GreenStream

Lessons learned from the Swedish Programme for International Climate Change Mitigation

Final Report

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Summary

This report is the result of an assignment aiming to provide key lessons learned, drawn from the implementation of the Swedish Programme for International Climate Change Mitigation, that could contribute to the ongoing work on implementing the Paris Agreement.

The Swedish Energy Agency has been responsible for the Swedish governmental programme for International Climate Change Mitigation (the Programme) for more than 15 years, and it is planned to continue to 2022. The programme was set to purchase up to 40 million tons of CO2 equivalent emission reductions through market-based mechanisms as part of Sweden's national target for 2020.

With its over 200 projects in the portfolio, the Agency is the 6th largest purchaser globally in terms of number of projects. The programme was launched during a period when a new type of international agreement, the Kyoto Protocol, was established. This agreement was continuously negotiated and developed for several years. Containing legally binding targets for developed countries, it introduced new types of instruments such as international emissions trading and project-based mechanisms. Needless to say, there was no previous experience among Government or multilateral agencies of any similar types of mechanisms. For sure, no one had seen a carbon market before. The entrepreneurial character of the Programme during the initial years of operation should not be underestimated.

Acting as a buyer of carbon credits on the international carbon market, a longstanding objective set by the Swedish Government has been to contribute to the development of the flexible mechanisms of the Kyoto Protocol: The Clean Development Mechanism (CDM) and Joint Implementation (JI). More recently, the Programme has engaged in developing new types of mechanisms, up-scaled or sector-based approaches as well as approaches to result-based climate finance, primarily through engaging in World Bank initiatives such as the Carbon Initiative for Development and the Transformative Carbon Asset Facility.

Since its inception until today, the Programme has had different objectives and varying resources, with budgets ranging from SEK 20 million in the early 2000s to over SEK 250 million per annum during the early 2010s. The Programme has been built on a bilateral project portfolio and participation in several multilateral carbon funds.

The international climate change regimes as well as carbon markets have changed significantly during the period of Programme operation. It is important to bear in mind that the operation and performance of the Programme in the earlier periods faced political realities and expectations of that time. If launched today, a Programme of this type would face a different international climate and sustainable development policy context. Thus, the initial period of the Programme should not be judged against what is well-known and taken for granted today.

The lessons learned cover experiences and events from the early years, from the build up, and from the ambition to accomplish change. The lessons learned also cover the more recent period, where challenges have arisen from adapting to new political conditions, both international and domestic.

The period leading up to the first commitment period of the Kyoto Protocol was characterized by pioneering work to identify and develop JI and CDM projects and to develop methodologies, as well as to supporting the establishment of the CDM Executive Board (EB) and the JI Supervisory Committee (JISC). During this time, the Agency contributed to the development of the emerging carbon market by creating demand as buyer but also through its support to methodology development and through funding project development. A key lesson learned is that early on the Programme could rely on its experiences from both bilateral projects and early engagement in mechanisms through the Prototype Carbon Fund. This gave credibility and authority when Sweden took part in the climate change negotiations. Early experience from a bilateral programme and insight from the climate change negotiations contributed to a strengthened role in multilateral carbon funds.

The first Commitment period of the Kyoto Protocol coincides with a Swedish policy decision to use carbon credits purchased by the Programme for both the national 2012 and 2020 targets, leading to an expansion of the Programme. Lessons learned include dealing with challenges of transforming from a small-scale entrepreneurial buyer to a large-scale purchasing machine. As a Government programme, the changes in government and the related changes in instructions have made long term planning difficult.

The market collapse during the first commitment period of the Kyoto Protocol implied that the Programme had to adapt to a situation where it could not base contracts on price levels derived from the market, which at the time was driven by the demand from the EU Emissions Trading Scheme together with demand from Government buyers such as Japan. The Agency adapted to the new situation through new pricing models which are still relevant.

Specific lessons learned can be summarized as follows:

- Drawing on experience from the bilateral programme into fund participation has turned out very useful and it also applies in the other direction;
- The strong connection between an in-house operative programme and negotiation experts has been of great value to advance ideas and positions in the negotiations, but also to get better understanding of the dynamics of international climate policy and to get early warnings of policy change for the Programme;
- Using the experiences from the Programme for other types of activities, such as capacity building, has proven beneficial and has included some synergetic impacts;
- Detailed knowledge of the regulatory framework for market-based mechanisms is built up over time and often resides with particular individuals. A lesson learned is that efforts should be done to better create a collective memory and to developed systematic approaches to enhance collective knowledge;
- The Agency is not a regular market actor and a lesson learned is that the Agency has to be careful when operating on the market on business terms, including making accurate risk assessments and applying business strategies;

- Too many objectives and tasks tend to get difficult to manage. The instructions from the Government to support the Swedish private sector and for a limited period to promote Swedish technology export, were challenging to implement for the Agency. Without specific instruments for implementation, there is a risk that one simply cannot deliver on all targets;
- A mandate to deliver a volume of carbon credits at a future target date ten years ahead may lead to that the instruments used for implementation of the target becomes out of date when approaching the target date. The emergence of a complex policy structure resulting from the Paris Agreement led to that purchasing carbon credits from projects and programmes as the main tool for developing market-based mechanisms constitutes has become a limitation. In this regard, the engagement in new types of facilities such as the Transformative Carbon Asset Facility, which has made it possible to be able to purchase credits from sector level activities, and policy oriented initiatives such as the Partnership for Market Readiness is more promising to address the current situation.

The study shows that the living lab approach of the Agency has been successful in that it has been able to support the development of the flexible mechanisms, despite significantly changing conditions. The work with CDM Programme of Activities that involved collaboration with other organisations in working groups, but above all, the participation of an Agency expert in the CDM Executive Board contributed strongly to the development of small-scale methodologies, including approaches to sampling, which was a precondition for engaging in Least Developed Countries through a carbon credit purchase programme. In this case, a lesson learned is that using experience from a bilateral programme, participation in multilateral funds and participation in the UNFCCC negotiations combined with representation in the CDM EB as an enforcing addition, can become a powerful instrument to accomplish policy and regulatory change.

The advancing of CDM Programme of Activities, which benefitted from a clear mandate to enhance CDM in LDCs which set the foundation for working with early pilots both bilaterally and through carbon funds, may have been the single most important contribution by the Programme to the development of international carbon market mechanisms. This case shows how regulatory frameworks can be changed to better address the needs of both investors, project developers and communities. Without the learning-by-doing approach, this achievement may not have been reached.

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Abbreviations

ADB	Asian Development Bank
APCF	Asia Pasific Carbon Fund, CDM fund managed by the ADB
BASREC	Baltic Sea Region Energy Cooperation
CB	Capacity Building
CCAC	Climate and Clean Air Coalition
CDM	Clean Development Mechanism
CDM EB	Clean Development Mechanism Executive Board
CER	Certified Emission Reduction
CERUPT	Certified Emission Reduction Unit Procurement Tender
Ci-Dev	Carbon Initiative for Development, CDM fund and capacity building facility managed by the World Bank
CHP	Combined Heat and Power
CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
CMP	Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
COP	Conference of the Parties, the governing body of the UNFCCC
CPF	Carbon Partnership Facility, Carbon Fund managed by the World Bank
DNA	Designated National Authority
DOE	Designated Operational Entity
EBDS-CE	Export Business Development Support, Climate and Energy
EBRD	European Bank for Reconstruction and Development
EE	Energy Efficiency

ENSI	Energy Saving International AS
ERPA	Emission Reduction Purchase Agreement
ERU	Emission Reduction Unit under the Joint Implementation mechanism
ETS	Emissions Trading System
EU	European Union
FCF	Future Carbon Fund, CDM fund managed by ADB
GHG	Greenhouse Gas
INDCs	Intended Nationally Determined Contribution
IPCC	Intergovernmental Panel on Climate Change
ITL	International Transaction Log
ITMO	Internationally Transferred Mitigation Outcome
JCM	Joint Crediting Mechanism
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
KP	Kyoto Protocol
LDC	Least Developed Country
LULUCF	Land Use, Land Use Change and Forestry
MCCF	Multilateral Carbon Credit Fund, CDM and JI fund managed by the EBRD
MoEE	Ministry of Environment and Energy (Sweden)
MoEI	Ministry of Enterprise and Innovation (Sweden)
MoFA	Ministry of Foreign Affairs (Sweden
NAMA	Nationally Appropriate Mitigation Action
NCM	Nordic Council of Ministers
NDC	Nationally Determined Contribution
NEFCO	Nordic Environment Finance Corporation

NPI	Nordic Partnership Initiative on Up-Scaled Mitigation Action
ODA	Official Development Aid
PAF	Pilot Auctioning Facility, Carbon fund managed by the World Bank
PDC	Partner Driven Cooperation
PMR	Partnership for Market Readiness
PoA	Programme of Activities
PCF	Prototype Carbon Fund, Carbon fund managed by the World Bank
RE	Renewable Energy
RMU	Removal units from LULUCF activities in Annex I countries under the Kyoto Protocol
SEI	Stockholm Environment Institute
Sida	Swedish International Development Cooperation Agency
SIDS	Small Island Developing States
SLCP	Short-Lived Climate Pollutants
SEPA	Swedish Environmental Protection Agency
TCAF	Transformative Carbon Asset Facility, Carbon fund managed by the Word Bank
tCO2e	Tonnes of CO2 equivalent
TGF	Testing Ground Facility, JI fund managed by NEFCO
UCFT2	Umbrella Carbon Facility Tranche II, Carbon fund managed by the World Bank
UNFCCC	United Nations Framework Convention on Climate Change
WB	World Bank

1. Introduction

1.1 Introduction

This report is the result of an assignment aiming to provide key lessons learned, drawn from the implementation of the Swedish Programme for International Climate Change Mitigation, that could contribute to the ongoing work on implementing the Paris Agreement, both at the Swedish Energy Agency and in other organizations.

The Swedish Energy Agency has been responsible for the Swedish governmental programme for International Climate Change Mitigation (the Programme) for more than 15 years, and it is destined to continue to 2022. The programme is set to fund up to 40 million tons of CO2 equivalent emission reductions through market-based mechanisms, (the flexible mechanisms of the Kyoto Protocol) as part of Sweden's national target for 2020. The Programme has been in operation for a long time. It was launched during a period when a new type of international agreement was established; an agreement that for several years was continuously negotiated and developed; an agreement that contained legally binding targets for developed countries; an agreement that introduced new types of instruments such as international emissions trading and project-based mechanisms Needless to say, there was no previous experience among Government or multilateral agencies of any similar types of mechanisms, for sure, noone had before seen a carbon market. The entrepreneurial character of the initial years of operation should not be underestimated.

Acting as a buyer on the international carbon market, a longstanding objective for the Programme has been to contribute to the development of the flexible mechanisms of the Kyoto Protocol: The Clean Development Mechanism (CDM) and Joint Implementation (JI). More recently, the Programme has engaged in developing new types of mechanisms: up-scaled or sector-based approaches as well as approaches to result-based climate finance.

Since its inception until today, the Programme has had different objectives and varying resources, with budgets ranging from SEK 20 million in the early 2000s to over SEK 250 million per annum during the early 2010s. The Programme has been built on a bilateral project portfolio and participation in several multilateral carbon funds.

The climate change regimes as well as carbon markets have changed significantly during the period of Programme operation. It is important to bear in mind that the operation and performance of the Programme in the earlier periods cannot be judged against the political realities and requirements that a programme would face today.

The Programme has been a success in many ways. However, there have been some bumps and hits on the way. The lessons learned cover experiences and events from the early years, from the build up, and from the ambition to accomplish change. The lessons learned also cover the more recent period, where challenges have arisen from adapting to new political conditions, both international and domestic.

1.2 Methodological approach

The Programme has contained, and still does, many different components and activities. It would be impossible to pay full attention to all initiatives and operations implemented throughout the years. Guided by the terms of reference, the report highlights:

- the initiative, or rather the different initiatives, the Agency launched to address the carbon market in Africa. This does not mean that initiatives in for instance South Asia, East Asia, or Latin America are of less interest, rather, it is to illustrate the work of the Agency in a region where the Agency tried to make a difference;
- cases of the Programme's impact on climate policy, in particular on the regulatory framework for CDM;
- the struggle to come to terms with the collapse of the Kyoto Protocol carbon market and the Programme's role in post-Kyoto and Paris Agreement discussions, and;
- the approaches to the organisational set up of some of the key functions, such as sourcing and contracing, participating in multilateral funds, and representing the Sweden in UNFCCC negotiations.

The study has applied three main approaches, a descriptive part, an assessment part, and an interpretation part. First, the study provides a historical description, outlining the distinct phases of the Programme, showing how it has been adapted to changing instructions as well as changing external conditions.

The second aspect is an assessment of the Programme's performance in all its main processes: project sourcing, contracting and follow up, participation in funds and facilities, and in UNFCCC negotiations. The study tries to answer questions relating to if the Programme has been implemented as intended, and what its contribution to the development of the carbon market and its specific mechanisms have been. This endeavour also includes an analysis of benefits and synergies of capacity building efforts and how the Programme has encouraged private sector engagement in the flexible mechanisms of the Kyoto Protocol.

The third aspect or level of analysis has been identifying lessons learned, based on the assessment described above. An essential element has been the analysis of the potential benefit of sourcing carbon credits both from a bilateral programme and through funds, if and how these two types of sourcing methods have been reinforcing, and how the experiences from both types of sourcing have been used in the UNFCCC negotiations.

Data collection has been made through screening and analysing public documents as well as internal documents of the Agency. Roughly twenty-five persons inside and outside the Agency have been interviewed using a semi-structured format. A web survey was used to collect additional information related to sourcing and contracting.

The interviewees' positions and roles have been presented generally throughout the report to ensure anonymity. For instance, heads of units, transaction managers and experts have most often been referred to as staff members.

1.3 Report structure

Chapter 2 outlines the historical development of the Programme, including how the Annual Directives and budgets have changed over time. It also entails information about when the Agency has entered into funds and other specific events that have had a major impact on the operation of the Programme.This chapter is descriptive and provides a background to the coming chapters.

Chapter 3 examplifies how the Programme has contributed to the development of the flexible mechanisms, which has been a long-standing objective of the Programme, through highlighting a few major achievements. The chapter takes a look at the development of CDM Programme of Activities, the post-Kyoto and pre-Paris discussions and presents how the Programme has worked with funds to respond to new ideas and demands of the international community.

Chapter 4 illustrates how the Programme has worked with one of its particular objectives, to increase the share of CDM projects in the Least Developed Countries (LDC), through an overview of its activities in Africa. As above, the intention is not to downplay the role the Programme has played in other regions where there also are LDCs, but to show how it has contributed to the development of the carbon market by making intense efforts in a region with many challenges.

Chapter 5 describes how the Programme has worked with project sourcing, contracting and follow-up, and how this work has been organised. It also provides an analysis of how fund participation and other main tasks, such as providing experts to negotiations, implementing capacity building, and engage with stakeholder, have been organised.

Chapter 6 shows how the changing policy landscape has been challenging to address. It discusses how the role of the Agency has changed with an increasing maturity of the carbon market and how the Agency has managed to address a new policy context.

Chapter 7 provides an overview of the lessons learned. These are presented at a general level as well as at a specific level relating to the tasks of the Programme described above.

The annexes provide a brief summary of a previous lessons learned study made by the Nordic Council of Ministers covering all Nordic CDM- and JI-programmes, and an outline of a specific initiative to promote Swedish technology in relation to CDM-sourcing activities.

1.4 Definitions

"Agency" refers to the Swedish Energy Agency.

"Directive" refers to the annual directive from the Ministry to the Agency (*Regleringsbrev)*

"Ministry" refers to the Ministry in Sweden responsible for providing annual directives to the Agency regarding the Programme.

"Programme" will be used to denote all climate change mitigation activities carried out by the Agency stipulated in the Directives from the Government, i.e. including both the bilateral programme and the memberships in diverse types of funds.

2. Programme Development over Time

2.1 Aim of Section and Methodology

The terms of reference of the Assignment states that one of the issues that the analysis should consider is the lessons-learned on how large, long-term and state-funded programs like this should be run. In order to provide such an analysis, we have made an effort to describe how it has been run so far. For this purpose, interviews have been made with current and previous staff members as well as persons working closely with the Programme in the Ministry, at other Swedish agencies, and in the international arena. The terms of reference also list a number of questions suggested for inclusion in the study.

- What happened with the program when the international climate policy changed or when market conditions change? What adjustments were made?
- How have project results been followed up? How has the program been developed based on the results of follow-up?
- Has the program been implemented as intended from the beginning and in subsequent annual directives?
- How has the program adapted to changed annual directives and conditions over the years?

To answer these questions, we have made a desktop analysis including a comparison of the Annual Directives, which are the instructions and mandates given annually to the Agency from the Ministry responsible for the budget, and annual reports for the period 2002 – 2017. This comparison shows how Directives have changed over time and how the Programme has responded to these, but also how it has been adapted to external changes. Additional information from public sources and interviews has been added to provide a fuller understanding of the historical development of the Programme.

2.2 The rationale for introducing, applying and developing market-based mechanisms for climate change mitigation

Why did the Swedish Government assign the Swedish Energy Agency to launch a Programme for purchasing carbon credits? To answer this question, it is worthwhile to look at the context in which marked based mechanisms for mitigation emerged. The United Nations Framework Convention on Climate Change (UNFCCC) does not mention markets or mechanisms. When the Convention was negotiated, the concept of emissions trading had entered the debate but its way into the Convention was not straightforward. The Convention text though states that countries can implement "…policies and measures jointly with other Parties and may assist other Parties in contributing to the achievement of the objective of the Convention" (Article 4.2).

During this period, around 1990, emissions trading became law in the US as part of the Clean Air Act of 1990, which under its Acid Rain Program was to reduce annual SO_2 emissions. The theory behind emissions trading had been introduced by researchers a few years earlier, ad in 1989, the concept was introduced explicitly in the context of reducing GHG emissions, and there were attempts to introduce the concept into the UNFCCC.[1]

The debate that followed is widely known. Advocates of emissions trading pointed to cost effectiveness and opponents pointed to the risk of creating incentives for acting domestically, and countries did not agree to introduce the concept in the UNFCCC. However, Article 4.2 had a "hook" that countries could use in the future to develop approaches based on the concept of emissions trading. This "hook" was the requirement to "take decisions regarding criteria for joint implementation" (Article 4.2 d) at the first COP of the UNFCCC. However, decisions regarding criteria resulted not so much in criteria as in the creation of a pilot phase for joint implementation, but with the concept renamed as Activities Implemented Jointly.

