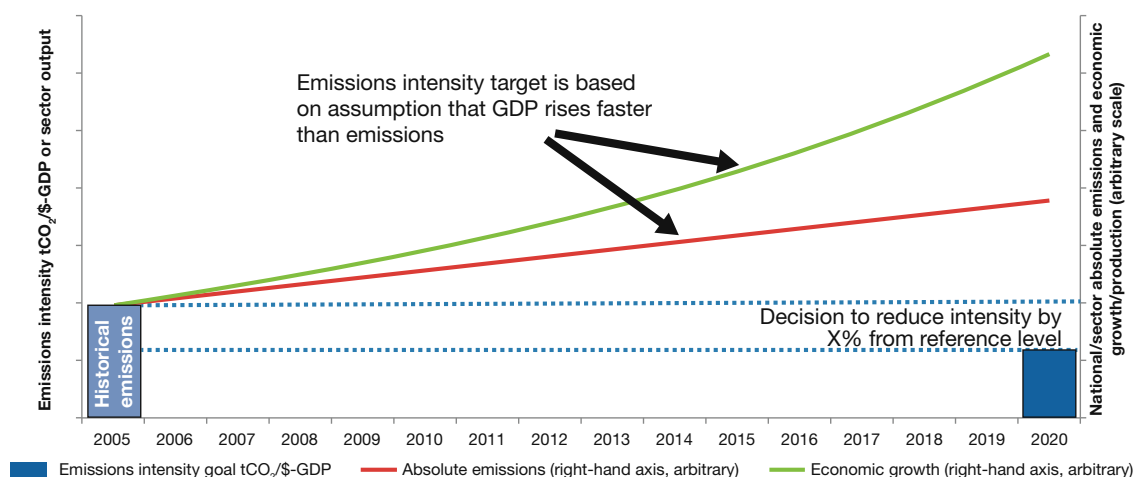
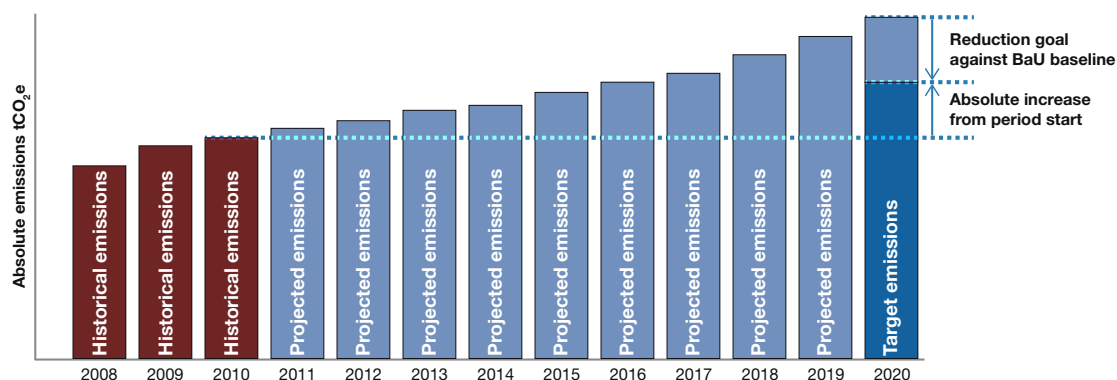


Figure 18: Baseline using forward projection to define a goal: Brazil's mitigation goal for 2020

(Source: OECD/IEA (p.5-6, 2011))

output). Sectoral NAMAs will most likely be based on projected BAU scenarios, so establishing such scenarios will be very important in the baseline setting process. Figure 17 provides an example of a relative baseline using the historical intensity level, and Figure 18 provides an example of a baseline using a forward projection.

In addition to using of GHG emission metrics for the baseline, other metrics can be applied. The baseline for policy NAMAs may be applied in a BAU scenario, *i.e.* the number and effectiveness of policies in place at the start of a NAMA. For example, under a transport NAMA, the baseline could be measured in MJ/km for light duty vehicles. Although metrics may not directly be measured in GHG emissions, it should be kept in mind that the main goal of the NAMA is emission reductions, coupled with sustainable development.

Project-based baselines, which were historically done in the CDM, are still possible but it is unlikely that they will be done on a broad scale. However, if project based baselines are used, it will most likely be in a simpler way than with the CDM. Credited NAMAs, however, will result in credits based on

Indonesia: NAMA development in the power sector

The Indonesian power system is comprised of 600 isolated power systems and 7 interconnected power systems. The baseline for the power sector would be established by first calculating the absolute value of CO₂ sources from all interconnected power systems within the same time frame and then aggregating those resources to construct the aggregated BAU. The long-term CO₂ emission path under the BAU baseline would be based on the least-cost principle without climate change policy intervention.

The BAU baseline for each interconnected and small/isolated power system would be calculated differently. For each interconnected power system, the optimal capacity expansion plan would be derived through a free optimisation approach. In contrast, for isolated and small power systems, a simpler methodology which is deterministic in nature could be used to develop the capacity expansion plan.

(Source: GIZ TUEWAS (p. 15, 2011))

emission reductions. GHG emissions accounting will not need to be as precise for NAMAs as it is for CDM. The example below compares the process of establishing a baseline for a large interconnected power system, which is done at sectoral level, and for isolated power systems, where establishing a baseline is similar to a project-specific baseline.

» What needs to be considered in terms of data collection for the baseline?

Data collection will be determined by the type of NAMA, the needs of the implementing country and, where applicable, the demands of the donor. However, a few key components are applicable for all baseline settings. These are listed in the box below.

System boundaries for the NAMA must be established, boundaries for the NAMA area (*e.g.* one district, a country or a region) must be set and activities included in the NAMA (*e.g.* for an agriculture NAMA on inorganic fertiliser use: Will all activities in the value chain be included? Should emission reductions be attributed to the producer or user?) must be determined. In addition to determining activities within the boundary, leakages (*e.g.* implementing a policy to limit unsustainable charcoal production in one country leading to an increased amount of unsustainable charcoal production in a neighbouring country) must also be considered.

The data needed to establish the baseline should be made transparent especially because data availability

Variables for producing a baseline

- ✓ Scope: project; programme; sub-sector; sector; country; technology;
- ✓ Metrics or indicators: absolute GHG or CO₂ emissions; relative GHG emissions (*e.g.* emissions intensity); indirect metrics (*e.g.* MW of renewable energy capacity installed, m³ of forest stock, or qualitative aspects such as mitigative capacity and co-benefits);
 - ❖ When choosing indirect metrics, consider whether it will be important to 'convert' the outcomes into GHG reductions with emission factors!
- ✓ Historical data: single time period (*e.g.* one year); multiple time periods (*e.g.* an average over several years);
- ✓ Future assumptions: assumed continuation of historical emissions (project); continued rate of emission growth/emission intensity (sector); modelling based on policies included in baseline; and
- ✓ Co-benefits: indicators for sustainable development (*e.g.* resource efficiency, social inclusion, economic viability).

Policy and technical considerations may influence the overall ambition of baseline, *e.g.*, data availability, expertise, climate legislation.

(Source: GlZ 1 (p. 43, 2012))

tends to be low. It needs to be clearly stated where assumptions are made. The Intergovernmental Panel on Climate Change (IPCC) provides tier methods for data availability for emission reductions. For instance, Tier 1 is a simple method that uses default values. The data availability and therefore the tier applied will affect the uncertainty of the baseline established. An example of a decision tree (for CH₄

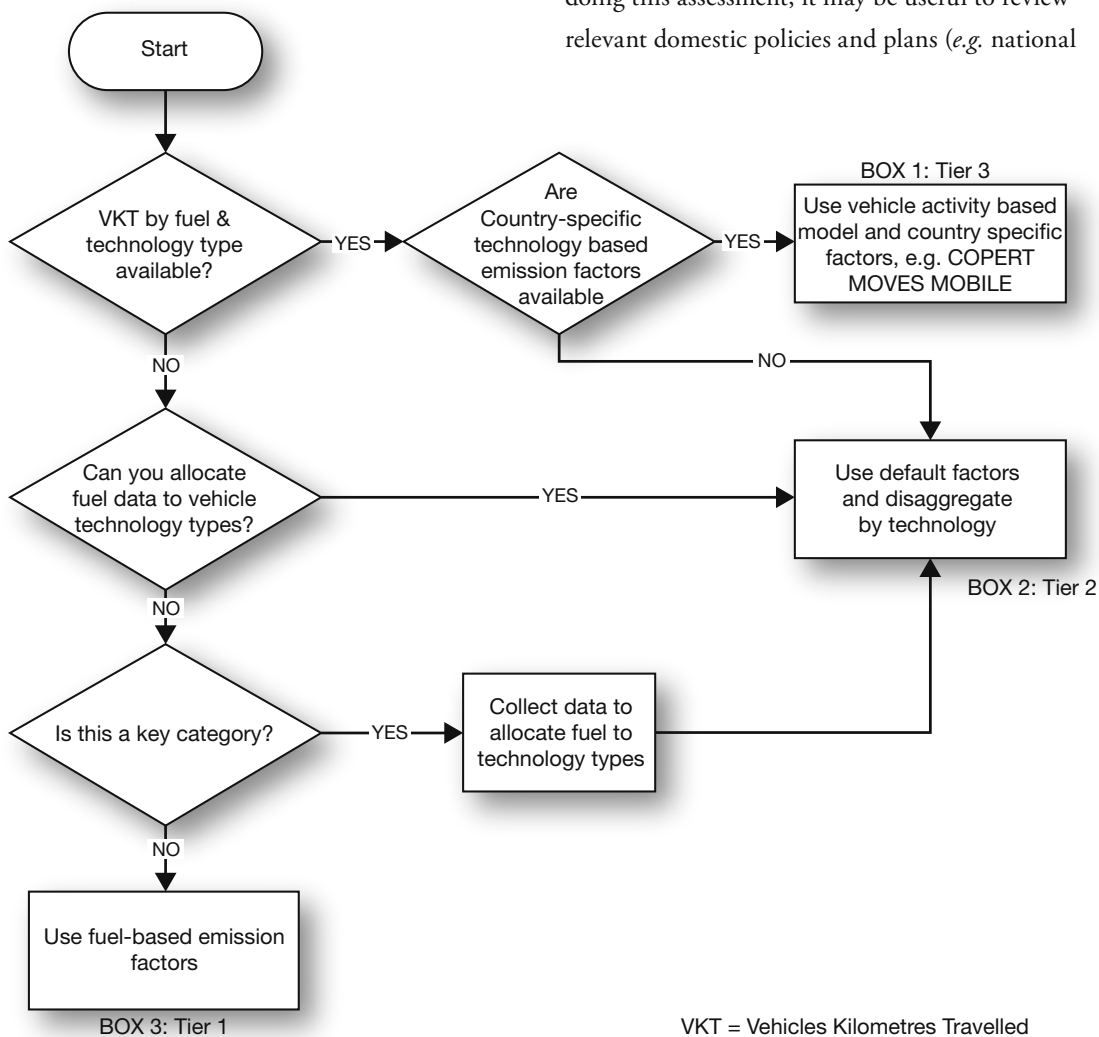
and N₂O from road transport) that can help to decide which tier to apply can be seen in Figure 19.



How can co-benefits be included in the baseline?

Unless required by a donor, NAMA co-benefits do not need to be stringently assessed for a baseline. However, it is useful to conduct at least a qualitative baseline assessment of the co-benefits (*e.g.* significant soil degradation is occurring; landfills are poorly managed) relevant to the NAMA. While doing this assessment, it may be useful to review relevant domestic policies and plans (*e.g.* national

Figure 19: Tier data methodology decision tree



Source: IPCC (p. 9, 2006)

development plans or sector strategies) and their progress in order to have a better understanding of sustainable development progress and plans as well as potential focus areas for indicators to monitor. As the example of potential transport NAMAs in Colombia illustrates, identifying co-benefits can be a key component in the NAMA selection process. Colombia has applied to join the OECD and in the OECD Economic Assessment of Colombia, one of the recommendations made was to use transport infrastructure more efficiently (OECD 2010). As one of the co-benefits of a transport NAMA is to improve the transport sector, NAMA implementation will help the country to align itself with OECD recommendations (Interview GIZ Transport 2012).

