

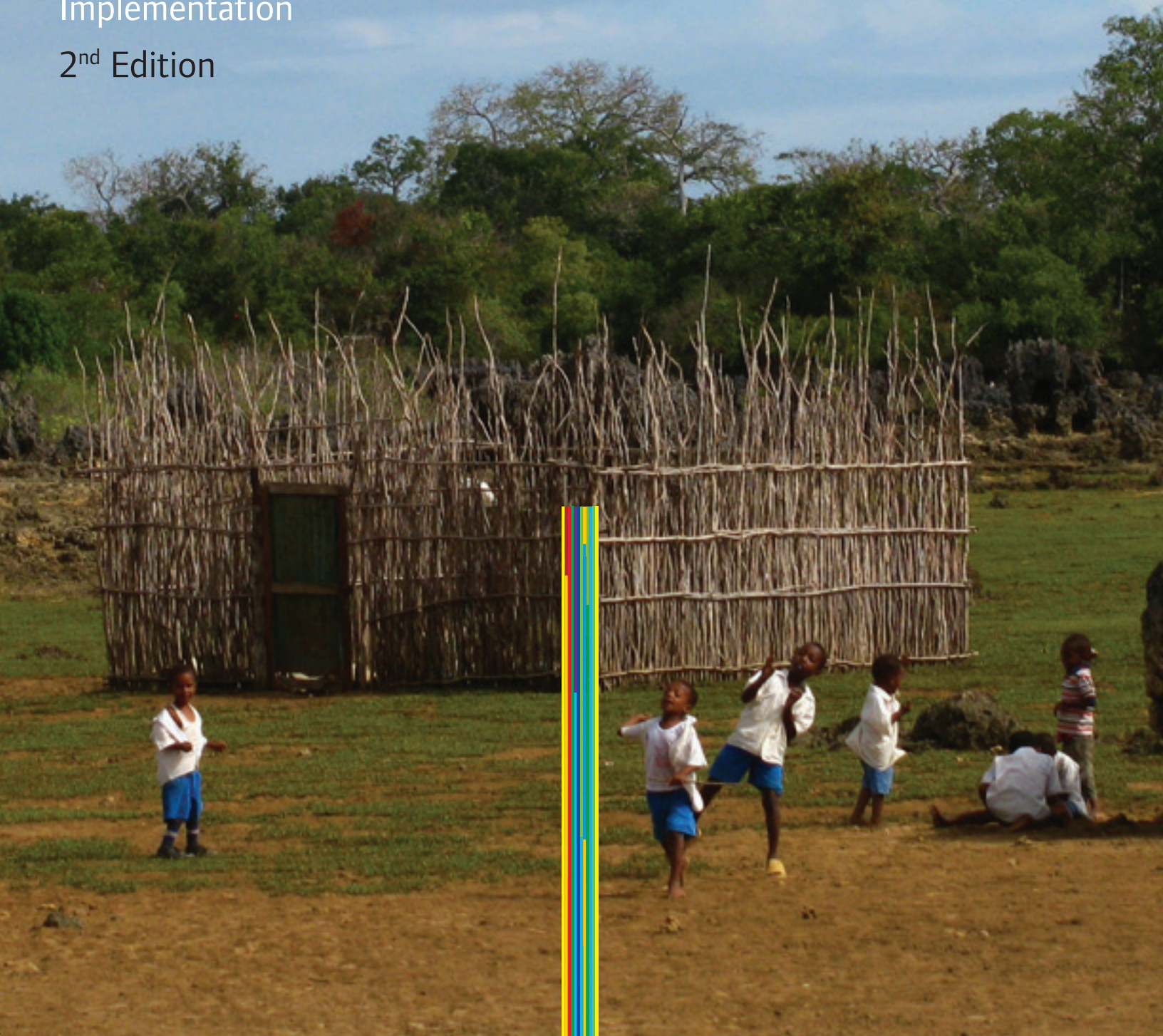


CLIMATE FOCUS

The Handbook for Programmes of Activities

Practical Guidance
to Successful
Implementation

2nd Edition

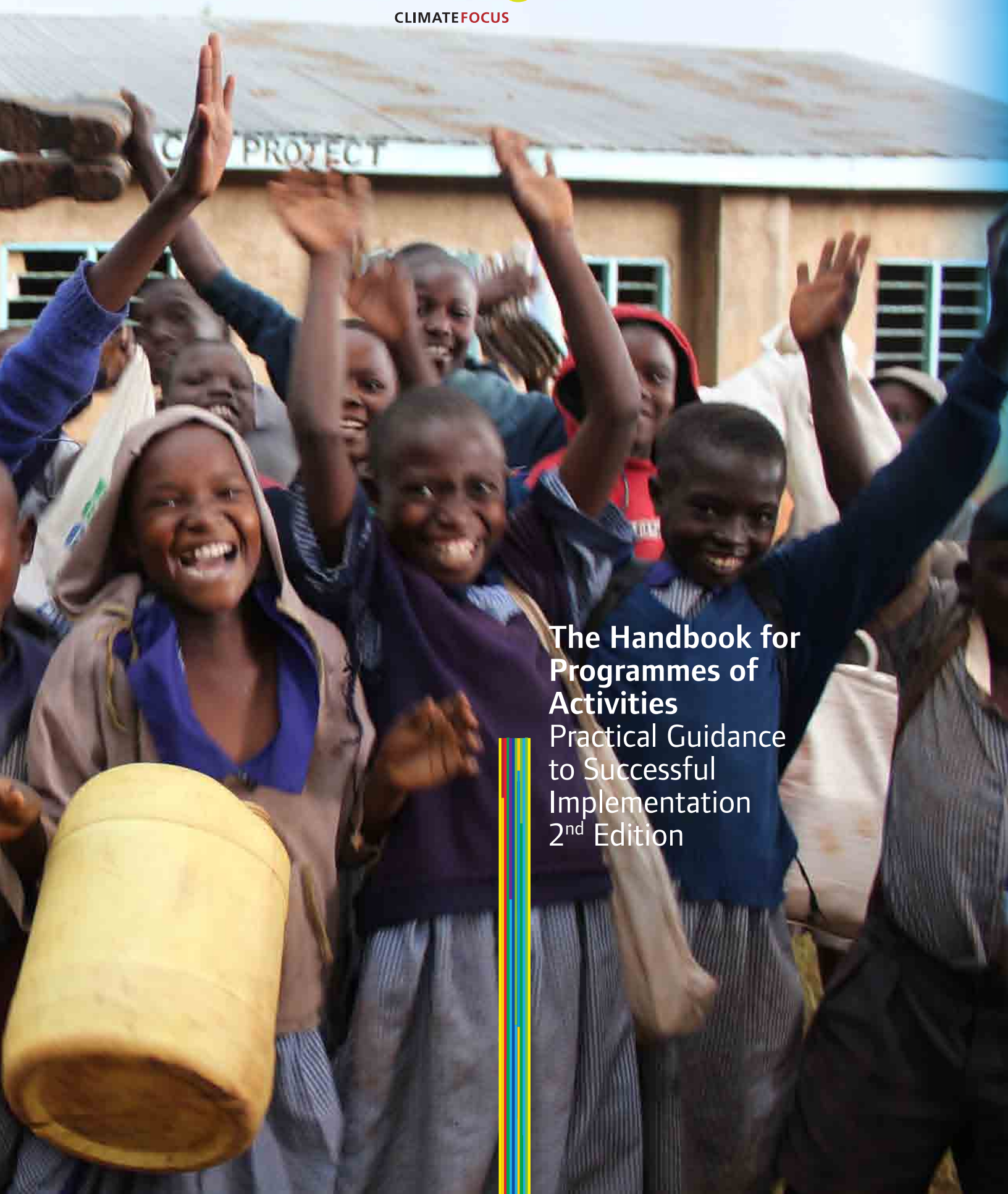








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Content

Content 4

List of Acronyms and Abbreviations 6

Acknowledgements 7

1 Introduction 8

1.1 Purpose of the Handbook 10

1.2 Overview 11

1.3 Further reading 13

2 Why do a PoA? 14

2.1 Key recommendations 17

2.2 Advantages of PoAs over conventional carbon credit certification 17

2.3 Perspectives for PoAs after 2013 20

2.4 Further reading 20

3 Procedures and Carbon Management 22

3.1 Key recommendations 24

3.2 Steps and procedures 24

3.3 Efficiency in the project cycle 30

3.4 Gathering baseline data 31

3.5 Additionality 33

3.6 Applying methodologies 35

3.7 Defining eligibility criteria for the inclusion of CPAs 36

3.8 Start dates and crediting periods 37

3.9 CPA Size 39

3.10 Monitoring and verification 41

3.11 Further reading 45

4 The Role of the Programme Manager 46

4.1 Key recommendations 47

4.2 Programme management 48

4.3 The role of the Coordinating/Managing Entity (CME) 51

4.4 Management systems in PoAs 51

4.5 Types of Programme Managers 52

4.6 Further reading 54



5. Financial Management 56

- 5.1 Key recommendations 59
- 5.2 Emission reductions as an asset 59
- 5.3 What does carbon finance offer you? 59
- 5.4 Understanding the risks of a PoA 62
- 5.5 Types of finance 63
- 5.6 Examples of financing schemes for PoAs 65
- 5.7 Market context: supply and demand for CERs from 2013 onwards 68
- 5.8 Further reading 68

6 Legal Management 70

- 6.1 Key recommendations 72
- 6.2 General legal matters 72
- 6.3 Legal steps 74
- 6.4 Relevant contracts 79
- 6.5 Further reading 87

7 PoAs under The Gold Standard 88

- 7.1 Key Recommendations 90
- 7.2 Introduction to The Gold Standard 90
- 7.3 Developing CDM PoAs under The Gold Standard 91
- 7.4 Developing PoAs under the voluntary Gold Standard 96
- 7.5 Further Reading 101

8 Opportunities and Challenges for PoAs in Africa 102

- 8.1 Key recommendations 103
- 8.2 Introduction 104
- 8.3 Overcoming Africa's historical struggle with the CDM 105
- 8.4 Current state of PoAs in Africa 108
- 8.5 Remaining challenges of developing PoAs in Africa 108
- 8.6 Further Reading 110



List of Acronyms and Abbreviations

(AfDB)	African Development Bank
(CDM)	Clean Development Mechanism
(CPA)	Component Project Activity
(CER)	Certified Emission Reduction
(CFL)	Compact Fluorescent Lamp
(CPA-DD)	CPA Design Document
(CME)	Coordinating or Managing Entity
(DNA)	Designated National Authority
(DOE)	Designated Operational Entity
(ERP)	Emission Reduction Purchase Agreement
(ETS)	Emissions Trading Scheme
(EU ETS)	European Emission Trading Scheme
(EB)	Executive Board
(GHG)	Greenhouse Gas
(GS)	Gold Standard
(IET)	International Emissions Trading
(JI)	Joint Implementation
(LDC)	Least Developed Country
(LSC)	Local Stakeholder Consultation
(MW)	Megawatt
(NGO)	Non-governmental organisation
(OECD)	Organisation for Economic Co-operation and Development
(PoA-DD)	PoA Design Document
(PoA)	Programme of Activities
(PDD)	Project Design Document
(PIN)	Project Idea Note
(SMEs)	Small and Medium-Sized Enterprises
(SD)	Sustainable development
(tCO ₂ e)	Tonne of carbon dioxide equivalent
(UNFCCC)	United Nations Framework Convention on Climate Change
(VER)	Voluntary Emission Reduction
(VPA)	Voluntary Project Activity



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Introduction

Putting a solar water heater on a roof is a start for a single family to save energy. Putting hundreds of thousands of them on roofs is where solar water heaters start to make a difference in reducing greenhouse gas emissions and contributing to the mitigation of climate change.

Rural families around the world often prepare their meals on traditional open fires. Changing to efficient cookstoves can make a real difference: for themselves and for the planet. Smoke related health problems are reduced, cooking comfort increases and less time is needed for firewood collection. At the same time, fewer trees need to be cut down and carbon dioxide remains in forests.

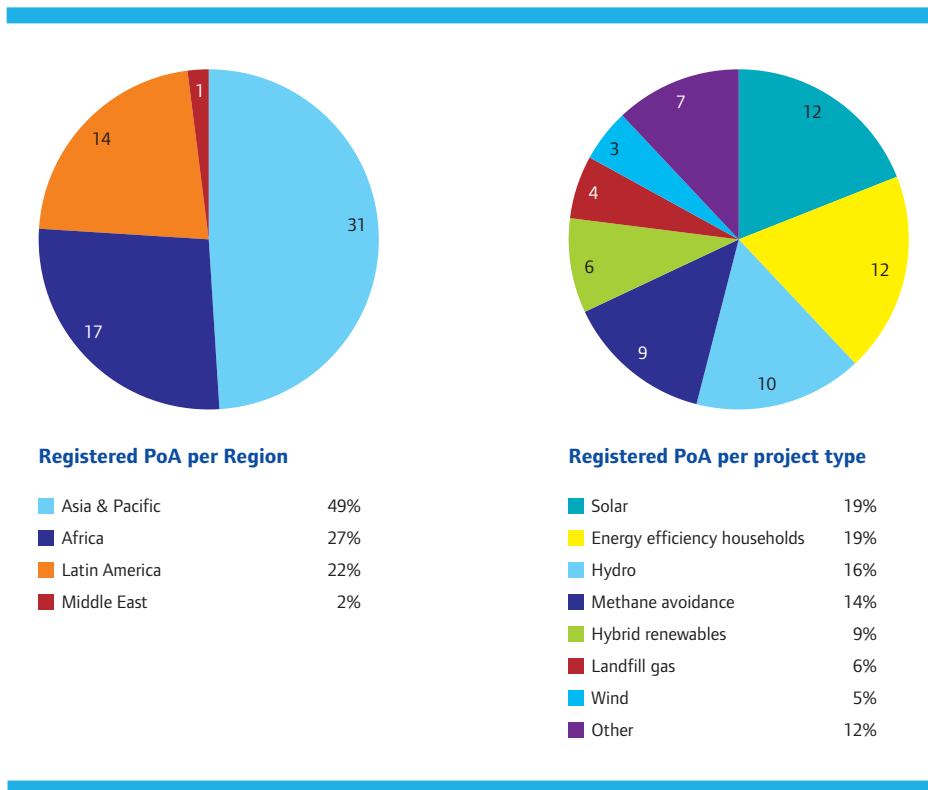
One micro-hydropower installation helps an isolated community generate power and switch off their expensive diesel generator. Hundreds of these installations for off-grid settlements may avoid the need to construct an oil-fired power plant.

Programmes of Activities (PoAs) are exactly about this: bundling large numbers of emission reducing activities that can earn carbon credits. In aggregate, the value of these can make a difference for the programme. This programmatic approach is able to bring sustainable development to people and places that have hardly benefited from carbon finance before: rural communities, farms or households in developing countries with little or no industry. Individually, these activities would be too small to apply the often costly carbon credit certification processes and would most likely never materialise.

PoAs are an innovative facility under the Clean Development Mechanism (CDM) of the Kyoto Protocol, the world's main carbon credit scheme. Since its onset in 2008, the pipeline of programmes has grown remarkably, with 63 PoAs successfully registered by 1st January 2013 and a further 320 under validation. Over the years, carbon developers have demonstrated that the programmatic approach is operationally and economically feasible and many prominent carbon buyers have embraced the programmatic approach as a key new type of activity in their investment portfolios. Other schemes such as the Gold Standard have adopted comparable facilities that allow for bundling of emission reductions projects, the location and characteristics of which are still unknown at the moment the programme is launched.



Figure 1.1
Overview of registered PoAs by project type and region
 (source: UNEP Risoe’s PoA Pipeline 1st January 2013).
 Numbers represent the number of PoAs.



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2012 was a challenging year for PoAs. Market conditions for selling carbon credits worsened as the price of carbon fell to lows not seen before in the carbon markets. This price drop was the result of falling demand from European compliance buyers combined with increasing supply generated by already successfully operational CDM projects. Price projections for the years ahead vary as prospects regarding future demand for credits remain uncertain due to lingering climate negotiations. The UN climate talks held in December 2012 in Doha, Qatar, ensure that there will be a continuation of the Kyoto Protocol, the legally-binding global agreement under which industrialised countries have agreed to reduce their greenhouse gas emissions. This formally ensures the continuation of the CDM. At the same time, some industrialised countries have stepped out of the Kyoto Protocol, leaving only limited demand from Europe and from Australia. The potential for new demand for carbon credits in the short term is limited. Buyers have therefore become more selective when investing in PoAs and that preferences are shifting towards programmes implemented in Least Developed Countries and initiatives that offer clear sustainable development benefits. Ever more often, carbon credits from PoAs find their way to voluntary offset markets.



Despite the difficult market conditions, programmatic climate mitigation projects feature high on the agenda of international climate negotiations and are likely to continue to attract support as the Kyoto Protocol's second commitment period takes shape, with implementation of new programmes in countries where the CDM has not been established as the key focus after 2012. To further encourage the implementation of PoAs, The CDM EB has established a dialogue with project developers to remove remaining procedural barriers, further pushing for the standardisation of methodologies and simplifying the applicability of additionality. Programmatic approaches are seen as a stepping-stone to new and enhanced mitigation strategies and policies for developing countries. They are not only wider in scope, but are also more suitable for channelling resources directly to where they are most needed. Through a stringent monitoring and verification scheme, PoAs ensure that the money invested by foreign parties is backed by real emission reductions which contribute to global climate change mitigation.

1.1 Purpose of the Handbook

This second edition of the PoA Handbook provides refreshed insights into the practical and logistical side of PoA development. Since the publication of the first edition of the Handbook, new rules and guidance relating to PoA development have been introduced to make implementation of PoAs more practical and effective. PoA practitioners all over the world are facing similar questions on how to set up, implement and organise a PoA for which individual solutions are being developed. This updated edition of the Handbook seeks to bring together the experience emerging from PoAs that are already up and running, learn from participants in the market and provide structured and hands-on guidance on how to deal with the main issues surrounding PoA development.

Implementation advice provided by this Handbook does not apply only to PoAs developed under the CDM. Although the CDM PoA is certainly the most concrete programmatic approach developed to date, advice provided by the Handbook is equally applicable to programmatic approaches under voluntary carbon standards, and specifically the programmatic approach of the Gold Standard. A new chapter has been included in this second edition to provide detailed insight into the Gold Standard PoA rules. Furthermore, to reflect the shifting trend of PoA implementation in Least Developed Countries, a second new chapter on the challenges and opportunities of PoA development in Africa also features in this new edition of the PoA Handbook.

The role of the programme manager is among the major topics of concern in setting up and implementing a PoA, as well as the financial, legal and organisational management of a PoA. A PoA can only be successful if it is fully funded, the various actors and proponents are brought together in a robust contractual framework, and the operational structure is transparent, functional and sustainable. Key questions to address in the context of PoA are (i) how to benefit from the opportunity while managing the thicket of PoA regulations; (ii) how to ensure a functional and sustainable framework with all actors involved; and (iii) how to use the additional inflow of money to make a programme work. These are the guiding questions of this book.

The Handbook is directed at PoA practitioners: companies, non-governmental organisations, government entities



or others involved in setting up and managing a programme and that could formally assume the role of programme manager and ‘coordinating/managing entity’, or CME in the terminology of the CDM. Practitioners are also those who are vital contributors in the overall set-up of the programme but may not lead the effort themselves. These include co-facilitators of PoAs like financiers that provide loans or grants, consultants that help structure a carbon finance transaction, and buyers of the carbon credits that evaluate a programmatic proposal and often get involved in co-designing programmes, to name but a few.

This Handbook is designed to complement and build on existing publications on PoAs. While these publications focus exclusively or largely on the rules and regulations for CDM PoAs, (including suitable technologies and their emission reductions potential, applicable CDM methodologies, financial model calculations and case studies), their findings represent a valuable departing point for the PoA Handbook. Reference to these and other relevant additional reading material is provided at the end of each chapter.

1.2 Overview

The Handbook is organised into eight main chapters. The second chapter (“Why do a PoA?”) discusses some of the benefits of the programmatic concept over the more conventional CDM project-offsetting. This chapter also gives a brief updated overview of the political outlook for PoAs under the Kyoto Protocol.

The third chapter (“Basic procedures and carbon management”) provides an easy-to-understand explanation of the rules and regulations of PoAs under the CDM and the Gold Standard for those practitioners not yet familiar with them. A number of important new rules and guidelines relevant to PoA development have been released since the publication of the first edition of this Handbook. This chapter also presents the main technical obstacles to the registration of a PoA faced so far and how these hurdles have been (or are currently being) addressed under the CDM and by project developers. It also provides practical guidance on how to manage the carbon component of a PoA.

The fourth chapter (“Role of the programme manager”) looks at the characteristics and responsibilities of the main actor in a PoA, the programme manager. The new edition features practical insights gathered from programme managers as well as relevant updated guidelines. The chapter analyses which characteristics are particularly relevant for fulfilling the role of a programme manager and which core competencies the programme manager should possess. A defining characteristic of PoAs is that they require a combination of resources, skills and competencies rarely found within one single entity. For instance, an entity may possess a strong local network that can be used for dissemination and maintenance of a technology but lack the international network, carbon finance knowledge and access to financiers. Or an entity may have financing and a suitable technology but insufficient access to local users. PoAs are not usually carried out by one single actor but rather in partnership with other actors, relying on a combination of skills and capacities. In addition to the role of the programme manager, the chapter examines the outsourcing of functions within the programme and different partnership models.



The fifth chapter (“Financial management”) explains the role and use of carbon finance within the overall financial structure of a programme. Just as there are many different types of organisations setting up and implementing a PoA, the financial structures of PoAs come in a plurality of forms. Carbon revenues can go to different parties and be used in different ways to facilitate a programme; be it as a discount on the purchasing price of a technology, as equity or collateral to improve loan conditions or as a contribution to the management and organisation of the programme as a whole, to name a few. Every programme manager has to decide on a suitable financial model and distribute carbon revenues within the overall structure, in such a manner that sufficient incentives are created and maintained throughout the entire lifetime of the programme. Different models also exist as to whether carbon finance is provided upfront or only after delivery of the emission reductions. The new edition includes updated experiences of financiers and carbon credit buyers, reflecting the changing market conditions and the perceived risks and opportunities.

The sixth chapter (“Legal management”) highlights the key legal and institutional challenges surrounding the implementation of a PoA. This chapter discusses and provides some tools to (i) reduce uncertainties generated regarding the programme’s success; (ii) manage risks associated with the interdependence that exists between actions carried out by all actors; and (iii) deal with issues of negligence and intentional defective performance. In this context, the adequate allocation of responsibilities and liabilities is a key concern for every programme manager and a sound contractual structure is paramount to the long-term success of a PoA. The chapter discusses the most important legal relationships within a PoA and provides updated operational guidance in the form of model legal clauses that programme managers can use and incorporate directly into their contracts.

The seventh chapter (“PoAs under the Gold Standard”) is a new addition to this second version of the Handbook and introduces the Gold Standard and its guidance for PoA implementation. Increasingly more project developers are exploring the opportunity to develop programmes under voluntary carbon standards, with the Gold Standard being the most applicable standard for development of PoAs thanks to its close link to CDM guidelines. Gold Standard certification also ensures that programmes meet certain sustainable development benefits, making these projects more attractive to investors and carbon credit buyers. This chapter offers insights into how existing CDM PoAs can gain accreditation under the Gold Standard, and how new project developers can opt for developing new PoAs under the voluntary Gold Standard without the need to go through the registration procedure of the CDM.

The eighth and final chapter is also a new addition to the Handbook. This chapter (“Challenges and Opportunities for PoAs in Africa”) focuses on the particularities of PoA development in Africa and presents the CDM’s struggle to take off across the continent. With the majority of new PoAs being implemented in Least Developed Countries after 2012, Africa is set to become a key target host continent of PoAs. This chapter provides an explanation of the current status of PoAs in Africa and the opportunities that this mechanism brings; highlighting a few examples and discussing their benefits and challenges. The chapter closes by introducing the opportunities arising through Nationally Appropriate Mitigation Actions, and the possibility of framing PoAs within them.



1.3 Further reading

Three publications on PoAs provide guidance on specific aspects of PoA project development. The first is the “PoA Blueprint Book, Guidebook for PoA coordinators under CDM/JI” (2nd Revised Edition, Frankfurt am Main, 2010). This Blueprint Book provides organisational models and guidance on project design for a broad range of programmes with participants varying from households to larger industrial participants. The latest update of the book also includes legal guidance, case studies and guidance on technology specific issues.

The second is the “Handbook to standardized eligibility criteria for frequent types of Programmes of Activities” (2012, Climate Focus), which provides analysis of how to formulate eligibility criteria, and provides blueprint text of eligibility criteria for the most common PoA types. All blueprint texts were screened by a validator, officially termed the Designate Operational Entity (DOE) for approval, and can be used directly in writing a project design document.

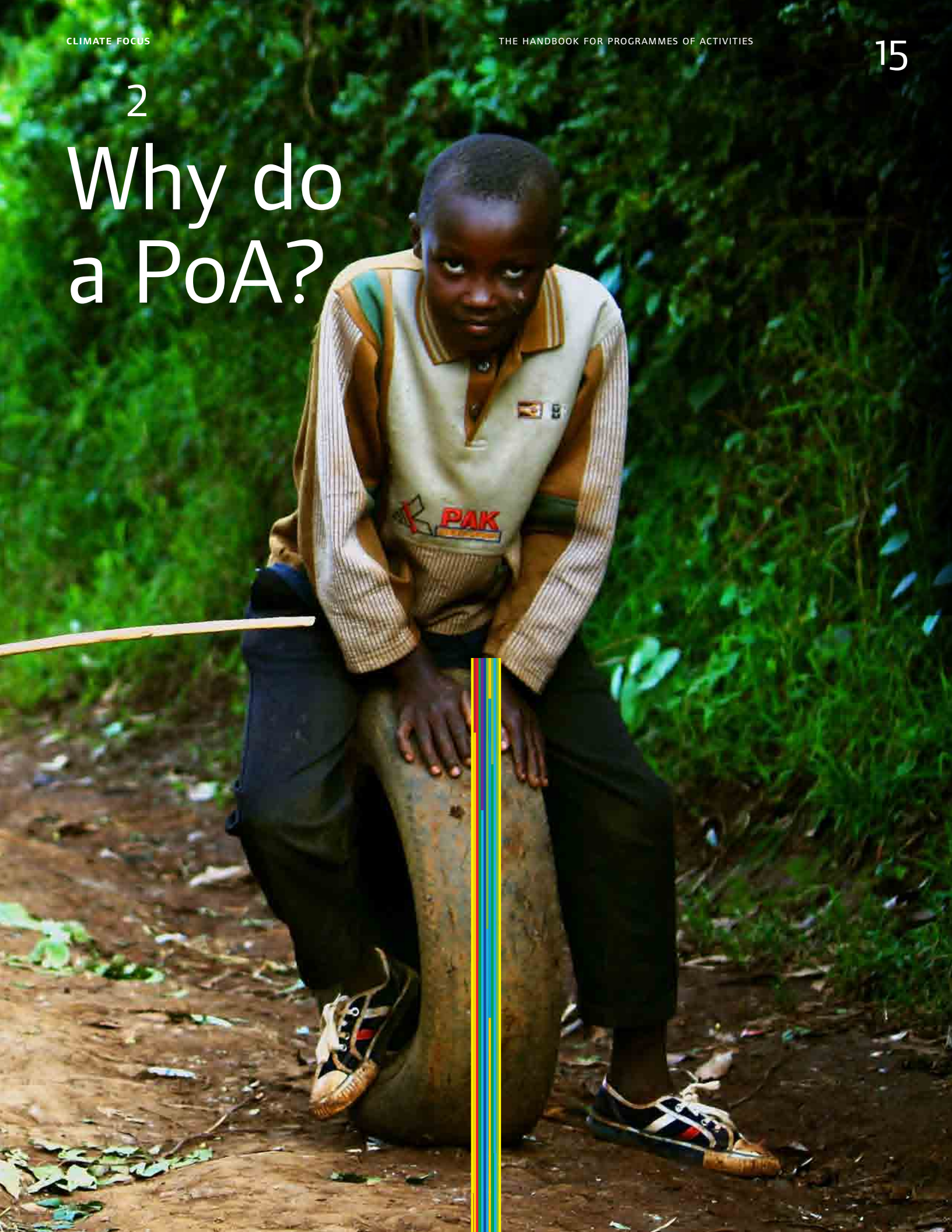
The third is the “CME Starter Kit: A manual for management systems at coordinating/management entities (CMEs)” (2012, Climate Focus). This provides more detailed assistance to programme managers on how to design and implement effective management systems for their PoA, across what could be a large number of small project activities across countries.






2

Why do a PoA?



A programmatic approach has several advantages over conventional carbon credit certification. Most importantly, Programmes of Activities make it possible to develop a portfolio of projects that can easily be replicated and scaled up, creating an extensive portfolio of projects with fast growing potential.





Advantages over
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2.1 Key recommendations

- Key advantages of PoAs are:
 - The certification effort is limited. Programme developers can add new activities to the PoA as and when the programme expands.
 - There is no need for all individual activities to be known or identified at the moment the PoA is registered.
 - The time needed for an activity to be included in the carbon credit programme and benefit from carbon credit income is a matter of weeks rather than months.
 - A PoA can expand to several host countries.
 - A PoA allows maximising the number of carbon credits for projects implemented over time: each separate CPA may have a stand-alone and overlapping crediting period.
 - Innovative companies can register a PoA and open it to the inclusion of projects implemented by other project developers.
- PoAs may not only provide an opportunity for household level programmes, but also for large investments that are implemented in parallel or in phases.
- PoAs can be developed under the CDM as well as under a voluntary standard such as the Gold Standard.
- Clear sustainable development benefits will make your PoA more attractive to investors and carbon credit buyers.

2.2 Advantages of PoAs over conventional carbon credit certification

A PoA enables the implementation of projects with a high replication potential that are implemented over a longer period of time, typically several years to over a decade. In contrast to a regular CDM project, where the pooling of individual activities is restricted to a one-off 'bundling' of a number of small and similar projects, a PoA creates an umbrella structure that supports the inclusion of multiple and unlimited bundles of subprojects over time. Adding projects, or Component Project Activities (CPAs) as they are called, to the PoA requires only a 'quick check' by a validator, as opposed to the more detailed and lengthy validation and registration procedure of the regular CDM project-approval cycle.

The first advantage of a PoA is that not all individual activities have to be known or identified at the moment the PoA is registered, but can be included periodically as the programme grows. This way, the portfolio of activities that generates carbon credits under the PoA is allowed to grow over time. This is particularly useful for programmes where there may be little or no indication upfront of how many activities will eventually be implemented and where they will be located. Clear examples are programmes in which efficient lighting, solar cookers or building renovations are offered to consumers, and where the speed of implementation depends on the pace at which households or small business owners adopt a particular technology.