The theoretical basis for setting up the Programme was the line of thought that builds on the objective to achieve cost effective emission reductions, and part of this objective is the logic that a reduction of GHG emissions in one place is as good as in any other place. The argument went that since climate change is a global problem, it does not matter where actions are taken, and we might as well use the resources as cost effective as possible. However, the term that came to denote this approach under the emerging Kyoto Protocol was not cost-effectiveness, but flexibility.

The rationale for the Programme has now been given, the context is another element. Given the heated debates among countries, there is no coincidence that one of the instructions to the Programme over the years have been to develop the mechanisms into not only "effective" but also "credible" instruments for mitigation. The Programme operated by a Swedish agency that was not to jeopardize the implementation of the concepts, on the contrary, the ambition to ensure environmental integrity of the mechanisms was there from the outset.

2.3 The Programme's predecessor and its inception

The Swedish Programme for International Climate Change Mitigation, formerly the Swedish International Climate Investment Programme, (SICLIP) but also often referred to as the Swedish CDM and JI programme, was initiated during the early 2000s[2]. The predecessor was a programme aiming at cost effective measures to promote energy efficiency and renewable energy in Eastern Europe, the Baltic states in particular. This programme, Environmentally Adapted Energy Systems (EAES), was initiated in 1993 in direct response to the Swedish ratification of the UN Framework Convention on Climate

[1] For a historical account see e.g. Jackson, Begg and Parkinson, eds. (2001) *Flexibility in Climate Policy. Makring the Kyoto Mechanisms Work,* Earthscan publications, London
[2] Sweden joined PCF already in 1999, but this was managed by the Ministry of Enterprise and Innovation so was not really part of any Agency Programme intially

Change (UNFCCC) agreed in 1992. The programme operated through soft loans to companies and organisations.

During 1999-2002, the Agency had an additional assignment to fund similar projects through the "Baltic Sea Billion" however not being subject to emission reduction requirements or reporting.

The Baltic Sea Billion was established in 1996 to promote business and collaboration with the three Baltic states, North western Russia and Poland. The aim was to increase employment in Sweden through widened collaboration and export, and the programme was set up as a development aid funded programme. The Baltic Sea Billion enhanced the interest for the EAES programme and activities were to some extent overlapping.

The Agency overtook responsibility of the initial Baltic oriented programme from the Swedish Agency for Economic and Regional Growth (NUTEK) 1998 and it was from that point managed by the International Department at the Agency. As clarity emerged regarding the design of the flexibility mechanisms of the Kyoto Protocol, a specific climate unit was created in 2001 that managed the EAES-programme and a climate policy research programme.

The EAES Programme was reported within the framework of Activities Implemented Jointly (AIJ), which was the pilot program for the flexibility mechanisms decided at COP 1 in Berlin 1995. As shown in section 1.2 above, there was no certainty that the concept of joint implementation and / or emissions trading would become part of the international climate regime when the EAES Programme started in 1993, but with the decision on a pilot phase in 1995 there was at least a way to test the concept under some UNFCCC guidance.

For some time, it was not clear whether the UNFCCC negotiations would result in that AIJ-projects should be able to result in carbon crediting or not. The final decision[3] agreed at COP 8 in New Delhi 2002 was to not allow crediting from AIJ-activities, awaiting the Kyoto Protocol entering into force and for the Clean Development Mechanism (CDM) and Joint Implementation (JI) to become operational. The EAES-programme was adapted to the AIJ format following the 1995 decision.

The AIJ programme supported over 70 projects with a budget of more than 60 million Euro during the period 1993 to 2002. The EAES programme received international recognition: the CTI technology award 1999, and the Energy Globe Award 2000.

The early days thus had a geographical focus on Eastern Europe, and Joint Implementation was the mechanism very much targeted in this pre-Programme period. With the strong connection to the Baltic Sea Region and the AIJ-programme, the research programme administered by the Unit then also contained a bilateral part for joint research between Swedish Universities and Baltic and Russian counterparts, typically funding research related to biomass supply chains and bioenergy applications.

Following upon the ratification of the UNFCCC and a conceptual development of the section in the Convention suggesting that Parties may implement policies and measures

[3] FCCC/CP/2002/7/Add.2

jointly with other Parties[4], the World Bank introduced the idea of a carbon fund to the Swedish Ministry of Enterprise and Innovation (MoEI) during the mid-90s. The process of establishing the PCF as a carbon credit buyer took some time, not least since many of the concepts, such as additionality, that came up during negotiations leading up to the Kyoto Protocol in 1997 were completely new. MoEI led the discussions with the World Bank and it resulted in Sweden joining the Prototype Carbon Fund (PCF) in 1999 with a budget of 10 million USD.

During the early 2000s, following the adoption of the Kyoto Protocol and the elaboration of specific rules for the flexible mechanisms in the Marrakech Accords 2001, the Programme came to focus on the CDM and JI, although the results of the AIJ-programme continued to be reported to the UNFCCC until 2006.

2.4 Objectives, mandates and resources given from the Government over time

As part of the analysis, we have compared the Directives following Government decisions for the Agency from 2002 to 2017. We have selected 2002 as the starting date since this year marks when the Programme started to become operational in CDM and JI. A Directive typically contains a target, followed by reporting requirements, and budget allocations with specific conditions for their use.

As stated above, a key objective of the Programme throughout the studied period is the contribution to the development of the flexible mechanisms of the Kyoto Protocol (and of future regimes). Throughout the period, the objective has been to establish mechanisms as “effective” and “credible” climate policy instruments for the Swedish as well as international implementation of the objectives of the UNFCCC. In addition, the activities initiated should be characterised by high environmental integrity standards.

The Directives have varied regarding scope and detail of reporting, as well as preferred project types while the desired geographical location of projects partly has remained largely intact (least developed countries, LDCs).

The early years: from JI to CDM and preparation for the first commitment period of the KP

The Swedish Government early considered how project-based mechanisms could be included in a future emissions trading scheme and established summer 2001 a Parliamentary Committee to elaborate a system in Sweden for the flexible mechanisms of the Kyoto Protocol, emissions trading as well as the project-based mechanisms. This delegation was given the mandate to review the Agency’s proposal for criteria for project-based mechanisms as well as review specific projects presented by the Agency up to the end of 2004.

One of the features of the early discussions in Sweden was the idea that project-based mechanisms could give information on how the emission reduction had been achieved,

[4] Article 4.2 (a)

which is not the case in emissions trading. This was seen as a distinctive advantage from an environmental integrity perspective.

Initially, the Programme consisted of a CDM part, a JI part and the Testing Ground Facility administered by NEFCO. At this time, the Programme was called Swedish International Climate Investment Programme, (SICLIP).

The 2002, 2003 and 2004 Directives reveal an expectation of collaboration and co-ordination with Sida (Swedish International Development Cooperation Agency), where co-operation in specific projects through additional funding through carbon finance is foreseen. This should not be mistaken for collaboration in developing countries, instead, this follows from the earlier Baltic Sea and Eastern Europe programme (see above), where Sida provided substantial support to improve the environmental status and energy efficiency in these countries.

The 2002 Directive mandated the Agency to contribute to the development of flexible mechanisms, based on the experiences from Joint Implementation (JI). A specific task this year was the support to a Government appointed envoy[5] with a mandate to negotiate agreements relating to cooperation for Joint Implementation. Russia was a prioritised country. At that time, it was perceived that bilateral agreements between governments were needed to proceed to cooperate on specific projects.

The Directive for 2004 set out the Climate Unit's participation in the Baltic Sea Testing Ground Facility administered by NEFCO (Nordic Environment Finance Corporation). The idea of making the Baltic Sea region a testing ground for Joint Implementation came from discussions in the Baltic Sea Region Energy Cooperation (BASREC) and was decided at a Ministerial meeting in 2003. The year before, the Nordic energy ministers had agreed to establish an investment fund, the Testing Ground Facility (TGF), accessing 10 million Euro to be administered by the Nordic Environment Finance Corporation (NEFCO). The Investors' Committee had its first meeting in March 2004.

The Agency signed the first contracts with CDM project owners in India (2003) and Brazil (2004) and contributed to methodology development through the creation of AM0015 (The methodology for bagasse-based cogeneration connected to an electricity grid, see Chapter 4). The support from the Agency to the MoEI's participation in the PCF is not specifically mentioned in the Directives but was substantial and continued from the inception of PCF until 2009 when the Agency overtook responsibility[6].

From 2005, CDM was given a stronger presence; the collaboration with Sida is complemented to include CDM-projects and a specific objective to achieve regional balance in the portfolio is introduced. There was also a specific mentioning of a wish to initiate projects in the Least Developed Countries (LDCs). From 2005, the Directive also marks another development, namely, the objective to promote and support Swedish companies wishing to engage in the project-based mechanisms of the Kyoto Protocol. Another new aspect is the preference for energy efficiency in energy production and

[5] https://www.riksdagen.se/sv/dokument-lagar/dokument/kommittedirektiv/forhandlare-med-uppdrag-att-lamna-forslag-till_GPB1101
[6] Government decision 2009-06-04 M2009/2277/Mk

distribution and renewable energy for electricity generation and heating. Last, but not least, the 2005 Directive entails the mandate to support the CDM EB and the Joint Implementation Supervisory Committee. These institutions were to be financed by the Share of Proceeds, i.e., a fee from applicants and in the early days, without project pipelines, there was lack of funding that slowed work down.

The 2006 Directive was by and large similar to 2005. Olle Björk, at this time under-secretary at the Swedish Ministry for Enterprise and Innovation, was elected as member of the JISC, and the Agency provided support to the MoEI to assist Olle Björk as member in JISC. JISC is the supervisory body set up to oversee validation and verification of Joint Implementation projects.

At the end of this period, the Agency started to look at LDCs, small-scale projects, and began to approach projects that were less mature than those presented by project developers in middle income countries.

Going to Africa: Capacity Building, Program of Activities and CDM EB

In 2007, the objective to develop mechanisms into effective and credible instruments was to be achieved primarily through participation in, and through implementing, concrete projects. This may appear to suggest concentrating on the bilateral portfolio instead of multilateral funds, but it refers to an emphasis to gain experience from the full project cycle and the importance of being registered as project participant for CDM projects. The registration as project participant is a prerequisite for deciding on the transfer of CERs (Certified Emission Reductions) and for communicating with the CDM EB, in other words, a prerequisite for being an actor on the primary CER market. At this time, the Programme had been running for a few years with build-up of experience. The only other new feature of the Directive was to promote Swedish technology export (see Chapter 5 and Annex II).

The period was characterized by a strong focus on Least Developed Countries (LDCs) and the Agency intensified their efforts to identify projects from LDCs in Africa (see Chapter 3). A specific capacity building initiative for Africa, called “Programme on Capacity Building for CDM (East Africa)” was set up, and the 2008 Directive contains an imperative to coordinate with Sida regarding this initiative. The Ministry invested in the Multilateral Carbon Credit Fund (MCCF), launched by the EBRD (European Bank for Reconstruction and Development). This fund covers Eastern Europe and Central Asia and thus both JI and CDM type of projects. The Agency initially supported the Ministry’s participation in the MCCF but took over responsibility for MCCF in 2012.

In 2007, the Agency joined the Asian Pacific Carbon Fund (APCF) launched by the Asian Development Bank aming at purchasing pre-2013 CERs for its participants. This fund was closed in 2014. One year later the ADB established the Future Carbon Fund (FCF) focussing on purchasin CERs generated in the 2013-2020 period.

The support to the CDM EB intensified when Ulrika Raab, who at the time was senior advisor at the Agency, was elected in her personal capacity as board member and as chair of the CDM EB Small Scale Working Group. This proved to be useful for the Agency’s support to the development of CDM Programme of Activities (PoA), which will be discussed below (see Chapter 4).

The Kyoto Period: Increased funding but challenging market developments

The period 2009 – 2012 saw a significant increase in the Programme budget, reaching roughly 250 MSEK per year. The funding also moved from the "energy" to "environment" budget line and the Directive for the Programme was prepared at the Ministry of Environment, while the Agency as a whole continued to receive its Directive from the Ministry of Enterprise and Innovation.

The 2009 Directive was shorter than previous versions but contained a few novel edicts. Firstly, the Agency was required to engage in multilateral initiatives in which they could have a decisive influence related to participation in individual projects. Secondly, the Directive states that the Agency can take part in pilot activities for avoiding deforestation, CDM programmes of activities and sector-CDM[7]. There is no coincidence that avoiding deforestation entered the Directive at this time. Reducing Deforestation and Forest Degradation in Developing Countries (REDD) was high on the agenda since the Bali meeting in 2007 and Norway had launched a large-scale programme together with the Food and Agriculture Organization of the United Nations (FAO), the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP). However, Sweden and the Agency never engaged in the UN REDD-programme.

For 2010, the Directive was almost identical to 2009. However, an important change of direction was the objective to intensify the strive for an increased share of projects from the Least Developed Countries. During this period, the Agency entered Tranche 2 of the Umbrella Carbon Facility (UCFT2) of the World Bank, which was a fund with regionally dispersed projects intended to provide Participants with a facility to obtain post-2012 CERs. UCFT2 gave access to new countries and included several African projects (see Chapter 4).

For 2011, the Agency received an instruction to report on how international climate projects can, in a cost-effective way, contribute to the national target for the first commitment period of the Kyoto Protocol as well as for the national target for 2020. The 2011 Directive highlighted a wish for the development of new types of mechanisms under the UNFCCC. However, whereas improving the existing mechanisms is a "shall" requirement, contributing to new mechanisms is something the Agency "could" do. While the Programme was expanding, the carbon market started to face challenges. Uncertainty over a future climate regime and a shaky demand within the EU ETS led to a plunge in CER prices.

The Agency was requested in the 2012 Directive to prepare a proposal for enhanced reporting. The proposal was presented in a report later during 2012 (ER 2012:15). However, the Programme had been presented separately in annual reports already since 2011.

The final year of the period of Centre-Right Government (2013) entailed a specific mentioning of short-lived climate pollutants (SLCP), likely the result of Environment Minister's engagement in the Climate and Clean Air Coalition (CCAC)[8]. The other most notable change in the 2013 Directive was a specific reporting requirement for the

[7] The concept sectoral mechanisms emerged from the up-scaling debate that caught ground through the Bali Action Plan in 2007, but there was never any real attempt to include whole sectors in the CDM as such.
[8] http://ccacoalition.org/en

Programme's contribution to sustainable development in host countries, to be made in dialogue with Sida. The objective to have a balance between the bilateral project portfolio and participation in funds was removed at this point in time. Instead, a specific aim to enhance efforts in LDCs is made with an additional mentioning of small island developing states.

In 2012, the Agency decided to launch an initiative targeting renewable energy projects that quickly could deliver CERs to compensate for slow progress and delays in projects and PoAs[9]. The initiative contained a strive to contract already registered and operating CDM-projects. In total, the initiative came to include 11 projects in six different regions in India.

At this time, 2013, the Agency got involved in the Carbon Initiative for Development (Ci-Dev), which was launched in December 2011 to build capacity and develop tools and methodologies to help the world's poorest countries access carbon finance, mainly in the area of energy access. It was set up to use performance payments based on reduced emissions to support projects that use clean and efficient technologies in low-income countries. The Agency also signed up to the Carbon Partnership Facility (CPF) and the Partnership for Market Readiness (PMR). The CPF addressed the post-Kyoto desire to develop up-scaled mechanisms and had an innovative governance feature since it included both sellers and buyers in its steering committee which rendered intensive negotiations of the fund regulationsThe PMR supports developing countries to introduce market based instruments to address mitigation, in line with their own proposals and plans. Countries that have received support from PMR so far are typically middle-income countries like Chile, Brazil, Vietnam, Thailand, South Afica, Morocco, to mention a few. The PMR funding comes from the Ministry of Foreign Affairs, with representation in the steering body delegated to MoEE and the Agency.

New directions and budget drawbacks

The period from 2014 until today saw a significant shift in policy because of change in Government. While the 2014 Directive resembles the ones from the earlier period, the wordings 2015 shifts from "the Agency shall enter agreements to purchase carbon credits" to "the Agency is allowed to engage in international climate change mitigation activities".

The previous Government's interest in Short Lived Climate Pollutants (SLCP) is reflected in the participation in the Pilot Auction Facility for Methane and Climate Change Mitigation (PAF)[10], which is an initiative by International Bank for Reconstruction and Development (IBRD) to develop innovative mechanisms that pioneer the use of auctions to allocate public finance for climate action efficiently and to maximize use of funds and projects supported).

The Agency played a role in the development of the PAF through providing carbon market expertise to the work of the Methane Finance Study Group coordinated by the World Bank. Sweden as a country took part in the intitial discussions for supporting urgent action on

[9] Slutrapport for Indiensatsningen
[10] https://www.pilotauctionfacility.org/

methane mitigation, including in the Blue Ribbon Panel that prior to COP 15 in Copenhagen 2009 released their initial report[11] recommending a special fund to support development and financing of methane projects under the CDM as well as voluntary markets. Two experts from the Agency took part in the group behind the report[12] that formed the basis for the development of the PAF.

The 2015 Directive took the conceptual discussions prior to the Paris COP 21 meeting in consideration and states that the purpose is to contribute to the development of new cooperative approaches and international emissions trading, in addition to fulfil Sweden's international commitments and the new 2020 target. The longstanding aim of contributing to the development mechanism is here maintained, but with a new orientation towards the emerging Paris Agreement. The Directive also mandates the Agency to adapt its operations to the conditions resulting from ongoing UNFCCC negotiations. Thus, although the Programme could continue to work with contracted projects, a new future direction was set for the Programme.

The same year, the Agency initiated discussions with the World Bank together with representatives from other countries with ambitious agendas in this area to establish the Transformative Carbon Asset Facility (T-CAF). This initiative is intended to support countries in meeting their climate goals, through adopting carbon pricing and sectoral low-carbon development measures. One of the key elements in the approach of T-CAF is to create new classes of carbon assets associated with reduced greenhouse gas emission reductions, including those achieved through policy actions.

The Directive of 2016 marked the definitive end to contracting new CDM and JI projects. The mandate to use the existing budget pledge of roughly EURO 50 Million for purchase of CERs was withdrawn with this Directive. The Agency was instructed to fulfil existing contracts but was also encouraged to review ongoing contracts and fund memberships to adjust to the new objectives. Part of the changing objectives was the requirement to follow-up how activities strengthen local communities and their development as part of the reporting of the contribution to sustainable development.