Furthermore, a donor may require a co-benefits baseline. In this case, the partner should follow donor guidelines on undertaking a baseline assessment of co-benefits.

What resources can provide information about emissions reductions accounting?

For general information on GHG emission reductions accounting across sectors

- The [GHG Protocol for Project Accounting](#) (Greenhouse Gas Protocol Initiative (2005)) provides concepts and principles for GHG emission accounting across all sectors.
- ISO 14064 details in three parts principles and requirements for quantifying, measuring, reporting and validating/verifying GHG inventories or projects. The standard can be bought through [ISO](#), relevant national bodies or publishing houses.

For GHG emission reductions accounting in specific sectors:

- IPCC Guidelines for National Greenhouse Gas Inventories offer different approaches to

calculating GHG emissions for the sectors energy, industrial processes and product use, agriculture/forestry/other land use, and waste. They support countries in compiling complete, national inventories of GHGs and can be downloaded [here](#).

- A 'Tool for Calculating Greenhouse Gases in Solid Waste Management' was developed by the Institut für Energie- und Umweltforschung (IFEU) funded by BMZ, KfW and GIZ – it can be downloaded [here](#).
- A method and approach for monitoring projects within the GIZ Energising Development Programme (EnDev), *i.e.* energy supply through modern energy services, is accessible [here](#).
- A GIZ guidebook on 'Accounting for Greenhouse Gas Emissions in Energy-related Projects' is available [here](#).
- A 'Manual for Calculating the GHG Benefits of GEF Projects: Energy Efficiency and Renewable Energy Projects – Global Environment Facility' is available from the GEF [here](#).
- For guidance for fluorinated GHG emission on the 'Calculation of GHG Emissions Reduction: Methodology and Baseline and Ex-ante Calculation' can be obtained upon request through the GIZ PROKLIMA programme.
- The University of Aberdeen has developed a tool for Unilever for assessing GHG emissions in agriculture at farm level. The 'Cool Farm Tool' is available [here](#).
- Guidance for cities and communities on how to calculate GHG emissions is provided through ICLEI's 'International Local Government GHG Emissions Analysis Protocol' [here](#).
- A 'Manual for Calculating Greenhouse Gas Benefits for GEF Transportation Projects' from the Institute for Transportation and Development

Policy compiled for the Scientific and Technical Advisory Panel of the GEF can be found [here](#).

- In some cases it may be useful to build on the detailed experience gained through CDM approaches, *e.g.* the approved UNFCCC CDM Methodologies which are available [here](#).

(Source partly: GIZ 3 (p.31 ff., 2011))

GHG emission reduction potential and costs of different technologies:

- The UNEP Risoe Centre offers the Financial and Cost Assessment Model (FICAM) as a tool to evaluate the mitigation capacity as well as costs of technologies [here](#).
- The TNAssess tool complements FICAM in terms of co-benefits through a Multi-criteria Decision Analysis (MCDA). A description can be found [here](#).
- The best technology references available from the EC Joint Research Centre for different sectors can be found [here](#).
- The Climate TechWiki offers detailed information on a range of mitigation technologies [here](#).

(Source partly: GIZ 1 (p.40, 2012))

For marginal abatement costs (MAC)

- The World Bank offers a MAC tool available [here](#).
- The following support tool for rating the co-benefits of mitigation measures in a MAC is being developed by a CLEAN working group: 'Development Impact Assessment tool' (forthcoming).
- The free-of-charge Non-Annex I Marginal Abatement Cost (NAMAC) curve online tool, which shows MAC curves for different Non-Annex I countries including different sectors, is provided through ECN [here](#).

(Source partly: GIZ 1 (p.40, 2012))



How can partner countries be supported in establishing a GHG baseline?

There are a number of initiatives which may provide useful information in establishing sectoral baselines, particularly those applying BAU projections. A number of these baseline initiatives also strongly promote South–South cooperation.

One such initiative is the Mitigation Action Plans and Scenarios (MAPS) collaboration. MAPS grew out of South Africa's very successful, government mandated Long Term Mitigation Scenarios (LTMS) process which included much stakeholder interaction and emissions modelling performed by the University of Cape Town. MAPS is a form of collaboration between developing countries to establish long-term baselines. Currently, the MAPS process is being undertaken in Brazil, Chile, Colombia and Peru, with funding provided by the Children's Investment Fund Foundation. The MAPS process also aims to disseminate information and it will hopefully be extended to other countries. MAPS processes are government mandated and as such, decisions on funding are sovereign questions for the countries.

Further information can be found [here](#). Information on Brazil's MAPS process can be seen below. The three phases of the MAPS process in Brazil show how the baseline can be applied further along in the process to reduce emission reductions at national level.

Applying the MAPS process in Brazil

Emission Reduction Plans in Brazil

- Under the Copenhagen Accord, Brazil voluntarily committed to reducing emissions by between 36% and 39% BAU by 2020;
- Currently, the Ministries are working on sectoral mitigation plans for the period 2012–2020; and
- Reductions will mainly be achieved by reducing deforestation.

MAPS: Brazil

Phase 1: Desk-based comparative study of three GHG emissions scenarios for Brazil up to 2030, including a cost assessment of the mitigation scenarios compared to the baseline. The scenarios were broken down by sector.

- Scenario A: baseline (BAU);
- Scenario B: plus voluntary pledges; and
- Scenario C: voluntary pledges plus additional mitigation actions.

Phase 2:

- Building a technical research team and a scenario building team made up of the country's leading experts from the public and private sector; and
- Refining modelling techniques for creating long-term scenarios.

Phase 3: Bringing together the scenario building team and the technical research and modelling teams;

- Analysing data and creating models to ensure that Brazil is on track to meet 2020 targets;
- Creating mitigation scenarios for 2020–2030 and 2020–2050;
- Identifying potential policies that could enable higher emission reductions;
- Identifying clean energy technologies;
- Identifying means to mitigate emissions without putting economic growth in jeopardy; and
- Demonstrating economic and social impacts of each scenario.

(Source: Lèbre La Rovere (p. 2 ff., 2011))

The Danish Energy Agency, UNEP Risø and the OECD, along with partner countries China, Ethiopia, India, Indonesia, Kenya, Mexico, South Africa, Thailand and Viet Nam, are involved in a work stream to identify key assumptions and methodologies used across a range of developing countries in setting their national baselines and emissions projections for certain sectors and/or for the

whole economies. In different countries, these may have been the result of detailed modelling or high-level assessments, and they may have been used for national communications, LEDS, NAMA development or other purposes.^[9] This work stream will result in a publication or series of publications about setting baselines, a useful tool which will be available in the beginning of 2013.

[9] DEA (2012) <http://www.ens.dk/en-US/Info/FactsAnd-Figures/nama/workstream/Sider/Forside.aspx>

Further reading about MAPS

- Country studies (along with a comparative paper) on understanding and conceptualising mitigation actions in Brazil, Chile, Colombia, Peru and South Africa. This will be released as a special issue in the 'Climate and Development' Journal. Click [here](#).
- An initial paper exploring linkages between low-carbon development, mitigation and poverty in middle-income countries. Click [here](#).
- Discussions and explorations into challenges in establishing a robust modelling framework that covers detailed information on sectors and economy-side implications. Click [here](#).
- Offering a facilitation training course in collaboration with the LEDS Global Partnership to equip climate change professionals with skills in facilitation (theory and practice). Click [here](#).

Does additionality need to be taken into consideration in NAMAs?

The extent to which additionality needs to be taken into consideration depends on the type of NAMA. As defined by the Conference of Parties to the Kyoto Protocol, a project activity is considered additional if anthropogenic emissions of GHGs by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (UNFCCC 2 (2006)). In the CDM, strict additionality rules are defined in the 'Tool for the demonstration and assessment of additionality'. However, for NAMAs, there are no established rules, procedures or best practices on how to define additionality and when additionality needs to be applied. However, it

is assumed that NAMAs should be additional in the sense of achieving emission reductions in comparison with the baseline.

For internationally supported NAMAs, additionality requirements must be discussed with the financier(s) of a NAMA. The situation may arise where a NAMA implementing government has funds already earmarked for implementing activities; in this case, if a donor provides financing, the implementing country funds may be used elsewhere. Here, the activity may not be considered 'additional' as it would have occurred without the involvement of a donor, and the donor must decide whether this is an issue; international donors presumably do not have an interest in co-funding mitigation actions that would be undertaken regardless of support being provided. This question of additionality is likely to gain even more relevance when the flow of international climate finance increases. In another situation, for example the GIZ Efficiency Measures in the Mexican Residential Building Sector NAMA, the NAMA is comprised of the scale-up (*e.g.* increased subsidies and more ambitious efficiency standards) of an existing programme. Donors may want reassurance that the scale-up would not happen without external NAMA financing.

If NAMA credits are to be used in a UNFCCC-regulated offset mechanism, additionality rules will need to be decided upon by the UNFCCC.

For domestically funded NAMAs, additionality will probably not be an issue as the activities would most likely not occur without the domestic funds, meaning the activities would not be BAU. However, additionality rules may be determined by the implementing country.



How can partner countries evaluate the technical emission reduction potential and associated costs at national and sectoral level through ex-ante estimates? How can emission reductions and costs be quantified while avoiding double counting?

General concept and process

The GHG emission reduction potential and associated costs should be estimated at national and sectoral levels. This is to be achieved through ex-ante estimates, which should be based on the application of internationally recognised methodologies that quantify GHG emission reductions and costs and avoid double counting. As part of the analysis, co-benefits as well as economic incremental costs also need to be taken into account (Source: GIZ 1 (p.11, 2012)).

Indonesia: Conceptual steps towards NAMA development

The Indonesian NAMA framework follows these conceptual steps:

- An initial priority list of mitigation actions should be selected according to the criteria ‘cost-effectiveness’ and ‘implementability level’.
- Screening criteria can support in assessing the ‘implementability level’ of potential mitigation actions and are to be selected according to four categories including social and political feasibility and data availability and quality.
- Co-benefits should include the impact of mitigation actions on poverty eradication and whether it contributes to economic and social development.

(Source: GIZ TUEWAS (p. 8 ff., 2011))

Key steps proposed for the Indonesian transport sector

1. Conduct a screening exercise of existing transport measures within the country and see which of these could contribute (either currently or in future) to CO₂ mitigation. The screening should ideally extend to the local level (e.g. municipal governments), as many interventions in the transport sector are conducted at this level.
2. Based on the first step, revisit the current list of proposed mitigation actions and compare them against published lists of international best practices. Based on this comparison, consider further actions that could be taken in Indonesia.
3. Estimate CO₂ emissions from the transport sector under BAU assumptions, as well as the impact of the identified mitigation actions on CO₂ emissions.
4. Combine the information on CO₂ mitigation impacts with other criteria related to sustainable development (e.g. traffic safety, energy security, health benefits, environmental impact) and prioritise/rank the measures.
5. Identify a combination of actions that would allow the transport sector to mitigate CO₂ emissions up to or even beyond a given target.
6. Identify the key barriers for the implementation of these actions and determine the need for international support (e.g. capacity building, technology transfer, financing).

(Source: GIZ/BAPPENAS (p.83, 2011))

The general process includes collecting top-down and bottom-up data, finding room for improvement and then developing and evaluating different mitigation scenarios. This encompasses sector-by-sector assessments as well as planning and consultation workshops that include discussions on criteria for good and ambitious NAMAs. The below cases illustrate general conceptual steps and processes carried out in Indonesia.

Calculating the emission reduction potential

Firstly, ensure that bottom-up data (*e.g.* detailed sectoral data) and top-down data (*e.g.* national data for extrapolation) is available in the required level of detail. Ensure that system boundaries are set logically. Then calculate different emission reduction

scenarios based on sets of mitigation actions (ideally for the different priority sectors identified earlier) and present them to the relevant stakeholders for discussion and prioritisation. State uncertainties and make conservative assumptions regarding your calculations.