Box 2.1 Regulatory Context

The basis for PoAs lies in the regime of the United Nations Framework Convention on Climate Change (UNFCCC). The UNFCCC is an international agreement, enjoying almost worldwide participation, which lays out a regulatory regime for controlling global greenhouse gas emissions. The main objective of the UNFCCC is to stabilise greenhouse gas concentrations in the atmosphere “at a level that would prevent dangerous anthropogenic interference with the climate system”.

The UNFCCC assigns general obligations to countries in accordance with their respective capacities and responsibilities to undertake climate change mitigation and adaptation measures. It divides countries into two main categories: Annex I countries, comprising the industrialised countries that were members of OECD at the time of the UNFCCC’s adoption (including all EU member states, USA, Russia, Ukraine, Australia, New Zealand, Canada and Japan), and non-Annex I countries (all remaining parties). The Kyoto Protocol, created and adopted under the UNFCCC, is an international agreement that details and develops some of the general obligations found in the UNFCCC.

The Kyoto Protocol complements the UNFCCC through a more concrete regulatory framework that defines clear emission reductions commitments for Annex I parties, and mandates the creation of a monitoring and accounting system for monitoring the achievement of these targets. In addition, the Kyoto Protocol creates three “flexible mechanisms” (Joint Implementation – JI, the Clean Development Mechanism – CDM and International Emissions Trading – IET) to assist in the implementation of the Protocol. These flexible mechanisms have in effect laid the foundation for the development of the international carbon market. JI and the CDM allow Annex I countries to offset their emissions by reducing emissions in other countries, either Annex I (JI) or non-Annex I (CDM). By means of the CDM and JI, the Kyoto Protocol uses market mechanisms to identify the cheapest reduction opportunities.

The UNFCCC, the Kyoto Protocol and its flexible mechanisms provide the regulatory setting in which PoAs generally operate. It is important to note however, that credits generated by PoAs can also be accepted under domestic or regional emissions trading schemes. Several emissions trading initiatives have been implemented or are currently being designed in different countries and regions. These trading schemes exist independently of the Kyoto Protocol and may establish additional criteria for offset projects that also apply to PoAs. The European Union Emissions Trading Scheme (EU-ETS) is a prime example; the platform on which most of the CDM’s carbon credits are sold.

PoA development opportunities also exist outside the regulatory context. So-called “voluntary markets” are not regulated by the Kyoto Protocol or the UNFCCC, but rather motivated by self-imposed environmental and social commitments of companies, non-governmental organisations and individuals. Under the voluntary market, these actors seek to voluntarily offset their emissions.



Secondly, PoAs can shorten the time needed for a project to be included in the CDM to a period of weeks (the time needed to draft CPA documentation and include the CPA in a registered PoA) rather than years (the time needed to draft a PDD, validate it and have the project registered). Since projects can only generate carbon credits from the moment they are registered, delays caused by the lengthy validation and registration procedures cost project developers and investors considerable amounts of time and resources, including lost revenues from the sale of carbon credits. PoAs can mitigate this risk by offering fast-track “inclusion” procedures for each additional project activity.

The third advantage is that a PoA explicitly allows for the development and inclusion of CPAs in several different host countries. In principle, the regular CDM has no restrictions on including different host countries and developing a project or a bundle of projects that cover different countries, but so far this option has hardly been exercised and has been limited to countries sharing a common border. That may be different under a PoA. A PoA offers the possibility of unlimited replication of projects under one umbrella, making it possible for project developers to expand the geographical coverage to different host countries.

Box 2.2 PoAs versus a bundled approach

Bundling is bringing together several small CDM projects in a portfolio. All projects in a bundle can be described in a single PDD and go through validation and registration as if it were one project. The composition of a bundle cannot change over time and all projects in the bundle will have the same CDM characteristics, such as the crediting period. The projects in a bundle do not have to be the same, but if a bundle includes different technologies, separate monitoring plans and reports should be drafted for each technology.

For a PoA, it is possible to bundle different subprojects with similar characteristics into one CPA and thus benefit from a single CPA inclusion procedure. There are clear advantages of choosing the PoA model over a bundled approach:

- **Crediting period:** The CDM rules allow for different crediting periods between the CPAs. In a bundle, all subprojects receive the same crediting period. If these subprojects start operations on different dates, not all emission reductions will be credited if they are developed in one bundle;
 - **Methodology:** The CDM rules also allow for the application of a simplified small scale methodology, or combination of methodologies, in a PoA where under a bundled approach a large scale methodology would have to be used. If a PoA consists of many small subprojects, the project developer can choose the size of a CPA to match the size limits for use of small scale methodologies. The size of a CPA determines whether a simplified (and often less costly) small scale methodology can be used.
-

Furthermore, a PoA can also offer clear benefits for larger projects. For example, many large wind power projects (say over 500 MW) are implemented in stages. As a result, the first tranche of 100 MW may be implemented five years before the last tranche. In the past, a project developer could either register each tranche as a separate project or bundle them. Registering them all separately implies facing the costs and uncertainty of validation and registration for each tranche. Bundling them would, in turn, give all tranches the same crediting period, which means that the last wind turbines would have already lost a five-year crediting period before the start of operations. A PoA undoes both disadvantages by requiring a single validation and registration process and allowing for the inclusion of separate CPAs with stand-alone and overlapping crediting periods.

project developers to participate through individual projects, thereby benefiting from the validation and registration work already done by the developer. In this case, access to carbon finance and the ability to generate carbon credits becomes a ready-available service offered by the innovative developer. Since most of the procedural work has been done, including the validation and registration of the umbrella design of the PoA, each individual project developer needs only to prepare and add its project as an individual CPA. While the validation and registration of a PoA may take over a year under the CDM, the inclusion of a CPA generally takes no longer than a few weeks. In particular, for projects set to start operations soon, such quick access to carbon finance can significantly increase the amount of emission reductions and carbon credits.

A fifth advantage of a PoA is that it allows innovative companies to register a PoA and open it to the inclusion of projects implemented by other project developers. In other words, an innovative developer can register a PoA for a project type for which it sees a large replication potential in one or several countries and allow individual

In cases where a project developer knows the exact number and location of all subprojects and the subprojects are implemented within a time frame of a small number of years, bundling in the regular CDM way may still remain a more attractive option. In this case, a full list of individual activities can be included when the



project undergoes validation and registration, saving the costs and effort of having various successive CPA inclusions. However, since a CPA can also be a bundle of projects, the developer of a bundle could opt for inclusion as a CPA in an already registered PoA, rather than go for separate validation and registration of the bundle. This will save time and can allow for an earlier start of the crediting period of the projects in the bundle.

2.3 Perspectives for PoAs after 2013

The current difficult market conditions triggered by falling demand for carbon credits from European compliance buyers and a high level of uncertainty surrounding future commitments at the international level are making it more challenging to implement PoAs under the CDM. While the UN climate negotiations held in December 2012 in Doha, Qatar, secured continuation of the Kyoto Protocol, it is unlikely that this second commitment period will have a significant impact on the demand for carbon credits generated under the scheme, putting pressure on the price project developers can obtain for their carbon credits.

With the current pipeline of CDM projects, future supply of carbon credits outstrips expected demand, putting pressure on the prices project developers are able to secure for the generated emission reductions. A limit imposed by the European Union Emissions Trading Scheme (EU-ETS) restricting the usage of carbon credits generated under the CDM after 2012 is another factor obstructing implementation of CDM projects. Under this regulation, only carbon credits generated from CDM projects registered prior to 1 January 2013 are eligible for compliance within the EU-ETS. PoAs implemented in Least Developed Countries remain eligible under the EU-ETS, so implementation of new PoAs in these regions is likely to continue in the years to come. In particular, programmes that target households or communities and deliver clear sustainable development benefits will be sought after by investors, presenting attractive opportunities for project developers.

In reaction to the restriction posed by the EU-ETS, currently the largest source of demand for carbon credits, it is likely that many project developers in non-Least Developed Countries will opt for

certifying their programme under a voluntary market standard. This shift was already noticeable in the second half of 2012, when project developers recognised the challenge of registering their programmes under the compliance market before the end of the year and ventured to the voluntary carbon market instead. One of the preferred voluntary carbon standards is the Gold Standard, which besides verifying emission reductions also certifies the programme's sustainable development benefits. Demand for voluntary carbon credits remains stable and is expected to grow as increasingly more businesses both in the developed and developing world are becoming conscious of the impact their operations have on the environment and climate change.

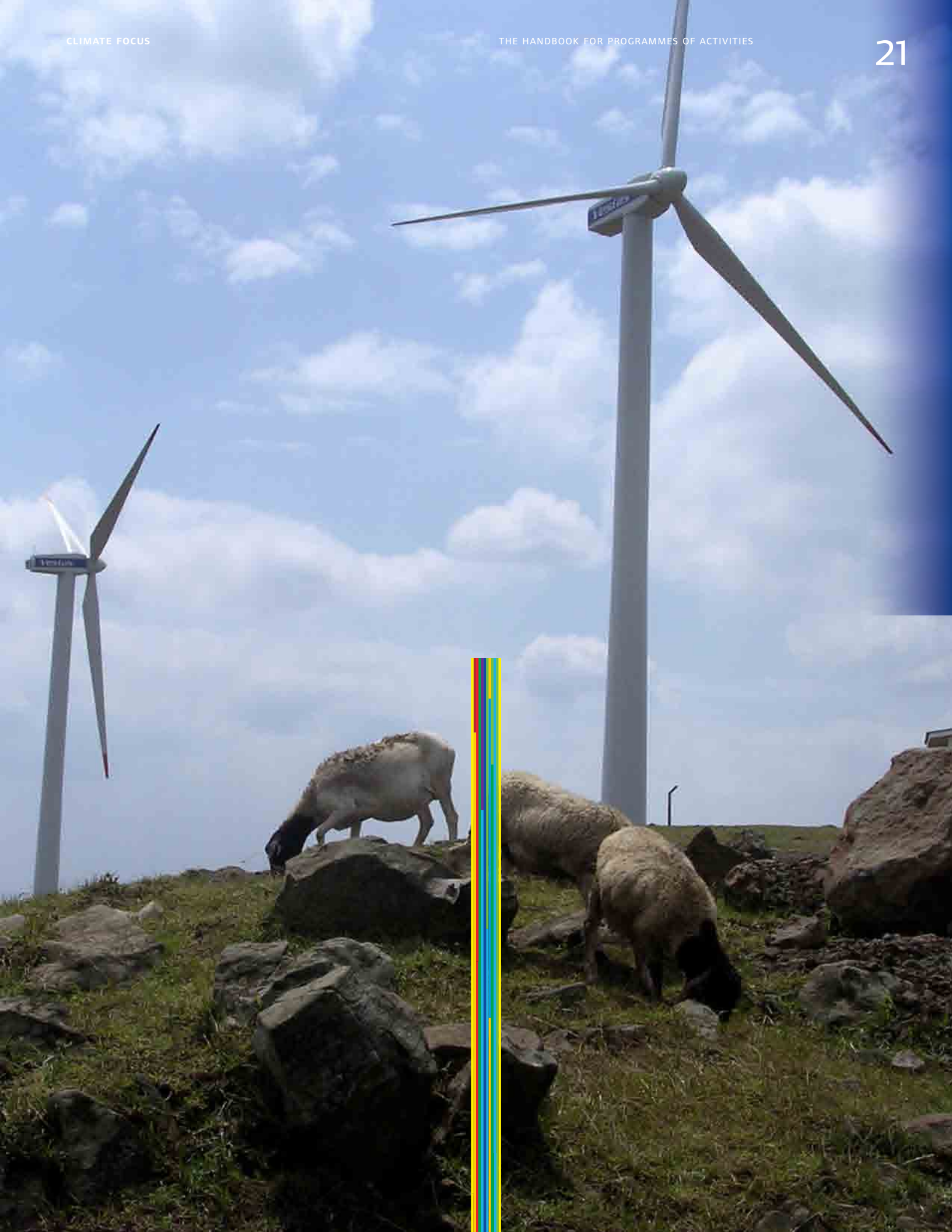
Whether developed under the compliance or voluntary market, PoAs will continue to represent an opportunity for greenhouse gas mitigation support that is intrinsically aligned with local economic, social and environmental goals of developing countries. On-going reforms in both markets have facilitated implementation of small- and micro- scale projects by further reducing transaction costs, creating additional incentives for countries with only a few registered projects and easing the development and registration of PoAs. In the end, it is the price of carbon that will drive the attractiveness of investing in PoAs and define the extent to which PoAs will promote low carbon development of the host countries.

2.4 Further reading

For an overview of the differences between PoA and conventional offsetting we refer to the guides listed at the end of the previous chapter. Since the future of the PoA concept relies on the continuation of the CDM, its future is widely discussed in international climate negotiations. Two useful sources include:

- The UNFCCC website (www.unfccc.int) provides an overview of decisions made and draft proposals under discussion.
- The International Institute for Sustainable Development (www.iisd.org/climate) is another source of information on developments in climate negotiations.

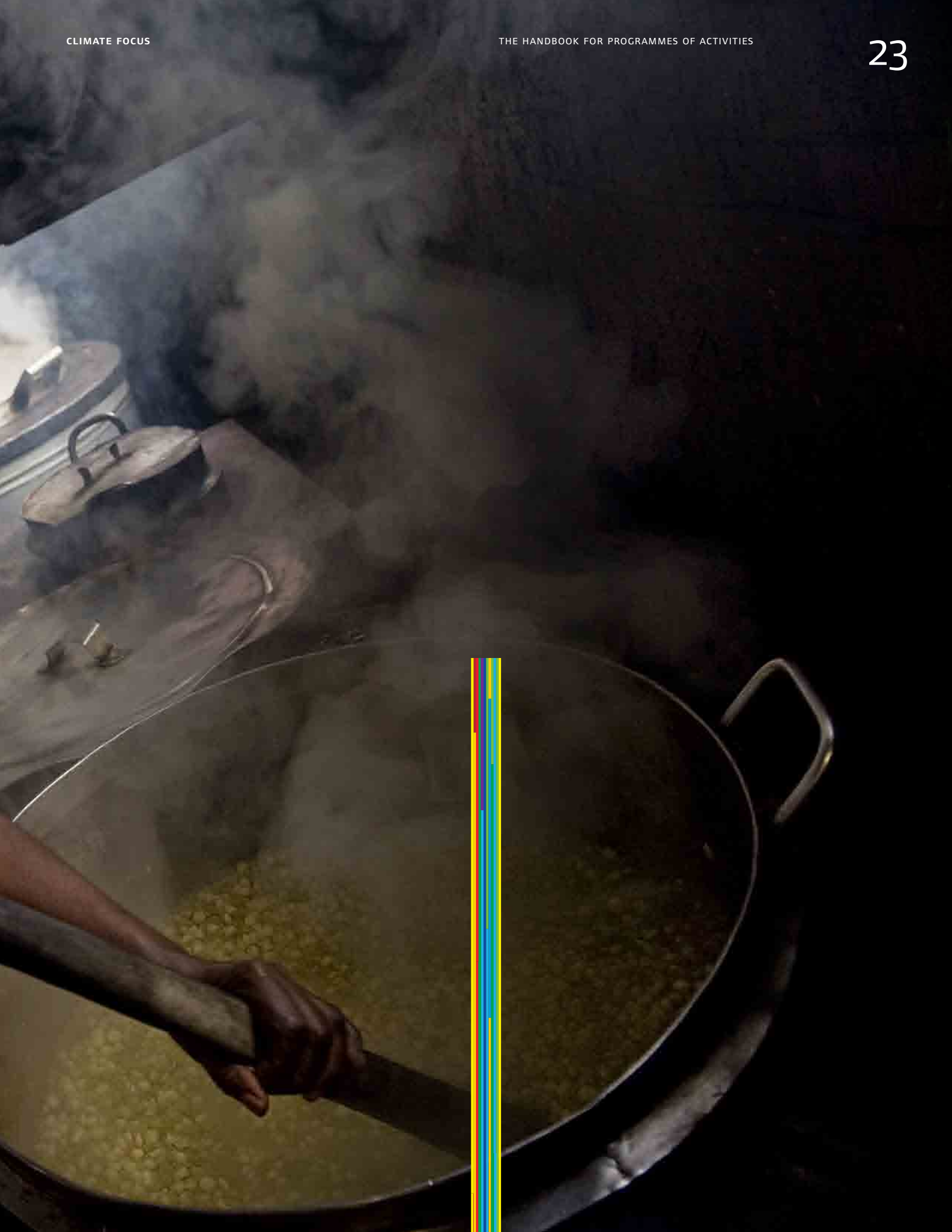




3

Procedures and Carbon Management





3.1 Key recommendations

- A PoA is suitable to create carbon credits from a large number of small and geographically dispersed activities (e.g. efficient cookstoves, lights), even when the locations of which are not known at the start of the project. An unlimited number of new activities can be added to the PoA for a period of up to 28 years.
- New activities (e.g. efficient cookstoves) can be added to a CPA at any time. In order to maximise income from carbon credits, open a new CPA as soon as the first system in that CPA is implemented and able to generate carbon credits. ‘Fill’ the CPA up with systems as quickly as possible.
- Remember that at least one CPA per technology type needs to be included in the PoA upon registration.
- Keep eligibility criteria and the PoA-DD text broad enough to allow the inclusion of future CPAs with ease. Avoid restrictive text in the PoA-DD that will limit the scope of future CPAs.
- Additionality in a PoA is demonstrated in the PoA-DD, and simply confirmed via a checklist of eligibility criteria for each CPA added to the programme in the CPA-DD.
- When referencing CDM guidance in your project documentation, make sure the most recent version of the guidance is used.
- The baseline should be set at CPA level, although some parameters can be fixed at PoA-level. For single-host country PoAs this could include, for example, the fraction of non-renewable biomass.
- Remember that a baseline survey may need to be carried out to gather baseline data for the programme. Foresee the need for numerous baseline surveys if developing a multinational PoA.
- Promote your programme at an early stage and liaise with the host country DNA to build acceptance for the issuance of a Letter of Approval.
- In order to be issued carbon credits, a programme must first produce a monitoring report and have this verified by an accredited third-party.

3.2 Steps and procedures

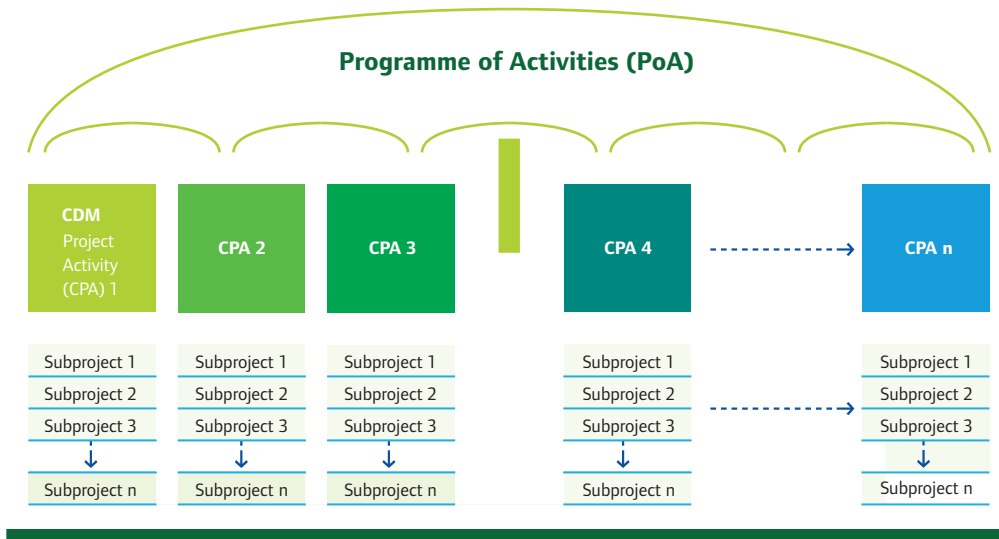
A PoA creates an umbrella structure that can accommodate an increasing number of greenhouse gas reduction activities, registered as a single project under a carbon credit standard. A PoA consists of the implementation and coordination of several emission reductions activities or set of interrelated activities. A PoA allows for an unlimited number of small and geographically dispersed activities to be added to the programme over its lifetime. This is in contrast to conventional projects, where the number of greenhouse gas abatement activities is normally geographically and numerically limited. Figure 3.1 gives an overview of the structure of a PoA under the CDM, showing the PoA as an umbrella structure for an unlimited number of Component Project Activities (CPAs), which represent similar project activities implemented over time within a pre-defined geographical area. Each CPA in itself can consist of single projects or a number of subprojects. The figure shows the most extended structure in which each CPA consists of a number of subprojects.

The ‘CDM Project Standard’¹, forms the backbone of project development under the CDM. Chapter XI of this standard describes both the design requirements of PoAs and the procedures for their registration, expansion and issuance, and provides reference to relevant further documentation where needed. A programme manager should be familiar with this document and monitor the CDM web-site at the UNFCCC for any changes (see Box 3.2).

¹ EB 70, Annex 2, ‘Clean Development Mechanism Project Standard (Version 02)’.



Figure 3.1
Structure of a PoA with its CPAs and individual projects



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Box 3.1 How to check if a small scale CPA is at risk of being considered a de-bundled project

Most traditional CDM projects are single project activities, implemented in one stage and limited to one project at a specific location. If a project involves a set of subprojects or is being implemented in different locations, the programme manager must demonstrate that a CPA is not a de-bundled component of a large scale project. Failing to do so will disqualify the CPA from being included in the programme. A CPA is at risk of being considering de-bundled if:

- Another activity has the same CPA implementer or the CME also manages a large scale PoA of the same technology;
- Another activity has a project boundary within one kilometre of the CPA.

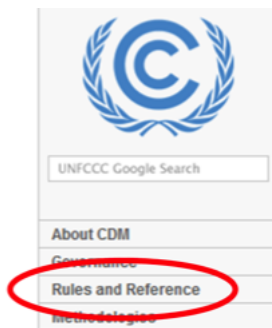
To quickly prove that the project is not a de-bundled project of a larger project, the project developer needs to indicate that the implemented equipment on a stand-alone basis is not larger than 1% of the size limits of the methodology applied. For instance, a CPA implementing small scale biogas digesters needs to prove that the maximum output of an individual system is below 450 kW thermal – that is 1% of the 45 MW thermal threshold established under the applicable small scale methodology. Evidencing this through a calculation means the CPA will by default not be considered a de-bundled component of a larger project.

Box 3.2 How to find CDM guidance

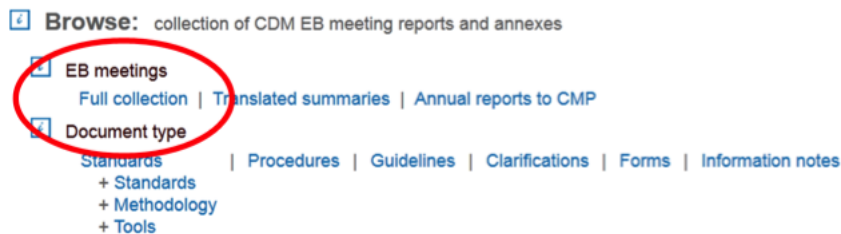
All CDM guidance can be found on the UNFCCC's official website, available on <http://cdm.unfccc.int/>. Finding the correct guidance documentation is not always straightforward. In order to direct you to the correct documentation, we have included references to CDM guidance throughout the Handbook via footnotes. These footnotes direct the reader to the relevant Executive Board (EB) meeting, as well as the annex in which the document can be found, for example 'EB 60, Annex 20'.

If a reference states EB YY, Annex bb, this document can be found as follows:

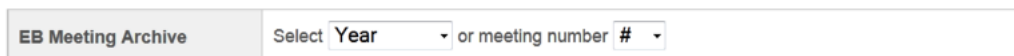
1. Go to the UNFCCC's CDM website on <http://cdm.unfccc.int/>
2. Open the link 'Rules and Reference' at the upper right-hand side of the screen.



3. You will be presented with options to browse either 'EB Meetings' or 'Document Type'. Since we are searching for documents in EB YY, click on 'Full collection' under the 'EB Meetings' heading.



4. At the bottom of the 'EB Meetings' page you are able to browse through all EB meetings by either year or meeting number within the EB Meeting Archive. Select EB YY in the dropdown menu and the page will automatically reload to the relevant EB meeting.



5. All documents for EB YY are categorised by discussion topic. Click on the 'Standards for CDM project activities and programme of activities' to expand all annexes within this section. Annexes are chronologically presented. Click on Annex bb and the pdf will automatically load.



EB Meeting: 70	Date: 19 - 23 November 2012	Webcast
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Show all

- Report
 - Meeting report (310 KB) (Published at 01:30 (Bonn time))
 - Conflict of Interest overview
- Matters related to the Board and its support structure
- Standards for CDM project activities and programme of activities
- Methodological standards for large-scale CDM project activities
- Methodological standards for small-scale CDM project activities
- Methodological standards for afforestation and reforestation CDM project activities
- Procedures
- Other matters

EB meetings are held every two months, with updates released after each meeting. To ensure that you are applying the most recent relevant guidance, documents can also be browsed by 'Document Type' (point 3 above) (i.e. standards, procedures, guidelines, clarifications, forms and information notes). All documents in this section have been officially approved for usage and are the most up-to-date files, whereas some annexes in the EB meetings are only drafts. When referencing any CDM documents in your project documentation, check to make sure the most recent version of the document is used.

The PoA procedures are outlined in Figure 3.2 and consist of writing relevant CDM documents, validation of the programme by an accredited validator (known as Designated Operational Entity or DOE), programme registration, CPA inclusion, generation, monitoring and reporting of emission reductions, third party verification of emission reductions and issuance of CERs.

At the programme level, the basic framework for the programme to which each CPA must conform, is laid out. The PoA Design Document (PoA-DD) describes the concept, methodology, monitoring plan and general project management aspects; and the individual CPA Design Documents (CPA-DDs) define the specific programme activities that are included in the registered PoA. Each CPA has the characteristics of a regular CDM project: it reduces emissions, has defined project boundaries, a crediting period, a start date and contains concrete references to the actual activity on the ground. The checklists in Table 3.1 show the typical contents of a PoA-DD and CPA-DD. CDM PDD templates for the PoA and CPA can be found on the UNFCCC's website².

² Forms for PoA projects are available at: http://cdm.unfccc.int/Reference/PDDs_Forms/index.html#reg

Table 3.1:
Items to be included in the CDM-PoA-DD and the CDM-CPA-DD³

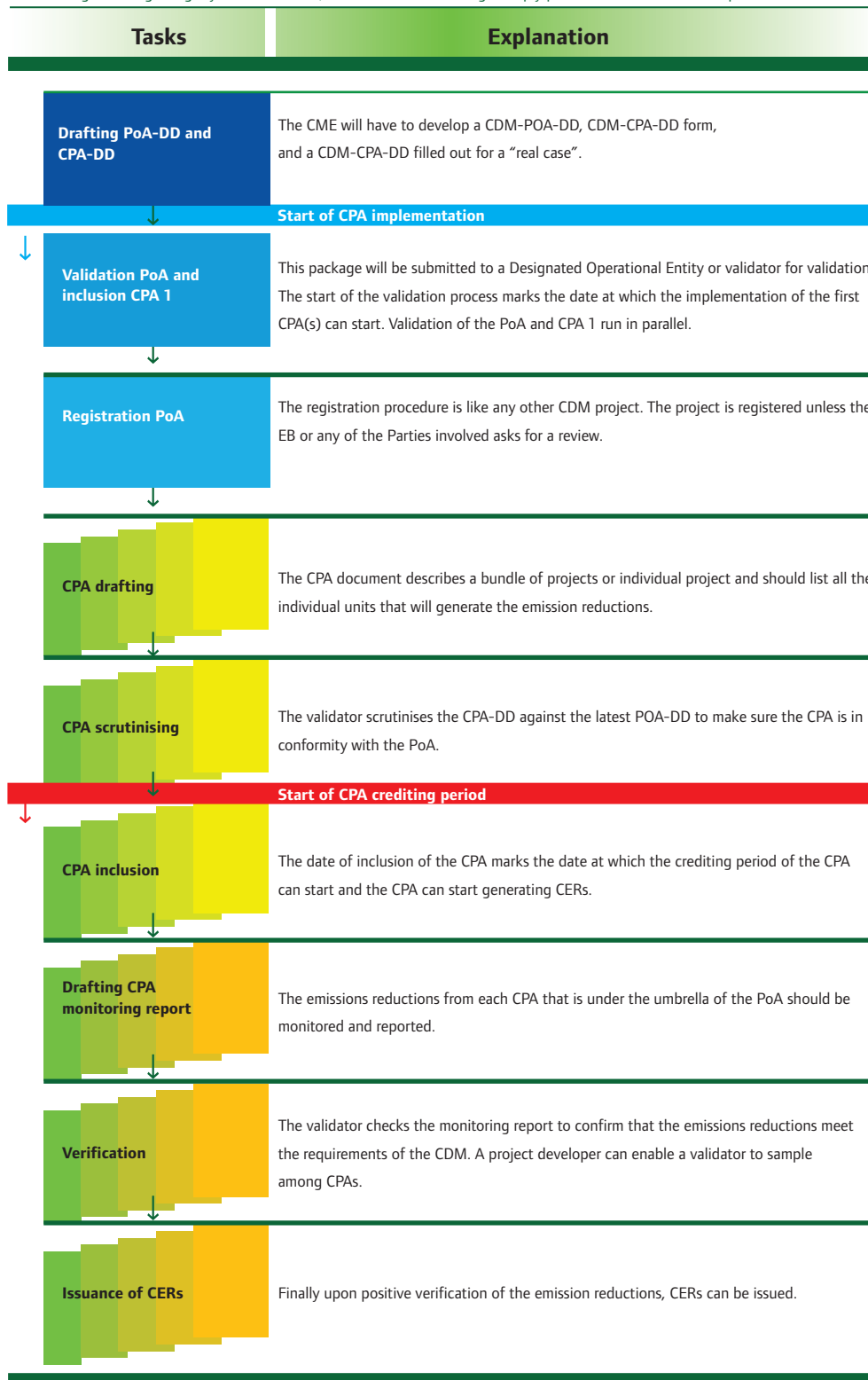
Items to be included in the PoA-DD		
Part 1	Section A	Purpose and general description of PoA, including a description of how the PoA contributes to sustainable development
		Definition of participants within the programme, including the Coordinating/Managing Entity (CME) who is responsible for coordinating efforts across all CPAs
		Definition of the programme's geographical boundary
		Description of the technologies/measures to be employed
		Statement on the use of public funding, if applicable
	Section B	Demonstration of additionality on the PoA level
		Definition of eligibility criteria for inclusion of a CPA and for the demonstration of additionality on the CPA level
Section C	Applicability of the chosen methodology	
	Description of the management system (the operational and management arrangements of the CME, including a record keeping system for the CPAs)	
Section D	Start date of the PoA, and duration	
Section E and F	Details of any environmental impacts or local stakeholder consultations, and whether these will take place at PoA or CPA level	
Section G	Status of receiving a Letter of Approval (LoA) from the host country(s).	
Part 2	Section A and B	Definition of a generic CPA, including a general description of the CPA, methodologies applied, description of the baseline scenario, demonstration of eligibility for inclusion in the PoA, emission reductions and a description of the monitoring plan.
Items to be included in each CPA-DD		
Section A	Title and description of the CPA	
	Definition of participants within the programme, including who is responsible for the CPA	
	Definition of the programme's geographical boundary	
	Start date of the CPA, and duration. Start date of the crediting period, and duration	
	Summary of emission reductions achieved over the project's crediting period	
Section B and C	Statement on the use of public funding, if applicable	
Section D	Details of any environmental impacts or local stakeholder consultations, if these take place at CPA level.	
	Methodologies applied, and emissions sources included	
	Description of baseline scenario	
	Demonstration of compliance with eligibility criteria of the PoA	
	Description of the baseline scenario and estimation of emission reductions	
	Data to be monitored	
Section E	Description of the monitoring plan	
	Status of receiving a Letter of Approval (LoA) from the host country(s).	

