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International Cooperation under the Paris Agreement

Exploring opportunities for
Swedish cooperation with
developing countries

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Executive Summary

The Swedish Energy Agency (SEA) has worked in the area of international climate finance and climate cooperation for many years. The SEA seeks to reposition itself in the dynamic framework for international cooperation on climate change after the Paris Agreement.

The Paris Agreement obliges all countries to submit increasingly ambitious Nationally Determined Contributions (NDCs), and to monitor and report on their performance under a new transparency framework. It also formalises a framework for international cooperation on climate action, which is based on providing finance for investment, capacity building, technology transfer in addition to yet to be developed market mechanisms.

The success of the Paris Agreement to achieve the global mitigation ambition will hinge largely on the ability of countries to translate their NDCs into mitigation action. These provisions of the Agreement are central to its success, and will require common cooperation among Parties to realise increased mitigation efforts. Furthermore, there is also a need for engaging in early stages of capacity building as well as engagement in the financing and implementing of transformative policies and projects.

While international climate finance and cooperation are quickly developing, a number of needs seem unaddressed or under-served. These needs include:

- Support to developing countries to strengthen their capacity and institutions on taking policies from the early design stages to fully fledged financeable initiatives, in order to unlock international large-scale climate finance;
- Support to developing countries to mainstream climate considerations in the general policy process and increase the low-carbon ambitions with every NDC update;
- Mechanisms to enhance the participation of the private sector in international climate cooperation, including improving access to climate finance in addition to mobilising private sector investment;
- Building the capacity to report on national emissions and monitor the performance of mitigation action, also in sectors which have been poorly served by climate finance;
- Putting a price on carbon and provide financial incentives for emission reductions.

These needs provide direction to Swedish international cooperation on climate action. A first opportunity lies in unlocking climate finance by bringing private initiatives to a state where they are ready to access finance. Sweden is already the largest per capita contributor to the Green Climate Fund and participates in several innovative climate funds managed by international financial institutions. A project support facility can help unlock the climate finance commitments already made by Sweden and by other countries.

A second opportunity lies in building and expanding the coverage of the transparency framework on project and sector-level. Climate finance has been considerably less effective in sectors where there are few, or no, internationally agreed methodologies to quantify the mitigation impact. Sweden could respond to an articulated request from private sector stakeholders for support with developing a monitoring framework to facilitate access to upfront or results-based climate finance.

The practical experience with climate finance and MRV support on project or sector-level can also contribute to the development of the mechanisms under Article 6. Formulating the modalities and procedures of a new mechanism for international cooperation requires pioneers with hands-on experience.

A third opportunity lies in developing additional possibilities to mainstream low carbon development. The national commitments made before the Paris negotiations already cover about half of the mitigation effort that is needed to limit global warming to 2 °C.¹ Sweden has the technical and conceptual expertise to assist with taking the plans a step further, and explore innovative approaches to both identifying mitigation action and international cooperation on climate change. Existing business relations within value chains can serve as a basis for international cooperation on climate action. Concepts like improving resource productivity and circular economy can reveal new mitigation options.

² The 'Paris Agreement' refers to both the Agreement and the Paris Decision, FCCC/CP/2015/L.9.

1.

Introduction

The Swedish Energy Agency is looking to reposition itself in the new framework for international cooperation on climate change after the Paris Agreement. Sweden's experience, interests and strengths are the starting points for engaging in international cooperation on mitigating climate change.

1.1 Background

The Swedish Energy Agency (SEA) has worked in the area of international climate finance and climate cooperation for many years, mainly with the Kyoto Protocol Mechanisms. The SEA seeks. It has reached out to Climate Focus and NIRAS to assist with providing insights, narratives, and guidance in identifying, assessing and prioritising options for Swedish contributions to international climate cooperation under the Paris Agreement² mainly in the period up to 2020.

The Paris Agreement marks a milestone in the development of the architecture of international cooperation on mitigating climate change. Whereas international cooperation under the Kyoto Protocol relied largely on market mechanisms, in particular on the Clean Development Mechanism, the main body of international cooperation under the Paris Agreement consists of government-to-government cooperation in the field of finance, capacity building, and technology transfer.

This report provides an overview of opportunities for international cooperation which have arisen from the Paris Agreement. The opportunities have been defined broadly and without prejudice. The analysis serves to feed-in to strategy development at the SEA.

1.2 Swedish context

Sweden's experience, interests and strengths are one of the starting points for engaging in international cooperation on mitigating climate change. The SEA and the Swedish Government have an impressive track record in international cooperation on mitigating climate change. The Swedish experience extends to piloting and using the flexible mechanisms under the United Nations Framework Convention on Climate Change (UNFCCC) and testing new approaches to climate finance through the participation in a wide choice of innovative multilateral programmes. The SEA has often

² The 'Paris Agreement' refers to both the Agreement and the Paris Decision, FCCC/CP/2015/L.9.

taken an active and effective role in co-designing these programmes, shaping new mechanisms and supporting the reform of existing ones. The forerunner role in piloting cooperation mechanisms on the ground has provided first-hand insights to Swedish climate change negotiators, which they have successfully applied in putting forward Swedish interests in the international climate negotiations.

The Swedish experience in international climate cooperation includes among others:

1. SEAs results-based payments scheme which uses the Clean Development Mechanism (CDM) and Joint Implementation (JI) while contributing to sustainable development in host countries and the further development of cooperative approaches.
2. Nationally Appropriate Mitigation Actions (NAMAs) which Sweden supports through the Nordic Partnership Initiative (NPI). With both the NAMA on waste in Peru and the NAMA on cement in Viet Nam, Sweden has shared knowledge and experience. For the NAMA on cement in Viet Nam, the Vietnamese Authorities have requested SEA to explore further support.
3. Participation in numerous funds and capacity building initiatives with the World Bank, European Bank for Reconstruction and Development and the Asian Development Bank.
4. The country's engagement with shaping Joint Implementation (JI), the EU's CDM reform agenda, and capacity building under the Partnership for Market Readiness (PMR).
5. Recently Sweden has become the largest per capita contributor to the Green Climate Fund (GCF), one of the main multilateral channels through which international climate finance will flow to low carbon development in developing countries. Sweden also has a member on the board of the GCF, which can further help in positioning the country to contribute to the design of climate finance.

In the dynamic climate finance landscape, Sweden is looking for further opportunities that contribute to Swedish objectives in the climate negotiations and promote the export Swedish low-carbon technologies³.

The focus of the study has been on the need for enhancing various mitigation actions, through increased collaboration up and until 2020. A number of criteria for the purpose of this assignment have been formulated regarding engagement in international climate cooperation, which are summarised in Box 1.

Box 1: Engagement criteria

1. Contribute to incentivising **ambitious climate action**.
2. Enable or incentivise climate action that is **robust, effective and timely**.
3. **Be complementary** to what other institutions are already doing.
- 3a. **Be complementary** to what Sweden is already doing.
4. Incentivise or facilitate financing for **emission reductions which would otherwise not take place**. The impact of emission reductions, as a result of the support from Sweden, may be indirect.
5. **Minimise program expenses** and allows for the effective allocation of public resources
6. **Engage both private and public sector stakeholders** in the host country
7. **Support paradigm shift**, enable a fundamental shift towards a low-carbon economy and optimise co-benefits

³ SEA, personal communication.

8. **Make the best use of Swedish expertise** with international cooperation on climate action

9. **Create opportunities for Swedish technologies** and make use of the expertise available in the Swedish private sector.

10. **Allow for the use of different sources of finance** available from the Swedish Government, including Official Development Aid (ODA), commitment to bilateral funds, earmarked climate finance.

11. Take into account **lessons from the past**, notably the rules, modalities, and procedures, and infrastructure developed under the agreements and protocols which preceded Paris.

12. **Strengthen, or build upon bottom-up initiatives** that support the transition to a low-carbon economy (for example divestment initiatives).

13. Allow for programme budget allocations **between €1 million and €10 million** per year until 2020.

1.3 Methodology

The analysis of opportunities for the Swedish government to collaborate with developing countries in the framework of the Paris Agreement covers two elements. The first relates to the direct measurement and reporting commitments described in the Agreement, and the second relates to the implementation of the Intended Nationally Determined Contributions (INDCs) and raising their ambition. The analysis is based on:

- An assessment of the Paris Agreement and the associated Conference of Parties (CoP) 21 decision;
- An assessment of the landscape for international cooperation on mitigation action;
- Interviews with experts on this topic. The results from the interviews have been incorporated in this report.
- Literature on international cooperation on climate action;
- A participative workshop with SEA and other Swedish government stakeholders.

2.

The Paris Agreement

The Paris Agreement united 197 countries behind a global commitment to limit global warming to a maximum of 2 °C. It provides a framework for among others finance, technology transfer and capacity building to assist developing countries achieving their low carbon development ambitions.

2.1 Architecture

The Paris Agreement can be considered an important milestone in having a global commitment to limit global warming to a maximum of 2 °C. The Paris Agreement is the latest step in the development of the framework for international cooperation on climate under the United Nations Framework Convention on Climate Change (UNFCCC or briefly the “Convention”), which was adopted in 1992.

The architecture of the Paris Agreement is in many ways different from its predecessor, the Kyoto Protocol. At the basis of the Kyoto Protocol are the legally binding emission reduction targets for developed countries within two subsequent commitment periods from 2008 to 2012 and 2013 to 2020. The approach of the Paris Agreement, on the other hand, builds emission reduction targets on voluntary mitigation contributions by all 197 countries and regional economic integration organisations which are a Party to the Convention. As such, the Agreement replaces a distinction between developed and developing countries with voluntary commitments by all Parties taking into account their respective capabilities and national circumstances.

To track climate action under voluntary mitigation contributions, the Agreement defines mandates to different UNFCCC bodies and stakeholders to define clear procedures, mechanisms, accounting frameworks and guidelines. The agreement thus targets the accounting behind mitigation action and climate finance (including finance to adaptation measures). The ways in which the up-scaled mitigation action are realised are the discretion of the governments and non-state actors themselves.

2.2 Nationally Determined Contributions

The first building block of the Paris Agreement is the submission by national governments of their "Intended Nationally Determined Contributions" (INDCs) prior to the Paris negotiations. From 2020 onwards, countries will report on the progress made and reflect the country's highest possible

mitigation ambition within 5 yearly Nationally Determined Contribution (NDCs).