GHG emission reductions are generally expressed in CO₂ equivalent and should, according to UNFCCC, use the global warming potential (GWP) provided by the IPCC based on the effects of GHGs over a 100-year time horizon (Source: UNFCCC (p.6, 2002)).

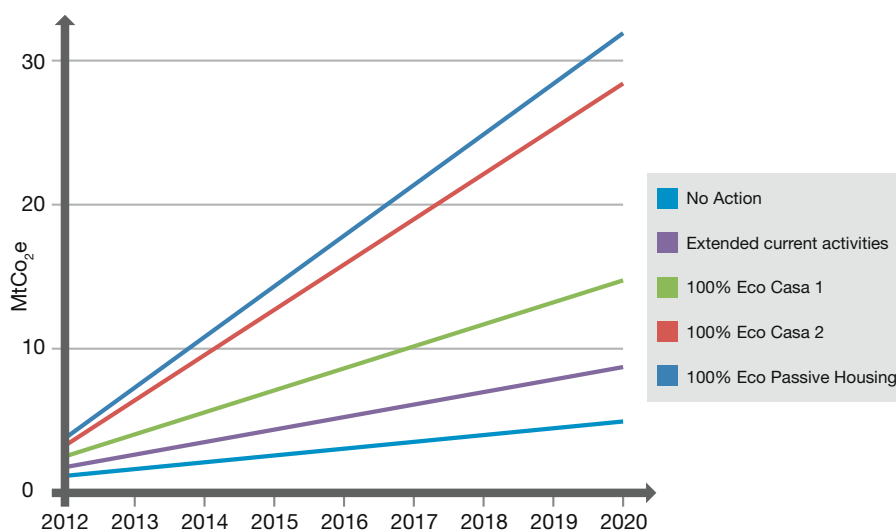
There could also be country-specific requirements for GHG accounting; these should be taken into account.

The case below shows an excerpt from scenarios in the housing sector in Mexico.

Housing sector in Mexico

With Mexico's continuing population growth, more than seven million new housing units will be constructed by 2020, contributing as many as 33 MtCO₂e to the cumulative GHG emissions of Mexico. A NAMA concept is therefore in progress that aims at increasing the overall number of energy efficient homes built and improving their emission performance. The figure shows the emissions from newly constructed houses in Mexico and selected mitigation scenarios. Three primary energy 'standards' were calculated as part of the NAMA efforts in Mexico: Eco Casa 1, Eco Casa 2 and Passive House Standard.

Figure 20: Emissions from EcoCasas in Mexico



Source: GIZ/Gobierno Federal Mexico (p.1, no year)

Calculating associated costs

Generally, it is essential to include different cost categories, *e.g.* technology, as well as financing parameters. This is illustrated in a case from the transport sector (below).

Transport sector: What costs should be looked at when selecting NAMA options?

- Direct (including transaction) costs?
- Indirect costs (*e.g.* long-term maintenance obligations)?
- Incremental costs compared to alternatives?
- Can costs be stated in euros (or other currency) per unit CO₂ avoided?

(Source: TRANSfer (2012) (p.11, 2012))

For any mitigation scenario it is important to understand the so-called ‘system abatement cost’, which shows the economic efficiency of the scenario in reducing GHG emissions.

(Refer to: GIZ/BAPPENAS (p. 95 ff., 2011))

Marginal abatement cost curves can be useful in selecting mitigation options as they rank technological options by cost and mitigation potentials. However, when interpreting MAC curves, one should keep in mind their limitations, such as no consideration of co-benefits, little or no reflection of institutional, transaction and implementation costs or other market barriers, and an inability to capture different impacts of climate policies on agents, sectors or income groups.

(Source: GIZ 1 (p.39, 2012))

Approach for calculating abatement costs for the land-based sector in Indonesia

Estimating abatement costs in the land-based sector is rather complicated and several models have been developed for that matter as depicted in Table 3:

Table 3: Models for estimating abatement costs for the land-based sector

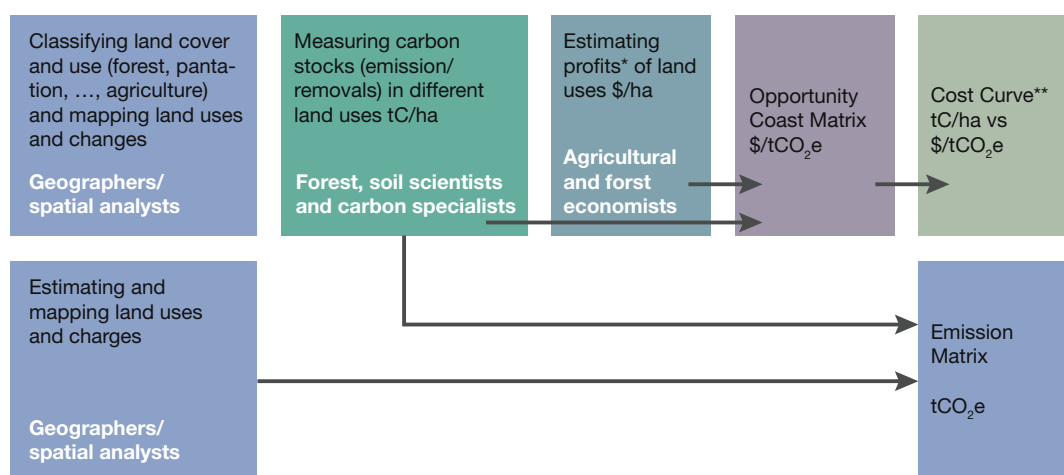
Local-empirical models	Global simulation models	Global-empirical approaches
<ul style="list-style-type: none"> ■ Boener and Wunder (2008) – 2 states of the Brazilian Amazons ■ Swallow <i>et al.</i>, (2007)21 – 3 sites in Indonesia, 1 in Peru and 1 in Cameroon ■ Nepstad <i>et al.</i>, (2007) – Brazilian Amazon region 	<ul style="list-style-type: none"> ■ Dynamic Integrated Model of Forestry and Alternative Land Use (DIMA) ■ The generalized Comprehensive Mitigation Assessment Process Model (GCOMAP) ■ The Global Timber model (GTM) 	<ul style="list-style-type: none"> ■ Grieg-Gran (2006) for the Stern Review – 8 main tropical forest nations (Brazil, Bolivia, Cameroon, Democratic Republic of Congo, Ghana, Indonesia, Malaysia and PNG), cumulatively account for 46% of global deforestation

(Source: GIZ/BAPPENAS (p.108, 2011))

Generally, it is assumed that the true value lies somewhere in between the global and empirical models. Several steps are required by experts to estimate

the abatement costs for the land-based sector as shown below:

Figure 21: Steps for estimating abatement costs for land-based emissions



* hydrologists and biodiversity specialists would also be needed to estimate possible co-benefits;

** in addition to opportunity cost, transaction costs, implementation and monitoring costs also need to be integrated.

Source: GIZ/BAPPENAS (p. 109, 2011)

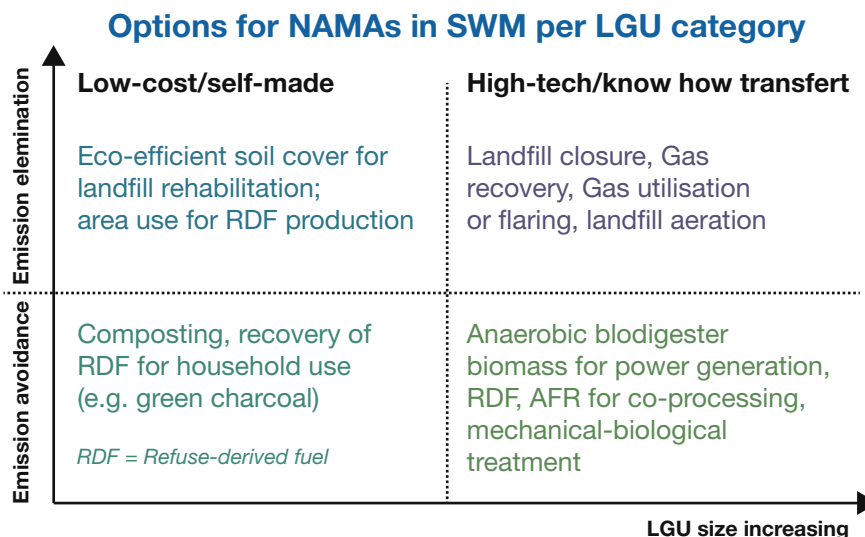
Please also refer to the information box 'NAMAs and REDD+: relationship and key issues for consideration' in Section 3.2.

Philippines: Bottom-up evaluation of technical options for solid waste management (SWM) NAMAs

According to the national GHG inventory submitted to the UNFCCC 2009 National Framework Strategy on Climate Change (NFSCC), the waste sector is the third largest emitter in the Philippines. GHG emissions mainly come from open dumping of solid waste and wastewater from cities and communities. Furthermore, there is limited awareness on how the waste sector facilitates further GHG emission reductions in other sectors. For example, the capacities of recycling industries, co-processing facilities and the biomass energy sector to recover materials and energy rely heavily on the efficiency of municipal waste collection systems to deliver the needed resources.

Experience from the BMZ-funded Programme on Solid Waste Management for Local Government Units showed that local authorities can invest, operate and sustain SWM programmes when they are able to select models or technological options that suit their local situations. Therefore, a combination of existing national approaches and development cooperation can further enhance the capacity of national and local governments to mainstream NAMAs in the sector. Based on a bottom-up approach, a matrix (below) was developed and used to categorise technical options by landfill gas utilisation category in low-tech/high-tech, small/big, avoidance/treatment to decide on the most promising option.

Figure 22: Technical options in landfill gas utilisation



Source: GIZ TUEWAS (p. 25 ff., 2011)

How to avoid double counting?

There is potential for the wider NAMA approach to collide with specific CDM projects. If a NAMA is introduced to a sector in which CDM projects are being undertaken, emission reductions could be double counted. Annex I countries could potentially pay twice for the same GHG emission reduction, on the one-hand through the purchase of certified emission reductions (CERs) from the specific CDM project (*e.g.* wind power plant) and on the other hand through the financial assistance supplied for the NAMA activities in the same sector (*e.g.* renewable energy sector).

There are several approaches for addressing the issue:

- Fence off individual CDM projects from NAMAs by excluding existing CDM projects from any new NAMA assistance in the specific sector and by not counting the GHG emission reduction achieved from the registered CDM project towards the newly introduced NAMA goal. For

instance, if the NAMA goal aims to achieve a 12% emission reduction through renewables, already registered CDM projects for solar power should not be counted towards that 12% goal.

- Lower the baseline for new CDM projects within existing NAMA sectors accordingly, *i.e.* make the NAMA activity and its reduction target part of the BAU baseline of the CDM project. This, however, needs to be decided by the CDM Executive Board or the COP.
- From the perspective of Annex I countries, offset purchase rules could restrict certain purchase activities for project CERs beyond 2012. Furthermore, the international discussion may result in a selection of countries that should move towards a NAMA framework instead (and stop participating in the CDM) due to their large emission-reduction potential.

(Source: adapted from Center for Clean Air Policy (p.3, no year))

As a result, the introduction of a comprehensive NAMA framework in a given sector could make it difficult to run new CDM projects in parallel (*e.g.* regarding additionality testing) and less cost effective (profitability). However, if sector-wide transformation is to be achieved, the NAMA approach may be more promising than single CDM projects. This, however, depends on the ongoing process of CDM reform.

(Source: adapted from Center for Clean Air Policy (p.3, no year))

» What is the difference between the emission reductions accounting needed for the CDM and for NAMAs?

With respect to the differences in GHG accounting for CDM and for NAMAs, one needs to bear in mind the different perspectives of each mechanism. Emission reductions in CDM projects are paid for on a one-to-one basis by stakeholders in Annex I countries, and BAU emissions and reductions thus need to be carefully calculated. As NAMAs generally support the broader actions of non-Annex I countries in which funding is not directly linked to specific emission reductions on a one-to-one basis (if not a credited NAMA), calculations do not need to be as precise. For example, the CO₂ mitigation effect of solar water heaters depends on the exact level of local solar irradiation. A CDM project would need to collect data for all sites across the country. A unilateral or supported NAMA, however, can use simplified regional approximations. Nevertheless, certain good practices from CDM PoAs can be of use when setting up a NAMA framework, *e.g.* for setting system boundaries (refer to: KfW/Southpole (2011)).



