Status Report on Nationally Appropriate Mitigation Actions (NAMAs)

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Disclaimer
The opinions expressed in this report are the author’s own and do not necessarily reflect the view of their respective organisations.

Production, layout and graphics
GRAS Communicatie
# List of abbreviations

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<th>Description</th>
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<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
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<tr>
<td>CO₂</td>
<td>Carbon dioxide</td>
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<td>COP</td>
<td>Conference of Parties</td>
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<td>CTF</td>
<td>Clean Technology Fund</td>
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<td>DBSA</td>
<td>Development Bank of Southern Africa</td>
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<td>DPP</td>
<td>Detailed Preparation Phase</td>
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<td>ECN</td>
<td>Energy research Centre of the Netherlands</td>
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<td>EE</td>
<td>Energy Efficiency</td>
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<td>ESCOs</td>
<td>Energy Service Companies</td>
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<td>ESMAP</td>
<td>Energy Sector Management Assistance Programme</td>
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<td>GCF</td>
<td>Green Climate Fund</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GEF</td>
<td>Global Environment Facility</td>
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<td>GHG</td>
<td>Greenhouse Gases</td>
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<td>IDB</td>
<td>Inter-American Development Bank</td>
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<td>IFIs</td>
<td>International Financial Institutions</td>
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<td>INDC(s)</td>
<td>Intended Nationally Determined Contribution(s)</td>
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<td>LAC</td>
<td>Latin-America and Caribbean</td>
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<td>Laos PDR</td>
<td>Laos People’s Democratic Republic</td>
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<td>LDCs</td>
<td>Least Developed Countries</td>
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<td>LFIs</td>
<td>Local Financial Institutions</td>
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<td>MDG</td>
<td>Millennium Development Goal</td>
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<td>MRV</td>
<td>Measuring, Reporting and Verification</td>
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<td>MSMEs</td>
<td>Micro, Small &amp; Medium size Enterprises</td>
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<tr>
<td>MtCO₂ₑ</td>
<td>Megatonnes of carbon dioxide equivalent</td>
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<td>MW</td>
<td>Megawatt</td>
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<td>NAMA(s)</td>
<td>Nationally Appropriate Mitigation Action(s)</td>
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<td>NDC(s)</td>
<td>Nationally Determined Contribution(s)</td>
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<tr>
<td>NGOs</td>
<td>Non-Governmental Organizations</td>
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<td>NSP</td>
<td>NAMA Support Project</td>
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<td>PA</td>
<td>Paris Agreement</td>
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<td>PPF</td>
<td>Project Preparation Facility</td>
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<td>RE</td>
<td>Renewable Energy</td>
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<td>SDGs</td>
<td>Sustainable Development Goals</td>
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<td>SEFA</td>
<td>Small Enterprise Finance Agency of South Africa</td>
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<td>SIDA</td>
<td>Swedish Development Agency</td>
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<td>SMEs</td>
<td>Small &amp; Medium size Enterprises</td>
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<td>SCF</td>
<td>Supply Chain Finance</td>
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<td>SUTRI</td>
<td>Sustainable Urban Transport Initiative</td>
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<tr>
<td>tCO₂ₑ</td>
<td>Tonnes of carbon dioxide equivalent</td>
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<td>TOD</td>
<td>Transit-Oriented Development</td>
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<td>UGEAP</td>
<td>Universal Green Energy Access Programme</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>UNEP</td>
<td>United Nations Environment Programme</td>
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<td>UNEP DTU</td>
<td>UNEP Technical University of Denmark Partnership</td>
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<tr>
<td>UNFCCC</td>
<td>United Nations Framework Convention on Climate Change</td>
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<tr>
<td>USD</td>
<td>United States Dollars</td>
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Foreword

With the signing of the Paris agreement in 2015 the call for rapid climate action has been strengthened. The focus of the climate agenda has shifted substantially from setting low-carbon policies to implementing them on the ground. The National Determined Contributions (NDCs) set the goals, now countries need to work on realising them.

National Determined Contributions (NDCs) set the goals, now countries need to work on realising them. Nationally Appropriate Mitigation Actions (NAMAs) are one way to achieve these goals. They have the focus on implementation embedded in their name - "action" and are one of the key instruments with a transformational approach.

This report shows that NAMAs are still important to developing countries - in the past 6 months, 30 new NAMAs have been registered in the NAMA database. NDCs and NAMAs have a strong link, for example, more than 45 countries mention NAMAs in their NDCs.

In this status report we identify that there is still a lot of activity in NAMAs who did not secure funding yet. The lessons learned from those NAMAs provide valuable insights for current implementation activities but there is not one fit for all solution, therefore we need to remain creative.

We explore financial mechanisms of low-carbon programmes and recognise elements that would be key for their success. The analysis provides food for thought to stakeholders active in the development of mitigation projects, including NAMAs.

We also take a step back by connecting the dots between different existing mechanisms that support sustainable development and economic growth. Taking a holistic approach to accelerate low carbon development by building on the foundation of NAMAs while enhancing linkages between NDCs and Sustainable Development Goals (SDGs).

I invite you to use the messages and insights of this NAMA Status report to:
- Be inspired - there is action happening
- Use the existing blueprints - we do not need to start from scratch, we can be creative and built on what exists
- Connect the dots - SDGs, Circular Economy, NAMAs - all have a similar goal. Addressing climate change making its actions mainstreams.

Katja Eisbrenner
Director, Ecofys, a Navigant Company
EXECUTIVE SUMMARY

The upward trend in NAMA development suggests that NAMAs continue to be relevant in the post-Paris climate landscape.

Despite difficulties in securing funding toward implementation, the number of NAMAs has increased by 28% in the last 12 months.

HOW TO PROPEL THE IMPLEMENTATION OF NATIONALLY DETERMINED CONTRIBUTIONS?

Learning from NAMA development experiences can guide developing countries in effective and efficient NDC implementation.

Some of the NAMAs that have not secured implementation funding have evolved into initiatives with NAMA-like features that have been able to attract financing.

Mainstreaming circular economy in climate programmes could significantly contribute to low-carbon growth.

Specially in countries, with negligible current contributions to global emissions but growing economies, circular economy approaches in climate action could help achieve not only mitigation targets but also sustainable development goals.

Designing financial mechanisms for replicability, scalability and sustainability increase the chances of attracting implementation finance.

Successful financial mechanisms enable the scale up of programmes’ investment volume, the replicability in other countries or regions, and the eventual phase out, when appropriate, of public sector and concessional finance.

ACHIEVING THE PARIS AGREEMENT’S GOALS IS ABOUT GETTING DOWN TO IMPLEMENTATION; AS LONG AS NAMAS ARE ABLE TO CONTRIBUTE TO THIS, THEY WILL REMAIN RELEVANT IN THE POST-PARIS CLIMATE LANDSCAPE.
Executive summary

The trends we have seen over the years in Nationally Appropriate Mitigation Action (NAMA) development continue to hold. In chapter 1 of this report, we see that the number of NAMAs recorded in the NAMA Database keep increasing, which is in line with our expectations, given their relevance in the post-Paris climate landscape. Meanwhile, securing funding for implementation remains a key obstacle, only 8.5% of the NAMAs have obtained implementation funding.

As the achievement of Nationally Determined Contributions (NDCs) targets is crucial for a successful Paris post-2020 agenda, in this edition of the NAMA Status Report, we present three angles from which developing countries could drive the implementation of NDCs and the role NAMAs could play.

1. The wealth of experience and body of knowledge that has been built up by public officials and NAMA practitioners in developing NAMAs (chapter 2).
2. The experience from project developers in designing financial mechanisms for low-carbon programmes, which have been successful in attracting international climate finance for implementation (chapter 3).
3. The emerging approach of mainstreaming circular economy in climate project pipelines, which could help countries achieve not only mitigation targets but also sustainable development goals (chapter 4).

In chapter 2, we present the preliminary results of a research we are conducting on NAMAs that have not secured funding for implementation, and we find signs that many of these initiatives are still very much alive. Some concepts and proposals are still being developed, some are looking to secure financing, and others have evolved into initiatives with NAMA-like features that have been able to attract implementation financing. Learning from the wealth of experience in developing these NAMAs can guide developing countries in effective and efficient NDC implementation.

In chapter 3, we provide insights into factors that are important to design financial mechanisms of low-carbon programmes. Our analysis suggests that successful financial mechanisms have in common that (i) they have been designed from the start with the idea that public sector finance and concessional (low cost) finance will be phased out where appropriate, (ii) they are designed to make the programmes scalable and replicable, and (iii) innovative financing structures are needed to ensure that public money is used to drive down the cost of capital or decrease risk for other investors, so as to ensure that private sector will find it easier to take some of the risks.

In chapter 4, an opinion piece from the United Nations Development Programme (UNDP) highlights that developing NAMAs and low-carbon programmes could embed circular economy approaches to significantly contribute to low-carbon growth, especially in countries with negligible current contributions to global emissions but growing economies.