The contribution of all INDCs submitted before Paris are not sufficient to limit the global warming to maximum 2 °C⁴. The Paris Agreement, therefore, aims to ratchet the ambitions of future NDCs.

The success of the Paris Agreement to achieve the global mitigation ambition will depend largely on the ability of countries to translate their NDCs into mitigation action. This will require cooperation among Parties.

2.3 The transparency framework

An important topic of negotiation was the ability for countries to track mitigation progress in a consistent and transparent manner. To ensure this, the Paris Agreement includes a transparency framework that will be further defined in future negotiations. The framework should promote environmental integrity, transparency, accuracy, completeness, comparability, and consistency and avoid double counting of mitigation outcomes. The framework will require countries to provide a national inventory report on emissions and sources using IPCC-accepted methodology and information necessary to track progress on NDCs.

2.4 Financing

In accordance with previous COP decisions, developed countries shall provide climate finance. The Paris Agreement further states that in addition to reporting the level of Parties' financial commitments at the five-yearly stocktakes, developed country Parties are also required to submit, every two years⁵, information on future projected levels of finance available.

Furthermore, developed countries shall help build the capacity that is needed for the agreement's transparency framework. Underpinning this system are new and comprehensive requirements, institutions and procedures applicable to all countries to track their performance. These include expert technical reviews, a multilateral peer review process, and a standing committee on implementation and compliance. Both will focus on both the technical and political aspects of the performance.

The Paris Agreement also further emphasises the importance of Result Based Payments (RBP) for Reducing Emissions from Deforestation and forest Degradation (REDD+).⁶ In practice RBP is also applied in other sectors, sometimes mimicking the approach adopted by REDD+. The REDD+ mechanism has formal rules for creating institutions, establishing reference levels, recognising mitigation activities, ensuring safeguards, and implementing RBP. As such REDD+ is seen as an example of developing mitigation action in phases, starting with the institutional and regulatory framework before making RBP available.

2.5 Carbon markets

In Article 6, the Paris Agreement has introduced a framework for market mechanisms, and thus a carbon market can be a part of the multilateral climate regime after 2020. There will be an international mechanism to be

⁴ UNEP (2015), Emissions gap report. Extracted from: <http://www.unep.org/publications/ebooks/emissionsgapreport/index.asp> (3 May 2016).

⁵ Streck et al., 2016

⁶ www.redd.unfccc.int/

supervised by a body designated by the Conference of the Parties, which is often referred to as the Sustainable Development Mechanism. In addition, Article 6 enables initiatives referred to as Cooperative Approaches and a framework for non-market approaches to sustainable development. The voluntary cooperative approaches will use internationally transferrable mitigation outcomes and shall according to the Paris Agreement promote sustainable development and deliver an overall mitigation in global emissions. The latter distinguishes the mechanisms from the CDM.

The Article allows countries to achieve NDCs jointly, by sharing mitigation targets. The transferable mitigation outcomes can be transferred internationally helping countries meet their NDC targets. The transfer of mitigation outcomes internationally can either be in the context of emission trading or facilitate RBP⁷. The PA further mentions that there will be a mechanism for private and public entities to support Sustainable Development projects that generate transferable emission reductions⁸.

2.6 Capacity building

Parties should cooperate to build the capacity of developing countries to undertake adaptation actions, develop technology, access finance, education and information to manage the impact of climate change. Capacity-building should respond to the needs of the country in question, to enable countries to assume ownership of processes. An implementation mechanism, made up of an expert panel, will assist countries in the implementation of the Agreement.

2.7 Technology development and transfer

The developed countries under the Convention shall, according to Article 4.5, take all practicable steps to promote, facilitate and finance, the transfer or access to sustainable technologies and knowledge to other parties. During CoP in Warsaw, the Technology Mechanism became fully operational, as it adopted the modalities and procedures of the Climate Technology Centre and Network (CTCN).

The Paris Agreement has strengthened the mandate of the technology mechanism. Any financial means that aim to support technology improvements shall go through the technology mechanism or alternatively through the financial mechanism of the Paris Agreement. The mechanism shall work as an accelerator for scaled up actions on technology transfer. The Paris Agreement further gives the mandate to develop and implement a specific technology framework that will guide the technology mechanism and will facilitate an update of Technology Needs Assessments (TNA).

Parties are encouraged to share technology and provide capacity building assistance. The Technology and Financial Mechanism established under the Convention will facilitate cooperative action on the development and transfer of technology, to improve climate resilience and reduce greenhouse gas emissions. The mechanism will operate by a technology framework, and provide technology to developing countries, especially in the early stage of the technology cycle.

⁷ Streck et al., 2016

⁸ Streck et al., 2016

3.

Needs assessment

The Paris Agreement requires significant effort from all Parties. Also for developing countries, this includes effort to bring NDCs from ideas to implementation, to develop the MRV framework, to operationalise the mechanisms of Article 6 and to mainstream climate considerations in investment decisions and policy development.

3.1 Structuring the options

The Paris Agreement in the first place deals with communicating mitigation ambitions and monitoring. The mitigation ambition is laid down in countries' NDCs while the development and implementation of policies and measures are the responsibility of national governments. Several experts in our survey highlighted that the ambition expressed in many NDCs still needs to become backed by actual policies and related mitigation action and anchored in institutions and businesses. Therefore, the effective and timely implementation of measures to implement the current (I)NDCs is at least as important as scaling up their ambition in future communication rounds.

Figure 1 provides an overview of the different elements of international cooperation that are relevant under the Paris Agreement. It provides structure to the needs coming out of the agreement by distinguishing the regulatory elements and mechanisms defined in the agreement (top part), from the international cooperation which aims to realise mitigation action and increase its ambition. Both sides support the development of policies and projects which constitute or enable climate action. The elements defined within the UNFCCC framework are the mechanisms which partly require the measuring of emissions, emission reductions and communication on mitigation achievements and targets with the UNFCCC. As indicated by the arrows on the right, this is two-way communication. The UNFCCC aims to improve the transparency framework which supports this communication, through bottom-up experience and best practices from the countries.

From the left to the right, the activities include the national inventories of greenhouse gas emissions, analysing the mitigation options and national target setting. From there towards the left policy and project design, implementation and operation all require different kinds of engagement of developing countries and their partner organisations. On the lower half of the graph, the developing country needs move from capacity building and

identification of mitigation options and underlying policies, towards financing and de-risking investments and results-based payments (RBP) during the operation stage of the project or policy. The RBP is connected to the pre-financing and de-risking of investments since it aims to increase the return on investment, making the project or policy more attractive to financial institutions or international donors.

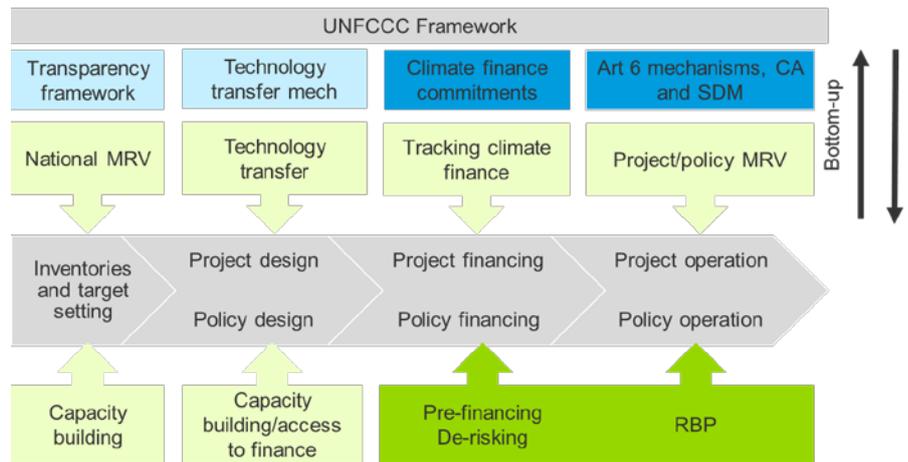


Figure 1: Structuring developing country needs arising from the Paris Agreement.

The colours in Figure 1 refer to two dimensions of international cooperation on climate finance. The different developing country needs, and also the opportunities to respond to these needs can be categorised along:

1. An axis which ranges from activities in the target country to activities related to the overarching framework provided by the UNFCCC.
2. An axis which ranges from providing finance to support projects/programmes or policies, to providing capacity building.

Figure 2 shows these two dimensions and lists examples of international cooperation opportunities within each quadrant. The graph does not pretend to provide a complete coverage of all possible options for international cooperation, but rather provide a structure in which the different options can be placed. The colours of the different elements in Figure 1 refer to the four quadrants in Figure 2.

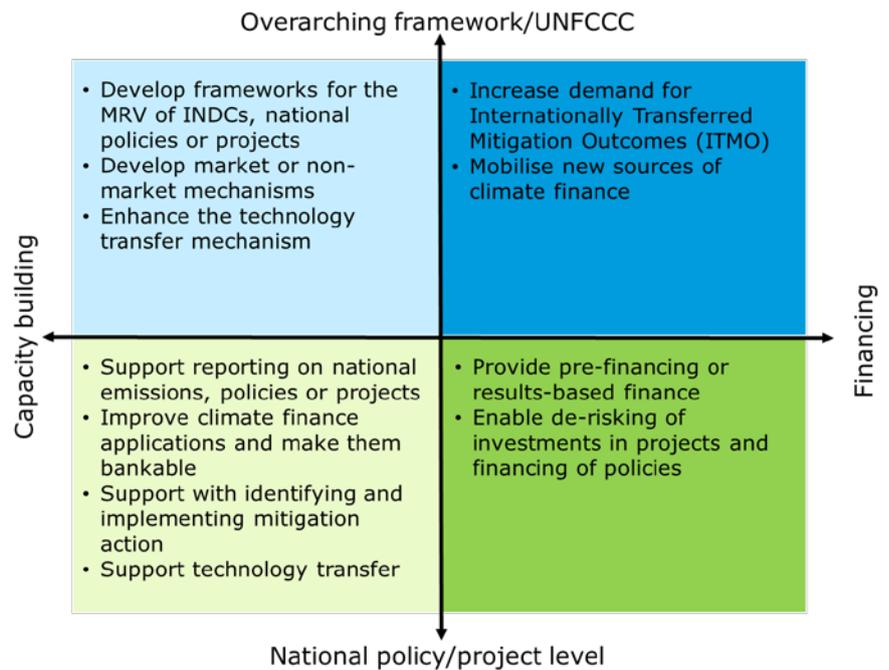


Figure 2: Structuring opportunities for international cooperation on mitigation action in two dimensions.