Hints for NAMA project planning and management

Setting up a baseline to measure mitigation efforts against is a key step in NAMA development and implementation. As there are several guidelines and methodologies regarding GHG emission reductions accounting, partners may require advice on the best approach according to their specific needs and whether additionality and/or the inclusion of non-GHG co-benefits in the baseline plays a role.

Recommended Capacity WORKS tool

SF5: LEARNING AND INNOVATION – 05 Product-based Knowledge Management

This tool is designed to help identify relevant experience and knowledge, and systematically manage it for future exchange with others.

Benefits of the tool for NAMA development

- Carry out a structured retrospective analysis of experiences made in baseline design; and
- Select new GIZ products to be produced based on experiences with baseline advisory services in partner countries.

Further reading

- Center for Clean Air Policy (no year) – Nationally Appropriate Mitigation Actions (NAMAs) and the Clean Development Mechanism (CDM). An Overview. Available online at (last accessed 18.10.2012): <http://www.ccap.org/docs/resources/1016/NAMAs%20and%20the%20CDM.pdf>
- GIZ 4 (2011) – Klimawirkungen. Das GIZ-Source book für klimaspezifisches Monitoring in der internationalen Zusammenarbeit. Available online at (last accessed 18.10.2012): <http://www2.gtz.de/dokumente/bib-2011/giz2011-0445de-klimawirkungen.pdf>
- GIZ 1 (2012) – Nationally Appropriate Mitigation Actions (NAMAs). Steps for moving a NAMA from Idea to Implementation. NAMA Tool 7.
- Greenhouse Gas Protocol Initiative (2005) – GHG Protocol for Project Accounting. Available online at (last accessed 18.10.2012): <http://www.ghgprotocol.org/standards/project-protocol>
- Lèbre La Rovere, Emilio (2011) – Applying the MAPS process in Brazil. MAPS Brazil presentation for COP17 side event 2011. Available online at (last accessed 18.10.2012): http://www.mapsprogramme.org/wp-content/uploads/COP17_Psn_MAPS-Event_Brazil_2__111201-2-Compatibility-Mode.pdf
- Ministère de l'Environnement et du Développement Durable 1 (2010) – Tunisian 'Nationally Appropriate Mitigation Action' NAMAs. Preliminary Proposals. Available online at (last accessed 18.10.2012): http://www.jiko-bmu.de/files/basis-informationen/application/pdf/nama_proposals_tunisia.pdf
- TRANSfer (2012) – Navigating Transport NAMAs. Practical handbook for the design and implementation of NAMAs in the transport sector. Available online at (last accessed 18.10.2012): <http://www.mitigationpartnership.net/transfer-2012-navigating-transport-namas-practical-handbook-design-and-implementation-namas-transport>
- UNFCCC (2002) – Decision 17/CP.8. Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention. Available online at (last accessed 18.10.2012): <http://unfccc.int/resource/docs/cop8/07a02.pdf>

5.2 What needs to be considered when designing the MRV plan?

»» How can NAMA MRV plans be designed to suit the needs and requirements of the implementing country and donor?

A number of implementing countries are currently seeking support in developing MRV structures – even prior to having a NAMA in place. This is because the successful process of establishing MRV structures can be seen as a crucial step in entering into the NAMA process. These MRV structures may include roles and responsibilities of actors (*e.g.* if will there be a co-ordinating body for the MRV of all NAMAs), data systems and procedures for reviewing data, etc. The Government of Japan is currently undertaking NAMA MRV capacity building in Cambodia, the Lao People's Democratic Republic, Mongolia and Viet Nam. Further information about the programme can be found [here](#). A key lesson learned in this initiative is that assessing the degree of success in practical terms depends on the original capacity level, goals, and expected outputs and outcomes.

The Paris Declaration on Aid Effectiveness and the Accra Agenda for Action outline commitments by donors and implementing countries to ensure that monitoring, evaluation and reporting procedures and requirements are aligned with national strategies (OECD 2005). This document can be used as initial guidance to ensure that both parties' needs are met. In addition, when they are available, UNFCCC MRV requirements need to be met.

Prior to designing MRV plans, both implementing and donor government policies on MRV should be reviewed. In the implementing country, the implementing agency and possibly the ministry of finance

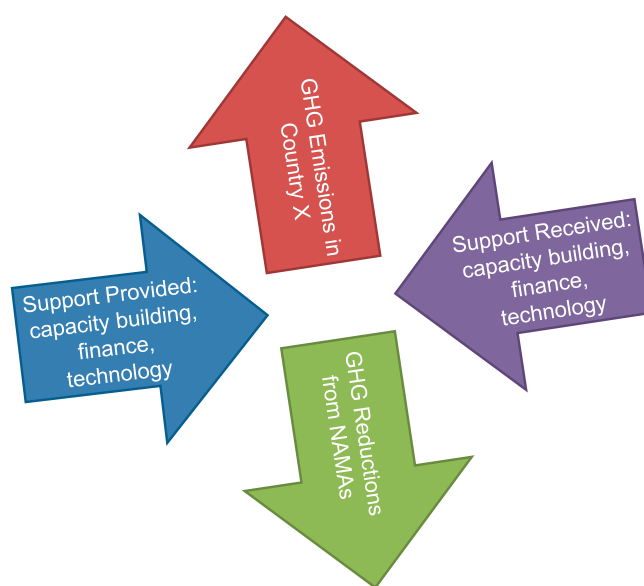
should provide any necessary MRV requirements or strategies. The donor government should provide typical MRV requirements. The requirements of both parties should then be aligned.

In addition to ensuring that both parties agree on the MRV requirements, the UNFCCC must also take these requirements into consideration. These will be discussed in a later section.

»» What needs to be included in MRV plans?

Figure 23 demonstrates the four main categories of parameters that need to be part of the MRV system. These include: GHG emissions in the country, support received (*e.g.* capacity building, finance, technology), GHG emissions from NAMAs, and support provided (*e.g.* capacity building, finance, technology). As mentioned above, the exact parameters will depend on donor and UNFCCC requirements.

Figure 23: MRV framework



Source: Lacy (p.2, 2011)

A three step approach can be used to set up an MRV framework (illustrated in Figure 24):

➔ **Step 1: Identify key parameters for the MRV approach**

These parameters will depend on the requirements of the donor or implementing country, as well as of the UNFCCC. Existing GHG quantification methodologies (*e.g.* CDM, various voluntary carbon market standards, World Resources Institute Greenhouse Gas Reporting Protocol, IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories) may be used for guidance.

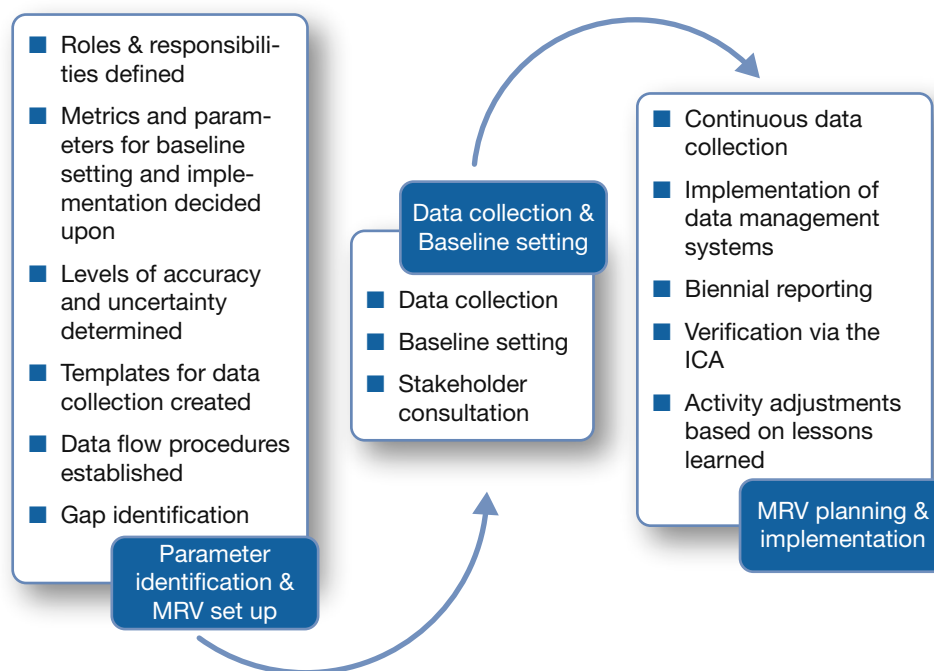
➔ **Step 2: Check data requirements and availability, and establish the baseline**

It is necessary to check, in accordance with implementing and donor countries and UNFCCC requirements, the data that is needed and the data accuracy that is required. In addition, the data that is available needs to be determined. Setting the baseline should have provided some information about data availability, but further data assessment will most likely be required. A gap analysis is a useful exercise for determining the data that is available.

➔ **Develop an MRV plan and implement it**

The MRV plan should clearly lay out the parameters to be measured, how often each parameter will be measured, where the information will be recorded, who will be recording and checking the data, and the back up plans that will be in place. Quality assurance and quality control procedures should be included in the plan.

Figure 24: Approach for setting up an MRV



Source: adelphi/Perspectives (2012)

In addition to undertaking a gap analysis for data, it may be useful to perform one at national level in order to assess what domestic systems NAMA need to be established. An overall gap analysis was undertaken in Indonesia, as described in the box below.

Indonesia NAMA MRV gap analysis

A GHG inventory and NAMA gap analysis was undertaken by GIZ in Indonesia. This analysis identified MRV gaps at national level. Gaps identified are as follows:

- MRV activities have to be aligned across different levels of government institutions/ministries for effective coordination and consolidation;
- MRV infrastructure has to be established to enable relevant agencies/institutions to pool their resources;
- MRV activities related to the GHG inventory have to be established in a robust and sustainable manner; and
- MRV activities on RAN/RAD-GRK have to be established in a robust and sustainable manner.

(Source: RAN-GRK (2012))

Recent decisions within the international climate negotiations demonstrate a growing global consensus that common forms of measuring, reporting and verifying information are needed to track progress with regard to GHG emissions, emission reductions, and the need for developing countries to improve their basis of information. Along with the new commitments to MRV come new challenges for raising national-level, sub-national-level and sectoral-level capacities for improving information. GIZ developed an MRV tool that provides step-by-step guidance

and concrete examples for carrying out MRV in the three principle areas (emissions, NAMAs and support received).

UNEP Risoe also recently released a primer on MRV which may serve as a useful resource: [Measuring Reporting Verifying: A Primer on MRV for Nationally Appropriate Mitigation](#)



What are lessons learned that can be derived from CDM which should be kept in mind when setting up MRV systems?

One key lesson learned from the CDM is that complex, strict MRV systems can cause many challenges. MRV systems for NAMAs should be designed in a way that is feasible while still maintaining environmental integrity. Further lessons learned include (Ellis & Aalders 2012):

- Robust MRV process ensure environmental integrity;
- There should be an explicit requirement to indicate what would have happened otherwise;
- Developing emission reduction methods is resource-intensive and not an exact science;
- Some projects/programme types are much more difficult to MRV than others; and
- Co-benefits are reported ex ante – no international oversight.



How can local institutions be empowered to develop and manage the necessary MRV procedures?

Local institutions can play a number of key roles in assisting with MRV, as researchers, stakeholders and consultants. Having capable MRV institutions is very important to the success of a NAMA, especially a decentralised NAMA. In the Philippines, there is a lack of capacity for the MRV of SWM, especially in

relation to GHG emission management. As described in the box below, GIZ engaged partners to fill this capacity gap.

