

Nationally Appropriate Mitigation Actions (NAMAs)

Steps for moving a
NAMA from idea towards implementation

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*Please open this tool in full-screen mode so you can click on the internal
hyperlinks for additional information and/or accessible instruments!*



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Please note that the NAMA Tool is continuously being updated according to progress made in the international climate negotiations.

The NAMA Tool was developed by two programmes implemented by GIZ that are supporting the German Federal Ministry for Economic Cooperation and Development (BMZ) in the global climate negotiations and the German Federal Environment Ministry (BMUB) within the framework of the International Partnership on Mitigation and MRV, respectively.

The concepts expressed in this tool are those of the authors and do not necessarily represent the views of the German Government, nor does the German Government endorse any approach described herein.

There might be matters in the tool on which some governments have different views.

On behalf of:



Federal Ministry for the
Environment, Nature Conservation,
Building and Nuclear Safety



Federal Ministry
for Economic Cooperation
and Development

of the Federal Republic of Germany





Intro I: NAMA Tool history

In 2011 the [International Climate Initiative \(IKI\)](#) brought experts for the workshop: ‘Developing Knowledge on the Building Blocks of a Global Mitigation Architecture.’ The participants analysed 13 IKI-projects that were in the process of developing Low-emission Development Strategies (LEDS), Nationally Appropriate Mitigation Actions (NAMAs) and Measuring, Reporting and Verification (MRV) systems. The participants generated ideas about generic success factors for the development and future implementation of LEDS, NAMAs and MRV systems, and identified steps for the development of such approaches.

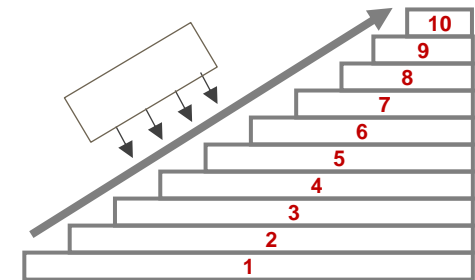
Based on this, the German Federal Ministry for Economic Cooperation and Development and the Federal Environment Ministry commissioned GIZ to develop three tools that guide practitioners through the process of developing and implementing NAMAs, LEDS and MRV systems. The tools form the basis for three related trainings which GIZ is now offering to interested partners.

These tools are continuously being improved. If you have feedback or seek support in conducting a training or workshop, please contact climate@giz.de.



Intro II: NAMA Tool objectives and contents

- The NAMA Tool provides NAMA developers and implementers with brief step-by-step instructions on how to develop a NAMA. It navigates users to the relevant information, knowledge and instruments.
- The process involves 10 steps. The 10-step approach is designed to supply users with more data and accessible instruments for certain aspects of NAMA development.
- Even though this tool helps users prepare for NAMA implementation, it is first and foremost a navigation tool guiding practitioners through the NAMA development process. It is not an instrument for NAMA implementation.
- This tool also does not give sector-specific instructions, but includes links to sector-specific expertise and handbooks. The tool is available at www.mitigationpartnership.net.



Note!

When developing an individual NAMA, the sequence of ten steps does not have to be followed strictly chronologically nor completely.

However, an ambitious NAMA will most likely have completed every step somewhere along the process!

**Related
tools**



Intro III: International Partnership on Mitigation and MRV

Launched by South Africa, South Korea and Germany at the Petersberg Climate Dialogue in 2010, the Partnership encourages countries to step up mitigation ambition and undertake transformational change. It supports the design, setup and effective implementation of:

- Intended Nationally-Determined Contributions (INDCs)
- Low-Emission Development Strategies (LEDS)
- Nationally Appropriate Mitigation Actions (NAMAs)
- Measuring, Reporting and Verification (MRV) systems

In this context the Partnership is supporting the design, pilot testing and training of a series of tools, including this NAMA Tool.

Visit the Partnership at: www.mitigationpartnership.net or follow on [Twitter](#) @Mitigation_MRV.



International Partnership
on Mitigation and MRV

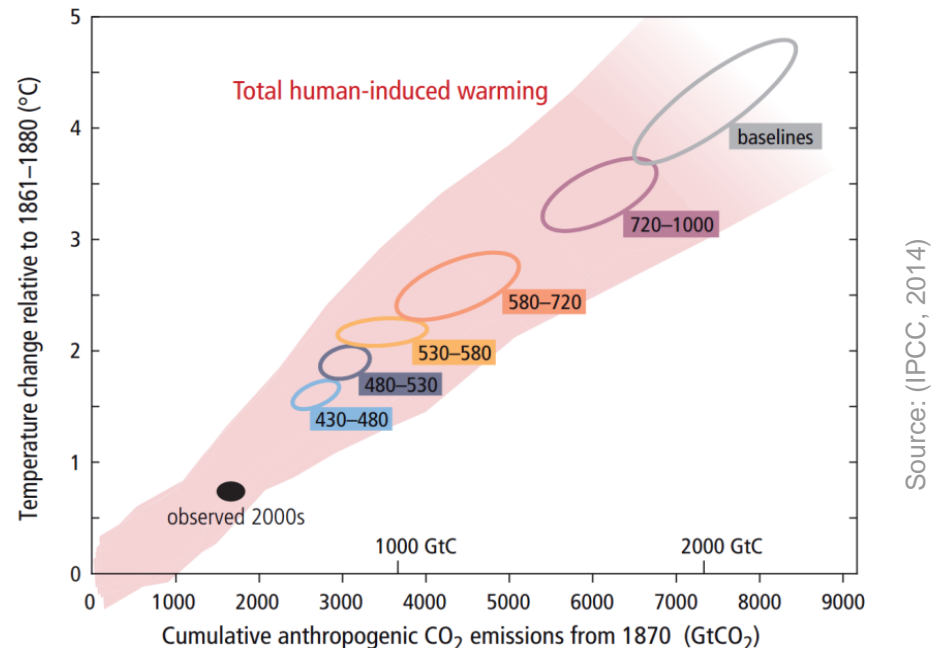


Intro IV: Need for GHG mitigation

The major challenge of international climate policy is to reduce GHG emissions to well below **2 °C (and ideally below 1.5 °C)** above pre-industrial levels.

In order to meet this target, atmospheric GHG concentrations need to stay below 450 ppm CO₂ eq. However, the GHG concentration in 2011 is already estimated to be 430 ppm.

Having a 'likely' chance of meeting this target requires global emissions to be reduced by 40 to 70% by 2050 compared with 2010, and emission levels to be near zero or below zero in 2100. (Source: IPCC AR5)



This requires **ambitious** mitigation action by developed and developing countries, which **both account for around half of global emissions** today.



Intro V: Political design of GHG mitigation

While the UN negotiations work towards establishing a **global mitigation architecture**, the national level – with international support according to needs and ambition – must already begin **developing and implementing the building blocks of this mitigation architecture**.

The challenge is to consider the **global requirements** for holding the increase in the global average temperature to well below 2°C (and ideally below 1.5 °C) while at the same time addressing the **national appropriateness** of actions. This translates into the implementation of national policies and strategies for sustainable development while reducing GHG emissions and seizing opportunities for green growth.

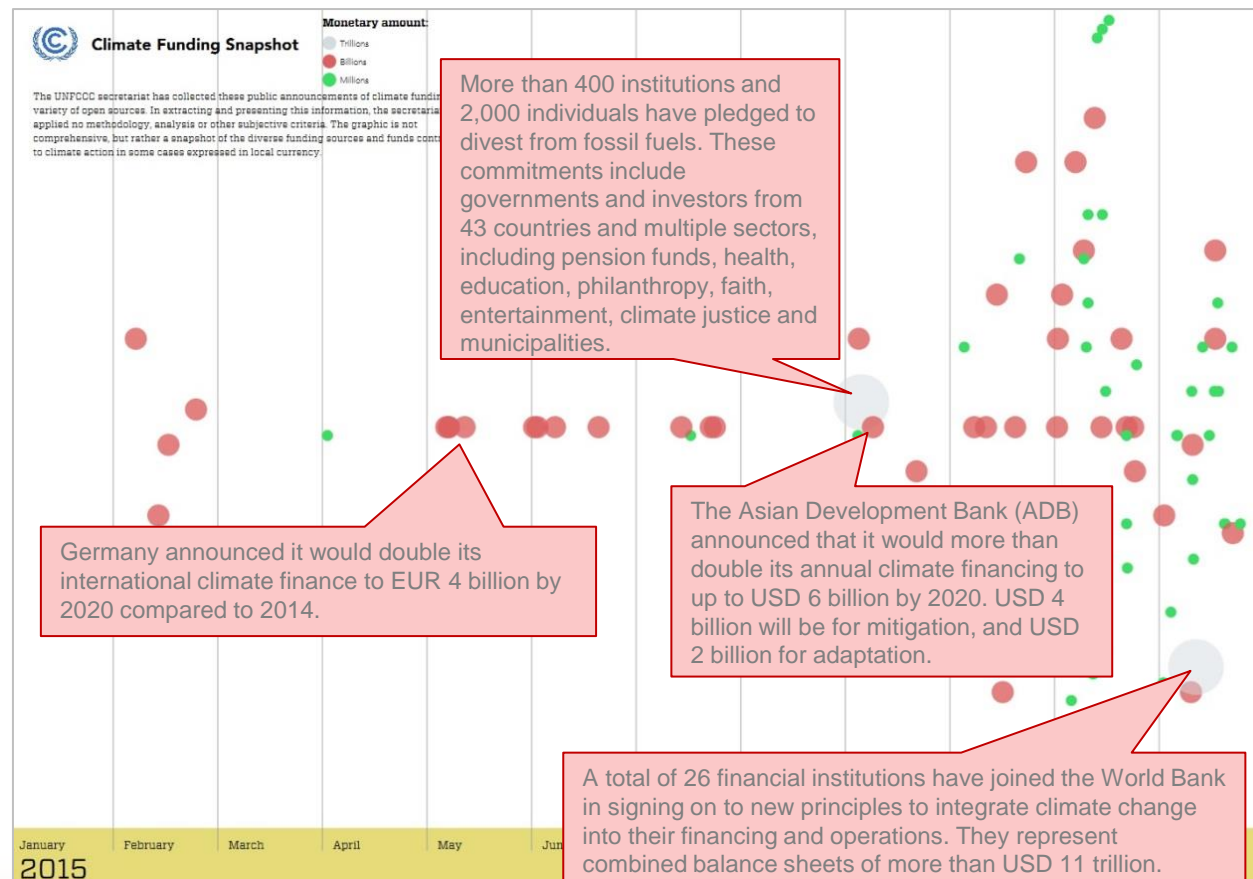
A majority of Parties, including developing countries, [communicated their INDCs](#) towards achieving the objectives of the Convention, many of which included NAMAs and their domestic mitigation targets. According to the Paris Agreement, these INDCs (or later nationally determined contributions (NDCs)) will be updated every five years from 2020 onwards.



Intro VI: Financing GHG mitigation

In 2009, developed countries committed to jointly mobilise USD 100 billion annually by 2020 from various sources of financing. During COP 21, Parties decided to set a new collective quantified goal from a floor of USD 100 billion per year till 2025.

In the lead-up to Paris as well as after, many governments, international organisations and private enterprises publicly announced their financial support for climate action. Please find more details at www.climatefundingsnapshot.com





Intro VII: What is a NAMA?

The history
behind NAMAs

Further guidance
and information

NAMAs in the UNFCCC context:

- Negotiations pursuant to the Bali Action Plan were concluded at COP 18 in Doha. As a part of the agreed outcome, developing country Parties will implement NAMAs in the context of sustainable development.
- NAMAs refer to any action that reduces emissions in developing countries, supports sustainable development and is prepared under the umbrella of a national governmental initiative. They can be:
 - a formal submission by Parties declaring intent to mitigate greenhouse gas emissions (national level); or
 - detailed (groups of) actions designed to help a country meet their mitigation objectives (individual action level).
- NAMAs are supported and enabled by technology, financing and capacity-building and are aimed at achieving a reduction in emissions relative to the 'business-as-usual' scenario for 2020.



Intro VIII: LEDS, NAMA, MRV architecture (pre-2020)



What is a LEDS?

What is a NAMA?

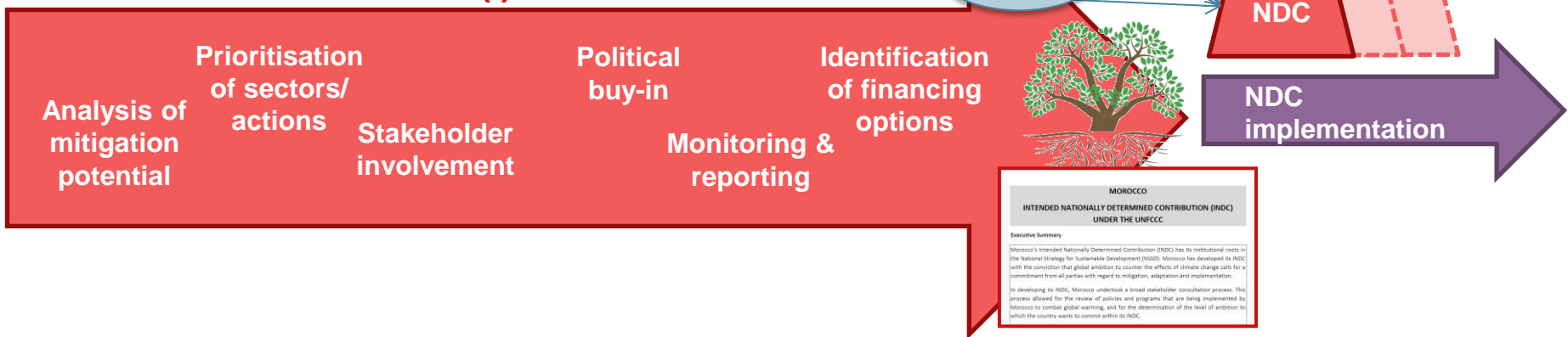
What is MRV?