³ Programme Design Document form for CDM Programmes of Activities (F CDM PoA DD) (Version 02); Component Project Activity Design Document form (F CDM CPA DD) (Version 02). Available at http://cdm.unfccc.int/Reference/PDDs_Forms/index.html#reg



Figure 3.2
Procedure for PoA development under the CDM

The single rectangles signify the overall PoA, while the sets of rectangles imply processes that need to be repeated for each CPA



Once the Design Documents are complete, they must undergo a process of validation, in which a validator makes sure that the programme meets the rules and requirements of the CDM. Once the validator has finalised his assessment, the PoA documents and validation report can be submitted to the UNFCCC for registration. It is only after the submission of a PoA for registration that the CPAs included in a PoA can generate carbon credits⁴. Registration takes place eight weeks after a complete submission of a project for registration, unless any of the host or investor country governments, or members of the Executive Board, requests a review. Reviews are requested only if there are inconsistencies in the validation procedure. In practice, the review process can delay project registration by several months or lead to an eventual rejection of the project. To date, only two PoAs have been rejected out of 49 registered programmes. No requests for review have yet been issued for a PoA.

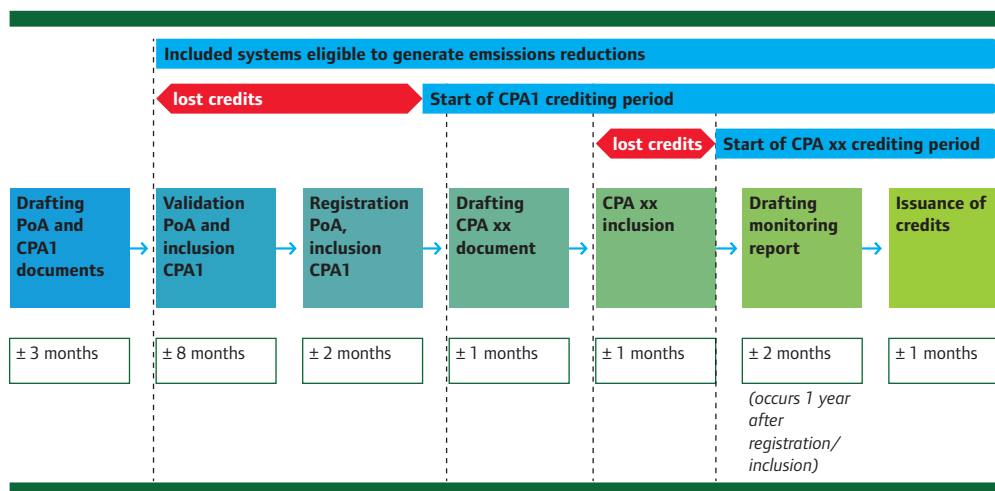
3.3 Efficiency in the project cycle

Developing a PoA takes time. The time needed for validation and registration tends to take around 15 months⁵, though individual developers may be faster or slower. It is crucial that the registration process is carried out quickly and effectively as delays in validation and registration can result in a loss of creditable emission reductions (Figure 3.3). Prior to programme registration under the CDM, no carbon credits can be generated.

For many PoA developers, the start of CDM document drafting marks the beginning of a race to register the programme before the equipment in the PoA is commissioned and starts generating emission reductions that can be turned into carbon credits. Although many CDM development aspects can be outsourced, PoA developers also need internal capacity to deal with CDM-related questions and ensure that the PoA complies with the CDM rules. It is important to assign a person who is responsible for overseeing all CDM aspects, and who has an overview of deadlines and milestones, in particular when there is a carbon credits sales contract in place.

The time for the inclusion of a CPA should also be kept as short as possible, since a CPA can only generate carbon credits when it has been included in the PoA⁶. This means that any units installed prior to CPA inclusion will not generate carbon credits. Note that a CPA can be included without yet having all the systems operational. For example, a CPA may be opened with only 10 operational efficient cookstoves, with the intention to install 1,000 cookstoves over the crediting period of the CPA. The remaining 990 cookstoves can be added to the CPA overtime, essentially 'filling-up' the CPA.

Figure 3.3
Project cycle illustrating the CPA crediting periods and the need for speed during validation and inclusion.



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⁴ EB 59, Annex 12, Paragraph 25. 'Procedure for requests for registration of proposed CDM project activities' (Version 2).

⁵ According to the UNEP Risoe November 2012 pipeline, available at <http://www.cdmpipeline.org/>

⁶ EB 55, Annex 38, Paragraph 7(c). 'Procedures for registration of a programme of activities as a single CDM project activity and issuance of certified emission reductions for a programme of activities' (Version 04.1).

Box 3.3 Ways to ensure timely registration of your programme

Consider the following options to speed up registration:

- Engage or subcontract qualified experts who are experienced and familiar with the CDM and your project type. Experts who have previously developed a similar project can often anticipate issues and address them faster. Familiarity with CDM guidance, procedures and discussions around the methodologies is very helpful for avoiding misinterpretation of Executive Board decisions. Without intimate knowledge of the CDM, it may well happen that both project developers and validators are guided by rumours and opinions rather than by the actual CDM Rules;
 - Set clear deadlines for PDD development;
 - Make clear agreements with the validators on response times and define internal responsibilities that enable you to quickly react to queries from the validator;
 - Ensure continuity of staff working on the development of the CDM aspects. Loss of specific project knowledge between PDD drafting, validation and registration can lead to issues at a later stage;
 - Ensure that all required information is given in each section of the PDD and that any tools/methodologies are up-to-date in order to avoid reviews and discussions during validation, registration and verification.
-

3.4 Gathering baseline data

The baseline represents the situation prior to the implementation of the CDM project and is the benchmark against which all future emission reductions are calculated. CDM methodologies outline the basic procedures for calculating the baseline emissions for the specific project type. Calculating the baseline emissions requires the gathering of baseline data, which is usually carried out by means of a baseline survey. A baseline survey aims to gather information to calculate the historic emissions of participants to the programme. Most small scale methodologies focus on historic data to determine the baseline emissions.

When a PoA is restricted to a single country, it can be efficient to fix some baseline parameters at PoA level, although the baseline itself needs to be defined at the level of the CPA. However, if there are considerable regional differences across the country or when a PoA is carried out in more than one host country, then generalising the baseline could result in a loss of carbon credits where the baseline has been set too high. Hence: balance efficiency and maximisation of carbon credits carefully. By fixing parameters at PoA level you may win time, but lose carbon credits.

Gathering the baseline data for the first CPA will need to be done whilst the documentation is being drafted, that is, prior to registration of the PoA. For subsequent CPAs baseline surveys can be combined with the monitoring surveys of existing CPAs thereby reducing costs. To ensure that actual baseline data are available for each new CPA, the survey needs to be repeated regularly. For example, when including a new CPA on an annual basis, the baseline surveys will also have to be repeated annually to ensure that the baseline can be applied in the new CPA. This effort can then easily be combined with the annual gathering of data for the monitoring reports.



Box 3.4 Default values for the fraction of non-renewable biomass

In order to reduce the barriers to CDM development in Least Developed Countries, Small Island Developing States and countries with less than 10 registered CDM projects, the CDM Executive Board has released a list of default non-renewable biomass factors (fNRB)⁷. The factors can be applied when calculating the baseline for methodologies that require this parameter, for instance in programmes involving efficient cookstoves and domestic biogas systems. Thus far, 74 countries now have default non-renewable biomass factors, with a further 28 awaiting host country approval. On average, the non-renewable biomass factors are quite favourable, with most over 80%.

Some programme developers still prefer to develop their own fNRB, anticipating their own factor is higher than the default one. However, whilst applying default factors in a programme may result in slightly lower emission reductions than when applying your own factor, the default factors do increase the chances of registration and credit issuance significantly. Some carbon credit buyers will even prefer projects that apply default parameters simply because the risk of registration and non-issuance are reduced.

Box 3.5 Utilising mobile phone technology to collect user data

The registered 'Barefoot Power Lighting Programme' has devised an innovative way of overcoming the challenges of developing a PoA where the target group is widely dispersed and not always easily accessible.

The PoA distributes both portable solar lights and fixed solar home systems. Distribution is carried out primarily through wholesale retailers, who purchase a bulk quantity of solar lamps from Barefoot Power and sell the lamps at retail outlets across Kenya. In order to track where sales are made and ensure that users can be re-located for monitoring purposes, each lamp has a special warranty offer advertised on the box. Upon purchase of a product, the prospective user is motivated to provide personal data to Barefoot Power via a series of text messages sent by mobile phone in order to activate the one-year warranty. Through this data exchange, the CME of the PoA – Barefoot Power – is able to verify the serial number of the lamp while collecting other relevant user data such as the name, location and mobile phone number of the user. Since most people in Kenya own a mobile phone, this approach greatly facilitates locating individuals for monitoring purposes and can be extremely useful for understanding the market and improving overall business development.

(Andrew Barson, Barefoot Power)

⁷For more information on the default values for the fraction of non-renewable biomass, refer to <http://cdm.unfccc.int/DNA/fNRB/index.html>



3.5 Additionality

The demonstration of additionality is a key element of the programme documents. The programme developer must demonstrate that the programme and the project activities would not take place without the programme's registration under the CDM. In the PoA-DD, the demonstration of additionality is elaborated, while in the CPA-DD additionality is simply checked against the eligibility criteria.

At the PoA level, the PoA-DD must describe how the CPAs would not have occurred without the CDM. At CPA level additionality is demonstrated by ticking a checklist of eligibility criteria that is defined in the PoA-DD⁸. In other words, rather than developing the additionality argument on the CPA level, additionality is instead demonstrated by confirming that the CPA meets certain criteria, such as installations being below a certain size threshold.

The simplest way to demonstrate PoA additionality is through microscale additionality⁹, which allows CPAs to be considered

automatically additional if each CPA meets certain criteria. These criteria include being located in a least developed country or small island developing state, or targeting certain end-users. For example, energy efficiency projects can apply microscale additionality if they meet any one of the following two conditions:

- they are located in a Least Developed Country (LDC) or a Small Island Developing State (SIDS), or in a special underdeveloped zone of the host country identified by the Government before 28 May 2010, or;
- each subsystem is below a certain size threshold and the end users are households/communities/SMEs.

In addition, some small scale technologies and project types are considered automatically additional, without further need to demonstrate this, so long as they remain below the small scale threshold of an installed capacity up to 15 MW. These project types are referred to as a 'positive list'¹⁰, and include:

Table 3.2:
Technologies included under the 'positive list' of small scale additionality

Criteria	Eligible technology/project type
Grid connected electricity generation	Solar technologies (photovoltaic and solar thermal electricity generation); Off-shore wind technologies; Marine technologies (eg. wave, tidal); Building-integrated wind turbines or household rooftop wind turbines up to 100kW each.
Off-grid electricity generation	Micro/pico-hydro (with a power plant size up to 100 kW); Micro/pico-wind turbines (up to 100 kW); PV-wind hybrids (up to 100 kW); Geothermal (up to 200 kW); Biomass gasification/biogas (up to 100 kW).
Isolated units where users are households, communities or small/medium enterprises, where each unit is below a certain size.	No restrictions on the eligible project type/technology.
Rural electrification in countries with rural electrification rates of less than 20%.	All renewable energy sources.

Demonstrating additionality for small scale CPAs to which microscale additionality guidelines do not apply requires detailing the barriers that prevent the implementation of the project.¹¹ These barriers include:

- Investment barrier: the proposed project is not the most financially viable project, and the alternative project would have led to higher greenhouse gas emissions;

- Technology barrier: the proposed project applies a more risky technology, and the use of the alternative technology would have led to higher greenhouse gas emissions;
- Prevailing practice barrier: prevailing practice would lead to a project that releases more greenhouse gas emissions;

⁸ EB 70, Annex 2 'Clean Development Mechanism Project Standard' (Version 02.1); EB 70, Annex 5 'Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities' (Version 2.1)

⁹ EB 68, Annex 26 'Guidelines for demonstrating additionality of microscale project activities' (Version 04.0)

¹⁰ EB 68, Annex 27 'Guidelines on the demonstration of additionality of small-scale project activities' (Version 09.0)

¹¹ EB 68, Annex 27 'Guidelines on the demonstration of additionality of small-scale project activities' (Version 09.0)



Other forms of barriers, including institutional barriers or lack of technical knowhow can also be used to argue for additionality of your project. Referencing credible reports, technical or financial feasibility studies, or domestic regulation is important to construct a convincing argument and indicate the project's additionality.

For large scale PoAs the additionality demonstration is more detailed and requires laying out how possible alternative scenarios lead to higher greenhouse gas emissions than the programme scenario. The CDM "Tool for the demonstration and assessment of additionality"¹² provides a structured approach to demonstrating additionality for large scale PoA CPAs, and requires the PoA-DD to:

1. Identify realistic alternatives to the project activity;
2. a) Conduct an investment analysis to indicate that the proposed programme activity is either not the most economically or

financially attractive, or not economically or financially feasible at all; or

- b) Conduct a barrier analysis demonstrating that there is at least one barrier preventing the implementation of the programme without the CDM;
3. Perform a common practice analysis to demonstrate the extent to which the proposed project activities have already diffused in the relevant sector and region.

Once the approach to demonstration additionality is defined in the PoA-DD, a CPA's compliance with the additionality demonstration is again checked only via the eligibility criteria in the CPA-DD. This applies regardless of whether the CPA is micro-, small- or large-scale.

Box 3.6 Examples for the demonstration of additionality

The PoA "Biogas Programme Nicaragua (PBN)" aims to disseminate biogas digesters to households and farmers in Nicaragua. The biogas digesters are fuelled with animal manure, fermented to produce biogas, which is used for fuelling a cooking stove and reading lights. Additionality at CPA level is demonstrated via eligibility criteria which confirm that the CPA meets the requirements of microscale additionality. This requires confirming that each biogas digester in the CPA is below a certain size, and that the end users are households/communities/small and medium enterprises. Compliance with both criteria can be demonstrated with, for example, the biogas digester sales contract.

Another programme, the "Tunki Small Scale Hydropower Program of Activities" aims to develop hydropower projects in Peru that will be connected to the national grid. Additionality of CPAs in this programme can be demonstrated from a choice of two approaches, one through microscale additionality (as above), and the second through demonstrating an investment barrier. The PoA-DD describes how the investment analysis should be applied, and the CME uses a standard excel template for the calculations. CPAs that rely on the investment analysis must have an internal rate of return of 12% or more without the CDM.

The criteria for the demonstration of additionality of a CPA in the "Uganda Municipal Waste Compost Programme" include demonstrating that the disposal of wastes at a landfill or dumpsite is common practice. In addition, if the capacity of the composting installation in the CPA deviates by more than 20% from the capacity from the default system, it should be demonstrated that without the CDM the CPA is not viable. The financial additionality of the CPA with default capacity has already been demonstrated in the PoA-DD.

The PoA "CUIDEMOS Mexico (Campana De Uso Inteligente De Energia Mexico) – Smart Use of Energy Mexico" aims to reduce electricity consumption in Mexico by the distribution of 30 million compact fluorescent lamps (CFLs). For this programme, the additionality of each CPA should be demonstrated with a simple cost analysis, showing that there are no revenues other than those from the generation and sale of carbon credits. In addition, a common practice analysis should demonstrate that the market penetration of efficient lights implemented without support from the CDM remains low. The same approach to CPA additionality has been adopted for a very different programme, the "Masca Small Hydro Programme". In this programme, the CPAs are small hydropower stations in Honduras.

¹² EB 70, Annex 8. "Tool for the demonstration and assessment of additionality" (Version 7.0.0)



Box 3.7 Recent developments in climate negotiations

Parties to the UNFCCC and the Kyoto Protocol meet every year to negotiate the further development of commitments and institutional arrangements under the two treaties. At their December 2012 meeting in Doha, Qatar, Parties agreed to extend the second commitment period of the Kyoto Protocol to 2020. Parties made several “requests” to the CDM Executive Board on PoAs. Three are of particular relevance. Firstly, the Executive Board was requested to work on ensuring that the eligibility criteria included in a PoA accurately reflect the different technology types in the PoA. Secondly, Parties requested to work on allowing practical approaches for dealing with missing monitoring and verification data for microscale PoAs. Lastly the Executive Board was requested to limit the occurrences of validation and verification being carried out by the same validator unless absolutely necessary. In response to these requests, it is likely that the Executive Board will revise its guidelines on these matters in its upcoming meetings.

3.6 Applying Methodologies

CDM Methodologies are procedures that are approved by the CDM Executive Board that describe how emission reductions are calculated, measured and monitored. It is compulsory to apply a methodology to any PoA. A comprehensive overview of all approved CDM methodologies can be found in the CDM Methodology Booklet¹³ by the UNFCCC, which can assist in identifying the appropriate methodology for a programme.

While applying a single methodology for the programme is the most common and simplest way forward, sometimes more than one methodology can be used in a PoA. This is for instance the case with the use of a biogas digester, where one methodology is applied to calculate the reduced methane emissions from the manure, and a second methodology is used to calculate the amount of avoided emissions when using gas to generate power rather than relying on fossil fuel.

In situations where more than one methodology can be applied, there are three options for applying the combination, depending on the circumstances:

1. Any combination of methodologies that have been approved by the Executive Board for use under a PoA can be used. A list of already approved combinations can be found in the “General Guidelines to SSC CDM methodologies”¹⁴.
2. If a combination of methodologies has been applied in an approved CDM project before, they can be applied in a PoA as well but only if interactive cross effects between the different measures can be excluded or are conservatively accounted for. Checking whether a combination of methodologies has been applied in a registered project can easily be done with the “advanced search” option for searching projects on the UNFCCC website at: <http://cdm.unfccc.int/Projects/projsearch.html>
3. If a combination of methodologies has not been applied in a registered CDM project before, and has not been approved by the Executive Board, they can be used only after prior approval by the Executive Board.

The CDM Executive Board updates methodologies periodically. New PoAs must use the most recent version of the methodology¹⁵, while – contrary to common misunderstanding – existing PoAs can normally continue to use the methodology that was valid at the moment of registration of the PoA. There is one exception to this rule, which is when the CDM Executive Board finds that a methodology has a major flaw and puts its application on hold. In this situation, the CPAs included after the methodology revision need to follow the revised PoA-DD. PoAs cannot include additional CPAs if the methodology applied is put on hold or withdrawn, unless the methodology has been put on hold for the purpose of inclusion in a consolidated methodology¹⁶. Fortunately, the occasions when methodologies have been put on hold are extremely rare and have been limited to the early days of the CDM.

¹³ For more information on the CDM Methodology Booklet, refer to <http://cdm.unfccc.int/methodologies/documentation/index.html>

¹⁴ EB 69, Annex 27, Paragraph 11. ‘General guidelines for SSC CDM methodologies’ (Version 19.0)

¹⁵ For a full list of CDM methodologies, refer to <http://cdm.unfccc.int/methodologies/index.html>

¹⁶ EB 70, Annex 02, Paragraphs 23 – 24. ‘CDM Project Standard’(Version 02.1)

3.7 Defining eligibility criteria for the inclusion of CPAs

Defining concrete, verifiable eligibility criteria for the inclusion of future CPAs is a precise and important task. Each CPA will be carefully scrutinised against these eligibility criteria during the validation stage. The eligibility criteria should cover, as a minimum, the following ¹⁷:

- The geographic boundary of the CPA, which should be consistent with the geographical boundary set in the PoA;
- Conditions that avoid double counting of emission reductions;
- Specifications of the technology/measure;
- The start date of the CPA;
- Compliance with the methodology applied;
- Additionality requirements;
- Conditions for undertaking stakeholder consultations and an environmental impact assessment;
- A confirmation that any funding from Annex I parties does not result in a diversion of Official Development Assistance (ODA);

- Definition of the target group and distribution mechanisms;
- Sampling requirements;
- Conditions to ensure that the CPA remains below the small- or micro- scale threshold;
- Requirements for the de-bundling check.

In order to prove compliance with each of the above mentioned eligibility criteria, validators require that each CPA is accompanied with substantiating evidence that they are able to cross-check for compliance. Evidence could include, for example, paper copies of sales contracts or commissioning records in which the GPS coordinates of each installation are recorded. This allows for cross-checking of entries in the project's database. Clarifying in the PoA-DD which documents can be used to demonstrate compliance with the eligibility criteria can be useful since it creates clarity for both the CME and the validator.

Box 3.8 Upfront payment is the easiest option for CPA inclusion

While the CME of a programme will often act as the implementer of individual CPAs, this is not always the case. CO₂Balance, for instance, has developed several PoAs under which it solely acts as the CME, leaving implementation of the actual CPAs to project developers. The developer has to agree to the monitoring guidance set out in the programme design and the sustainable development criteria and code of ethics stated by CO₂Balance.

In return for giving project developers the opportunity to join a registered PoA and start generating carbon credits, the company asks for an inclusion fee to assist with the high costs of PoA development. This fee consists of an upfront payment that is made to the CME upon successful inclusion of the CPA.

In certain cases, part of the CME fee can also be paid upon first issuance of CERs of the specific CPA either as a one of fee or percentage of credits. However, since ex-ante calculations are often the best case scenario for the emission reduction potential of a project activity and issuance success depends on the competence of the CPA implementer, CO₂Balance is inclined to make the CME fee independent from future performance and a one-time upfront payment is preferred.
(Matt Thomas, CO₂Balance)

¹⁷ EB 70, Annex 05 'Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities' (Version 02.1)



3.8 Start dates and crediting periods

Figure 3.4
Definition of crediting periods and start dates in a PoA.
 Adapted from the CDM glossary of terms and CPA-DD and PoA-DD forms.

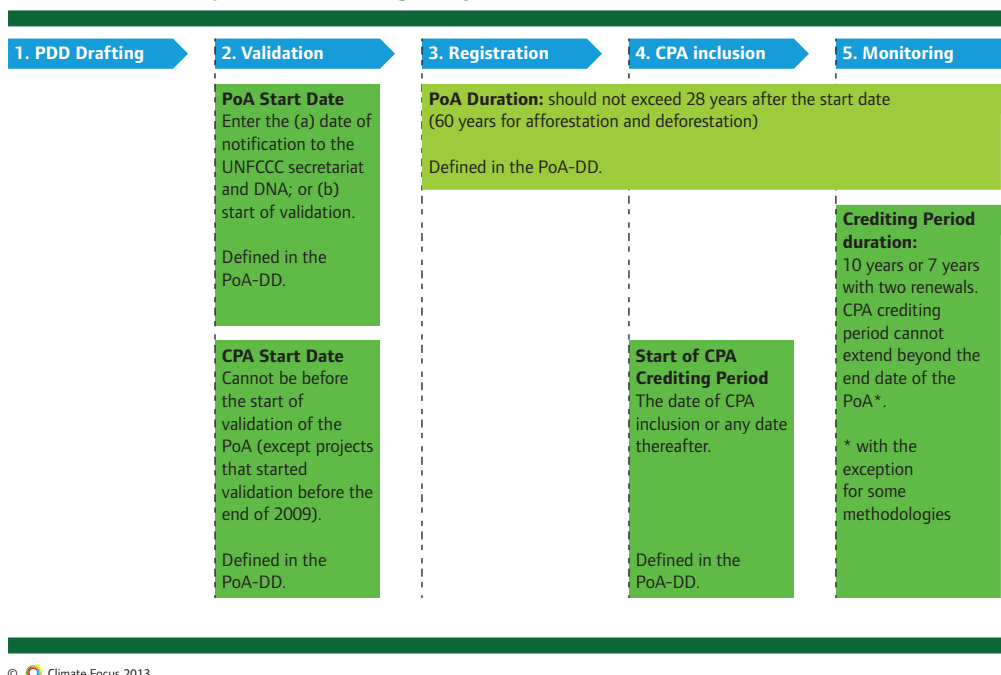


Figure 3.4 above provides an overview of the definitions of duration, start dates and crediting periods within a PoA. The only term that applies to both the PoA and CPA is the start date, which must be defined once for the entire PoA-DD, and once for each CPA-DD when a new CPA is added to the programme. The crediting period only applies for each CPA, and is defined in each CPA-DD.

The **duration of a PoA**, or the period in which the CPAs under the PoA can generate carbon credits, can be up to 28 years from the start date of the PoA (which can be the date of registration or any later date). The duration is defined by the project participants in the PoA-DD.

The **start date of the PoA** can be either a) the date the CME notifies the UNFCCC secretariat and host country DNA of the intention to seek CDM status or b) the date of publication of the PoA-DD for global stakeholder consultation (i.e. the start of validation)¹⁸. The PoA start date should be in line with the date of first CPA inclusion so that the programme's lifetime covers a maximum length of CPA crediting periods. In other words, the starting date of the PoA should align with the inclusion and operational start of the first CPA.

The **CPA start date** is the earliest date at which the implementation or construction of the CPA begins¹⁹. The CPA start date, however, cannot be before the start of validation of the PoA²⁰, and can at the

earliest be the date of uploading the PoA-DD for global stakeholder consultation on the UNFCCC's website (which marks the start of validation). The programme developer must define a concrete start date in the CPA-DD.

In addition to the implementation start date, a CPA also has a start date for its **crediting period**. The crediting period of a CPA defines the period in which it can generate carbon credits. For the first CPA the start of the crediting period can be on or after the date of registration of the PoA. For all subsequent CPAs added to the project, the start date of the crediting period can be on or after the date of inclusion in the registered PoA, and cannot start before the date of registration of the PoA. The programme developer must define the crediting period in the CPA-DD: if the CPA is already operational at the time of inclusion (e.g. biogas digesters are already in use), the start date of the CPA crediting period should be defined as the date of inclusion. Otherwise it should be the expected start date of the project's operation.

The crediting period of the individual CPAs is either seven years with two seven-year renewals (totalling 21 years) or ten years fixed without renewal. The PoA end date marks the end of the crediting period for any CPA included in the programme, regardless of when the CPA was added to the programme²¹.

¹⁸ EB 70, Annex 2, Paragraph 159. 'CDM Project Standard' (Version 02.1)

¹⁹ EB 70 Annex 7. 'Glossary of CDM terms' (Version 07)

²⁰ EB 70, Annex 2, Paragraphs 159 – 162. 'CDM Project Standard' (Version 02.1)

²¹ EB 70, Annex 2 Paragraph 163. 'CDM Project Standard' (Version 02.1)

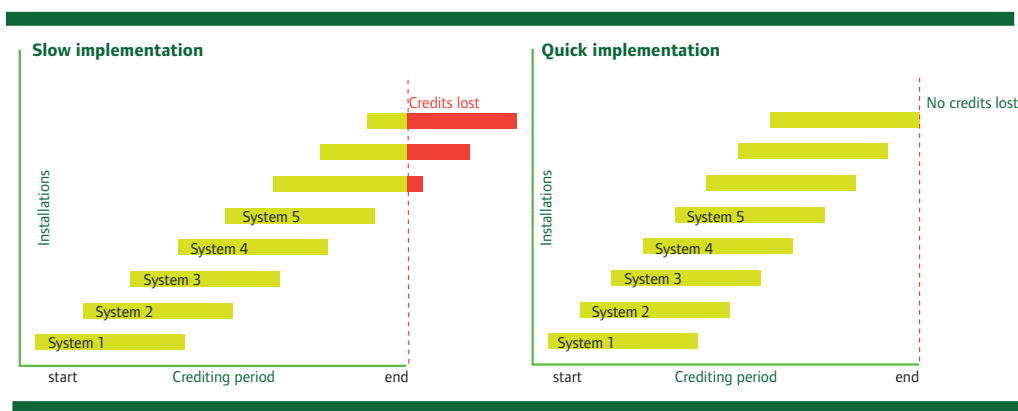
In order to maximise income from carbon credits, it is most efficient to open a new CPA as soon as the first system is implemented and can create carbon credits (i.e. as soon as a system becomes operational), and to add further systems to the CPA until it reaches its limit. The CPA can be limited either by size or time (e.g. one year), whichever is reached first. New systems should be added to the CPA as quickly as possible to ensure that systems avoid losing credits when their operational lifetime runs over the crediting period of the CPA (Figure 3.5).

Figure 3.5 shows how a CPA can include many small subprojects or installations, creating an increasingly large portfolio over time. The red dotted lines indicate when the crediting period of the CPA starts and ends, while the horizontal blue lines indicate the lifetime of the installed equipment. When implementation of equipment (such as individual household biogas digesters) is slow within the CPA there is a risk that credits will be lost when the operational lifetime of the equipment extends beyond the crediting period. Since the lifetimes of installed equipment in the CPA do not run in parallel, some emission reductions fall outside the crediting period and cannot be converted into carbon credits.

Figure 3.5
Importance of ‘filling’ a CPA rapidly to avoid losing credits at the end of the crediting period.
 Adapted from the CDM glossary of terms and CPA-DD and PoA-DD forms.

The lifetime of each system (e.g. biogas digester) is represented by the horizontal lines. Where the system’s operational lifetime exceeds the CPA’s crediting period, potential to generate carbon credits is lost (left graphic).

Quick implementation allows for each system to maximise income from carbon credits (right graphic).



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In certain situations the crediting period may exceed the lifetime of the installed equipment. This is commonly the case with efficient cookstoves, which tend to break down after several years of use. In this case, the amount of generated carbon credits will decline as time goes by. Certain methodologies however allow project developers to replace impaired equipment to maintain a steady flow of carbon credits throughout a crediting period. For instance, methodology AMS-I.E.²² specifies that “monitoring shall consist of an annual check

of all appliances or a representative sample thereof to ensure that they are still operating or are replaced by an equivalent in service appliance”. This implies that the lifetime of the equipment can be extended if it is replaced by an equivalent in service appliance, and that the crediting period may extend beyond the lifetime of the equipment.

²² AMS-I.E. ‘Switch from non-renewable biomass for thermal applications by the user’ (Version 02) Paragraph 14.

Box 3.9 Offering maintenance and replacement services to maximise carbon revenues

Efficient cook stoves generally have an average lifetime of only two years if no maintenance is provided. This means that a cook stove installed in the first year of the CPAs operation would only be able to generate credits for two years, foregoing the remaining five or eight years of the crediting period during which carbon credits could be generated. To overcome this problem, CO₂Balance, the CME of the 'Efficient Cook Stove Programme in Kenya', has made the provision of maintenance and repair services an integral part of the programme. The service is free of charge for all participating households as all associated expenses are covered by the income generated from the sale of carbon credits. A strict monitoring system has been put in place that covers all participating households and ensures dysfunctional stoves are identified on a timely basis and repaired, when possible. Apart from repairing damaged cook stoves, the PoA also actively replaces broken cook stoves with new units to ensure that the maximum amount of carbon credits can be generated per CPA during a given crediting period.