Capacity building for local institutions to support MRV in the Philippines – SWM sector

Through the Philippines Integrated Solid Waste Management Programme for Local Government Units (LGUs), GIZ has engaged a number of partners to increase local capacity for MRV. One key partner is a local university, the Central Philippine University Iloilo. GIZ has supported the foundation of a diploma course in Environmental Resource Management and Technologies in Solid Waste Management. This course is a 1.5-year, Saturdays-only course for professionals, many of whom work for LGUs at regional and national agencies. The course started in June 2012 and includes modules on Greenhouse Gas Accounting, Management and Monitoring. These students and their newly acquired skills will be essential in increasing MRV capacity at local, regional and national government level. This improved MRV capacity will be highly applicable in increasing NAMA MRV capacity.

Prior to this post-graduate programme, the 17-module toolkit developed by the SWM4LGUs project has been piloted by 45 participants from partner organisations and selected communities. The technical expertise of the partners has been enhanced and validated through a competitive examination system.

In addition to the university partner, the SWM4LGUs programme also collaborates on MRV with the Regional Ecology Centers (RECs). The RECs are key MRV partners as they collect local government waste information in a database, whose set-up was supported by the BMZ/GIZ SWM4LGUs project. Information is also now linked to the SWM4LGUs website (<http://swm4lgus.net>), which provides a wealth of MRV related information. The RECs also serve as information sources for the LGUs.

(Source: Interview with GIZ Philippines 2012)

Further information about working with MRV partners can be gathered from the BMU-funded and GIZ-facilitated [International Partnership on Mitigation and MRV](#). The partnership provides a wealth of information and resources about mitigation and MRV. Furthermore, the partnership offers a number of interactive options – summer schools, technical workshops and peer-to-peer programmes.

What UNFCCC requirements are there for MRV?

At COP17 in Durban, Parties came to an agreement about the international MRV process for NAMAs. The MRV is included within the International Consultation and Analysis (ICA) process, which is based on BURs to be produced by developing countries.

The section on mitigation in the BURs should include, to the fullest extent possible, the following information:

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

ICAs will be undertaken to assess the BURs. The goal of the ICAs is to increase the transparency and understanding of the BURs, facilitate information sharing and help to flag early on any challenges associated with the reporting process. The details of ICAs are still under discussion but the first rounds of ICA will commence within six months after the submission of the first round of BURs by developing countries. In the subsequent ICA rounds, the frequency of participation by developing countries, based on their respective capabilities and national circumstances and granting special flexibility to small island developing states and LDCs, will be determined by the frequency of the submission of BURs. Small island developing states and LDCs may undergo ICAs as a group at their discretion. Implementing countries may need capacity building with regard to BURs and ICAs; BURs and ICAs should be addressed in any MRV capacity-building initiatives.

The UNFCCC will host a NAMA Registry, of which a prototype available here. Use of the Registry is not mandatory but provides a showcase platform for

NAMAs seeking support or NAMAs being implemented domestically.



How are policy NAMAs monitored?

MRV of policy NAMAs differs significantly from the traditional MRV of relatively quantifiable emission reductions. Some policy NAMAs can be measured through the number of activities that occur as a result of the policy (*e.g.* number power purchase agreements (PPAs) signed for renewable energy projects). However, the impact of other policy NAMAs (*e.g.* energy efficiency appliance standards) may be more challenging to measure, especially as a quantifiable baseline may not always be possible.

The following table was presented in the 2009 OECD report entitled Greenhouse Gas Mitigation Actions: MRV Issues and Options. The table presents options for measuring and reporting metrics for policies and measures.

Table 4: Options for monitoring and reporting

Type of policies and measures	Example	Monitoring/reporting metric	Type of metric
General economic/fiscal measures	Phasing out subsidies	Date and/or subsidy amount; change in consumption of subsidised energy	Input, Intermediate output
	CO ₂ tax	\$/t CO ₂ ; evolution of tax revenues for the taxed products	Input, Intermediate output
Targeted economic/fiscal measures	Landfill tax	\$/t landfill, m ³ CH ₄ collected	Input, GHG outcome
	Feed-in tariffs for renewables	\$/MWh; MW installed capacity; MWh generated	Input, Intermediate output
Regulations/standards	Appliance standards	Energy consumption standards; X% of appliances on market meeting new standards	Input, Intermediate output
	Electricity market regulations	MW installed capacity; %RES in production	Input, Intermediate output
	Biofuel standards	X% biofuel/litre	Input, Intermediate output
Market-based measures	Green certificates (renewables)	\$/certificate; GWh produced	Input, Intermediate output
	Emissions trading	t CO ₂ eq (emitted, not reduced)	GHG outcome
Industry/sector agreements	Performance standards	GJ/t cement, PFC emissions per tonne of aluminium; -X% emissions of Y/t production	Intermediate output
Goals/targets	Increased forest area	Hectares forest land	Intermediate output
Information, education, capacity development	Public awareness campaigns	Number of requests for funding/tools/information; hits on websites; actual expenditures	Input, Intermediate output
	Capacity for implementing agents	Number of researchers (etc.); funding	Input, Intermediate output
Research, development & demonstration	R&D for low-C technologies	\$/; number of patents	Input, Intermediate output
	Demonstration/pilot projects	Number of projects; funding leveraged; project-specific metric (MW; emissions)	Input, Intermediate output

Source: OECD (p. 21, 2009)



Hints for NAMA project planning and management

The successful process of establishing MRV structures can be seen as a crucial step in entering the NAMA process. To design MRV plans, government policies on MRV of the partner country need to be reviewed and a gap analysis for data should be undertaken. As partner countries might see MRV as a complicated and costly issue, and thus as a barrier to engaging in NAMAs, GIZ advisory services should focus on demystifying the MRV concept and build respective partner capacities.

Recommended Capacity WORKS tool

SF5: LEARNING AND INNOVATION – 06 Organisational Diagnosis

The tool provides a general structure designed to help analyse and diagnose organisations in order to form conclusions on their learning potentials and needs for future tasks (e.g. MRV).

Benefits of the tool for NAMA development

- Analyses key organisational aspects (e.g. mandate, environment, resources) crucial for the assessment of an organisation's potential role in conducting MRV tasks;
- Identifies the most suitable institutions to fulfil MRV tasks.

For domestically supported NAMAs, MRV metrics for policy measures are to be decided upon based on what is feasible and not onerous, while still providing transparency and sufficient MRV. For internationally supported NAMAs, appropriate metrics and the level and accuracy of MRV should be agreed upon by the implementing country and donor.

The level of detail of reporting should be aligned with requirements for the BURs.

Further reading

- International Partnership on Mitigation and MRV – Website (no year): Available online at (last accessed 18.10.2012): <http://mitigation-partnership.net>
- Philippines Department of Environmental Resources/GIZ/AHT Group AG (no year): Regional Ecology Centers (RECs). Available online at (last accessed 18.10.2012): http://www.swm4lgus.net/files/ecology_centers/E002-RA9003_REC_Roles.pdf
- RAN-GRK (2012) – Measurement, Reporting, Verification of GHG Inventory and RAN-GRK, RAD-GRK mitigation actions (NAMA). Gap Analysis Report for Indonesia. Available online at (last accessed 18.10.2012): http://www.paklim.org/wp-content/uploads/downloads/2012/08/MRV-Gap-Analysis-Indonesia-2.0-EUMRVCB-PAKLIM-GIZ_FINAL-english.pdf
- SWM4LGU – Website (2001): Available online at (last accessed 18.10.2012): <http://www.swm4lgus.net>

5.3 What are key components of data management systems?

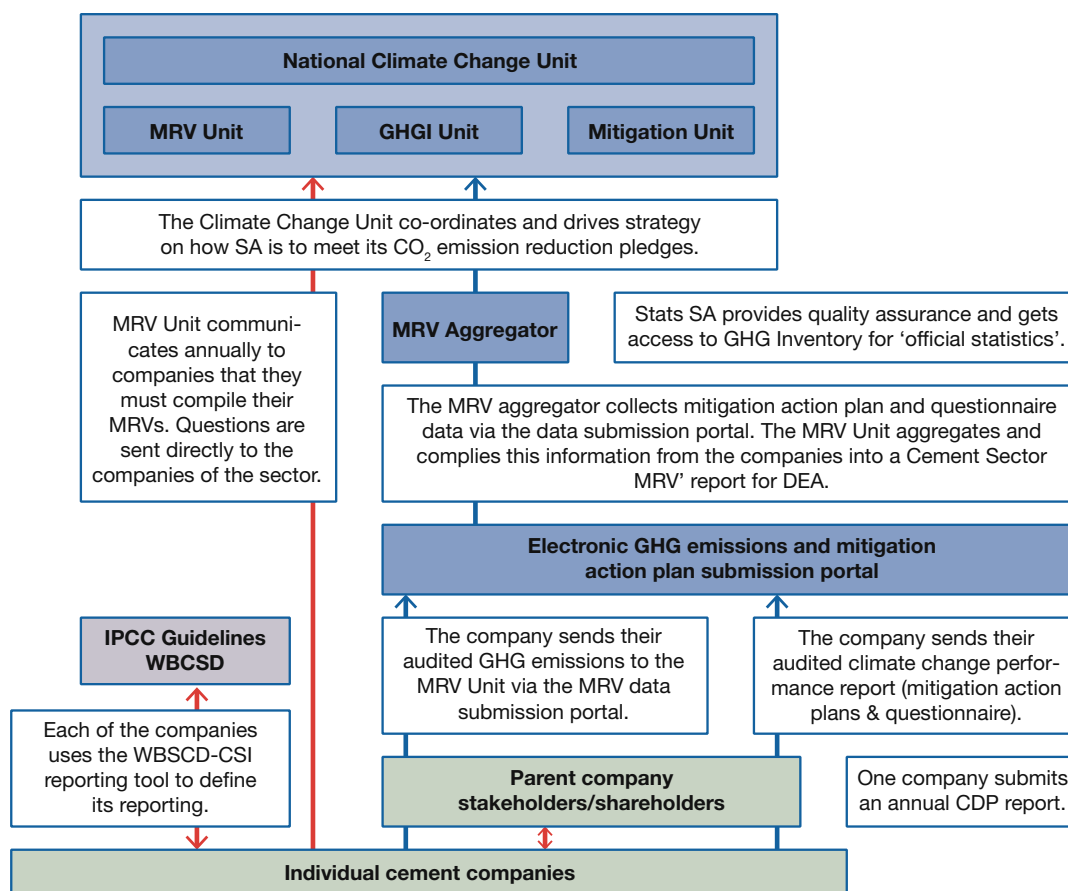
How is data generated and how are data flows managed?

MRV data should be generated in accordance with a MRV plan established as early as possible in the NAMA design process. Entities responsible for collecting and recording data could be the governmental agencies in charge of certain sectors, external technical experts (*e.g.* consultants hired to assist with the MRV), private sector companies in the sector, statistical departments, etc.

To ensure a smooth MRV process, there should be clear roles and responsibilities established for those in charge of the overall MRV (*e.g.* national unit for MRV) and its individual steps (*e.g.* measuring of data points, recording of data in a pre-established location and assisting with independent verifications).

Figure 25 shows an excerpt from the proposed reporting structure for the cement sector in South Africa.

Figure 25: Proposed reporting structure for the cement sector in South Africa (excerpt)



(Source: GlZ 1(p.51, 2012))

The type of data generated and those in charge depend strongly on the type of NAMA, sector or sectors, funding, etc. In any case, the MRV plan should detail data requirements, responsibilities and timeframes.

Table 5 shows example data that needs to be measured, reported and verified for an energy efficient housing NAMA in Mexico and the data sources.