- **Low-emission Development Strategies (LEDS)** are national long-term strategies for reducing emissions while promoting sustainable development. They provide an overall framework for the development of NAMAs.
- The **Measurement, Reporting and Verification (MRV)** of these actions is important to generate transparency on their effectiveness and facilitate decision-making.



Intro VIII: How are NAMAs linked to (I)NDCs?

Benefits of NAMAs for the (I)NDC



1. Experience made, information processed, and capacities and institutions built during NAMA development and implementation provide a strong basis for (I)NDC developed.

2. NAMAs are important tools and building blocks for the implementation of NDCs.

More information on the relationship between NAMAs and INDCs can be found here:

[How are INDCs and NAMAs linked?](#)

[NAMAs and INDCs – Interactions and opportunities](#)

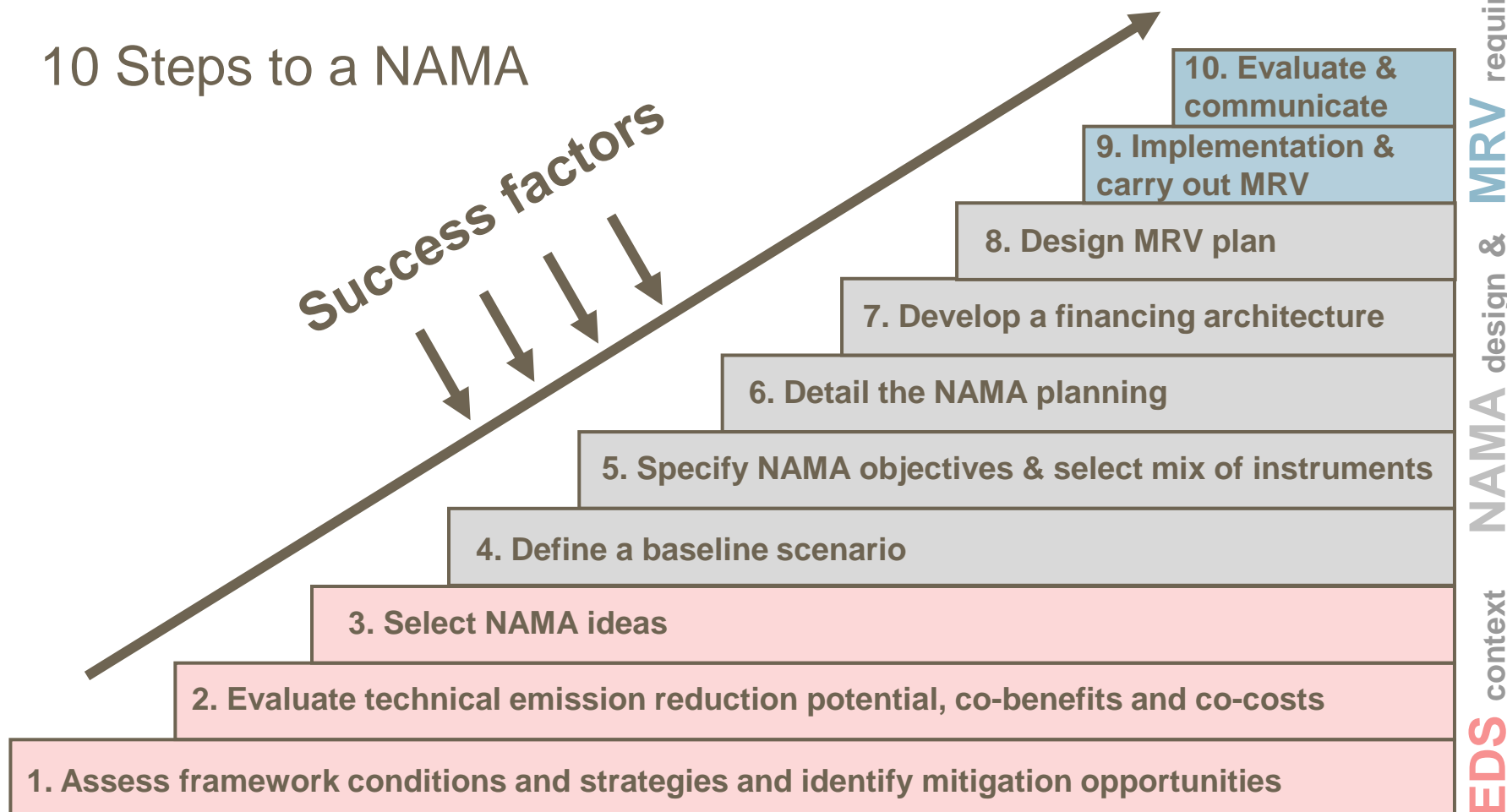
In their INDCs some countries explicitly referred to NAMAs as tools for NDC implementation, for example [Mongolia](#).

What are (I)NDCs?



10 Steps to a NAMA

Success factors



Navigate by clicking on a particular step, or start the full tour





Success factors *(early lessons)*

Individual NAMAs should be embedded in **long-term visions** and **clear objectives**. An NDC or a LEDS helps to ensure that NAMAs create synergies and support one another.

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 by potential supporters. (Pre-)feasibility studies can also be useful for attracting finance.

High-level political commitment and **inter-ministerial collaboration and coordination**, particularly involving countries' ministries of finance, are necessary and support the prioritisation of action, the alignment of low carbon development with wider sustainable development goals, and the identification of potential public and private financing sources.

The designation of a **responsible institution** to coordinate NAMAs, the **bundling of policies and measures, and alignment** with other national policies and strategies, along with the consideration of sustainable development **co-benefits**, promote successful and effective NAMA implementation.

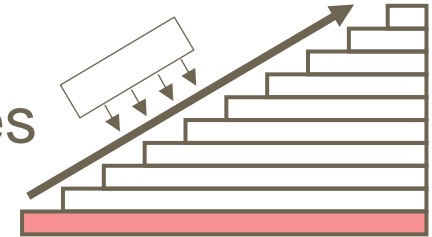
A robust **MRV** system and a **scientific and technological basis** with robust data for individual NAMAs are necessary to underpin planning and implementation and help build consensus.

A **participatory, bottom-up stakeholder process** and the inclusion of **local expertise** and work from within the target countries should be emphasised to create **ownership**.

The focus should be on **upscaling existing programmes** rather than creating completely new projects.

Partnering with both **public and private-sector stakeholders** is important to ensure NAMA implementation.

**Quality criteria
for NAMAs**



1. Assess framework conditions and strategies and identify mitigation opportunities

- Assess **national framework conditions** for mitigation, including the political and governance framework and general barriers for climate policy implementation. Consider relevant **national strategies or plans** (e.g. development or energy strategies) as well as **time horizons** in the global climate process leading up to **2020** (when the Paris Agreement enters into force) and beyond (when NDCs need to be implemented).
- Perform a bottom-up assessment of where **gaps** remain in existing **policies** in order to (1) address national development needs and priorities; and (2) **identify measures needed** to be implemented, applying emission reduction targets to them.
- An NDC contains a country's overarching mitigation framework and provides information on short- and long-term goals and priorities for climate actions. Hence, it should guide the development of NAMAs and might already include information about current and planned NAMAs.
- In addition, a [LEDS](#) can guide NAMA development and implementation and facilitate alignment with national development planning processes. If there is already a LEDS in place, the NAMA development process can proceed directly from **Step 3** onwards.



The Paris Agreement calls for countries to formulate and communicate LEDS. However, there are currently no specific UNFCCC requirements or guidelines for their development.

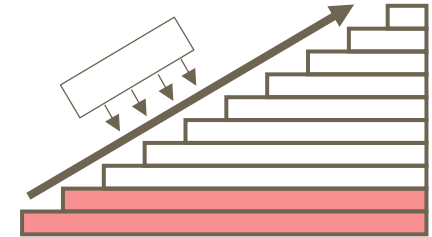
NAMA examples
by type

Stock Taking
Tool

Relevant
stakeholders

Anti-
corruption

GIZ's [Stock Taking Tool](#) helps to identify and prioritise mitigation actions.



2. Evaluate technical emission reduction potential, co-benefits & co-costs

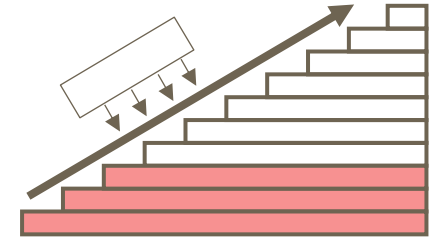
- Assess the emissions structure of different sectors and evaluate the technical GHG emission reduction potential at national and sectoral level. Apply ex-ante estimates, which should be based on the application of internationally recognised methodologies (e.g. [CDM methodologies](#)) that quantify emission reductions and costs and avoid double-counting.
- Important impacts to be assessed besides the GHG emission reduction potential include:
 - **co-benefits** for national sustainable development
 - associated **incremental economic costs**
 - **potential negative impacts** (make sure you apply a ‘do-no-harm approach’ where you assess how the potential actions might negatively affect local dynamics).

More information on sustainable development impacts of NAMAs can be found in a paper by [UNEP Risoe Centre](#).

**Tools to estimate
NAMA impacts**

**Types of barriers, co-
costs and negative effects**

**Sustainable development
impact of NAMAs**



3. Select NAMA ideas

- **Identify potential actions**, possibly with the help of a marginal abatement cost curve, and select an action which is cost-efficient and contributes to long-term sustainable emission reductions.
- Conduct sector-by-sector **participatory assessment, planning and consultation processes**, e.g. workshops, to identify reduction potential and development gains and plan for concrete activities. Develop and discuss criteria for good and ambitious NAMAs.
- **Prioritise sectors and actions** for potential NAMAs, considering the best available options, robust data and their chances for implementation.
- **Evaluate** technical, financial, political and socio-cultural **feasibility**.
- **Identify and involve** potential financiers, and discuss planned NAMAs and potential NAMA implementers with them.

The UNFCCC secretariat and the [Climate Technology Centre and Network \(CTCN\)](#) provide technical assistance for the preparation of NAMAs.

[Technology needs assessments](#) can be helpful to identify NAMA options.

Tools to estimate
NAMA impacts

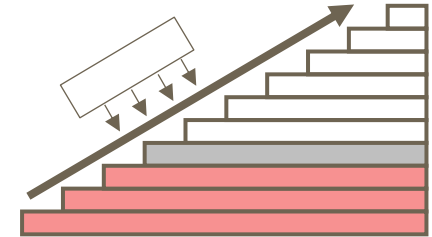
NAMA prioritisation
process

Selection criteria
for NAMA support

Ensuring resource
availability

Stakeholder diagram
for housing NAMA

NAMA
information note



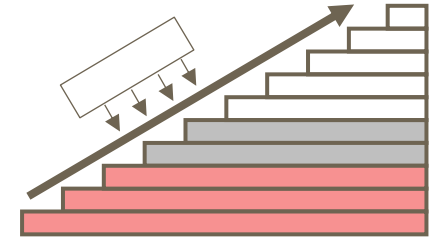
4. Define a baseline scenario

- A baseline scenario characterises the likely **evolution of GHG emissions** for a period of time in the absence of the policy/action being assessed. There are different types of baselines, depending on whether existing or planned policies/measures are taken into account. Often, baseline scenarios are equated with business-as-usual (BAU) scenarios.
- An ambitious baseline scenario takes into account policies and laws with a beneficial impact on emissions.
- It provides a **reference level** to set a **goal or target** and **measure progress**.
- A baseline scenario for a NAMA should also include non-GHG **co-benefits**.
- It can have different **purposes** that need to be defined in advance, e.g. setting a target for the NAMA or measuring performance of the NAMA.
- When collecting data to set up a **GHG baseline**, one should define **boundaries**, consider **leakages** as well as **uncertainty**, and pay attention to **net emission reductions**.

BAU
scenario

Tips for defining
a baseline

Possible baseline
data sources



5. Specify NAMA objectives and select mix of instruments

- Formulate concrete **NAMA objectives** with regard to the expected GHG emission reduction and co-benefits.
- Determine sectoral, temporal and geographical **scope** of the NAMA.
- Select **mix of measures and instruments** to be included.

NAMA
objectives

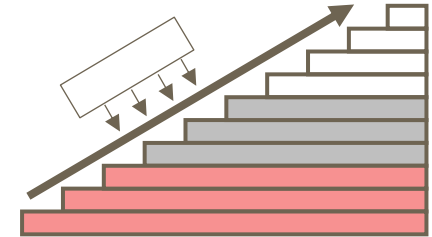
Mix of instruments
for NAMAs

NAMA examples by
sectors

NAMA examples by
type

Incentives

Technology
promotion



6. Detail the NAMA planning

- Plan detailed activities and determine roles of different stakeholders to make the NAMA process time-efficient and transparent.
- Define a timeline for a set of activities and responsibilities of the NAMA implementer(s).
- Conceptualise and design the NAMA with the help of a NAMA template.
- Develop and apply tools for the following interventions:
 - a. planning the policy framework and creating an enabling environment;
 - b. regulating and setting up effective institutions;
 - c. creating economic incentives to form appropriate structures;
 - d. generating and disseminating relevant information;
 - e. promoting investments in technologies for implementation;
 - f. avoiding any potential negative impacts of the NAMA.