In addition, emphasis was put on the development of new international co-operative approaches, result-based climate finance and other effective instruments that can assist in achieving the global 2-degree stabilization target, which probably was a formulation based on the then recent adoption of the Paris Agreement. Finally, the Directive contained was an edict to focus on monitoring, reporting and verification of mitigation as well as sustainable development impacts. The following year's Directive contains the same wordings.

Going forward: Changing geographical focus and implementing the Paris Agreement

The Agency has regularly been required to provide analyses and reports on various subjects, including how to fulfil Swedish national targets, how to enhance the reporting of

[11] Methane Blue Ribbon Panel (2009) *A Fast-action Plan for Methane Abatement*
[12] Methane Finance Study Group (2013) *Using Pay-for-Performance Mechanisms to Finance Methane Abatement*

the Programme and the Agency released a report in 2014 on the role of flexible mechanisms in the international climate policy between 2015 and 2030, In October 2016 and June 2017 the Agency launched reports on how Sweden could work with cooperative approaches under Article 6 of the Paris Agreement. The outcome of these reports was reflected in the budget of 2017[13], where it was highlighted that Sweden should continue to contribute to the development of cooperative approaches and to participate in concrete initiatives, not least together with middle-income countries representing a large and growing share of greenhouse gas emissions. This has created space for an initial three-year budget for working with co-operative approaches under Article 6 of the Paris Agreement. The budget also allows for financial commitments of up to 70 million SEK during 2019–2025. The budget for contracted projects is kept at roughly 200 million SEK per year.

[13]http://www.regeringen.se/4a65cf/contentassets/79f6d27416794f0bb146c792e02b65fc/utgiftsomrade-20-allman-miljo-och-naturvard.pdf

3. Contribution to the international carbon market and global climate policy

3.1 Introduction

This section sets out to analyse how the Programme has contributed to the development of the international carbon market and the UNFCCC negotiations. Specifically, the section attempts to bring forward key contributions of the Programme, which will serve as an illustration of how the objective of contributing to the development of credible market-based mechanisms have been achieved by the Agency. However, initially we present a general introduction to the Programme's contribution to the UNFCCC negotiations and its place in global carbon market.

The Programme, when taking both bilateral and fund projects and the whole Programme period into account, is the 6th largest buyer in the CDM market in the world, and the largest of the governmental buyers in terms of number of projects. A table of contracted volumes would look significantly different since, among other things, a few companies would rank high due purchases of large volumes of CERs industrial gas projects. The top buyers in terms of number of project are listed in the table below derived from by UNEP DTU Partnership CDM pipeline[14], which contains the top 20 buyers worldwide:

Top 20 buyers	Projects	Of these withdrawn from
Vitol	310	7
EcoSecurities	305	48
EDF Trading	298	6
Tricorona Carbon Asset Management Sweden	251	25
Carbon Resource Management	215	30
Government of Sweden	**201**	**39**
RWE	178	60
CAMCO	148	6
Noble Carbon	119	79
Bunge Emissions Group	111	9
Climate Bridge	107	1
Mitsubishi	102	12
Arreon Carbon UK	101	1
Gazprom Marketing & Trading	98	25
AgCert	96	1

[14] www.cdmpipeline.org, January 2018

Mercuria Energy Trading	94	7
Kommunalkredit	93	5
Danish Ministry of Climate & Energy	87	11
Endesa	81	27
Deutsche Bank	76	17

On the JI side the Programme is the 9th or 10th largest buyer. The JI buyers are mostly governments, in contrast to the CDM market. Source of the table is UNEP DTU Partnership JI Pipeline.

Top 15 Buyers	**Number of projects**		
	JI track 1	**JI track 2**	**Total JI**
Netherlands	133	67	200
Switzerland	110	21	131
Not specified	74	55	129
United Kingdom	35	36	71
Latvia	44		44
Germany	29	9	38
Denmark	20	8	28
Estonia	24	1	25
Japan	16	9	25
Sweden	**15**	**8**	**23**
Austria	12	10	22
France	16	3	19
Finland	11	4	15
NEFCO	1	10	11
Spain	2	6	8

As can be seen from the above two tables, the Programme has been a significant actor in the CDM and JI markets as one of the top 10 buyers in both markets. Another influential Swedish actor has been Tricorona Carbon Asset Management Sweden, which has purchased CERs for e.g. the Swedish private sector[15].

3.2 Contribution to UNFCCC climate negotiations and the development of global carbon markets

The Agency has since the pre-Programme period provided support to the Swedish Government by appointing experts to participate in the Swedish delegation to the

[15] http://www.tricorona.se/kunder/

UNFCCC. Agency staff took part in negotiations during the pre-Kyoto phase, mainly regarding sinks. During this period, i.e. the second half of the 1990s, there was not much to build on from the initial programme that could be translated into negotiations. The responsibility as expert agency for the flexible mechanisms, including providing expert negotiators, has been with the Agency since the Kyoto Protocol negotiations, initially relying on experiences from AIJ in Eastern Europe.

One negotiator, then working at the MoEI, recalls that the first time one could sense that having a programme had some real impact was during the UNFCCC negotiations in Lyon, 2000, prior to the COP in Hague 2000. Sweden and the Netherlands were the two countries within the EU that at that time could bring experiences from their own programmes. This gave, in the words of the negotiator, "a possibility to speak with much more authority".

The Programme has likely had an impact on the development of the CDM, particularly before and during the expansion phase during the Kyoto period (see chapter 2). When preparing the Swedish position for CMP's[16] annual guidance to the CDM EB, experiences were collected within the unit and discussed to inform the responsible negotiator. These discussions thus fed into the negotiator's preparation for the upcoming COP and were ultimately documented in the Swedish Instruction for the COP. The systematic approach by collecting issues to discuss in relation to the annual guidance from the COP to the CDM EB, following upon the annual report from the CDM EB, is reported by several staff to have been, and still is, an effective way of lifting issues to the negotiation agenda.

According to non-Swedish interviewees, the Programme has contributed to a better understanding of climate policy and market mechanisms internationally through its pro-active, long-term, persistent and well-resourced "living lab" approach. The added value of the Programme in the international climate policy development has been in bringing the project level experiences into the policy formulation context; the program has bridged praxis and theory in an effective way.

Sometimes the contribution to international policy has been unintentional but has also then worked for the benefit of development of the mechanisms. The Kachung project in Uganda caused negative publicity in Swedish media after a critical review on TV, showcasing the importance of being fully informed about development in projects that constitute specific piloting or testing,

The project in Kachung was an afforestation project, which is a project type under the CDM A/R (afforestation and reforestation) rules. The emission reductions from these types of projects result in temporary CERs (tCER), due the uncertainty over the emission reduction being permanent, and must be renewed every five years. The tCER never became a regular commodity on the carbon market: they were not eligible in the EU ETS, and for voluntary purposes they were also cumbersome to manage. The Agency wanted to test a concept of "string of tCERs", designing a project to deliver tCERs in sequence to ensure in order to ensure a longer lasting emission reduction and resemble an ordinary CER.

This project was included in the portfolio to test how initiatives in the forestry and land-use sector could work since this sector must also contribute to emission reductions if global

[16] Conference of the Parties serving as Members of the Kyoto Protocol

mitigation targets are to be reached. With little experience from these types of projects, it was considered that even a single project could provide valuable experiences. The project got attention due to conflicts between the project developer and local communities. These type of projects, land use projects, may involve issues that regular CDM projects do not contain which the Kachung project illustrates, which has been brought forward as an important lesson in interviews with informants from other countries.

A fully intentional contribution to the development of the mechanisms have been that experts from the Agency have been active in the UNFCCC negotiations. Experts have acted as lead negotiators for the EU, as well as being issue leaders (supporting lead negotiators), and acted as co-chairs in negotiation meetings.

As part of taking active part in the Swedish delegation to the UNFCCC, the Agency has actively participated in the EU Mechanism Expert Sub-Group of the EU delegation to the UNFCCC where it has been recognized for its role in shaping the EU position on Article 6 of the Paris Agreement as well as the CDM Review. This has been done via studies and background papers commissioned by the Agency that often were first presented at sub-group meetings.

A member of the MEX group states that Sweden has been one of the most active member countries in this expert group, as Sweden reacts and comments on all the documents and participates actively in the meetings. However, the MEX member wishes that Sweden would be more active in the preparation documents or background documents for the meetings.

3.3 CDM Programme of Activities

Programme of Activities (PoA) was introduced by decision 7/CMP.1 Further guidance relating to the clean development mechanism at COP 11 in 2005, Montreal, which also was the first meeting of the members of the Kyoto Protocol (CMP 1). The basic aim of introducing this concept was to broaden the CDM field to replicable emission reduction activities applied to many small and geographically distributed GHG emissions sources that would have been difficult and time-consuming to develop on a project-by-project basis. It was also considered that household level activities could be effective for supporting sustainable development.

The idea of programmes with small- or micro scale activities, e.g. covering energy efficiency measures such as switching light bulbs to energy efficient lighting sources, came from the World Bank. The Agency played a vital role for implementing CDM PoA and improving it, and negotiators from the Agency were also involved when the decision on PoA was taken in Montreal 2005.

Work on PoA was soon initiated at the Agency and trying to implement the Programme's objective to increase the share of projects from LDC led to the conclusion that existing CDM methodologies did not fit LDCs, and neither did they fit PoAs. Supported by the "regional distribution agenda" and the Nairobi Framework (including additional funding from the Swedish Environment Minister, see Chapter 4) the nomination of Ulrika Raab, CDM EB member 2007-2008, as chair of the small-scale panel turned out to be a perfect move with perfect timing.

The development of PoAs were dependent on small-scale methodologies, and Ulrika could promote the development of such methodologies, enhancing the possibility for applying PoAs in LDCs and especially in Africa. A fellow CDM EB member at the time, who was interviewed for this assignment, also stated that Ulrika was a very respected and esteemed member of the EB and was very effective in promoting the Programme goals to steer the CDM and PoAs towards projects with clear development impacts. Another interviewee, who is a Fund manager in a fund the Agency participates in, stated that fund managers and fund members have learned a lot from the Agency especially on PoA rules and their implementation.

Experts from the Agency took part in a PoA working group funded by the German Ministry for Environment, Nature Conservation, Building, and Nuclear Safety. The group, which still is in operation, focuses on the scientific, regulative and policy- making aspects of the PoAs and provides a platform for dialogue. Many of the recommendations put forward by the working group have been integrated into the PoA modalities and procedures, resulting in improved conditions for PoA implementation and use.

The introduction and elaboration of CDM PoA was instrumental for making activities with household level mitigation actions feasible. As such, it was a necessity for the Agency's initiatives in Africa as will be shown in the next chapter.

3.4 Materiality

One staff member brings forward that one concrete thing that shows the connection between the Programme and negotiations was that they were able to put "materiality" on the agenda. Materiality is a concept within auditing and accounting that relates to the importance or significance of information such as amounts, transactions, or discrepancies. Another way of defining it is that something is typically material only if it has an impact on decision making.

The CDM rules were according to many project developers and validators too rigid. One example is that if a wind power developer changes the brand of the generator, also increasing the installed capacity from 1 MW to 1.1 MW, this change had to be verified by an independent entity and reported to the CDM EB. Effectively such a minor change in the project means that the PDD of the project needs to be modified and re-validated, and the project basically re-registered as a CDM project. This even poses a risk of non-continuance of the CDM project, if there are problems in the re-validation process. Small technical changes thus resulted in unproportionate bureaucracy and costs.

The CDM EB was reluctant to open a discussion on materiality and stated at its 51st meeting in early December 2009 that it was "premature given the current stage of development of the CDM" but agreed to discuss it in the future[17]. However, the countries responded directly at the Copenhagen meeting later that month and the CDB EB was mandated to by further exploring the possible introduction of the concepts of materiality

[17] http://cdm.unfccc.int/EB/051/eb51rep.pdf

and level of assurance in the CDM Validation and Verification Manual. Eventually, at COP 17 (CMP 7) in Durban 2011 a materiality standard was adopted[18].

3.5 Methodology development

The Programme's early project sourcing contributed to methodology development. A lot of early methodological work was performed by PCF which Sweden supported since 1999. However, the bilateral part of the Programme has also made important contributions The methodology AM0015 (bagasse-based cogeneration connected to an electricity grid), that was used in the three Brazilian projects the Agency contracted in 2003 was the first methodology that was submitted to the CDM EB in June 2003, and it became the foundation for the group of methodologies applying a grid emissions factor i.e. calculating emission reductions from the feeding of electricty from renewable energy into a national or regional grid. The Brazilian group of projects contained electricty production from using bagasse as fuel.

The CDM project cycle starts with the submission of a new baseline and monitoring methodology if no methodology approved by the EB exists for the project type. These methodologies have to be developed by project participants. A new methodology submission has always to be submitted together with a Project Design Document (PDD) describing the application of the methodology to a project. Once approved, methodologies are a public good. This and the high risk of rejection has led to a reluctance of the private sector to develop methodologies as this can be very costly.[19] Thus, it was quite natural that government agencies took a leading role in methodology development in the early days of the CDM-market.

The process of approving a methodology has changed many times since 2002. The first methodologies were submitted in advance of the 9th CDM EB meeting in June 2003 and the methodology for the Vale do Rosario bagasse cogeneration project was the first submitted proposal for a new methodology (NM001). At this time, the methodology panel was instructed to use three types of recommendations on the proposed new methodologies: (a) "Methodology approved/Approved with minor changes as attached", (b) "Methodology may be approved, subject to required changes" and (c) "Methodology not approved". Type (b) recommendations would imply that project participants shall make required changes in the proposed new methodology and send it back to the Meth Panel.[20]

The NM001 was reviewed by the CDM EB Methodology Panel in September 2003, receving a (b), and submitted again in September 2003 and was then approved. Later the methodology became part of a consolidated methodology. Submitting methodologies at an early stage, including showcasing how to determine additionality was important and interviewees both inside and outside the Agency tend to agree that this was groundbreaking.

[18] Decision 9/CMP.7
[19] Michaelowa et al (2007) Understanding CDM Methodologies A guidebook to CDM Rules and Procedures. Department for Environment, Food and Rural Affairs. UK
[20] http://cdm.unfccc.int/EB/Panels/meth/PNM_Recommendations/meeting/02-03/ReportMeth05final.pdf

A consultant involved in the development of the Brazilian projects recalls that the precondition was that the Programme could work with three concrete projects, Moema, Vale do Rosário and Santa Elisa. The methodology and project development took place in parallel.

Since the approach of the Agency has been not only to purchase carbon credits but also contribute to the development of the mechansims, these types of actvities were core elements of the Programme, providing for spending the time and resources needed. One interviewee explains that the Brazilian project developers, at this early stage of the CDM market, would probably not have developed the CDM parts on their own, and at this early stage of the the carbon market, it was even difficult for them to specify what kind of help they needed. There was also no track record of reviewed methodologies, in other words not much to go on for a project owner interested in the CDM.

As the CDM evolved and a wide spectrum of methodologies were submitted by many developers, there was soon not the same need for the Programme to be active in methodology development.

Through the participation of Ulrika Raab in the CDM EB, Sweden has also indirectly affected the development of other new CDM methodologies. A representative of the World Bank stated that Ulrika was a key person in getting a World Bank-developed CDM methodology on energy efficient lighting approved by the panel, as Ulrika was instrumental in getting other members of the CDM EB to understand the details on how the methodology works. This methodology is still used today.

Another example of methodology development is the small-scale methodology AMS-I.E.: Switch from non-renewable biomass for thermal applications by the user. This work came forward as part of the Agency's search for small-scale projects with significant contribution to sustainable development in LDCs. The Agency had identified a few projects for water treatment systems in Rwanda and signed two ERPAs in 2009 at an early stage of project development. For these projects, a methodology building on AMS I.E, was developed and later became the first water purification methodology, AMS III.AV.

The activities implemented in Rwanda includes the dispersion of water filters and effective cook stoves. Both measures lead to reduced use of firewood. For poorer households in rural Rwanda, costs for purchasing firewood is high, and collecting wood is time consuming for those who cannot buy.

The early engagement, which included upfront payments as part of the ERPA, helped to fund work with the methodology for the Rwanda programme. This implies that the Agency in this case faced a methodology risk, but this was necessary to facilitate the project developers work with the methodology. The methodology finally accepted by the CDM EB gave a significantly lower level of credited emission reductions than initially foreseen, which resulted in that the initial project owner cancelled the projects. Manna Energy Ltd, with CDM development support from UNDP, had planned to introduce two central water treatment facilities for seven schools. With the income from CER sales as the main source of income for the projects, Manna Energy decided to not move forward with the two facilities. However, a new project owner, DelAgua, stepped in and clean water access to the seven schools came to be provided through a CDM PoA that included both water purification and the diffusion of efficient cook stoves.

The long-term commitment and early involvement with risk-taking contributed in this case to the development of a new CDM methodology that is useful for LDCs where cooking water for household use typically leads to deforestation. This case also shows how the development of a CDM-project could cover several market phases. When the discussions started with the project developers 2008 the market was still growing and after a peak during 2010, the market collapse for CER prices followed swiftly. At the time of the final ERPA, 2014, the price reflected cost-based pricing in the absence of a reference price on the primary market.

4. Contributing to the development of the carbon market: focus Africa

4.1 Aim of Section

One of the objectives of this study is to assess how the Agency has responded to changing international climate policy, changing market conditions and changes in Directives. In this section, the initiatives of the Agency in Africa is used to illustrate how the Programme has responded to international climate policy (the Nairobi Framework and EU CDM policy), marked conditions (challenges to source projects from LDCs in Africa) and changes in Directives from the Ministry (increase share of projects from LDCs). The terms of reference for this study also concerns potential benefits and synergies of capacity building efforts, why an account of the Agency's capacity building efforts in Africa has been included.

Interviews as well as reviews of internal and public documents have been made to provide an overview of the Agency's approach to sourcing projects in Africa. The introduction of CDM Programme of Activities contributed immensly to change the conditions for sourcing CDM projects in Africa and the Agency played an important role in this regard, which was described in Chapter 3.

4.2 Finding ways on a challenging market

The review of Directives in the previous chapter brings forward two main objectives aside from purchasing carbon credits for the national target(s). The first of these is, same as since the very beginning of the programme, the objective to contribute to the development of the market mechanisms under UNFCCC, for which specific contributions will be illustrated in the next chapter. In this section, the main theme is the second objective to increase the share of CDM-projects in the Least Developed Countries (LDCs).