(Matt Thomas, CO₂Balance)

3.9 CPA size

It is up to the programme developer to choose the most convenient CPA size. Two aspects determine the optimal size:

1. Scale limits of the methodologies/tools applied: if a PoA applies a small scale methodology, it must ensure that each CPA stays within the small scale limit of the methodology applied. Likewise, if the microscale additionality guidelines are applied each CPA will need to remain below the microscale threshold.
2. Financial aspect: Balancing the costs of each inclusion with the value of the additional amount of CERs generated is important for ensuring the project's cost-effectiveness.

Regarding the first aspect, the size limits in which CPAs can apply a small scale methodology are defined for the three different small scale project categories, as listed in Table 3.3 below. In some cases, the small scale methodology itself provides more specific guidance on the size limits that apply for that specific methodology.

In order to decide when to start a new CPA, the trade-off between the cost of inclusion of a new CPA and the cost of credits lost at the

end of the crediting period should be balanced (Figure 3.6). The pace of implementation is key, especially where the lifetime of systems extends beyond the crediting period of the CPA. To minimise the lost potential to generate carbon credits, CPA size should be adjusted.

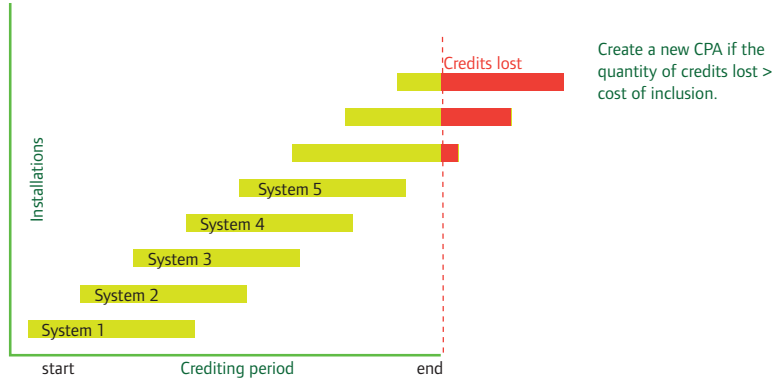
- If the rate of implementation is slow, more but smaller CPAs will be suitable. Although this results in higher costs for drafting CPAs, including CPAs and monitoring and verification, it allows for capitalising on the crediting periods in which the individual subprojects will generate carbon credits (i.e. reducing loss of credits at the end of the crediting period)
- If the rate of implementation is quick, less but larger CPAs will work. There are lower costs for drafting CPAs, including CPAs and monitoring and verification, but less ability to tailor crediting periods to the period in which the individual subprojects will generate carbon credits. The latter should however not be an issue for a CPA with a quick implementation rate.



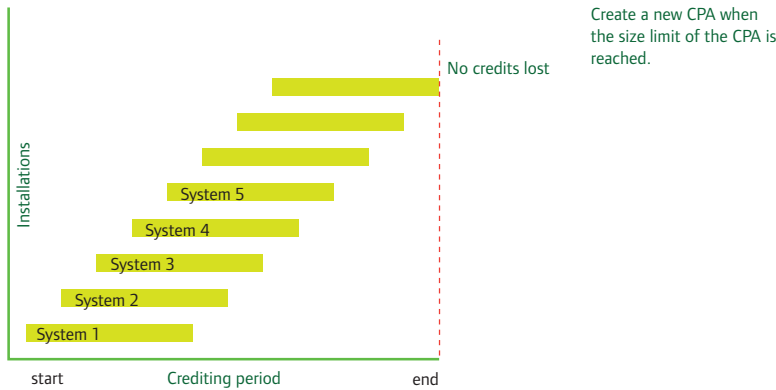
Figure 3.6
Deciding when to start a new CPA.

Trade-off between the cost of inclusion of a new CPA and the cost of carbon credits lost at the end of the crediting period.

Slow implementation



Quick implementation



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Table 3.3:
CPA scale limits of the methodologies/tools applied

Project type	Size limit of CPA when using a small scale methodology	Size limit of CPA when using microscale additionality
Generation of power, heat or mechanical energy	Installed capacity no more than 15 MWe or 45 MWth	Installed capacity no more than 5 MWe
Energy efficiency, demand and supply-side	Electrical energy saving not exceeding 60 GWhe/year	Energy savings of not more than 20 GWh/year
Fuel switch, reduction of methane emissions or other gases	Emission reductions not exceeding 60,000 tCO ₂ e/year	Emissions reductions not exceeding 20,000 tCO ₂ e/year



Box 3.10 Multinational PoAs

A PoA can cover different countries if all participating host countries issue a Letter of Approval. Having one PoA cover a number of host countries avoids the need for the development of an entire new programme including the costs of validation and registration, each time the project owner wishes to expand to a new host country. Including CPAs located in a new host country which is defined in the PoA-DD simply requires a short inclusion check, which is both considerably cheaper and faster than developing a new PoA.

When dealing with a multinational PoA, baseline data needs to be defined on the CPA level as baseline conditions are likely to vary considerably across borders. This implies that numerous baseline studies need to be implemented and that the amount of carbon credits per CPA may vary across different countries. Furthermore, due to differing economic and institutional situations per country, the additionality argument may also differ per CPA. This means a more general PoA-DD is needed, with the country-specific information being featured in the CPA-DD.

A look at the existing PoA pipeline, in which nearly 400 projects now feature, shows that only about 15% of PoAs are multi-country PoAs. Whilst some project developers may have no intention of expanding to other countries, others may plan to expand in future. Additional countries can be added to a PoA after registration so long as a Letter of Approval is received from the host country government. Since a PoA has a duration of 28 years, it can be beneficial to leave the option open for including additional host countries in future. In order to do so, the eligibility criteria for inclusion of future CPAs should be kept general enough to add new host countries. All host-country specific information should be shifted to the CPA-DD, which can only cover one host country, and the PoA-DD language should be kept open.

Whilst this approach is generally acceptable, some host country DNAs will not issue a Letter of Approval to multi-country PoAs unless a CPA is located in their host country or the CME is a registered entity in the host country, among other things. It is important to keep this in mind and check the requirements of DNAs located in host countries where you aim to expand the PoA into.

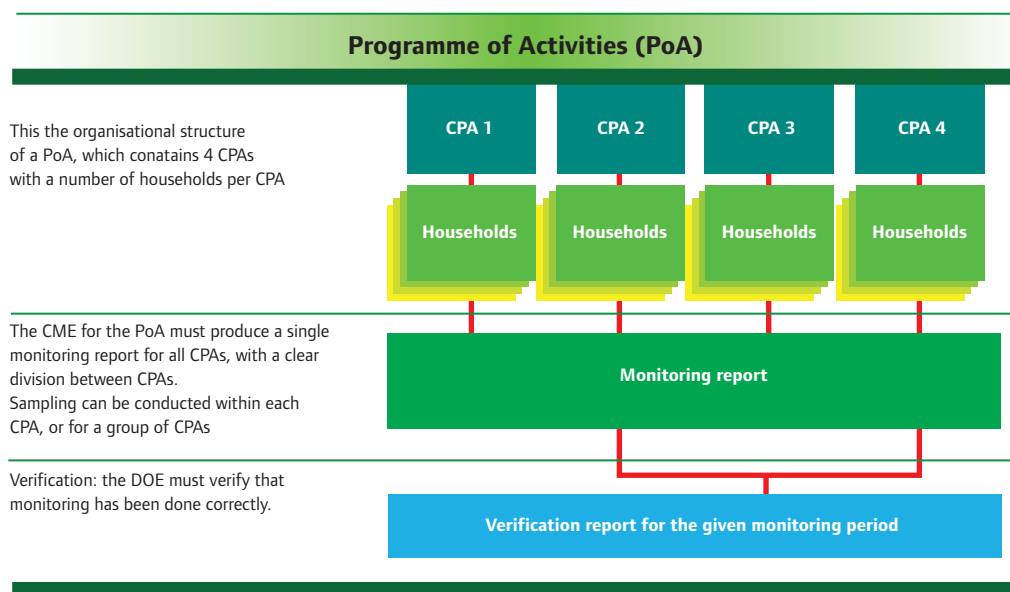
3.10 Monitoring and verification

All emission reductions generated under the programme must be monitored, reported and verified. In order to be issued carbon credits, a programme must first produce a monitoring report and have this verified by an accredited reviewer. Since a PoA consists of a large number of individual systems aggregated under the programme, employing sampling during monitoring avoids the

need to measure the performance of each and every installation. An efficient lighting PoA, for example, may install tens of thousands of lamps. Sampling allows only a representative portion of these to be monitored, rather than all thousand lamps; a task which would be prohibitively expensive and time consuming.



Figure 3.7
Sampling for monitoring and verification under a PoA



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Most programme developers opt for an annual round of monitoring and verification. More frequent monitoring and verification has a clear advantage: any errors in monitoring that would put the issuance of credits at risk will be identified sooner. The financial incentives and obligations under the carbon sales contract often determine the frequency of verification and issuance. For example, large projects generating over a million carbon credits per year tend to be verified and have carbon credits issued more than once a year due to the large volumes of credits produced. Producing regular monitoring reports, in this case, is possible due to the high potential income from the sale of large volumes of credits.

The project owner is required to prepare a single monitoring report covering all CPAs under the PoA (Figure 3.7). The monitoring results for each CPA, however, should be clearly separated within the monitoring report²³. Sampling is often the most practical way to collect monitoring data. Sampling can either be conducted within each CPA, or a single sampling effort can be carried out for a group of CPAs²⁴. The latter is most practical when there are a large number

of similar CPAs to be monitored, although guidance on how to report this monitoring effort is lacking and it can be challenging to separate the monitoring results for each CPA if sampling is conducted on a group of CPAs. Most likely, the CDM Executive Board will require that the grouped CPAs monitored be clearly identified within the monitoring report.

The sampling plan should include a definition of the sampling method, any assumptions made and the sample size. In addition, elements such as the qualification of the people conducting the samples, characteristics of the population, procedures for data management and suggestions for dealing with non-response should also be included, among other things.

In order to design an appropriate sampling method for the PoA, the CDM have produced comprehensive guidance on the types of sampling available and when each approach can be used²⁵. The guidance introduces five sampling methods.

²³ EB 70, Annex 2, Paragraph 236 (b). 'CDM Project Standard' (Version 02.1)

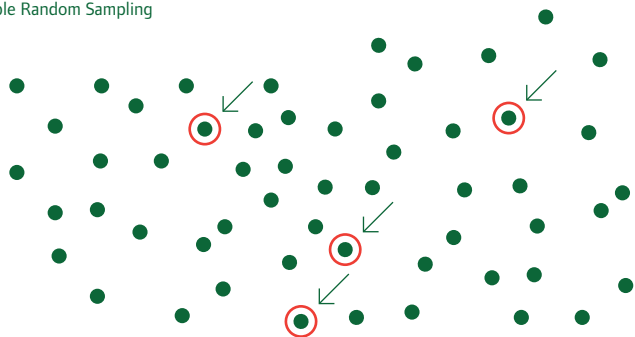
²⁴ EB 69, Annex 4, Paragraph 20. 'Standard for sampling and surveys for CDM project activities and programme of activities' (Version 03.0)

²⁵ EB 69, Annex 5. 'Guidelines for sampling and surveys for CDM project activities and Programme of Activities' (Version 02)



The first is **Simple Random Sampling**, in which a random sample is taken from a relatively homogeneous population. This is the most straightforward way of sampling but may not always be the most appropriate. This kind of sampling works when the population of units from which the sample will be taken are homogenous, of limited size or concentrated in a small geographical area, or when they are easily accessible.

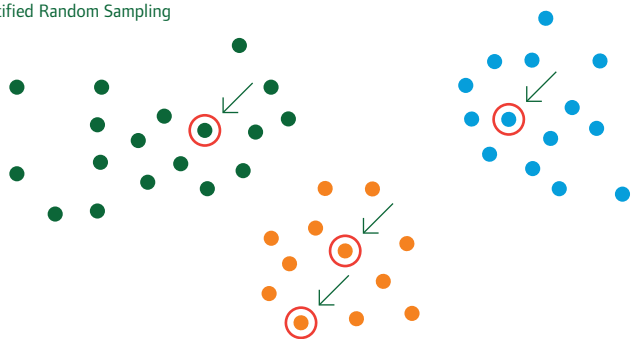
Simple Random Sampling



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The second method is **Stratified Random Sampling**, which is applied when a population to be sampled consists of several sub-populations which vary, and are more similar within groups than across groups. It involves selecting strata or homogeneous subpopulations and sampling within these. Examples might be subpopulations of building types (e.g. offices, houses, shops, etc.).

Stratified Random Sampling



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The third method is **Systematic Sampling**, which is most commonly applied to determine quality assurance within the output of a product. An example is a production line where you can test every tenth product. This could include assessing the nth unit to determine the quality of bricks in a manufacturing process or the efficiency of efficient cookstoves. When designing a sampling plan under this approach, it is important to ensure that the population to be sampled is ordered randomly.

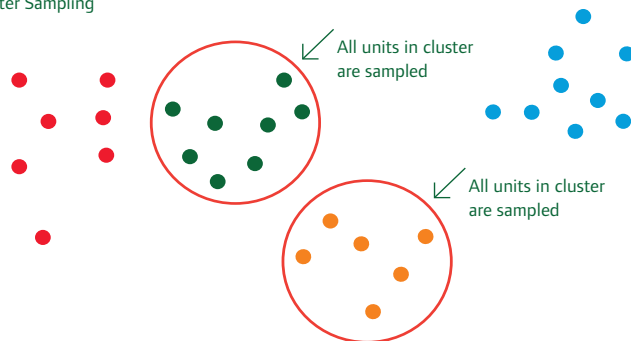
Systematic Sampling



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The fourth method is **Cluster Sampling**, which applies when there are natural groupings within the population. In contrast with Stratified Random Sampling, sampling here occurs at group level rather than on the individual units: the population is divided into subgroups, which are then randomly selected. All units within each sub-group are sampled. A clear example of a population in which Cluster Sampling works well is a population that is geographically dispersed. In this instance, sampling geographical clusters will save travel time and costs of sampling. For example, assume a project installs high-efficiency lighting in apartment buildings, with several lights in each building. In order to estimate the operating hours of the lights, one might take a sample of the buildings instead of the lights, and then monitor all the lights in the selected buildings. In this case, sampling at building level is more efficient than randomly sampling all the lights.

Cluster Sampling



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And finally, **Multi-stage Sampling** can be applied. Multi-stage Sampling is a more complex form of Cluster Sampling, in which the population is sub-divided as in Cluster Sampling above, but not all the units within a sub-group need to be measured. Instead, a sample of sub-group units are measure, In the above example, this would mean that only a sample of efficient lights within each building are monitored, rather than every light within selected buildings.

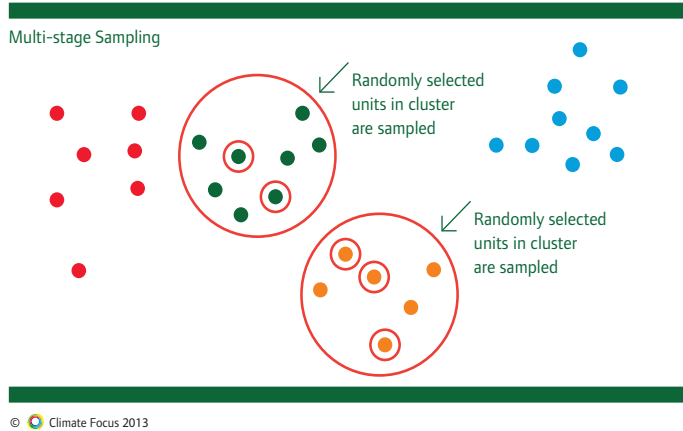


Table 3.4:
Advantages and disadvantages of different sampling methods²⁶

Sampling method	Advantages	Disadvantages
<p>Simple Random Sampling Involves taking a random sample from the whole population</p>	<p>Simplest sampling method, easy to use.</p> <p>Suitable if the units being sampled are similar with respect to the parameter being studied.</p>	<p>Requires knowing the entire population before a sample can be selected.</p> <p>Sampling can become costly if the population to be sampled is spread over a wide geographical area.</p>
<p>Stratified Random Sampling Involves randomly sampling a different number of units from each strata according to the weight of each strata in the population (e.g. proportional representation)</p>	<p>Improves the precision of the estimate (compared to simple random sampling) if there are differences between the strata.</p>	<p>Complicated to calculate.</p> <p>Determining what the stratification factors should be can be difficult (e.g. in ‘Buildings’, the strata could include offices, households and shops).</p>
<p>Systematic Sampling Involves taking a sample every nth unit</p>	<p>A simple sampling method, easy to use.</p>	<p>Sampling can become costly if the population to be sampled is spread over a wide geographical area.</p>
<p>Cluster Sampling Sampling every unit within a sample of clusters from the population</p>	<p>The most economical sampling method if the population is spread over a large geographic area, since the sampling units can be grouped based on their location.</p> <p>Can save time where the entire population is not known (e.g. if only a list of villages is known, sampling can be done within villages without having to have a list of each household when planning the sampling effort).</p>	<p>Standard errors can be high with cluster sampling, since each subgroup tends to be similar. Taking a larger sample size can help to overcome this.</p>
<p>Multi-stage Sampling Randomly sampling a number of units within a number of randomly selected clusters</p>	<p>Enables a sampling approach at two levels: both the clusters and units.</p> <p>Allows for a cost-efficient design to suit the needs of the CME.</p>	<p>Analysis and the sample size calculation are more complex.</p>

²⁶ Adapted from Table 1 presented in EB 69, Annex 5. ‘Guidelines for sampling and surveys for CDM project activities and Programme of Activities’ (Version 02)



3.11 Further reading

The information provided in this chapter is largely based on the CDM guidance, in particular the documents and decisions made by the Executive Board. It is important to stay informed about the decisions made by the Executive Board and to make sure that the guidance document you apply is still the latest available. Relevant CDM Rules can be found at: <http://cdm.unfccc.int/Reference/index.html>. All references provided in this chapter include the EB meeting number, which can be used to quickly find relevant guidance.

In addition, there are rulebooks available that try to make the rulings of the Executive Board more accessible and provide detailed guidance on specific technical aspects of PoA development. These include:

- The CDM Rulebook by Baker & McKenzie, available at: www.cdmrulebook.org, which includes a separate section on programmatic CDM. When using this rulebook, do take note of the latest Executive Board meeting from which the Rulebook has been updated. This is indicated with “Current to Executive Board [No]” on the front page of this website.
- Handbook to standardized eligibility criteria for frequent types of Programmes of Activities (2012, Climate Focus): provides analysis of how to formulate eligibility criteria, and provides blueprint text of eligibility criteria for the most common PoA types. All blueprint texts were screened by a validator for approval.

- Sampling Manual: A guide to sampling under the CDM with special focus to PoAs (2012, Perspectives)

Another valuable source of information is UNEP Risoe, which publishes a series of guidebooks²⁷ and resources, such as:

- “PDD Guidebook: Navigating the Pitfalls” (May 2011) 3rd Edition
- “Baseline Methodologies for CDM Projects” (November 2005), and
- “A Primer on CDM Programme of Activities” (November 2009)
- Methodology Selection Tool: UNEP Risoe has made the wealth of methodologies previously approved by the Executive Board accessible through a Methodology Selection Tool, available at <http://cdm-meth.org/>.
- Updates project pipeline summaries: UNEP Risoe publishes an up-to-date overview of CDM projects that have started or moved beyond validation. This pipeline of project is available at: <http://www.cdmpipeline.org/>

²⁷ These Guidebooks are available at: <http://cd-4cdm.org/Guidebooks.htm>



4

The Role of the Programme Manager





4.1 Key recommendations

- The programme manager is responsible for overseeing the business development under the PoA while bringing together the various financial, legal and carbon aspects in a coherent structure.
- The programme manager is the focal point for all matters related to the PoA.
- Public entities, commercial parties or NGOs can all be a programme manager.
- The programme manager should be prepared to oversee the PoA for a period of up to 28 years.
- The role of Coordinating/Managing Entity (CME) is specifically related to the CDM and can be outsourced.
- The programme manager should clearly assign all responsibilities and tasks as to avoid confusion of duties. Work should be carried out according to a roadmap, with set deadlines to avoid delays.
- An effective management system in line with CDM guidelines should be in place.
- The programme manager should train relevant staff on monitoring procedures in line with the monitoring plan outlined in the PoA-DD.

4.2 Programme management

CDM registration is only the starting point for the generation of carbon credits under the PoA. As programmes typically consist of numerous subprojects that may have separate owners, developers and financiers, there is a need for a clear focal point that is responsible for the overall managerial and operational oversight of the PoA. Effective management of a PoA is the core responsibility of the programme manager, who coordinates the entire programme throughout its lifetime. By cohesively bringing together financial, legal and carbon aspects of the programme, the programme manager can ensure successful generation and issuance of carbon credits throughout the PoA's lifetime.

When developing a PoA, the implementing entity is likely to stumble upon an array of challenges, both when it concerns the actual business development as well as when dealing with the generation of carbon credits. Issues related to business development include the development, operation and maintenance of the business and securing finance, marketing of carbon credit and revenue distribution. Carbon credit related issues include validation, registration, CPA inclusion, monitoring and database management, carbon credit issuance and communication with the CDM Executive Board and validators or verifiers. In this handbook, we refer to “programme manager” where it concerns the management of all tasks related to the programme: business and carbon development included (Figure 4.1). We refer to “Coordinating and Managing Entity” or CME where it concerns the entity that formally coordinates the tasks related to the CDM development.

The most important tasks of the programme manager involve building the trust needed amongst the programme's stakeholders, bringing together the human, institutional, and financial resources

for successful programme implementation, and effectively promoting the programme to attract future participants. The programme manager does not need to be directly involved in the implementation of the subprojects, but can operate as a structure and platform for the programme units to be included in the programme.

Tasks under a programme are many and varied (see the checklist in Table 4.1). Whether the programme manager or a third party takes up the requisite responsibilities depends on the abilities and preferences of the programme manager, and the organisational set-up. A programme manager needs to assess the strengths and weaknesses of its organisation, and identify which tasks it will manage and which ones it will outsource to others. Often case, outsourcing of certain tasks is advisable as long as responsibilities are clearly defined and overall coordination remains in the hands of the programme manager.

The entity managing the programme does not necessarily need to be the same as the entity that coordinates the CDM aspects, generally referred to as the Coordinating Managing Entity or CME. This job can be outsourced as well. The responsibilities of a CME are defined by the CDM Rules and are limited to the registration of the project, its approval, and the verification of emission reductions.

The programme manager needs to engage in communication with stakeholders to ensure effective programme functioning based on clearly defined roles and responsibilities of each participant to the programme. Figure 4.2 illustrates the flow of communication within a typical PoA. Optional relations are necessary only if the organisational or financial structure of the programme so requires.

Figure 4.1
Programme management integrates diverse tasks

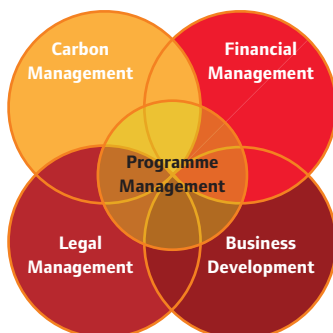
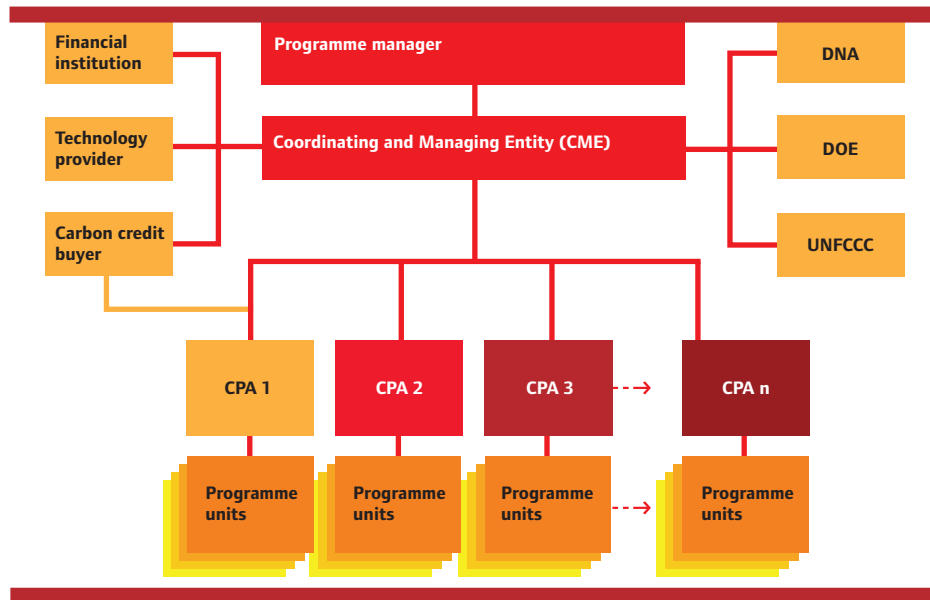


Table 4.1
Checklist of tasks that need to be performed under a PoA

Design and promote the programme
Design the programme
Draft a solid business plan
Draft a roadmap that provides guidance to all actors relevant to the programme
Manage the carbon aspects
Develop in-house or acquire external CDM expertise
Draft and submit the POA-DD, CPA-DDs and monitoring reports
Obtain letters of approval and authorisation
Coordinate the issuance of CERs
Develop and manage the operational structure
Manage and organise contracts and agreements among stakeholders and participants
Set-up and manage a central database of project information
Expand operational capacity as the programme develops
Fund raising and financial management
Take on the responsibility for arranging finance for the programme, and/or support individual CPA developers with sourcing financing
Promote the programme
Develop and implement an incentive scheme that will attract participants, e.g. through applied grants, subsidies or loans
Secure ownership of carbon revenues and arrange for their distribution or use
Technology distribution and maintenance
Ensure access to technology and related services
Ensure long-term compliance of the technology with design criteria and requirements defined in the CDM documents
Arrange for technology distribution, installation and maintenance and repair services
Coordination and communication with stakeholders
Meet the responsibilities associated with direct communication with the carbon regulating entity
Organise stakeholder meetings and integrate suggestions or address concerns in the programme design
Coordinate between all actors involved, including financiers, technology providers, programme participants, validators and relevant host country authorities
Develop an in-house network of staff or well-recognised set of local partners that support with programme dissemination



Figure 4.2
Communication channels within a PoA.
 The programme manager and the CME can be the same entity.



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Box 4.1 “Do not underestimate the business component”

“The challenge of developing a PoA is not the technical part but the management of the business. The success of a PoA depends on lean and professional management which should cover all aspects in an integrated manner, including the carbon aspects, project financing and expansion of the programme.

PoAs are complex structures that place a lot of tasks and responsibilities on the shoulders of the programme manager. All CPAs should be able to rely on standardised procedures and monitoring approaches to avoid management costs running out of hand as the number of CPAs increases. That is important since the PoA can only be successful if the number of CPAs increases rapidly.”

(Christoph Sutter, Chairman of South Pole Carbon Asset Management)



4.3 The role of the Coordinating/Managing Entity (CME)

The CME is the entity that formally coordinates the tasks related to the CDM development. This role can be assumed by the programme manager or outsourced to a third party, for instance to a specialised carbon credit consultancy. The list of tasks of the CME under the CDM is limited to the following duties:

- Drafting PoA documentation (the CDM-PoA-DD and CDM-CPA-DD);
- Responding to any issues that arise in the PoA-DD and CPA-DD validation process;
- Obtaining a Letter of Approval from each host country and the Annex I party involved;
- Coordinating and communicating with the validator and the CDM Executive Board;
- Drafting monitoring reports for CPAs in accordance with the methodology outlined in the PoA-DD;
- Responding to any issues that arise during the verification process for all the monitoring reports;
- Communicating with the UNFCCC secretariat regarding the registry accounts of project participants to which CERs have to be issued to;
- Drafting and implementing a CME management system for the PoA (see section 4.4).

Obtaining the Letter of Approval (LoA) is vital as it authorises the CME to be the official project participant in the PoA, and is a requirement for the PoA to be registered under the CDM. The CME will need to contact the local Designated National Authority (DNA) and present and discuss the PoA; approaching the DNA at an early stage and building a trusting relationship is recommended. This enables the DNA to get a good understanding of what the proposed PoA entails and how it fits to the country's sustainable development criteria. It is important to note that a LoA is required for the PoA, but not for each individual CPA under the programme.

4.4 Management systems in PoAs

The benefits of the PoA model include the ability to quickly replicate individual CPAs as part of a single programme and to increase the efficiency of the validation and verification processes, thereby reducing transaction costs. But in order to secure consistency when replicating activities under a programme, an effective management system for the development and implementation of new CPAs and for the operation of existing projects is essential. This fundamental requirement has been demonstrated across decades in product manufacturing, and has become recognised by the CDM Executive Board in the PoA Standard¹. The CME is required to outline a detailed management system within the PoA-DD (see Box 4.3). It specifically lists a number of elements that have to be included in such a management system, but leaves the door open to "any other relevant elements". The CME's management system is subject to the validator's review and approval during validation.

Box 4.2 "Seek Public and Political Acceptance"

"Ensuring that your programme gathers enough support to reach the required critical mass of participants is one of the key elements in designing a successful PoA. Under the Bachat Lamp Yojana (BLY) scheme, compact fluorescent lamps (CFLs) are distributed by CPA implementers to grid-connected residential households in exchange for their existing incandescent lamps and a small fee.

There were three key elements to success. Firstly, the programme was discussed with stakeholders in five meetings across the country, organised by Greenpeace as a credible independent actor. This helped the CME and the Bureau of Energy Efficiency design a robust PoA. Secondly, to ensure public support, press and media kits with detailed documentation and short press briefs were handed out to the public. This helped build public pressure on governments to implement the programme. Finally, BEE, a statutory body of the Government of India, has undertaken the role of CME, and has emphasised that the programme serves the public objective of promoting energy efficient lighting in the household sector."