In the detailed development of NAMAs, existing [sector-specific](#) NAMA handbooks can be helpful references for the application of appropriate instruments.

NAMA
template

Guidance for
NAMA developers

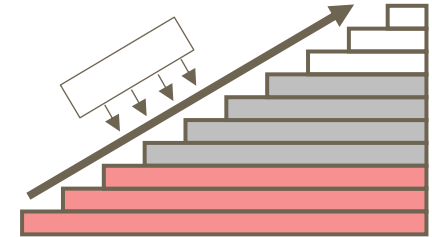
Incentives

Technology
promotion

Risk
management

Anti-
corruption

Knowledge-sharing
platforms



7. Develop a financing architecture

- Develop a professional **business plan** jointly with implementers to present NAMAs to potential public/private financiers.
- The design process of NAMAs should pro-actively engage the **private sector** and remove barriers to its involvement, e.g. through public-private roundtables.
- Depending on cost structure and revenue streams, the major portion of NAMA financing has to come from **domestic sources** through the creation of economic incentives, e.g. putting a price on carbon or regulatory interventions to cap (and trade) emissions. Hence, NAMAs must form part of national plans and strategies.
- If private and domestic resources are not sufficient, identify needs for **technological, capacity-building and financial support** as well as potential sources for this support.
- **International climate finance** can play a complementary and catalytic role. In addition, private sector engagement is needed to meet financing needs. At a later stage, carbon markets may attract resources for NAMAs.

Individual NAMAs may differ in their support needs, and hence, international support may differ in what is deemed adequate in terms of technical or financial assistance.

The only dedicated sources of NAMA finance in 2016 are the Green Climate Fund and [the NAMA Facility](#).

Incentives

Finance
options

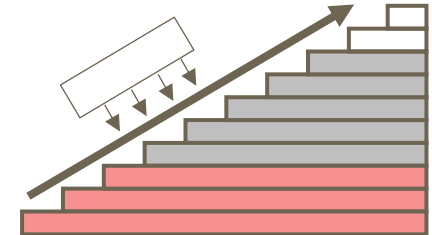
Developing a
financing plan

Investment
barriers

Barriers to NAMA
financing

Selection criteria for
NAMA support

Engaging the
private sector



8. Design an MRV plan

- Under the UNFCCC there are currently **guidelines** in place for (1) **regular reporting** (biennial update reports (BURs)) on and **verification** (international consultation and analysis (ICA)) of national-level mitigation information (relevance, transparency); (2) the [composition of the teams of technical experts](#) to undertake the technical analysis of BURs; and (3) [on general guidelines for the MRV of NAMAs](#) to set up national MRV systems.
- Taking this guidance into account, MRV plans for NAMAs should include the required processes, arrangements, methodologies, clearly defined responsibilities, and expertise that suit the parties involved and facilitate the reporting on their impacts in BURs. Regularly preparing GHG inventories provides a good basis for MRV.
- The **Paris Agreement**, which will enter into force in 2020, established a **common system for transparency** for all countries. Further procedures and guidelines, etc., are currently being negotiated.
- Experience gained in development cooperation (project monitoring), sectoral work (measuring and reporting), and in the clean development mechanism (verification) offer valuable lessons for NAMA developers.



Countries shall submit BURs and subject them to ICA.

GIZ has developed an [MRV Tool](#) and a [BUR template](#).



In UNFCCC negotiation

ICA Guidelines

Why MRV?

Design MRV plan

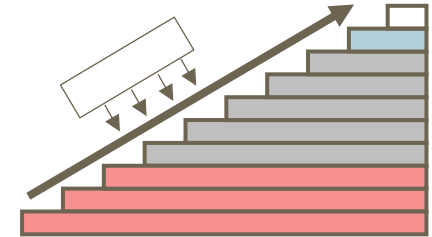
Project monitoring: indicators and impact chains

Measuring: Housing NAMA in Mexico

BUR guidelines

Reporting: Cement sector in South Africa

Verification: Lessons from the CDM

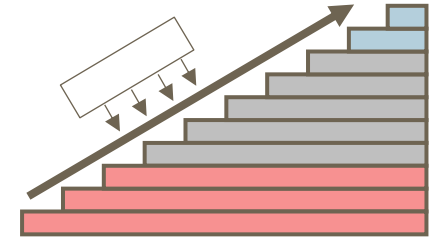


9. Implementation & carry out MRV

- Once **implementation** is underway, a timeline for planned interventions should be followed, financial and organisational management must be carried out, and progress should be monitored.
- The MRV plan that was agreed upon during the NAMA's design phase (see step 8) must be operationalised to **measure, report and verify ex-post emission reductions** as well as other MRV-able aspects of the NAMA, such as its co-benefits.
- While the NAMA developer may have had the responsibility of designing the MRV plan for a NAMA, the NAMA implementer should carry out the MRV plan.
- During the MRV design process, it would have been decided **what** to measure, **how** to measure, **when** to measure and **who** should measure. The answers to these four questions can be used to set up an implementation plan for this step.

GIZ has developed an [MRV Tool](#) and a [BUR template](#).

A proposed MRV implementation plan for a housing NAMA in Mexico



10. Evaluate & communicate

- Instigate a learning process by **starting early action** and getting **experience on the ground** in developing and implementing NAMAs. Identify best practices and share them with peers and in the international climate negotiations. Identify lessons learned along the way (from own and other experiences) and improve processes continuously.
- **Lessons** can be drawn from:
 - implementation of policies and measures in Annex I countries
 - Annex I reporting requirements, e.g. MRV of policies and measures
 - implementation of the CDM and programmes of activity under the CDM (NAMAs clearly go beyond individual projects and are not necessarily linked to the international carbon market).
- The **UNFCCC NAMA Registry** aims to enhance transparency by tracking mitigation actions and facilitates the matching of needs of NAMA host countries with support from developed countries. Since submission to the Registry is voluntary, a country may decide to use it as a means of attracting international support or as a means of showcasing ongoing NAMAs.

**Guidance for
NAMA developers**

**UNFCCC NAMA
Registry**



Recommendations for an institutional structure for NAMA development

As an overarching task, governments should assess the **existing institutional structures** and decide if the country needs a **designated organisational setup** to facilitate NAMA development and implementation.

There is **no official requirement** for such an institutional structure. **Harnessing existing capacities** can strengthen **ownership** in the following ways:

- Options include assigning a new mandate to an existing institution or an inter-institutional committee. It is mostly preferable to base organisational structures on existing structures, not to establish new institutions.
- The organisational structure should ideally have a facilitating role rather than steering NAMA development top-down, which could be inefficient. The NAMA development process should involve a variety of in-country stakeholders. The organisational structure should establish links between the different line ministries involved.
- If a dedicated organisational structure is installed, this needs to have an overarching institutional position but should not be included in one line ministry.

Example of inter-ministerial cooperation in Indonesia: [NAMA Sourcebook](#), p. 35. and [Global Good Practice Analysis](#).

Organisational roles for NAMA development and implementation

Example of institutional setup

Guiding questions for institutional assessment

Nationally Appropriate Mitigation Actions (NAMAs)

Steps for moving a
NAMA from idea towards implementation

End of presentation

Content

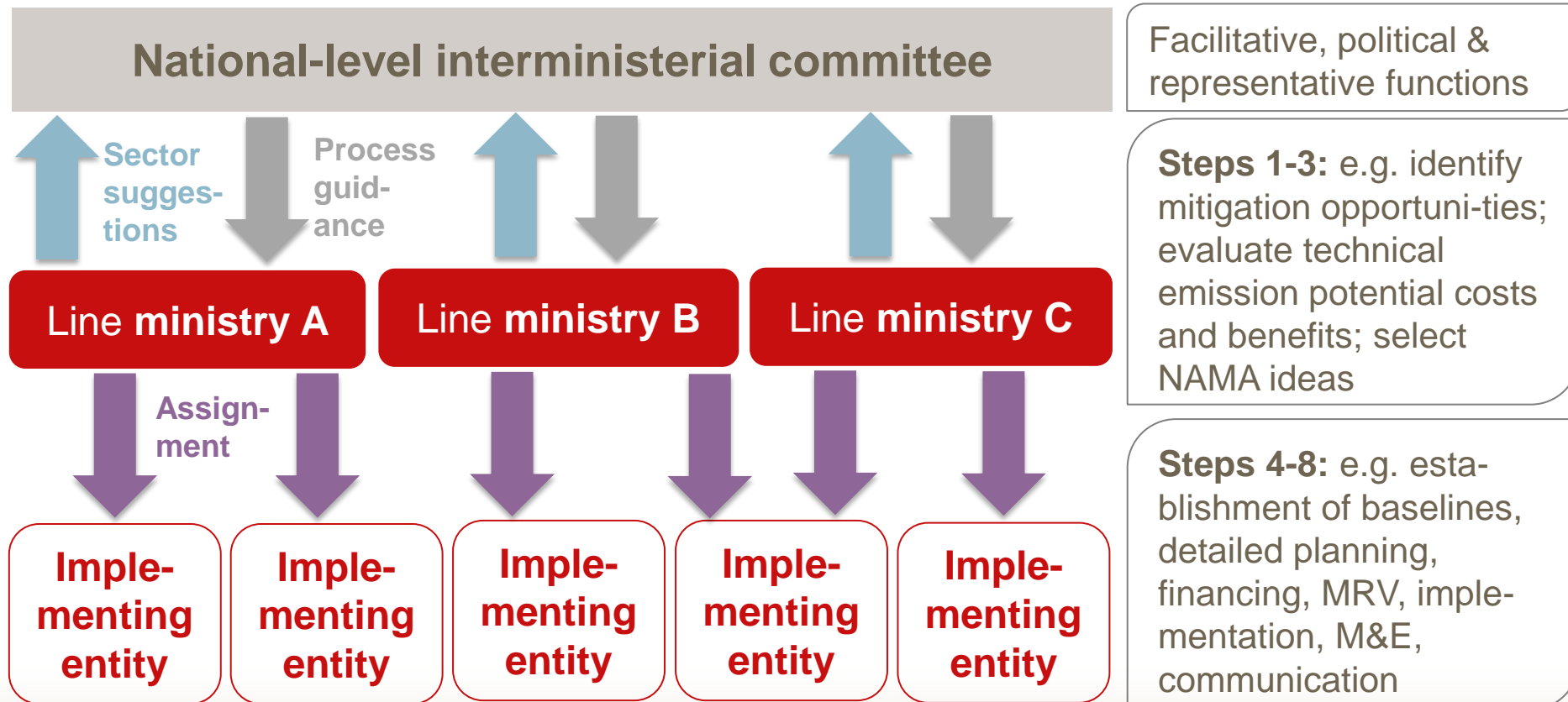
- Back to main menu -



Example of institutional setup for NAMA development

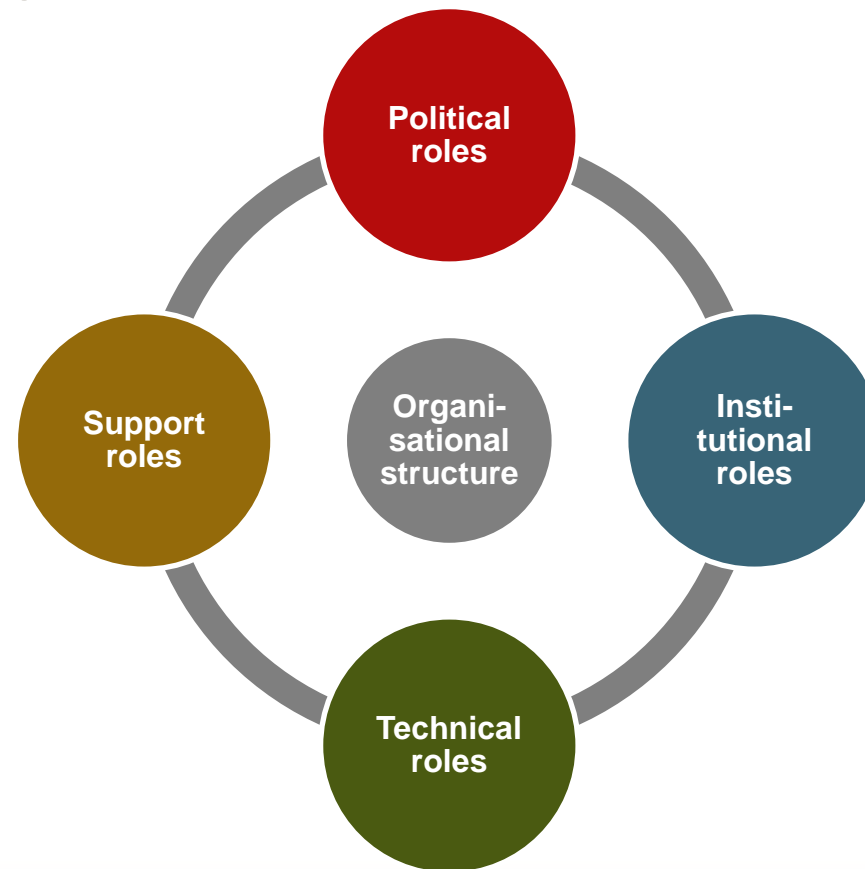
Institutions & processes

Assigned functions



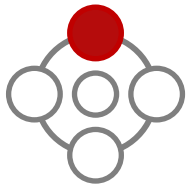


Organisational roles for NAMA development and implementation





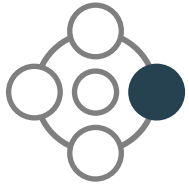
Political roles



- Check national appropriateness of planned actions.
- Take stock of relevant policies and measures.
- Create incentives for investment.
- Set priorities for NAMA development.
- Create visibility and awareness of mitigation actions.
- Promote high-level political support and leadership.