Finally, in chapter 5, we provide our concluding remarks on what is next for NAMAs, and emphasise that they will remain relevant as long as they are able to contribute to the achievement of the Paris Agreement goals.
WHAT IS HAPPENING IN THE WORLD OF NAMAs?

The total number of NAMAs has increased by 28% in the last twelve months. There are currently 259 NAMAs in 69 countries unevenly spread across regions and sectors.

REGIONAL OVERVIEW

Africa (and the Middle East) has taken over Latin America (and the Caribbean) as the leading region in NAMA development, while Asia remains the frontrunner in terms of NAMAs under implementation. Europe is the most underrepresented region.

SECTORAL OVERVIEW

Despite a small decrease in its share of NAMAs, the Energy sector continues to lead NAMA developments. Both Agriculture and Transport have witnessed a strong boost in the past year. The Industry and Forestry sectors host the smallest number of NAMAs.
1 What is happening in the world of NAMAs?

By Coraline Bucquet (Ecofys)

Over the last six months, 30 new NAMAs have been recorded in the NAMA Database, maintaining the annual increasing trend in the number of NAMAs worldwide. After a sharp 40% increase in the year preceding the Paris Agreement (PA), the increase was 23% in 2016 and 28% in the past 12 months. A possible explanation for this continuous albeit slower growth of the NAMA pipeline is that the PA, which entered into force on 4 November 2016, has positively influenced the development of NAMAs both in its run-up period and since then. Nevertheless, only 22 NAMAs are currently under implementation, equivalent to 8.5% of the total number of recorded NAMAs in the NAMA Database.

This chapter provides an update on the status of the global NAMA pipeline, since the May 2017 edition, considering new developments between April 2017 and October 2017. The next chapter will provide further insights on the status of the pipeline.

A first look at NAMAs: status of the UNFCCC NAMA Registry

Following the 16th Conference of Parties (COP) in November 2010, the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat set up the NAMA Public Registry to allow countries to submit NAMA initiatives for recognition and for seeking international support. Over the years, it has become a publicly available online platform. Its aim is to record the NAMAs for recognition and facilitate the provision and matching of international technical, financial, and capacity building support to developing NAMAs. As in the previous editions, the NAMA Status Report includes NAMAs seeking international support for preparation and implementation (categories i and ii) of the UNFCCC NAMA Registry. It does not consider the NAMAs for recognition (category iii).

Box 1. The UNFCCC NAMA Registry

There are three types of NAMAs within the Registry:

(i) NAMAs seeking support for preparation: NAMAs that have not yet been developed and require financial or technical support to be prepared;

(ii) NAMAs seeking support for implementation: NAMAs that have already been developed and are ready to receive financial, technical and/or capacity building support for implementation;

(iii) NAMAs for recognition: NAMAs that developing countries have implemented or will implement without international support, seeking recognition for domestic mitigation efforts.

The Registry also offers additional information on the different financing sources in entries such as ‘Information on Support’ and ‘Supported NAMAs’.

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1 It is important to note that the increase in the number of NAMAs in the past twelve months may be due to either new NAMAs that have entered the development phase or existing NAMAs that had not been registered yet but were already under development. This uncertainty is due to the lack of comprehensive public data on these NAMAs.
3 UNFCCC NAMA Registry http://www4.unfccc.int/sites/nama/SitePages/Home.aspx
4 At the time of writing there were 9 NAMAs seeking recognition in the NAMA Registry (unchanged since 2016).
6 Only 18 entries have been entered in the ‘Supported NAMAs’ page in the Registry, including support given for the implementation of NAMAs (such as Morocco or Tunisia), for the preparation of the NAMA design document (such as Namibia or Laos), or for capacity development projects for NAMAs (for example Serbia). This list is not exhaustive and only represents part of the total support available for NAMAs to date.
7 Information on 18 organisations, initiatives or governments that provide financial support to NAMAs.
The total number of NAMAs submitted to the UNFCCC Registry continues to increase (Figure 1). The Registry now holds 140 NAMAs seeking support for preparation and implementation, compared to 137 since the last update in April 2017. However, NAMA submissions have considerably slowed down. Indeed, the run-up period to Paris, between December 2014 and October 2015, witnessed a steep increase of 86% in NAMA entries, but the following year reported only a 23% increase. The number of NAMA submissions has declined even further in the last twelve months, only growing by 8% since November 2016. Whether this change of pace denotes a potential decline in the interest in NAMAs as mitigation instruments remains to be seen. Nonetheless it provides a good indication of current trends. For this reason, NAMA submissions to the Registry, combined with other NAMA-related sources, should be carefully monitored in the future.

In the last six months⁴, the number of NAMAs seeking support for implementation has risen from 69 in April 2017 to 71 in October 2017. This small increase is due to both the addition of a new NAMA to this category and the change of the other NAMA from category “seeking support for preparation” to “seeking support for implementation”. It is worth noting that the number of NAMAs in the latter category, and this remains true since October 2016, is higher than the number of NAMAs that seek support for preparation. This is different from the year following the Paris Agreement, which saw more NAMAs seeking support for preparation than for implementation. A possible explanation of this change is that developing countries are becoming more aware of the potential and benefits of implementing existing NAMAs in order to achieve targets set out in their NDCs. Another possible reason is that more support, both technical and financial, has been given and that capacities in developing countries have gradually been built for the successful preparation of NAMAs.

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Figure 1. Submission of NAMAs to the UNFCCC NAMA Registry

⁴ Bucquet (2017). What is happening in the world of NAMAs? In 2017 Mid-Year NAMA Status Report
The share of NAMAs that receive financial support remains relatively low. Only one additional entry has been identified, bringing the number of supported NAMAs to 18. The NAMA for Energy Generation and End Use Sectors in Sri Lanka received funding for its implementation from the Global Environment Facility (GEF). The UNFCCC Registry provides a list of sources that support NAMAs, namely the GEF, the Governments of Austria and Japan, the NAMA Facility, the Spanish NAMA Platform, the Austrian NAMA Initiative, the Inter-American Development Bank (IDB), and the Australian funded UNDP Millennium Development Goal (MDG) Carbon programme. Despite the diversity of sources, only 13% of NAMAs (a total of 18) in the Registry are tagged as having received support (from 12% or a total of 17 in April 2017).

Another eye on NAMAs: status of the NAMA Database

The NAMA Database contains publicly available data for NAMAs worldwide. Updated on a regular basis, the NAMA Database collects information from the UNFCCC NAMA Registry, the NAMA Facility, the NAMA Pipeline Analysis and Database, as well as additional publicly available information on NAMAs.

According to the NAMA Database, the total number of NAMAs globally continues to expand. Currently, 259 NAMAs are listed, up from 203 in November 2016 and 229 in April 2017, representing an increase of 13% since April 2017 and 28% over the past twelve months (Figure 2).

Box 2. The NAMA Database

NAMAs, in the database, are categorised as either ‘under development’ or ‘under implementation’. Criteria for these two categories are:

(i) NAMAs under development: NAMAs that have the intention to seek financial, technical transfer or capacity building support under the UNFCCC; have a specific mitigation objective given within specific sector(s); and have received government backing.

(ii) NAMAs under implementation: NAMAs that meet all the criteria mentioned above; have a clear proponent and a clear set of activities across a defined timeline; specify cost estimates and support needs; specify GHG mitigation and co-benefit impacts; have received some international support to implement proposed actions; and make the size and source of funding publicly available.

The NAMA Database also contains feasibility studies, which have not received official government support, and unilateral NAMAs, which are purely domestic initiatives. As in all past reports, these initiatives are excluded from the statistics presented in this report.

Note: The NAMA Database does not represent official NAMA submissions and may not reflect the priorities of the country governments.

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9 NAMA Database: http://nama-database.org/index.php/Main_Page
10 NAMA Facility: http://www.nama-facility.org/news.html
11 UNEP DTU NAMA Pipeline Analysis and Database: http://www.namapipeline.org/
12 All data and figures given in this section refer to the NAMA Database, dated 4th October 2017.
14 At the time of writing there are 35 feasibility studies listed in the NAMA Database, as in April 2017.
Since last May, there are 28 new NAMAs under development and two additional NAMAs under implementation spread across regions and sectors. Only the Energy Generation NAMA in Sri Lanka and the Argan NAMA in Morocco managed to receive financial support for implementation in the past six months. However, as mentioned in the previous report, in March 2017 the NAMA Facility announced support for the Detailed Preparation Phase of seven NAMAs (in Brazil, Mexico, Philippines, Thailand, Tunisia and Uganda) as part of its 4th call. This support, combined with other country initiatives, might contribute to maturing the NAMA pipeline in the future.