(Manu Maudgal, GIZ)

¹ EB 70, Annex 05, Paragraph 19 'Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities (Version 02.1)



Box 4.3 Mandatory CME Management System

According to the PoA Standard the CME must ensure that each CPA meets all the requirements and eligibility criteria before inclusion in the registered PoA. The Standard obliges the CME to develop and implement a management system that must be made available to the validator at the time of validation of the PoA within Section C of the PoA-DD. The management system focuses primarily on the procedures and qualifications of persons involved in the inclusion of future CPAs. The management system must include:

- A clear definition of the roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies. This could include, for example, an organisational chart and table detailing the entity, their core responsibilities and their CDM-specific responsibilities.
- Records of arrangements for training and capacity development for personnel; e.g. outlining who will receive training, the training subject and how records will be maintained to prove that personnel have received training.
- Procedures for the technical review of inclusion of CPAs; e.g. detail how the CME will check to make sure a CPA is eligible for inclusion under the PoA.
- A procedure to avoid double counting (e.g. to avoid the case of including a new CPA that has already been registered either as a CDM project activity or as a CPA of another PoA);
- Records and documentation control process for each CPA under the PoA; e.g. a diagram illustrating the CDM documentation process, including a description
- Measures for continuous improvements of the PoA management system; e.g. building in a review process such as annual management meetings.
- Other relevant elements the CME wishes to outline such as procedures for the issuance of serial numbers to be applied to efficient cookstoves at manufacturing

The PoA Standard lists a number of additional requirements that should be covered in the PoA management system. These requirements concern the update of eligibility criteria if a methodology is revised or replaced, or if the PoA boundary is changed or if a newer methodology version is available at the renewal of the PoA crediting period. For more guidance on how to draft the CME manual, see the publications featured under “Further reading”.

4.5 Types of Programme Managers

The programme manager needs to be represented by an entity that is prepared and capable of overlooking the PoA throughout its entire lifetime – up to 28 years. The programme manager can be a public entity, a commercial entity, a not-for-profit organisation, or even an individual person. Whichever type, the programme manager needs to have strong regional presence so that it can coordinate the programme efficiently. This can be done directly through the presence of regional offices, or indirectly through a network of partners that facilitate local outreach. Established connections with technology providers, financial institutions and regional governmental bodies are key to setting up the PoA in a competent manner. Below we outline the different types of entities that can play the role of a programme manager.

Public entities

Depending on the nature of the PoA, development banks, state banks and governmental organisations are excellent candidates for assuming the role of programme manager.

Currently, there are various PoAs in the CDM pipeline where the programme manager is an agency within a ministry or other public body. One example of a registered PoA coordinated by a public entity is the Bachat Lamp Yojana efficient lighting Programme in India, which is managed by the Bureau of Energy Efficiency, a government organisation engaged in developing policies and strategies to promote energy efficiency and renewable energy in India. The Bureau of Energy Efficiency decided to limit its involvement to purely organisational aspects and has not been involved in sourcing financing or technology for the programme; this is left to the individual CPAs.



Box 4.4 Efficient data management is vital to a successful PoA

The registered ‘Sichuan Rural Poor-Household Biogas Development Programme’ aims to install household biogas digesters across the Chinese Sichuan province. The PoA will host a large number of CPAs, with more than 50 CPAs currently undergoing inclusion less than year after registration and 400,000 units already distributed. In order to manage the large quantity of data, the CME in collaboration with UPM GmbH set up a sophisticated data management system, which acts as the backbone for coordinating and recording data across the PoA.

The data management system is developed specifically to suit the needs of the PoA, and has a number of built-in features to streamline data administration:

- All required data are automatically calculated, including emissions reductions, compliance with the start date and crediting period, among other things;
- Staff is automatically informed of upcoming tasks and data collections. This allows monitoring to take place cost-effectively through utilising the network of in-field staff and minimising travel;
- Required documents are automatically generated, such as the CPA-DD, standardised monitoring reports and participants’ lists;
- Allows data to be entered remotely. In-field staff logon to an internet-based platform to enter data, which is then automatically transferred to the centralised database.

Utilising such a sophisticated data management system allows the PoA to keep management costs low, whilst facilitating smooth inclusion of future CPAs and credit issuance.

(Henning Huenteler, UPM GmbH)

Box 4.5 Carbon revenues for different types of programme managers

While any type of organisation can take on the role of a programme manager, the application of carbon revenues from the sale of carbon credits is likely to differ per entity type:

- Commercial entities will see carbon as an additional form of revenue that increases future profit potential and makes the venture financially more attractive;
 - Non-profit organisations will often focus on the social and environmental benefits of the programme. Nonetheless, they will also consider it a success if the programme becomes financially independent, thus reducing its dependence on donors;
 - Governmental institutions generally find carbon revenues attractive since they can reduce a programme’s reliance on grants or subsidies from the state budget.
-

Commercial entities

Commercial entities that commonly act as programme managers include energy supply companies, utilities, technology providers, CDM consultants, and engineering and construction companies.

The first registered PoA that has already successfully issued credits, CUIDEMOS Mexico, is being managed by Cool nrg, a private entity that promotes energy efficiency and provides consultancy services in emission reductions projects. Acting as the CME, Cool nrg provides organisational leadership, has established a network of efficient

lighting distribution centres and engages, both directly and through partnerships, a trained workforce that assures effective programme implementation and monitoring. Having previous experience with disseminating energy-saving lights in the UK and Australia has proved advantageous in terms of assuring effective implementation of the first CPA and securing financing.



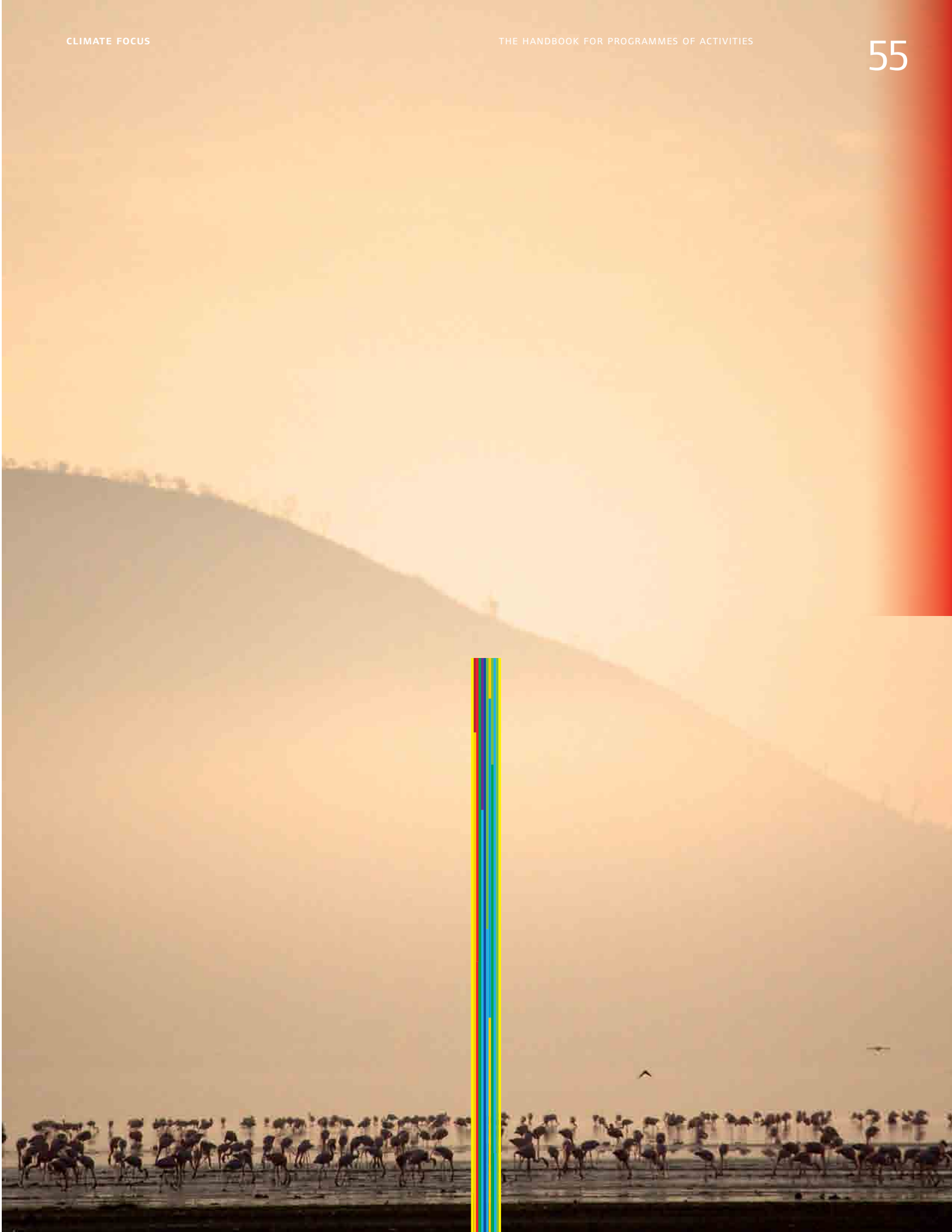
Not-for-profit organisations

Not-for-profit and non-governmental organisations (NGOs), including foundations and social and environmental charities, implement PoAs to improve social and environmental conditions in developing countries. There are several PoAs in the CDM pipeline that have NGOs as programme managers. One example is the methane capture and combustion from Animal Waste Management System (AWMS) of the Sadia Institute (the 3S Program), which aims to install over 1,000 biodigesters in farms in five provinces in Brazil. This programme is being coordinated by the Instituto Sadia de Sustentabilidade, a non-profit entity affiliated to Sadia, a large producer of chilled and frozen foods. The main reason behind its creation by Sadia was to enable the company to focus on the overall management of the PoA, leaving the specific tasks of the CME to an affiliated entity.

4.6 Further reading

- The “CME Starter Kit: A manual for management systems at coordinating/management entities” (Climate Focus 2012): provides practical guidance to CMEs on how to set up an effective management systems for their PoA.
- PoA Blueprint Book (KfW, Frankfurt, 2009): provides an overview of organisational models that can be used for PoAs and is a useful and interesting read. The book provides organisational blueprints for a broad range of PoAs, varying from household stoves to industrial boilers.
- UNEP Risoe, the “Primer on CDM Programme of Activities” (Roskilde 2009): provides an overview of the role of the CME and various actors involved in the development of a PoA. It presents various organisational models and some PoA project examples.

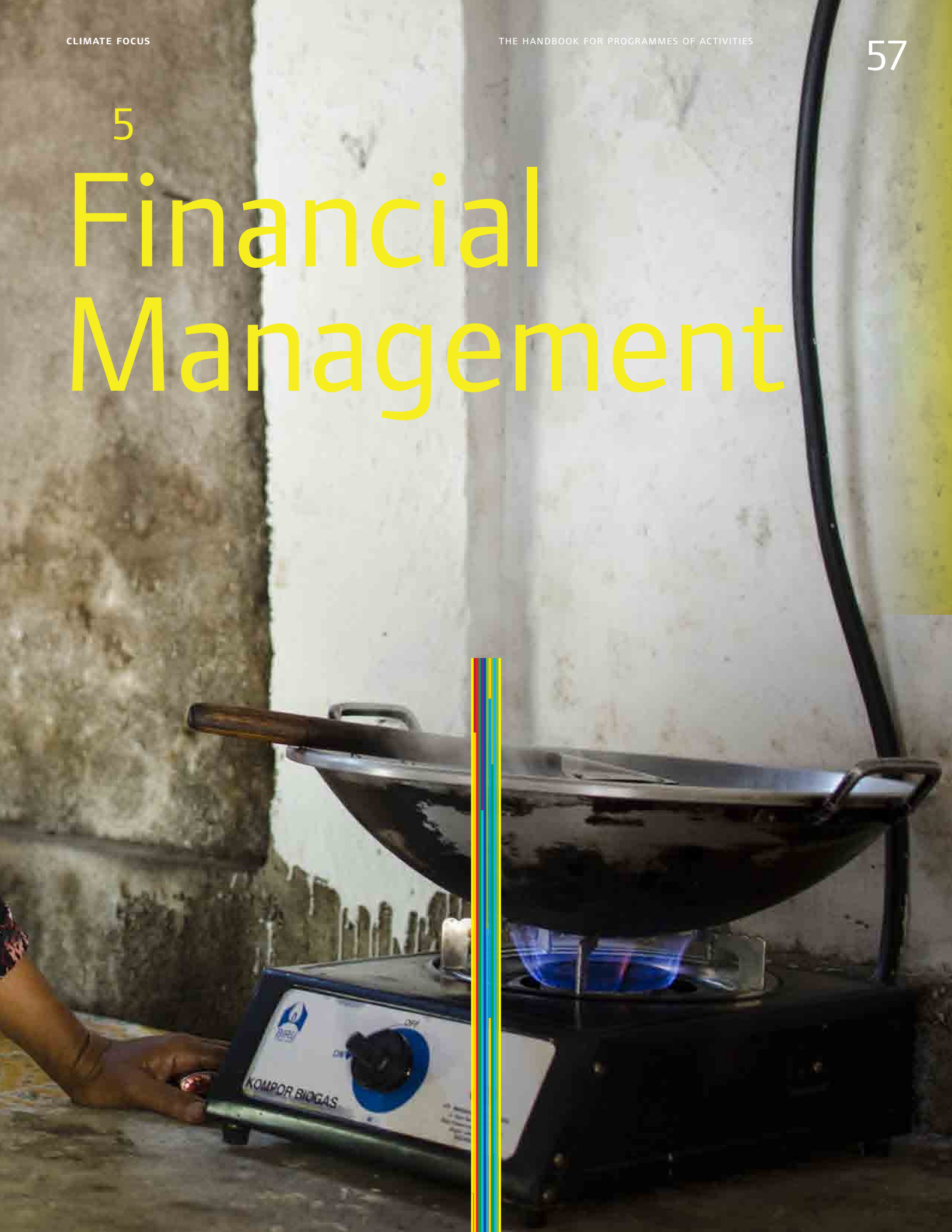






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Financial Management





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KOMPOR BIRU

5.1 Key recommendations

- In financial terms, emission reductions are a project asset.
- Leverage your carbon asset when sourcing other financing.
- Develop a solid business plan clearly outlining how carbon revenues will be used to support the programme.
- Identify the key risks threatening the success of the programme.
- Understand the benefits and risks behind different strategies of monetising carbon assets.
- Realise what your obligations are when taking up debt or offering shares to equity investors.
- There are various ways to source funding for your programme - combining different sources of funds is advisable.
- Be aware of the relevant carbon market regulations in the region where the CERs will eventually be sold.

5.2 Emission reductions as an asset

A PoA turns emission reductions into income that can support the activities under the programme through time. The carbon revenue stream may encourage and incentivise participants to join a programme because, for example, it allows the technology provider to offer a discount on its products, or because the carbon revenues make the investment economically more attractive. Having access to finance is a precondition for the growth of a PoA, and understanding the specificities of carbon finance and the opportunities it offers is therefore critical in putting together a successful programme.

Finding the right financial partner that understands how carbon finance enhances the business case of a programme is important. Most banks, private equity firms, investment funds and other organisations that may provide finance for the programme have limited understanding of carbon finance and engaging them in a programme often requires convincing and training. For a programme manager seeking a financial partner it is therefore crucial to understand how investors evaluate the risks associated with a programme and how carbon finance can be used to leverage funding. Only then will a programme manager be able to source start-up capital, negotiate a financing agreement and secure financial closure for the programme. This requires a thorough understanding of the merits of carbon finance and the ability to convey this understanding to financiers.

5.3 What does carbon finance offer you?

The future income stream generated by the sale of carbon credits presents a valuable security that makes the programme more attractive to investors. A programme manager needs to recognise the ways carbon finance can be used to strengthen the viability of the programme. There are three key benefits carbon finance can deliver:

1. Carbon finance can provide an incentive to end-users to participate in a programme

Carbon finance brings an additional source of revenue to an initiative, which can make a significant difference in viability and encourage end-users to join the programme. This is particularly relevant for programmes that are dependent on carbon revenues as their main or only source of income, as is the case with initiatives installing efficient lighting, cookstoves or biogas digesters. Ways carbon finance can be used to incentivise participants to join the programme include:

- Subsidising the sale of the product to the end-user or lowering the retail price. A good example of this can be illustrated with efficient lighting projects, where the end-user can purchase a lamp at a discount, or even receives the lamp for free.
- Covering programme costs such as dissemination of equipment, service and maintenance, programme coordination, monitoring and reporting. For example, household biogas PoAs often use carbon finance to cover maintenance and repair costs that are provided free-of-charge to end-users. This encourages end-users to purchase a biogas digester on a commercial basis as all additional expenses are covered under a guarantee.

When carbon finance is the sole or most important source of revenue, it is essential to share the proceeds in a transparent and equitable way among the participants. Inequitable distribution of CDM proceeds has proven to be a major reason for project failure in bundled regular CDM projects and will equally be a time bomb under a programme.



2. Carbon finance can help kick-start the programme by attracting upfront capital in return for future delivery of carbon credits

The first activities that need funding are drafting feasibility studies, developing a sound business plan, preparing CDM documents, the validation and the ensuing registration by the CDM Executive Board. During this initial phase, the uncertainty surrounding the financial viability of the programme is highest, since the programme only exists in concept and typically lacks collateral to secure capital.

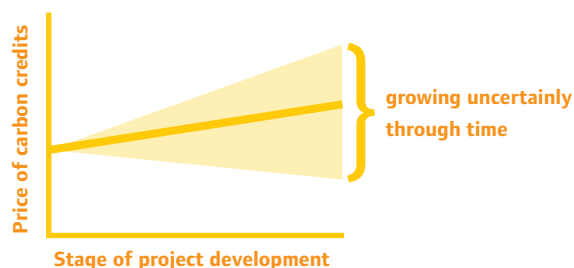
Where the programme needs upfront investment, the programme manager may solicit advance payments from the buyer of the future carbon credits. The buyer's willingness to provide an upfront payment depends on the perceived risks and market conditions. A clear business plan coupled with a financial or parent company guarantee will normally be a prerequisite for an upfront payment. Typical upfront payments may cover the costs of developing the carbon component: drafting a PDD, hiring a validator and registering the PoA at the UNFCCC. Other than that, upfront payments may cover setting up the management structure, initial legal costs, marketing and technology purchase. However, the latter typically requires more than a carbon purchase agreement. In return for offering capital upfront, buyers require a discount on the carbon credit price.

As the price discount can be significant, the programme manager needs to assess whether the costs of the upfront payment transaction are actually balanced by the opportunity cost of selling the carbon credits at a later stage. The more advanced the project is, the lower the risks; the better the negotiating position of the programme manager, the higher the price of the carbon credits that can be attained. On the other hand, waiting to sell exposes the programme manager to the price volatility of the market (see Figure 5.1).

When deciding to sell the carbon credits at a later stage, a programme manager can sometimes rely on non-commercial sources of funding. The PoA concept has been embraced by development banks and development organisations that have created funds to provide grants or loans at preferential conditions. This is especially the case for projects in Least Developed Countries.

Figure 5.1

Trade-offs between contracting a buyer for the carbon credits now or once the project is further advanced



3. Carbon finance can assist the programme manager to access other types of financing

Capital providers will base an investment decision on both financial and nonfinancial aspects. Lenders and equity investors in the regular financial markets focus their investment decision on the financial attractiveness and associated operational risks, while grant agencies, development banks and charities are likely to incorporate and reward sustainable development benefits in their decision-making process.

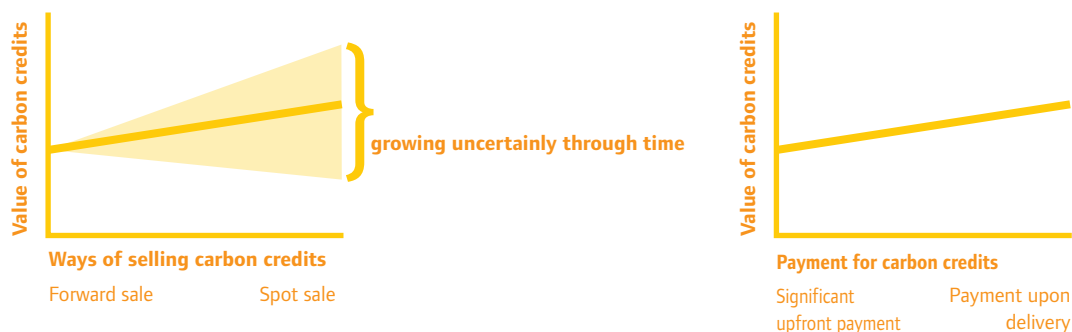
In some programmes, such as the distribution of energy efficient lamps or efficient cookstoves, the revenue received from the sale of carbon credits may be the only source of revenues generated by the activity. In programmes where renewable energy is generated and sold, carbon revenues increase the activity's internal rate of return¹ and can serve as a catalyst for attracting investors. In either case, the programme will face a financing gap at the inception phase since carbon revenues will only come in once the first subprojects under the programme are operational and the carbon credits are issued.

The business plan is the basis for marketing the programme to external investors. The primary aim of the business plan is to present the programme as a bankable venture. The carbon component of the programme strengthens the business proposition, as the emission reductions potential will be turned into a source of income that will increase the financial attractiveness of the activity. If a fixed-price carbon sales agreement is in place, revenues under such a contract can be regarded as long-term cash flow that is exposed to no or limited price fluctuation. Additionally, as the purchase and payment of carbon credits is usually agreed in strong currencies (generally USD or EUR), currency risk is low. This allows programmes situated in countries with low and volatile exchange rates to offer revenues in a strong currency, a security and collateral appreciated by investors.

¹ The internal rate of return is a valuation method used to determine the profitability of an investment.

Figure 5.2

Trade-offs between spot versus forward sale of carbon credits and between attracting upfront payment versus payment upon delivery



Box 5.1 Forward versus spot sale of carbon credits

If you do not seek upfront payment in return for a discounted price arrangement with the purchasing entity, there are two ways in which you can monetise the emission reductions potential of your programme:

Future delivery and future payment

A forward contract is an agreement that defines the terms and conditions of a future transaction between the seller and buyer of carbon at a pre-defined price (floating or fixed). Forward contracts are used by both parties to define the price of the future carbon credits. The agreed transaction price of future emission reductions depends on the level of risk the buyer associates with the programme. This risk is defined by the exposure to carbon risk, technology risk, country risk and organisational risk (see Section 5.4).

The price you will be able to secure for your carbon credits depends on whether you or the buyer accepts the delivery risk. By internalising the delivery risk and offering a 'guaranteed delivery', you can negotiate a higher transaction price. In case the programme underperforms and fails to deliver the contracted volume of carbon credits, you will however need to compensate the shortage by sourcing carbon credits elsewhere at the prevailing market price. When delivery risk is accepted by the buying party, delivery is 'non-guaranteed' and the transaction price will be discounted to reflect the probability of underperformance.

The price of the carbon credits can be floating or fixed. A floating price implies fluctuating future cash inflows that are benchmarked against the price of exchange-traded carbon credits. Although this arrangement may turn out beneficial in a scenario where the future price of carbon goes up, it may also have disastrous consequences for the programme if the odds turn. A fixed price, on the other hand, secures a steady inflow of revenue and facilitates better financial planning.

Spot delivery and payment

When you have secured financing for the development, implementation and operation of the programme, monetisation of the carbon credits can wait until they are generated and issued. Issued carbon credits represent minor delivery risk and thus have a higher market value than carbon credits sold on a forward basis.

Choosing this model does not necessarily guarantee the best return since carbon market uncertainties and fluctuations can bring the price up or down. This implies that the future spot price of guaranteed delivery can be lower than the current forward price of non-guaranteed delivery.

Finally, you do not have to sell all carbon credits under one contract but can also decide to sell part of the carbon credits upfront and part of them under a spot transaction.

5.4 Understanding the risks of a PoA

Investors will analyse the business model of a PoA and its financial viability by assessing whether the estimated future carbon revenues are likely to materialise. This requires a risk analysis. Risks can reduce the amount or delay the delivery of carbon credits. Understanding how capital is put at risk throughout the programme lifetime allows the programme manager to recognise the demands and expectations of investors. Furthermore, being aware of these risks allows the programme manager to minimise risk exposure by taking pre-emptive measures.

Carbon risk

Registration under the CDM is a precondition for any programme to earn carbon credits. With the exception of a few specialised carbon investors, most financiers have difficulties assessing the programme and registration risk of PoAs, since it is very specific for carbon transactions. Carbon risk relates to the procedure the programme needs to complete to be registered under a carbon standard and to have its carbon credits issued. Generating carbon credits consists of several steps, beginning with drafting a PDD and ending with the issuance of credits by the CDM Executive Board. The further a CDM project is in the development cycle, the smaller the perceived risk. Once the programme is registered, the programme developer will have a stronger negotiating position, opening an opportunity to settle with a higher CER value.

Technology risk

Capital providers will assess the track record and efficiency of the proposed technology. A key concern is the ability of the installed equipment to perform according to specifications and generate the anticipated emission reductions. Proven technology is best, while complex technologies that are difficult to disseminate are considered more risky. Providing data on the performance of the technology or setting up a pilot project allows the investor to determine the emission reductions potential and subsequent carbon revenues more accurately. This is relevant for innovative technologies and proven technologies alike, since for both their performance needs to be demonstrated in local conditions. Including maintenance services and training for operators and construction companies reduces the technology risk further.

Organisational risk

Effective organisation is crucial. Investors need confidence that the programme manager and the supporting organisations have the capacity and necessary experience to implement and operate the programme. A key uncertainty of a programme is its organisational ability to achieve the envisaged dissemination targets of the technology that is being implemented. Programme dissemination will have a direct relationship with the volume of carbon credits generated by the PoA and will be a risk that potential financiers will look at closely. Most programmes rely on the adoption of a certain technology by a large number of end-users, households or small companies and there should be a plan in place on how to inform, engage, and incentivise these end-users to participate in the programme. How this level of dissemination can be achieved and the availability of distribution channels should be clearly outlined in the business plan.

Country risk

The PoA concept was supported by the notion that it would bring carbon finance to countries that had not or hardly benefited from the CDM before. In response, many programme managers have indeed targeted countries with little or no previous CDM activity, even when these countries lack political stability or have or have weak legal systems. Attracting capital in these countries is difficult as investors are reluctant to invest in countries with high political and business risk. Investors will seek evidence of governmental support for the programme and its development under a carbon standard, and will assess the business plan for clues on how certain inherent business risks will be mitigated or minimised.

Operational risk

Finally, the key risk parameter remains the stage of development of the programme. A programme manager of an initiative with issued credits has demonstrated that he can overcome all relevant hurdles. A programme manager that is only in the inception stage of implementation on the other hand faces the challenge of convincing an investor of its experience and capacities, and demonstrating that the programme is robust and well designed.

Figure 5.3:
Risks related to the generation of carbon credits

Technology risk		Organisational risk	
High risk	Innovated, not tested	High risk	Brand new structure with undefined roles
Medium risk	Uncertain technology	Medium risk	Roles not defined or cooperation not tested
Low risk	Proven technology	Low risk	Cooperation with good track record
Country risk		Operational risk	
High risk	High corruption, political instability	High risk	Programme in concept stage, before/under evaluation
Medium risk	Weak governance	Medium risk	Programme being implemented and registered
Low risk	Investor friendly, strong government	Low risk	Project with issued credits



Box 5.2 Risks related to the generation of carbon credits

Approval or endorsement of the Designated National Authority (DNA) of the CDM project:

- Has a Designated National Authority been established? Has it already approved PoAs? Does it function properly?
- How long does it take to obtain an approval?

Validation of the PoA and inclusion of CPAs:

- Can you substantiate that you have the capacity and experience to guide the project through validation and the CPAs through the inclusion procedure?
- Do you have a contract with the validators with clear deadlines?

Registration of the PoA:

- Does the project rely on a technology and methodology that is common practice under the CDM?
- Are there precedents of issues that other projects have faced during registration that may apply to this project as well?

Verification of emission reductions:

- Is the monitoring system robust?
 - Is a contract with an experienced verifier in place?
-

5.5 Types of finance

The financial and developmental aspects of a programme will determine the type and terms of financing available for the implementation of the programme. Types of finance include debt, equity, grants and subsidies. Programme managers seeking financing may seek any of these options, or alternatively use a mix.

Equity

Equity describes the share capital provided directly by shareholders. Shareholders include external financiers (venture capitalists, private equity investors, CDM developers) and the programme manager itself. Investors that provide equity are rewarded by dividends and in the long run by increased value of the share capital, but run the risk of losing their entire stake if the programme fails. Equity represents a residual claim, and can only realise a return once other providers of finance have been satisfied.

Investors will weigh up a range of criteria before engaging in a programme, including the experience and capacity of the programme manager, the risks related to technology performance, and the emission reductions potential. Funds are typically provided through periodic capital injections based on successful achievement of pre-determined milestones.

Equity can play an essential role in the start-up phase of the programme, where the risks associated with the activity are high and debt may be inaccessible. Most programmes rely on a mix of equity and debt, as shareholders generally welcome debt financing's ability to allow investors to realise a higher rate of return due to its leverage effects.

Debt

Debt finance refers to loans provided by development banks, commercial banks and micro-finance institutions. Loan capital is provided based on terms and conditions, including the required interest payments (representing the cost of borrowing those funds) and a repayment schedule of the principal. To attract debt capital, the programme manager needs to provide comfort to the prospective lender that there will be enough money to service and repay outstanding debt. Forward sales contracts for carbon credits can be used as collateral for debt.

There are different types of debt that programme managers can apply to finance the programme. Their availability depends on the specifications of the programme and its application. Programmes that rely on capital-intensive technology can attract debt financing from development and commercial banks. These institutions can provide large loans, backed by collateral and with long-term tenure. Programmes that rely on small equipment, like energy systems at community or household level, are more likely to arrange financing through micro-finance institutions. Micro-financing allows for the issuance of small loans directly to the end-users of the technology, rather than accruing debt at a central level.

Using debt allows the programme manager to access funding while maintaining ownership of the programme. On the flip side, debt financing implies a contractual obligation to meet periodic payments. Lenders condition the cash flow available from carbon revenues to be used to pay the outstanding debt. These terms and conditions can limit the possibilities of the programme manager of optimally using this capital.



Grants and subsidies

Grants and subsidies do not need to be repaid. A grant is an amount of money given, usually by governments, development agencies, NGOs, or philanthropic foundations, to fund activities meeting specified terms. Grants may be available for sponsoring pilot studies or facilitating the start-up of a PoA. Subsidies tend to be long-term

financing schemes that provide co-financing for a programme. Usually provided by governments, subsidies constitute money made available to stimulate activities that contribute to certain policy objectives.

Box 5.3 Committing to buy back carbon credits at fixed price to attract investment

Atmosfair invests in emission reduction projects worldwide to generate carbon credits that can be used for offsetting purposes by firms or individuals. The company is involved in a number of PoAs. To scale up the potential of its programmes, the company offers the possibility for equity investors to get involved in a specific PoA in return for a commitment to purchase back generated carbon credits from the investor at a fixed price. By agreeing to off-take the carbon credits at a pre-defined price, the investor can calculate expected returns with more certainty, facilitating the investment decision. Atmosfair in turn needs to ensure that it fetches more attractive prices for these carbon credits on the market to avoid losses. Seeking involvement in PoAs with clear sustainable development benefits, establishing good relations with a network of potential buyers, and selling in small volumes is the strategy followed to maximise the value of accumulated carbon credits.

(Florian Zerzawy, Atmosfair)

Box 5.4 Types of debt finance

The cost of loans depends on the exposure of the programme to financial distress. The higher the perceived risk of the programme, the higher the interest rate charged. The seniority of a loan and extent of collateralisation are other factors affecting the interest rate.