Annex 1 provides a detailed overview of the gap analysis. It lists identified tasks and responsibilities for developing countries in relation to the Paris Agreement. Interviews with developing country representatives confirmed that international cooperation on these items would be needed. The table also lists the programmes and initiatives which already respond to these needs. These programmes are explained in further detail in Annex 2. The second table in Annex 2 lists the needs left unaddressed and translated these into options for engagement by the government of Sweden. These are further discussed, per topic, in the section below.

3.2 Developing the UNFCCC Framework

MRV

Monitoring, reporting and verification (MRV) of emissions and emission reductions is a core element of the Paris Agreement. On national and global levels MRV continues following IPCC guidance. On sectoral and project levels, however, much still needs to be done to make emissions and emission reductions transparent and comparable. Applications of MRV are needed for instance

- To measure the effectiveness of policy measures;
- To establish the effectiveness of climate finance;
- To serve as a metric for market mechanisms under Article 6 of the Paris Agreement;
- As a basis for Results Based Payments.

Some, including the Executive Board of the CDM, are advocating that the CDM and its established procedures are to be used for these purposes. This is supported by arguments including that the procedures of the CDM are well established and familiar to users and that they have high environmental integrity. At the same time, the procedures of the CDM are considered expensive and slow. CDM methodologies have limited coverage in specific sectors, including major ones like transport and agriculture.

Engagement options: There are several programmes in place which support building the transparency framework and develop the in-country capacity for national reporting. Still, there is a need for further capacity building to national governments to comply with the monitoring and reporting requirements related to their NDCs. This capacity building effort could be coupled with using this bottom-up experience to support the development of the overarching framework.

In addition, there are sectors which have hardly benefitted from climate finance, partly because quantifying and attributing the mitigation impact of climate action is challenging. There is a need for pioneering scalable ways to incentivise mitigation action in these sectors as well.

Financing

The Kyoto Protocol relied largely on market mechanisms, in particular, the Clean Development Mechanism (CDM) as the main instrument to channel funds for sustainable development from industrialised to developing countries. The financial mechanism of the CDM resulted in payments for achieved emission reductions and the 2 % share of proceeds generated capital for the adaptation fund. Further engagements and programmes like the EU-ETS system incentivised and helped to create a private sector demand that brought forward a considerable financial flow.

In the Paris Agreement, the basis of the international cooperation is between governments. The role of market mechanisms is secondary, and still uncertain as the modalities of the Article 6 mechanisms are still undefined. Central to the cooperation is providing (public) finance for investments and policies. The Global Environmental Facility (GEF) and the Green Climate Fund (GCF) have been designated as the main channels through which this funding is to flow. The funding is to evolve and grow from an initial USD 100 billion per year in 2020. Many of the interviewed stakeholders are concerned about the lack of private sector involvement in international climate cooperation and say it is essential to increase the private sector engagement, especially regarding enhanced investments.

Private funding can be used to leverage public contributions to the financial commitments made under the Copenhagen Accords. The attracted private sector funds would under prevailing definitions be counted towards the USD 100 billion+ climate finance mobilisation commitment. The Private Sector Facility of the GCF for instance “*aims to mobilize at scale private funding flows from local, regional, and international commercial banks and institutional investors (i.e. insurance companies, pension funds, and private equity funds)*”⁹.

Businesses and investors perceive the procedures to access public climate finance often as cumbersome and bureaucratic and hence not attractive. At the same time, the private sector is very active in mitigation actions in developing countries in practice, both in financial investments and in project development and implementation. The activities are however not linked to public climate finance initiatives.

Engagement options: Some climate funds are setting up project development facilities to enhance access to the funds they provide. More effort is needed however. This extends to supporting private

⁹ <http://www.greenclimate.fund/ventures/private-sector>

sector initiatives with reaching a state where they can access financing, as well as to exploring ways to have climate finance unlock private sector investments. This could involve developing new programmes or support existing pioneering work in this field undertaken by the World Bank or the Global Innovation Lab for Climate Finance.

Additionally, there is increasing interest from the private sector to offset or reduce scope 3 emissions (emissions are outside a company's organisational boundaries) within a company's own value chain. The Swedish government could encourage and facilitate such initiatives.

Markets and carbon pricing

A stable and long-term system of carbon pricing can give clear guidance to policy makers and to the private sector on which they can base policies and investment plans. The perverse practices of fossil fuel subsidies, for instance, would become more difficult when the cost of carbon emissions would be properly priced around the world. In countries where fossil fuel production and/or consumption is subsidised, climate finance might initially be better allocated towards technical or policy assistance with phasing out of the subsidies. After that, a stable carbon pricing signal would be a strong driver of investment in low-carbon technology.

Article 6 of the Paris Agreement provides an opening for re-establishing markets and carbon pricing. The article is formulated loosely however and does not impose markets or pricing on signatories of the agreement. It provides interested parties with the possibility to develop and participate in these mechanisms voluntarily. The central mechanism that is dubbed Sustainable Development Mechanism under Article 6 will be coordinated within the CMA¹⁰ in addition to the frameworks for the Cooperative Approaches and the non-market mechanisms. Opinions on the form the mechanisms vary widely. There are Parties who merely see the new mechanisms as accounting approaches and tools to facilitate the so-called *conditional commitments* in many developing countries' INDCs. Others favour approaches that enable global carbon pricing and emissions trading. The upcoming years will be crucial in the design of these mechanisms. The World Bank is the leading agency in piloting carbon pricing and developing a knowledge base for mechanisms, with innovative pilot programmes such as Ci-Dev, PMR, PAF, CPLC, GNCM, CPF and most recently TCAF¹¹.

Engagement options: Experience with carbon markets should support the development of modalities and procedures for the mechanisms proposed in Article 6 of the Paris Agreement. There is a need for expertise with avoiding double counting, tracking mitigation outcomes while keeping procedures practical. New demand for tradable mitigation outcomes needs to be stimulated to create a market price that incentivises additional mitigation action. Moreover, the price signal should be long-term and sustainable, so investors and policy makers can account for it in their long-term planning. A long-term price signal also provides an opportunity for sectors which are currently not exposed to market pricing and requires expertise with compliance and voluntary carbon markets.

¹⁰ Convention of the Parties of serving as the Meeting of the Parties of the Paris Agreement

¹¹ See Annex 2 for acronyms and summary of these programmes.

Capacity

The years between 2012 and 2015, between the end of the first commitment period of the Kyoto Protocol and the signing of the Paris Agreement, have witnessed a brain drain of climate change knowledge and capacity. Until 2012 the CDM was a success and many experts built their careers on climate change and the CDM. This was the case in governments (north and south), financial markets, utilities, project developers, NGOs, law firms, consultancies, and universities. When prices for carbon credits collapsed, this had a serious impact on the confidence in carbon markets. Many experts shifted their careers and turned their backs on climate business. Using the attendance of Carbon Expo, the yearly event of the carbon markets¹², as an indicator, climate business capacity in 2016 was only at 20% of what it was in the early 2010's. The Paris Agreement has not yet restored that certainty and continuity. On the contrary, it looks like inconclusiveness and a lack of direction will prevail until 2020 when the Paris Agreement enters into force. That needs to be restored with long-term certainty and continuity. Furthermore, it is also important that host countries Designated National Authorities capacity will be maintained.

Engagement options: The process of developing of both modalities and procedures for national reporting on NDCs, and on the mechanisms under Article 6 should include participation from all types of countries. There is a need for pioneering activities where developed and developing countries together explore and test new approaches to international cooperation on climate. The experience from this pioneering activity can help shape the Article 6 mechanisms and transparency framework. This activity can build upon the capacity which the CDM has built up, but which is currently underused.

3.3 Supporting mitigation action

Climate finance

Up to, and after, Paris, in December 2015, climate financial investment pledges grew substantially, both by public and private sector (e.g. banks)¹³. However, sometimes, it is difficult to distinguish funding specifically made available for climate finance purposes from other development cooperation funds. This is partly because there is a significant amount of funding in conventional development programmes that also serves climate purposes and also because former development funding has been relabelled as climate finance. Nevertheless, funding for large-scale climate projects is there in ever larger amounts. The GCF has announced its intention to approve projects worth USD 2.5 billion in 2016¹⁴, and multilateral development banks are working hard to mainstream climate change in their total operation.

Advance finance is a major bottleneck since donors prefer to spend their funds at lower risk on Results Based Payments, after the project has been implemented. This is true for large scale investments and investment funds that consider it difficult to find soft money at the stack of equity or debt fund.

¹² www.carbonexpo.com, and http://carbon-pulse.com/20580/?utm_source=CP+Daily&utm_campaign=5109ed8af5-CPdaily30052016&utm_medium=email&utm_term=0_a9d8834f72-5109ed8af5-93611509

¹³ <https://www.odi.org/comment/10201-climate-finance-agreed-paris-cop21>

¹⁴ <http://www.greenclimate.fund/-/gcf-encourages-more-high-quality-and-ambitious-proposals>

It is also true for project developers that need working capital and de-risking facilities to get their projects going.

Engagement options: There is a need for advance finance to complement RBF. Even if climate finance can make the project commercially attractive, commercial banks are reluctant to invest in the application of relatively new low-carbon technologies in developing countries. Developed country governments can provide upfront finance with a higher risk tolerance, or setting up a facility that takes away a specific risk, like the currency risk.

Capacity building

On the other side of the spectrum of international cooperation, developing countries are being assisted in developing and refining their Intended Nationally Determined Contributions (INDCs) and the underlying policies. The latter is often being referred to as Nationally Appropriate Mitigation Actions (NAMAs). The support in this field is provided both through multilateral channels like UNDP and GGGI and through bilateral channels such as AfD (France), SCIP (UK, Norway, Denmark) and CDKN (UK, Netherlands). Also, the GCF is contributing to building capacity in developing countries through its readiness programme.

The mitigation ambition which countries expressed in their INDCs already covers half of the mitigation action that is needed to get on a 2 °C pathway. To increase the ambition, new approaches to both identifying mitigation options and to realising them are needed. To name an example, in OECD countries, 55% to 65% of the greenhouse gas emissions are related to material management.¹⁵ In a world where only 4% of the materials are recycled,¹⁶ this points at improving resource productivity or the circular economy as a promising strategy to reduce emissions beyond the measures described in the INDCs. Exploring this opportunity jointly with partner countries outside the OECD would also improve our, much needed, understanding of the mitigation potential along international value chains.