One key and consistent fact is that the number of NAMAs under implementation recorded in the NAMA Database remains low: 22 NAMAs have (partially) secured implementation funding compared to the 237 NAMAs that are still in the development phase. This share of only 8.5% has been almost constant over the past three years. Also, it is important to note that the category ‘under implementation’ does not necessarily mean that the NAMA is sufficiently financially supported. Securing the scale of finance required for implementation of NAMAs remains a challenge, and only through a combination of funding from public and private sources can these requirements be met.

The NAMAs listed in the database cover 69 countries, including four additional countries (Cuba, El Salvador, India, and Palestine) since the last update in April 2017. All continents (Europe, America, Asia and Middle East, Africa) are represented but some countries host a higher number of NAMAs than others (still many countries have none). The difference in numbers may depend on, to name a few, the alignment between NAMAs and climate mitigation strategies of developing countries, the pro-activeness of governments and other stakeholders to move NAMAs to implementation, the efforts made by developing countries to seek technical and financial support, or the level of climate awareness. Moreover, over 80% of these NAMAs are developed at the national level, instead of at the regional or community level as is sometimes the case.

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15 http://www.nama-facility.org/projects/portfolio.html

16 It is not clear whether these countries started these NAMA activities in the last twelve months or if they had already started working on these NAMAs without registering them.
Regional distribution of NAMAs

The last six months have witnessed a change in the geographical distribution of the total number of NAMAs, both under development and implementation. Africa (and the Middle East) has taken over Latin America in both its share and number of NAMAs. Indeed, Africa (and the Middle East) now hosts 93 NAMAs, representing 36% of the total number of NAMAs (from 69, representing 30% in April 2017) compared to Latin America with 84 NAMAs, representing 33% (from 82 or 36% in April 2017). Asia remains the third region, hosting 4 new NAMAs, of which one is currently under implementation\(^7\). Only 14 NAMAs remain under development in Europe, accounting for 5% of the total number of NAMAs across the world (Figure 3).

\(^7\) It is important to note that this increase may not necessarily mean that these NAMAs are new NAMAs developed in the last six months, but rather that they have just been recently recorded in the NAMA Database.

Sectoral distribution of NAMAs

The sectoral distribution of NAMAs has not considerably changed over the past year, and the uneven spread of NAMAs across the seven major economic sectors prevails (figure 4). The Energy sector now holds 97 NAMAs (both under development and under implementation), and maintains its leading position. Both with a 12% share of NAMAs, the Transport and Waste sectors are the next two most represented sectors, especially in African and Latin American countries. Focus on the Buildings sector is largely found in Europe and to a lesser extent in Latin America. Agriculture hosts 8% of all NAMAs, and is mostly relevant in Africa. Also, Asia has by far the highest interest in developing NAMAs in the Industry sector. Forestry remains an underrepresented sector, accounting for only 3% of NAMAs.

\(^8\) This NAMA entered in the Registry as under implementation.

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Figure 3. Regional distribution of NAMAs (under development and implementation)
In absolute terms, every sector has increased its number of NAMAs since April 2017. The Energy sector has added six NAMAs to its portfolio, mostly in Africa (and the Middle East). Four Agricultural NAMAs and four Transport NAMAs have emerged, all in Africa (and the Middle East), including one NAMA under implementation\(^*\). Also, multi-sectoral NAMAs are widely represented, totalling 37 NAMAs up from 30 in April 2017. This could reflect synergies between sectors being made and countries seeing the broader cross-sectoral benefits of NAMAs. It seems that NAMAs in these sectors or in a combination of sectors have gradually gained interest.

\(^*\) This refers to the NAMA in the Argan sector in Morocco.

\(^{20}\) For this analysis, interviews were held, in November 2016, with country representatives from Azerbaijan, Colombia, Georgia and Indonesia as well as the NAMA Facility. More details can be found in the 2016 NAMA Annual Status Report. [http://mitigationmomentum.org/downloads/Mitigation-Momentum-Status-Report-NOV2016.pdf](http://mitigationmomentum.org/downloads/Mitigation-Momentum-Status-Report-NOV2016.pdf)

**A closer look at NAMAs: zooming in on NAMAs under implementation**

The level of maturity of NAMAs is an important factor in determining their contribution to reaching the global climate targets. At the moment, the UNFCCC NAMA Registry records NAMAs under ‘seeking support for preparation’ or ‘seeking support for implementation’, and the NAMA Database categorises NAMAs as ‘under development’ or ‘under implementation’. The rationale behind this categorisation is similar, namely to distinguish the status of these NAMAs. Going further, the level of maturity of NAMAs depends on the availability, amount, source and coverage of the financing they receive. For this reason, it is relevant to breakdown this categorisation and identify the various stages of implementation\(^{20}\) (Box 3).
The categorisation of NAMAs remains a challenge, mostly because the status of implementation of NAMAs depends on a wide range of factors, each with their synergies, discrepancies and specificities. Financing is not the only criterion to consider when classifying NAMAs, and international support received is only one piece of the puzzle for full implementation of a NAMA.

While NAMAs are fundamentally rooted in domestic public effort, they often require additional international support. It is also paramount that NAMA activities foster the engagement of the private sector and leverage additional private investments.

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**Box 3. Categories of NAMAs under implementation**

NAMAs under implementation can be classified according to the level of financing they have received. The four categories that measure the extent to which NAMAs are being implemented on the ground are:

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<tr>
<th>Category</th>
<th>Requirements</th>
</tr>
</thead>
</table>
| Fully funded       | • International funding has been received  
                    • Funding (international, national, private) covers the total cost of the NAMA  
                    • Adequate financial mechanisms are established  
                    • All activities linked to the implementation of mitigation activities envisaged in the NAMA proposal have been or are being executed |
| Partially funded   | • International funding has been received  
                    • Funding (international, national, private) covers a part of the total cost of the NAMA  
                    • Additional financing sources (international, national, private) are sought  
                    • Financial mechanisms have been researched, but not necessarily established  
                    • Some activities linked to the implementation of mitigation activities envisaged in the NAMA proposal are being executed |
| Financing approved | • Funding proposals have been submitted to and approved by an international donor  
                    • Bilateral project agreements are under discussion  
                    • Additional financing sources (international, national, private) are sought  
                    • Financial mechanisms have been researched, but not yet established  
                    • No activities linked to the implementation of mitigation activities envisaged in the NAMA proposal are executed yet |
| Under appraisal    | • Funding proposals have been submitted to an international donor  
                    • Funding proposals are being assessed by the donor  
                    • Additional financing sources (international, national, private) are sought  
                    • No activities linked to the implementation of mitigation activities envisaged in the NAMA proposal are executed yet |

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21 Interviewees were mainly based in October 2016 with NAMA proponents in countries and the NAMA Facility for this analysis. According to the interviewees, some preliminary activities are carried out once funding is approved but not yet been sourced. Indeed, some the financing process occurs over several years. Activities such as the design of the NAMA concept, the development of the Measuring, Reporting and Verification (MRV) component and capacity building actually take place before funding is approved. However, generally the majority of the technical activities towards concrete mitigation actions only start once funding is disbursed.

22 An example is the NAMA Facility which classifies its NAMA Support Project proposals under the ‘appraisal’ category. According to an interviewee from the NAMA Facility, this phase entails the thorough assessment of these proposals, including ancillary missions and additional feasibility studies, as well as discussions between the national government and the donor to clarify the ambitions of the NAMA, which will be considered for the final decision of the donor. This process can take up to 18 months.

23 Using the information in the NAMA Database, this report focuses mostly on contributions from international donors, which will be used to leverage additional national public and private finance.
Based on this categorisation, 22 NAMAs are currently considered under implementation, representing only 8.5% of the total number of NAMAs worldwide. They are spread unevenly across regions, sectors and status. The share of NAMAs under implementation has remained relatively constant, and low, in the past three years. Nonetheless, since April 2017, two new NAMAs have secured funding including Sri Lanka (energy generation and end use sectors) through the GEF and Morocco (argan sector) through the Green Climate Fund (GCF).

Out of these 22 NAMAs, 65% (14 NAMAs in total) remain in the earliest stages of implementation: eight are still under appraisal for financing and six still have not yet received the approved financing. The addition of two more mature NAMAs explains the lower share of the latter categories since April 2017 (Figure 6). One striking fact is that, for the first time, a NAMA is being fully funded, increasing the share of this category to 5%. Indeed, the NAMA in the Argan sector in Morocco, supervised by the Moroccan Agency for Agricultural Development, has received USD39.3 million from the GCF, covering the total cost of the NAMA. Moreover, the Sri Lanka Energy NAMA, which received USD1.79 million from the GEF, brings the number of partially funded NAMAs to 7.

Typically, NAMAs under this category have already started designing activities and leverage the disbursed funds to implement these on the ground. However, more financial resources need to be mobilised to accelerate the implementation of NAMAs and to reach a stage where all the planned NAMA activities are underway.