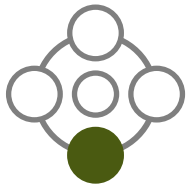
Institutional roles



- Liaise with UNFCCC secretariat.
- Liaise with the public and private sectors.
- Share knowledge/manage information.
- Coordinate efforts between line ministries and sub-national entities.



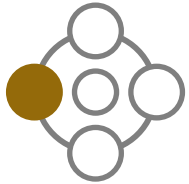
Support roles



- Identify support options, including financing, technology and capacity building.
- Establish public-private dialogues and promote public-private partnerships.
- Carry out outreach activities and liaise with potential domestic and international providers of support/investors to facilitate matching of support with NAMAs.
- Identify and promote relevant public finance mechanisms which could catalyse private investment flows (e.g. investment guarantee agreements).



Technical roles



- Help to establish baselines and projections.
- Conduct cost-benefit analyses.
- Set national standards for the MRV of NAMAs.
- Oversee fulfilment of MRV requirements.
- Manage technical challenges.
- Link NAMAs with national development goals.



Guiding questions for institutional assessment

- What technical capacities are needed to implement NAMAS in the country?
- What financial management capacities are needed in the government for NAMAs?
- What M&E capacities are needed in the government to steer the NAMA process?
- What procedures must be set up to manage and monitor the NAMA process?
- Which institutions can provide sufficient leadership to start the NAMA process?
- Which resource endowments are needed in institutions in the NAMA process?
- How can the (long-term) costs of NAMAs be financed with minimal public intervention?
- Which inter-institutional relationships should be established for NAMA governance?



What are (I)NDCs?

Intended nationally determined contributions (INDCs) put forward by countries served as **key input to the negotiations** and led to the 2015 Paris Agreement. They provide information on the climate actions a country is willing to undertake (either unconditionally or conditional to the provision of support).

According to the Paris Agreement, Parties will need to submit nationally determined contributions (NDCs) **every five years** from 2020 onwards that ‘will represent a **clear progression**’ beyond the previous NDC.

(I)NDCs should include **key information**, such as the target and scope of the (I)NDC, the methodologies and assumptions, and considerations regarding fairness and ambition, etc. (i.e. up-front information, see [decision 1/CP.20, para. 14](#)), to ensure the INDC is transparent; further information requirements for submitting NDCs will be defined in the negotiations.

Example components of an NDC: National long-term emissions goals; national short-term emissions targets; sectoral targets; highlights of mitigation policies and projects (including NAMAs); explanations and international support needs for mitigation.

The UNFCCC secretariat publishes all submitted INDCs [here](#).



The history behind NAMAs

Kyoto Protocol:

set a 5% global emissions reduction target by 2012 compared to 1990

Bali Action Plan:

established that NAMAs are to be implemented in a measurable, reportable and verifiable manner

Cancún: established that NAMAs are to be prepared within the context of sustainable development; deviations in emissions are to be compared to 'business as usual' emissions in 2020

1992

1997

2007

2009

2010

2011

UNFCCC (Rio Earth Summit):

established 'common but differentiated responsibilities' to mitigate GHG emissions

Copenhagen: agreed that internationally supported NAMAs are to be recorded in a UNFCCC registry along with relevant supporting actions, which will be added to appendix II of the Copenhagen Accord

Durban: decision taken to create a NAMA registry

Doha to Lima (2012-2014): established a 2-year work programme to further the understanding of the diversity of NAMAs



Related tools

The NAMA Tool was developed as part of a package of tools designed to promote low-carbon development and the production and dissemination of transparent information. To that end, users of the NAMA Tool may find it useful to consult the other three tools in the package, namely:

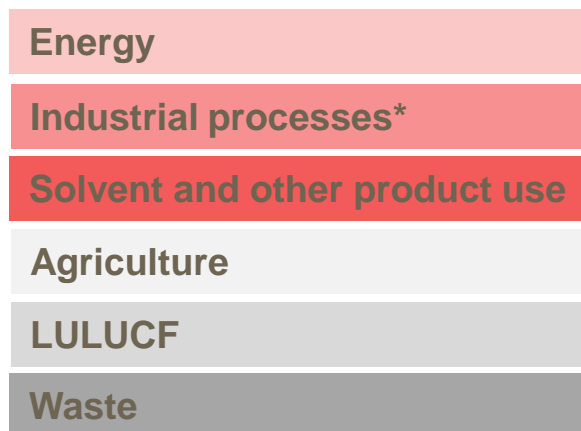
- [Low Emissions Development Strategy \(LEDS\) Tool](#), which walks users through a six-step process beginning with the conceptualisation of low-emission development through to the implementation of the strategy;
- [Measurement, Reporting and Verification \(MRV\) Tool](#), which presents three ‘types’ of MRV that should be considered when developing monitoring systems to track progress towards mitigation goals:
 - MRV of emissions
 - MRV of mitigation actions (NAMAs)
 - MRV of support received;
- [Stock Taking Tool](#), which is an analytical tool for the identification of prioritised action for national MRV systems, including LEDS and NAMAs. It aims at supporting countries in the assessment of the current mitigation architecture.



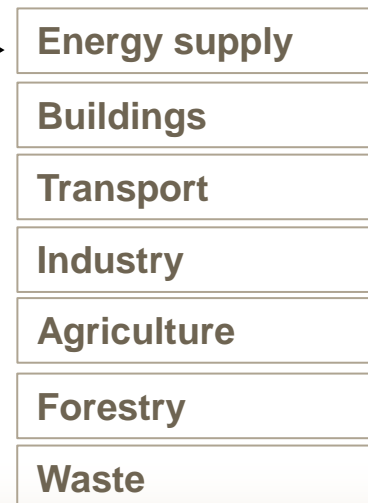
List of NAMA examples by sector

The IPCC suggests categorising GHG emissions into six emitting sectors (hereinafter referred to as 'IPCC sectors'). The NAMA Registry provides a slightly different categorisation of mitigation action sectors. The latter tends to focus more on the sectoral responsibilities of line ministries by splitting up the large energy sector.

GHG inventory sectors (IPCC)



NAMA Registry sectors



Cross-sectoral

The [Global Good Practice Analysis](#) by the International Partnership for Mitigation and MRV and UNDP LECB present different good practice examples for mitigation actions from a variety of sectors.





List of NAMA examples by type

Enabling/policy-based :

- Public procurement guidelines
- Feed-in tariffs
- Tax reductions/exemptions
- Building standards
- Labeling schemes
- Removal of subsidies for non-renewable energies

Target-based:

- GHG emissions target
- GHG emissions in relation to BAU
- Mitigation target
- Intensity target
- Energy efficiency target
- Renewable energy target

Project-based:

- Point-source emission reductions
- Energy efficiency measures
- Direct interventions to avoid emissions





List of NAMA examples by sector: **Energy**

- Shift from coal to low-carbon fuels in power production
- Guaranteed feed-in tariffs for electricity from renewable energy (RE) sources
- Promotion of combined heat and power (CHP)
- Energy efficiency (EE) improvement programmes
- Building codes for improved insulation
- Support schemes for individual RE/EE technologies, e.g.:
 - Replacement programmes for conventional boilers with solar water heaters
 - Labelling programmes and minimum energy performance standards for household appliances

For further information on NAMAs in the energy sector please consult the International Renewable Energy Agency [Handbook on Renewable Energy Nationally Appropriate Mitigation Actions](#).



List of NAMA examples by sector: **Transport**

Avoid

- Urban land-use planning
- Economic development around railway corridors
- Green logistics to avoid empty haulage
- Reduction of subsidies/fossil fuel taxation

Shift

- High-quality public transport
- Promotion of non-motorised transport
- Road pricing
- Parking management

Improve

- Fuel economy standards
- Truck design regulations
- Eco-driving campaign

For potential co-benefits of the NAMAs in the transport sector see [NAMA Sourcebook](#), p.28, and for detailed planning of individual transport NAMA activities, see the [Navigating Transport NAMAs Handbook](#).



List of NAMA examples by sector: **Industry**

- Top-runner programmes
- Improved cement processing
- Improved charcoal production
- Promotion of sector-wide technology upgrades
- Accelerated retirement of older and inefficient plants or technologies
- HFC gas phase-out in the refrigeration, air-conditioning and foam sector (cooling and insulation) and introduction of climate-friendly and energy-efficient alternatives

For further information on NAMAs in the refrigeration, air conditioning and foam sectors please consult this [handbook](#) by GIZ.



List of NAMA examples by sector: **Agriculture**

- Reducing on-farm emissions
 - improvement in cropland management (e.g. reduced burning)
 - methane reduction (e.g. through changes in livestock management)
 - nitrogen oxide reduction (e.g. through manure management and optimised use of nitrogen fertiliser)
- Enhancing removals/carbon sequestration
 - increase in soil organic matter content
 - increase in plant organic matter
 - rehabilitation of agriculturally used peatlands and wetlands
- Avoiding emissions
 - increase in efficiency of agricultural equipment and operations; reduction in fuel consumption
 - use of alternative energies
 - use of biomass waste for energy used in agricultural processing or electricity production

For the steps to calculating emissions for the land-based sector in Indonesia, please consult the [NAMA Sourcebook](#), p. 53.

For more information on NAMA development in the Agriculture, Forestry and Other Land Use (AFOLU) sector, please consult the FAO learning tool on [NAMAs in AFOLU sector](#).



List of NAMA examples by sector: **Forestry**

- Reducing emissions from deforestation and forest degradation
- Afforestation/reforestation (please refer to the UNFCCC definitions: http://cdm.unfccc.int/Reference/Guidclarif/glos_CDM.pdf)
- Degraded land management/landscape restoration
- Promotion of sustainable forest management
- Forest conservation
- Enhancement of GHG removals through forest sinks
- Prevention of forest fires
- Increased green urban areas

Please consider possible overlaps with initiatives for Reducing Emissions from Deforestation and Forest Degradation (REDD+). For a comparison of these two concepts please consult [‘NAMAs and REDD+’ \(2013\)](#)

For more information on NAMA development in the AFOLU sector please consult the FAO learning tool on [NAMAs in the AFOLU sector](#).

**Recommendations on
NAMAs & REDD+**



List of NAMA examples by sector: **Waste**

- Improvement of the legislative framework and law enforcement
- Waste minimisation through reduced packaging and increased product/package reusability and recyclability
- Awareness-raising for households, small and medium-sized enterprises and industry
- Increase in the recycling and composting rate
- Minimisation of landfill waste through processing and incineration
- Increase in methane capture and energy generation from waste
- Reduction in illegal waste disposal; increase in disposal in sanitary landfills
- Wastewater management

For more information on the bottom-up evaluation of technical options for solid waste management NAMAs in the Philippines, please consult the [NAMA Sourcebook](#), p. 53.

For a detailed planning of municipal waste-NAMA activities, see the [Guidebook for the Development of NAMAs on Sustainable Municipal Waste Management](#).

For information on GHG inventories in the waste sector, please refer to the [following case study](#).



List of NAMA examples by sector: **Cross-sectoral**

- Removal of fossil fuel subsidies
- Taxation of fossil fuels (according to carbon content)
- Emissions trading schemes for GHGs across all relevant sectors
- Multi-sector framework and targets
- Project funding, research and development
- Urban and regional development and land-use mitigation action



Tools to estimate expected NAMA impacts

Marginal abatement cost (MAC) curves rank technological options by cost and mitigation potential. They can thus be useful in selecting and prioritising mitigation options. When interpreting MAC curves, it is important to be aware of their caveats, such as:

- no consideration of co-benefits
- little or no reflection of institutional, transaction and implementation costs or market barriers
- inability to capture impacts of climate policies on agents, sectors or income groups.

MAC Tool developed by the World Bank

Policy and Action Standard developed by the World Resources Institute; used for the ex-ante estimation of direct emission reductions from planned projects, which can be particularly helpful in communication with potential financiers

There are diverse tools that assist in assessing the sustainable development impacts/co-benefits of NAMAs, for example the **Development Impact Assessment (DIA) tools**, the **CDM SD Tool** and the **NAMA SD Evaluation Tool**. Find an overview of a range of tools and their strengths [here](#) (pp. 5-15).





Categories of relevant stakeholders

Who should be involved in a NAMA planning process should be decided on a case-by-case basis, taking into consideration, e.g., gender, ethnicity and indigenous groups. Stakeholders do not need to be mandated, but they do need to be knowledgeable of their respective sectors. In order to consider all perspectives and overcome resistance to change, leaders and laggards, early movers and foot draggers should all be invited to participate.

Process is important! The involvement of different stakeholders is key to a good result.

Evidence is pivotal for convincing and mobilising actors.