This also represents an opportunity for international cooperation on climate action. Companies currently lean towards reducing emissions in their own value chains, rather than originating offsets from a project that is unrelated to their core business. Using the business relations that exist within value chains as a way to shape international cooperation on climate mitigation is promising, both in terms of mitigation impact as well as in making best use of Swedish expertise.

Engagement options: Capacity building on low-carbon development is a relatively crowded field but would benefit from initiatives which pioneer new approaches to identifying and incentivising mitigation actions. These include activities focussing on subnational governments, enhancing cooperation on mitigation action along supply chains, using resource efficiency or even the circular economy as means to identify and develop mitigation options or focussing on start-ups. New approaches are needed to jointly find ways to increase the ambition of NDCs, and to reach out to sectors which have hardly benefitted from climate finance.

Disconnection between INDCs and finance

Despite the funding for investments being available and countries being supported in building capacity and becoming ready, the paradigm shift to low carbon economies is not getting off the ground as fast as many stakeholders would like. The GCF ambition to fund projects worth USD 2.5 billion in 2016 is considered unrealistic by many. The contributions made to the fund may well remain untouched for a while.

One of the reasons for the slow progress is that there is a significant disconnection between INDCs and investment finance. The ambitions and ideas presented in developing countries' INDCs and NAMA proposals are in early stages of development. Funders and donors indicate that many of the plans, while ambitious and of good intent, are to go through the next phases of design and development before they are ready to be financed. Many NDCs have been written up quickly leading up to Paris and now need to be anchored in national policies, institutions and businesses. The quality of NDCs is as good as the underlying policies. For some countries, for instance, Ethiopia, the INDC is a reflection of the actual state of policy making where low carbon development is being mainstreamed in regular policy development and implementation. In quite a few other countries, the INDCs are as thin as the paper they are written on.

It takes time and effort to elevate policy and project development from the initial stages to bankable proposals. This is definitely not unique for climate finance, but a general feature in development cooperation. Enhancing project development is a typical bottleneck. Examples of programmes in the climate finance realm that address project and policy development include the NDF, NEFCO, (both Nordic) IKI (Germany), the NAMA Facility (Germany, UK, Denmark) and more recently, REPP (UK). There is definitely room for more of these initiatives.

The disconnection between host country governments and investment finance is felt on both sides. Host country governments feel that they are left with piecemeal support and with international consultants flying in and out absorbing donor funding. They are frustrated that serious finance is not flowing immediately after they completed the required INDCs. The large investment funds find that project and policy plans in developing countries are still far from being investment ready and are confronted with government counterparts that don't understand the complexity of international finance.

The confidence between developed and developing countries that climate finance is made available and is well-allocated can be enhanced. For instance, in many traditional aid programmes, developed countries have the majority vote and decide what's happening, while developing countries would like to decide themselves.

Engagement options: Also on country-level a project support facility should help mitigation initiatives get access to financing. By developing and applying sound MRV procedures to the mitigation activity, while also tracking the financing that is made available, the cooperation between developing and developed countries can be improved further. This could include peer-to-peer learning, building networks where bottom-up initiatives are assisted with accessing climate finance,

Secondly, the national reporting can enhance transparency and build the confidence that is needed to scale up financing. Opportunities there also lie in peer-to-peer cooperation on the national reporting programmes on emissions, and to ensure consistency between countries.

4.

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Sweden may consider developing additional climate finance instruments that help unlocking the investment finance that is already available.

4.1 Assessment of identified needs against the engagement criteria

The identified needs have been assessed against the engagement criteria posed by SEA in this assignment, evaluating whether they would contribute to SEA engagement preferences. The result is presented in Figure 3.

	1. Ambitious climate action	2. Robust, effective, timely	3. Be complementary International	3a. Be complementary Sweden	4. Additional ERs	5. Minimise programme expenses	6. Public and private stakeholders	7. Paradigm shift	8. Swedish expertise	9. Swedish technologies	10. Different sources of finance	11. Lessons from the past	12. Bottom-up initiatives	13. Budget range 1 - 10 million
MRV	+/-	+/-	+	+	+/-	+/-	+/-	+	+	-	-	+	+/-	+
Private sector: investing	+/-	+/-	-	-	+/-	+/-	+/-	+/-	+/-	+	+	+/-	-	
Private sector: access	+/-	+/-	+	+	+/-	+/-	+/-	+/-	+	+	+	+	+/-	
Markets and pricing	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+	+	↑	↑	+	-	↑
Capacity	+/-	+/-	+/-	+	+/-	+/-	+/-	+	+	+	+	+	+/-	
Advance payments	+/-	+/-	+/-	-	+/-	+/-	+/-	+/-	+/-	+	+	+	-	
Enhancing NDCs	+/-	+/-	+	+	+/-	+/-	+/-	+	+	+	+	+	+/-	

Figure 3: Assessment of needs against the engagement criteria

- + When addressing this need, there is a potential to contribute to this criterion
- +/- When addressing this need, there could be a potential to contribute to this criterion, subject to programme design
- Addressing this need is unlikely to contribute to this criterion
- ↑ Positive effect in the longer term

Some engagement criteria are selective, while others have equal scoring across the different needs. For example, Swedish technologies are better positioned in a programme which promotes increasing NDC ambition. MRV development on the other hand is less likely to promote the transfer of Swedish technology. At the same time all options contribute equally to *ambitious climate action* and support the *robustness of the climate action*. These criteria will not direct Sweden to the most appropriate and promising engagement option. They do have merit as a design criterion when developing a selected Swedish intervention.

Across the thirteen engagement criteria, the following are most selective.

#3 Complementarity: Additional Swedish contributions to investment finance and early financing can hardly be complementary to the current Swedish climate finance nor to what other countries are doing already. Sweden is already the largest per capita contributor to the GCF, and the funds available are not likely to be depleted soon.

When it comes to markets and carbon pricing, Sweden is already participating in the World Bank initiatives in this field. This could be considered an excellent basis from which to expand Swedish participation, but it could also be a reason to focus on new or complementary engagement options.

#12 Supporting bottom-up initiatives: the needs that directly address NDC implementation match the SEA's desire to support bottom-up initiatives best. The needs that address the design of the international framework (e.g. developing markets) would do so only indirectly.

#13 Budget range: engaging in MRV programmes and in activities related to developing market and pricing mechanisms, fit a budget range of EUR 1 to 10 million per. For leveraging private sector finance or providing advance payments for investments, the potential impact of the proposed budget range is less adequate.

#9 Swedish technologies are also best served with programmes addressing needs within the target countries. **#10 Different sources of Swedish finance** are also best applied in programmes addressing the needs of governments and project developers rather than the needs related to developing the UNFCCC framework and mechanisms.

Similarly, **#8 Swedish expertise** with designing and operating mitigation mechanisms can contribute to developing and shaping the institutional and procedural aspects of the Paris Agreement, in particularly the mechanisms under Article 6. Both the Swedish government and Swedish knowledge institutions have internationally renowned knowledge on these subjects and have been very effective in bringing their message across.

Supporting pricing and market initiatives can have a more long-term effect. It takes time for markets to become operational and gain confidence from its participants. Once the market has been established, it can be a very effective way to source and direct financing. This would benefit suppliers of low-carbon technologies, including suppliers from Sweden.

It will take time for the three mechanisms described in Article 6 to develop and become operational. Also, the mechanisms under the Kyoto Protocol took years to become operational and required even longer to gain the confidence of the private sector. Developing a mechanism requires modalities and procedures but above all, it requires pioneers. These are often governments and international financial institutions. SEA interest in supporting bottom-up initiatives, exploring new technologies and approaches to reducing emissions, while also supporting the operationalisation of the mechanisms under Article 6, fits well with such a pioneering role.

4.2 Selecting options

From the identified needs of chapter 3 and the assessment against the engagement criteria of paragraph 4.1 we have defined 15 options for

engagement, which are presented in Figure 4. If the options listed in Annex 1 overlapped with scope and objectives mentioned in the interviews, the interventions were merged. The intervention types have been plotted along the axes capacity building versus financing and interventions on the level of national policies and projects versus interventions on the level of the international framework.

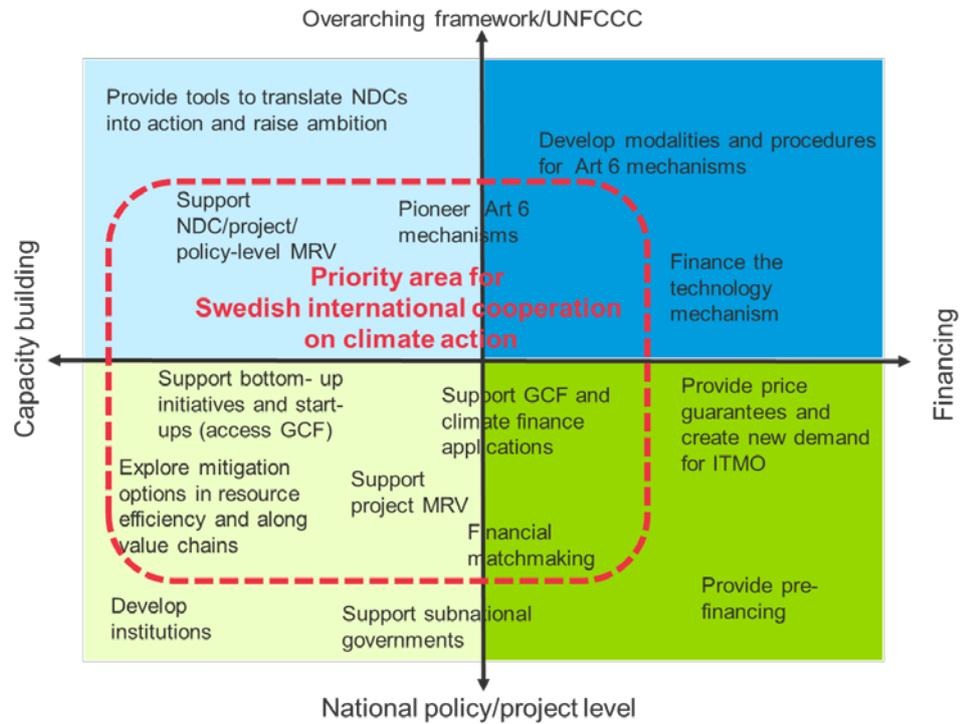


Figure 4: Mapping of additional Swedish intervention options

The left side of the plot represents interventions that focus on initial capacity building. An example of these is supporting developing countries with the drafting of their NDCs and assisting them with initial NAMA proposals. On the right hand side feature purely financial instruments, for instance provision of investment finance to the GCF or providing payments for emission reductions.