The focus on LDCs was part of a deliberate strategy by the Swedish Government to mobilise support among countries in Africa, showing that international climate cooperation in this form under the UNFCCC not only would benefit a small group of middle income countries. The idea has been that this also would strengthen the confidence among the poorer countries in the UNFCCC process. Sweden supported capacity building in Africa in the early period, e.g. through the PCF plus, which e.g. arranged workshops in Africa in 2002.

The Agency made significant efforts to enhance the CDM market in Africa, using different vehicles in different time periods. From the outset, CDM to a large extent came to be about Asia, and of almost 8000 registered projects, more than 80% are located in the Asia Pacific region. Being a market based mechanism, this makes sense since a large part of Asia has been characterised by economic growth and growing emissions, offering access to project finance as well as significant emission reduction potential.

The situation in Africa is different, reflected in the fact that only about 2% of the total number of registered CDM projects are located in the region. The Agency's portfolio does not reflect this pattern as African projects comprise of more than 20% of the bilateral projects. Through funds, the Agency's portfolio contains an additional 10 projects in Africa.

Practitioners interviewed for this study recall that the market for a period before the first commitment period of the Kyoto Protocol started was flooded with Project Idea Notes (PINs) from project developers in many African countries. This supply of PINs came from early support from donors to boost CDM in Africa as a preparation for the upcoming first commitment period. However, a reoccurring issue was that the underlying projects was far from getting financial close and often could not attract investors or loan facilities even with potenial support from CDM-income. The attempts by the Agency must be understood with these conditions in mind, leading to a few ERPAs that led to actual delivery of CERs, and a few that never did. However, with new concepts and instruments (CDM PoA) that proved more useful to poorer countries, the share of African projects could grow over time.

4.3 Early sourcing initatives

The Agency received an assignment by the Government in 2001 to identify a CDM project in Africa. At this time, it is important to bear in mind that the Modalities and Procedures for the CDM just had been adopted as part of the Marrakech Accords (COP 7, 2001), and that there were no methodologies approved, nor any pilot projects to look at for inspiration except for a few projects in developing countries under the AIJ. The CDM EB had its first meeting in conjunction with COP 8 in New Dehli and did not approve any metodologies until 2003.

The Agency approached an organisation that had some experience from energy projects in Africa, and in 2002, the Stockholm Environment Institute (SEI) was contracted to identify CDM projects in Africa.[21] The approach included a desktop assessment of African countries, from which South Africa and Ghana were selected for further analys. The study reviewed approximately twelve potential projects from which five were chosen for full assessment by the SEI, two in Ghana and three in South Africa. The list of projects was reduced to three, and when presented to the Programme, the Agency decided to continue with one project in Ghana. This project concerned a saw mill, from which wood residues could be used for the generation of electricity and steam for a nearby located brewery. Local and international consultants were used for project development and the Swedish EPA conducted a study related to the risk of illegal logging in Ghana and neighbouring countries. The logging seemed to be legit, even FSC[22] branded, so the process could continue.

With not many alternative project prospects available, the Agency pursued discussions with the project owners at the brewery but promoting CDM income at this early stage

[21] CDM projects in Africa. Tiempo - Issue 44/45, September 2002
[22] Forest Stewardship Council: http://www.fsc.org/

turned out to be difficult. A staff member involved at the time concludes that if the project had been presented a few years later, it probably would have been rejected directly.

The Agency changed strategy and inspired by the Dutch CERUPT programme it turned to public tenders as a means of sourcing instead of sending research organisations to look for projects. The first public tender for CDM in 2002 (see Chapter 5) attracted five proposals from Africa, of total 46 proposals received. Of these, one African project,Tazama Pipelines Ltd in Zambia and Tanzania, made it to the shortlist for further consideration. This was a conceptually and technologically simple project, intended to use hydro power electricity from the grid to replace six diesel and oil engines driving pump stations along a pipeline.

The Tazama pipeline project was developed with support from the SUSAC initiative (Start-Up CDM in African, Caribbean and Pacific (ACP) Countries), which was funded by the Directorate General Development of the European Commission, and co-funded by the UK's Foreign and Commonwealth Office (FCO) under its Climate Change Challenge Fund (CCCF).

In this case, the Agency supported the project owner to identify sources for additional funding. The Agency approached Sida to explore the possibility of assistance with funding (loan). However, the project did not suit Sida for several reasons, being a private sector project in the oil and gas sector, with limited obvious contribution to poverty reduction. By 2004, funding had not been solved[23] and the Agency later withdrew from ERPA negotiations.

4.4 A new push for projects from African LDCs

As mentioned above, the Directives provided a focus on LDCs already from 2005, but several developments came to provide a push for LDCs in Africa. One of these was the effort-sharing decision as part of the EU climate package in 2008. This decision stipulated that the implementation of the Kyoto Protocol in the EU after 2012 would be carried out by, on the one hand, the trading sector containing all installations in the EU ETS regardless of Member State affiliation and the non-trading sectors in each Member State on the other hand. For the non-trading sector, the Member States received an annual volume of 3% of the emissions of 2005 that could be covered by carbon credits.

Sweden proposed an extra volume of carbon credits for LDCs and Small Island Developing States (SIDS), which also was accepted by the EU, leading to an additional volume of 1% available through CDM-projects. Thus, there was a political ambition from the Environment Minister at this time to boost CDM in Africa, which also was reflected in the launch of the East African capacity building programme funded by Sida. The annual budget for the Programme was quite limited until 2009 but the Agency could after 2009 with substantially increased funding engage in new initatives, both at the multilateral level and through the bilateral part of the Programme. The Directives from the Ministry during the years 2008-2010 did surprisingly not contain wordings related to the regional distribution agenda for CDM in Africa, which the Directive of 2007 specifically did.

[23] Tazama Pipelines Limited in Zambia and Tanzania. AIEKA AB. January 2004.

Nevertheless, it was a priority of the Government at this time which also is reflected in the efforts by the Agency.

In 2009, the Agency initiated specific sourcing efforts by signing framework agreements with three market-leading project developers in the region. The Agency also received proposals from other project developers and was in no way restricted to use the two contracted firms. The set up was that the developers screened the market and were paid a finder's fee for project proposals of a pre-specified quality. If the Agency proceeded with the project, the firms could continue to perform additional services related to project development.

The projects under consideration included renewable energy projects: wind power, hydro power and solar power, in several Sub-Saharan countries, e.g. Tanzania, Kenya, Mauritius, Benin, Ivory Coast and Rwanda. Some of these projects, although thoroughly assessed and with better foundations than the numerous PINs that circulated in this period, did not materialise. It was common that the process led to a signed ERPA, but implementation of the projects turned out to be complicated, several of the ERPAs were terminated.

One example shows that discussions went on for five years, with a negative result. ERPA negotiations could take long, particularly when Government agencies or ministries were involved on the host country side. In this case, it took SEA nearly 2 years to get a final ERPA signed with the government. Since the signature of the ERPA was a condition precedent for the CDM project development work to start, there was a huge delay between the initial assessment of the project and taking real steps toward registration as CDM-project. Since the CDM regulations evolved from year to year in this period, the requirements that were expected to be fulfilled in 2009, were not fulfilled when the project was ready to be submitted for registration four or five years later.

Having a Government entity as project partner was challenging. In this case, the entity responded very slow and there was regularly a change of key personnel. This meant among other things that unless the new person was familiar with CDM, capacity building and a supportive dialogue had to be iterated many times.

Although some of these experiences could be discouraging, the Agency continued to work with African LDCs. The participation in Ci-Dev and a bilaterally launched cook stove initiative are part of more recent attempts to address the CDM-market in Africa.

4.5 African projects in multilateral funds

The possibility to get access to African project has been one factor when deciding to enter multilateral funds is the objective to contribute to regional distribution of projects and programmes. In 2010, not many funds in the Agency's portfolio provided African projects, although the FCF and APCF could deliver projects in LDCs, these were located in Asia and the Pacific. Two other funds were directed towards JI and CDM in central Asia (TGF and the MCCF). At this time, PCF was the only fund containing African projects in its portfolio, however, only with two projects: the Durban Landfill Gas-to-Electricity Project and the West Nile Electrification Project in Uganda.

The opportunity to enter the Umbrella Carbon Facility Tranche 2 (UCFT2) gave a possibility to have a more balanced portfolio and greater regional distribution, including projects in Nigeria, Senegal, Tunisia and Mali, which was presented as a main reason for investing.

The Carbon Partnership Facility has contracts in Africa, however, not so much in the LDCs. There is a municipal solid waste management programme in Morocco and a vehicle recycling programme in Egypt, aiming a taking old heavy emitting vehicles from the streets. There is one programme in a LDC, namely a small scale renewable energy, primarily hydropower, in Tanzania, administered by the Rural Energy Agency of Tanzania (REA), which took part in the East African CB-programme presented below.

The Carbon Initiative for Development on the other hand is explicitly focused on Africa, with eight programmes contracted in seven Sub-Saharan countries.

4.6 The African Cook Stove Initiative

During the mid 2010s the Programme had about 100 projects in the portfolio. Of these, eight were PoAs aiming at replacing traditional cook stoves with energy efficient stoves. These PoAs was established during 2012-2014 with a total volume of appr. 4 million CERs.

The rationale for taking specific action in this area is partly found in the Directive and the mandate to focus on LDCs (from 2011 and onwards), but it is also an effect of the development of the market at this time when there was no secondary CER price to rely on. This last condition means that based on the very low market price on CERs, CDM income could not incentivise projects since the contributon of CDM would be close to insignificant. To address this isssue, the Agency and other buyers turned other pricing models, more based on actual cost of the activity[24]. Furthermore, since the emission reduction potential in the poorer parts of Africa exist at the household level, there was a need for new types of project categories where the CDM income could cover a substantial part of the costs.

Another impetus is the fact that cook stove programmes address deforestation. Households using fire wood and charcoal for cooking, mainly, causes deforestation. Reducing the need for charcoal and fire wood through use of efficient cook stove thus has a climate change mitigation impact. Finally, the programmes also reduce black carbon which is a type of short lived climate pollutant and the Agency had a particular role in relation to efficient cook stoves within the frame of the Clean Air and Climate Coalition However, reducing black carbon cannot be included in methodologies for CDM PoAs since it is a climate pollutant that is not under the scope of the Kyoto Protocol. There are efforts in the voluntary carbon market to include black carbon in methodologies.

During 2013, the Agency launched an initiative in Africa for efficient cook stoves. Cook stove programmes have traditionally been funded by donors but a basic idea of addressing

[24] Methane projects is another category where the CDM income stands for a significant part of the cash flow, thus also suitable for cost based pricing

these through CDM is that can support the private sector to distribute cook stoves. It should be stressed that the road to be able to channel carbon finance to these types of programmes was not that straightforward. Substantial efforts during work in the CDM EB and at negotiations at several COPs were needed to make this happen (see section on PoA in previous chapter).

A challenge for programmes of micro activities is the costs of monitoring and reporting emission reductions. Cook stove programmes or programmes involving the replacement of inefficent light bulbs would not be feasible if the actions of every single household would need to be checked and reported. Thus, there was a need to make Programme of Activities manageable through samling techniques and spot checks to reduce costs for monitoring and reporting (also verification). These type of data collection methods were initially not allowed under the CDM where the intitial regulations[25] demanded that emission reductions be "clearly attributable to" the activity, which was interpretated to mean that you had to measure. This demand for direct measurement would render cookstove projects economically impossible. But the small scale working group under the CDM EB proposed sampling methodologies that were approved and thus made cookstove project somewhat less cumbersome.

The cook stove market faces considerable barriers:

- Low purchase power among consumers, including limited acces to credit to pay for a stove.
- None or limited knowledge in households regarding the benefits of investing in an efficient stove. The programmatic approach provides an opportunity to disperse information to the households regarding the benefits of a new stove, information that (in particular comparisons) otherwise would be difficult to access for households.
- Low margins for companies and investors in relation to risk[26] implying that the private sector would not launch these programmes completely on market terms.

These barriers could be addressed through carbon finance since emission reductions can be counted against the reduced use of non-renewable biomass[27], and in the cases of bought fuel, reduced use of charcoal and other fossil fuels.

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[25] The Modalities and Procedures of the CDM (3/CMP.1) states that: the project boundary shall encompass all anthropogenic emissions by sources of greenhouse gases under the control of the project participants that are significant and reasonably attributable to the CDM project activity (para 52); and Project participants shall include, as part of the project design document, a monitoring plan that provides for: (a) The collection and archiving of all relevant data necessary for estimating or measuring anthropogenic emissions by sources of greenhouse gases occurring within the project boundary during the crediting period (para 53).

[26] Literature suggests that many early programmes have been less successful, but that Government programmes in e.g. China and India has proven successful. See e.g. Vahlne and Ahlgren (2014) (Policy implications for improved cook stove programs — A case study of the importance of village fuel use variations, Energy Policy. Vol. 66

[27] Unsustainable use of biomass over longer time periods imply that the use overrides the biomass growth, i.e. the biomass does not renew. Reducing the need for non-renewable biomass slows deforestation down and contributes to a net reduction of CO2.

A cook stove programme typically has several positive effects such as improved indoor air quality, reduced time for wood collection, and cost reductions for households normally buying their fuel. This is a type of programme that is relevant for LDCs where firewood for household use in many cases constitute the largest share of energy, and with extra support through CDM, investors are in a better position to establish local manufacturing. For households not being able to collect wood, purchase of fuel becomes a major part of the household expenses

Being a micro activity dispersed over large areas in large numbers, the monitoring, reporting and verification of emission reductions become challenging. Samples and spotchecks are key elements in the cookstove PoA methodologies. These type of methodologies include statistical analysis making it complex for the project developer. There are not yet that many cook stove programmes, 17 out of 380 registered PoAs meaning that the experience from issuance is not very solid. Taken together, it is challenging to estimate the volume of CERs that will come out of a cook stove programme. The impact of the Agency acting as a buyer is that other type of financing becomes easier to attract once project developers have contracts with a stable governmental buyer.

As mentioned above, the initiative launched in 2015 was based on the mandate to address regional distribution and to source projects from LDCs. The particular focus on CDM PoAs stems from the experience of previous actions in LDCs in Africa where many projects were never implemented despite seemingly good conditions. In a way, it is a logical development from the earlier work of the Agency related to CDM PoAs and the continued regional distribution objective of the Programme. By the end of 2015, as many as 37% of the contracted volume of CERs came from projects and PoAs in Africa[28].

The efforts by the Agency in Africa has been internationally recognised. One project developer points out that it was a smart change of approach by the Agency to go into Africa and other new CDM countries such as Vietnam, as this pushed the CDM market into other areas outside the conventional host countries China, India and Brazil that previously had dominated the market supply. As the Agency's approach was not to purchase cheapest carbon credits, but to contribute the development and capacity building of new areas in the carbon markets and demonstrating the real-life use of CDM in unproved markets, the spill-over effects of this work are still positively present today in the global carbon market.

4.7 Africa Capacity Building Programmes

As indicated in Chapter 2, the Programme started to orient itself towards LDCs and Africa at an early stage, and one of the staff members with close connections to Sida and the Foreign Ministry took the lead in 2006 in trying to enhance the co-operation with Sida to get them more interested in the CDM. This was a result of the regional distribution agenda, i.e. the objective to spread CDM-projects more evenly across regions, and capacity

[28] http://www.energimyndigheten.se/klimat--miljo/internationella-klimatinsatser/erfarenheter-av-internationella-klimatinsatser/utmaningarna-med-att-utveckla-CDM-projekt-i-de-fattigaste-landerna/

building in Africa was specifically mentioned in the Government budget for research and development this year. Sida provided a budget for 2008-2009 of SEK 13,5 million.

The agenda was formalised through the Nairobi Framework (NF) that was initiated by the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP) and its UNEP Risoe Centre, the World Bank Group, the African Development Bank (AfDB), and the secretariat of the United Nations Framework Convention on Climate Change (UNFCCC). The target was to help developing countries, especially those in sub-Sahara Africa, to increase their level of participation in CDM.

With assistance from consultants, the Agency consulted with African DNAs to understand their needs; e.g. if the need was project development capacity, or information and knowledge to the financial sector. Based on results of the consultations, the "Programme on Capacity Building for CDM (East Africa)" (CB-programme) was launched in September 2007, targeting three African countries: Kenya, Tanzania and Uganda. The Agency acted as executive agency of the CB-programme, but it was funded by Sida with a total budget of 13 million SEK.

The objective of the CB-programme was to build capacity in African countries to get more projects into the pipeline, and not just to run knowledge enhancing workshops. The CB-programme consisted of regional and national workshops, working meetings between The Agency and national partners, sector scoping and project assessment studies, dialogues with development banks as well as south-south technical exchange.

The CB-programme is reported by Agency staff and participants to have a significant impact in Kenya, where they developed a planning and evaluation unit that could scan and assess projects and identify projects for the carbon market. The CB-programme also brought forward manufacturing companies, that later provided support to the Kenyan Government relating to private sector participation in carbon markets. It allegedly led to a shift in mindset in Kenya. The Agency was able to work with the management of companies like KenGen, which were themselves interested in building capacity. KenGen was later a driving force for wind power development with CDM support in Kenya[29].

In contrast, the work in Uganda turned out to be very slow: stakeholders took part in general information meetings, but it was not possible to gather a team in Uganda to bring forward projects. Also, the Tanzania programme ran into difficulties where it was difficult to engage the Ministry of Environment, which was responsible for CDM. However, the Rural Energy Agency (REA) was interested in learning and could later assist small scale project developer of hydro power.

Experts from the Programme participated through a couple of missions in Africa and it is reported that they developed a good relationship with the with Sida staff in Kenya. The lessons learned presented in a briefing note by the key consultancy consortium concludes

[29] See for instance: Project 9960 : 5.1MW Grid Connected Wind Electricity Generation at Ngong Hills, Kenya.

that the CB-programme would have benefited from more cooperation with local Sida representatives and embassies.

Sida commissioned an independent review of the CB-programme in 2009[30]. The review states that the progress of the CB-programme had been slow in 2007-2009, but measures to catch up had been started. According to the review, the partnership spirit between the Agency and the target countries was genuine, but the reporting and dialogue on progress was not timely or analytical enough.

The review concludes that the Agency project management and expert input were less than planned, due to heavy internal workload at the Agency. Instead, the implementation came to rely more on consultants, leading to delays and higher costs. An Agency internal analysis concluded that putting more time and effort into planning would have given better results and that one of the key issues is to match ambitions with budget, and also make clear to participating organisations about staff time expectations.