Table 5: MRV Plan for a Housing NAMA in Mexico

	Measure	Report	Verify
What to...	<ul style="list-style-type: none"> ■ Electricity and Fuel Consumption; Emission Factors (Grid Electricity and fuel); Transmission and distribution loss, including Electricity theft; net calorific value of fuel; floor area of building unit, Heating Degree Days 	<ul style="list-style-type: none"> ■ Description of NAMA activities ■ Assumptions and Methodologies ■ Objectives of the Actions and Info on progress 	<ul style="list-style-type: none"> ■ Emissions Reductions (level of stringency TBD) ■ Increased access to affordable and efficient housing
How to...	<ul style="list-style-type: none"> ■ Electricity/fuel meters and/or utility bills ■ CDM Tool for Emission Factors ■ Data from utility providers on losses ■ Default Values ■ Data on air temperature for HDD 	<ul style="list-style-type: none"> ■ National-level reporting procedures (<i>i.e.</i> biennial update reports to UNFCCC) ■ NAMA-level reporting procedures, TBD 	<ul style="list-style-type: none"> ■ Biennial Update Reports to be verified by international experts (ICA) ■ NAMA-level verification, TBD
Who should...	<ul style="list-style-type: none"> ■ NAMA implementer 	<ul style="list-style-type: none"> ■ NAMA implementer 	<ul style="list-style-type: none"> ■ NAMA supporter (national and/or int'l)
When to...	<ul style="list-style-type: none"> ■ Continuous metering ■ Performance Monitoring annually ■ Baseline updates every 3–4 years 	<ul style="list-style-type: none"> ■ National-level, biennially ■ NAMA-level, TBD 	<ul style="list-style-type: none"> ■ National level every 2 years (ICA) ■ NAMA-level, TBD

Source: GIZ 1 (p.73, 2012)

What data management benefits are there?

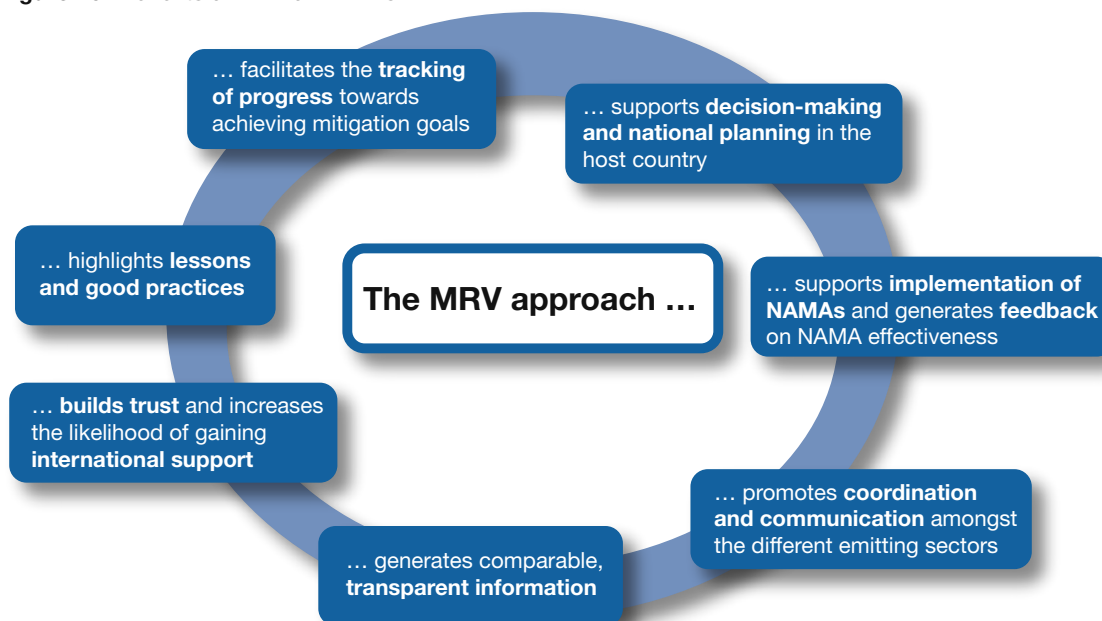
Data management is a crucial part of NAMA work and benefits. Information gathered for baselines will help to increase the knowledge surrounding issues related to emission reductions. Although some of this data may have already been gathered through the work undertaken for national inventories and communications or for carbon market projects, NAMA data collection should fill some remaining gaps, especially as many NAMAs will apply a holistic, (cross-) sectoral approach.

This gathering of data will enable the identification of gaps in data availability and may help to identify further NAMAs.

In addition, establishing or improving data management systems will have many other benefits. These systems will facilitate further mitigation activities which may or may not fall under the UNFCCC system. This could include domestic emissions trading schemes, results-based financing projects, etc. Furthermore, work performed on the MRV of policy

NAMAs may enable better assessment and better tracking of other policies. Figure 26 provides an illustration of benefits arising from the MRV of NAMAs.

Figure 26: *Benefits of MRV of NAMAs*



Source: GIZ 3 (2012)

Philippines solid waste management (SWM)

In the Philippines, there is currently a low level of capacity for SWM data management. This is partially due to the complexity of having three different levels of government involvement – a local level, where the data is recorded; the regional level – where the data is collected; and the national level – where overall information about the sector is kept. The Regional Ecology Centers (RECs), through the regional offices of Department of Environment and Natural Resources' Environmental Management Bureau (DENR-EMB), are tasked with validating and manually submitting local status reports to the National Solid Waste Management Commission (NSWMC). NSWMC already has an existing knowledge management system for consolidating nationwide data, but a real-time,

online updating system is still in progress. In addition, precise waste stream analyses that support the monitoring of NAMA-relevant indicators have not yet been agreed upon.

The GIZ SWM4LGUs project has worked to strengthen the MRV capacity at the regional level as the regional centres have a much better overview of the local level than the national authority. The strengthening of the RECs will result in improved data management systems for the sector, an improved support structure for the local governments and improved implementation of national SWM legislation.

(Source: GIZ Philippines interview 2012)

Further reading

- OECD (2009) – Greenhouse gas mitigation actions: MRV Issues and Options. Available online at (last accessed 18.10.2012): <http://www1.oecd.org/environment/climatechange/42474623.pdf>
- Philippines Department of Environmental Resources/GIZ/AHT Group AG (no year): Regional Ecology Centers (RECs). Available online at (last accessed 18.10.2012): http://www.swm4lgu.net/files/ecology_centers/E002-RA9003_REC_Roles.pdf
- UNFCCC (2008) – UNFCCC Resource Guide Module 4 for developing National Communications. Available online at (last accessed 18.10.2012): http://unfccc.int/resource/docs/publications/08_resource_guide4.pdf

5.4 What needs to be considered at an international level when planning NAMAs?



What needs to be taken into account when planning NAMAs in accordance with an international NAMA template?

The UNFCCC has released four NAMA templates which can be found [here](#):

1. NAMA seeking support for preparation;
2. NAMA seeking support for implementation;
3. Other NAMAs for recognition; and
4. Information on support for NAMAs.

These templates are available on the UNFCCC NAMA Registry website. One of the key design elements of the templates is flexibility. The UNFCCC produced an information note on the NAMA Registry prototype, which highlighted this flexibility. (UNFCCC (2012)):

- The only mandatory fields in the submission tool are the NAMA title, NAMA description and contact details;
- It is possible to select various options when presented with a menu;
- It is possible to edit the information on NAMAs or support at the discretion of the user; and
- A 'light' version of the Registry is available for use with slow Internet connections.

The flexibility incorporated into the Registry highlights the desire of the UNFCCC Parties for flexibility in NAMA design, implementation and MRV. Therefore, one of the key concepts to bear in mind when developing a NAMA is that all NAMA aspects are flexible and should be developed in the way that best suits the implementing countries' needs and abilities, as well as, where applicable, the donors' needs.

» What is the process for submitting to the UNFCCC Registry? What are the advantages?

The current process for submitting to the Registry is to complete the provided template and e-mail it to the UNFCCC secretariat at NAMA-Registry@unfccc.int. A section of the template for NAMAs seeking support for implementation is below.

Figure 27: *NAMA Seeking support template*

A.1 Party	<Pls enter Name of the Party here>	
A.2 Title of Mitigation Action	<Pls enter Title of Mitigation Action here>	
A.3 Description of mitigation action		
A.4 Sector	<input type="checkbox"/> Energy supply <input type="checkbox"/> Residential and Commercial Buildings <input type="checkbox"/> Agriculture <input type="checkbox"/> Waste management	<input type="checkbox"/> Transport and its Infrastructure <input type="checkbox"/> Industry <input type="checkbox"/> Forestry
A.5 Technology	<input type="checkbox"/> Bioenergy <input type="checkbox"/> Energy Efficiency <input type="checkbox"/> Hydropower <input type="checkbox"/> Wind energy <input type="checkbox"/> Carbon Capture and Storage	<input type="checkbox"/> Cleaner Fuels <input type="checkbox"/> Geothermal energy <input type="checkbox"/> Solar energy <input type="checkbox"/> Ocean energy <input type="checkbox"/> Other <pls enter Other text here>
A.6 Type of action	<input type="checkbox"/> National/Sectoral goal <input type="checkbox"/> Strategy <input type="checkbox"/> National/Sectoral policy or program <input type="checkbox"/> Project: Investment in machinery <input type="checkbox"/> Project: Investment in infrastructure <input type="checkbox"/> Other: <Pls enter Other text here>	

Source: UNFCCC (2012)

Prior to establishing the UNFCCC Registry, a NAMA database was created. This database, located [here](#), provides another platform for sharing information on NAMAs. This information is provided in a Wiki format.

Since submission to the registry is voluntary, a country may decide to use the Registry as a means of attracting international support or showcasing NAMAs around the world that may already be under implementation.

Submission of the NAMA to the Registry by the UNFCCC focal point will also allow for transparency surrounding the NAMA from the start. Before uploading a NAMA to the UNFCCC Registry, it is necessary to have widespread national approval, and thus national buy-in, of the NAMA. Colombia has demonstrated the process of gaining approval prior to submitting to the Registry, as is seen in the example below.

Colombia transport NAMA approval process

In partnership with the GIZ TRANSFER project, Colombia has developed a freight transport renovation NAMA. This NAMA has been developed within the framework of Colombia's Low Carbon Development Strategy (LCDS) which was launched in 2011.

In mid-2012, the Colombian NAMA was ready for uploading to the UNFCCC Registry. However, bearing in mind that there was Parliamentary approval for the LCDS, the NAMA was first put to Parliament for approval.

(Source: Interview with GIZ TRANSfer project, 2012)

Further reading

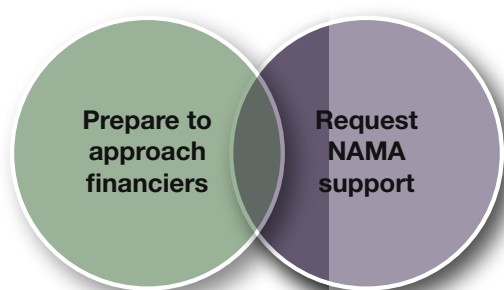
- NAMA Database – Website (no year): Available online at (last accessed 18.10.2012): <http://www.nama-database.org>
- UNFCCC (2012) – NAMA Seeking support. Word-Template. Available online at (last accessed 18.10.2012): http://unfccc.int/files/cooperation_support/nama/application/msword/01-nama-seeking-support-for-preparation-web-v0.4.doc



6. Financing

In this chapter, financial issues related to NAMAs will be presented. It focuses on how to prepare NAMAs for financing and how to request the financing. Once financing has been received, the section on MRV becomes pertinent.

Figure 28: Key aspects of Chapter 7



Source: adelphi/PCC

To this end the following questions will be addressed:

6.1 What should be prepared in order to approach financiers?

This section discusses how to identify needs for technological, capacity building and financial support and potential sources for this support. It then discusses and provides examples about potential NAMA costs. Finally, suggestions on what documents could be provided in order to gain financier interest are provided.

6.2 How to request support for NAMAs?

This section provides information on potential sources of NAMA support and what can be done to try and receive this support. Suggestions are also provided on what financial structures could be utilised to manage support received.

6.1 What should be prepared in order to approach financiers?



How can needs for technological, capacity building and financial support and potential sources for this support be identified?

One component of NAMA planning is identifying of needs. As priority mitigation activities are identified, the needs associated with those activities should be determined. The implementing country should also assess which resources are available in terms of technology, capacity and finance. These needs will be best identified through consultation with a number of stakeholders involved, including the relevant line ministries (*e.g.* ministries of transport, agriculture, energy) and the relevant agency for domestic budgeting (*e.g.* ministry of finance).

The UNFCCC published a guidebook on preparing technology transfer projects for financing, which may serve as a helpful resource on how to prepare proposals for funding. This is available [here](#).