The lower quadrants of the plot contain interventions on the level of projects and policies of developing countries, i.e. measures to realise the ambition of current INDCs. The top quadrants contain interventions that support the development of the international framework, like the definition and development of market mechanisms and the elaboration of MRV procedures under the UNFCCC.

New programming by the Swedish government would be most useful, desirable, feasible and effective in the dotted area, i.e. in the field linking initial capacity building with project finance and with a strong emphasis on work on the ground in developing countries.

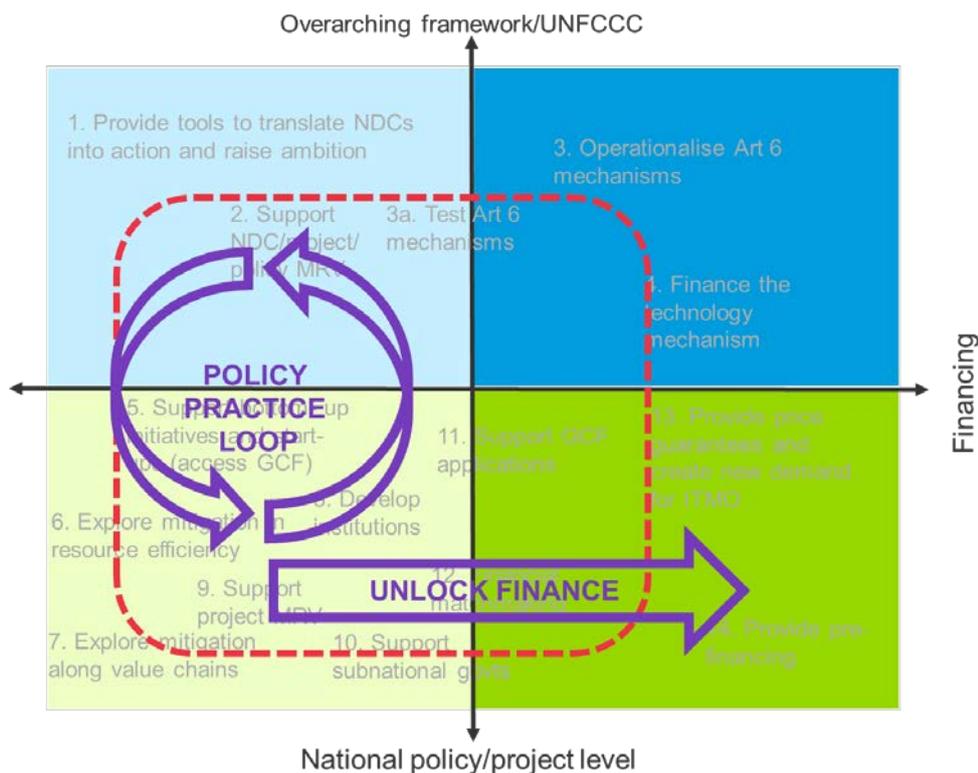


Figure 5: Synergies and interactions of possible Swedish interventions

More, in particular, programmes can be designed in such a way that they enhance the investment potential and unlock pledged climate finance, as indicated by the arrow in the lower quadrants of Figure 5.

In addition, Sweden could enhance its successful policy practice loop, whereby it organises concrete action on the ground and feeds back the experiences into the international negotiations. Such interventions could be for instance feed into the debate on the design of future mechanisms under Article 6 or standards for sectoral and policy based MRV.

These insights provide direction to Swedish international cooperation on climate action. A first opportunity lies in unlocking climate finance by bringing private initiatives to a state where they are ready to access finance. Sweden is already the largest per capita contributor to the Green Climate Fund and participates in several innovative climate funds managed by international financial institutions. A project support facility can help unlock the climate finance commitments already made by Sweden and by other countries.

A second opportunity lies in building and expanding the coverage of the transparency framework on project and sector-level. Climate finance has been considerably less effective in sectors where there are few, or no, internationally agreed methodologies to quantify the mitigation impact. Sweden could respond to an articulated request from private sector stakeholders for support with developing a monitoring framework to facilitate access to upfront or results-based climate finance.

The practical experience with climate finance and MRV support on project or sector-level can also aid the development of the mechanisms under Article 6. Formulating the modalities and procedures of a new mechanism for international cooperation requires pioneers with hands-on experience.

A third opportunity lies in developing additional possibilities to mainstream low carbon development. The national commitments made before the Paris negotiations already cover about half of the mitigation effort that is needed to limit global warming to 2 °C. Sweden has the technical and conceptual expertise to assist with taking the plans a step further, and explore innovative approaches to both identifying mitigation action and to international cooperation on climate change. Existing business relations within value chains can serve as a basis for international cooperation on climate action. Concepts like improving resource productivity and circular economy can reveal new mitigation options.

4.3 Programme suggestions

Considering the above assessment, it would make sense for Sweden and the SEA to create or join a programme to accelerate project development and enhance the access to climate mitigation funds at the GCF and other climate financiers. The projects to be supported should have a clear link to the host country's NDC. Depending on the available budget, the scope of the programme can be focused on selected countries and/or sectors. The programme would target private sector developers.

Sweden could consider setting up a programme of its own, which would most likely maximise the use of Swedish expertise and technology. The programme should be non-bureaucratic and flexible to support the need by the Swedish potential experts, suppliers and investors.

Alternatively, Sweden could consider joining existing initiatives, such as the NAMA Facility, GGGI, or CDKN. This is likely to result in lower programme expenses and would draw on the experience these programmes already have. It may be less flexible however. REPP is another alternative, although started only in May this year. In any case, this kind of support has the aim to unlock the finance vested in the GCF and other climate funds.

In support of the businesses the programme would be promoting, Sweden could consider making available funding from other public budget lines to pay for results of the projects once implemented. Such payments could also be procured from one of the carbon initiatives from the World Bank, including PAF, CiDev and TCAF, in which Sweden, through the SEA, is participating. A forecasted firmer revenue stream can be an important trigger to get access to finance.

The programme could also support the development of MRV systems, in cases where MRV is a barrier for securing international climate finance.

As an alternative approach, Sweden could target host country governments with whom established cooperation relationships exist and assist them with the advancing of their NDCs and creating the institutional conditions in which low carbon investments can take place.

Sweden could also consider a public-private-partnership approach as exemplified by the Dutch "Partners for International Business" programme¹⁷. This programme provides tailored multi-year government support for consortia of Dutch and local companies to remove barriers for international business. The pallet of tools available includes promotion and marketing, government-to-government knowledge transfer and economic diplomacy. The support packages are tailor-made from a wide range of government

¹⁷ <http://www.rvo.nl/subsidies-regelingen/partners-international-business-pib> (in Dutch)

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support programmes from various budget lines and ministries. A Swedish climate version of such a programme could include all of the above, in addition to the items mentioned earlier (business plans, RBP, MRV).

5.

Annex 1: Gap analysis

5.1 Current programmes and initiatives

Table 1: Tasks and responsibilities resulting from the Paris Agreement (PA).

#	TASKS AND RESPONSIBILITIES RELATED TO DEVELOPING COUNTRIES	PARIS AGREEMENT ARTICLE AND PARAGRAPH	PROGRAMMES AND INSTITUTIONS RESPONDING TO THESE NEEDS
MRV			
1	All parties shall participate in the existing measurement, reporting and verification processes under the Cancun Agreements.	Decision I/CP.21 ¹⁸ : para 106e	
2	Developing parties shall provide necessary information for clarity and transparency in accordance with decision 1/CP.21	Article 4 paragraph 8	
3	Parties shall account for their NDCs, in accounting for anthropogenic emissions and removals. Parties shall promote environmental integrity, transparency, accuracy, completeness, comparability, and consistency, and ensure the avoidance of double counting.	Article 4 paragraph 13	
4	Enhancing the reporting by developing country parties on support received, including the use, impact and estimated results thereof.	Decision I/CP.21 Paragraph 95d	CBIT, CDKN, ICAT, IPMM, IKI, LECB, PCCB, UNFCCC
5	The initiative and establishment of the Capacity-building Initiative for Transparency will support developing countries to meet enhanced transparency requirements under Article 13.	Decision I/CP paragraph 85	
6	Support to meet enhanced transparency need and submission of national inventory reports and the information necessary to track progress made in implementing and achieve respective countries NDCs	Article 13, paragraph 7a and b	
FINANCING			
7	Financial support provided to developing parties shall enhance implementation of their policies, strategies, regulations and action plans on both mitigation and adaptation.	The decision I/CP.21 paragraph 53	CiDev, CPLI, CPF, GCF, GEF, Electrifi, Energy+ Initiative, CPLC CPF, CIO, GCF, Electrifi, Energy+, NDC, NAMA Facility, PAF, TCAF, development banks

¹⁸ The reference is taken from the Adoption of the Paris Agreement.