Senior vs. junior.

Senior debt is the highest-ranking form of debt and is associated with the lowest risk. This class of debt is the first in line for repayment in the event that the programme manager defaults. Senior debt represents the cheapest source of capital in terms of interest payments, but may involve collateral and debt covenants that limit the programme manager's capacity to operate its assets or proceed with certain investment decisions. Junior debt is subordinate to the senior and will only be paid once the holders of senior debt have been satisfied. This debt is often unsecured and comes at higher interest rates.

Secured vs. unsecured.

A loan is deemed 'secured' when collateral is pledged. This means that the loan is asset-backed and, in the event of default, the lender can claim the pledged assets from the programme manager to make up for the default on debt payments. Unsecured loans are loans that are not secured against the borrower's assets. These present a higher risk to the lender and require higher interest payments than secured debt.



5.6 Examples of financing schemes for PoAs

There are numerous ways of structuring your programme financially, ranging from dependence on subsidies and grants to more typical project finance structures combining debt and equity. Key characteristics of the PoA – such as the number and type of participants involved, the location, and the technology used – will determine which financing solution will best fit your programme. The examples presented below describe possible financial structures for PoAs.

Example 1: Subsidy financing

This model is applicable to programmes where subsidy capital made available by a governmental entity partially or fully covers the investment costs of the PoA. The programme manager is either the governmental institution itself, or an independent entity that facilitates the use of subsidy funding. Carbon finance can make an existing subsidy scheme more attractive by reducing the required upfront investment.

By linking the programme activity to carbon finance, the programme manager can use generated carbon revenues to increase the subsidy level, improve outreach and fund maintenance and repair activities to stimulate further adoption of the technology and ensure its long-term operation. The role that the subsidy capital plays depends on the specific conditions and scale of the subsidy.

In programmes where the subsidy covers a majority of the required investment costs, carbon revenues can suffice in closing the financing gap. However, in most cases government funds will only partially cover the expected costs (10% - 50%), meaning that the rest of the financing will need to be arranged by the programme manager - through debt or equity - or needs to be supplied directly

by the individual programme participants (those who integrate the programme as CPAs or as a subproject within a CPA). Involving participants financially in the programme is important as it creates a feeling of ownership and increases the probability that the applied technology will be taken care of.

Example 2: Equity financing

Under the equity model, the programme is sponsored through one or several equity investors. Equity capital may come directly from the programme manager or be offered by outside investors, such as specialised CDM investors, utility companies or institutional investors. These can be either from international or local investors.

An advantage of using equity is that revenues, including those from carbon credit sales, can be retained within the programme as no capital is diverted to service debt payments to loan providers. In programmes entirely financed by equity, generated financial returns and carbon credits are shared among the capital providers. Certain investors, such as international utility companies, will be interested in the resulting carbon credits that can be used for their domestic compliance, while others expect to capitalise on the carbon credits by selling them on.

In return for giving away the ownership rights over the generated emission reductions, a programme manager expects support. A programme manager can lower the financial burden carried by the participants in the programme by, for example, offering the technology at a discounted price. Providing installation and maintenance services at no cost will enhance the attractiveness of the programme, while at the same time improve the overall performance level.

Figure 5.4
The subsidy model

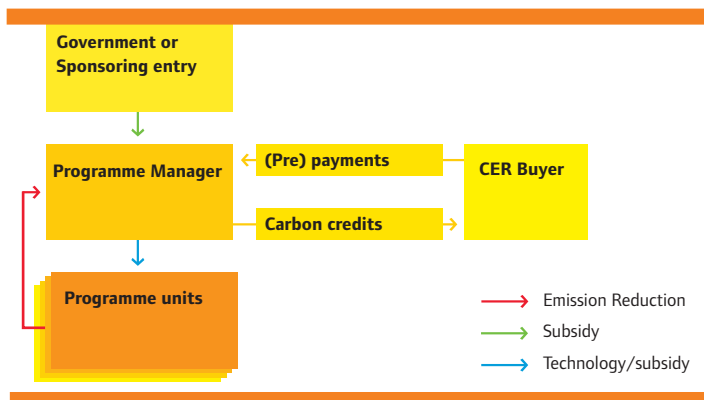
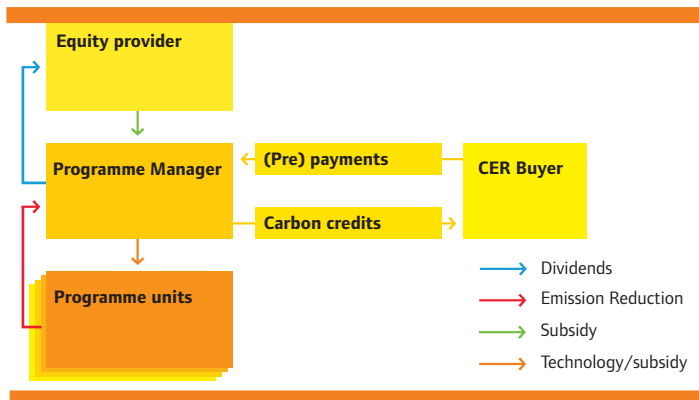


Figure 5.5
The equity model



Example 3: Equity and debt financing

Equity and debt financing can be combined. Equity capital will often be the only available source of finance in a programme’s early stage of development, as debt providers will be reluctant to engage in a programme that has little or no collateral to offer. This implies that attracting debt capital before securing a buyer of the carbon credits can be difficult, especially for programmes that apply technology of minor or no collateral value, such as efficient cookstoves or lighting. Programmes involving significant physical assets, such as large hydro or wind projects, will find it relatively easier to source debt finance, as the risk-return trade-off will be more attractive given the higher collateral value.

When providing a loan, debt providers want to see that the programme generates sufficient cash flow to service the interest payments and repay the outstanding debt. Long-term power purchase agreements, letters of credit and fixed price carbon sales are what debt providers like to see, and will allow the programme manager to bring down the cost of capital.

As part of the future generated cash flow will be needed to service debt payments, programme managers need to keep in mind that not all of the revenue generated by the sale of carbon credits will remain within the programme or become available to equity partners.

Besides ensuring sufficient cash flow and collateral is available, debt providers often require a minimum level of equity capital before engaging in a PoA in order to ensure ownership and active participation by the organisation acting as programme manager. Although average debt-to-equity ratios tend to be around 7:3, determining the best financial mix for a programme needs to be assessed on a case-by-case basis.

Example 4: Micro-finance

Programmes lacking significant upfront capital investment costs per participant and involving a large number of participants are associated with specific risks that many regular debt providers will avoid. Technologies like small biogas digesters or efficient cookstoves offer little collateral, and due to the number of participants involved, managing and monitoring repayment needs to happen on the ground.

Micro-finance institutions have the local expertise and outreach to serve the financial needs of many participants that require support to purchase particular equipment and join the programme. Typical micro-finance loans are short-term and are meant to allow the participants to repay the outstanding debt within weeks or months. As the name indicates, the value of the loans is also limited, and tends to be limited to several hundreds of dollars per borrower. To make the programme more accessible to participants, the programme manager can offer additional support by providing the particular equipment below market price, thereby allowing even the poorest participants to join. The value of future carbon revenues, given that their ownership is secured by the programme manager, can be used as security, allowing for more attractive loan conditions.

Figure 5.6
The equity/debt model

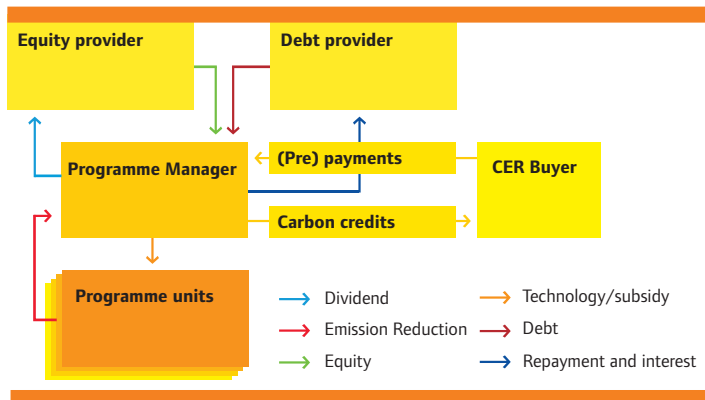
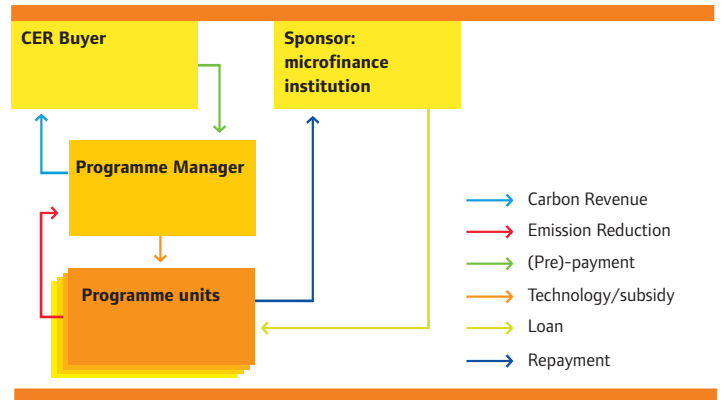


Figure 5.7
The micro-finance model



Box 5.5 Financing for the Luz Verde PoA

Dutch banking group ING Bank financed the first registered PoA, the Luz Verde Programme in Mexico. This was done through a loan covering the distribution of one million energy efficient lamps (Compact Fluorescent Lamps or CFLs). Getting the right partners on board was a prerequisite for ING Bank to get involved in the programme.

Efficient lighting distribution programmes offer no assets that ING Bank could consider as collateral. For this reason, ING Bank was careful in getting engaged in the Luz Verde PoA. As a condition, it required that a CER buyer be found that would be willing to buy both pre-2012 and post-2012 CERs at a fixed price. Eneco Energy Trade B.V, the buyer of the Gold Standard CERs from the first CPA from Luz Verde, agreed to these conditions. This completed the partnership and allowed the project developer, Cool nrg, to start with programme implementation.

Aside from securing the financial flow of carbon revenues, ING Bank also carefully assessed the experience and capacity of Cool nrg, the programme's CME. Prior to setting up the Luz Verde PoA, Cool nrg had been involved in a range of energy efficiency programmes, including the distribution of light bulbs. Cool nrg's own experiences, its access to a network of local distributors in Mexico and having an equity stake in the programme, gave ING Bank the confidence that Cool nrg was the right entity to act as the CME and guide the programme to a success.

(Stephen Hibbert and Stirling Habbitts, ING Bank)

Box 5.6 Designing household payment schemes

To ensure that technological uptake is successful it is vital that households are able to afford the technology offered under a PoA. The 'ETA Solar Water Heater Programme in South Africa' has designed a novel payment scheme for participating households that does not require them to take on an additional financial burden after acquiring the solar water heating (SWH) system.

The SWH installed replaces the household's conventional water heating system. Households are required to pay for their SWH in monthly installments equal to, or less than, the cost of water heating they would otherwise have paid under their previous conventional system. For example, if a household pays USD 50 per month in bills, USD 20 of which is for water heating, this will be redirected to pay installments of USD 20/month towards the new SWH. The PoA therefore avoids placing an additional financial burden on households, overcoming a barrier and facilitating access to the technology. Once the SWH is fully paid off, water heating will be provided for free to households for the rest of the technology's lifetime. Carbon finance for the programme is used to cover the costs of installation and to provide a maintenance service to users.

(Lehlogonolo Seoka, CEF Carbon)



5.7 Market context: supply and demand for CERs from 2013 onwards

PoAs offer advantages over classic CDM projects, but is there also a demand for the carbon credits they generate? Programme managers should always be aware of the relevant carbon market regulations in the region where the CERs will eventually be sold. This includes checking what the quantitative and qualitative restrictions for CERs in general, and for PoA CERs in specific, are.

The EU Emissions Trading Scheme (EU-ETS) is a case in point. The EU-ETS caps the emissions of large emitters by allocating installations a fixed number of tradable emission allowances. An installation that is expected to emit more than permitted can buy carbon credits generated by CDM projects and use these for own compliance. From 2013 onwards the rules on the eligibility of CERs within the EU-ETS have changed. Carbon credits from new projects registered after 2012 will only be eligible for compliance in the EU-ETS if they originate from Least Developed Countries. This means that CERs generated from programmes registered before 2013, subject to no other quality restrictions, will be eligible for compliance and therefore of interest to buyers within the EU-ETS. This includes credits from new CPAs included to the programme after 2013. If the PoA is registered after 2013, only the credits from Least Developed Countries will be eligible for EU compliance. Since Least Developed Countries typically present low carbon-intensive economic activity, the aim is to promote sustainable development and decentralised energy supply. These are natural focus areas for

PoAs. Furthermore, carbon credit buyers and investors generally lean towards projects that carry higher environmental and social credentials, a feature inherent to many PoA types.

There also exists potential future demand stemming from other domestic emissions trading schemes, including New Zealand, Australia and Japan. These emerging emissions trading schemes may look favourably to offsets generated by PoAs targeting poorer communities and regions in developing countries.

Developments on both the supply and demand sides show that there is room for growth of emission reduction activities following a programmatic mode. Since the EU-ETS has trade volumes that far exceed those of any other carbon credit market, its focus on Least Developed Countries is likely to increase demand for PoAs. On the supply side, the ability of PoAs to shorten the time needed for a project to gain approval under the CDM, as well as their growth potential, may stimulate additional interest in the CDM and create additional supply.

5.8 Further reading

A valuable source of information regarding financing emission reductions projects is the “Guidebook to Financing CDM Projects” prepared by CD4CDM and EcoSecurities². The guide provides an overview of the types of finance available and provides insights into the financial assessment of projects.

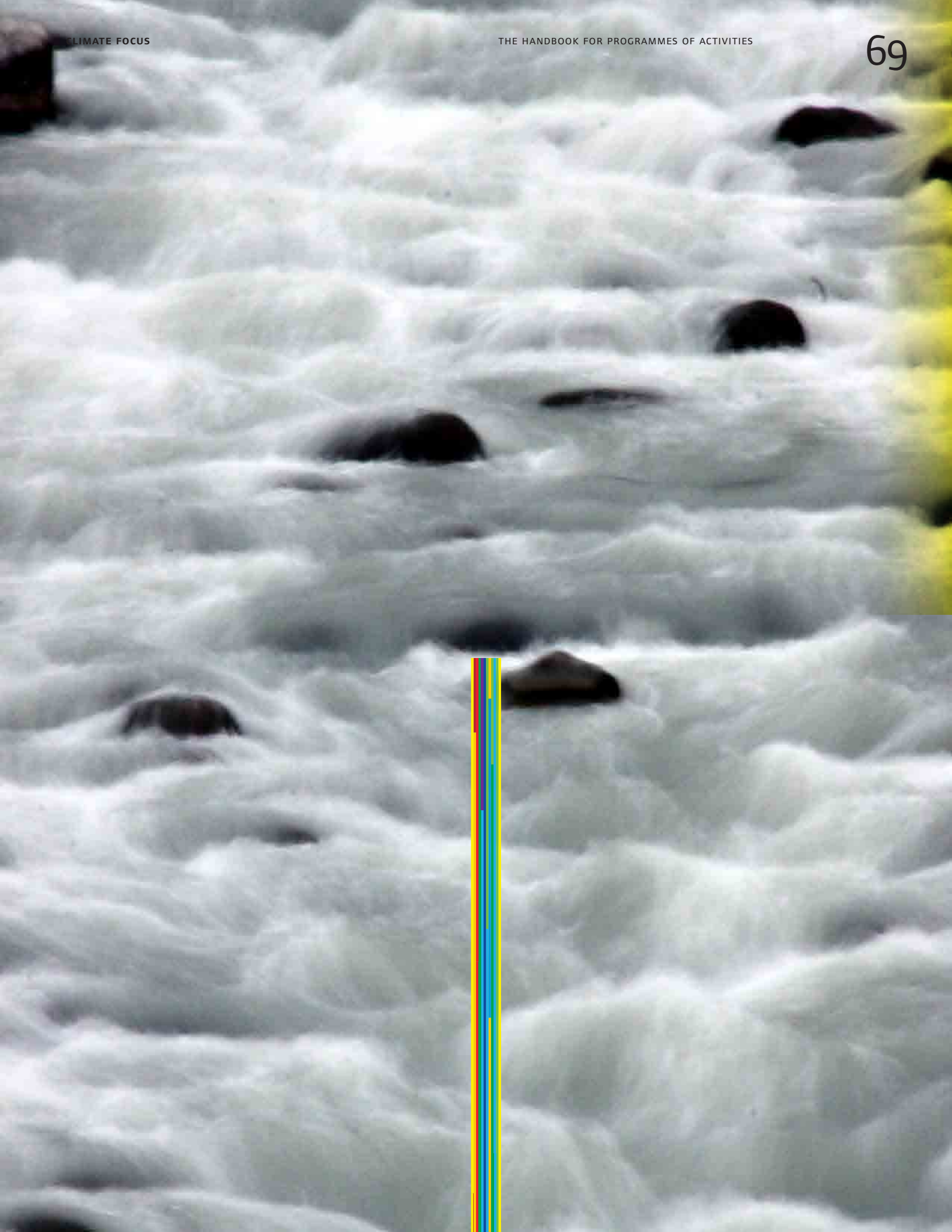
Box 5.7 A changing market

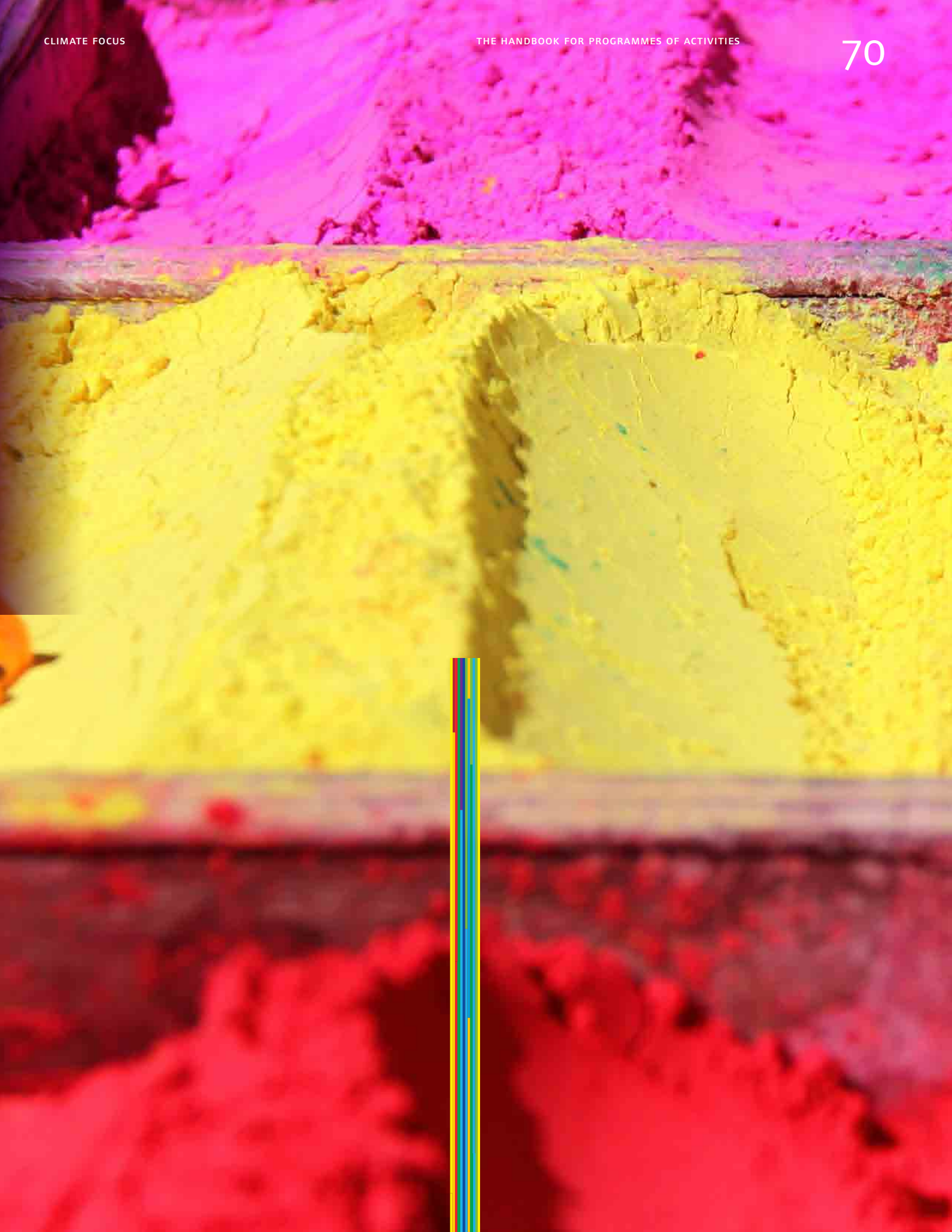
Over the past year, carbon prices have declined in reaction to uncertainty concerning demand for credits. The downward price trend has impacted the terms under which transactions take place in the market, which affects carbon revenues. Before the recent price declines, sellers favoured floating price structures over fixed price arrangements hoping to cash in on the upside potential for gains in a market of rising prices. Buyers, on the other hand, were cautious to expose themselves to price escalation and pushed for fixed price carbon off take agreements to lock in expenses. Today, it is the buyers that push for floating price carbon off take arrangements, commonly capped at a percentage of the traded CER price to limit financial exposure.

Such floating price structures can be inconvenient for project developers as they make it difficult to forecast future revenues from carbon credits sales. To limit downside risks, programme managers should ensure that a fixed floor price is included in the sales agreement to give the programme a level of comfort in case prices decline significantly through time. Another way to limit downside risk is to agree on both a fixed and a floating price element. For instance, buyers may accept paying a fixed price for half of the contracted volume, with the second half of the transaction being valued at a floating price.

² The guidebook is available from <http://cd4cdm.org/Guidebooks.htm>







6

Legal Management



6.1 Key recommendations

- Define key stakeholders involved in the PoA and establish an appropriate incentive structure.
- Understand any particular requirements under local law that may be imposed by the DNAs.
- Ensure that a complete set of contracts covering all relevant relationships is in place.
- Make a clear choice on who has the rights to emission reductions and future carbon credits.
- Define clearly the roles of programme manager and of CPA developers.
- Keep the legal arrangements flexible and able to accommodate changes during the PoA life-cycle.
- Keep end-user agreements simple. Simplicity and easy communication are the key to successfully involving households in a programme.

6.2 General legal matters

A single PoA can generate large numbers of legal relationships. In the context of multiple stakeholders, the importance of a robust and consistent set of contracts cannot be underestimated. A well-designed network of contracts (one in which the rights and obligations of the multiple stakeholders involved are clearly defined and enforceable) creates a robust framework for the implementation and operation of the PoA. When adequately drawn up, PoA contracts not only satisfy general expectations of legal security, but also guide the programme manager through the different stages of the PoA implementation and contribute substantially to the programme's success.

A PoA consists of a potentially large number of CPAs, each of which, in turn, can contain a potentially large number of individual subprojects and end-users. The relationships between the stakeholders involved in a PoA are governed by formal long-term agreements between the relevant entities, including, the sale and purchase of carbon credits, the financing by sponsors and investors, the purchase, licensing, or lease of the applicable technology, installation and maintenance of equipment, and the contract with end-users in the programme. The relationships of potential actors in a PoA are illustrated in Figure 6.1¹.

While in theory it is possible to set up a PoA without a single written contract, practice shows that verbal agreements tend to lead to uncertainty and misunderstanding about the exact nature of the rights and obligations of the relevant actors in the programme. It is therefore advisable that formal written legal arrangements are established at the initial stage in the process of setting up a PoA. These formal legal arrangements should clearly define the responsibilities of the different actors involved in the programme, the time frames for fulfilling obligations, and define the incentive mechanisms for each stakeholder to perform according to the agreed timelines and obligations.

The programme manager will usually be involved in most contracts related to the PoA and needs to put in place the relevant contractual provisions to ensure timely performance of the obligations of the different stakeholders involved in the programme. The programme manager must be directly involved in the contractual relationships between all stakeholders involved in the programme. This will enable exercising greater control over the progress of the PoA and show potential investors that the programme manager is also in control of the PoA in the legal sense.

¹ In this section, unless otherwise specified, we assume that the programme manager also exercises the role of CME. For more information about the distinction between programme manager and the CME see Section 4.2.

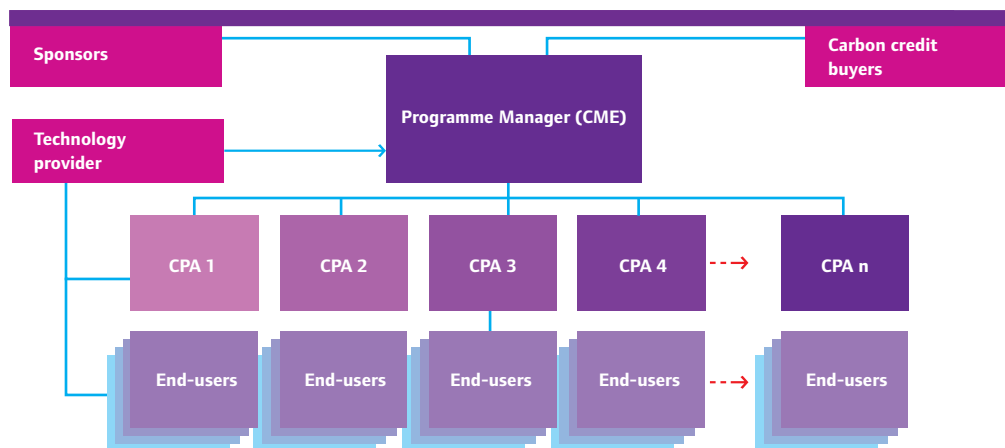


Box 6.1 Initial rights to carbon

Carbon credits generated under the Kyoto Protocol are created under international law between the countries that have ratified the treaty. As treaties are agreements between countries, these carbon credits are owned and held initially by the countries that are signed up to the treaty. The Kyoto Protocol, however, clearly allows for the participation of non-state entities in the CDM. Companies and NGOs may receive government authorisation to participate in a CDM project. This authorisation is required under the Kyoto Protocol for non-state entity participants and is seen as the transfer of rights to CERs to the entity developing and implementing the project.

While under international law carbon credits are interpreted as “sovereign assets”, when it comes to the implementation of projects at the domestic level, the rights to CERs and other types of carbon credits (outside the Kyoto context) are determined by national laws. As very few countries have laws that clearly define the ownership of carbon credits, national laws related to general commercial transactions will typically apply. In most jurisdictions it is argued that the entities that own the emission reductions project are also assumed to be the owners of the carbon credits. These original owners may contractually transfer title and ownership to carbon credits to other entities.

Figure 6.1
Actors and relationships in a programme



Two legal issues that will normally have to be dealt with at an early stage by programme managers are financial support and title to carbon credits. The development of PoAs often requires upfront capital for preparing the necessary project documentation and engaging technology providers and end-users. Any entity agreeing to pre-finance a programme is likely to undertake a detailed assessment of the capacity of the programme manager (and other relevant PoA stakeholders) to timely perform the tasks assigned to it. Unless the programme manager is able to show that it has in place an adequate contractual arrangement, the chances for securing start-up finance will be slim.

Clarity over title to carbon credits is also important. Typically, more attention is required from project developers and investors to sort out carbon ownership issues in the context of PoAs than in regular carbon projects. In a regular carbon project, the entity holding the rights to and control over the generated emission reductions is generally presumed to be the project owner, i.e. the entity that designs, registers and runs the project.

In a PoA, by contrast, there are many stakeholders that can potentially compete for the ownership of the carbon credits flowing from the PoA. This includes the programme manager that oversees the programme; a separate entity that supervises the implementation of particular CPAs, which could be, for example, a retailer; technology providers who may lease or sell the technology for the programme; and the end-users who will normally be directly responsible for the day-to-day use and application of the technology.

There may also be third parties with an interest or claim over the carbon credits generated by the programme, such as consultants involved in developing and managing the carbon credits, micro-finance loan providers or governmental entities offering subsidies to the development of the PoA. In the absence of domestic laws or clear contractual guidance, any of the above-mentioned actors may eventually claim a right to the carbon credits generated by the PoA. To avoid such competing claims and to secure a legally robust programme framework, the presence of contracts between the various stakeholders involved and a clear allocation of carbon rights is paramount.

6.3 Legal steps

Mapping out stakeholders and relationships

The first step for the programme manager will be to define the main objective of the programme and identify the different entities that will be involved in it. To ensure operational efficiency and a clear allocation of tasks and duties among the stakeholders involved, legal arrangements are of key importance. Some level of flexibility will be needed in the different arrangements to adjust to the long-term nature of these contracts, in particular, given the likelihood of change of stakeholders (including government authorities, technology providers, homeowners, and even programme managers), and/or of technology used.

At the design and project cycle level, the programme manager will normally be with the focal point between the validator, DNAs, the Executive Board, and the UNFCCC secretariat. At the implementation level, relationships will typically be formalised with foreign carbon credit buyers and investors, technology providers, end-users, and other intermediaries that may play a role in reaching out to end-users (such as CPA developers and local authorities).

Depending on the experience and capacity of the programme manager with carbon offset project development, a specialised carbon consulting company may also be engaged for preparing the PoA-DD and CPA-DDs and responding to the questions and concerns raised by the UNFCCC auditors and bodies. Elaboration of PoA-related documents should also be initiated at an early stage.

Defining the incentive structure

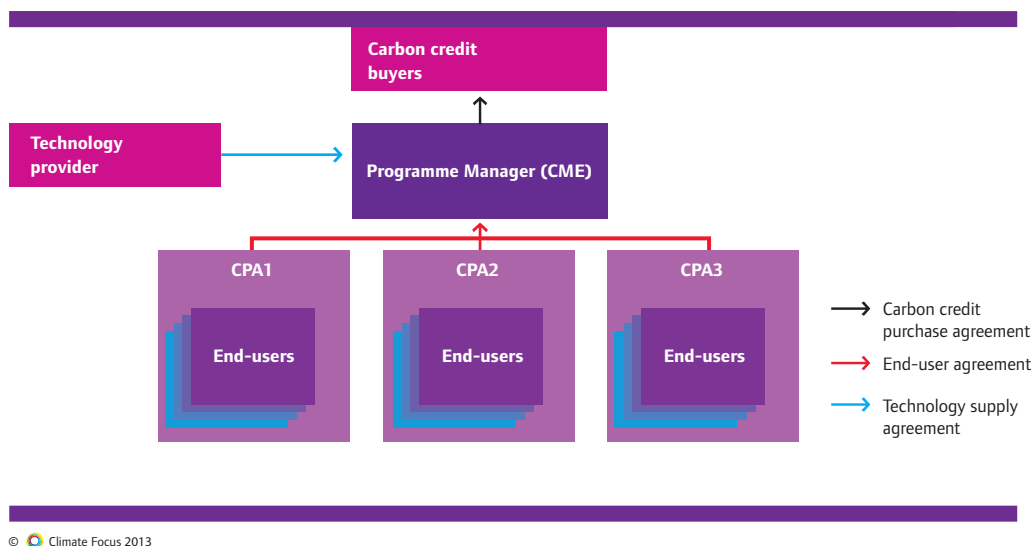
Once all relevant players have been identified, the project manager can define the incentive structure for the participation of the various stakeholders. Questions that usually need to be answered at this stage are: How are end-users going to benefit from the programme (i.e. a price discount on the technology, tax rebate, subsidies, lower interest rate through micro-financing, energy savings, etc)? Is the technology being leased, licensed, sold or donated to end-users? How are technology providers and intermediaries being remunerated? Who will be the entity responsible for marketing and selling the carbon credits? What is the remuneration structure applicable by programme managers to CPA developers (when the PoA umbrella is outsourced to CPA developers)?