Champions are necessary.

In general, stakeholders should comprise **representatives from the following categories:**

- all ministries involved in low-carbon development
- subnational authorities
- big emitters
- the private sector
- committed local, national, and international NGOs
- potential financiers and international providers of support
- organisations providing technical assistance
- academia
- labour

More information on the engagement of stakeholders can be found [here](#).



Anti-corruption

Corruption risks

- Bid-rigging and bribery in public procurement
- Nepotism in appointments or awarding of contracts
- Collusion and extortion in regulatory or auditing processes
- More examples of corruption risks can be found in the [U4 anti-corruption glossary](#)

Further information:
anticorruption-program@giz.de

**Governance
indices**

**Transparent
process design**

Counter measures

- Conclude [integrity pacts](#) in public procurement .
- Adopt [codes of conduct for public officials](#), including conflict of interest policies and transparent criteria for their appointment.
- Ensure NAMA-related regulation/licensing is vested in an independent institution with a strong [integrity management system](#).
- More tools can be found in the [UN Anti-Corruption Toolkit](#) and at the [Global Infrastructure Anti Corruption Centre](#).





Governance indices

Broader governance indices:

Bertelsmann Transformations Index (BTI):

- analyses the quality of democracy, the market economy and political management
- provides in-depth country reports to assess countries' transformation status and challenges

Actionable Governance Indicators (AGI)

by the World Bank:

- offers a collection of different un-aggregated indicators of various specific aspects of governance
- provides an overview of the governance situation within a country ('governance at a glance')

World Governance Indicators (WGI) by the World Bank:

- provides highly aggregate data from 218 countries for six dimensions of governance

Corruption and integrity indices:

Corruption Perception Index (CPI) by Transparency International:

- serves as a prevalent measure of corruption in the public sector

Global Corruption Barometer (GCB) by Transparency International:

- enables comparisons between countries and regions, as well as over time
- allows for detailed analysis according to specific institutions or demographic criteria

Global Integrity Report by Global Integrity:

- provides anti-corruption legal frameworks as well as strategies for practical implementation and enforcement
- takes a close look at whether citizens can effectively access and use anti-corruption safeguards



Tools to assess governance and corruption risks at sector level

Governance assessments:

- Political economic analysis of power relations, actors, interests, decision-making structures, etc.
- GIZ governance compass for sectors:
 - core governance issues
 - good governance principles applied
 - relevant governance topics

Corruption risk analyses:

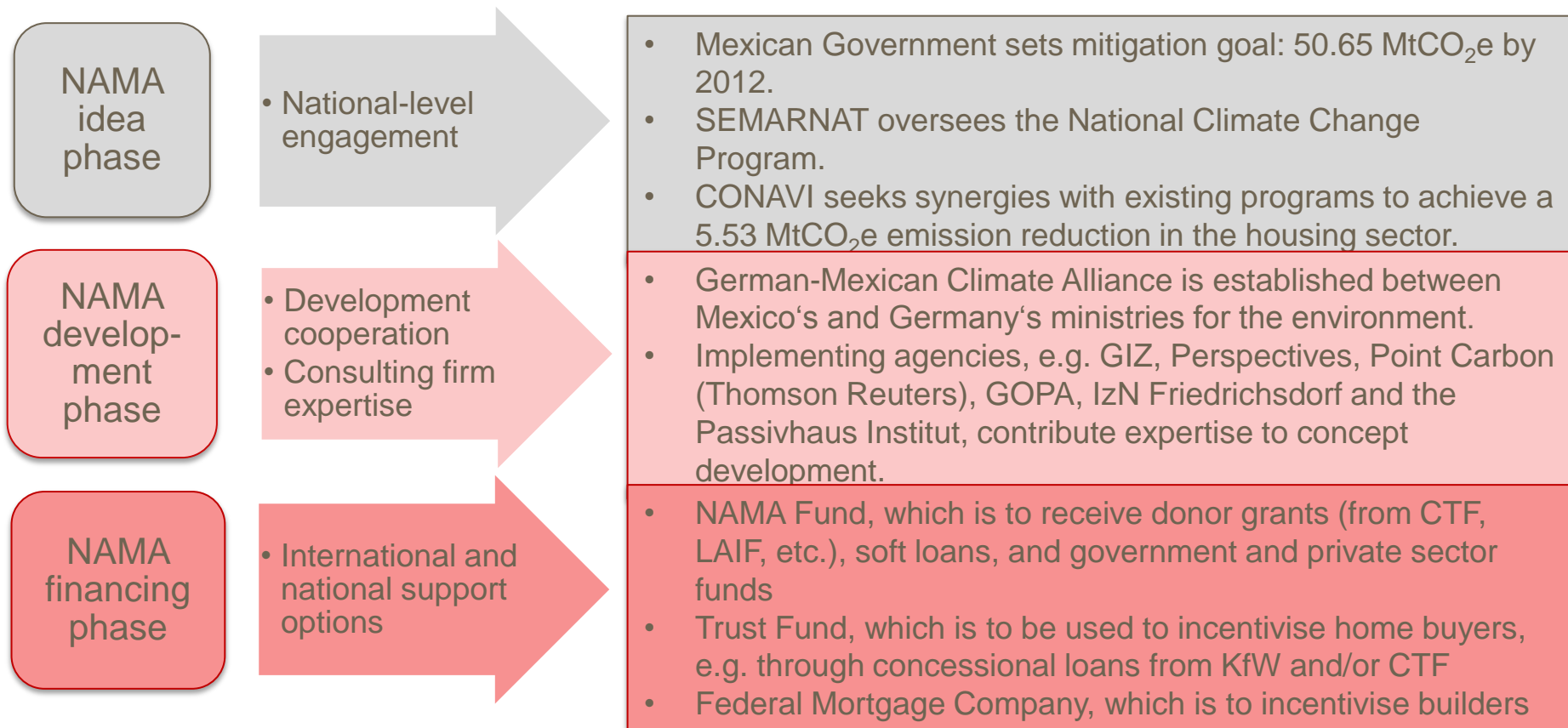
- Actor-based risk analysis
 - Which interests, hidden agendas, formal/informal relations, etc., do core actors have?
 - Which types of corruption may occur between these actors?

- [Process-based risk analysis](#)
 - What are the core processes in a sector (e.g. funding, regulation, service provision)?
 - Which types of corruption may occur at which process steps?
- Institutional assessment
 - Focus on [risks](#) or [integrity](#) within an institution
- [Anti-corruption WORKS](#)
 - Participatory workshop format for programme-specific corruption risk analysis and anti-corruption activity planning

Further information:
anticorruption-program@giz.de



Stakeholder diagram for a housing NAMA in Mexico



More information on the NAMA available [here](#) and on the [NAMA Facility](#) website.



NAMA prioritisation process

In order to facilitate informed decision-making on NAMA development in a country, a participatory prioritisation of different NAMA options using the previously discussed selection criteria is strongly recommended. Such a process could be carried out as follows:

- Step 1: Convene stakeholders
- Step 2: Put all NAMA ideas, incl. all available information and data, on the table.
- Step 3: Define your set of NAMA objectives.
- Step 4: Define your set of NAMA co-benefits.
- Step 5: Weigh objectives and co-benefits.
- Step 6: Score objectives and co-benefits.
- Step 7: Review the results of the prioritisation exercise.

A more detailed description of the steps to take and aspects to consider within the process of NAMA prioritisation can be found [here](#).

For an example of collaborating to prioritise and select mitigation actions in Lebanon, consult the [Global Good Practice Analysis](#).



Tips for defining the baseline

Know the **variables** for producing a baseline:

For an example on the development of a baseline for the power sector in Indonesia, please consult the [NAMA Sourcebook](#), p. 43.

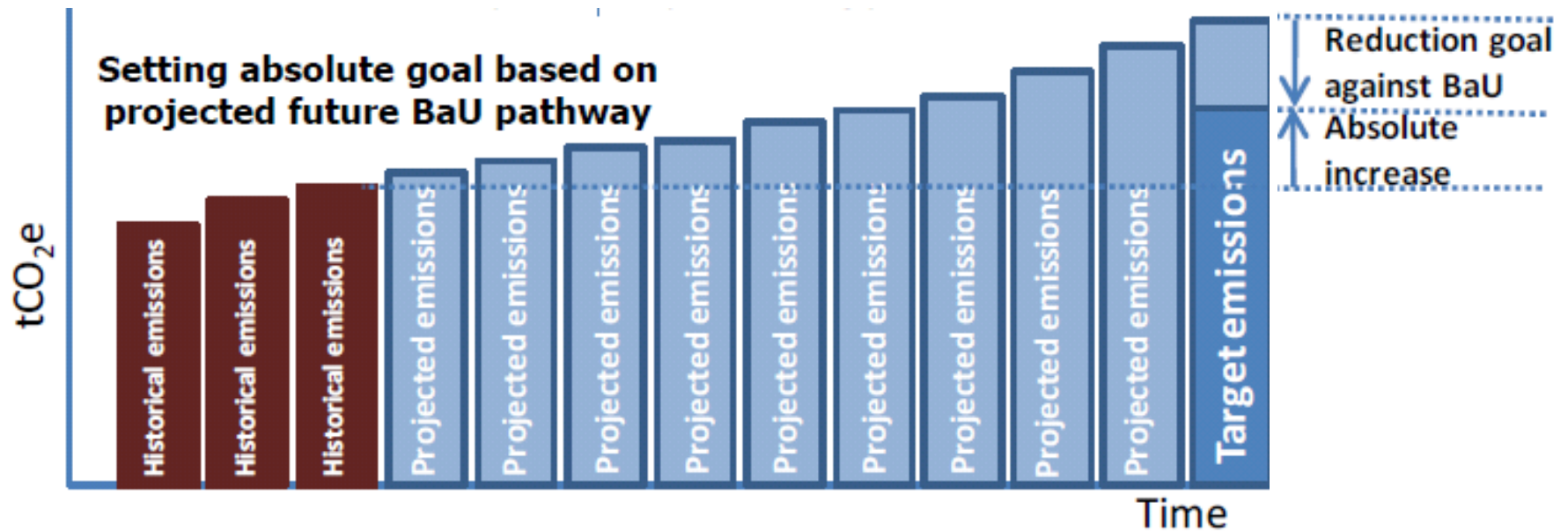
- **Scope:** project/programme, sub-sector, sector, country, technology
- A sector-wide baseline should take into account all UNFCCC gases (CO₂, CH₄, N₂O, SF₆, PFCs, HFCs, NF₃) and use the global warming potential established by the IPCC.
- **Metrics or indicators:** Absolute GHG or CO₂ emissions; relative 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 or 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. average over several years)
- **Future assumptions:** assumed continuation of historical emissions (project); continued rate of growth of emissions/emissions intensity (sector); modelling based on policies included in baseline
- **Co-benefits:** indicators for sustainable development (e.g. resource efficiency, social inclusion, economic viability)

Policy and technical considerations may influence the overall ambition of a baseline, e.g. data availability, expertise, legislation, etc. It is also important to carry out uncertainty assessments and sensitivity analyses on existing data, key parameters and assumptions in order to properly interpret GHG assessment results.

For more guidance see WRI's [Policy and Action Standard](#) and the [Project Protocol](#).



Example: Business-as-usual scenario



Source: OECD/IEA (2011) Setting National and Sectoral Baselines



Data sources for baseline-setting

Consider which of the following **sources** may be available to provide data for baseline-setting and subsequent monitoring:

- GHG inventory (national communications)
- sector-specific data
- consumption data
- emission factors
- economic growth projections
- population growth projections.



Designing a monitoring system for a housing NAMA in Mexico

National circumstances:

- 50 million Mexicans live in poverty, 80% of which have no access to funding for appropriate housing.
- Mexico committed itself to achieving ambitious GHG emissions reductions by 2020, depending on support.

Proposed NAMA:

- Sustainable housing programme to target mortgage market to provide low-income families with low GHG-emitting homes.

Monitoring to focus on GHG and non-GHG metrics:

- GHG reductions – GHG metrics needed
- Increased access to energy-efficient housing – non-GHG metrics needed

**GHG metrics for the
Mexican housing NAMA**

**Non-GHG metrics for the
Mexican housing NAMA**



GHG metrics for the Mexican housing NAMA

Data to measure	Type of measuring
Electricity consumption	Direct and continuous metering of electricity consumption (including generation from solar). If available, utility billing records can be used.
Emission factor of the grid electricity	Use CDM Tool to calculate the emission factor for an electricity system, or use published data.
Transmission & distribution loss	Data from a utility or an official government body. (Note that electricity theft and meter manipulation are to be considered under this category of monitoring)
Fuel consumption	Direct and continuous metering of fuel consumption (meters to be installed as part of the NAMA). Alternative: ask families how many gas canisters used per year.
Net calorific value of the fuel	Values provided by the fuel supplier in invoices or its own measurement, or the regional or national default values.
CO ₂ emission factor of the fuel	Values provided by the fuel supplier in invoices or its own measurement, or the regional or national default values.
Heating degree days (HDD)	Use data on outside air temperature in a given region to calculate HDD.
Gross floor area of a building unit	Building plans or onsite measurements.