The East Africa CB-programme ended in 2010. There was also a CB-programme in Ethiopia with a limited budget that was well received. One of the consultancy consortiums that were assigned to implement the CB-programme reported several lessons learned. Regarding planning, the lessons learned highlights that putting more time and effort into planning would have given better results. The key issue is to match ambitions with budget, and also make clear to participating organisations about staff time expectations. Other lessons learned highlighted the need to take local conditions into consideration and being sensitive to these and real experience of working in the region is needed. One conclusion was that technical support should not be limited to CDM project development (see Annex II for an example of a broader approach).

How did the Programme respond to the experiences from the CB-programme? The challenging investment climate and limited access to project finance as well as insufficient regulatory and institutional capacity are issues highlighted in an internal paper[31]. It is further described that Sweden's view was to assess different alternatives for overcoming the barriers to increase Africa's share of CDM projects. Capacity building, guarantee facilities and enhanced demand are methods brought forward as a response to this wish, and the paper argues that more efforts are needed in these areas.

There were staff members in the Programme attempting to have the Programme to look more deeply into access to finance but that such suggestions never realised. In other words, the CB-programme was successful in Kenya, partly successful in Tanzania, and not that successful in Uganda, however, this did not lead to a redirection of the Programme towards addressing the financing challenges facing project developers in LDCs and in Africa in particular.

The Agency approached Sida for funding of additional support to further activities, but despite political support, accessing funds at Sida proved to be difficult. Those at Sida

[30] Jennervik, A. (2009). Review of the Swedish Energy Agency Pilot project for CDM Capacity Building East Africa. SIDA case 2007-002117
[31] Utveckling av Afrikas CDM-potential, kompletterande PM 2011

responsible for climate policy do not have access to funds, and the Agency was referred to departments managing national funds, regional funds, global funds, as well as appraoching local resources at embassies but did not succeed in an further capacity building activities in Africa of any larger scale[32]. As presented below, an initiative was later launched for the Caribbean countries and capacity building could be included in programmes developed in conjunction with Sida's exit strategies in middle income developing countries, see an example in Annex II.

A key lesson learned from attempts to advance capacity building experiences in Africa after the East African CB-programme is that the cooperation with other Agencies in Sweden, particularly Sida, could have been better, and it seems that the political support for enhancing the participation of Africa LDCs did not materialise very clearly in budgetary terms, decreasing the Agencies possibility to advance further capacity building programmes.

[32] See e.g. brief from the Agency to Ministry of Environment 2009.

5. Processes and Ways of Work

5.1 Aim of section and methodology

A carbon credit purchase programme typically has three main areas of work. First, it is the process through which projects or programme of activities are identified and selected. Second is the process through which the project is contracted, involving not only ERPA negotiations but also performing due diligence and signing initial documents such as terms sheets and non-disclosure agreements. Third, programme management includes follow-up that includes tracking the volumes to be delivered but that also can mean re-negotiation of ERPAs due to significant changes in the project.

A key question relating to the performance of a programme is how well the organisation has been suited to the tasks to be performed, under each of these three main processes, and its ability to adapt to changes. In general, the study shows that the Agency's unit designated to implement the Programme have been able to perform the required tasks and have responded well to external developments.

In the following, there is a description of how the Agency has worked with sourcing of projects, an introduction to the formal contracting process, and a description of how follow-up has been addressed through the Programme period. Additional data collection regarding sourcing and contracting was made through a short web survey, sent to twelve current and previous staff members with seven answers received. In addition, the chapter covers two additional processes: one that is about fund participation and one that relates to the role in providing experts to the international climate change negotiations.

5.2 Methods for sourcing projects and Programmes of Activties

In the early days, the Agency was able to identify JI-projects through the AIJ-programme and the Baltic Sea collaboration. For CDM, the situation was different since the Agency had not been involved in collaboration with developing countries.

In the early period, the main sourcing effort came with a call for proposals in May 2002[33]. The aim was to identify a portfolio of four to six projects.The main criteria were (i) the quality and completeness of project documentation; (ii) the credibility of project baselines, (iii) project economy and financing; and (iv) the project's contribution to sustainable development.

[33] Swedish Energy Agency. Call for CDM Project Proposals, May 30, 2002

The choice of methods for sourcing of projects is affected by several factors. The changes from being a buyers' market, to a sellers' market, back to a buyers' market after the market collapse have had impacts on the methods for sourcing. Thus, the market conditions may impact whether or not the best appoach is to use a call for proposals or to be represented at carbon market fairs and other events. Several responses in the web survey, as well as in interviews, bring forward that calls for proposals worked fine during the period when there was a buyer's market, i.e. up to 2005 and after the market collapse in 2011. In between, networking with brokers, developers and project owners in a sellers' market seemed to have been a necessity.

Another factor of importance is the budget of the purchaser, the requirements for regional distribution and other specific programme criteria. The Agency used different types of sourcing methods:

- Searching in registries and data bases
- Carbon market fairs
- Calls for proposals
- Dialogues within existing networks of brokers, consultants, project owners
- Strategic cooperation agreements with project developers.

The most efficient way to source projects and PoAs depends on the objective of the sourcing activity and the market situation as well as other external factors, but some general points can be made regarding the type of organisation that introduces the project.

The experience shows that brokers generally were able to present more mature projects, i.e. projects being registered or already issuing CERs. If the objective is to limit the risk of delivery, sourcing through brokers makes a lot of sense.

CDM project developers typically presented projects that were less mature, with higher risks and potentially different type of problems and challenges ahead. At the same time, earlier involvement from the Agency implied better opportunity to affect the development of the project.

Project owners have over years presented many interesting projects, but in many cases limited knowledge of the CDM requirements has turned out to be a barrier since there are specific criteria that should have been addressed the earliest stages of project planning.

Several responses highlight the benefit of calls for proposals in terms of standardizing the selection process and for identification of projects in a defined category. Another aspect that speaks for call for proposals is that there is a competition element implying that with predefined criteria, projects can be rated and ranked. Responses also brings out the advantages of working with a predefined agreement format, leading to a faster and simpler signing of ERPA.

Searches in databases have not been a successful method according to several responses, and one reason mentioned is that the projects that are available from listings maybe are not the most attractive projects. One aspect brought forward is that neither searching in databases, nor calls for proposals, are suitable for finding early stage projects.

Responses diverge on preferred method with several respondents pointing out that the key factor always has been the counterpart and the quality of the project. Others state that projects presented by project developers were better in terms of CDM-documentation, since the CDM criteria were part of the development early on. However, a call for proposals typically renders more projects and identifying better quality projects was in many cases a straightforward endevaour. It also provided for targeting specific regions and/or specific project types. Responses also highlight that for reaching more innovative projects, other channels worked better and the Agency had to be more active to identify those projecs.

At the same time, brokers and project developers did a lot of market screening and could also bring projects that fit particular criteria of the Programme. For some contracts, the set up involved finder's fee, which was a quite normal format for the CDM-market, creating incentives for project developers and brokers, while reducing sourcing costs for the Agency. The set up can become difficult to administer, though, when projects develop in unforeseen ways or where contract has been subject to renegotiations since the initial finder's fee construction may turn out incompatible with developments

However, dialogues and partnerships with brokers and project developers do not always lead to projects in line with demands. Companies often work in selected markets, i.e. in specific countries only and they prefer to work with project categories or types for which they have technical competence and previous experience. This means that in order to reach out for new countries as well as new project types, calls for proposals is perceived as an efficient method. In other words, sourcing methods need to be complementary and adapted to the current needs of the Programme.

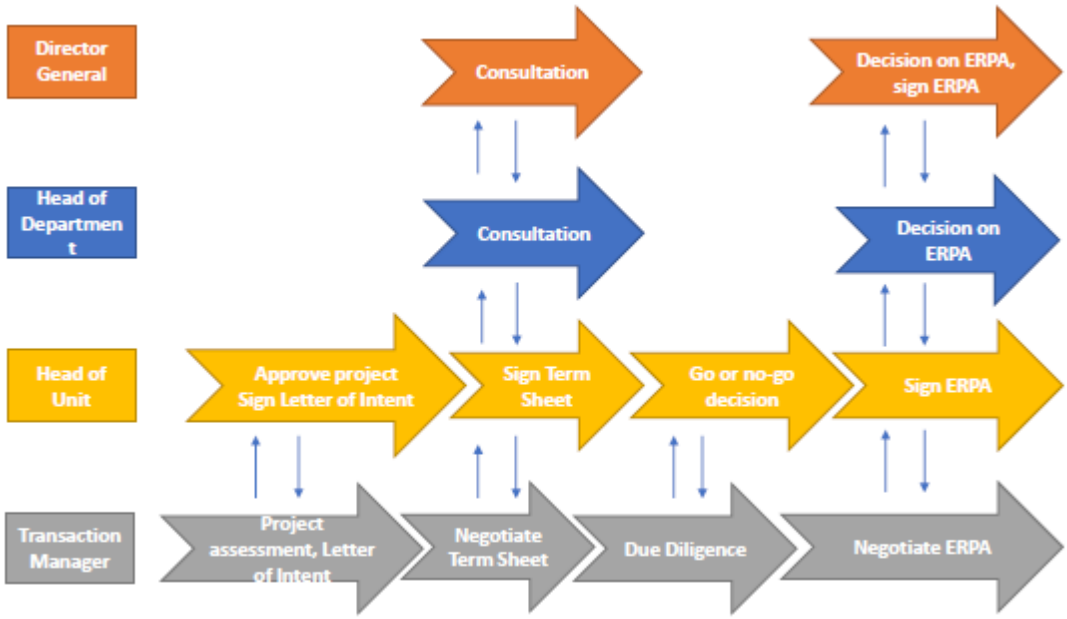
Regarding the assessment of projects, interviews and the web survey do not reveal any perceived lack of technical (as in engineering) competence among transaction managers. Regarding expertise and technical knowledge of the UNFCCC regulations and Monitoring, Reporting and Verication (MRV), there are two views emerging. One view holds that deeper knowledge relating to UNFCCC regulations and MRV has not been needed, at the same time though acknowledging that when available, more informative discussions have been possible with project developers and owners. The other view holds that lack of this type of expertise has led to regular outsourcing to consultants. Some staff members state that the work of the consultants could have been used better for learning within the Agency, other staff members go further and state that the use of consultants led to a lack of deep understanding of CDM and related issues.

Several interviewees point out that there has been a periodical lack of project finance competence. This is also one of the competences the staff reports they would have preferred to have more of as part of their own competence profile. A key issue reported is the ability to better understand risk. A barrier for accessing this type of competence has been that it was difficult to recruit experienced business people since the Agency could not offer competitive salaries.

5.3 The formal contracting process

The contracting process is a result of the internal administrative procedures at the Agency as well as the project cycle of CDM-projects.

Figure X. The project management process at the Agency



The negotiations between counterparts and the Agency have most often been based on the Agency's ERPA format. Negotiations have been performed by the transaction manager with support from the head of unit and/or a lawyer. Agreements have been reviewed by the Agency's lawyer before signing.

Options agreements (or term sheets), which is initial contract to ensure further negotiations, have not been used to a large extent and mainly in the early period. Responses indicate that it has been easier to work directly with the main ERPA directly. In a buyer's market, the need to tie a seller to the Programme through a term sheet has not been a priority. The Agency has always negotiated directly with the project owner, which sometimes have been difficult since many project owners have limited knowledge in English. In those cases, the Agency have used consultants for translations.

The contracts have often been subject to changes, mainly in the form of revised delivery schedules. Responses in the web survey brings out that changes in signed contracts have been a natural part of the process since the Agency has entered into the process early in many cases. Reasons for post signature renegotiations have been changes in:

- market conditions, such as lack of feed stock, (e.g. running out of biomass residures for a biomass CHP plant)
- financial capacity to implement projects

- ownership
- national permits or issues relating to CDM-registration
- significant delays in financial close and construction
- breaches of sustainable development policies

Working with CDM brokers and project developers has its pros and cons. Good working relations with brokers and project developers resultated in access to a larger portfolio. However, with time, these companies came to be quite informed about the Agency's contract requirements and acceptable price level. With knowledge of the Agency's positions through previous contracts, these companies were in a good negotiation position vis-à-vis the Agency.

Several staff members (current as well as previous) bring forward that the Agency generally has been a less competent negotiator than its private sector counterparts. Sometimes this has been a result of the strive to get a project into the portfolio overshadowing the risks of contracting a bad project or signing up to bad terms. Some staff goes as far as to say that the negotiation mandate to the Agency for single projects should have been reduced to specific predefined terms, i.e. using a format defined at the Agency which counterparts would have had to accept.

Responses in the web survey confirms the view that the Agency has not always been as stringent and hard as it should and the importance of the transaction manager being proficient in both project finance and law has been brought forward as a key for taking the lead in the negotiations. Respondents appreciate the existence of an ERPA-format but lament that the Agency not always were consequent regarding pricing and that that price strategies could have been useful also in the earlier periods. The method of sourcing seems to have had little impact on the price levels in the ERPAs, reasonably more a matter of the current and expected market situations.

Managing a purchase programme requires legal competence, and while most of the staff interviewed report that they have enhanced their own capacity in this area, the Agency has been dependent on legal expertise from outside the Agency. Business lawyers were contracted for the development of the ERPA-format, lawyers that also participated in ERPA negotiations during the early phases of the Programme. Lawyers have also been contracted for legal assessments of fund agreements.

The web survey reveals that co-buying arrangements are seen as risky since project owners may expect that the Agency, as a governmental organisation, would guarantee the contract for all buyers. This is what happened in one case, which retrieved media attention in Sweden[34]. The Agency had entered into a co-buying initiative with the Swedish company Carbon Asset Management (CAM) in 2008 regarding purchase of CERs from several wind power projects in China. The wind power plants began delivering CERs in 2009, i.e. before the collapse of the market.

[34] http://www.energimyndigheten.se/klimat--miljo/internationella-klimatinsatser/erfarenheter-av-internationella-klimatinsatser/utmaningarna-med-marknadens-utveckling/

After receiving the contract CER amounts and thus fulfilled its obligations under the ERPA in 2012, including the collaboration with CAM, the Agency was informed during 2013 and 2014 by the Chinese project owners that CAM had not fulfilled its part of the agreements.

To avoid the risk of legal action from the Chinese project owners, the Agency choose to negotiate additional purchases of CERs. This was made within the existing budgets and mandates, but it became a necessity due to wordings in the ERPA that obligated the Agency to cover for CAM in the case CAM for market reasons had to exit the contract. The Agency has made claims on CAM and its owner Tricorona, companies that faced bankrupcy following CDM market collapse.

This was the only case where the Agency had to step and cover for another part, and despite some mitigating factors, the Agency has concluded that these ERPA terms should not have been accepted in the first place.

As expressed by interviewees and in the web survey, the Agency did not always reach the same standard in negotiations as experienced project developers and brokers. However, it was only in the case above it led to significant economic consequences.

5.4 Follow-up and the Sustainable Development agenda

The analysis of how the Agency has implemented Sustainable Development (SD) and other criteria is not covered in detail in this report[35]. However, in terms of the Agency's ability to respond to changing external developments, we can learn from interviews as well as desktop studies that the focus to a large extent, particularly during the early periods, has been on the credibility of emission reductions and compliance with mandatory UNFCCC rules.

Staff members concede that the approach to a substantial extent was to rely on the CDM rules, the confirming of contribution of SD by the host countries, and the third-party verification of both emission reductions and local stakeholder consultations. However, social and environmental criteria, together with anti-corruption criteria, gradually entered into the Emission Reduction Purchase Agreements (ERPAs), and the anti-corruption clauses became part of the standard ERPA format.

The interviewees emphasize that the Agency has honoured the ERPA and the international rules, and that requirements and criteria above these have not been elaborated in the Directives from the Ministry. Additional criteria were thus developed internally and not through the Directives.

The instructions and criteria for selecting projects have been relatively vague from the Ministry’s side. The Agency has adapted additional criteria, e.g. excluding projects involving palm oil and large-scale industrial gas applications. Most renewable energy

[35] This will be part of a parallel assignment containing an evaluation of the results of the Programme

projects meet Gold Standard (GS) or other NGO criteria, which is shown by their registration as GS projects.

Since a few years, there has been a larger focus in the international as well as national context to focus on the reporting of co-benefits of mitigation activities. The criteria for project selection has also changed and several staff members bring out the engagement in Ci-Dev as having a major impact in this area. Ci-Dev is a fund that mixes development aid and carbon finance, to a considerable extent relying on Official Development Aid (ODA) through the UK and US Governments. Since the Ci-Dev aims at capacity building and to provide tools and methodologies for increasing access of carbon finance in the poorest countries, it uses the guidelines and criteria applied by the DFID (UK Department for International Development) and other donors (the LogFrame approach).

It has been stressed in the interviews that participating in the funds has given additional value in this area, since the funds and the Multilateral Development Banks that implement them, have been working with performance standards and risk assessment (risk categorisation) since many years. The Agency has regularly been engaged in discussions with the Foreign Ministry in Sweden regarding criteria that govern participation in World Bank and Asian Development Bank activities.

It is a challenge to identify and present the co-benefits of mitigation actions if there have been no initial requirements to monitor and report these from the outset. However, as this area has matured, more attention has been paid to the development of standards and formats, which have been helpful in this regard. The EU pushed for consideration of sustainable development co-benefits for CDM in the negotiations and managed in 2011 at the COP-meeting in Durban 2011 to get a mandate to the CDM EB to explore voluntary standards for reporting co-benefits[36]. This work has resulted in the Sustainable Development co-benefits tool (SD tool) for the CDM. The projects using the SD Tool are listed in a separate page under the CDM website[37].

One transaction manager at the Agency recalls that the Agency started to get more involved in these issues around 2012-2013. The first SD questionnaire to project owners was designed at this point, and several staff members admit that the Agency maybe put too much faith in the descriptions provided by the project developers or owners early on.

In 2014, the Agency commissioned a consultant to assess the experience of project developers and other stakeholders of working with different type of standards. The results were presented at the DNA Forum in November 2014[38].

The sourcing methods do not seem to have had any larger impact on how the project performs in terms of sustainable development criteria. Responses in the web survey

[36] Decision 8/CMP 7, paragraph 5.
[37] http://cdmcobenefits.unfccc.int/Pages/SD-Reports.aspx

[38]https://cdm.unfccc.int/filestorage/e/x/t/extfile-20141112094002472-Global_DNA_Forum__Agenda_12112014.pdf/Global%20DNA%20Forum_%20Agenda_12112014.pdf?t=Tjh8cDQ2dzZyfDDg68496CUSLjJbez0Z6EQX

emphasize that the key aspect is criteria and requirements, with some reflecting also that when calls for proposals are used, it is easier to compare projects in relation to the specification in the call.