#	TASKS AND RESPONSIBILITIES RELATED TO DEVELOPING COUNTRIES	PARIS AGREEMENT ARTICLE AND PARAGRAPH	PROGRAMMES AND INSTITUTIONS RESPONDING TO THESE NEEDS
8	Develop a variety of actions which facilitate support from developed countries in mobilising climate finance and supporting country-driven strategies.	Article 9 paragraph 3	LECB, CDKN, GGGI, Energy+, GILCF, FX, TCAF, development banks
9	Give positive incentives for reducing emissions from deforestation and forest degradation.	Article 5, Paragraph 2	GEF, REDD+, UN-REDD
PROJECT PREPARATION AND IMPLEMENTATION			
11	Incentivize and facilitate participation of mitigation actions by public and private entities authorised by a party.	Article 6 paragraph 4b	CiDev, CDKN, GGGI, GCF, IKI, PAF, PMR, LECB, NAMA Facility, PMR, TCAF, development banks
POLICY PREPARATION AND PLANNING			
12	Support for developing country-driven strategies.	Article 9 paragraph 3	
13	Financial resources provided to developing countries should enhance the implementation of their policies, strategies, regulations and action plans and their climate change actions.	Decision 1/CP.21 paragraph 53	CDKN, GGGI, IKI, IPMM, LECB, PMR, TCAF, UNFCCC, development banks
14	Communicate ambitious efforts to limit climate change.	Article 3 paragraph 0	
15	Ability to develop (long-term) mitigation strategies and policies.	Article 4 paragraph 19	
16	Integrated holistic and balanced non-market approaches for implementing NDCs.	Article 6 paragraph 8	CDKN, GGGI, IKI, IPMM, LECB, PMR, TCAF, development banks
17	Improve the policy approaches and incentives for activities on reducing emissions from deforestation and forest degradation.	Article 5 paragraph 2	GEF, REDD+, UN-REDD
18	Each Party shall prepare, communicate and maintain successive NDCs that it intends to achieve.	Article 4 paragraph 2	IPMM, ICAT, UNDP, UNFCCC, Development banks
19	Improvement of mitigation from previous NDCs.	Article 4 paragraph 3	
20	Developing countries need to pursue domestic mitigation measures that aim to achieve the contributions set out in the NDCs.	Article 4 paragraph 2	All programmes listed in Annex 2.
POLICY MONITORING AND REPORTING			
21	Need to provide necessary information on the progress of implementation of NDCs in a transparent manner.	Article 13 paragraph 7b	
22	Improve the national reporting on inventories, according to the IPCC guidelines.	Article 13 paragraph 7a	UNFCCC, IPMM, ICAT, CBIT, LECB
23	Monitor, report and verify the climate impact on national and programme/policy level	Decision 1/CP.21 paragraph	
24	Capacity to regularly communicate progress made on implementing capacity-building plans, policies, actions or measures to implement this Agreement.	Article 11 paragraph 4	

#	TASKS AND RESPONSIBILITIES RELATED TO DEVELOPING COUNTRIES	PARIS AGREEMENT ARTICLE AND PARAGRAPH	PROGRAMMES AND INSTITUTIONS RESPONDING TO THESE NEEDS
25	Improve the national reporting on inventories, according to the IPCC guidelines.	Article 13 paragraph 7a	
TECHNOLOGY TRANSFER			
26	The technology framework established under article 10.4 to update and undertake TNA and the implementation of the TNA results through preparation of bankable projects	Decision 1/CP.21 paragraph 68a and b	
27	Need a framework to provide enhanced financial and technical support for implementation of the results of the technology need assessment (TNA)	Decision 1/CP.21 paragraph 68 b	GEF
28	Strengthen cooperative actions on technology development and transfer	10 paragraph 2	
29	Developing countries need to be provided support, including financial support for implementing Article 10 under the agreement. This includes technology development and transfer at different stages of the technology cycle.	10 paragraph 6	
30	Decouple emissions from economic growth through accelerated innovation and encourage and enable innovations.	10 paragraph 5	CTCN
31	Create an enabling environment that can help mobilising increased levels of investment in climate technologies;	The Decision I/CP.21. Paragraph 116	
CAPACITY BUILDING			
33	Capacity building measures that shall improve country ownership be cross-cutting and improve ownership at all levels.	11 paragraph 2	LECB
34	Need for country-driven capacity building on national needs.	11 paragraph 2	
35	Enhance public and private sector participation in the implementation of NDCs	6 paragraph 8a	CCAC, CDKN, Climate-Kic, CPLI, GABC, GFEI, GGGi PMR, PAF
36	Identifying capacity gaps and needs and recommend ways to address them;	Decision I/CP.21 paragraph 74a	
37	Exploring how developing country parties can take ownership of building and maintaining capacity over time and space;	Decision I/CP.21 paragraph 74f	GABC, GFEI, PCCB
38	Identify opportunities to strengthen capacity at the national, regional, and subnational level;	Decision I/CP.21 paragraph 74g	

5.2 Needs left unaddressed

From both developing country governments and businesses some needs are left unaddressed or preconditions that are not in place. The gaps are listed in Table 2 and for each gap options are suggested for the Swedish government to engage. The colour coding referring to the first row categorises the nature of the gaps along two dimensions, as follows.

	Capacity building	Finance
Overarching Framework		
Local level		

Table 2: column one shows the needs left unaddressed identified from the above table and from interviews within the study. Column two shows some potential solutions for each needs that have been identified.

NEEDS LEFT UNADDRESSED		POTENTIAL SOLUTIONS OR INITIATIVES
GAPS ON THE LEVEL OF THE PARIS AGREEMENT		
RELATED TO MRV		
1	Inconsistent methodologies and data collection, including baselines, and the future NDC process	Provide capacity building support for the development of methodologies and procedures for data collection on national emissions and emission reductions as a result of policies and project interventions.
2	Absence of MRV approaches for sectors which have received limited climate finance or for alternative approaches to mitigate greenhouse gas emissions	Support the development of the project and policy-level metrics which can help quantify mitigation impact, in particular in sectors where such metrics are lacking. Support the development of metrics which allow for a credible quantification of emission reductions from mitigation action based on resource efficiency, circular economy or improving value chain efficiency.
RELATED TO FINANCING		
3	Limited capacity in the target countries to prepare financially viable project proposals, which now hampers access to funding	To support countries in creating viable projects, a centre or institution could be established which will focus on identifying potential financial support and improve the projects submitted so they better can be matched with existing funding possibilities. The idea is that the services provided by the initiative should be paid by the applying country.
4	Targeting actual financial needs, efficiently	Potential for establishing a financial matchmaking network that maps different ongoing initiatives with the need for climate projects. The objective will be to identify how these initiatives and their mandates can/should be optimised to be suitable for the financial needs of climate projects.
5	Difficult access to equity or debt financing	Allocate funds to pre-finance investments in low-carbon technologies with capital, equity, and/or debt. Results-based-payment can only increase the operational revenues, but not cover the investment itself. This engagement option could include support to existing initiatives like the TCAF and REPP.
6	GCF does not reach the private sector	- Support private sector projects with applying for GCF funding - Simplify GCF application processes
7	Limited peer-to-peer interaction on financial programmes and initiatives which effectively reduce emissions	Set up a programme which supports the peer-to-peer learning of best practices on mitigation programmes and policies, which supports turning NDCs into climate policies. This could include best practices on mitigation programmes operated by Swedish Agencies

	NEEDS LEFT UNADDRESSED	POTENTIAL SOLUTIONS OR INITIATIVES
		and which could be modified and replicated potential to other countries.
RELATED TO CARBON MARKETS		
8	Unclear how developing countries can use the Article 6 mechanisms for international cooperation	<ul style="list-style-type: none"> - Provide developing countries with tools to track mitigation action and avoiding double counting of mitigation outcomes - Support the operationalization of the Article 6 mechanisms by supporting developing countries in the negotiations.
9	High upfront transaction costs of project developers to develop projects for the carbon market / result-based climate finance	Introduce a project development facility, which make projects bankable and helps secure market and non-market-based finance.
10	No incentives for developing new projects for the international compliance market	<ul style="list-style-type: none"> - Introduce price guarantees for mitigation outcomes (e.g. strengthen the PAF, introduce and finance a floor price) - Lobby for opening up new sources of compliance demand (e.g. new demand from aviation and international shipping) - Lobby for industrialised countries to raise their ambition to purchase mitigation outcomes from developing countries
GAPS ON COUNTRY LEVEL		
RELATED TO PROJECT PREPARATION AND IMPLEMENTATION		
11	Limited capacity to prepare bankable projects	Set-up project preparation facilities which assist project developers with submitting climate finance applications which are bankable.
12	Bottom-up initiatives fail to connect with climate finance and technical assistance	Support networks that assist bottom-up initiatives in developing countries and assists with connecting them to climate finance.
13	Limited access to fast accessible climate finance (intermediate financing) for projects.	Initiatives could include supporting special initiatives that can set up a facility/initiative to support intermediate financing, alternatively start an own facility that targets intermediate finance.
RELATED TO POLICY PREPARATION AND PLANNING		
14	Limited understanding of NDCs and how to implement policies and development plans which reduce emissions in the short and long-term	<p>Support governments by</p> <ul style="list-style-type: none"> - Raising awareness of the meaning and the implication of NDCs. - Providing means to include long-term emission trajectories in countries development planning. - Helping countries use NDCs as a planning tool. - Developing marginal abatement cost curves and use these to develop climate policies.
15	Limited resources and capacity for backing of NDCs with domestic mitigation policies and measures	<p>Support governments with:</p> <ul style="list-style-type: none"> - Implementing a process of preparation and communication of NDCs, while building the capacity to identify new domestic mitigation measures which can further raise the NDCs ambition while contributing to sustainable development. - Provide policy support and develop national programmes and measures which focus on translating INDCs into government action. - Measures could include, i.e., peer-to-peer dialogue between policy-modellers and/or policy-makers on e.g. how a particular policy was identified, selected, designed, implemented and what experiences

	NEEDS LEFT UNADDRESSED	POTENTIAL SOLUTIONS OR INITIATIVES
		have been gained. It could also take the form of delegating national experts to foreign governments.
16	Limited progress in LDC and SIDSs with preparing strategies, plans, and actions for low carbon development.	Provide support that help LDCs and SIDS implement strategies. Actions could include bi-lateral support by developing strategies through delegate national experts to these governments or facilitate regional training programmes. Support can also be given to other entities, like GCF or UNDP that in turn can help support these countries in developing strategies.
RELATED TO POLICY MONITORING AND REPORTING		
17	<p>Limited national capacity to create and maintain an efficient national streamlined MRV process that complies with the transparency framework under the Paris Agreement.</p> <p>There are unanswered questions on double counting and granularity, or nesting of project-level activities into subnational and national reporting.</p>	<ul style="list-style-type: none"> - Establish continuous monitoring systems for Biennial reporting on NDC progress. The monitoring system needs to be integrated with national and international reporting progress. - The potentially set-up technical review process to allow for continuous improvement of the monitoring process. It is suggested that peer to peer review among various countries could be considered. - Develop modalities to ensure vertical consistency, i.e. to integrate MRV at plant or project-level with MRV on NAMA or sector-level to MRV at the national inventories, and support with their implementation. Consistency is important to facilitate robust accounting at all activity levels.
18	Lack of robust tracking of greenhouse gas emissions in the countries (some developing countries have not reported emissions since the 1990s).	Support in building emission reporting capacity and infrastructure.
RELATED TO TECHNOLOGY TRANSFER		
19	Limited funding for the technology mechanism	Support the technology mechanism for a set period of time to ensure cash flow and certainty of the technology mechanism.
20	Limited experience with exporting Swedish expertise and technologies which can be effectively applied in the specific developing country context. There is little experience with how to support the adoption and embedding of innovative technologies in developing countries.	Sweden can assess which Swedish mitigation technologies can be durably applied in developing countries and identify ways to transfer them. Technologies and the way they are embedded need to be suitable for the receiving country context.
RELATED TO CAPACITY BUILDING AND ALTERNATIVE MITIGATION APPROACHES		
22	Limited institutional capacity.	Capacity building should improve the institutional capacity to help identify mitigation options and monitor their performance and impact.
22	Subnational governments require more expertise to formulate and meet an emission reduction target.	Develop climate support programmes which focus on subnational governments, notably cities, rather than national governments. Also, consider strengthening city-to-city cooperation and networks of municipalities.