The NAMA Facility finances the highest number and share of NAMAs, currently 64% of NAMAs under implementation. The NAMA Facility, a multi-donor fund, has provided approximately €262 million across its four calls since its creation in 2012, to support developing countries in implementing ambitious actions to mitigate GHG emissions, particularly through the NAMA mechanism. Despite a lower contribution in terms of share of NAMAs under implementation (down from 70% in April 2017), the NAMA Facility is bound to maintain its leading position. Indeed, the seven NAMAs currently under development, which have received funding for their Detailed Preparation Phase (DPP) in the 4th Call of the NAMA Facility, are likely to move towards implementation in the near future. Moreover, in a recent joint workshop with the NAMA Facility and the GCF, lessons were shared, and cooperation opportunities were identified mainly in project origination, performance measurement, and Measuring, Reporting and Verification (MRV). Such events, even though disparate, show that dialogue and awareness-raising efforts are being made to further advance NAMA implementation.

![Figure 5. Number of NAMAs across different stages of implementation](image-url)
Regional distribution of NAMAs under implementation

Even though Asia only hosts a quarter of the total number of NAMAs worldwide, the region remains the frontrunner in terms of NAMAs under implementation. With one fully-funded NAMA recently added to its portfolio, Asia is currently in the process of starting the implementation of nine NAMAs (representing 41% of the total number of NAMAs in this category), of which almost two thirds have already been partially funded or are close to receiving funding. Latin America still has seven NAMAs in all stages of implementation. Africa (and the Middle East) is now implementing six NAMAs, most of them only ‘under appraisal’, but with a new ‘fully-funded’ NAMA. In Europe, there are no NAMAs under implementation (Figure 5). Also, implemented NAMAs are mostly located in middle income countries: half continue to be in upper-middle income countries, followed by 41% in lower-middle income countries with three additions (Morocco, Sri Lanka and Vanuatu) over the past twelve months, one in a low-income country (Burkina Faso) and one in a high-income country (Chile). Colombia is the first and only country to have received financing for implementation of two NAMAs, both by the NAMA Facility.

Sectoral distribution of NAMAs under implementation

Following the general sectoral trend of NAMAs worldwide, energy remains the leading sector in NAMAs under implementation. The energy sector accounts for 36% of these NAMAs, up from 35% in April 2017, in part due to the recent addition of the Energy Generation NAMA. Energy is also the frontrunner sector in all three continents, representing half of NAMAs under implementation in Africa (and the Middle East) and around a third in Asia and Latin America. Transport follows, with a 14% share and a total of 3 NAMAs, present solely in Africa (and the Middle East) and Latin America. Thanks to its new NAMA, Agriculture has now equalled Buildings and Forestry, each hosting 2 of the NAMAs under implementation. Building on synergies between sectors, multi-sectoral NAMAs continue to play an important role, representing almost one fifth of the number of NAMAs under implementation (a total of 4). Waste, only relevant in Africa, is the most underrepresented sector. Also, Industry is the only sector that does not have any NAMA under implementation.

Figure 5. Number of NAMAs under implementation worldwide

- weg: These countries have been categorised by country income groups, according to World Bank Classification. https://datahelpdesk.worldbank.org/knowledgebase/articles/906519
- weg: The two NAMAs in Colombia are for Transit-oriented Development (TOD) and for the domestic refrigeration sector. Funding under the NAMA Facility is under appraisal following, respectively, a first and third call for NAMA Support Project Outlines.
Most existing analysis focuses on NAMAs that have managed to secure funding for implementation, which is only approximately 10% of all recorded NAMA initiatives, while progress and status of the NAMAs still ‘under development’ remains opaque. We set out to look beyond the statistic that 90% has not (yet) been successful to unveil what their current status is. What we observe so far is diversity in the NAMA pipeline: many initiatives are still under active consideration and some even close to implementation. This Chapter presents some preliminary findings from our ongoing research.

Although there is no dedicated funding source beyond the NAMA Facility, we expect NAMAs to play an important role in NDC implementation in one way or another, and argue that there is a clear role for interventions with NAMA-like features in NDC implementation (ECN & Ecofys, 2016). Now that the spotlight is on NDCs, we believe it to be an opportune time to take a closer look at the pipeline.

What do we want to know and why?
We know that a relatively high proportion of NAMAs have not secured funding, but we want to look beyond the statistics to find out the progress and current condition of these NAMAs for three reasons. The first is a pragmatic one: how close are the NAMAs to implementation, what would be the impact for NDC implementation, and what would it take to move them forward? Second, since the COP 15 in Copenhagen, a community of practitioners and substantial body of work on NAMAs has been established. NDC implementation will require government led action, thus we should learn from past and present experience working on NAMAs to be effective and efficient in the future on NDC implementation. Third, a large amount of public funds and political capital has been invested in developing NAMAs. Only focusing our analysis on the relatively small number that have secured funding, without knowing the status of NAMAs that have not, would be a missed learning opportunity. Moreover, given this high level of investment in developing NAMAs it would be at the very least prudent to understand what the future could hold for NAMAs in the pipeline.

The starting point for our analysis is the simple framework (Figure 7) proposed in the previous edition of this report (van Tilburg, 2016).
Preliminary results

This section presents findings from a first sample of 28 NAMAs. The preliminary results indicate that further analysis is indeed useful. Until now we have conducted interviews with experts involved in the development of 28 NAMAs, and we expect the final results to be drawn from a (much) larger sample.

Figure 8 shows that a high number (20 out of 28) of NAMAs are considered to be either in an 'Active' state or are being 'Used (partially) outside of the NAMA' (i.e. a NAMA proposal, or elements of it, are used in other initiatives e.g. a GCF proposal). A small number (8 out of 28) is considered to be stalled (i.e. the NAMA is not progressing closer to implementation) or infeasible / obsolete (i.e. the NAMA is no longer considered).

Figure 9 shows that from the sample of 28 NAMAs, 7 proposals have been submitted to the NAMA Facility and were unsuccessful in securing funding. Some are currently being redeveloped with the intention of (re) submission to the Facility, some have been tailored to requirements of a different funder (such as the GCF), and others appear to have made no further progress. A further 12 NAMAs are considered by respondents to be ready for funding. Although these 19 NAMAs reached mature stages of development, they did not manage to secure financing for implementation. We discuss potential reasons for this in the following section.
According to the NAMA practitioners we interviewed, the link between the NAMA(s) they have worked on and the country's NDC is typically either strong or very strong (18 out of 28 NAMAs), as shown in Figure 10. Some respondents suggested that NAMAs were the foundation of the country's NDC, or that the NAMA is mentioned explicitly in the NDC thus the link is 'very strong'. The recent focus on NDCs may have led some countries to revisit NAMA development as a mechanism to achieve the mitigation targets they have pledged. These observations support the presupposition that in a post-2020 climate regime, NAMAs will still play an important role.

From the interviews, we observe some themes that have already emerged in previous reports where we have talked about NAMA development. The following section discusses some of these themes.

Discussion

Funders are open to receiving NAMA-like proposals. Funders of mitigation activities are open to receiving proposals for NAMAs, but submitters are not required to use the NAMA label. Many NAMA concepts are still very much alive in terms of attempting (or already succeeding) to secure finance from various sources, most notably the GCF. One observation from our research thus far is that NAMA concepts and proposals that have been developed to target a specific funder of NAMAs (the NAMA Facility) will be useful in developing mitigation actions that support achieving countries NDC ambitions. Several initiatives that started out as NAMAs, because they targeted the NAMA Facility for funding, have since dropped the label 'NAMA' because it is no longer needed when trying to attract funds from alternative sources.

Technical assistance limitations

Often NAMAs have been developed without adequate financial resources and technical or financial expertise, and in some cases there is no more funding available for technical support to further develop the NAMA concept or proposal. The development of NAMAs has largely been driven by small think-tanks and Non-Governmental Organizations (NGOs) with very small amounts of financial resources (Cameron, et al., 2015). Designing quality concepts and proposals for mitigation actions that can have a transformational impact is a complicated, time-consuming process that requires application of specialist knowledge (technical and financial), thus sufficient resources need to be dedicated to the design phase.

The Green Climate Fund appears to be taking project preparation seriously through the introduction of its Project Preparation Facility (PPF). During its initial phase the PPF has made USD 40 million available, mainly in the form of grants of up to a maximum USD 1.5 million per GCF Accredited Entity, for project and programme preparation support. Financial support at this scale has not been provided for NAMA development.

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Figure 10. Linkage between the NAMA and the country’s NDC

Small think-tanks and NGOs, who supply only technical assistance for NAMA development, and not financial resources for implementation, do not have the convening power to enact regulatory change. Instead this should be done by larger organisations that are able to either supply the financial resources themselves or have the power to attract other financiers to fund NAMA implementation. There is a missing scale and commitment behind NAMAs, without which it is difficult to change the regulatory status quo, which is often needed for NAMAs to move to implementation.