What is the potential cost of NAMAs?

NAMA costs will vary significantly based on sector, level of project ambition and type of needs (*e.g.* technological, capacity building and/or financial support). Limited information is available so far about the costs of NAMAs. However, the costs associated with the GIZ-supported NAMA for energy efficient housing in Mexico is listed below.

Table 6: Costs associated with the GIZ-supported NAMA in Mexico

No.	Type of support actions	Financing need
1	Institutional set-up and NAMA administration	USD 3,009,000
2	Building codes and permit procedures	USD 910,000
3	Capacity building	USD 4,482,000
4	Beacon projects and software adaptation	USD 1,830,000
5	Marketing and advertising	USD 1,419,000
	TOTAL	USD 11,650,000

Source: GIZ/Gobierno Federal Mexico (p.36, no year)

Table 7: Examples of financial packages for subsidies to homeowners in Mexico

Packages				Financing need		Benefits	
Financial packages	Scale of the package	Content of the package		Subsidies to homeowners USD million		Total incremental construction cost USD million	Emission reductions over 30 yrs. lifetime, tCO ₂
		Mainstream roll-out	Passive house pilot	Mainstream roll-out	Passive house pilot		
Package 1	Large scale (27,000 homes)	EcoCasas 1 & 2, 40 and 70m ²	30 buildings of 40m ²	49	0,2	165	1,711,000
Package 2	Mid-size (13,800 homes)	EcoCasas 1 & 2, 40 and 70m ²	30 buildings of 40m ²	25	0,2	84	866,000
Package 3	Small scale (5,200 homes)	EcoCasas 1 & 2, 40 and 70m ²	30 buildings of 70m ²	9	0,3	27	311,000
Package 4	Multi-family (14,940 apartments)	EcoCasas 1 & 2, 40 and 70m ²	780 verticals, 40 and 70m ²	27	3	94	865,000
Package 5	Passive house pilot (890 homes)	890 Mexican passive houses (different types)		—	6	12	87,000

Source: GIZ/Gobierno Federal Mexico (p.42, no year)

These packages are very specific to the Mexican NAMA but provide an illustration of how NAMAs can be marketed to donors. The different packages can also be funded in a staged approach. For

instance, Package 5 could be funded as a pilot for the NAMA. If the results of the pilot are successful, the donor could then fund Package 1 or two donors could each fund a combination of packages.

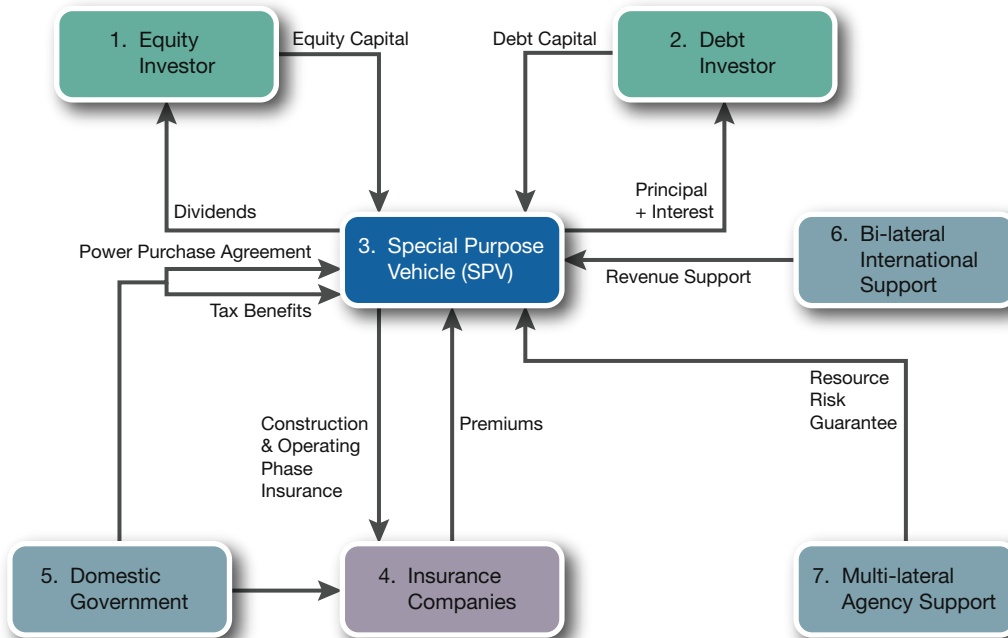
What documents should be prepared in order to present NAMAs seeking international support to potential public/private financiers?

The NAMA template for the UNFCCC Registry would be a useful document to prepare for providers of support. In addition to this, implementing countries should prepare documents similar to those prepared for other projects seeking financing or other forms of support. For public financiers, this may be a document in the form of a proposal. For private financiers, this may be a business plan which details the amount of support needed, how the support for

financing, technological issues or capacity building will be used to enable the successful implementation of the NAMA, and what the potential monetary benefits of the NAMA could be. Implementing countries should ask financiers which documents are required.

It may be useful to present to financiers a possible package of instruments for bridging support gaps in NAMAs. Figure 29 demonstrates a possible mix of a wide range of sources and instruments, funnelled through a Special Purpose Vehicle (SPV) created for the lifetime of the project, in order to fund a wind energy project.

Figure 29: Financing options for a special purpose vehicle



Source: Center for Clean Air Policy (p.17, 2011)



Hints for NAMA project planning and management

The estimation of NAMA costs is a key aspect in selecting mitigation activities. NAMA costs will vary significantly based on the sector and the level of ambition of the project. Besides the costs of the NAMAs, further needs regarding technology and/or capacity building should also be identified and addressed at the very beginning of the project.

Recommended Capacity WORKS tool

SF2: COOPERATION – Tool 09 Needs Analysis

This tool addresses the issue of where complementary cooperation is required and with which possible partners this cooperation could be established.

Benefits of the tool for NAMA development:

- Identifies potential cooperation partners that can contribute financial resources and/or technological or capacity building expertise;
- Visualises the performance profile of the cooperation system.

Furthermore, in addition to preparing NAMA-specific documents, further information that may improve the attractiveness of NAMAs in terms of receiving funding can be provided to financiers. Three components on which further information can be provided include (GIZ 2 (2012)):

1. Policy signals:
 - Develop standards for what constitutes a good (*i.e.* ambitious) NAMA:
 - i. MRV;
 - ii. Contribution to sustainable development;
 - iii. Emission reduction;
2. Hedging of perceived risks:
 - Package perceived risks in appropriate finance vehicles;
3. Design a needs-support matching platform:
 - Connect donors with implementers/practitioners.

Further reading

- GIZ 2 (2012) – NAMA financing. How to Structure Climate Financing Vehicles. Available online at (last accessed 18.10.2012): http://mitigationpartnership.net/sites/default/files/nama_financing_0.pdf
- UNFCCC 1 (2006) – Preparing and presenting proposals – A guidebook on preparing technology transfer projects for financing. Available online at (last accessed 18.10.2012): <http://unfccc.int/ttclear/pdf/PG/EN/introduction.pdf>

6.2 What information is useful to know about NAMA funding?

» What is the process for requesting support for NAMAs?

There is no set process to request NAMA support. The process for requesting funding for NAMAs is similar to requesting funding for other projects. Donors who have supported other NAMAs or other projects in a similar field are a good initial point of entry.

Amongst others, the Green Climate Fund (GCF) is expected to offer a significant opportunity in financing NAMAs. The objective of the fund is to raise \$100 billion per year by 2020 (UNFCCC 2011). The GCF modalities and procedures are still being discussed. The first meeting of the Board was held on 25 August 2012. Further information about the GCF can be found [here](#).

» What are potential sources of funding for NAMAs?

Potential NAMA funders could be aid agencies. These could include:

- German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), Nordic Development Fund and the relevant country development agencies (Denmark, Finland, Iceland, Norway and Sweden);
- United Nations Development Programme (UNDP).

Funders could also be multilateral funds or bilateral funds.

Multilateral funds could include:

- Global Environment Facility (GEF);
- Inter-American Bank's Sustainable Energy and Climate Change Initiative (SECCI);

- Inter-American Bank's Infrastructure Fund (InfraFund);
- Asian Development Bank's (ADB) Climate Change Fund (CCF);
- ADB Clean Energy Fund (CEF);
- World Bank's (WB) Clean Technology Fund (CTF);
- WB Public Private Infrastructure Advisory Facility (PPIAF);
- WB Carbon Finance Unit (CFU);
- European Union's Global Climate Change Alliance (GCCA).

Bilateral funds could include:

- Japan's Hatoyama Initiative;
- German International Climate Initiative;
- German Climate Technology Initiative (DKTI);
- United Kingdom's Department for Energy and Climate Change (DECC) Capital Markets Climate Initiative.

(Source: TRANSfer (2012))

There are several donors who are seriously interested in investing in the implementation of early NAMAs. Their interest is to provide financial and technical support to facilitate the implementation of initial NAMAs on the ground in order to gain experience and enable countries to roll out and upscale the implementation of NAMAs. The UK and Germany can be considered leaders in these efforts. Currently, they are working on the establishment of a NAMA facility which will aim at showcasing the full implementation of transformational NAMAs with robust MRV systems and meaningful sustainable development co-benefits.

Funding for the Mexican energy efficient housing fund comes from a variety of sources. Further information is provided in the box below.

NAMA funding

KfW is a partial funder (providing an 80 million euro concessional loan on behalf of BMZ) of the GIZ energy efficiency NAMA in Mexico. KfW views the NAMA as it does any other development project. No NAMA-specific requirements are added to the NAMA by KfW, although other donors funding the NAMA may have added requirements related to emission reductions or other factors.

The NAMA is being funded by variety of partners who fund different components but who work in collaboration. These partners include: KfW, the Inter-American Development Bank and the Mexican Clean Technology Fund (which is supported by the Government of Mexico for the International Bank for Reconstruction and Development), the Latin America Investment Facility (funded by the EU Commission), the Inter-American Development Bank and the International Finance Corporation. Further donor support is being sought.

(Source: KfW interview 2012)

» How can potential financiers be identified and involved in the discussion on planned NAMAs?

Funding discussions can be started with those financiers who are already working in the implementing country; it would be ideal if the financiers are already working on the specific sector in the implementing country. This could include international donors or private sector financiers. If any current partners are already working on NAMAs, these partners should be priority for funding discussions. Further to this, NAMA developers should contact the

above-mentioned potential funders. This initial contact should include sending an informative document such as the NAMA support request form (see above) or a business plan.

Characteristics of a NAMA that may make them attractive to financiers include:

- Alignment with a priority sector or country of a financier;
- A robust framework demonstrating that time and effort have been put into the proposal;
- Proposals regarding the MRV framework that indicate accountability;
- Significant co-benefits;
- Some funding being provided by the implementing country in order to demonstrate commitment; and
- A clear NAMA domestic champion who is capable of facilitating the implementation process.

Different barriers to mitigation actions may be overcome through different forms of financing. Specific financing mechanisms could be targeted in order to overcome specific barriers. For instance (ECN/Ecofys (2012)):

1. Low (or no) return on investment could be ameliorated by up-front grants (*e.g.* direct subsidies, investment tax breaks, grant component of concessional loans) or funding during operation (*e.g.* feed-in remuneration, carbon markets);
2. High up-front costs and insufficient access to capital could be overcome by the provision of debt (*e.g.* through loans or credit lines), provision of equity or incentivising the financing system;
3. High risk lowered by risk guarantees or insurance schemes;
4. High transaction costs lowered by standardisation and aggregation of activities; and

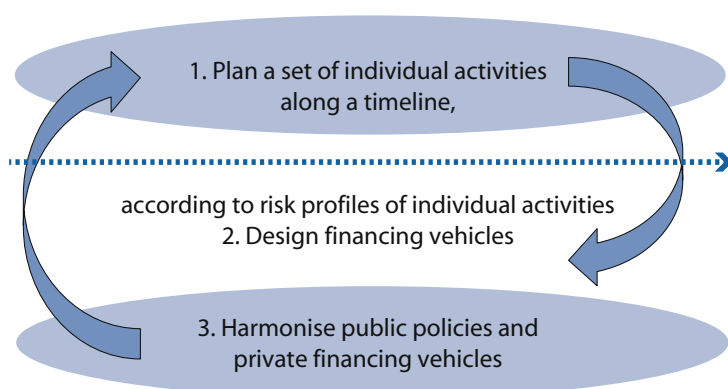
5. Non-financial barriers (*e.g.* regulatory, lack of information and capacity).