	NEEDS LEFT UNADDRESSED	POTENTIAL SOLUTIONS OR INITIATIVES
23	NDCs are formulated by national governments while a lot of mitigation potential lies in cooperation across international value chains.	Strengthen international cooperation on low-carbon development within supply chains which are important to Sweden and which extend to developing countries.
24	The mitigation potential of resource efficiency is often overlooked. Usually, the majority of energy consumption relates to extracting and processing materials.	Launch programmes which provide technical support and financing to improve resource efficiency through the adoption of circular economy strategies like material substitution, industrial ecology, recovery and reuse, circular design, lifetime extension, sharing and service models, etc..
25	Support bottom-up initiatives start-ups and innovative business models in the preparatory phases.	Support existing infrastructures like Impact Hub or develop programmes which support initiatives and start-ups with the potential to reduce emissions or facilitate emission reductions in the short and long term.
26	Focus on sectors which face challenges in accessing climate finance, like agriculture or non-motorised transport.	Support existing initiatives which target mitigation actions in these sectors and/or support the development of credible metrics which allow financial institutions to measure the mitigation impact of their investments. Potentially, support the development of concrete project proposals.
27	Collaboration between developing countries or/and regions in the countries in exchanging practices	Twin exchange can be developed either between Sweden and a developing country. Alternatively, the exchanged is facilitated by Sweden, but the exchange is between two countries or specific national regions. The focus can for example be on the sectorial level, e.g. agricultural sector.

6.

Annex 2: Support programmes

6.1 Current programmes and initiatives

The UNFCCC refers to three categories of international cooperation on climate: financing, capacity building and technology transfer. It has set up specific mechanisms to support each of these categories. Various institutions, donors and international financial institutions are on one hand supporting the development of these mechanisms while on the other hand using them to support mitigation action in developing countries. Next to that, there are a multitude of multi- and bilateral initiatives that aim to enhance and support the realisation of the mitigation ambitions expressed under the Paris Agreement. Not in all cases, their work is presented or as part of the Paris Agreement. Mitigation action has multiple benefits and sometimes the justification of activities does not rely on the emission reductions, even though the activity reduces emissions.

It goes too far to mention all programmes and initiatives. Instead we will focus on programmes that have a financial importance or which represent a relatively unique approach to international cooperation on climate change mitigation.

The selection has also prioritised programmes and initiatives which represent a novel approach to support climate action. Some of the more important programmes, for example in terms of capitalisation or because of their mentioning in the Paris Agreement, have been elaborated in more detail.

The Lima-Paris Action Agenda (LPAA) and the Non-State Actor Zone for Climate Action (NAZCA)¹⁹ are two web-sites where the UNFCCC reports on climate initiatives. The LPAA provides an overview of transformational initiatives where state and non-state actors cooperate to accelerate cooperative climate action in support of the Paris Agreement. NAZCA on the other hand is a registry, maintained by the UNFCCC which tracks commitments to climate action by companies, cities, subnational regions, and investors to address climate change. Some of the initiatives listed on these two sites, which receive significant support from national governments, are included in the overview below.

¹⁹ <http://climateaction.unfccc.int/>

6.2 Financing

Carbon Initiative for Development (CiDev)²⁰ aims to improve and extend the CDM by applying CDM metrics to determine the mitigation impact of projects and pays for Certified Emission Reductions in LDCs.

Carbon Pricing Leadership Coalition (CPLC)²¹: an initiative of heads of government and private sector leaders which call on their peers to join them in putting a price on carbon. It targets all developing countries.

Carbon Partnership Facility (CPF)²²: a World Bank carbon finance instrument which purchases emission reductions from long-term investments, in cooperation with local governments and market participants in developing countries.

Climate Investor One (CIO)²³ is a EUR 50 million fund which aims to fast-track renewable energy projects in developing and middle-income countries. It should mobilise USD 2 million. It targets developing and middle-income countries.

Globally Networked Carbon Market (GNCM)²⁴, is an initiative by the World Bank, and aims to explore alternative visions for how a potential future international carbon market could accommodate different domestic climate actions.

Green Climate Fund (GCF)²⁵: provides predictable financing resources, including results-based payments in developing countries. It also foresees establishing a project preparation facility.

The Paris Agreement mandated the GCF to provide predictable financial resources in the post-2020 framework. The finance need to be scaled up to at least minimum USD 100 billion per year by 2020. The GCF will focus on Least Developed Countries (LDCs) and Small Islands Developing States (SIDS).

The GCF will establish a project preparation facility that can target small scale activities and direct access entities. It has also been decided to simplify the funding proposal template and concept note template so that it is designed to facilitate the application process.

An outcome of the Paris negotiations was that the GCF was asked to operationalise result-based payments for activities in decision 1/CP.16, article 70, which relates to mitigation initiatives in the forest sector. The Article, encourages developing countries to contribute to the forest sector by undertaking national appropriate actions in either reducing emission from deforestation, forest degradation or conservation of forest carbon stock or sustainable management of forests.

Global Environment Facility (GEF)²⁶ Undertakes pilot concrete actions on climate change activities that are particular relevant for the least developed

²⁰ <http://www.ci-dev.org/>

²¹ <http://www.carbonpricingleadership.org/>

²² <http://cpf.wbcarbonfinance.org/>

²³ <http://www.climatefundmanagers.com/>

²⁴ <http://www.worldbank.org/en/topic/climatechange/brief/globally-networked-carbon-markets>

²⁵ <http://www.greencclimate.fund/home>

²⁶ <https://www.thegef.org/gef/>

countries, including forestry related activities. The GEF also supports institutional development (it has supported 46 countries with preparing their INDCs), Technology Needs Assessments (TNAs), sustainable forest management and climate action in LDCs. It targets 183 participating developed and developing countries. During the Paris negotiations, the GEF has been invited to continue supporting countries with formulating policies, strategies, programmes and projects to implement activities that have been identified in the countries respective INDCs.

Electrification Financing Initiative (Electrifi)²⁷ targets the private sector and invests in renewable energy for rural electrification. Eligible projects require between EUR 0,5 million to EUR 10 million and are located in developing countries.

Energy+ Initiative (Energy+)²⁸ supports energy-related NAMAs with capacity building and financing.

In 2011, the Norwegian Government launched the International Energy and Climate Initiative (Energy+) to support developing countries in their efforts to achieve universal access to sustainable energy as well as to reduce GHG emissions by increasing their share of renewable energy and by improving energy efficiency. Moreover, the initiative aims to contribute to the climate negotiations by accelerating the implementation of energy related NAMAs that are already under development in developing countries. Energy+ builds on the conceptual framework of REDD+. The approach is implemented in three phases to facilitate the development of an enabling environment for innovative, energy-related initiatives that should receive financing through RBP. During the first phase, support is conventionally provided for the development of low-carbon energy sector strategies and policies as well as for the development of technical and institutional capacities. The second phase focusses on support for the implementation of policies and strategies and monitoring systems. The third phase provides RBP to developing country governments for increasing energy access and reducing GHG emissions in the energy sector, compared to a business as usual baseline.

The Energy+ initiative seeks to use public funds to leverage private sector capital to cover the investment needs for increasing access to renewable energy. Public finance is also used to encourage investments in rural energy markets, which are often perceived as too risky by private sector investors.

Global Innovation Lab for Climate Finance (GILCF)²⁹ is an initiative which supports the identification and piloting of new climate finance instruments. Its objective is to mobilise private investment into climate change mitigation and adaptation in developing countries. The Lab is financed by EU governments, and the Rockefeller Foundation and administered by the Climate Policy Initiative.

Long-Term FX Risk Management (FX)³⁰ is an instrument developed by The Currency Exchange Fund (TCX) and the International Finance Corporation (IFC) which together aim to address the currency and credit risk

²⁷ <http://www.electrifi.org/>

²⁸ https://www.regjeringen.no/en/historical-archiv/Stoltenbergs-2nd-Government/Ministry-of-Foreign-Affairs/tema-og-redaksjonelt-innhold/redaksjonelle-artikler/2012/energy_background/id697734/

²⁹ <http://climatefinancelab.org/>

³⁰ <http://climatefinancelab.org/idea/long-term-currency-swap/>

of investments in developing countries. With an investment of USD 250 million it can enable USD 1.5 billion of clean investment projects.

NAMA Facility³¹: Responds to a need for financial and technical support for the development of Nationally, Appropriate Mitigation Actions. (targets: all developing countries).

By the first half of 2016 twelve NAMA had been selected for funding and the Facility was sourcing funding for a fourth tender round in 2016. The NAMA facility supports NAMAs which are a combination of policies and financial mechanisms, anchored in national development strategies and plans. The funding from the NAMA Facility should be used to leverage additional public and/or private capital investment, with the aim of developing a NAMA which can become financially independent over time. The NAMA Facility decided to provide technical support to NAMA development to enhance their readiness to receive funding.

Nordic Climate Facility (NCF)³²: builds partnerships between the Nordic countries and Nordic Development Funds (NDF's) partner countries on climate change adaptation and mitigation through a call for proposals which is open to institutions in the Nordic countries. The NDF targets specific partner countries.

Pilot Auction Facility (PAF)³³: Pilot Auction Facility: an experimental auction facility where price guarantees for verified emission reductions are auctioned. To gain experience with this way of purchasing emission reduction results, the World Bank varies the auction model and target sector varies with each auction round. The PAF targets all developing countries.

Transformational Carbon Asset Facility (TCAF)³⁴ is relatively new. It will measure and “pay for emission cuts in large scale programs in areas like renewable energy, transport, energy efficiency, solid waste management, and low carbon cities. For example, it could make payments for emission reductions to countries that remove fossil fuel subsidies or embark on other reforms like simplifying regulations for renewable energy.”