Responses further stress that the Agency's requirements for projects could have been better specified, at an earlier stage. Related to this is also the fact that some staff members state that when the focus started to shift from purchasing to purchasing from projects with positive co-benefits, more expertise could have been needed in relation to environmental and social safeguards.

5.5 Communication and internal learning

The key method for communication and informing colleagues seems to have been the regular Unit meetings. During a long period of the Programme, these meetings covered key issues in the bilateral as well as fund portfolio and negotiations, and in this way, it was the main means for informing and knowledge sharing as well as for discussing policy developments. Staff members point out that during the early phases of the Programme, there was no rush to make decisions and issues were thoroughly considered.

For instance, when preparing the Swedish position for CMP's annual guidance to the CDM EB, experiences were collected within the Unit and discussed so as to inform the responsible negotiator. These discussions thus fed into the negotiator's preparation for the upcoming COP and were ultimately documented in the Swedish Instruction for the COP. However, staff also recall that the discussions were not systematically documented at the Unit. This view is confirmed by the lack of interim and final briefing notes on the lessons learned from the Programme, both in terms of bilateral projects and the multilateral funds. There are a few final reports on fund participation, e.g. for the TGF, and in some cases lessons learned in documentation over single projects, but not at an aggregate level. Some lessons learned are though presented in in thematic papers such as the example on the outlook for CDM in Africa.

In the early years, the Programme used secondments as a way of learning. In 2003 and 2006, two staff members were seconded to the World Bank, and during 2008, one staff member was seconded to the ADB to work with the Asia Pacific Carbon Fund. At this time, the Head of unit was also the chair of the APCF.

5.6 UNFCCC mechanisms negotiations

The organisational set up of the Programme at the Agency had several positive elements during its early stages since the organisation then contained competence and expertise, in negotiations as well as related to the Programme, that could feed into each other's work areas. During the first years of the Programme, much of the rules and practices for carbon market projects were still under elaboration, and there was not much previous experience to rely on from running these types of programmes. In this respect, the Programme was initially more entrepreneurial in character and it had to develop in parallel to the elaboration of the rule systems for CDM and JI. One can argue that the connection to the negotiating expertise was more important for the Programme during this period than was the case at a later stage since key rules and interpretations were established along the way. The

strong connection between the Programme and the negotiators is still a part of the organisation of work.

5.7 Working with the funds

Having a large portfolio of bilateral projects is time-consuming and resource-intensive, compared to fund participation. On the other hand, the Programme personnel gathers more deep and hands-on expertise from bilateral projects than from fund participation, and closer connections to the network of project owners and developers. Both bilateral and multilateral projects have their own benefits – working closely with bilateral projects gives more insights from actions on the ground in developing and emerging countries and on challenges of particular project types, but fund participation can give more high-level, forward-looking insights on an international level, and opportunities for learning from other fund participants.

As experience from bilateral activities has grown, it has provided for a stronger voice in multilateral funds, and better ability to assess projects and programmes proposed by fund managers.

The Agency has contributed to the development of global carbon markets via their participation in several carbon funds, especially those early efforts that had prototype character, such as the World Bank's PCF. Participants from other countries typically recognise the positive role played by the Agency, which has been characterised by an informed view of carbon markets, a long-term commitment and constructive ideas for improvements.

Staff members highlight the strategic use of funds for learning: for instance, about CDM Programme of Activities (PoAs) in the Carbon Partnership Facility (CPF) of the World Bank, and about the post-2012 conditions through the Future Carbon Fund (FCF) of the Asian Development Bank. The World Bank-led T-CAF and PMR are key initiatives for learning about future forms of collaboration. In the early days, the PCF brought important experiences into the bilateral programme where the first ERPA templates were created, which were later utilised in the development of the Agency's ERPAs.

Interviewees both inside and outside the Agency stress that the combination of the bilateral programme, multilateral funds, and negotiations provide for the getting a whole picture on carbon markets and related international climate policy, and for understanding the uncertainty and slow progress characterising UNFCCC-governed markets.

According to fund participants, there were cases when countries came to e.g. PMR meetings with a lot less informed view on market mechanisms than Sweden, which had gathered bilateral experiences through its own programme, and could use this informed view in moving issues forward in the meetings. The long-term experience on real-life projects, from both the bilateral portfolio and the fund participation has built Sweden's credibility in all the funds and facilities Sweden participates in. The other fund participants views are reported to value Sweden's input in the fund discussions as highly relevant, as Sweden has such an extensive experience with the challenges and opportunities of the carbon markets on both project and portfolio level.

Staff within the Agency bring forward that the bilateral programme has been very valuable for participation in funds, which also is supported by experts from other countries stating for instance that "Sweden has not been purely a compliance buyer, it has promoted development of carbon pricing as policy tool more generally in the fund meetings. Sweden has also valued the sustainable development co-benefits more than many other fund investors, who have focused on fulfilling compliance targets and MRV issues".

However, staff members recall that the co-coordination between fund representatives within the Agency periodically has been limited and that Sweden as investor or the Agency not always has been able to appear with one voice across the different funds. Coordination has taken place weekly at the Unit meeting, where main issues have been presented before meetings of the funds. Still, interviewees report that positions and lines to take were not always co-ordinated during this period (roughly 2010 to 2015). There was a need for common lines on pricing and policies during the period when the market started to collapse. However, a lot of things happened during this time, with the different funds responding in different ways, which made coordination more difficult. More recently, co-ordination has been improved through the establishment of the multilateral group within the Agency.

5.8 Capacity building

Capacity building has not been a task or objective in the Directives. During the East African CB-programme, the Directives for 2007 and 2008 contained an instruction to consult with Sida in capacity building activities for CDM. However, several of the multilateral funds have combined their purchasing programmes with capacity building or readiness activities, e.g. the PCF plus. The funds at the Asian Development Bank did not have these types of activities within the funds, but ADB had and still has technical assistance programmes for the carbon market.

More recently, the Agency's participation in the Ci-Dev can also be seen as a capacity building exercise, since it contains a separate readiness fund aiming at capacity building. Ci-Dev has been valuable in supporting LDCs e.g. though support to the development of standardized baselines and establishing "suppressed demand" accounting standards for energy access projects.[39]

In addition to designated capacity building efforts, the Agency has through its early and deep engagement with project owners built capacity. Discussions with project developers, including hands-on work with project developers facing the project-level challenges in the national context contributes to capacity-building and learning. Through collaboration with the Agency, project developers have learned extensively about CDM rules and requirements and gathered experiences from going through the CDM project cycle of validation and registration, and the verification and issuance of emission reductions.

The Agency took part in capacity building for CDM in China and during fall 2007, an expert from the Agency was stationed in Beijing to assist in mapping CDM's contribution to technology transfer and in identifying the potential for achieving a better regional

[39] https://www.ci-dev.org/about-us

distribution of projects in China. This work took place within the framework of a larger three-year capacity building programme for CDM in China that was funded by the EU. Several European companies and organisations took part in the programme that was administered by IVL. This programme suffered according to several interviewees from the time frames for EU funding, and when it finally was implemented, many of the elements of the Programme were out of date.

Experts participating in the China programme recall that the results of the capacity building efforts were difficult to assess but that it was rewarding to build networks in China, including with local CDM-offices, since this was during the heydays of CDM. At this time, the Agency's budget was still small and Chinese projects tended to be large. Thus, while not rendering concrete projects relevant for the Programme, the Agency could build networks in China that proved useful later during the period when the Programme thrived.

The staff member who had initiated the CB-programme in East Africa also designed a Caribbean initiative that started around 2014, aiming at preparing for the development of INDCs that were to be submitted to the UNFCCC preferably in advance of the COP meeting in Paris. The Swedish Ambassador for Caribbean countries was interested to accomplish something in the energy sector and the Agency responded by suggesting assessing at what these countries could do with their national strategies, within the energy sector, while also preparing their INDCs[40]. Part of this initiative was to have them prepare strategies for how to make use of market-based instruments. The Agency received a budget for scoping work to start the Caribbean CB-programme. The result was a programme concerning climate resilience in the energy sector: Contribution to Swedish-Caribbean cooperation on resilience. The programme was funded by Sida with roughly SEK 5,6 Million during 2015-2016.[41]

A follow-up programme, Swedish-Caribbean cooperation for integrated energy-climate strategies[42], is a collaboration between the Caribbean Community Climate Change Centre (5Cs), the Agency, and a consortium of consultants. In 2016, the programme resulted in a report that describes and assesses the elements of international and domestic efforts to stimulate renewable energy and energy efficiency investments in the region. The results were presented at a regional workshop in October 2017[43]. The funding from Sida was SEK 2 million, for 2017 for the development of NDCs of small island developing states[44]. As also highlighted in Chapter 4, capacity building efforts of this type have been funded by Sida and not part of the Agency´s budget line. The Caribbean programmes indicate that capacity building initiatives have evolved from specific CDM training to more universal support relating to the development and implementation of NDCs.

[40] An INDC will become the first Nationally Determined Contribution (NDC) when a country ratifies the Paris Agreement

[41] https://openaid.se/sv/activity/SE-0-SE-11-9999117701-GGG-41010
[42] https://openaid.se/sv/activity/SE-0-SE-11-10302A0101-GGG-23010
[43] http://www.energimyndigheten.se/en/cooperation/international-climate-cooperation/supporting-climate-action-in-the-caribbean/
[44] https://openaid.se/sv/activity/SE-0-SE-11-11192A0101-GGG-23010

As a type of softer capacity building, the Agency has supported many knowledge products. A well-used example is the CDM rulebook, which was an online database of the CDM rules. It was developed by Baker & McKenzie, with funding from the Agency and seven other organisations (British Foreign & Commonwealth Office, Australian Government, New Zealand Ministry for the Environment, Asian Development Bank, The World Bank, UNDP, UNEP Risoe). The CDM rulebook has been a key resource in the international CDM community, as it laid out the CDM rules in a comprehensive and easily understandable manner for project developers and consultants. The CDM rulebook contained the CDM cycle rules in a more accessible manner than the UNFCCC websites, and thus was the go-to webpage for many actors in the field. During its operation, the database was updated after every CDM EB meeting and COP negotiations. However, the online service is now discontinued.

The Agency and its employees contributed to the development of global carbon markets through publications as well as presentations at relevant UNFCCC and EU Working Group meetings. Reports were done, *inter alia,* on the following topics:

- Article 6.4 crediting outside of NDC commitments under the Paris Agreement: issues and options (2017)
- Features and implications of NDCs for carbon markets (2017)
- Environmental integrity and additionality in the new context of the Paris Agreement crediting mechanisms (2017)
- Benchmark levels of ambition from country's INDC (Intended Nationally Determined Contributions) (2016)
- International Cooperation under the Paris Agreement - Exploring opportunities for Swedish cooperation with developing countries (2016)
- Crediting early action: options, opportunities and risks (2016)
- Net Mitigation through the CDM (2013)
- National policies and the CDM rules: options for the future (2013).[45]
- Analysis of Hurdles related to Verification and Issuance of CDM Program of Activities (2012)
- The Role of the Private Sector within a Sectoral or NAMA Crediting Framework (2009) Design Options for JI post 2012 (2009)

Through the Research Programme for International Climate Policy, the Agency also funded research related to design of the market-based mechanisms:

- Designing new market-based mechanisms: case studies of design options for up-scaled mitigation activities in Bangladesh and Thailand (2012-2013)
- Designing new market-based mechanisms: case studies from Thailand and the Philippines (2013-2015)

[45] http://www.energimyndigheten.se/en/cooperation/international-climate-cooperation/climate-policy-research-programme/results-from-the-climate-policy-research-programme/

The Research Programme also funded research related to NAMAs (Linköping University) and other policy related studies but these have typically limited relevance for negotiations as well as carbon market approaches.

Interviewees from the international mechanisms community have found the Agency's studies to contribute to international capacity building on these issues, and to be helpful in the work of e.g. the EU Mechanisms Expert group and other related work. These studies can be seen as a major capacity building effort by the Agency internationally, as the reports are all public on the Agency's website and are accessible to all interested actors around the world.

In addition to contributing to enhanced knowledge on CDM rules and regulations, the experts from the Programme have contributed to capacity building of fellow negotiators in the EU. Agency experts have actively shared their views and experiences from both the bilateral projects and fund activities of the Programme in UNFCCC negotiations and related EU expert groups, and this knowledge sharing has contributed to a better understanding of the carbon markets and the realities stakeholders face in real-life project experiences. A member of the EU MEX group states that even though the MEX was not supposed to be a capacity-building exercise but a negotiation group, in reality it became a way of building capacity in many Member States. Sweden has been one of the few countries with active large-scale purchase programmes and thus it has been able to present real-life examples and challenges in the use of mechanisms, which have contributed to capacity building of the group.

5.9 Stakeholder relations

The Agency has from 2006 been mandated to facilitate and promote Swedish companies wishing to engage in the project-based mechanisms[46]. This edict has remained in the Directives until today. Regarding general promotion of the participation of the private sector, practitioners and staff members recall that the Agency arranged several seminars in the early phases of the Programme for potential actors.

It could be important to bear in mind that the interest during the earlier period came from potential compliance buyers of CERs as well as brokers or project developers. The developments in the EU ETS, where the first hang up was the decision to only allow projects from LDCs for compliance after 2012 and the second was the surplus of allowances making any hedging with CERs unnecessary, reduced the interest in capacity building seminars and the like. In other words, there has not been any active compliance buyers in Sweden that could have been interested in a more informative dialogue with Agency experts and negotiators after the second period of the EU ETS (2008-2012). However, some discussions and collaboration have taken place with brokers and project developers that also have had an interest in the voluntary sector.

The Agency has had regular dialogue with the Ministries in charge of the Programme, in particular in areas where there has been a shared responsibility: UNFCCC negotiations,

[46] Myndigheten skall stödja och underlätta för svenska företag som önskar engagera sig i de projektbaserade mekanismerna.(Regleringsbrev 2006)

PMR, PCF etc. Occasionally, there have been meeting with Ministers and Secretaries of State. Broader hearings have been scarce, counting to one presentation for the Environment and Agriculture Committee (*Miljö-and Jordbruksutskottet*) and one for Prime Ministers' office (*Statsrådsberedningen*) before the expansion of the Programme. Surprisingly, given the size of the Programme, there has not been any reference or steering group at the Ministry(ies) or Ministry participation in any such a group. Such a group has been established for instance for Sweden's participation in the GCF, also including non-Government stakeholders.

UNFCCC meetings have given experts not participating in the dialogue with the Ministry regularly the opportunity to discuss with Ministry staff and experts from other agencies since UNFCCC meetings gathered relevant Swedish experts in a way that is not common on a regular basis while in Sweden. Such discussions have been referred to as very promising by several interviewees both from the Agency and from other agencies. However, it seems that a general problem has been a lack of fora and opportunities for taking these discussions further domestically. In other words, ideas and initiatives discussed between Ministry and agency experts could not be picked up once the experts had returned to Sweden after the UNFCCC negotiations.

There has been some collaboration with the Swedish Environmental Protection Agency (SEPA) over MRV and with Sida over capacity building. The scope of collaboration with other Swedish agencies has varied over the years. At the more general climate policy level, the Agency has done work with several Government assignments covering the design of future climate regimes, analyses related to national targets, the preparation of the National Communications to the UNFCCC, and not least in relation to the implementation of the EU ETS. Collaboration and dialogue have also been a natural part of the work in the Swedish delegation to the UNFCCC.

For quite some time, the mechanisms constituted an area differentiated from national inventories and related reporting. This is the case for the project-based mechanisms while international emissions trading from the outset has been tied to the existence of inventories, time series data, data collection systems and accreditation and verification schemes. CDM and JI methodologies are to some extent based on IPCC guidelines, which also underpins inventories and their reporting but the technical collaboration between the SEPA and the Agency has been very limited. Recently, through the adoption of the Paris Agreement and discussions on enhancing the capacity for monitoring, reporting and verification, the two areas have become more interrelated.

Experts at the SEPA acknowledge that the collaboration between the Agency and SEPA has worked well within the frame of the Delegation to the UNFCCC, where Programme experiences have been useful, and where Agency experts have had good insights in GHG accounting issues. It seems as if fruitful discussions and exchanges have emerged over issues related to the new concepts introduced in the Paris Agreement. The two agencies have cooperated in the reoccurring preparation of the National Communications and Biennial Reports to the UNFCCC. In these reports, the Agency (within this area) has been responsible for feeding information related to the use of flexible mechanisms into the reports.

The dialogue with Sida was encouraged in the Directives for a few years during the period of capacity building in Eastern Africa, and recently regarding technical mitigation support

related to a rural electrification programme in Zambia. As described in Chapter 4, operational collaboration has been based on funding from Sida with the Agency as implementing organisation.

The Agency took part in several seminars at Sida during the initial period, but generally, the co-operation with Sida did not work that well at this early time. Initially, the understanding of the role of carbon finance was not well developed in donor networks, and there was also the scepticism from donors related to the belief that reducing or avoiding emissions would lead to reduced growth in poorer countries.

As stated in an earlier section, the Directive for 2013, included a mandate to talk to Sida regarding the reporting on contribution to sustainable development in the host countries. Dialogue meetings were held, that among other things came to include discussions about how the Agency could support Sida's reporting of climate mitigation impacts.

A recent collaboration concerns estimation of reductions of GHG emissions from the Beyond the Grid Fund Zambia (BGFZ) programme, which constitutes the Swedish part of the Power Africa initiative[47]. The purpose of the collaboration is to arrive at recommendations for monitoring, reporting and verification of emission reductions, since reductions could assist electricity service companies to get climate finance and reductions could also be reported as part of Zambia's NDC.

5.10 Organisation's ability to respond to external changes

As presented in Chapter 2, the program has experienced different Government policies and various levels of funding over the years. Adapting to these changes are of course mandatory and upcoming changes were often discussed with the Agency before changes were to be implemented. In addition, there have been external developments to which the Agency has had to respond, regardless of current policy and budget directives. In general, during the first ten years of the Programme, it managed fairly well to transform from:

- Joint Implementation to the Clean Development Mechanism. Uncertainty over the status of JI in Russia was one of the risks that led to a decreased role of JI in the Programme.
- From CDM in middle income countries to CDM in LDCs. This was part of a deliberate strategy, party following from the regional distribution agenda (see Chapter 4.)
- From fixed pricing to variable pricing. This was an effect of the market structure for the EU ETS, for a period price setting for CDM through its secondary CER prices.
- From CDM to CDM Programmes of Activities, reflecting the need for approaches that could work better in LDCs.
- From secondary market price setting to result-based or cost-based pricing.