»» How can NAMA funding be received?

There are a number of structures for receiving NAMA funding:

- Funding can be provided directly from the donor country to the implementing country government. This funding could be put into an environmental fund, which many countries are already implementing.
 - Funding from different donors can be pooled into one NAMA fund; and/or
 - Funding could come from private sector investors, *e.g.* in the form of bonds or equity.
- NAMA investment could also be bundled into asset packages that institutional investors are familiar with. These packages should be designed according to the timing of the implementation of the activities and to risk profiles. A NAMA should at the same time design a structure to harmonise public policy and private investments in order to maximise the effectiveness of NAMA activities and the leveraging of investments. See Figure 30 for an illustration of a NAMA financing architecture design.

Figure 30: Designing a NAMA financing architecture



Source: GIZ 2 (p. 6, 2012)

Further reading

- GIZ 2 (2012) – NAMA financing. How to Structure Climate Financing Vehicles. Available online at (last accessed 18.10.2012): http://mitigationpartnership.net/sites/default/files/nama_financing_0.pdf
- TRANSfer (2012) – Navigating Transport NAMAs. Practical handbook for the design and implementation of NAMAs in the transport sector. Available online at (last accessed 18.10.2012): <http://www.mitigationpartnership.net/transfer-2012-navigating-transport-namas-practical-handbook-design-and-implementation-namas-transport>



7. Implementation and best practices

» How can GIZ enhance and support partner countries' competencies and capacities to coordinate NAMA development and implementation?

A key strength of GIZ is having the ability to link different stakeholders domestically and internationally. Therefore, GIZ could help mobilise stakeholders to engage in NAMAs, facilitate multi-stakeholder dialogues and establish interdisciplinary and cross-sectoral NAMA steering structures. Additionally, GIZ could reinforce its efforts to support governments in the creation of regulations and standards in those sectors relevant to NAMAs, forging the link between government policies and the actual implementers. GIZ could also support governments in the development of national level NAMA frameworks, plans and strategies.

Another important area to be supported by GIZ is knowledge management on NAMAs; this could for instance include identifying and building capacities of suitable institutions in host countries. GIZ could work with the institutions to provide trainings on the GIZ NAMA Tool, amongst other resources. These institutions can serve as knowledge hubs for the dissemination of information on NAMAs to different stakeholder groups in the national or regional context. Furthermore, experiences gained from pilot projects should be made publically available in reader friendly documents; lessons learned should also feed back into the international discussions on NAMAs.

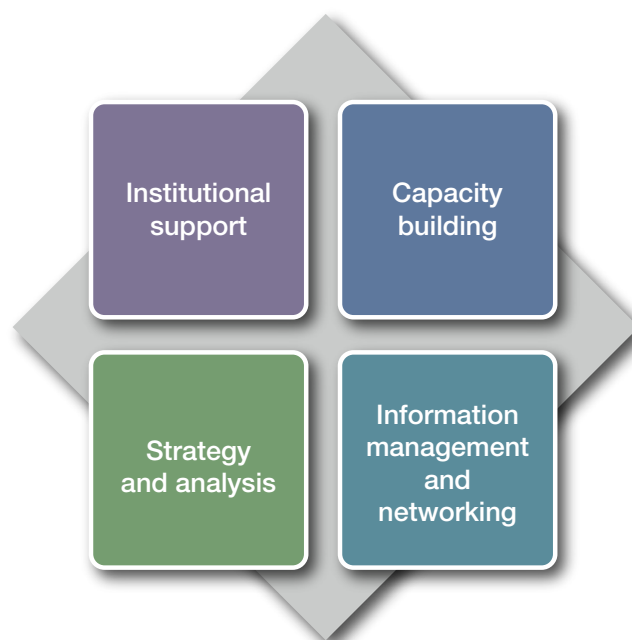
An innovative approach to providing assistance to a potential NAMA coordinating body which lacks the necessary staff capacity needed to assume a coordination role could be to assist with the provision of additional staff for the coordinating body.

Examples of how GIZ could support NAMA development include:

- Institutional support such as the establishment of NAMA offices;
- Capacity building such as NAMA training;
- Strategy and analysis, *e.g.* developing LEDs, cost-benefit analysis and market research; and
- Information management and networking, *e.g.* data gathering, baseline setting, organisation of participatory processes and dialogues, facilitation of information sharing, lessons learned, peer-to-peer learning, networking.

(Source: GIZ 1 (p.2, 2011))

Figure 31: Examples of GIZ NAMA support



Source: Based on GIZ 1 (p.2, 2011)

Specifically with respect to MRV, GIZ can provide support with respect to:

- Improving monitoring and reporting systems;
- Designing and implementing national and sectoral MRV systems;
- Developing mitigation actions with MRV requirements already in mind;
- Providing support to institutions involved in reporting;
- Building capacity within reporting institutions;
- Strengthening cooperation between relevant sectors and governmental entities;
- Facilitating the sharing of experiences between countries; and

- Helping partners gain MRV experience before an international system is in place.

(Source: GIZ 4 (p.2, 2012))

» What are GIZ's best practices in implementing policies and measures in partner countries?

The below tables summarises the best practices according to the five key factors which comprise the structure of this source book. Detailed examples from GIZ projects are provided in the previous sections and are included as project snapshots.

Table 8: Best practices according to the five key factors of this source book

Political process	<ul style="list-style-type: none"> ■ Individual NAMAs should be embedded in long-term visions and clear objectives. The LEDS helps to ensure that NAMAs create synergies and support one another. ■ High-level political commitment and inter-ministerial collaboration and coordination – particularly involving finance ministries – are necessary and support the whole process in prioritising action, aligning low carbon with wider sustainable development goals, and identifying potential public and private financing sources. ■ The designation of a responsible institution to coordinate NAMAs is of benefit. ■ NAMAs provide an opportunity to jointly pursue sustainable national development alongside mitigation actions ('co-benefits'). <p>Snapshots from GIZ projects:</p> <ul style="list-style-type: none"> ■ There are good examples from Indonesia for a possible steering structure consisting of integrator and coordinator roles as well as for the transport sector (e.g. joint working group). A housing project in Mexico plans to set up a 'NAMA Programme Office Unit'. ■ The Indonesian case also provides information on the required steps to derive NAMAs from LEDS. ■ In Tunisia, examples can be found of how to derive NAMAs from sectoral mitigation strategies without a LEDS. ■ The transport sector provides an overview on potential co-benefits in the respective sector.
Stakeholders and co-operation	<ul style="list-style-type: none"> ■ A participatory, bottom-up, stakeholder process and work from within the partner countries should be emphasised to create ownership. ■ The strengthening of local and national expertise is the key for ensuring inclusive processes and ownership for NAMA selection.

Technical factors	<p>Snapshots from GIZ projects:</p> <ul style="list-style-type: none"> ■ A best practice from a CDM PoA in India is setting aside a separate budget for stakeholder involvement. ■ Indonesia provides an example of a bottom-up aggregation of sectoral data for a baseline as well as for local action plans. ■ A project on energy efficient residential buildings in China provides examples of how to establish ownership with local stakeholders. ■ The NAMA process in the transport sector in Colombia gives useful hints on how to strengthen the role of scientific support in the country itself. <p>Snapshots from GIZ projects:</p> <ul style="list-style-type: none"> ■ To establish Indonesia's power sector baselines, complex baseline methodologies will be used for inter-connected grids and simpler methodologies will be used for isolated systems. ■ The Tunisia Solar Plan includes many co-benefits such as jobs, fuel independence and improved health. ■ The NAMA project on housing in Mexico shows calculations for different mitigation scenarios. An approach for calculating abatement costs for the land-based sector can be found in Indonesia. ■ An Indonesia MRV gap analysis identified key national-level gaps that should be addressed in order to have a well-functioning MRV system. ■ The Philippines SWM project has enabled local institutional MRV capacity building by helping develop a SWM post-graduate university course which is mainly attended by local government employees.
Support	<ul style="list-style-type: none"> ■ As priority mitigation activities are identified, the needs associated with those activities should also be identified. ■ The availability of resources can be ensured by developing a robust financing plan, involving potential investors early, and having the NAMA acknowledged as high quality. ■ (Pre-) feasibility studies can also be useful for attracting finance. ■ NAMA support can be marketed in various funding packages, depend on funding availability. ■ Documents that may be useful to prepare for financiers include UNFCCC NAMA support request templates, business plans and packages of possible financial instruments. ■ The process for requesting support for NAMAs is similar to requesting funding for other projects which require support. ■ Potential support sources include aid agencies, multilateral and bilateral funds. <p>Snapshots from GIZ projects:</p> <ul style="list-style-type: none"> ■ The Mexico energy efficient housing NAMA is projected to cost USD 11,650,000. The costs are being marketed in 5 possible packages. ■ KfW is a partial funder of the Mexico energy efficient housing NAMA. KfW views the NAMA as it does any other development project, and not as a different category of activity.

Sources: GIZ 1 (p.9, 2012), adelphi/Perspectives (2012)



What lessons learned can be drawn from the implementation of the CDM and the PoAs under the CDM?

Table 9: Lessons learned from the implementation of the CDM

Political process	<ul style="list-style-type: none"> ■ A strong institutional coordinating/managing entity is central to ensuring the success and continuation of a CDM PoA. For example, in the case of Bachat Lamp Yojana PoA in India, the Bureau of Energy Efficiency (BEE) acts as such an entity while at the same being independent of investor and utility. <p>(Source: GIZ/BEE (p.1, no year))</p>
Stakeholders and co-operation	<ul style="list-style-type: none"> ■ As for NAMAs, stakeholder involvement for CDM/CDM PoA is crucial. The benefits identified include the early identification of barriers and enablers, transparency in decision-making and stakeholder buy-in. <p>(Source: GIZ/BEE (p.2, no year))</p>
Technical factors	<ul style="list-style-type: none"> ■ CDM PoA can provide examples for setting system boundaries for multiple projects in one sector. ■ With respect to MRV, most CDM methodologies prescribe complex verification and monitoring, whereas a simpler approach is already more appropriate for CDM PoA. <p>(Source: GIZ/BEE (p.2, no year))</p> <ul style="list-style-type: none"> ■ Several lessons can be drawn from CDM projects for verification: ■ Ensure independence of verifiers (<i>i.e.</i> third party); ■ Draw on international auditors or build capacity if domestic capacity for verification is weak; ■ Ensure a clear objective for verification (<i>e.g.</i> verifiers only for data that can easily be verified and not for politically influenced elements). <p>(Source: GIZ 1 (p.52, 2012))</p> <ul style="list-style-type: none"> ■ Data availability is a major challenge and flexibility around data provision should be applied. ■ The implementation of sectoral baselines may reduce transaction costs and implementation challenges although it will require significant upfront cost and effort. ■ Flexibility should be a key criterion with respect to non-credited NAMAs. Technical requirements should be stringent enough to maintain environmental integrity without being overly burdensome. ■ Co-benefits should be emphasised from the start of NAMA planning.
Support	<ul style="list-style-type: none"> ■ Support should not be promised to NAMA developers; expectations should be kept reasonable, particularly while NAMAs are still in their infancy. ■ Support should be a combination of support from outside and domestic sources in order to ensure ownership. ■ The process to acquire financing should be designed in a way that it is not cumbersome and does not consume too much time.
MRV	<ul style="list-style-type: none"> ■ A robust MRV process provides environmental integrity. ■ There should be explicit requirements that indicate what would have happened otherwise. ■ Developing emission reduction methods is resource-intensive, and not an exact science. ■ It is much more difficult to put some projects/programme types through the MRV process than others. ■ Co-benefits are reported <i>ex ante</i> – no international oversight.

Sources: GIZ/BEE (no year), GIZ 1 (2012)



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