Getting the timing right
A NAMA concept may be relevant and useful at a specific time, but if an external event, for example a global or regional economic downturn or a shift in government priorities and policies, causes the enabling environment for the NAMA to worsen, the NAMA concept may need to put on hold until the time is right. An example is in Chile where UNDP has been developing a NAMA to convert organic waste to biogas for electricity generation. UNDP spent a large amount of resources to develop a NAMA proposal ready for funding, but there was a government decision to prioritise solar energy as the country’s main renewable energy source, and incentives were put in place to scale up solar deployment, making it difficult at the moment to move the NAMA closer to implementation.

Policy and regulatory uncertainty can be a risk to potential investors, particularly in developing countries and emerging economies. As a result, NAMAs can be stagnated, in part contingent on improved policy and regulatory conditions. This is one area where a NAMA Support Project (NSP) could play a key role in triggering the removal of regulatory and institutional barriers that prevent scaling up of private investment into low-carbon technologies and markets. Removing uncertainty can also help to scale up investment into NDC implementation.

Scale and diversity of NAMA finance
Leveraging private sector investment with public funds has been a key objective of NAMAs, but thus far they have largely failed to do so. The scale and diversity of finance needs to be substantially increased. The NAMA Facility has been supporting the early stages of NAMA implementation, providing mainly grant funding to their portfolio of NAMA Support Projects. Each NSP receives approximately €10-15 million of funding, which is a welcome catalyst for full NAMA implementation. But the scale of financing required for full NAMA implementation is much greater. The NAMA Facility has played a key role in early stage financing of NAMAs, and can continue to do so in the future, but it cannot provide the scale of finance needed on its own. A range of potential funders is needed that can provide much larger amounts of capital for NAMA implementation, which will also be helpful for NDC implementation.

Box 4 presents a short case study on NAMA development in Indonesia to bring to life some of discussion points mentioned here. NAMAs are closely connected to government action plans on GHG mitigation, and to the country’s NDC, and as such are expected to stay relevant in an NDC-world.

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38 The NAMA Facility provides tailor-made climate finance by funding the implementation of NAMA Support Projects, which are a combination of technical and financial measures covering the most ambitious parts of NAMAs. There are 21 NAMA Support Projects in total. The full list can be seen on the website of the NAMA Facility: [http://www.nama-facility.org/projects/](http://www.nama-facility.org/projects/)
Box 4. Case study: Indonesia

NAMAs in Indonesia\(^9\) (past and present)

All NAMAs in Indonesia are connected to the National Action Plan for the Reduction of GHG Emissions (RAN-GRK) and geared towards achievement of the current mitigation target of -26/-41% until 2020 as measured against the business as usual scenario. Indonesia, as the host country of the 2007 COP 13, has a special reference to NAMAs, as the Bali Action Plan resulted in NAMAs as the main vehicle for developing countries to join a global agreement. It comes as no surprise that Indonesia was one of the very first countries to work out a detailed concept for NAMAs, which later informed the national climate policy architecture. Since then, a lot of NAMAs have been developed in all of the 6 RAN GRK sectors, some of which have moved into implementation such as the Sustainable Urban Transport Initiative (SUTRI NAMA), but many did not advance further than preparatory stages, with an abatement potential of an estimated 500 MtCO₂e.

What has happened to the NAMAs in Indonesia that have not secured funding?

A tracing exercise into the fate of Indonesian NAMAs that did not make it to the funding and implementation stages, reveals a variety of insights in regards to their status and the challenges faced. For example, the smart rice NAMA targets farmer communities at a local level by developing techniques to enhance both rice yields as well as lowering emissions. While the NAMA targets the dual benefits of development and mitigation, the proposal did not yet advance beyond the preparation stage even though stakeholders are still engaged with enthusiasm. What can be learned is that locally developed NAMAs require a certain amount of time, in particular when working with small farmers. Another example from a very different sector tells another story. The Indonesian Cement NAMA has the ambition to lower GHG emissions by switching fuel in cement kilns from coal to industrial waste. The proposal is fully developed and the main stakeholders from industry and government are still active. Proponents of the NAMA decided to look for domestic funding coupled with bilateral cooperation, and work in subsequent stages on a more detailed funding strategy, also involving multilateral funds.

An overview on the stage and state of the Indonesian NAMAs reveals that the majority of NAMAs have developed solid concepts and strategies and many of them are still active. Within this bigger picture, taking a closer look shows that most of them need to be more detailed to meet international funding requirements, some are funded outside of regular NAMA funding, some have stalled, while yet others have faced regulatory gaps and are therefore on hold.

Will NAMAs stay relevant in the NDC-world?

Virtually all of the Indonesian NAMAs fit tightly to the sectoral scope of the country’s NDC. In that way, their GHG emission reduction actions and most importantly their readiness activities would directly contribute to the achievement of the NDC targets. This confirms principally the nature of the ratcheting-up mechanism for the NDCs: NAMAs can act as building blocks and important primers for mitigation actions in the sectors upon which the NDC can build. Naturally NAMAs are relevant in the NDC-world, as the impressive portfolio of NAMAs constitute the pre-2020 actions, which cannot be swept under the carpet by switching attention solely to NDCs. Lessons already learned from developing NAMAs need to be heard and support might be targeted specifically to address these in order to enhance the chances for success of NDCs.

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\(^9\) Case study provided by Syamsidar Thamin and Heiner von Luepke.
Next steps
There seems to be much to learn about the development of NAMAs than the headline statistic of the low number of NAMAs under implementation suggest. Taking a first look at the NAMA pipeline, and not focusing only on those that have already secured funding for implementation, has already led to some interesting observations. We are convinced that it is far too early to dismiss NAMAs altogether before finding out what has happened to them all and maximising the lessons learned from NAMA development. This can also be helpful for NDC implementation.

Thus far, our analysis has been based on a sample of only 28 NAMAs, and we estimate there are approximately 180 NAMAs that have not reached the stage of securing funding for implementation. We will continue our research until December 2017, by which time we aim to conduct a more thorough analysis and triangulation of the results drawing from a much larger sample size. We expect to publish the final results in a discussion paper in December 2017.
3 What to consider when setting up financial mechanisms?  

By Angélica Afanador, Thomas Haehl and Noémie Klein (Ecofys)

In the last edition of the NAMA Status Report (from May, 2017), we discussed approaches to involve the private sector in NAMA development, and financial instruments to attract private investments in NAMAs. In this chapter we go a step further to provide insights into important factors that should be considered when setting up financial mechanisms.

Accessing climate finance remains a challenge for developing and less developed countries. To cover the costs of mitigation actions, countries tap into national public funds, international public finance, and private sector investments. However, the level of success in accessing finance continues to be low. As seen in chapter one, of the total of 259 NAMAs developed since 2010, around 8.5% succeeded in securing funds for implementation. In the Annual Status Report on Nationally Appropriate Mitigation Actions (2016) and more broadly through the Mitigation Momentum Project, we have highlighted this trend and identified that one of the major reasons for this is the weakness of the financial mechanisms attached to the NAMAs. See box 5 for a definition of a financial mechanism. Most NAMAs and other low-carbon programmes that seek international climate finance appear to be facing difficulties in achieving financial close.

In light of this, we tried to shed light on the following question: what factors make a financial mechanism successful? Our detailed analysis is presented in a forthcoming research paper (Afanador & Haehl, 2017). In this research we studied three concrete renewable energy (RE) and energy efficiency (EE) programmes with NAMA-like features, such as alignment with countries’ climate strategies and expected significant mitigation impact with socio-economic co-benefits. We focus on the energy sector for three reasons: it is the largest contributor to GHG emissions and therefore plays a major role in achieving the temperature targets of the Paris Agreement; it is almost universally included in all mitigation commitments of NDCs; and it is the sector with the largest share of NAMAs.

Box 5. What do we mean by financial mechanisms?

In this chapter, the financial mechanism is the mechanism that enables investments under a NAMA-like programme. It is designed to lower the financial risks and/or improve the returns so as to mobilise investments. It is made of the programme’s business case and financing structure. The business case justifies why the programme should be implemented. It explains, for example, the type of energy services between stakeholders, such as end users and ESCOs, but also the profitability of the RE and/or EE services. The financing structure explains how the programme and the projects implemented under the programme will be financed. This includes the financial flows from public and private funders (amounts and frequency) from the financiers to the beneficiaries and the financial instruments used (e.g., loans, grants, equity etc.).

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40 This chapter summarises the findings of the research conducted from September-October 2017. A more extensive paper will be published presenting more details on the methodology, the cases analysed and the findings.  
41 Financial close occurs when all project and financing agreements have been signed and all the required conditions contained in them have been met. It enables funds (e.g. loans, equity, grants) to start flowing so that programme implementation can actually start.
The programmes have the following characteristics: (i) households and (micro) small and medium-size enterprises are the main beneficiaries, (ii) programmes have been awarded implementation funding, and (iii) programmes (or at least some components of the programme) are currently under implementation.