[47] https://openaid.se/sv/activity/SE-0-SE-6-10769A0101-ZMB-23030/

A previous employee characterises the developments as shifting from an initial buyers' market to a sellers' market, and then turning to a buyers' market again, concluding also that the possibility of discussing with the World Bank (WB) and the Asian Development Bank (ADB) was very helpful during periods where there was a need for a shift of strategy.

When the market could not sustain prices on the secondary market, new strategies for pricing were needed. This required more thorough analyses of projects and price formation. Obviously, during the periods of buyers' market, the role of the buyer to be active in price formation is larger and the buyer may have to adjust to these conditions.

One of the current staff sees that the Programme may have responded late to market price developments, following from the fact the Agency is not a market actor, and thus not being price sensitive, implying that this is a quite natural development. An internal paper from 2011[48] brings out the issues related to fixed versus variable pricing, among other things describing how the brokers that bought CERs to sell on to other buyers established variable pricing as a key element in ERPAs. This led to a demand among sellers to require variable pricing, a fact that the Agency had to respond to. Variable pricing makes the long-term budget more difficult to manage since the available funds may cover less or more purchases depending on the closing price at the transaction. Hence, the Agency asked for flexibility in its Directive in terms of its commitments to ERPAs, e.g. by having the possibility of not fulfilling contracts or by divesting to other buyers.

The response to the collapsing CER price during 2011 and onwards has been reflected in the annual reports, showing that the strategy transformed into payment for results, and payment for actual costs, rather than paying a price reflecting a discounted secondary market CER price.

Interviewees tend to support the view that the Programme since the expansion phase has been largely confined with transaction management, with fund participation and the negotiation tasks as windows to the world outside. In practice, this has meant that some staff members have experienced that there has not been sufficient time and effort to bring experience from international work and negotiations back into the Programme. Some current and previous employees state that if the tasks become characterised mainly by formal transaction management, they typically do not lead to the possibility to extract interesting facts that can be used for the development of new mechanisms, unless there is strategy and systematic approach for this. One interviewee argues that, "with not enough time devoted to reflection and thinking, it has been difficult to set internal discussions on key issues related to the CDM, up-scaled new mechanisms and other policy issues". Others express this view in the form of lack of forum for policy discussions.

Related to this aspect is that some staff members express a wish to work more deeply with analyses. More learning from each other and from senior staff has also come forward in the interviews as a wish. From 2012 and onwards we are informed that the idea was to

[48] Åtgärder för att hantera rörliga priser på CDM-marknaden och möjliggöra effektivare användning av anslag

always have two persons engaged in each of the funds, one more experienced and one more junior, to increase capacity building within the Agency.

6. Contribution to the Post-Kyoto and Pre-Paris Discussions

6.1 Aim of Section

Previous chapters have highlighted the role of the Programme in the development of the flexible mechanisms and the carbon market in the early days of the Programme. While the regulatory framework for CDM and JI continued to develop and actors gained more and more experience from these project based mechanisms, the international community had already at COP 13 in Bali, 2017 initiated discussions on the need to design upscaled market based mechanisms.

These discussion contained several different concepts. In the early discussions there were credited NAMAs, sectoral mechanisms, a new market-based mechanism and a framework for various approaches. Later on there have been market-based instruments and cooperative approaches. These concepts have in common the need to accomplish transformative change, which is difficult to get through project-based activities. The emphasis on upscaling and sectoral approaches is since growing economies facing infrastructure and energy investments could contribute to significant emission reductions if a greener development path is chosen.

Carbon finance could play a role to steer the development away from fossil fuel lock-ins, and the challenge has been, and still is, how to design carbon finance approaches that address transformative change. Achieving transformative change, up-scaling mitigation activities and applying sectoral approaches implicates the host country government and the political economy and getting involved in such initiatives is something different from purchasing carbon credits from projects or programmes. One of the questions raised by the terms of reference is what happened with the programme when the international climate policy changed or when market conditions change, One can argue that the discussions relating to new types of market-based mechanism reflects a change in international climate policy. This change have emerged over some time and is actually still ongoing; the outcome of the negotiations on carbon markets under the Paris Agreement not yet is known. This section outlines the response of the Agency to this long term change.

Whereas strategic discussions during the early 2010s came to be about how to manage the market price collapse and find a role on the market in the post 2012 period, more recent strategic thinking has concerned the design of new types of instruments. There are different views on how much thinking the Agency ought to have done about novel approaches, but there are some indications of the existence of a strategic approach to the post 2020 world.

The more recent work relating to the development of future carbon market mechanisms is based on a strategy discussed at the Agency in 2015 in the lead-up to the Paris

Agreement. This strategy concludes that new mechanisms need to build on the massive work already performed with the existing mechanisms but should arrive at broader and upscaled instruments in the future. The strategy outlines that it is important to test different concepts and highlights the following initiatives where the Agency is involved:

- Carbon Initiative for Development (Ci Dev) which aims at developing models for climate finance in poor countries and to build capacity for these countries to participate in current and future market based approaches.
- Pilot Auction Facility (PAF) which tests an innovative financing model that could be applied in several areas of climate and environment finance. The model is not dependent on progress in UNFCCC negotiations on future mechanisms in the post 2020 scheme.
- Carbon Partnership Facility (CPF) was planned as a CDM fund focussing on CDM PoA, with both companies and countries investing. Following the development of the CDM-market, discussions include using fund resources for testing pilots of new types of approaches.
- Partnership for Market Readiness (PMR) is an initiative where developed and developing countries collaborate on the promotion of the introduction of market based policies and measures for climate change mitigation in the more economically advanced developing countries.

The strategy emphasises that work related to the development of new types of mechanisms does not imply working with new applications of existing mechanisms or further development of these, but of new types of cooperative instruments for which the framework has not yet been set. The Agency therefore decided to pursue this work within the framework of multilateral collaboration, however, not excluding bilateral initiatives. As will be discussed below, the implication of this is that the main tool earlier used for contributing to the development of the carbon market, i.e. purchasing carbon credits, was downplayed as the major the tool for achieving the objective to contribute to the development of carbon market mechanisms.

The strategy also highlights the importance of the close connection between operative work with mechanisms and the UNFCCC negotiations, on which the Programme earlier has relied.

Starting 2014, the Agency had discussions with several countries and the World Bank regarding a sector-oriented approach under the working title Transformative Carbon Asset Fund (TCAF, later renamed Facility). The basic idea of this initiative was to contribute to the development of new cooperative mechanisms through the launch of a few pilots. The concept for TCAF came forward through discussions within PMR.

One aspect that is brought forward in the strategy is the need to ascertain verified mitigation outcomes, otherwise there would be no results that would form the basis for result-based finance. The Agency has considerable experience from result-based finance through CDM and multilateral initiatives where innovative concepts for result-based finance have been tested.

In the early periods when the carbon market was under development, the funds under the World Bank, Asian Development Bank, Nordic Co-operation and the EBRD, all contributed

to the development of the flexible mechanisms while at the same time purchasing carbon credits. As the CDM- and JI-markets have matured, the impact of purchasing carbon credits, i.e., using the mandate to purchase as a tool for supporting new types of projects, in new regions, and in new forms, have come to play a smaller role for the objective of developing the flexible mechanisms.

In the early days of the carbon market, there were few projects, no methodologies, and buyers were finding ways to get something to purchase for their portfolios. This led to buyers engaging in identifying and developing projects, supporting the development of methodologies, contributing to the development of the UNFCCC regulatory framework to make market rules operational and effective. As described in Chapter 3 and 4, when it turned out to be difficult to develop regular CDM-projects in large parts of Africa, buyers, including the WB and the Agency, tried to develop the market through the introduction of Programme of Activities and helped develop Small-scale methodologies. All in all, one can argue that although there are still room for specific methodologies to emerge, working with the purchase of CERs as the main tool, has reached a point where it cannot contribute much more to the development of the market-based mechanisms.

The development has instead to a considerable extent taken place in the form of the creation of funds and facilities that address various aspects of new market-based mechanisms. In these cases, whereas it earlier was possible for the Programme to purchase credits for achieving national targets and using this as a tool for contributing to carbon market development, some of the new types of facilities do not deliver carbon credits that Sweden can use for its national target. This implies that the work can be funded by ODA, which also has been the case with PMR.

Interviews bring out that the focus on CER purchase has made it difficult to adapt to up-scaled types of mechanisms (see also section 5.10). The Agency discussed NAMAs and NAMA crediting with a few companies around 2012, but the Agency could then not really respond to these discussions. Instead, the Swedish engagement in NAMA pilots 2011 came from the Nordic collaboration (NPI), with NAMA readiness activities in Viet Nam and Peru as a result.

The responsibility for the Nordic Partnership Initiative on Up-Scaled Mitigation Action (NPI) ended up with SEPA, even though it would have complemented other activities at the Agency, and it would have suited the goals of the Programme well in piloting up-scaled mitigation (if developed into a crediting NAMA). The Agency took part in discussions on NAMAs and sectoral mechanisms, but as stated above, action were mainly to come from the Nordic Council of Ministers in this area.

6.2 From entrepreneurial market developer to conservative buyer

In general, it should be recognised that the organisation for parts of the period of this analysis has had the main function as being buyer of carbon credits. This implies that the Agency has not been responsible for initiating, implementing or managing concrete projects. Thus, a large part of the Agency's work has been characterized by transaction management: assessing projects, arranging or performing due diligence, preparing and negotiating agreements, communicating with project entities, the CDM EB, fund managers and consultants. However, as indicated above, the early periods entailed more active contributions to the development of the mechanisms including methodology development

and opening for new regions and new types of projects. In fact, the Programme transforms at some point in time from a pioneering entrepreneur into a more conservative actor primarily acting through purchasing carbon credits and investment in funds. This possibly reflects the increase in size of the Programme budget, but also the increasing level of maturity of the carbon market.

The ambitious volume target and the emerging maturity of the carbon market pushed the Programme to consolidate and improve its administrative functions, which came to be reflected in the organisational set up. The Programme Unit was 2010 split into a Programme Unit and a Climate Policy Unit. By this split, staff working with policy and UNFCCC negotiations, with minor exceptions, moved to the policy unit, leading to a separation of policy-related work and Programme administration.

The development from the entrepreneurial state to more regular and formalised transaction management type of work was further reinforced in 2012 when a new head of unit was appointed. This person had earlier a coordinating responsibility for setting up the back-office function and to develop the economic administration of the Programme. The work of improving the monitoring and follow-up of economy, including better long-term projections based on the long-term purchasing mandate started already 2009, but staff members acknowledges that it took time to set the system up. There was during the years around 2010 however still a strong focus on finding new projects.

A picture emerges in which the Programme, with institutionalised routines and a large budget, turns into a CDM purchasing machine. With methodologies in place, a large supply of projects, the CDM EB functioning, how could the Agency continue to develop the existing mechanisms and contribute to the development of new mechanisms? This question contains two aspects. One aspect is what the Programme could have done within its purchasing mandate, i.e. how could it further develop mechanisms while at the same time purchasing CERs? A second aspect is what it could have done with the mandates for development of carbon market instruments outside the specific purchasing mandate.

Interviews indicate that there are different views on how to address this question, in particular in the period after 2014 and onwards. The interviews suggest that there was a significant divide in terms of expectations on what the Programme could have done in this period, and what it should have accomplished over the most recent years.

Two main views can be identified. One view was that despite changing political and market conditions, the main mandate of the Programme was to purchase CERs and that this focus should be sustained. A second view stressed that the Agency should have done much more regarding new types of mechanisms, but that the lack of earmarked funding for new types of investments hampered the possibility to take new initiatives. A version of the second view is more critical to the Agency itself and contains a complaint towards the management at the time for not producing a new strategy aiming to change the direction of the Programme.

Different argumens have been put forward by staff members advocating the first or the second view. Regarding the first view, one argument put forward is that the Directive's mandate to "support international climate mitigation activities through the purchase of units" restricts initiatives to purchasing units (carbon credits) thus excluding other forms of result-based finance for mitigation.

The mandate “through purchasing units”, could though imply purchasing different types of units. A further limitation to the mandate would be the approach to fulfilling the national target through cancellation of Kyoto units, which would impose a restriction since this means that only carbon credits and allowances generated within the Kyoto system would be eligible as “units”. However, no explicit reference to this type of restriction has been made, neither in interviews, nor in documents. Thus, formally, it seems as if other types of units could have been relevant for the Programme.

Another aspect of “through purchasing units” is that units from CDM or JI are proof of concrete results, being verified emission reductions under a centralized UN scheme, meaning that presenting volumes of units purchased under CDM or JI would be a good way of showing results. Presenting results through providing finance to a sectoral approach where it could be challenging to make the causal link between the investment and a particular emission reduction outcome (attribution). The attractivness of the more secure way to show results has been brought forward in several interviews as one of the reasons for continuing with the existing approach, i.e. to concentrate on purchasing units from CDM-projects.

If showing results was one of the key reasons put forward for continuing to focus on CDM, the risk of jeapardising the foundation for the Programme was another. A previous employee recalls that “initiating strategy discussions on how to change the Programme was seen by some to undermine both the mandates and the budgets.” In other words, it is not obvious that all staff members would have supported a discussion on how to significantly change the direction of the Programme. Finally, the build up of the Programme as a response to the 2010 budget increase led to a staffing and selection of competence suited for running a large purchasing programme. This may also have affected the ability to engage in new types of mechanisms, possibly requiring new sets of competencies.

Whatever reason was most important, the result was that discussions at the Agency led to a decision to continue to work with CDM in favour of testing new approaches on a bilateral level. This resulted in a call for CDM-proposals in 2014.

The continuous strong focus on CDM despite market collapse and a changing international policy landscape led to frustration among staff with preferences for elaborating new ideas and for shifting the focus of the Programme. The situation that occurred can be described as an expectation gap, where several staff members had significantly different expectations on the role of the Programme compared to the approach taken. The Agency could though work with the elaboration of new types of mechanisms and approaches through the multilateral funds and facilities.

7. Lessons learned

7.1 Key lessons learned

Needless to say, there is a lot of experiences to bring forward from a Programme that has been running for almost twenty years. Some experiences relate to how the Programme has been launched, how it has been managed over time and what it has achieved in terms of objectives. Other experiences cover lessons learned from performing specific tasks within the ambit of the Programme.

A major achievement of the Programme is the added value it has brought in the international climate policy development by bringing project level experiences into the policy formulation context; the program has bridged praxis and theory in an effective way.

Early pioneering involvement in bilateral activities gave leverage in the UNFCCC negotiations and when taking seats in multilateral funds. When establishing the initial CDM and JI Programme during the early 2000s, the Agency could draw on experiences from two main sources. Firstly, the EAES-programme that was reported under the AIJ-framework and, secondly, the participation in the PCF. These two arenas provided a basic understanding of methodological work for project-based carbon market approaches. In the first case this took place through the elaboration of baselines, piloting work on validation and verification by independent entities. In the second case, this was the result of learning from the PCF's discussions with project developers, including developing and negotiating options agreements and ERPAs, and making applications for host country approvals. The early work on and experiences from AIJ contributed to development of CDM/JI markets and rules.

The persistent efforts to develop the CDM market in Africa led to results, but also required resources. The study shows that it is possible to make a difference, but the results must be weighted against the efforts and resources used. For the Agency, developing the CDM market in LDCs was one of its key objectives, which motivated these efforts. A programme can have multiple objectives, but it may require access to several ways of sourcing projects. For reaching a volume target, a programme relying on carbon credits from LDCs only, combined with a stringent volume target, may have failed to reach its objective. A key lesson learned from the Africa initiatives is that methodology and policy development was a fundamental condition. The Agency managed to accomplish this, together with other actors, and the key to this ahievement was the Agency's strength: combining bilateral and multilateral efforts, pushing for change in UNFCCC negotiations, and, not least, be able to seat a person in a strategic position at a UNFCCC body.

For other objectives, there was less flexibility to use different methods and to act on several arenas. When working with the private sector, the Agency did not have any instruments available for co-funding underlying investments in projects, but it could take some of the CDM-development costs through the ERPA. However, being a Government purchasing

programme, promoting companies wishing to engage in the flexible mechanisms turned out to be difficult. For a period, this support also included promotion of Swedish technology export (described in Annex II), but the Agency did not really have the tools, and experience, nor the long term funding commitment needed, to integrate this objective into the purchasing activities. Thus, a lesson learned is that additional objectives have to come with additional tools and instruments, otherwise there is a risk that the tool at hand – in this case the mandate to purchase carbon credits and engage in multilateral initiatives – could not deliver on other objectives. The Agency did deliver well on other objectives in some cases, e.g. in the East African CB-Programme, where it can be noted that the CB-programme matched the strategy to develop the CDM-market in Africa and that additional earmarked funding was available from Sida.

Specific instruments for mitigation has varied over the Programme period. CDM was created for the bi-furcated Kyoto world, and although it has many positive functions in itself (market search function, MRV function etc.) it's design had to develop to suit political developments. One of these changes was the introduction of Programmes of Activities, which the Agency came to promote and develop, showcasing a leading role of a Government programme in the development of a market mechanism. However, when the global community started to discuss up-scaled mechanisms, transformation and sectoral approaches, CDM could not really deliver. This led the Agency to address new types of mechanisms mainly through multilateral funds. The key lesson learned here is that the tool of purchasing carbon credits could not to the extent as before be used for developing the market and in particular new mechanisms. At the Agency, this came to be reflected through a continuation of the bilateral CDM-programme in a somewhat conservative fashion, in a way separate from the multilateral set ups such as PMR and T-CAF.

Sourcing, Contracting and Follow-up

The Agency's methods for sourcing have shifted from period to period, ultimately depending on the market conditions, and the experiences reveal pros and cons from the different methods. Generally, a key lesson learned is that a purchasing programme must be able to respond to market changes and apply sourcing methods depending on the objectives of the programme. There is no clearly identified best way to do this, but it seems apparent that for whatever sourcing method is used, the more clarity there is in terms of predefined criteria for projects and key the requirements of the Agency regarding the terms of the contract, the more straightforward the selection and contracting process.