In addition to the earmarked climate finance there are numerous funds and programmes from developing banks and commercial banks which support investments in renewable energy, energy efficiency or other types of climate action. The Climate Policy Institute estimated that in 2014 USD 391 billion was invested in climate action,³⁵ already well beyond the USD 100 billion by 2020 committed under the Copenhagen Accords. Some development banks like the World Bank and the European Bank for Reconstruction and Development have supported INDC development. It is likely that they will continue supporting NDC development and implementation. Similarly, UNDP and UNEP have several programmes which support policy development in developing countries.

³¹ <http://www.nama-facility.org/start.html>

³² <http://www.ndf.fi/project/nordic-climate-facility-ncf>

³³ <http://www.pilotauctionfacility.org/>

³⁴ <http://www.worldbank.org/en/news/press-release/2015/11/30/new-500-million-initiative-to-boost-large-scale-climate-action-in-developing-countries>

³⁵ <http://www.climatefinancelandscape.org/>

6.3 Capacity building, MRV and transparency

Capacity Building Initiative for Transparency (CBIT): an initiative by the UNFCCC to strengthen the institutional and technical capacity required to meet the transparency requirements in the Paris Agreement, leading up to 2020 and beyond. CBIT is supported by the Coalition on Paris Agreement CBIT targets all developing countries.

Climate Development Knowledge Network (CDKN): recognising the need to support developing countries with defining its climate compatible development the UK Department for International Development (DfID) and the Dutch Ministry of Foreign Affairs (DGIS) initiated CDKN for a seven-year period from March 2010 to April 2017. CDKN provides technical assistance to decision-makers in developing countries, support them in the climate negotiations and supports research on climate compatible development.

Global Green Growth Institute (GGGI): has the marriage between economics growth and environmental sustainability as its main objective and aims to put green growth at the heart of economic planning in the public and private sectors of developing countries. GGGI provides analytical support to partner governments, assisting them with green growth planning.³⁶

International Climate Initiative (IKI)³⁷: The German government launched the IKI in 2008. In the initial years, it was funded through the proceeds of auctioning allowances under the European Emissions trading Scheme. Currently these proceeds are complemented with other sources from the German government budget. IKI is the main instrument for the German government to meet its climate financing commitments and the funding commitments in the framework of the Convention on Biological Diversity.

IKI is unique in being an open tender for adaptation, mitigation, REDD+ and biodiversity conservation projects. It is not applying a price on carbon as metrics but rather seeks broader impact on climate change, including public awareness. This flexibility makes IKI a source of funding for which also relatively innovative projects qualify.

Initiative for Climate Action Transparency (ICAT): responds to the calls for support from developing countries for improved transparency and capacity building related to measuring the impacts of climate action under the Paris Agreement. All developing countries

International Partnership on Mitigation and MRV (IPMM): supports international cooperation in mitigation action and impact monitoring and reporting. IPMM has 90 participating countries.

Low Emission Capacity Building Programme (LECB): The LECB aims to strengthen technical and institutional capacities in developing countries, while facilitating inclusion and coordination of the public and private sector in national initiatives addressing climate change. UNDP operates the LECB since 2011.³⁸ The LECB helps identify opportunities for NAMAs, design mitigation actions, develop systems for the MRV of proposed Actions and

³⁶ <http://gggi.org/activities/ggpi/ggp-overview/>

³⁷ <https://www.international-climate-initiative.com/en/>

³⁸

http://www.undp.org/content/undp/en/home/ourwork/environmentandenergy/focus_areas/climate_strategies/undp_projects_thatcontributetogreenlecrds/national_sub-nationalstrategies/low_emission_capacitybuildingprogramme.html

develop GHG inventory management systems. It is funded by the European Commission and the governments of Germany, Austria and the United States.

The **Paris Committee on Capacity-Building (PCCB)** has been established to assess developing country needs, identify capacity gaps and propose ways to address them and to foster global, regional, national and international cooperation. The Committee is supported by the CBIT and targets all developing countries.

Partnership for Market Readiness (PMR): addresses the need for economic and financial analysis to support the implementation of carbon pricing schemes, either emission trading or carbon taxation. PMR works mainly, but not exclusively, in emerging economies.

The **United Nations Framework Convention on Climate Change (UNFCCC)** provides capacity building support on national reporting to all developing countries.

UN-REDD is the **United Nations collaborative initiative on Reducing Emissions from Deforestation and forest Degradation** which supports the development and implementation of national programs in developing countries which avoid loss of forest stock, with involvement of all stakeholders

Also in relation to capacity building there are numerous programmes, partly funded by ODA, which aim to enhance capacity in developing countries.

6.4 Technology transfer and innovation

Climate Kic³⁹ is a European public private partnership aiming to address the challenge of climate change and drive innovation. It is mostly targeting Europe but its new Low Carbon City Lab has a global scope. It also has a start-up acceleration programme which aims to create investable businesses.

Climate Technology Centre and Network (CTCN)⁴⁰ promotes the accelerated transfer to environmentally sound technologies to support low carbon and climate resilient development in developing countries.

6.5 Single purpose programmes and alliances

Climate and Clean Air Coalition (CCAC)⁴¹: unites governments, civil society and private sector representatives, committed to protecting the climate in next few decades by reducing the emissions of short-lived climate pollutants. It launched the HFCs Initiative, which helps countries develop HFC inventories and reduce HFC emissions. CCAC targets all countries.

Cities Climate Finance Leadership Alliance (CCFLA)⁴²: an alliance of financial institutions and NGO's which are "working to mobilize investment into low-carbon and climate-resilient infrastructure in cities and urban areas internationally".

³⁹ <http://www.climate-kic.org/start-ups/>

⁴⁰ <https://www.ctc-n.org/>

⁴¹ <http://www.ccacoalition.org/en>

⁴² <http://www.citiesclimatefinance.org/>

Covenant of Mayors (CoM)⁴³: an alliance of over 6,690 subnational governments which pledge to reduce CO₂ emissions by at least 40% by 2030, and which is supported by reporting, progress monitoring and benchmarking and is open to all countries.

Cement Sustainability Initiative (CSI): a global coalition of 25 large cement producing companies which pursue sustainable development and low-carbon development of the cement industry.

Energising Development Partnership Programme (EnDev) The Energising Development Partnership Program (EnDev) aims to contribute to inclusive green growth of developing countries by facilitating sustainable access to energy services for mainly rural and peri-urban population. EnDev is strongly outcome oriented, holding itself accountable for concrete and verifiable numbers of beneficiaries reached through the EnDev interventions. It is a multi-donor, multi-stakeholder partnership.

Global Alliance for Buildings and Construction (GABC)⁴⁴: a global alliance, launched at the climate negotiations in Paris, which aims to raise the sector's climate action potential to assist in limiting global warming to below 2 °C path.

Global Alliance for Clean Cookstoves (GACC)⁴⁵: a public-private partnership aiming to increase the number of clean cookstoves in use in developing countries.

Global Fuel Economy Initiative (GFEI)⁴⁶: a global partnership of NGOs which works to secure an improvement of the efficiency of vehicles, and the rapid adoption of existing fuel economy technologies.

Sustainable Energy for All (SE4ALL)⁴⁷: a multi-stakeholder partnership which aims to improve energy access, energy efficiency and increase renewable energy.

Renewable Energy Performance Platform (REPP): invests in renewable energy projects up to 25 MW throughout sub-Saharan Africa, founded by the UK government, European Investment Bank and the United Nations Environment Programme (UNEP) and targeting Sub-Saharan Africa.

4/1000 Initiative- Soils for Food (4/1000)⁴⁸: builds on the notion that our ability to feed 9.5 billion people in 2050 depends on soil quality and the organic matter content of the soil. Carbon-rich soils are more climate resilient and help sequester carbon. The initiative provides trainings, policy support and helps develop sustainable supply chains.

⁴³ http://www.covenantofmayors.eu/index_en.html

⁴⁴ <http://newsroom.unfccc.int/lpaa/building/global-alliance-for-buildings-and-construction/>

⁴⁵ <http://cleancookstoves.org/>

⁴⁶ <http://www.globalfueleconomy.org/>

⁴⁷ <http://www.se4all.org/>

⁴⁸ <http://4p1000.org/>

6.6 Start-up support

Climate Kic ⁴⁹ (as above in section 6.4)

Impact Hub:⁵⁰ Impact hub is a network of start-ups and entrepreneurs focussed on making a positive impact. It is present in a selection of developed and developing countries.

⁴⁹ <http://www.climate-kic.org/start-ups/>

⁵⁰ <http://www.impacthub.net/>

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Abbreviations

ACRONYM	MEANING
AfD	France's national institution working for development
CBIT	Capacity Building Initiative for Transparency
CER	Certified Emission Reduction
CDKN	Climate and Development Knowledge Network
CDM	Clean Development Mechanism
CiDev	Carbon Initiative for Development
CIO	Climate Investor One
CMA	Convention of the Parties of serving as the Meeting of the Parties of the Paris Agreement
CoP	Conference of Parties
CPF	Carbon Partnership Facility
CPLC	Carbon Pricing Leadership Coalition
CTCN	Climate Technology Centre and Network
ER	Emission Reduction
FX	Long-Term FX Risk Management
GABC	Global Alliance for Buildings and Construction
GCF	Green Climate Fund
GEF	Global Environmental Facility
GFEI	Global Fuel Economy Initiative
GGGI	Global Green Growth Institute
GILCF	Global Innovation Lab for Climate Finance
ICAT	Initiative for Climate Action Transparency
IKI	International Climate Initiative
INDC	Intended Nationally Determined Contributions
IPMM	International Partnership on Mitigation and MRV
ITMO	Internationally Transferred Mitigation Outcomes
LECB	Low Emission Capacity Building Programme
NAMA	Nationally Appropriate Mitigation Actions
NCF	Nordic Climate Facility
NDC	National Determined Contributions
NDF	Nordic Development Fund
NPI	Nordic Partnership Initiative
PAF	Pilot Auction Facility
PCCB	Paris Committee on Capacity-Building

Abbreviations

ACRONYM	MEANING
PMR	Partnership for Market Readiness
RBP	Result Based Payments
REDD+	Reducing Emissions from Deforestation and forest Degradation
REPP	Renewable Energy Performance Platform
SCIP	Strategic Climate Institutions Programme
SEA	Swedish Energy Agency
TCAF	Transformational Carbon Asset Facility
TCX	The Currency Exchange Fund
TNA	Technology Needs Assessment
UK	United Kingdom
UNDP	United Nation Development Programme
UNFCCC	United Nations Framework Convention on Climate Change