Our analysis is based on literature review and interviews, and it followed a three-step approach, summarised in the annex. The three programmes analysed are described in boxes 6, 7, and 8.

The financial mechanism of NAMA-like programmes aims to lower the financial risks and/or improve the returns so as to mobilise investments. NAMA-like programmes also need to create a policy framework that enables these investments (e.g. regulations, institutional framework, outreach activities). This needs to be designed in parallel to the financial mechanisms, which are the focus of this chapter.
Box 6. Energy Efficiency Green Bond in Latin America and the Caribbean

Unlocking the financing of EE projects through capital markets securities

The challenge: Small and Medium size Enterprises (SMEs) that offer energy efficiency services have limited access to financing, they lack the collateral that commercial banks demand, and therefore their track record with these banks is low. Local financial institutions’ knowledge and experience in EE investments is minimal and their risk perception on such investments is high.

The solution: a green bond in which a pool of EE projects is packaged, issued and backed by the energy cost savings generated by the underlying projects.

The financial mechanism (phase II):*

- Financial stakeholders: GCF, IDB, the Clean Technology Fund (CTF), and private sector stakeholders
- Financial instruments: Guarantee (provided by GCF, IDB, CTF), Grant (provided by GCF), Loan (provided by IDB), Equity (provided by the private sector), Bond (provided by private sector)
- Co-financing share (next to GCF): 85%
- Private funding share: 69%

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*Phase II refers to the financial mechanism that is based upon the good results of phase I, a pilot project in Mexico, which had a similar financial mechanism structure. The financial mechanism for this programme is the result of combining good results of a pilot project in Mexico, the potential for scale up in the country and replicability in the region, and the ambition of country governments to increase EE investments in their economies.
Box 7. Supply Chain Finance (SCF) Capital Solutions
Increasing MSMEs’ working capital through supply chain financing techniques

The challenge: Micro, Small and Medium size energy service companies (MSMEs) have limited access to financing, they have a small track record with commercial banks, and they lack the collateral that these banks demand. Besides, local financial institutions avoid offering such financing to SMEs because their knowledge and experience in EE and RE investments is minimal.

The solution: a supply chain finance (SCF) fund whereby MSMEs’ working capital is increased. Credit approval decisions are made based on the credit worthiness of the energy service buyer (not the MSMEs), the fund provides loans that directly finance the costs of supply while the buyer directly finances the loan.

The financial mechanism
• Financial stakeholders: GCF, private investors, the Small Enterprise Finance Agency of South Africa (SEFA), the Development Bank of Southern Africa (DBSA), SCF Capital Solution (a private sector fund).
• Financial instruments: Equity provided by SEFA, DBSA, SCF capital solution and the GCF, and loans provided by the SCF fund itself.
• Co-financing share (next to GCF): 64%
• Private funding share: 36%
**Box 8. Universal Green Energy Access Programme**

**Empowering local financial institutions (LFIs) to enable local financing of rural electrification**

**The challenge:** limited access to electricity in rural communities of Sub-Saharan Africa (SSA), frequent power shortages and high prices of electricity. National public funds are limited and not enough to cover the capital required to solve these challenges.

**The solution:** a fund capitalised by public and private sector funding to empower local financial institutions (LFIs) through funding and risk participation agreements. Through these agreements, LFIs are able to provide loans of longer duration in local currency or in USD for ESCOs that offer clean electricity solutions to households and industries, such as solar home systems, renewable energy mini grids, and renewable electricity for industries.

**The financial mechanism**
- Financial stakeholders: GCF, Deutsche Bank, Private sector investors, public sector investors
- Financial instruments: Grant (provided by GCF), Equity (provided by Deutsche Bank, private sector, public sector), Guarantees (provided by the Swedish International Development Cooperation Agency (SIDA))
- Co-financing share (next to GCF): 73%
- Private funding share: 67%
What makes these financial mechanisms successful in securing implementation funding?

We analysed the structure of the programme’s financial mechanisms (see boxes 6, 7, and 8) and the processes that took place in setting them up, and identified factors common among the three cases that enabled them to secure funding for implementation.

For each programme, the success of the financial mechanisms was linked to three elements: a strong business case, a viable financing structure, and the factors that enabled the development of the first two elements.

A business case is strong when it is able to address the technical and financial barriers that prevent RE/EE programmes to advance, thereby making a clear case for going ahead with the programme. A financing structure is viable when it enables the implementation of programmes through cost-effective use of public and private monies. We illustrate this using the image of a house (see Figure 11).

I. The foundation: the business case
II. The roof: the financing structure
III. The pillars: the factors of success

A concrete example is provided by elaborating on the following factor of success: financial viability. If the business case for RE and/or EE programmes or projects is not financially viable—e.g., the project economics indicate that amortisation time is prohibitively high—then the house’s structure would be compromised, meaning that the financial mechanism will likely not be a success. The same holds true if the financing structure is not financially viable—e.g., the loan’s interest rate is insufficient to attract funding. A further example is provided by elaborating on the following factor of success: stakeholder capacity. If stakeholder lack the capacity to implement RE and/or EE projects—e.g., there are no ESCOs that know how to install RE and/or EE measures or local banks have limited expertise on RE and/or EE project financing—then the house’s structure would also be compromised, meaning that the financial mechanism would likely be unsuccessful.

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43 The assessment of the success is based on factors that helped programme developers to attain implementation financing rather than on results of actual implementation of the programme. This limitation is due to the fact that, while the three programmes are fully funded, they are not 100% under implementation yet.
**Zooming in: the eight pillars of a successful financial mechanism**

Through the analysis, we gained insights into what is needed to make the business case and the financing structure effective, these insights translate into eight factors of success or enablers (the pillars illustrated in Figure 11):

1. Governmental leadership
2. Impact creation
3. Financial viability
4. Engagement of stakeholders
5. Tailoring to local needs
6. Capacity of stakeholders
7. Scalability & replicability
8. Continuity & sustainability

It is not surprising that factors one to six have been important in the development of the financial mechanisms. The results of previous climate finance research under the Mitigation Momentum Project, has indicated that it is often the case that international financial institutions (IFIs) treat some of these as key investment criteria (Cuntz, Afanador, Klein, Barrera, & Sharma, 2017). These first six factors can be seen as conditions to lay the groundwork for the successful development of financial mechanisms.

**Governmental leadership**

For all three programmes, we found that they were initiated by a first national governmental drive and commitment to increase renewables and energy efficiency in the participating countries. These countries either set up RE and/or EE targets, established policies to foster action in the sector, or gave mandates to sector agencies or public funders to identify a course of actions to decarbonise the economy. For example, in the Energy Efficiency Green Bond in Latin America and the Caribbean programme, the political willingness of the Mexican government to create a favourable environment for the implementation of RE and EE technologies was fundamental to foster change in the market.

**Creation of impact**

In all three programmes, we observed that significant positive impacts to the economy (through job creation and green growth) and the environment (reducing GHG emissions) convinced countries in joining the respective RE and EE programme. For example, in the SCF Capital Solutions programme, the positive employment and environmental benefits convinced the SA government to support the programme from the beginning.

**Financial viability**

The business case and the financing structure of the RE and/or EE programmes should be financially viable. In two of the three programmes, before obtaining finance from GCF, pilot projects were set up to test whether (a) the business case was financially (and technically) viable (e.g. sufficient profit margin) and to test whether (b) the financing structure was financially viable (e.g. sufficient return for funders). In the SCF Capital Solutions programme, for example, the size of the MSME individual RE/EE project margin was crucial to obtain funding from the SCF Fund (i.e. SCF Fund required a minimum return on investment of 15%). Overall and most importantly, however, was the fact that all three programmes created a win-win situation for all stakeholders, which finally convinced all stakeholders to participate in the programmes.

**Engagement of stakeholders**

Engaging programme stakeholders is highly relevant during the development of the business case and the financial structure. In the Universal Green Energy Access Programme (UGEAP), for example, we observed that stakeholder engagement was key to getting acceptance and endorsement of the respective financial mechanism by all stakeholders. This was also indispensable to get approval from the GCF board for funding. In the case of UGEAP, strong stakeholder engagement also resulted in the development of locally tailored innovative financing solutions, which would not have been found if not all stakeholders were actively involved.
Tailoring to local needs
The design of the business case and the financing structure should consider the local needs and contexts. In all the three programmes, we observed that financing needs highly differ from country to country and from stakeholder to stakeholder. In the case of UGEAP, households prefer different type of financing than those preferred by businesses; for example households prefer to borrow in local currency, whereas businesses often prefer to borrow in USD. In the Energy Efficiency Green Bond in Latin America and the Caribbean programme, we observed that some countries preferred to promote small scale RE and/or EE projects while others preferred to promote large scale. Stakeholder engagement is critical when tailoring the financial mechanism to local needs.