For technical aspects of projects and PoAs, the Programme has to a considerable extent relied on consultants. One lesson learned is that while it could be difficult due to time and resource constraints to engage the staff more directly with technical issues, the work of contracted consultants could have been better used for learning within the Unit.

The Agency is not a market actor, and a lesson learned is that the Agency has to be careful operating on the market and to make accurate risk assessments.

Working with multilateral funds

Learning from multilateral funds has been brought forward as very valuable, given the wide range of expertise the World Bank and other development banks can show. The information and experience from this participation should be easily accessible and ways

of engaging more staff in the ongoing work of multilateral banks could be analysed. One way to utilise the multilateral funds further is to use staff secondments at the banks, which was used in the earlier stage of the Programme

The results of this study clearly show that participation in projects on a bilateral basis, and through multilateral funds are very useful for programmes of this type. Participation in multilateral funds, in particular in early stages of development of climate policy and market based instruments, provides experiences that is useful in the build-up of bilateral activities and it has also contributed to making the Agency an attractive partner in discussions about new multilateral initiatives.

Participating in UNFCCC negotiations

The experience from the Programme was used in a systematic way to inform preparations for negotiations related to the CDM and more recently for negotiations relating to Article 6 of the Paris Agreement, which sets the framework for the future global carbon market under the UNFCCC. Negotiators strongly benefit from both bilateral activities and participation in multilateral funds, if experiences are systematically gathered and analysed.

A strong connection between the Programme and experts participating in UNFCCC negotiations provides for a two-way reinforcing dialogue meaning that the experiences from the Programme can be fed into the international rule system, and that the Programme can adapt to, and take pioneering initiatives as part of the strategy. The systematic approach when preparing for the COP guidance to the CDM EB is one case in point, as shown in Chapter 4.

Participation in UNFCCC bodies, such as the CDM EB, has given considerable insight and leverage in negotiations. The results from desktop studies and the interviews clearly show that the impact of the Programme on UNFCCC negotiations was strongest during and immediately after the time when i) the negotiating team was still with the Programme Unit, ii) the Programme had a representative in the CDM Executive Board, iii) there was a systematic way of transferring experiences from the Programme into the negotiations, such as the case with COP guidance to the CDM EB.

With its long-term engagement and recent participation in a broad set of multilateral initiatives, one question is if not the Agency could have contributed even more to the development of new mechanisms and to the discussions under the UNFCCC.

Capacity building

Capacity building activities in the Programme have ranged from participation in the Ci-Dev initiative, which helped build carbon market capacities and develop ways to include more energy access projects in LDCs, to bilateral capacity building efforts in Africa and the Caribbean. These efforts have had synergies with project origination activities, and in offering learning opportunities and knowledge for potential new counterparties in developing and emerging countries.

Support to private sector engagement in carbon market mechanisms

Results indicate that programs of this type can encourage significant amounts of private climate financing. In this case, this has been done through the Programme being a long term consistent buyer during times where there has been limited demand of carbon credits from the private sector. In this way, the Programme has provided trust and belief in the market. Furthermore, a flexible approach to partnerships and contractual arrangements have provided for market participation by the private sector.

However, the Programme has not engaged in the financial set-up of projects. A possible development could have been to add this to the elements of the Programme, following the focus on LDCs and the lessons learned from the capacity building programme in East Africa.

Efforts to promote Swedish technology export did not lead to additional investments from Swedish companies in developing countries. This result was partly an effect of the CDM market developments, and the Programme, not being able to support in financial set-ups of the underlying projects, could not be expected to play a decisive role. An additional aspect has been that the type of technologies supported by the Agency, has largely been untested innovative technologies that do not fit markets in developing countries.

7.2 Conclusion

It is beyond doubt that the Programme has had significant impact on the development of the global carbon market. With an expected life span of more than 20 years (set to be finalised by 2022), the Programme has experienced different Swedish Government policies, different EU policies, changes in international climate policy, as well as changing market conditions following upon macro-economic developments as well as UNFCCC related market impacts.

The findings of this study indicate that learning-by-doing builds knowledge, experience and capacity in areas where there is not much common experience to build on, which has been the case with international climate policy and in particular the flexible mechanisms of the Kyoto Protocol, which were first of their kind. The results indicate that learning-by-doing gives leverage and authority in UNFCCC negotiation settings as well as for participation in multilateral funds.

The study shows that the living lab approach of the Agency has been successful in that it has been able to support the development of the mechanism, despite significantly changing conditions. The work with CDM Programme of Activities that involved collaboration with other organisations in working groups, but above all, the participation of an Agency expert in the CDB Executive Board, contributed strongly to the development of small-scale methodologies, including approaches to sampling, which was a precondition for engaging in LDCs through a carbon credit purchase programme. In this case, a lesson learned is that using experience from a bilateral programme, participation in multilateral funds and participation in the UNFCCC negotiations combined with representation in the CDB EB as an reinforcing complement,can become a powerful instrument to accomplish policy and regulatory change.

The advancing of CDM Programme of Activities, which benefitted from a clear mandate to enhance CDM in LDCs which set the foundation for working with early pilots both bilaterally and through carbon funds, may have been the single most important contribution by the

Programme to the development of international carbon market mechanisms. This case shows how regulatory frameworks can be changed to better address the needs of both investors, project developers and communities. Without the learning-by-doing approach, this achievement may not have been reached.

Annex 1. Lessons learned from Nordic CDM and JI Programmes

As part of the desk studies, the consultancy team has reviewed earlier evaluations and previously identified lessons learned. The only report with explicit presentation of lessons learned for whole national programmes is a summary of a series of workshops during 2010 that included the participation of the Nordic countries and NEFCO[49]. The workshops resulted in a summary report that highlights Nordic success stories on the use of mechanisms, as well as areas to improve. In the report, achievements related to market development and cost efficiency are brought forward as success stories, while issues related to the CDM and JI project cycles, management and financing are areas that could be improved.

The experiences brought forward in the report relate to issues such as (i) delays in validation and registration, and verification and issuance, (ii) the difficulties of contributing to the implementation of small-scale projects. One of the lessons learned was that Nordic programmes needed to allocate resources related to registration and issuance to assist project developers and to keep good relations with the Designated Operational Entity (DOE) performing the validation or verification. The Nordic lessons learned also suggest that it is useful to form networks with organisations such as embassies, governmental investment funds, CDM/JI developers, host country DNAs, other buyers, brokers, financial institutions and DOEs.

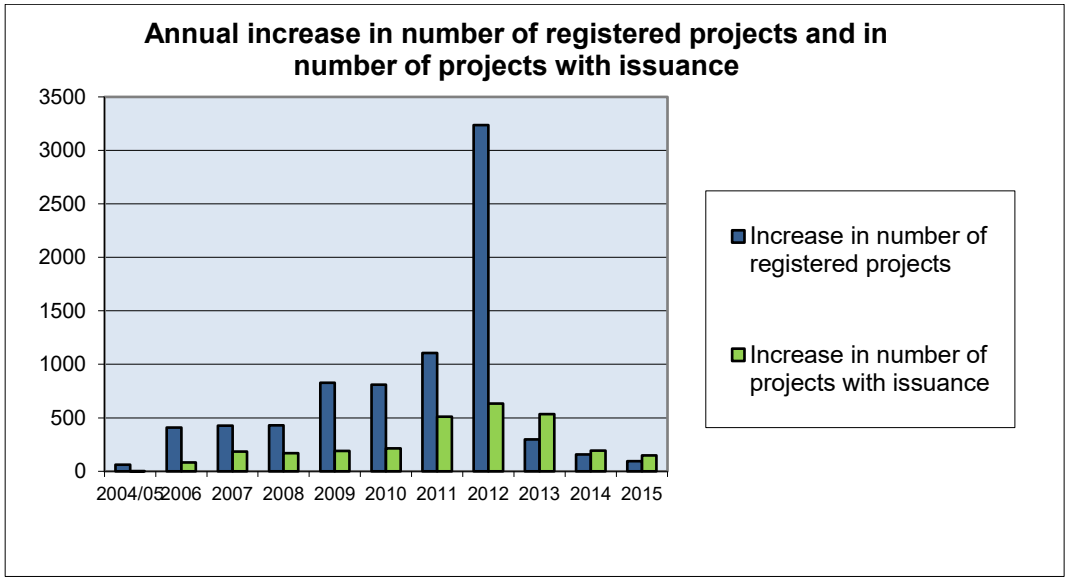
Delays and challenges in especially verification and issuance was a key concern when the Nordic study was made, and its importance is still significant looking at CDM project data; less than half of all registered CDM projects (3114 of 7792 projects) have any CERs issued by January 2018. One of the reasons behind this is the changed market conditions, as it has not been economically reasonable to pay for verification costs when carbon prices are very low. However, also the verification and issuance processes have been complicated and time-consuming. Of the projects that have issued CERs, the average issuance success rate is 85.9%. In PoAs the issuance rates are even lower – there are 310 registered PoAs, of which only 47 have issued CERs[50].

An interesting lesson learned is that the Nordic programmes have experienced problems of being operated from inside ministries or agencies due to a quite high mobility of staff, with the programmes acting as “schools” for desk officers who later move to private purchasers. The Nordic report acknowledges that this could be seen as a contribution to the development of the carbon market but concludes that lack of experienced personnel may cause problems for the programmes.

Comparing the lessons learned identified in this analysis, some of the lessons learned would still be relevant, for instance, the turnover of staff has been of some concern to the Unit also during recent years. However, the situation is different today since the demand among compliance buyers in the EU ETS for carbon market experts drastically reduced with the market collapse and the post 2012 EU ETS rules. Thus, the loss of staff members more recently must be explained by other causes that may of course be personal. Many

[49]Nordic Perspectives on Carbon Market Mechanisms TemaNord 2011:505
[50] http://www.cdmpipeline.org

of the issues related to registration and issuance improved as the UNFCCC secretariat and the CDM EB got enhanced capacity and the amount of CDM projects in the UN approval process has significantly reduced due to the changed market situation. The notable change of projects in the registration and issuance approval processes is visible from the below chart from the UNEP DTU CDM/JI Pipeline Analysis and Database[51].



The lessons learned regarding management alludes to the possible disadvantage of getting time-consuming bureaucratic or semi-political decision making for preparing investment decisions. However, it is reported in the Nordic study that government programmes can even be faster than private companies.

[51] http://www.cdmpipeline.org/

Annex II: Private sector promotion and technology export

From 2007 to 2011 there was a specific additional mandate to promote Swedish technology export[52].

Technology export promotion and CDM

With the mandate to promote Swedish technology export and the expansion of the Programme, the Agency 2010 launched a programme for Export Business Development Support, Climate and Energy (EBSD-CE). The initiative had four main elements: (i) dialogue with companies and business organisations regarding CDM and financing; (ii) active participation from the Programme in events, e.g. those arranged by International Secretariat at the Agency; (iii) Information sharing and providing expert advise; and iv) dialogue with other promoting agencies, e.g. Sida.

Already from the first seminar in September 2010 (stipulated in an early strategy) it was decided that the EBSD-CE programme should concentrate on operative work and not on participation in more overarching collaboraton structures, such as the green technology export promotion group (*Miljöteknikexportfrämjande gruppen*) consisting of Government agencies. It was also decided that the EBSD-CE Programme should not take part in marketing platforms such as SymbioCity.

The vision of EBSD-CE programme was to focus on small-scale project development, including to build on the opportunities provided by CDM PoA, i.e. small-scale projects in programmes with a central coordinating entity. The idea was to combine an export strategy with capacity building and technical assistance, and to add CDM-components, thus building on the activities of the Programme, experiences from the East African CB-programme, and experience from Energy Saving International AS (ENSI) financial engineering[53] approach. There was a belief in the systematic approach developed by ENSI (often funded by Norad) that included the development of bankable business plans and matchmaking with investors. An expert with experience from ENSI was employed from 2009 and took part in the development of the EBSD-CE programme.

The Agency had in 2009-2010 a dialogue with Sida that led to cooperation within the frame of Sida's partner collaboration (*Aktörssamverkan)* in two countries, India and Vietnam. These two countries were part of seven exit countries, i.e. countries for which Sida was to phase out development aid and deployed an exit strategy. The exit programmes all ended in 2013, however, the Agency's engagement in Vietnam continued until spring 2015.

The reason for collaborating with Sida was that: (i) the greenhouse gas emissions reduction potential in the exit countries was (and still is) high; (ii) the potential for developing and implementing the Sida concept Business for Development in Climate and Energy Applications (B4D-CE) was considered high, (Sida later abandoned this concept);

[52] Myndigheten skall eftersträva och verka för att svensk energiteknik sprids genom tillämpningen av de flexibla mekanismerna. (Regleringsbrev 2007)

[53] http://www.ensi.no/index.php?ledd2ID=45&sideID=296

(iii) there was a strong need for development of small scale market approaches, including technical solutions, business models and policies and measures for energy efficiency and renewable energy applications, that could foster innovations and contribute to sustainable local and regional development, including energy access and security, poverty reduction, etc. The CDM PoA was here seen as a potential facilitator in this development.

Generally, the collaboration related to technology export in the area of bioenergy has been quite substantial during the period from 2009 to 2017, including companies, business organisations, universities and municipalities.

A specific programme for Vietnam[54] was set up that during the period 2010 - 2015 also targeted CDM development from 2012. This programme was a Partner Driven Cooperation initiative, which is a method for development aid that is based on mutual interests for cooperation. The idea is that PDC between Swedish partners and the partners in one of Sida's seven selective countries will stimulate sustainable relations, which in the long term can contribute to poverty alleviation[55].

The PDC-programme in Vietnam unfortunately took place during the period when the CDM market deteriorated. All stakeholders, including investors and Vietnamese companies and authorities were enthusiastic and engaged from the start but the decision in the EU ETS to only allow CERs from LDCs after 2012 hampered the expectations. There were still beliefs that it could be possible to assess opportunities for CDM PoA within a sub-sector such as small-scale CHP applying gasification of biomass, involving Swedish technology and knowledge.

Swedish CDM project developers and consultancies were involved in the PDC-programme, and a growing pool of experts, including from Sweden, facilitated the implementation. Export opportunities and business development from Sweden, but also from Vietnam, to the rest of Asia was discussed with a focus on bioenergy.

The PDC-programme is generally conceived as successful, including the establishment of a Centre of Excellence for energy efficiency and renewable energy. Within the specific financial engineering sub-programme, 10+8 business plans (bankable feasibility studies) were developed.

Some issues came to impact the PDC-programme. One was that the Swedish Government decided to shut down the Embassy in Vietnam, a decision that later was revised. Another issue was the PDC-programme more or less had to compete with Sida's own initiative CENTEC (Centre for Environmental Technology Cooperation) . The Centec idea was copied from China into Vietnam to increase the Partner Driven Cooperation in the areas of environment, energy and climate change. However, CENTEC in Vietnam was not part of the embassy, but a result of a procurement of an independent consultant. CENTEC in Vietnam had some problems in starting up, partly because the consultant had little prior knowledge of the country context. It was established in 2011 and in the beginning

[54] Jankevics, V (2015) Partner Driven Cooperation in Vietnam 2010-2015 in Bioenergy, Swedish Energy Agency, September 2015
[55] https://www.sida.se/English/how-we-work/approaches-and-methods/This-is-Partner-Driven-Cooperation/

few partnerships were facilitated. However, at the end of 2013 a total of 24 of partnerships had been facilitated. One problem was that by the time CENTEC had facilitated new partnerships, Sida funds for new PDC and the time for executing new PDC financed projects was running out.[56]

A more serious issue was that the implementation was affected by late decisions from Vietnamese decision makers, both at the provincial and national levels. It also turned out to be difficult for the Vietnamese regional counterparts to stand by a commitment to provide 25% of the funding. This affected the PoA development element since Vietnamese experts were not fully paid by their Vietnamese organisations and thus reduced their engagement.

During this period, Japan, having decided to leave the Kyoto Protocol, launched its own bilateral crediting mechanism (JCM) and initiated negotiations with Vietnam. The JCM is specifically developed to promote Japanese interests while reducing emission reductions. Possible further Swedish collaboration with Vietnam related to emission reductions in the bioenergy sector could be subject to competition wih Japan, however, Japan's strategy has been to focus on larger scale projects.

The PDC-programme did not lead to ERPA contracts between any of its projects and the Programme. The participants in the PDC-programme was informed about the new price setting policies the Agency developed after the market collapse, however, the Programme shifted its interest to small-scale hydro power CDM projects that were already planned to include CDM-components and some already under construction. One interviewee reports that there was an open dialogue about the Programme and its possible interest in purchasing CERs also from small-scale bioenergy projects, but that it also was important not to raise expectations.

The PDC-programme had during its first phase 2012 – 2013 been working with a few small-scale projects that would result in a limited volume of emission reductions. According to one interviewee, there was at this time no elaborated plans for bundling or PoA. Larger scale projects existed but were more of demonstration project type, and not sufficiently mature to operate on market terms even with CER income.

After a workshop in June 2013, there was a specific initiative to look at how CDM could be addressed in relation to the PDC-programme and a consultant was assigned to explore approaches for the rice industry in the region. Whereas the Agency earlier had been leading in the development of CDM PoA, one interviewee claims that the Unit / Programme at this time did not show much interest in a PoA for bioenergy in Vietnam. This person concludes that the projects discussed under the PDC-programme would not fit the criteria for CDM and that the potential projects with Swedish gasification technology did not fit the idea of launching a CDM PoA in the rice sector since such a programme would have needed off-the-shelf technology that readily could be implemented.

[56] Sida (2013) *Experiences and lessons learned from Partner Driven Cooperation in the seven selective cooperation countries 2013:49*

A main barrier for single small-scale projects in the bioenergy sector is financing. The Programme, with a key focus on purchasing CERs, have not generally taken part in the financial set up of projects. The programme form, as in CDM PoA, but also other forms of achieving economies of scale and reducing risks can contribute to solving this problem. However, short term periods of funding for technology promotion may undermine the ability to sustain promising developments where not only business plans would need to be developed but where there also would be a need to develop financial set ups, potentially including carbon finance.

One lessons learned from this period with a specific technology export target for the Programme is that while capacity building and training in business plan and feasibility study development can be accompanied by development of the relevant documentation for CDM (or other carbon market or result-based finance schemes), the role of a purchasing programme will be more important if it can contribute to the financial set up of a programme.

A key lesson learned is that the primary stakeholders to be targeted (and understood) with regard to technology promotion are local and international project developers. Swedish companies and technology that can address the needs of these stakeholders have a large chance to success.