Source: Perspectives, Thomson Reuters



Non-GHG metrics for a housing NAMA in Mexico

- Number of houses constructed/year
- Demographic data
- Inhabitants/house (to compare baseline and NAMA houses)
- Energy costs for poor families
- Peak-load of the electricity grid*
- Air quality
- Water use (NAMA in the water sector under consideration)

**Low-energy houses will need no/smaller air conditioners and therefore consume less electricity at peak hours.*



Co-benefits and mitigative capacities achieved through NAMAs

Depending on the MRV scope of the NAMA, the NAMA may also seek to monitor and report **non-GHG reduction outcomes**. **Co-benefits** may include a wide range of national sustainable development goals, such as:

- **Social benefits**
 - Access to energy and transportation services
 - Health benefits through improved air and water quality
 - Increased income through lower energy costs
- **Economic benefits**
 - Job creation
 - New economic opportunities (green growth)
- **Institutional benefits (improved capacity for mitigation)**
 - Institutional arrangements are in place to promote low-emission development
 - Technical and human resource capacities are strengthened
 - The policy environment for low-emission development is improved
- **Environmental benefits**
 - Protection of biodiversity
 - Improved water or air quality

Background paper

about sustainable development co-benefits in the NAMA Facility.

Find an overview of a range of tools that assist in assessing sustainable development impacts/ co-benefits of NAMAs and their strengths [here](#) (pp. 5-15).



Reporting emissions and mitigation information in the cement sector of South Africa

Reporting level	Reporting to whom
International-level reporting	Carbon Disclosure Project
National-level reporting	Department of Environmental Affairs (DEA) => compiled for national communications under the UNFCCC
Sectoral-level reporting	Association of Cementitious Materials Producers (ACMP)
Individual cement producer reporting	International holding companies and shareholders

Reporting tool of the World Business Council for Sustainable Development (WBCSD) used to avoid duplicate reporting.



Lessons from the Clean Development Mechanism for NAMA verification

- Verification ensures credibility and accountability of a project's estimated GHG emission reductions.
- Independence of verifiers (i.e. third-party entities) is needed to ensure confidentiality of industry data and credibility.
- Domestic capacity for verification services are often weak; there is a need to draw on international auditors and/or build capacity.
- What needs to be verified must be made clear: Verifiers should only be responsible for data that is easily verifiable (e.g. data on fuel use and/or compliance with procedures) and not for assessing politically-influenced elements, such as baselines.

Although reporting systems can be very complex, the actual core process of reporting is fairly simple and involves:

- the emitter
- the submission of data on emissions and mitigation actions in a defined format
- the aggregation of the reported data
- a national unit to handle the reported data.



International guidelines for reporting under the UNFCCC: **Biennial Update Reports**

Biennial update reports (BURs) should cover the following information related to **NAMAs** and their effects:

- name and description of the mitigation action
- information on methodologies and assumptions
- objectives of the action and steps taken or envisaged to achieve that action
- information on the progress of implementation
- information on international market mechanisms
- a description of domestic measurement, reporting and verification arrangements.

The complete guidelines for BURs are available [here](#).

Further guidance on the preparation of BURs is available in the [GIZ BUR Template](#).



Developing countries have committed themselves to submit BURs and subject them to international consultation and analysis.



International guidelines for reporting under the UNFCCC: **International Consultation and Analysis**

International Consultation and Analysis (ICA) and NAMAs:

- Progress on NAMAs will be aggregated into a BUR to be submitted under the UNFCCC.
- ICA aims to enhance the transparency of mitigation actions and contribute to the capacity building of non-Annex I Parties, leading to improvement in the quality of its BURs over time.
- It consists of (1) a technical analysis of BURs by an international team of technical experts; and (2) a facilitative sharing of views.
 - *ICA is not intended to scrutinise individual NAMAs in detail.*
- The requirements for NAMA verification shall therefore still be determined by NAMA implementers and those supporting the NAMA.

Guidance on [Preparing for the ICA Process](#) by GIZ.



Developing countries have committed themselves to submit BURs and subject them to ICA.



Categories of incentives to consider

- **Capacity-building and information-based incentives:** e.g. Awareness-raising campaigns, monitoring and reporting schemes, education policies, labeling schemes
- **Regulatory:** e.g. mandatory insurance, standards, macroeconomic policy framework, legal institutions
- **Fiscal mechanisms:** e.g. tax credits, carbon tax, levies, fees, phasing-out subsidies
- **Early market development mechanisms:** e.g. grants, public procurement, feed-in tariffs, temporary production subsidies
- **Debt and equity finance mechanisms:** e.g. incubators, mezzanine subordinated debt funds, green bonds, microfinance
- **Environmental market mechanisms:** e.g. cap and trade, carbon credits, carbon funds, quotas

For more details on policy and financial instruments, see the UNDP report 'Catalysing Climate Finance' as well as a background paper on ['Financial Mechanisms in the NAMA Facility'](#).



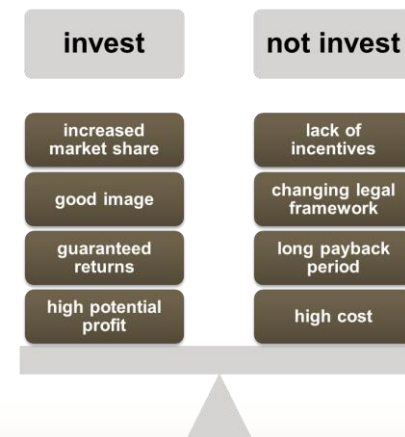


Engaging the private sector

Engaging the private sector is important to secure NAMA financing and gain expertise and experience.

**Instruments to mobilise
the private sector**

- Classification:
 - By role: market facilitators/financial intermediaries, project developers/implementers/operators, technology and service providers, investees
 - By size: households, small- to medium-scale companies, large-scale companies, the financial sector, banks (development banks, commercial banks, cooperatives), insurance companies, investors and funds
- Private actors base their investment decisions on an individual set of criteria, ensuring that the returns outweigh the costs.
- The role of public policy is to create an **enabling environment** for positive investment decisions and develop and disseminate information about market opportunities and access options with public support.





Instruments to mobilise the private sector

Non-financial

- Pressure by governments to implement legal framework
- Technical assistance/expertise
- Provision of information on climate change market opportunities
- Best-practice information campaigns tailored to the private sector

Financial (selection)

- Direct financial incentives, e.g. grants and soft loans
- Financial guarantees
- Co-investment with the private sector/public-private partnerships
- Seed capital
- Public equity
- A clear carbon price signal would be the best and most effective measure to mobilise private investments and incentivise the private sector to invest in mitigation actions.
- All these instruments can be supported through public grant components.
- In addition, all these instruments can be combined in asset packages.

For more information see, e.g.:
[‘The Green Climate Fund: Options for Mobilising the Private Sector’](#)
[‘Designing public sector interventions to mobilise private participation in low carbon development’](#)
[‘Driving Transformative Change: The Role of the Private Sector in Advancing Short-term and Long-term Signals in the Paris Climate Agreement’](#)





NAMA knowledge platforms

Knowledge is a resource that enables actors to plan and implement interventions. There are different initiatives that bundle and disseminate useful knowledge about NAMAs and other mitigation approaches. Among the most important are:

- **[International Partnership on Mitigation and MRV](#)**: The Partnership is a network of countries from all around the world, founded by South Africa, South Korea and Germany. Its website provides information on publications, tools, projects, etc., related to INDCs, LEDS, NAMAs and MRV.
- **[Climate and Development Knowledge Network \(CDKN\)](#)**: This alliance of various organisations supports decision-makers in designing and delivering climate-compatible development. Its website provides comprehensive information on different topics related to climate policies and actions.
- **[NAMA News](#)**: This UNFCCC platform shares stories about how developing countries are lowering global emissions, creating jobs, improving living conditions, and preparing for a low-emission world. It provides information on NAMA-related publications, events, other initiatives, etc.



Promoting technologies

To promote technologies, consider:

- Enhancing the investment environment.
- Removing market entry barriers, such as:
 - monopolistic market structures and high levels of corruption
 - subsidies for conventional technologies
 - lack of capacity
 - lack of knowledge
 - lack of financing
 - high transaction costs.
- To support innovation systems, countries should:
 - set up technology cooperation advisory facilities and regional technology centres
 - carry out technology needs assessments
 - foster learning processes
 - identify partners for technology cooperation.

For more guidance on promoting technologies please consult the handbook '[Technology Needs Assessment for Climate Change](#)' and the [UNFCCC website](#).

Tools to identify technologies





Tools to identify technology needs

The UNEP/UNDP [ClimateTechWiki](#) and the Renewable Energy and Energy Efficiency Partnership (REEEP)/Renewable Energy Policy Network for the 21st Century (REN21) [REEGLE](#) provide database and tools to identify which technologies are needed and most appropriate and determine who can provide these technologies.

A technology needs assessment that considers co-benefits may help to avoid conflicts.

The UNEP Risoe Centre developed the Financial and Cost Assessment Model (FICAM) as a tool to evaluate the mitigation capacity and the costs of technologies. Available [here](#).

As FICAM merely takes mitigation benefits into account without co-benefits, the TNAssess tool complements FICAM and helps policymakers and multiple stakeholders weight the sustainable development co-benefits of various technologies through a multi-criteria decision analysis (MCDA) included in the TNAssess tool. TNAssess tool helps technology recipients define their own priorities in technology selection. A description of the MCDA is found [here](#). (see p. 48)

A barrier analysis should be carried out after the identification of appropriate technologies.



Climate finance options

There is a wide range of options for accessing climate finance, including:

- national public support schemes
- private finance
- bilateral funding mechanisms
- multilateral funds dedicated to climate finance
- multilateral development banks.

The official website of the [UNFCCC on climate finance](#) provides information on the UN climate finance architecture as well as bilateral, regional and other multilateral channels.

The Climate Policy Initiative collected data on global climate-related finance flows and drew up a [Landscape of Climate Finance](#).

An overview of new climate funding sources is available here:
<http://climatefundingsnapshot.com/>.

The [TEC Brief #6](#) provides information on access to climate technology financing.

At a later stage, carbon markets may also be a mechanism to attract resources for NAMAs over the long term. The role of carbon markets for NAMAs is still under debate.

**Example:
NAMA Facility**



Producing a NAMA information note

In order to communicate a NAMA idea to potential providers of support, investors, stakeholders, and policymakers, essential information on that NAMA must be compiled.

The UNEP Risoe Centre has developed a **NAMA Information Note (NINO) template** in order to best present the most basic information on a NAMA seeking support. NINO includes information on:

- objective, set of measures and status of the activity
- background, barriers, description of activity, relation to other NAMAs, and boundaries
- co-benefits, estimated GHG emission reduction, and estimation methodology
- type of financing, technologies, and capacity-building needs
- monitoring indicators, national data management system, and verification procedure.

[NINO](#) can be found on p.12 in the document ‘Low-Carbon Development Strategies’.



UNFCCC NAMA Registry

Launched in 2013, the NAMA Registry aims at facilitating the matching of international resources with NAMAs ideas and proposals.

- NAMA host countries may document their NAMA idea or proposal by entering its description, cost estimate and GHG reduction potential.
- Providers of means of implementation (MOI) may record their financial, technical and capacity building support available for the development or implementation of NAMAs.
- NAMAs implemented using domestic resources only may also be recorded in the registry to give host countries recognition for their efforts.

Thus, the NAMA Registry provides an overview of potential sources of support for the design and implementation of NAMAs, and for sharing best practices among all parties. The NAMA Registry is **not** an automatic outlet for gaining international support, for example via the Green Climate Fund. Click here to view the [NAMA Registry](#) or the [UNFCCC NAMA Registry website](#).



NAMA template

- **Description of the NAMA:** title, country, timeframe, sectors/sub-sectors, brief description, partners and contact information
- **Strategic assessment:** policy and governance analysis, sector analysis (including a baseline scenario describing the past and present situation, emissions and development priorities), assessment of drivers and trends, identification of barriers to emissions reductions and how the NAMA can contribute to overcoming barriers.
- **NAMA proposal:** objective, scope, activities (with timelines), outputs and outcomes, expected impact, benefits (including: emissions reductions, mitigative capacities and social, economic and environmental benefits), costs (financing options for estimated costs and how financing might come from public, private and multilateral sources).
- **Implementation plan:** description of individual activities and details on implementation (what will happen where and when, and who is responsible?), details about measuring (including key indicators and interim results), reporting (including how results will be communicated), and verification (how will verification be performed?), risks (including proposed ways of mitigating risk e.g. of corruption).

There are different NAMA templates available for the preparation of NAMA concept notes or NAMA proposals, e.g. from [Ecofys](#), the [NAMA Registry](#), or the [NAMA Facility](#).



Why MRV?

MRV tells us if we are on track to meeting mitigation goals.

It also:

- Facilitates decision-making and national planning.
- Supports the implementation of NAMAs and generates feedback on NAMA effectiveness.
- Promotes coordination and communication among emitting sectors.
- Generates comparable, transparent information.
- Highlights lessons and good practices.
- Increases the likelihood of gaining international support.

➤ *Transparency starts with access to information!*



What is MRV?

- Measuring, reporting and verification (MRV) are key elements for ensuring greater transparency, accuracy and comparability of information with regard to climate change.
- MRV can be thought of as a knowledge management system for tracking GHG emissions, actions to reduce GHG emissions, and climate change mitigation support.
- Recent decisions within the international climate negotiations demonstrate a growing global consensus that common forms of MRV-relevant information are needed.

For further information on how to set up national MRV systems, the GIZ developed a separate [MRV Tool](#).