Capacity of stakeholders
Programme developers should implement capacity building programmes to ensure that local stakeholders increase their knowledge and abilities to participate in the development of financial mechanisms. In all the three programmes, we observed that capacity building programmes and/or the development of capacity through pilot projects were crucial to make the financial mechanism viable and bring all stakeholders onboard. The Mexican pilot in the case of the Energy Efficiency Green Bond in Latin America and the Caribbean programme was instrumental to show tangible results, especially to stakeholders that were not yet convinced of the programme or had no practical experience in RE/EE implementation or financing.

In addition to the first six, pillars seven and eight, scalability & replicability and continuity & sustainability, highlight specific characteristics that successful financial mechanisms exhibit in securing implementation funding. These pillars are presented in Box 9.

**Box 9. The two pillars that help make financial mechanisms secure funding for implementation**

In addition to the conditions that lay the ground work for the successful development of financial mechanisms, the two common factors that make financial mechanisms stand out and deliver are:

**Scalability and replicability:** programmes can be scaled up in size and volume, for example, by increasing the capacity installed (MW), the number of beneficiaries, and the investment volume (USD). Programmes can also be replicable widely in other countries or regions, while sharing and expanding the knowledge from country to country. In the case of SCF Capital Solutions, we observed that programme developers designed for scalability and replicability from the beginning. The SCF Fund is preparing to establish partnerships with large private sector enterprises that are potential buyers of energy services from MSMEs to build supply chain financing anchored around these large buyers. Overall, we saw that all programmes needed to increase the amount of RE and/or EE projects while also being able to scale up available financing. For example, in the "energy efficiency green bond in Latin America and Caribbean (LAC)", the concrete results of a pilot in Mexico, provided lessons that enabled project developers to propose the upscale of the generation capacity from 5MW to 30 MW and to design the replication of the Mexico’s programme (USD 335 million) in other LAC countries, such as Colombia, Dominican Republic and Jamaica (USD 1,265 million).

**Continuity and sustainability:** the design process of the programmes starts with the idea in mind that the public sector finance (e.g. from local and international financial institutions) will be, where appropriate, phased out after a certain time, from which the programme should keep running by itself (i.e. continuous and sustainable in time). In all the three programmes, we observed that programme developers design for continuity and sustainability of financing from the beginning. In the Energy Efficiency Green Bond in Latin America and the Caribbean programme, for example, from the start, the government and the IDB were concerned with the issue of continuity. By issuing more and more green bonds in the local/regional capital markets over time, they sought to make the financial mechanism less dependable on IDB’s financial support.
Applying the findings to NAMAs and low-carbon programmes

The implementation of NDCs will require a significant increase in the pipeline of RE and EE programmes and thus a need for setting up successful financial mechanisms that enable the implementation of these programmes. Most of the NAMAs registered in the NAMA Database and the UNFCCC NAMA registry are energy sector related. There is potential to boost the implementation of those energy NAMAs that are still seeking funding, by among others, designing a financial mechanism that is viable and convincing enough to attract international climate finance and private sector investments.

Our findings and recommendations are based on the analysis of three RE and EE programmes, but nonetheless give insights into the structuring of broader programmes in the context of NDC implementation. These should be treated as initial insights to serve public agencies and programme developers in designing and setting up successful financial mechanisms for NAMAs and low-carbon programmes.

Our analysis suggests that successful financial mechanisms:

- have been designed from the start with the idea that public sector finance and concessional (low cost) finance will be phased out where appropriate,
- are designed to make the projects scalable and replicable, and
- rely on financing structures that use public money to drive down the cost of capital or decrease risk for other investors, so as to ensure that private sector will find it easier to take some of the risks

Our key recommendations for building successful financial mechanism are the following:

First, design a business case that can be operational on the ground and with the right technical and financial features to solve the energy issue at hand; for example the energy services that will be offered, the type of contracts between end-users, energy companies and financial institutions, and the profits size. The business case explains why it makes sense to do the project on the basis of the benefits, costs, impacts, etc.

Second, confirm the financial mechanism is robust by integrating the following eight pillars:

- Ensure there is enough governmental leadership driving the programmes (e.g. national targets/strategies/political will)
- Demonstrate the financial mechanism’s impact creation (e.g. employment, GHG mitigation etc.)
- Demonstrate the financial mechanism’s financial viability (e.g. profitability/affordability analysis)
- Engage all stakeholders in setting up the financial mechanism (e.g. workshops, awareness raising)
- Tailor the financial mechanism to local needs (e.g. preferred financing/currency lending)
- Develop and building up capacities of stakeholders to run the financial mechanism (e.g. trainings)
- Design the financial mechanism for scalability and replicability (e.g. project can grow larger, a pipeline of projects can be identified)
- Design the financial mechanism for continuity and sustainability of financing (e.g. opt-out strategy)

Third, devise a financing structure that suits the needs of the NAMA or low-carbon programme with features such as the suitable volume of financial flows from public and private funders, the sort of financial instruments that will be used and the financial terms/conditions of each instrument.

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44 A financial mechanism is successful when it enables investments in projects under the NAMA-like programme.
4 Circular economy as an opportunity for countries to increase ambition and achieve NDC targets

By Alexandra Soezer (UNDP)

Circular development represents a unique opportunity for developing countries to redefine development and growth. The concepts of circular economy can support developing countries to overcome the predominant trend that economic growth goes hand in hand with a decrease in resource efficiency.

Circular economy can help countries like Lao People’s Democratic Republic (PDR) to grow and meet the needs of its society in a sustainable manner while accelerating the embedment of the Sustainable Development Goals (SDGs) in national conditions. By emphasizing traditional ways of production and living through the use of natural materials, and through recycling and reusing even Least Developed Countries (LDCs) can skip the catching-up phase and leapfrog into a post-industrial society (UNDP, 2017).

Globally, we see that approaches that are using everything within a cycle of production are gaining momentum: governments are announcing laws that encourage repair and discourage disposal, companies are promoting sharing rather than owning and individuals are making sustainable material choices for their homes, for example. The circularity spirit is spreading widely and there is an effort of think tanks and large foundations to strategically introduce it to developing countries.

Can circularity support NDC implementation and increase climate ambitions?

The Paris Agreement offers a unique opportunity for developing countries to apply circular economy approaches, while meeting their global commitments to countering climate change. The potential of circular economy could close half of the emission gap between commitments and 1.5C pathway (Circle Economy and Ecofys, 2016). 50% of the world’s emissions are related to materials. A reduction of emissions from materials production, use and disposal by 20%-30% can be achieved with circularity strategies, which would allow us to close the emission gap between current commitments and the 1.5C pathway. This circular economy potential is also confirmed by the Ellen MacArthur Foundation (2016) which estimates that the European CO₂ emissions can decrease by 48% by 2030 and by 83% by 2050 compared to 2012 with circularity approaches. Through increased material efficiency we can bridge half of the remaining emission gap in 2030. This would not even require large investments. Also the Club of Rome (2016) concluded that any decoupling strategies that include material efficiency have the potential to cut emissions by 10%. Through international collaboration between buyers and sellers of goods, financial incentives could be designed to promote products with a lower carbon footprint and sustainable consumption, while shifting responsibility and financial obligation for carbon intensive production.
Countries with negligible current contributions to global emissions but growing economies are not sufficiently encouraged to make low carbon choices. Low carbon choices, such as shifting to renewable energies or increased energy efficiency in industrial facilities and material efficiency, might be seen as a threat for their economic growth. Understandably, such countries focus first and foremost on advancing their economic growth. Circular economy can be an alternative development approach for their economies, encouraging smart and innovative approaches, thereby avoiding the mistakes that developed countries made, rigorously skipping the ‘catching-up’ and moving directly to state-of-the-art technologies, and cutting-edge methods that require thinking outside the box.

Circular economy has the potential to promote innovative low carbon development which can focus on the fastest growing sectors of a country’s economy by focusing on traditional ways of production and living. Circularity aims to promote the transformation of countries towards resource efficient societies. This requires a behavioural change of policy makers, large corporations and the civil society, each of us. It also requires educating the public. Massive awareness raising campaigns will need to promote recovery and reuse of everyday materials, resource-efficient design, replacement of conventional materials with sustainable materials, sharing rather than owning, and repair instead of replacement. This will truly be a paradigm shift towards a responsible civil society that makes daily informed consumption choices.

A holistic approach to accelerate low carbon development by building on the foundation of NAMAs while enhancing linkages between NDCs and SDGs: The case of Lao PDR

Lao PDR, as a country with a significant share of renewable energy in their energy mix, has continued to promote renewable energy through a NAMA on Rural Electrification (UNDP, 2017) with the overall goal to improve electricity access for regions, households and companies that are currently without access to electricity. The objectives of the NAMA are to maintain the share of renewable energies high compared to the overall electricity consumption, to provide conditions for income generation and new business opportunities, and to increase private sector involvement. The NAMA was designed to address multiple sustainable development objectives—poverty alleviation, local job creation, alternative income generation, provision of income equality opportunities, improved energy access and better health, educational and environmental conditions and ultimately achieve green, sustainable development for Lao PDR.