Of vital importance in the context of a PoA is that a complete set of contracts is put in place, ranging from the entity that is closest to the programme activity (e.g., the end-user or installation operator) to the carbon buyer. When the programme manager is the entity responsible for marketing and selling the carbon credits to international buyers and investors (see Figure 6.2), he should ensure that all agreements entered into with end-users and technology providers expressly assign all rights to the programme manager in relation to greenhouse gas reductions and carbon credits generated under the programme. The contracts should contain provisions which prevent end-users to participate in other similar mitigation programmes in order to avoid double-counting of emission reductions.

When public subsidies are available, the programme manager should clarify (through a memorandum of understanding or other legal instrument) the issue of rights to emission reductions and future carbon credits with the relevant public agency financing the activities under the programme.



Figure 6.2
Agreements under a PoA

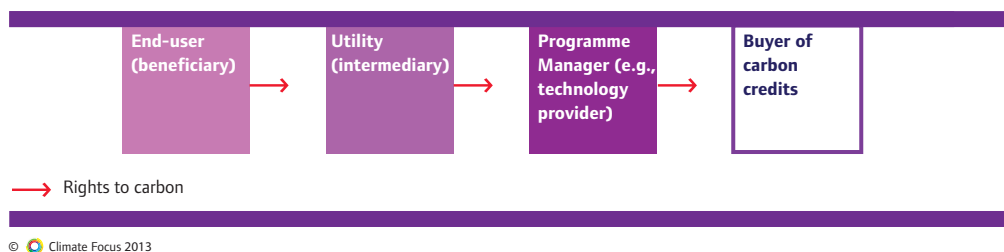


If a programme manager relies on third parties to access end-users (such as a CPA developer or another intermediary), contractual provisions clearly allocating rights to carbon credits would be needed in both relevant agreements: that between the end-user/ installation operator and the intermediary company; and between the intermediary and the programme manager.

For instance, a PoA with the objective to replace old inefficient refrigerators by new, more efficient models, could use an electricity supplier as an intermediary between the programme manager (in

this illustration, a technology provider) and the end-user (the beneficiary). In this case, the agreements between the electricity supplier and the beneficiary would state that the rights to emission reductions are thereby transferred to the electricity supplier and that the beneficiary has no claim towards the carbon credits arising from the operation of the new refrigerators. Similarly, the agreement between the programme manager and the electricity supplier would also specify that all rights to emission reductions associated with the operation of the refrigerators are assigned to the programme manager. Figure 6.3 illustrates this scenario.

Figure 6.3
Transfer of rights to carbon



The entity fulfilling the role of programme manager will also normally be the entity selling and marketing the carbon credits. In these situations, the programme manager must also retain all carbon rights under the PoA. Reasons for having the programme manager as the seller of carbon credits include:

- The entity entitled to sell the carbon credits and benefit from the associated payments should have some control over the programme in order to give the carbon buyer the confidence that the seller is able to live up to its contractual obligations;
- The programme manager is normally the entity exercising the role of CME². This is important because under the CDM, the CME is a mandatory project participant (and focal point) who has first-hand control over any issued carbon credits;
- CPA developers may not have the necessary experience to develop the documentation and carbon-related aspects of the CPA; and
- Buyers of carbon credits perceive the transaction and delivery risks to be higher if there are several entities involved in the process, as this may lead to coordination problems and competing claims.

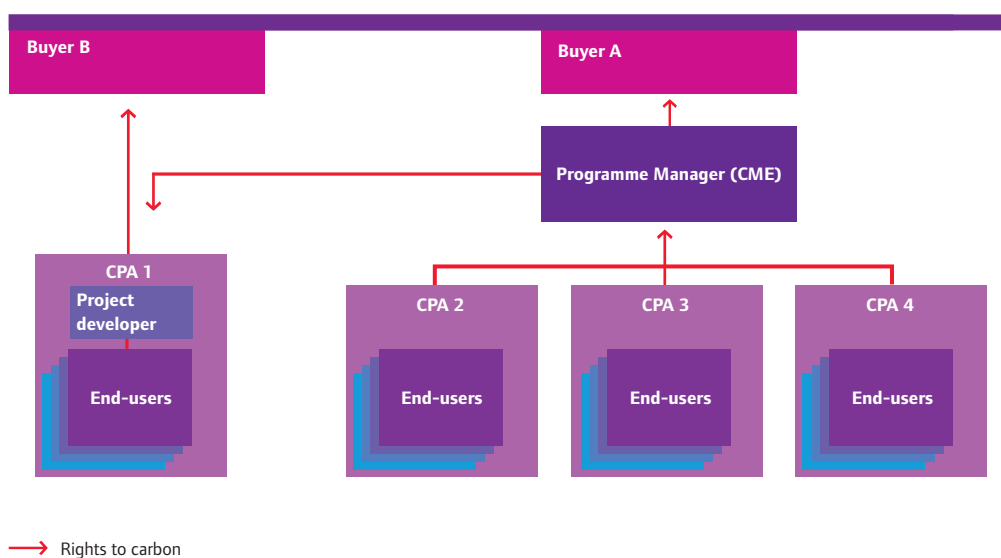
However, this is not to say that other structures cannot exist under PoAs. The CDM rules do not require any pre-defined structure for a PoA, leaving that decision to programme managers and DNAs. Hence, while the programme manager must initiate the PoA, CPAs and CPA developers may decide to join in only at a later stage. In addition, it is worth remembering that CPAs have their own crediting period, increasing the opportunity to manage the generation and sale of carbon credits more effectively.

This flexibility leads to the possibility of alternative PoA structures. One such possibility is a decentralised form of PoA, where the programme manager is not deeply involved with all CPAs, but 'outsources' the PoA design to independent CPA developers. In situations where CPAs are large or require a complex micro-management, the decentralised approach may indeed prove an attractive option.

Anecdotal evidence shows that some programme managers are already experimenting different arrangements, where the PoA is opened to CPA developers across one or more countries without the programme manager necessarily assuming the role of overseeing implementation of each CPA. In these instances, the CPA developer would likely retain the carbon rights associated with its individual CPA and sell the resulting carbon credits directly to a buyer or investor.

For that purpose, an agreement between the CPA developer and the programme manager would be required in order to clearly define responsibilities of each party and allocate rights to the carbon credits. The CPA developer would be able to sell the credits of its CPA(s) and would pay an up-front inclusion fee to the programme manager. Some programme managers, however, may be wary of structures where they do not draft the CPA documents and/or oversee closely the implementation of CPAs given liability issues associated with erroneous inclusions of CPAs (see below on contracts with validators below). Figure 6.4 provides an illustration of this potential structure.

Figure 6.4
Transfer of rights to carbon when the owner of the CPA acts semi-autonomously



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² As mentioned above, although we assume under this section that the role of programme manager and CME are combined in a single entity, this does not need to be so. When the programme manager and the CME are not the same entity, however, the programme manager will have to regulate issues such as, *inter alia*, appointing an

entity to exercise the role of the CME, defining the obligations of the CME consistent with CDM Rules and establishing the duties of the CME vis-a-vis the programme manager and buyers of carbon credits.

Keeping in mind potential domestic PoA requirements

The CDM rules require domestic approval only at the PoA level, leaving at the discretion of each country whether to establish further or more specific rules for the approval of PoAs. While most DNAs have not established additional procedures for approving PoAs, governments seem increasingly interested in making sure that they have an adequate overview of the CPAs being implemented in their countries and that these CPAs also meet certain environmental and social standards. In addition, depending on the size and scale of the PoA, DNAs may also perceive programme managers as having a too important role to be left without further checks of its capacity to carry out the PoA at the national level.

For example, some DNAs may require that the programme manager demonstrates it has secured finance to implement the PoA. They may also require the programme manager to declare they will share with the beneficiaries of the programme the information related to the sale of carbon credits (including price). Other potential requirements include: additional eligibility criteria of CPAs under a PoA and the creation of instruments to verify that such criteria are being met (such as being informed whenever a new CPA is added to the PoA); and to require CPAs to demonstrate that they are in

line with local environmental legislation. DNAs may also want to approve benefit-sharing arrangements for community-based PoAs (see Box 6.2).

Understanding potential specific requirements of DNAs is particularly important for multi-country PoAs, as the different domestic standards and requirements may slow down the roll-out of the programme. Practical questions which may appear in this respect include: (i) whether a DNA would be willing to approve a PoA for which the model CPA is not being developed in the respective DNA's country; (ii) whether DNAs will authorise the participation in the PoA of a non-resident programme manager; (iii) whether the DNA requires the programme manager to inform situations that affect or modify the PoA nationally or in other countries.

Programme managers need to keep close contact with DNAs from the very beginning of the programme implementation and understand whether there are any formal or informal requirements to obtain authorisation of the programme manager, secure the approval of the PoA, as well as the existence of further checks for the inclusion and operation of CPAs.

Box 6.2 Examples of specific procedures for approval of PoAs at the national level

Most DNAs do not have specific procedures for issuing a Letter of Approval for a PoA. The specific approval processes that do currently apply for PoAs vary substantially. They range from a specific Project Design form for PoAs (South Africa³), to requiring a copy of the agreement between the CME and the project developers (El Salvador⁴), or a sworn declaration by the CME stating that it is the project owner and the owner of the first CPA must be included in the application Peru⁵.

China currently only allows small scale PoAs and requires that the PoA gains preliminary approval from the provincial authorities where the activities will take place before applying for the Letter of Approval.

A few DNAs have substantive requirements for the approval of PoAs. One example is Colombia, where the PoA must fulfill at least two of seven sustainability requirements which have been set out in a governmental resolution⁶.

The inclusion of CPAs can be another area where DNAs require more information or assurances, with some DNAs stating that it is the responsibility of the CME to communicate every included CPA to the DNA. India's DNA requires the programme manager to inform the DNA on a bi-annual basis of included CPAs. Other DNAs ask for detailed information to be reported, such as brief descriptions of each CPA and copies of the proper environmental permits or assessments as required by law (Chile⁷), or a list of participants of stakeholder consultations per CPA (Peru).

³ Department of Energy Guidance for Applicants of Clean Development Mechanisms in South Africa, p.12. Available at: <http://www.energy.gov.za/files/esources/kyoto/Web%20info/DNA%20guideline%2020111.pdf>

⁴ This information has been gathered by Climate Focus based on a questionnaire sent to DNAs.

⁵ Annex I, Ministry of Environment (MINAM). Ministerial Resolution 104-2009. Available at http://www.minam.gob.pe/index.php?option=com_docman&task=doc_details&gid=352&Itemid=39

⁶ Art.5, Ministry of Environment and Sustainable Development (MADS), Resolution 2733 of 2010. Available at http://www.minambiente.gov.co/documentos/normativa/ambiente/resolucion/res_2733_291210.pdf

⁷ Website of the Chilean Ministry of Environment: <http://www.mma.gob.cl/1304/w3-article-44986.html>



Drafting and concluding agreements

After the relevant stakeholders have been identified and the incentives for their participation in the programme are defined, the programme manager needs to draft, negotiate and conclude the contracts needed. The timing for arranging these contracts will largely depend on the stage of development of the PoA. Negotiations of the various contracts may be time-consuming and can stretch over weeks, if not months, and support from a legal counsel is advisable.

While there is no rule on which agreement must be negotiated first, PoA developers will typically want to first secure the financial sustainability of the programme. This primarily involves negotiating and drafting agreements related to PoA finance (equity, loan, carbon sale, etc.). At the same time, financiers and buyers of carbon credits will generally want to see some progress on the ground before committing to any upfront payment or purchase of the

carbon credits. For this reason, financing and carbon credit sales agreements will typically include milestones for financial assistance and conditions precedent, for instance conditions that must be met before a contract becomes fully operational or a certain payment within the contract is triggered. These may include, for instance, the drafting of the PoA-DD and its positive validation, the inclusion of the first CPA-DD under the PoA, or the conclusion of a management agreement with any CPA developer, see sample provisions below. In most cases, the various contracts will be drafted and negotiated in parallel with each other.

Some of the most relevant contractual arrangements to be put in place for the implementation of a PoA are discussed in the following section.

Box 6.3 Sample provision - Conditions Precedent and Milestone Payments

Conditions Precedent

The obligations to Deliver and Purchase CERs and the obligations related to the Advance Payment will not take effect until all of the following conditions precedent have been fulfilled:

- a) The Buyer has notified the Seller that it has completed and it is satisfied with the results of its Due Diligence;
- b) The Seller has notified the Buyer that it has completed and is satisfied with the results of its Due Diligence of the Buyer;
- c) The PoA has achieved Registration by [date];
- d) The first [number] CPAs have achieved commissioning and are capable of generating CERs by [date];
- e) At least [number] CPAs have been included in the PoA by [date].

Milestone Payments

The Buyer agrees to pay the Seller an Advance Payment to the amount of [sum] towards the future Delivery of the Contracted CERs.

The Advance Payment will be paid to the Seller in 3 (three) installments (each such installment a "Milestone Payment") upon the achievement of the following Milestones:

- Milestone 1 – The participation of at least [number] End-Users to the PoA, as evidenced by the relevant executed End-User Agreements;
 - Milestone 2 – The first [number] containers of LED Lighting Systems having been ordered by the Seller;
 - Milestone 3 – The Registration of the PoA with the CDM Executive Board.
-



6.4 Relevant contracts

This section provides a brief overview of the most relevant contracts which will need to be entered into by the programme manager, starting with the relationship with end-users and ending with the final sale and purchase of carbon credits with a foreign buyer.

End-user Agreements

The end-user agreement links the ultimate beneficiaries of the programme such as households, installation operators and single users to the PoA. This agreement will often be between the programme manager and the end-users. However, if a CPA under the PoA is managed by a CPA developer, the end-users can contract with the CPA developer, which in turn will have a contractual agreement with the programme manager. As the carbon credits are generated at the end-user level, a close integration of the end-users into the PoA is key to the success of the programme as a whole.

Simplicity and practicality

The main challenge for the end-user agreement relates to size and practicability. For many project types, each end-user generates very small amounts of carbon credits, whereas the programme, by contrast, may combine tens of thousands of end-users. In these circumstances, end-users will only enter the programme if joining is straightforward and offers clear benefits. In cases such as the Bachat Lamp Yojana Programme, for example, a CPA developer handles up to 600,000 compact fluorescent lamps for incandescent light bulb transactions which may for instance take place in local shops, schools or retail outlets. Reading through long contracts and signing up to a detailed list of “do’s and don’ts” may, in such cases, not be realistic.

In such a situation, the programme manager needs to find efficient communication channels. The specific method of communication needs to be checked against the legal situation in the regions in which the PoA is implemented. Posters and printed hand-outs may be appropriate solutions that can also help educate the end-users and influence behaviour.

As a general rule, whether a formal contract is signed by the end-user or other forms of communication are used, any agreement should be written in local and self-explanatory language. Essentially,

the end-user agreement should contain (i) a clear reference to the programme; (ii) an acknowledgement of voluntary participation by the end-user; and (iii) an explicit statement regarding the transfer of the rights to the carbon credits.

A provision may also be required to prevent the same household or unit from participating in different emission reductions programmes, which could lead to double-counting of emission reductions. This is particularly important where more than one PoA of the same nature is being developed and implemented in the same country or region, see the sample provision below. It may also be required, as a pre-condition of participation in the programme, that end-users properly discard old and less efficient equipment or exchange it for the new technology.

Depending on the incentive structure adopted by the programme, the end-user agreement may have to include provisions on programme revenues and revenue distribution. Unless the programme manager or another intermediary makes full upfront payments or donates the technology, the end-users may have to cover initial costs for which they will obtain compensation by way of carbon revenues, energy savings, and reduced interest rates on small loans or other forms of subsidies over subsequent years. In this case, the handling method of payments, the amounts and the level of certainty need to be clearly addressed in the end-user agreement.

Where upfront payments, considerable price-discounts, or conditional donations are made by the programme manager, one way to motivate performance by end-users is to include provisions permitting the programme manager to terminate these benefits for breach of the terms of the agreement which results in a shortfall in carbon credits and potentially claim back the technology. Another way to promote cooperation by end-users is to look for positive incentives, where sharing of benefits increase as the level of participation of the end-user in the programme improves, for instance, with monitoring of equipment and collection of data.

Box 6.4 Sample provision – Prohibition of Participation in Other Similar Programs

The Beneficiary hereby agrees not to allow the received and installed [add technology] to be used in any other similar programme or activity aimed at generating greenhouse gas emission reductions without prior consent from [the programme manager].



Transfer of rights

For the transfer of rights to carbon credits, a proper contract needs to be in place. This could include an assignment of carbon rights from the end-user to the programme manager. If there is a CPA developer contracting with end-users, provisions regulating

these rights are required in both contractual relationships, i.e. (i) between the end-user and the CPA developer; and (ii) between the CPA developer and the programme manager. A sample provision is provided in box 6.5.

Box 6.5 Sample provision – Title to Emission Reductions in End-User Agreements

The [Beneficiary] fully understands and agrees that, by accepting to participate in the [title or reference to the programme], he or she will transfer all rights associated with the climatic benefits arising from the [name or reference to the programme], including the full ownership rights in and to any Emission Reductions, to [name of the programme manager or CPA developer].

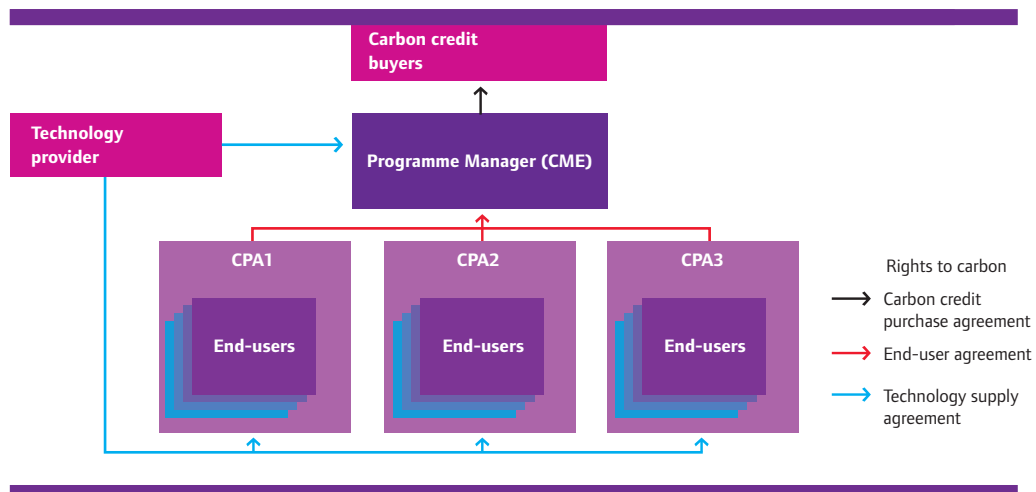
For the purpose of this Agreement, “Emission Reductions” mean any right, interest, credit, entitlement, benefit or allowances to emit (present or future) arising from or in connection with any greenhouse gas reduction achieved by the [insert name or reference to the programme], and includes any right that may be created under any regulatory or legal regime as a result of these greenhouse gas reductions whatsoever.

Other issues

For the sake of clarity and simplicity, programme developers sometimes agree to a level of risk exposure that could be prevented through better contractual arrangements. In household PoAs, the relevant technology (e.g., solar water heating or a biogas system) is installed in each individual household participating in the programme. Assuming that houses may change their owners from time to time, the situation arises in which a technology that is part

of a certain PoA remains in a house which has a new homeowner who may never have heard of the programme, and who may not be willing to follow the programme procedures. The contractual way to limit the risk would be to impose an obligation on the former homeowner to transfer the house with specific obligations attached to the technology and the programme. However, homeowners are not likely to accept such a requirement and adding provisions of this sort to an end-user agreement creates a complex contract, which may slow down the roll-out of the programme and the successful implementation of its operations. In this instance, programme developers may simply accept the risk and go ahead without addressing it in a contract. But risk mitigation can come in the form of regular monitoring, checking regularly when a new end-user agreement might be needed as a result of a change of ownership/tenancy of the household.

Figure 6.5
Technology supply agreements and rights to carbon



Management Agreement – Programme manager and the CPA developer

Where a CPA is made up of a number of end-users organised by a separate entity (CPA developer), the core programme contract is the one between the programme manager and each CPA developer. The management agreement will serve to define the role of the programme manager and lay out the different tasks of the CPA developer. For instance, which entity is responsible for meeting the eligibility criteria for inclusion in the PoA, and who prepares the relevant documentation associated with the CPA.

In addition, as the CPA developer functions as a gateway through which to reach the end-users, the programme manager should insist on arrangements that ensure operation of individual CPAs

is in line with how the overall programme functions. For instance, the programme managers should ensure that the CPA developer integrates the end-users according to the programme objectives and criteria, that the CPA does not constitute a de-bundling of another existing activity, that the technology distribution cycle runs in a stable manner, and that the data is monitored, collected, and transmitted from the CPA developer to the programme manager in a robust and accurate manner. This latter point is crucial also from a perspective of marketing and sale of carbon credits, as it allows a more reliable overview of emission reductions being generated. The end-users are ultimately the source for emission reductions, and their accurate integration into the PoA is key to the programme's success.

Box 6.6 Sample provision – Obligations of the CPA Developer

The [CPA Developer] shall be responsible for:

- a) Implementing, operating and maintaining the CPA (and each project activity within the CPA) in conformity with sound financial, administrative, engineering and environmental practices, including, if relevant, the collation of environmental impact assessments, and the preparation of feasibility studies necessary to define the technical, financial and legal feasibility of the CPA;
 - b) Developing the CPA Design Document;
 - c) Liaising with End-Users;
 - d) Monitoring emission reductions from the CPA in accordance with the PoA Monitoring Plan and preparing the CPA Monitoring Report;
 - e) Reporting about the progress of the CPA (and each project activity within the CPA) to [Programme Manager] at quarterly intervals as of the date of this Agreement (“Progress Reports”); and
 - f) Covering all costs and expenses associated with the activities above.
-

The CPA developer, for its part, will wish to receive safeguards that the programme manager performs its duties related to the programme cycle, including the fulfilment of all obligations towards the validators, the Executive Board and the UNFCCC secretariat in order, ultimately, to generate carbon credits from the PoA. It may also seek some sort of assurance that the programme manager will not abandon the PoA or look for a replacement during the PoA life-cycle.

Regarding the rights to the carbon credits, the contract between the programme manager and the CPA developer should clarify to whom

the carbon credits belong. As discussed above, a careful assessment of the programme is needed to determine for each individual programme which is the better model. The most important point is that a choice is made and that it is clear and transparent from the terms of the contract whether it is the programme manager or the CPA developer who owns the rights to the carbon credits. What the programme proponents need to avoid by all means is a situation in which carbon credit ownership remains undefined.

Box 6.7, provides a model legal clause in which the CPA developer transfers the carbon rights to the programme manager.



Box 6.7 Sample provision – Title to Emission Reductions in Management Agreements

[The CPA developer] agrees to transfer to the [Programme Manager] full ownership rights in and to any Emission Reductions generated by the [PoA], including all rights, title and interest in, and other associated benefits in relation to those Emission Reductions. [The CPA developer] hereby waives any assertion of rights in relation to the title or ownership of the Emission Reductions generated by the [PoA].

To keep in mind when drafting PoA management agreements:

- Define clearly the roles of programme manager and CPA developer;
- Decide on implementation milestones and monitoring and reporting obligations; and
- Make a clear choice on who has the rights to emission reductions and future carbon credits.

Technology supply and support agreements

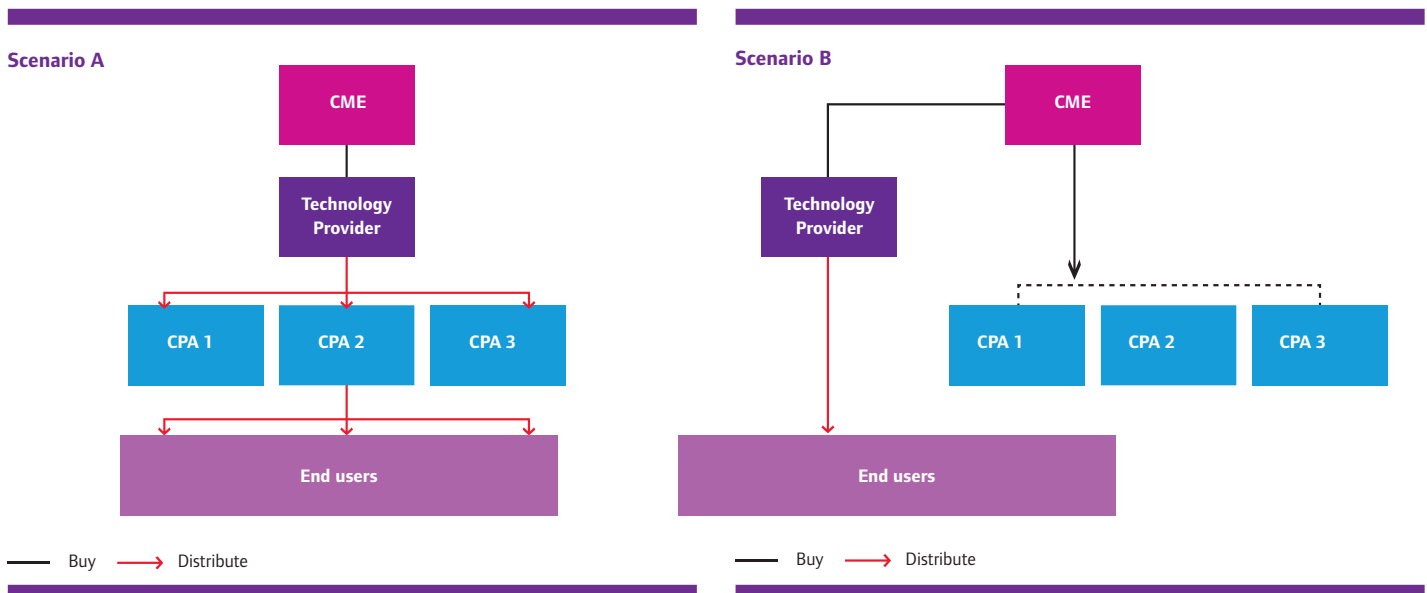
PoAs frequently distinguish between the participation of technology companies in a number of ways. Their involvement will often be as:

- Providers of the technology needed for the PoA (for example, the firm producing solar cookstoves, efficient lighting, biogas digesters etc.); or
- Firms that provide important parts of the PoA infrastructure, i.e. national electricity agencies that transmit and distribute payments from and to end-users in monthly electricity bills, insurance companies that replace electric boilers with solar water heaters thereby integrating households into a PoA, or micro-finance institutions that supply CPA developers with upfront money to purchase the technology necessary for participation in a PoA.

It is important to note that the PoA may require more than one technology provider, and the technology used and the technology provider may change over the life time of the PoA. In addition, the roles for technology supply and support firms may vary considerably, and hence different contractual arrangements may be apply.

In technology supply contracts, for instance, there is the scenario where the programme manager buys from the provider and the provider delivers the technology to the CPA developer, who then distributes it among end users (Figure 6.6, scenario A); alternatively, there is the case where the provider has a contract with the programme manager but delivers directly to end-users (Figure 6.6, scenario B). Another option is that the end-users (with or without a financial contribution) buy the products direct from the technology provider (Figure 6.6, scenario C).

Figure 6.6
Schematic figure illustrating the different roles of technology providers in a PoA



These agreements may be simple purchase and sale agreements, simple service agreements, or they may include elements of both. For the acquisition of the technology, a number of standard clauses will normally appear. These include provisions related to price and quantity of the technology and form of payment, including relevant milestones; delivery of the technology; who is responsible for obtaining the relevant licenses and authorisations to use the technology; the possibility of verifying the installation and testing the equipment; defining is responsible for any malfunction or damages eventually caused by the use of the technology, among others.

Additional terms, more specific to the PoA design, include proper assignment of rights the carbon credits, support to end-users in the management and maintenance of the equipment and other after-sales services, and meeting specific quality standards, to ensure the successful execution of the programme. In addition, programme managers should carefully consider the capacity of the technology provider to distribute the technology to different locations and the many households participating in the programme.

Other potential responsibilities of the technology provider may include training the end-user in the use of the technology, providing a disposal service of the device once finished (for example, when LED light bulbs have been distributed), and procuring the execution of the end-user agreements. It may also play a role in monitoring and other project cycle activities.

Finally, in decentralized PoAs, or ‘umbrella’ PoAs, where the necessary technology for the PoA is not specified beforehand but is left to the CPA, the CPA developer is responsible for ensuring the proper contractual provisions with the technology supplier if necessary. For example, the registered PoA “Mexican Renewable Energy Alliance Programme of Activities” (2012) works as a general

framework for the funding and promotion of renewable energy of water, wind, and solar radiation. In this case, the programme does not specify one technology or one technology provider; this is a decision that should be taken when considering each CPA proposal (Figure 6.6, scenario D).