Design an MRV plan: the who, what, when and how of MRV

- What to MRV?
 - Individual objectives and activities of the NAMA should have their own indicators based on whether they seek to measure GHG reductions or other benefits. The indicators will determine what gets reported and verified.
- How to MRV?
 - It is important to consider which methodologies should be used for measuring emission reductions and co-benefits and how much accuracy is needed. In addition, it should be assessed whether measurement can be conducted 'on-site', whether official data sources can be used and which ones, how the results will be compiled and stored and through which channels they will be reported, and whether cross-checking or on-site verification are required.
- When to MRV?
 - You need to decide when and how often particular activities of the NAMA will be 'MRVed' – for instance annual performance monitoring or biennial reporting in BURs.
- Who should MRV?
 - The person/institution responsible for the M, R and V of the NAMA needs to be identified during the design phase, and their independence and accountability must be secured.

Please refer to the IPCC Guidelines for National Greenhouse Gas Inventories [2006](#) or [1996](#).

More information on MRV methodologies and procedures are available in the Greenhouse Gas Protocol [Mitigation Goal Standard](#) of the World Resources Institute.



Project monitoring, indicators and impact chains: Standard impact chain checklist

When assessing the impact of a NAMA, we can differentiate between intended and unintended, in-boundary or out-of-boundary (spillover), and short-term or long-term effects.

Impact chains are useful tools for fine-tuning activity planning and for monitoring. A standard impact chain includes:

- inputs (material and immaterial): contributions from providers of support, national partners, international partners, businesses and civil society to produce outputs
- activities: immediate interventions
- outputs: short-term results of activities
- use of outputs (To make the intervention effective, the target group must make use of the outputs, which depends on complex circumstances and the (enabling) environment.)
- direct impact: direct result of activities
- indirect impact: indirect result after achieving the project goal (The indirect impact is the actual benefit that is sought through the activity.).

More information on options for monitoring and reporting can be found in the [NAMA Sourcebook](#), p. 62.

**Monitoring indicators
for NAMAs**

**A visualisation of
the impact chain**



Monitoring indicators for NAMAs

Indicators allow users to more precisely measure the attainment of goals. They may measure quantitative or qualitative project results. Individual NAMA activities should use separate indicators.

Indicators should be

SMART:

S: Specific

M: Measurable

A: Achievable

R: Relevant

T: Time-bound

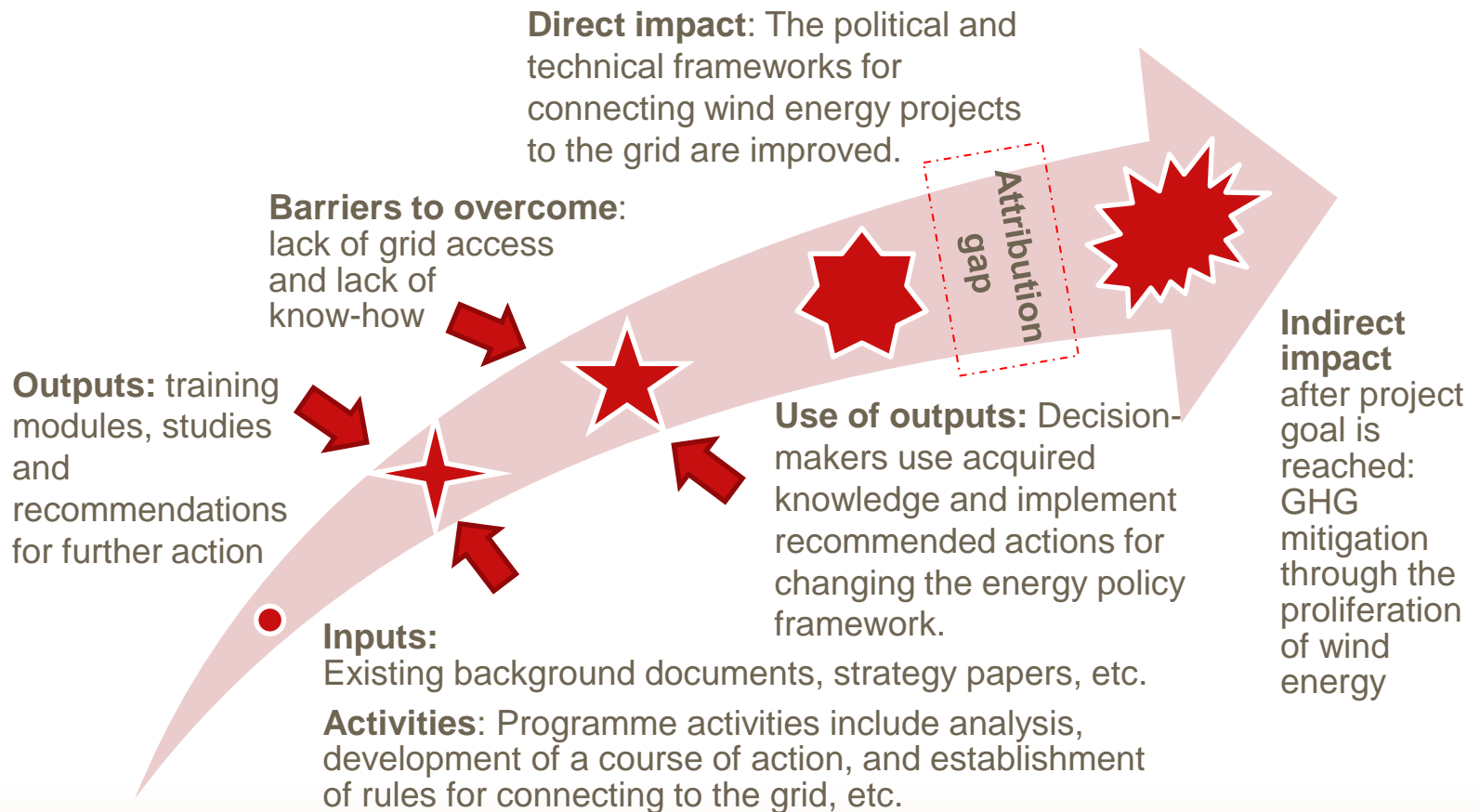
- Indicators should reflect what the NAMA seeks to achieve, e.g.:
 - direct emissions reductions: absolute or intensity-based (e.g. gCO₂e/km) reductions, gas-targeted reductions, geographic coverage of mitigation impacts, etc. (see [Policy and Action Standard](#) p.14)
 - indirect emissions reductions, i.e. those difficult to attribute to the NAMA
 - mitigative capacities to be developed (see non-GHG metric link below)
 - sustainable development co-benefits (See non-GHG metric link below).
- Indicators may be applied at different levels: (See [impact chain visualisation](#))
 - direct outputs of an activity
 - direct impacts of an activity
 - indirect impacts of an activity.
- For monitoring implementation, the following needs to be defined:
 - the specific interventions included in the NAMA (taxes, grants, etc.)
 - who monitors the indicators
 - timing and frequency of monitoring of the indicators
 - procedures for reporting and verification.

For a user-oriented guide on how to design a climate impact monitoring system , see the GIZ Monitoring Sourcebook [here](#).

**Non-GHG metrics for
measuring NAMA results**



Impact chain for a GIZ project promoting wind energy in Viet Nam





Implementing the 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 (HDDs) 	<ul style="list-style-type: none"> Description of NAMA activities Assumptions and methodologies Objectives of the actions and information 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 HDDs 	<ul style="list-style-type: none"> National-level reporting procedures (i.e. BURs under the UNFCCC) NAMA-level reporting procedures (tbd) 	<ul style="list-style-type: none"> BURs 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)



Types of barriers for low carbon investments and sustainable development

Financial barriers	<ul style="list-style-type: none">• High upfront costs• Small project sizes• Split incentives (e.g. of owners and users)• Misallocation of investments (subsidies for conventional technologies)
Institutional barriers	<ul style="list-style-type: none">• High transaction costs• Limited access to capital• Monopolies/limited access to markets, e.g. through social exclusion
Economic barriers	<ul style="list-style-type: none">• Externalities: costs that are not included in market prices, like negative environmental effects
Technical barriers	<ul style="list-style-type: none">• High transaction costs
Information barriers	<ul style="list-style-type: none">• Limited awareness of options• Lack of knowledge/access to knowledge
Capacity barriers	<ul style="list-style-type: none">• Lack of skilled labour• High transaction costs

Find a more detailed description of potential barriers in: [IISD \(2013\): Developing Financeable NAMAS](#), p. 35-37.





How to develop a financing plan

In order to contribute to transformational change, NAMAs should go beyond individual investment projects and be embedded in a LEDS or comparable national strategy. Instead, NAMAs push forward sector policies aimed at lowering barriers to investment and implementation. The implementation of certain elements of a NAMA may need financial and also technical support.

To develop a convincing financing plan for investors, the following six steps are proposed:

1. Develop a clear NAMA design approach, specifying its objectives, priorities and selection process.
2. Provide a brief description of the NAMA context and an analysis of potential barriers.
3. Identify potential financing sources.
4. Emphasise the relevance and role of the private sector.
5. Select appropriate financial instruments.
6. Detail your NAMA design by describing all other elements, including MRV and stakeholder engagement.

For further information see the UNEP publication [Financing Nationally Appropriate Mitigation Actions](#)

How to justify the need for international support



How to justify the need for international support

- Explain why the planned mitigation actions are needed, referring to, for instance, LEDS or co-benefits.
- Document the barriers and challenges that are preventing the mitigation actions from being implemented.
- Identify and document the baseline conditions in the absence of the action.
- Describe the action that targets the barriers and challenges.
- Define why this action realistically might or might not be implemented sufficiently without the additional funding requested in the short or long term.
- Describe how the funding will leverage the co-financing to help the action achieve the results that will lead to the mitigation.
- Clearly document all information and assumptions to develop and support the justification for funding the action.

**What is
LEDS?**

**Promotion of
technologies**

**Non-GHG metrics:
Co-benefits**



How to ensure availability of resources

- Discuss the level of contributions from national and sub-national budgets.
- The availability of resources can be ensured by developing a robust financing plan (including a pre-feasibility study to attract potential investors early) and having the high quality of the NAMA acknowledged by potential supporters. The pre-feasibility study should also give a first idea on possible MRV indicators that are relevant for private financing.
- Identify reliable and financially strong potential NAMA financiers.
- Inform potential financiers of the planned NAMA and the NAMA implementer(s).



Quality criteria for NAMAs

The organisations, institutions and individuals considering the provision of NAMA support will ultimately determine for themselves the definition of ‘high-quality’ for NAMAs that should receive support. Some essential elements are the following:

**Potential for trans-
formational change**

**Example: NAMA
Facility criteria**

	Direct & indirect contribution to global climate change mitigation	Sustainability and efficiency of impact
Development impact	High GHG impact/ambition level	Aligned with government priorities and national development goals
	Transformational potential	Embedded in a LEDS and/or other relevant national strategies
	Replicability	Economic, environmental and social co-benefits
		Political ownership and support of relevant stakeholders
Technical and financial feasibility of action	Robust MRV system	Link to existing initiatives and institutional arrangements
		Comprehensive financing plan





Potential for transformational change

Example: Transformative potential of green cooling

Transformational change disrupts established high-carbon pathways, resulting in a significantly higher level of development while reducing emissions. The process must be self-reinforcing, and the goals of this process must contribute to long-term sustainable development. The process must identify and address the agents of change, the innovation itself and how it fits into the current frameworks (economic, societal, environmental) and into the institutions of change.

In the context of the NAMA Facility, projects are considered as conducive to transformational change if they:

- contribute to enabling either a significant evolution in terms of **scope** (e.g. scaling-up or replication) or a faster and/or significant **shift** from one state to another;
- have a **catalytic effect** and include mechanisms to ensure the **sustainability of the impacts**, local ownership and political will; the involvement of the private sector; and the use of innovative technologies and approaches; and
- allow for systematic **learning** processes.

More information on the concept of transformational change can be found in a [paper by UNEP DTU and Wuppertal Institute](#) and by the [NAMA Facility](#).

Another [paper by UNEP DTU](#) analyses some examples for transformational change.



Transformative potential of green cooling (Thailand)

Sector-wide transition towards climate-friendly & energy-efficient cooling technologies

Political action

- Set target for emission reduction over equipment lifetime
- Set target for annual reduction until end of NAMA support project
- Reduce energy needs of the cooling sector by xx% against BAU

Mitigation potential

Drivers

- Energy security and costs
- Economic development
- Social development and job creation
- Environmental protection
- International recognition

Technical support

- Conversion of production lines
- Create market demand for green cooling
- Training programmes for installation and service technicians

Technical focus

Financial incentives

Financial ambition

- Investment in technical pilots (production & usage)
- Use of NAMA seed funding to leverage at least x-fold by using existing governmental & private funds



Common barriers to NAMA financing

- Many/most of the NAMA proposals developed over the past couple of years show weaknesses with respect to the financial structure for implementation.
- Financial mechanisms lack sufficient detail OR are developed with too much detail and little flexibility to adapt them to the real demands of the financial sector.
- Financial actors, especially development banks and the commercial financial sector, are not involved early enough.
- More consideration needs to be paid to the requirements of multilateral development banks (MDBs)/development finance institutions (DFIs) and commercial financial institutions.