The rural electrification strategy through renewable energies is also reflected in the country’s NDCs and shall reduce the reliance on wood fuel and fossil fuels in off-grid communities. The NDC promotes electrification of 90% of households by 2020 for which the NAMA is a key strategic component.

The NDCs also highlight additional mitigation and adaptation measures such as expansion of the use of large-scale hydroelectricity and increasing water resource infrastructure resilience to climate change. In the power sector, the NDC suggests among others, an upgrade of water resources and related infrastructure as mitigation and adaptation measures. The NDC lists construction of multi-purpose dams and reservoirs to ensure sufficient water supply all year-round, enhance river bank protection and improve irrigation systems.

Building on the work already done under the NAMA and during NDC development, a new circular economy study was undertaken for Lao PDR that builds on a system approach rather than a sector approach which leads to enhanced cross-sectoral mitigation and adaptation ambitions and strengthens the linkages between the NDCs and the SDGs. The UNDP study applied a system approach, which looks at the country’s imports and exports, resource extraction, flows, stocks and at industrial cluster as a metabolism. This innovative approach is entirely cross-sectoral and thus, opening new development perspectives beyond niche mitigation approaches. Previously, a focus on the classical mitigation sectors alone often de-linked climate actions from development because it didn’t rigorously address those sectors with the highest development potential in a country.

NAMAs concepts are holistic by nature as they reflect
national appropriate development and go beyond mitigation. The NAMA experience shows that sustainable development was emphasized over solely emission reduction potentials of projects and programmes. This is certainly a good foundation for circularity approaches that look at the whole metabolism of a country. While most NAMAs focused on the concepts of ‘co-benefits’ to a mitigation action, circular economy approaches go one step further and look at low carbon development through the lens of economic growth by identifying key growth sectors. Circularity would help strategically transforming the development plans of those sectors into low carbon, sustainable development plan in a structured manner. Re-assessing the design of NAMAs and NDCs with circularity in mind, can further encourage developing countries to stronger engage in climate change mitigation actions and at the same time keeping economic growth a key goal while keeping on track with their sustainable development strategies and objectives.

In Lao PDR resource efficient development perspectives were designed around the sectors which are among those with the highest contribution to the Gross Domestic Product (GDP) and have the highest potential for sustainable growth.

In the power sector, which is one of the three priority sectors identified for circular economy interventions, Lao PDR’s circular economy strategy looks at existing and new hydropower reservoirs as large underused assets with potential for tourism and fishing and through algae farming also as a local source for proteins, fertilizers and potentially even biofuels.

Mobilizing this underused potential will improve the water quality in Lao PRD, which is threatened by discharges from agriculture and mining and an increase in concentration of phosphorous. At the same time, high water temperatures in the reservoirs and high amounts of nutrients from agricultural activities make the reservoirs a good location for algae production.

The produced algae can be used immediately as bio-fertilizer and reduce the fertilizer imports of Lao PDR which are currently worth USD 40 million (2015) but going forward also as a raw material for biofuels or bio-kerosene as biofuels in planes. This would help to reduce GHG emissions from air travel which is one of the main environmental impacts of international tourism and could transform Lao PDR to an eco-tourism hotspot.

At the same time, algae production improves the surface quality of reservoirs significantly which is critical for the health of the agricultural communities along the rivers as well as for biodiversity and wildlife.

The production of algae through floating flexible tubes, so called photobioreactors, allows to separate the different activities in a reservoir, namely algae production, tourism, fishing and can even form paths that connect the shores of the lake and turn the reservoirs into public space, attract tourists, turn into a floating market place for vegetables and handicrafts.

Such a holistic approach will enhance low carbon development in the key development sectors of Lao PDR’s economy, contribute to at least 8 SDGs (1, 2, 6, 7, 8, 9, 11, 1345) and help the country to graduate to a middle income country while reducing the pressure on the environment and combating global warming.

Figure 12. Algae farming in combination with tourism
Source: UNDP, 2017

5 Outlook: What is next for NAMAs?

By Angélica Afanador (Ecofys) and Mathew Halstead (ECN Policy Studies)

For a decade, NAMAs have played an instrumental role in climate change mitigation activities of developing countries. It is true that NAMAs are not embedded per se in the Paris Agreement, but developing countries still show interest in them as we have seen in chapter one of this report. The statistics show a trend that suggests that NAMAs will continue to exist as an instrument to implement NDC mitigation targets, at least in the short-to-medium term. We highlight two main reasons for which we think this is true.

First, NAMA development is linked to countries’ low carbon development strategies or action plans and in many cases to their NDCs. As we observe in chapter two, the views from NAMA practitioners suggest that NAMAs are typically at least implicitly included in NDCs, and that the link between NAMAs and NDCs is strong. The existence of the NAMA Facility, as a frontrunner in providing funds for activities that can stimulate full NAMA implementation, is a good incentive for countries to continue to develop NAMAs. As far as the Facility continues to support NAMA development, countries would still look at it as one of the sources of climate financing worth tapping into.

Second, the wealth of NAMA experience has the potential to bring about stronger NAMA proposals and other low-carbon initiatives that built upon the NAMA work. Learning by doing has been the approach taken by NAMA practitioners and public officials that champion NAMAs at the country level. After ten years of work, we are optimistic that the learning curve has been steep and that it is serving to develop a pipeline of projects to support the implementation of NDC targets. Among the experiences, it is worth noting the following: multi-stakeholder engagement, government mitigation leadership, MRV, and design of financial mechanisms that make NAMAs bankable. All of them are instrumental in the development and implementation of NAMAs and low-carbon projects.

In the long run, the NAMA label might cease to exist. Assuming that developing countries are determined to strengthen their mitigation activities in order to implement their NDCs, what will be important is the quality of the pipeline of mitigation actions, and not the NAMA label itself. In fact, we have already observed some initiatives that started out as NAMAs but have since dropped the label “NAMA” because it was no longer needed when trying to attract funds from sources beyond the NAMA Facility.

The quality of the climate change mitigation pipeline depends, among various factors, on its bankability. A bankable pipeline has to have programmes that are technically and financially viable. As seen in chapter three, developers of such pipelines should consider designing strong business cases and robust financing structures to ensure that the programmes’ financial mechanisms are attractive enough to investors.

Achieving the Paris Agreement’s goals is about getting down to implementation; as long as NAMAs are able to contribute to this, they will remain relevant in the post-Paris climate landscape.
In chapter 3 we summarised the findings of a research paper on financial mechanisms for RE/EE programmes. In this annex we provide a summary of the methodology used in the research. A more extensive description of the methodology can be found in the paper (Afanador & Haehl, 2017).

**Step 1 - Selection of RE/EE programmes:** we created a longlist of RE and EE programmes that already receive financing or that have been accepted for financing using internationally available databases. To create the list, we defined parameters such as basic programme information (region, measure, date of approval, mitigation type etc.), programme performance indicators (programme size, mitigation, avoided emission costs, cost-efficiency etc.) and most importantly information on the financial mechanism (financial stakeholders, financial instrument, finance volume, co-financing share, public financing share etc.). We searched for programmes in databases of the Global Environment Facility (GEF), the Energy Sector Management Assistance Programme (ESMAP), the NAMA Facility and the Green Climate Fund (GCF). The GCF database provides the most detailed information on the financial mechanisms. Therefore, it was decided to extract the longlist of programmes from the GCF database. We came to 15 RE and EE programmes, which we processed in an Excel-based database to be able to analyse and compare the programmes’ financial mechanisms with each other. We then analysed the longlist and selected three RE and/or EE programmes based on a defined criteria that served as a first indication for a programme’s financial mechanism’s success. The criteria included: share of private sector funding, financial instruments used, and expected programme cost efficiency. We selected the top 3 programmes that have the largest private sector funding, use a variety of financial instruments (beyond grants), and have an expected high cost efficiency ratio (avoided tCO₂e/USD million).

**Step 2 - In-depth analysis of the three programmes:** we conducted an in-depth analysis of the three selected RE and/or EE programmes by reviewing the public literature available and conducting semi-structured telephone interviews with persons in charge of designing and setting up the programme’s financial mechanism. In this step we explored the programmes’ components, the process that led to the selection of the financial mechanism, the structure of the financial mechanism and the factors that determined the success of the financial mechanism.

**Step 3 - Comparative analysis of the three programmes:** Lastly, based on the results from step 2, we conducted a comparative analysis of the three programmes, identifying important common elements that made the financial mechanism successful (i.e. factors of success) and draw insights for stakeholders in the climate financing community.
7 References


Online resources and websites:
- NAMA Data Base: http://nama-database.org/index.php/Main_Page
- NAMA Facility: www.nama-facility.org
- NAMA Registry: http://www4.unfccc.int/sites/nama/SitePages/Home.aspx
- UNEP DTU NAMA Pipeline Analysis and Database: http://www.namapipeline.org/