Example: Selection criteria for projects supported by the International NAMA Facility

Eligibility criteria	Ambition criteria	Feasibility criteria
<ul style="list-style-type: none">✓ Timely submission✓ Formal requirements (completeness, language, regime, etc.)✓ Adequate timeframe for the implementation and DPP✓ Financing volume between €5-20 million✓ Qualification as official development assistance (ODA) given and eligibility of the country for ODA✓ Eligibility of the applicant✓ NAMA financing not used for the generation of GHG emission allowances	<ul style="list-style-type: none">✓ Potential for transformational change✓ Financial ambition✓ Mitigation ambition	<ul style="list-style-type: none">✓ Project rationale✓ Project design✓ DPP concept

For more Information see the [NAMA Facility - General Information Document](#)

Read about the [lessons learned from the assessment of 3 Calls](#) by the NAMA Facility.

What is the NAMA Facility?



Background information: NAMA Facility

- The NAMA Facility was launched at COP 18 in Doha by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety and the UK Department of Energy and Climate Change; in 2015 the Danish Ministry of Energy, Utilities and Climate and the European Commission joined the NAMA Facility as new donors.
- It is designed to support developing countries that want to implement transformational country-led NAMAs in the short term.
- Total funding made available through the Facility since its inception is €262 million (as at July 2016).
- It provides financial support & technical cooperation/capacity building.
- Its financial instruments include grants & concessional loans.
- See more information at www.nama-facility.org.

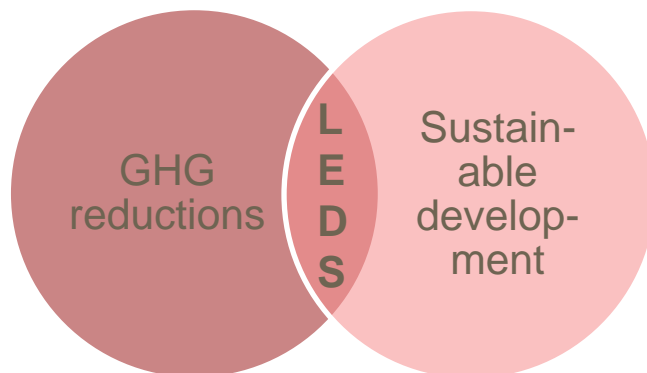




What is a LEDS?

A Low-Emission Development Strategy (LEDS) is a national high-level, comprehensive, long-term strategy developed by domestic stakeholders, which aims at decoupling economic growth and social development from growth in GHG emissions.

The goal of a LEDS is to make development climate-compatible. NAMAs contribute to the implementation of LEDS.



Developing countries are encouraged 'to develop low-carbon development strategies or plans in the context of sustainable development.' (Cancun Agreements, 2010)

'All Parties should strive to formulate and communicate long-term low greenhouse gas emission development strategies, mindful of Article 2 taking into account their common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.' (Paris Agreement 2015)



**Related policies
and plans**





What is a LEDS? – Related policies and plans

- A LEDS links economy-wide NDC targets and sectoral NAMAs. On the basis of a cross-cutting national analysis it identifies sectors and mitigation actions that achieve the highest development benefit while reducing emissions.
- A LEDS and individual NAMAs should build upon existing national strategies and processes (see examples in the illustration).
- There are also a number of other denominations for similar policy instruments, such as the low-carbon development strategy, the climate-compatible development plan, or the national climate change plan. But the aims, purposes and basic elements are not very different.





Risk management

Risk	(Public) Risk management instrument
Country risk	Country risk guarantees
Policy risk: Low-carbon policy reversal	Low-carbon policy risk cover linked to NAMA process
Currency risk: Volatile returns due to exchange rate fluctuations	Currency funds offering foreign exchange hedging products
Deal flow problems: Insufficient number of commercially attractive deals	Low-carbon project development companies (publicly funded and privately run) for early-stage project development and power purchase negotiations
Difficulty evaluating multiple, overlapping risks: Established mechanisms to fully evaluate risks may not be applicable due to interlinked risks	Structured funds with public first loss equity stakes



Hints for a transparent and inclusive process design

- Make the process as transparent as possible (clearly defined roles and responsibilities, clear objectives and timeline).
- Involve all relevant stakeholders from the beginning.
- Try to define a 'neutral' process, agreeing on selection criteria and their weighting first before talking about individual options. This makes the choice easier and easier to accept for everyone.
- Develop several NAMAs if you can.
- How can proactive lobby groups be handled?
- How should corruption be addressed?



Further guidance and examples for NAMA developers

Further literature on NAMAs:

- AFDB (2012): [Building blocks for Nationally Appropriate Mitigation Actions](#)
- Ecofys: [Annual Status Reports on NAMAs](#)
- GIZ (2012): [NAMA Sourcebook](#)
- IISD (2013): [Developing Financeable NAMAs: A Practitioner's Guide](#)
- OECC (2015): [NAMA Guidebook](#)
- UNEP (2014): [Understanding NAMA Cycle](#)
- UNEP Risoe Centre (2013): [Guidance for NAMA Design - Building on Country Experiences](#)
- UNEP DTU (2013): [Understanding the Concept of Nationally Appropriate Mitigation Action](#)
- UNEP DTU (2012): [Measuring Reporting Verifying: A Primer on MRV for NAMA](#)
- UNFCCC/UNEP/UNDP (2013): [Guidance for NAMA Design – Building on Country Experiences](#)

Weblinks on NAMAs:

- [NAMA Registry](#)
- [NAMA Database](#)
- [Mitigation Momentum](#)
- [International Partnership on NAMAs](#)
- [International Partnership on Mitigation and MRV](#)
- [NAMA Facility](#)
- [CDKN](#)
- [NAMA News](#)





Recommendations on NAMAs & REDD+

- Clearly define the boundaries of those activities falling under a land-use NAMA and those falling under REDD+.
- Establish a communication channel between land-use NAMAs and REDD+ agencies at national level
- Establish national registries for all REDD+ and NAMA activities, and link the two where land-use NAMAs are concerned.
- Streamline baseline establishment for REDD+ and land-use sector NAMAs.
- Coordinate MRV activities nationally, since REDD+ and NAMAs will both be subject to international verification.
- Respect internationally established REDD+ safeguards for land use-based NAMAs to maintain credibility.

For a comparison of these two concepts
please consult [‘NAMAs and REDD+’ \(2013\)](#)



Examples for the formulation of NAMA objectives

- **Absolute mitigation target:** *Limit annual GHG emissions from [(sub-)sector(s)] to no more than [x] tonnes of CO₂eq by the year [20yy].*
- **Relative mitigation target:** *Limit annual GHG emissions from [(sub-)sector(s)] to no more than [x] per cent by the year [20yy] (relative to the emission level of the year [zzzz]).*
- **Emission intensity target:** *Limit annual GHG emissions per [unit of output produced] from [(sub-)sector(s)] to no more than [x] per cent by the year [20yy] (relative to the emission intensity level of the year [zzzz]).*
- **Indirect mitigation target:** *Increase the energy efficiency (in energy unit per [output unit]) from [(sub-)sector(s)] by [x per cent] by the year [20yy] (relative to the energy efficiency level of the year [zzzz]).*
- **Indirect mitigation target:** *Increase the share of renewable energy sources from [(sub-)sector(s)] to [x] per cent by the year [20yy].*



Mix of instruments for NAMAs I:

Carbon and energy taxes aim at creating a uniform carbon price. They are typically applied to fuels and electricity, seeking to raise their prices in a manner consistent with their inherent emission factors.

Emissions trading schemes aim at creating a uniform carbon price. They are used to create a price for carbon indirectly by requiring emitters to submit a tradable certificate (or allowance) for each tonne of their CO₂ emissions, while limiting the quantity of available certificates via a quota or cap.

A fossil fuel subsidy reform is a pre-condition to creating a uniform carbon price. In some countries, fossil fuels are subsidised. These subsidies need to be phased out before carbon taxation or trading schemes can be installed.

Other market instruments and reforms are used to make implementation more flexible (and reduce costs) in meeting other climate-related regulations and targets. The certificates are denominated not in tonnes of direct emissions but rather in amounts of: electricity production from renewable energy sources (RES) (green certificates); electricity production from combined heat and power (blue certificates); energy savings (white certificates); and landfill waste reduction (landfill allowance certificates).

Other fiscal and economic incentives are used to promote or discourage certain purchases, investments or behaviour through financial means. They can take many forms, including: subsidies for energy-efficient product purchases or home renovations; project financing assistance; guaranteed minimum feed-in tariffs for electricity production from RES; differentiated purchase fees and rebates on automobiles based on fuel economy; road or landfill usage charges; and grants, loans and guarantees for emission mitigation projects.

Research and development is intended to provide a long-term signal to the industry to enhance its ability to deliver necessary emission reductions in the energy supply, energy end-use and non-energy fields, while improving Parties' competitive position in the potential markets for the new technologies. It includes direct funding and contributions to joint international research efforts.





Mix of instruments for NAMAs II:

Regulations (rules, standards and permitting requirements) are used to directly shape the market by reducing the role played by less-efficient, more carbon-intensive products (e.g. making it illegal to sell poorly performing equipment) or by increasing the role of climate-friendly operating practices (e.g. requiring industrial plants to undergo energy audits or use best available technologies). Regulations take many forms, including: appliance and equipment efficiency standards; building codes; landfill operating standards; manufacturing and power plant permission criteria; and power plant fuel share obligations (e.g. a minimum share of RES).

Voluntary/negotiated agreements encompass a variety of industry sector–government arrangements that range from covenants with binding targets and severe repercussions for non-compliance, to agreements with aspirational targets and mild consequences for failure to attain them. Voluntary enterprise partnerships are a diverse group of programmes aimed at individual companies, with various mixes of information, education, promotion, advice, decision aids, inventories, assessments, audits, strategies, action plans, aspirational challenges and targets, monitoring systems, benchmarks, performance indicators, public reporting, public recognition, public–private cooperative action and sometimes financing.

Framework targets with measuring, reporting and verification (MRV) of emissions establish legally binding (i.e. mandatory) or indicative (i.e. voluntary) goals for emission levels (carbon budgets), technology shares, fuel shares and efficiency, followed up by MRV procedures to ensure compliance.

Information, education and awareness (labels, auditing, metering, advice and demonstration) programmes are intended to improve the availability and accuracy of information about the emission and energy characteristics of appliances and equipment. They include labels for household appliances and entertainment devices, office equipment and buildings, and audits for buildings (in the residential, commercial and public sectors), best practice manuals, motor ratings and plant audits (in the industrial sector), and labels for automobiles and tires (in the transport sector).

For examples of a combination of policies with financial, technical and economic instruments consult the [Global Good Practice Analysis](#).



Glossary

ACMP	<i>Association of Cementitious Materials Producers</i>	(I)NDC	<i>(intended) nationally determined contribution</i>
AFOLU	<i>agriculture, forestry and other land use</i>	LCD	<i>low carbon development</i>
BAU	<i>business-as-usual</i>	LEDs	<i>low emission development strategy</i>
BMUB	<i>German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety</i>	LULUCF	<i>land use, land-use change and forestry</i>
BMZ	<i>German Federal Ministry for Economic Cooperation and Development</i>	MAC Tool	<i>Marginal Abatement Cost Tool</i>
BUR	<i>biennial update report</i>	MCDA	<i>multi-criteria decision analysis</i>
CDKN	<i>Climate and Development Knowledge Network</i>	MOI	<i>means of implementation</i>
CDM	<i>clean development mechanism</i>	MRV	<i>measuring, reporting and verification</i>
CDP	<i>Carbon Disclosure Project</i>	NAMA	<i>nationally appropriate mitigation actions</i>
CHP	<i>combined heat and power</i>	NGO	<i>non-governmental organisation</i>
CONAVI	<i>Comisión Nacional de Vivienda</i>	NINO	<i>NAMA Idea Note template</i>
COP	<i>Conference of the Parties</i>	ODA	<i>official development assistance</i>
CTF	<i>Clean Technology Fund</i>	OECD	<i>Organisation for Economic Co-operation and Development</i>
DEA	<i>Department of Environmental Affairs</i>	PV	<i>photovoltaic</i>
DECC	<i>UK Department of Energy and Climate Change</i>	RE	<i>renewable energy</i>
DIA	<i>development impact assessment</i>	REDD	<i>reducing emissions from deforestation and forest degradation</i>
EE	<i>energy efficiency</i>	REEEP	<i>Renewable Energy and Energy Efficiency Partnership</i>
FICAM	<i>Financial and Cost Assessment Model</i>	REN21	<i>Renewable Energy Policy Network for the 21 Century</i>
GHG	<i>greenhouse gas</i>	SEMARNAT	<i>Secretaría de Medio Ambiente y Recursos Naturales</i>
GWP	<i>global warming potential</i>	SME	<i>small and medium-sized enterprises</i>
HFC	<i>hydrofluorocarbon</i>	TNA	<i>technical needs assessment</i>
HDD	<i>heating degree days</i>	UNDP	<i>United Nations Development Programme</i>
ICA	<i>international consultation and analysis</i>	UNEP	<i>United Nations Environmental Programme</i>
IEA	<i>International Energy Agency</i>	UNFCCC	<i>United Nations Framework Convention on Climate Change</i>
IKI	<i>International Climate Initiative</i>	WBCSD	<i>World Business Council for Sustainable Development</i>
IISD	<i>International Institute for Sustainable Development</i>	WRI	<i>World Resources Institute</i>
IPCC	<i>Intergovernmental Panel on Climate Change</i>		