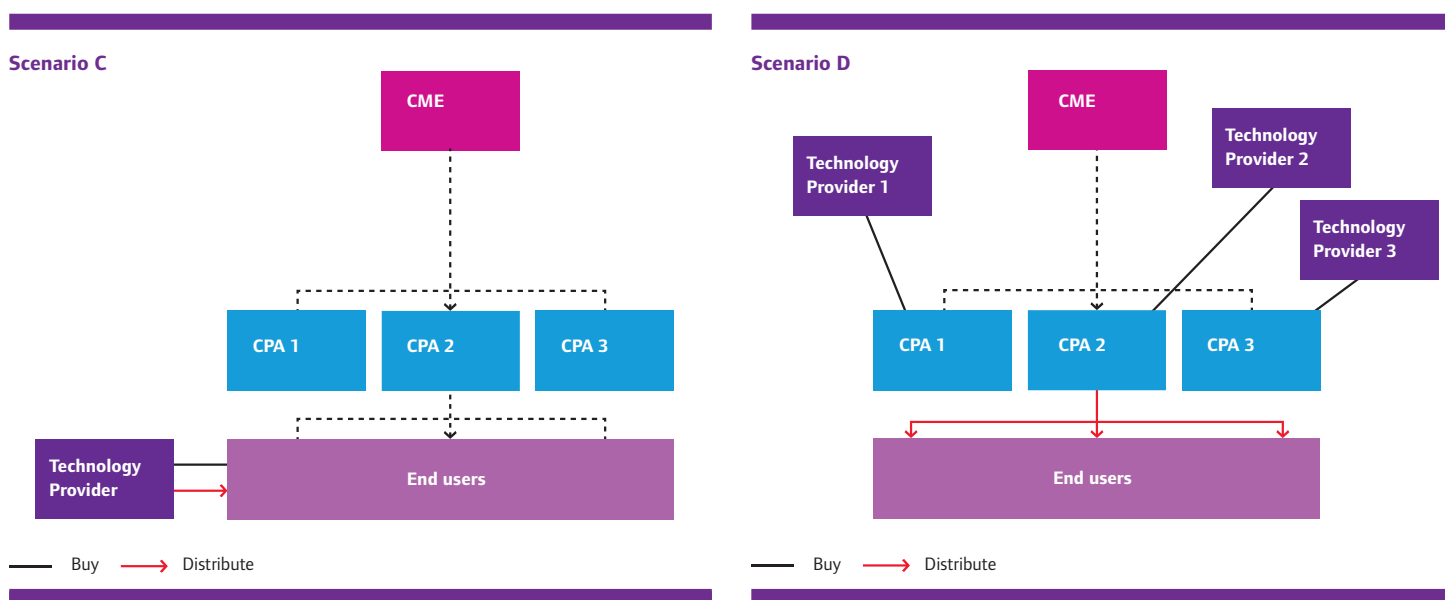
Agreements with validation and verification entities

A CPA can be included in a registered PoA at any time during the lifetime of a PoA. There is no formal registration at the CDM Executive Board level required. Rather, under the CDM the validator scrutinises the CPA for conformity with the PoA-DD and, if the assessment is positive, formally includes the CPA via a simple upload on the UNFCCC website. Apart from the power to conduct spot checks, the Executive Board does not confirm, cross-examine or otherwise interfere in this process.

The date of registration of the programme or the date of issuance of credits can determine the eligibility of the credits for use in compliance markets. When contracting validators, programme managers should keep these dates in mind and agree realistic but firm timelines for validation and verification. Some projects have run into trouble, for example, meeting deadlines for registration due to delayed validation.

When contracting with validators, programme managers should be mindful of provisions relating to the liability for erroneous CPA inclusion or ‘catch-all’ liability provisions under which this can fall (see Box 6.8). Careful about their direct liability, validators will usually seek to shift their financial responsibility to their contractual partners. Programme managers, in turn, will be interested to limit their contractual exposure to such liabilities, leaving validators with those risks that could have been detected in the validation process. Carbon buyers, for their part, will often seek to stay out of this liability issue altogether.

Figure 6.6 continued



The validation and verification contract, therefore, needs to be closely examined and carefully negotiated. One way of reducing the risk of an erroneous CPA inclusion is to clearly define the inclusion criteria for CPAs. On the other hand, being too strict will create obstacles for expanding the programme overtime as CPAs with slightly different shapes will not be allowed into the PoA. A careful balance between strictness of eligibility criteria and openness to future adjustments will have to be struck in this case.

Programme managers are advised to negotiate the liability clause with validators so that at least the risk and financial liability are

shared in a balanced manner among the contracting parties. Anecdotal evidence suggests alternative ways to accommodate the concerns of the different parties, such as creating an escrow account to hold revenues of CERs from CPAs which are still within their review-request ('probation') period. These funds would serve as collateral for erroneous inclusion and drawdown in accordance with the terms of the agreement between the validator and the programme manager. This solution may be expensive and thus require the support of buyers and investors which are willing to be more involved in the development of the PoA.

Box 6.8 Erroneous CPA inclusion

An erroneous CPA inclusion is a "CPA inclusion in situations where the validator has been found to have failed to conduct an assessment of compliance in accordance with the established assessment requirements."⁸ In order to avoid issuing credits from erroneously included CPAs in a PoA, the CDM has outlined specific rules:

- The CDM Executive Board or the DNA of one of the countries involved can request a review of the included activity within one year of inclusion of the CPA, or within 180 days of the first issuance of CERs from the CPA;
- The CDM Executive Board will then assess the validity of the request for review, and allow the programme manager and validator to respond to any issues within 28 days;
- After taking into account responses, the CDM Executive Board can then either exclude the CPA from the PoA or initiate a full review process, in which an independent validator is brought in to assess whether the CPA has been erroneously included and if previous CPAs were adequately assessed by the original validating entity.

If, after the above steps, the Board concludes that the original validator that performed the CPA inclusion failed to adequately assess the CPA's compliance with the eligibility criteria of the PoA, the validator is obliged to acquire and cancel an amount of CERs equal to the amount of CERs that have been issued from the CPA. Once an erroneous inclusion has been identified, the review can be extended to all CPAs⁹.

Although the risk of erroneous inclusion of CPAs has been greatly reduced by the introduction of the PoA Standard and the separation of responsibilities of the CME and the validator through the CME quality manual, the fact remains that when a CPA is deemed to be erroneously included, the liability for this inclusion falls squarely on the shoulders of the validator. For validators this is a real issue which has not yet been resolved by the CDM Executive Board. The Board has recently limited the time period during which an erroneous inclusion can be established, however, the damages of erroneous inclusion remains entirely with the validator. This may cause validators to be more hesitant than usual to validate a CPA inclusion. In addition, validators also observe that in the absence of liability caps for erroneous inclusion of CPAs, it can be difficult to find insurance products to cover this risk.

⁸ EB 61, Annex 22, Paragraph 65: 'Review of erroneous inclusion of a CPA' (Version 03.0)

⁹ EB 61, Annex 22 'Review of erroneous inclusion of a CPA' (Version 03.0)



Emission Reduction Purchase Agreement

The sales agreement between the carbon buyer and the programme manager that is selling the carbon credits is known as the “Emission Reduction Purchase Agreement” (ERPA). An ERPA needs to clearly define the type of carbon credit being transacted, the payment and delivery mechanisms, and all relevant obligations surrounding the implementation of the programme.

The seller of the carbon credits needs to hold all relevant rights and be entitled to transfer the credits to the buyer. The ERPA will

contain clauses warranting that the seller has ownership over the carbon credits being sold and specifying the moment at which the title passes on to the buyer. This issue deserves particular attention in the case of PoAs because, as discussed above, many entities may be involved and the potential for contradicting claims is high. Below, we provide a sample provision in this regard.

Box 6.9 Sample provision – Representation and Warranties

The Seller represents and warrants that it has full, unencumbered and undisputed legal ownership rights in and to any Contract CERs and has not sold, transferred, assigned, licensed, disposed of, granted or otherwise created any interest in such CERs. At the time of each Delivery of the Contract CERs, the Buyer will receive good, unencumbered and undisputed title to the Contract CERs, free of any mortgage, charge, pledge, lien or encumbrance of any kind whatsoever or other security interest in favour of any person or entity. For that purpose, the Seller shall obtain from all relevant persons and entities (including, without limitation, End-users) irrevocable waivers of all rights in all CERs and Emission Reductions generated under the Programme.

Specific to a PoA is the fact that the exact size of the PoA is not known at the start. During the entire lifetime of the PoA, new CPAs that fulfil the requirements for inclusion can be added at any time. This particular PoA feature needs to be mentioned in the ERPA through a particular set of provisions. This is all the more important where financing like advance payments prior to issuance and delivery of CERs are agreed by the contracting parties.

A buyer/investor will normally seek to include concrete milestones that work as an incentive for the programme manager to scale up the size of the programme. The buyer/investor will also seek reporting provisions and monitoring standards that secure a complete overview of the growth rate of the PoA and carbon credits

generated, preferably through a tracking system that is backed by a tested computer programme. In addition, the buyer providing an advance payment will likely want to ensure that the anticipated income is solely used for the development and advancement of the PoA or to the benefit of end-users.

Programme managers, in turn, should be mindful of keeping regular and open communications channels with their buyers/investors. ERPAs represent long-term legal agreements and delays and obstacles may occur. Taking too long to report on those not only may be perceived as a breach of the agreement put in place and could create friction between the contracting parties.

Box 6.10 To keep in mind when drafting a PoA ERPA:

- Make sure the seller has or will have the disposition rights (ownership and title) to be able to sell the carbon credits;
 - ERPAs need to be adjusted in accordance with the structure of each PoA, in particular the role assumed by CPA developers. Programme managers should make sure they have the proper oversight over CPAs and CPA developers in order to meet their obligations under the ERPA;
 - Be mindful of strict obligations under the ERPA for dealing with end-users, as these relationships may need to follow local consumer laws, and be adjusted to the relevant cultural and economic setting. Flexibility and simplicity in order to attract and keep end-users engaged in the programme will often be required.
-



The ERPA should also cater for the actual PoA structure on the ground. Obligations and responsibilities will differ considerably if the programme manager is the one implementing and running the CPAs or if the programme manager is only acting as the general coordinator of and focal point for the CPAs. In the latter scenario, the ERPA may include a listing of the various implementation contracts needed for the roll-out of the programme. It may even contain template contracts or model clauses that the programme manager needs to use when engaging CPA developers and technology providers.

The programme manager and the buyer/investor will need to negotiate and reach agreement on the level of control the programme manager is supposed to have over each CPA developer. Naturally, the buyer will seek that the programme manager takes on the risk (under the ERPA) of CPA developers not performing as required. On the other hand, the programme manager should try to secure with the buyer an adequate level of flexibility on how the programme manager deals with CPA developers, distributors, and end-users. A rigid set of pre-agreed provisions, obligations, and contract templates might not be practical given the variety of technical, economic, and local law issues that may come-up when engaging with CPA developers and end-users.

It will help building trust and ease compliance with obligations under the ERPA if the programme manager has developed some sort of tracking tool to assess the performance of its PoA.

In addition to managing the relationship and contracting with CPA developers, distributors, and end-users, the programme manager will be asked to take on under the ERPA the formal responsibilities of communicating with the DNA, the validator, and the CDM Executive Board for the purposes of validation, registration, and verification of the programme and the CPAs.

Under ERPAs, the seller and the buyer will also need to pay particular

attention to some common legal definitions normally used in ERPAs. These definitions may require some adjustments to cater for the particularities of the PoA model. This is the case, for instance, with the definition of “commissioning” which, under the Programme, may refer to the starting of operations and the generation of emission reductions by the first CPA officially added to the programme. The definition of “crediting period” will also need to clearly distinguish between the crediting period of the PoA and of that of CPAs.

Programme managers should be aware that buyers may be interested in purchasing credits from specific CPAs. At the moment, it is not possible to distinguish CERs to the CPA level in the CDM Registry. This is currently being reviewed by the UNFCCC Secretariat. However, it is possible for the programme manager to distinguish the CERs per CPA through the Monitoring Report in which the volume and the timing of the issuance of the CERs per CPA is set. Therefore, where multiple buyers exist and wish to purchase CERs from specific CPAs or tranches, the ERPA will need to clearly specify the relevant CPAs from which CERs are being generated and sold. The programme manager should make sure that the different ERPAs signed with different buyers are entirely consistent and clearly delineate delivery obligations for each of the buyers (avoiding for instance, that a buyer is given the right to claim CERs from a different CPA in the event of underperformance).

Additional attention may also be required with regard to the contracting parties’ rights to act as project participants in the PoA and communicate with the CDM Executive Board. Not all CPA participants need (and neither is this desired) to be included as project participants in the PoA. Where buyers are added as project participants, giving any one of these the right to jointly communicate¹⁰ with CDM bodies will be perceived as a delivery risk for the remaining or future buyers.

Box 6.11 Importance of including a pricing floor in floating price arrangements

Statkraft manages a diversified portfolio of CDM projects in different host countries, resulting in CERs that will be issued in the years to come. Negotiating the terms of offtake agreements of CERs with individual project developers is an important step in the acquisition process. A key component of these agreements is the pricing structure of CERs.

Under current market conditions, most primary transactions base the off-take price on either a fully floating pricing structure or a combination containing both a fixed and floating price element. Floating prices are benchmarked against exchange traded spot CERs, and apply a discount depending on the underlying risk associated with the project and the terms and conditions set forth in the off-take agreement. One way to limit downside risk in a market where prices are falling is the inclusion of a price floor within the floating price structure. While the inclusion of a price floor is a risk for the buyer and a higher discount on the benchmarked spot CER price will be applied, it is advisable for project developers to include this safety measure. This is especially relevant for projects that need a certain minimum CER price to sustain operations, and where a price drop below that level would force the PoA to halt operations.

(Eric Boonman, Statkraft)

¹⁰ In accordance with the CDM Rules, the CME is a mandatory focal point for all communications with the CDM.



6.5 Further reading

For general legal aspects relating to offset projects under the CDM, the following publications of the CD4CDM programme may be accessed online¹¹:

- “Implementing CDM Projects: Guidebook to Host Country Legal Issues” and
- “Legal Issues Guidebook to the Clean Development Mechanism”.
- For legal aspects and PoAs, refer also to “PoA Blueprint Book, Guidebook for PoA coordinators under CDM/JI” (2nd Revised Edition, Frankfurt and Main, 2010)¹².

¹¹ Resources are available from <http://cd4cdm.org/Guidebooks.htm>

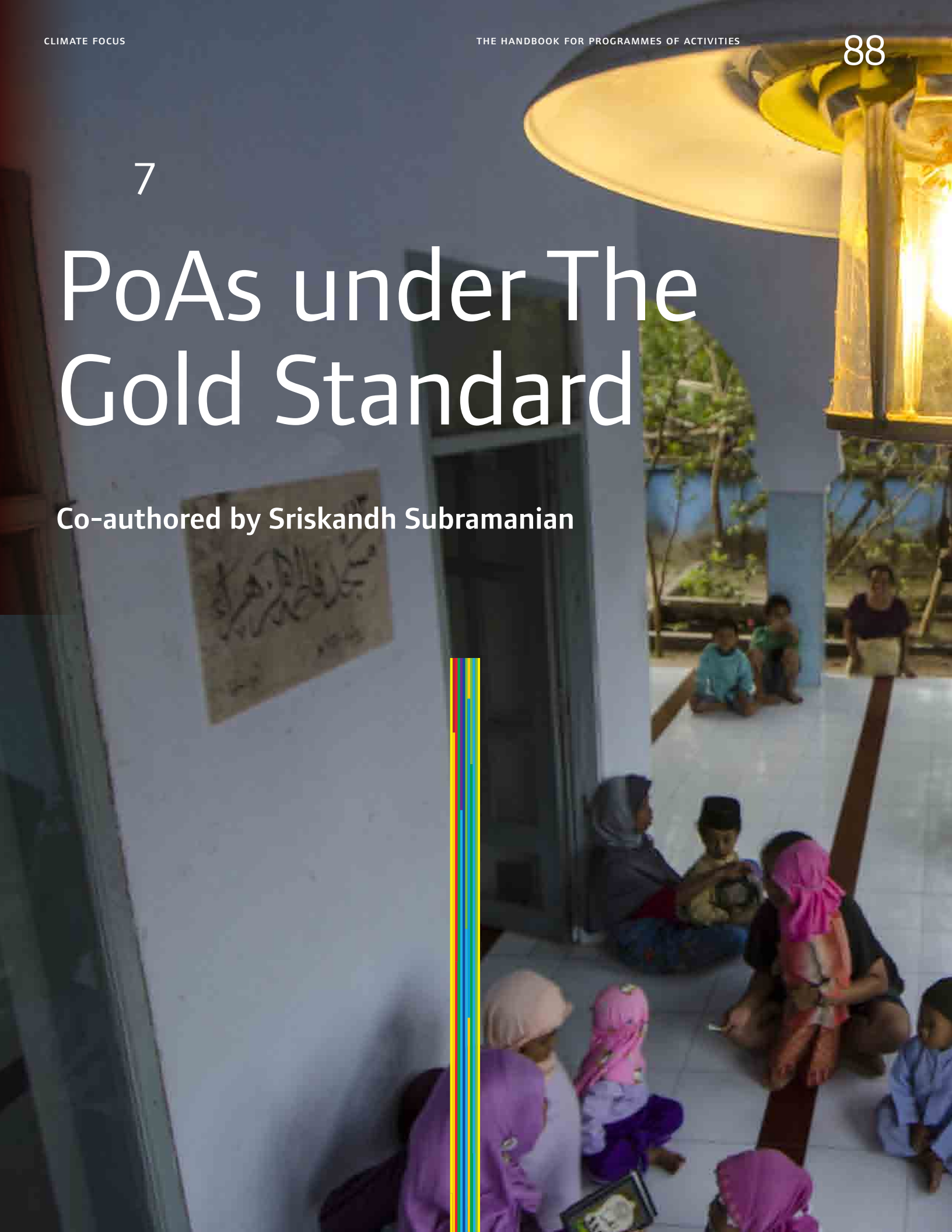
¹² Available from KfW at: http://www.kfw-entwicklungsbank.de/ebank/EN/Home/Climate_Change/Sustainability_and_Climate_Protection/PoA_Support_Centre_Germany/PoA_Blueprint_Book.jsp



7

PoAs under The Gold Standard

Co-authored by Sriskandh Subramanian





7.1 Key Recommendations

- The Gold Standard can be applied either as a stand-alone carbon standard, or as an ‘add-on’ to an existing CDM PoA to certify the environmental and social benefits of the programme.
- Gold Standard certified credits typically sell at a premium over regular CERs or VERs.
- Carbon credits can be retroactively labelled as Gold Standard certified for up to two years prior to registration with The Gold Standard.
- Registering a PoA under The Gold Standard requires conducting more elaborate stakeholder consultations than under the CDM.
- Besides the PoA- and CPA-DDs, a Local Stakeholder Consultation Report and Gold Standard Passports need to be prepared outlining the additional sustainable development benefits of the programme.
- Sustainable development criteria must be monitored in addition to the CDM criteria.
- Voluntary Gold Standard PoAs not associated with the CDM provide simplified rules for PoA developers that can reduce transaction costs and time.
- Voluntary Gold Standard rules provide attractive features like retroactive inclusion of VPAs, special provisions for validating projects in conflict zones, and a wider range of methodological choices.

7.2 Introduction to The Gold Standard

The Gold Standard is an independent standard for certifying GHG emission reductions that make measurable contributions to sustainable development worldwide. It is the only standard that operates in both the compliance and voluntary markets that covers individual projects as well as PoAs. This means that developers can pursue registration of their project as a voluntary emission reduction project following The Gold Standard guidance only, or use The Gold Standard to certify credits generated under the CDM.

Historically, The Gold Standard has focused on renewable energy and energy efficiency projects; more recently it has expanded its scope to include waste management, land use and forests. This means that most activities developed under the CDM can also certify their carbon credits under The Gold Standard, given that additional documentation is prepared and validated evidencing the projects’ positive impact on sustainable development. Until January 2013, three PoAs had been successfully registered under The Gold Standard, either as completely voluntary programmes or as an add-on to existing CDM PoAs. Another 31 PoAs are currently under validation.

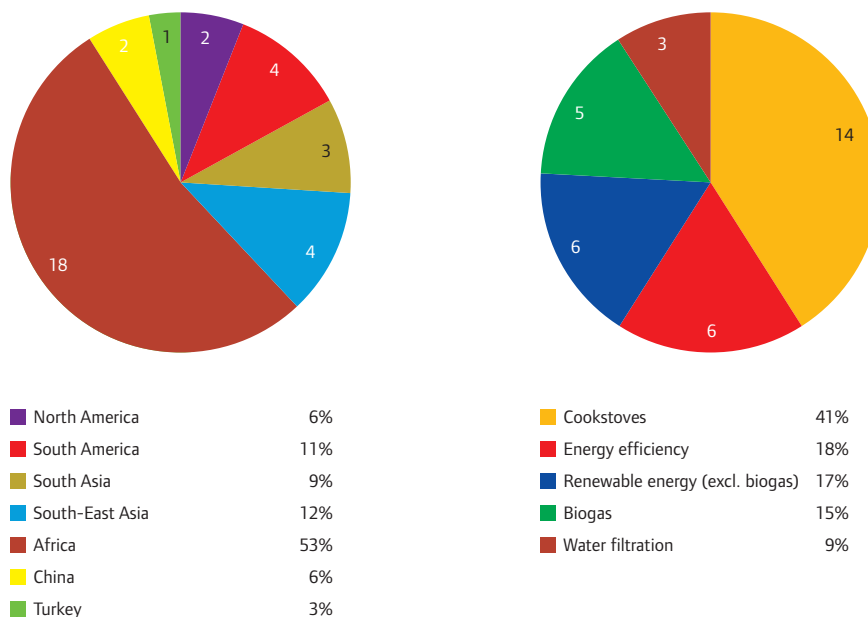
The Gold Standard has released specific guidance on the development of both voluntary and CDM PoAs, enabling PoA developers to benefit from the premium prices Gold Standard certified carbon credits generally attain. All programmes submitted to The Gold Standard must be consistent with applicable CDM and Gold Standard guidance, with the specific guidance dependent on whether the PoA is developed under the voluntary track or is added to an existing CDM PoA. Further to this, each Gold Standard PoA must work with local communities, NGOs and government officials to conduct Local Stakeholder Consultations to assess the potential environmental and social impacts of a programme, ensuring the delivery of verified sustainable development benefits and also proactively seek feedback on the design of the PoA.

This chapter presents an overview of the PoA guidance developed under The Gold Standard. Section 7.3 features rules that are applicable to developing CDM PoAs under The Gold Standard. As these programmes refer to the CDM for most guidelines, the reader should already be familiar with the concepts outlined in Chapter 3 of this PoA Handbook. Section 7.4 describes the rules applicable to new PoAs that are to be developed under the voluntary Gold Standard. Readers interested in developing PoAs following this voluntary track are advised to read the entire chapter, as certain steps outlined in Section 7.3 are crucial for understanding the guidance described in the following part.



Figure 7.1
Overview of pipeline Gold Standard PoA project types and geographical distribution
(both voluntary and CDM PoAs).

Values within the pie chart represent the number of PoAs.



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7.3 Developing CDM PoAs under The Gold Standard

The Gold Standard is the only carbon standard that operates in both the voluntary and compliance markets. As such, it can be applied to a CDM PoA as an 'add-on' to certify the environmental and social benefits of the programme. Currently, just over half of all Gold Standard PoAs in the pipeline are also pursuing registration under the CDM. Increasingly more PoA developers are opting for pursuing the additional registration under The Gold Standard to make their CDM PoA stand out from the growing pipeline of successful PoAs and facilitate negotiating more attractive prices for Gold Standard certified CERs (GS CERs).

Developers of CDM PoAs¹ have the flexibility to seek registration under The Gold Standard at different stages of programme implementation:

1. Pre-CDM VERs – this involves applying The Gold Standard to a registered CDM PoA, which can happen in parallel to the CDM validation process. Pre-CDM GS VERs will be issued to the PoA up to two years prior to the start of the crediting period under the CDM, but the same quantity of GS CERs will need to be cancelled upon issuance². Given the cancellation of an equivalent amount of GS CERs at a later stage, this approach is only beneficial if the programme is in need of upfront finance and cannot afford to wait until the first issuance under the CDM is completed.

2. Parallel submission – this involves developing a CDM PoA alongside The Gold Standard certification. This is the most cost-effective approach since it allows the integration of Gold Standard requirements into the CDM PoA from the outset. Regular stakeholder consultations required under the CDM can be designed to meet Gold Standard requirements, avoiding the need to repeat these at a later stage.
3. Retroactive crediting – this involves adding The Gold Standard certification to a registered CDM PoA. This can be done at any time after registration of the CDM PoA and involves retroactively conducting more elaborate stakeholder consultation meetings and preparing additional Gold Standard documentation that evidences the programme's sustainable development benefits. The Gold Standard certification can be applied to CERs issued up to two years prior to the date of registration with The Gold Standard.

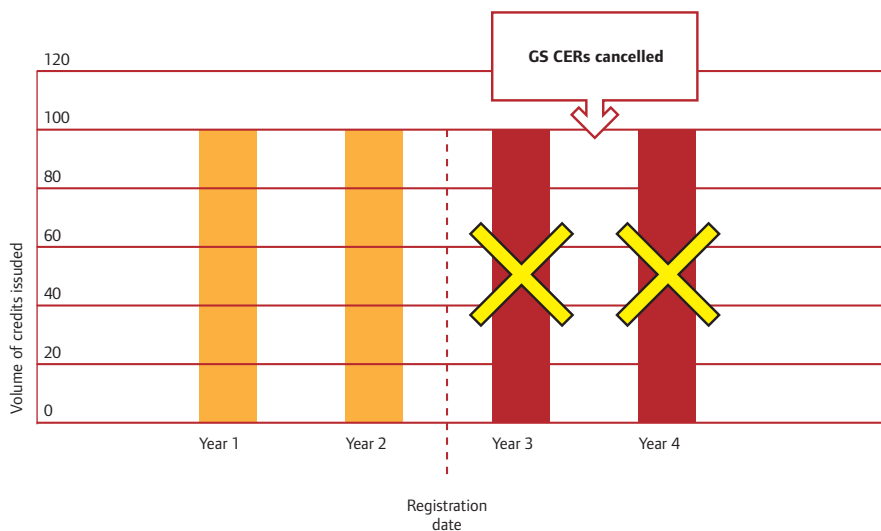
Regardless of the stage of implementation you decide to pursue Gold Standard registration, there are a number of steps that need to be completed. The following guidance is presented in a chronological order to assist prospective PoA developers to understand the sequence of key tasks.

¹ It is also possible to apply Gold Standard certification to a single CPA within a CDM PoA. This involves registering the particular CPA with The Gold Standard as a stand-alone project.

² There is a grace period of two years before the CERs must be retired to The Gold Standard Foundation.

Figure 7.2

Pre-CDM VERs: example illustrating the requirement to cancel GS CERs upon issuance to The Gold Standard if pre-CDM VERs are claimed for two year prior to CDM registration.



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Box 7.1 Pre-feasibility assessment

A pre-feasibility assessment is required for CDM CPAs that have a start date prior to conducting a Gold Standard Local Stakeholder Consultation. Completing the pre-feasibility assessment involves preparing drafts of the GS Passport(s), CDM validation report (if available) PoA-DD and CPA-DDs and presenting them to The Gold Standard for review.

The Gold Standard will conduct the pre-feasibility assessment to determine if the programme is eligible to apply The Gold Standard. The assessment can be fast-tracked under certain conditions, such as the validator's previous experience with Gold Standard projects. This assessment is subject to a fee that is based on the average annual volume of carbon credits generated by the PoA (USD 0.10 per carbon credit).

1. Getting started - checking the eligibility of your PoA

Prior to starting the drafting of any project documentation and planning stakeholder consultations you first need to ensure that your PoA is eligible under The Gold Standard. Key conditions that need to be complied with include :

- Scale of the programme: PoAs can be developed as microscale programmes, small scale PoAs (same thresholds apply as in the CDM) and large-scale PoAs (anything exceeds small scale thresholds).
- Type of programme: only renewable energy, energy efficiency and waste handling programmes are eligible.

- Official Development Assistance: programmes that receive Official Development Assistance on the condition that the generated GS-CERs are transferred back to the donor countries are not eligible.
- Previous announcement check: programmes previously announced to go ahead without the assistance of carbon revenues are not eligible.

For certain project types such as hydropower, landfill gas, biomass and waste heat recovery, amongst others, additional eligibility criteria apply. These specific criteria can be found in The Gold Standard guidance documents .



2. Setting up an account with The Gold Standard Registry

Once you are confident the programme meets all eligibility criteria, it is advised to open an account in The Gold Standard Registry. This account is a web-based application that serves as a tracking tool for the progress of your PoA and will be necessary to apply for registration under The Gold Standard. The opening of the account is free of charge.

3. Drafting project documentation

With the account setup, the drafting of The Gold Standard documentation can start. On top of the CDM PoA- and CPA-DDs, additional consultation reports need to be drafted for both the PoA in general as well as for each CPA that is to be included in the programme. Table 7.1 provides an overview of the additional documents that are required.

Table 7.1:
Documentation to be completed for Gold Standard certification of a CDM PoA.

Document name	Explanation	Contents
PoA Passport	Covers additional information required by The Gold Standard and includes basic programme information given in the CDM PoA-DD and Local Stakeholder Consultation Report.	<p>The contents of the document include:</p> <ul style="list-style-type: none"> - Section A – C: Basic programme characteristics (title, programme description, eligibility to apply Gold Standard, greenhouse gases covered, additionality). - Section D: Justification of whether consultations are made at PoA or CPA level. <p>If the above are conducted at PoA-level, sections are also available for:</p> <ul style="list-style-type: none"> - Outcomes of Local Stakeholder Consultations - Outcomes of the Do-No-Harm assessment and Sustainable Development assessment - Monitoring plan
CPA Passport	The CPA Passport is required regardless of whether consultations are carried out at PoA or CPA level. It covers additional information required by The Gold Standard and includes basic programme information given in the CDM CPA-DD and Local Stakeholder Consultation Report.	<p>The contents of the document include:</p> <ul style="list-style-type: none"> - Sections A – D: Basic programme characteristics (title, programme description, eligibility to apply Gold Standard, greenhouse gases covered, location). • Section E: Outcomes of Local Stakeholder Consultations • Section F: Outcomes of the Do No Harm assessment and Sustainable Development assessment • Section G: Sustainability monitoring plan • Section H: Additionality
PoA Design Consultation Report	Provides a description of how the PoA Design Consultation(s) was carried out, and how any issues raised have been taken into account within the programme's overall design.	<p>It is divided into three sections:</p> <ul style="list-style-type: none"> • Section A: outlines basic programme characteristics, including the geographic boundary, tentative start date, eligibility under The Gold Standard and current status of the programme. • Section B: features a complete list of all invited stakeholders and describes how their feedback was solicited. • Section C: describes the outcomes of the consultation(s), including any comments received and any changes made to the programme as a result.
Local Stakeholder Consultation Report (LSCR)	The document that describes the outcomes of the local stakeholder consultation carried out at either PoA or CPA-level, depending on which approach is chosen.	<ul style="list-style-type: none"> • Section A: Includes basic programme information including title, eligibility to apply Gold Standard and the current status of the programme. • Section B: Describes the design of the Stakeholder Consultation Process. Includes an agenda of the stakeholder meeting, complete list of all stakeholders invited, evidence of invitations. • Section C: Reviews the consultation process. Includes a complete list of all participants, evaluation forms, pictures, and minutes. Notes whether any alterations were made to the programme based on the comments received. • Section D: Describes the Sustainable Development Assessment. Includes the Do No Harm assessments and sustainable development matrices. • Section E: Covers the Sustainability Monitoring Plan. Includes details on how monitoring is to be carried out • Section F: Description of Stakeholder Feedback Round.



In order to complete the drafting of the above documents, the PoA needs to undergo a three-step consultation process during which stakeholders affected by the programme can express their comments or concerns regarding the scope and general design of the programme. Only the second stage – the Local Stakeholder Consultation – needs to be conducted through a physical, face-to-face meeting. The other two rounds – the PoA Design Consultation and the Stakeholder Feedback Round – can be arranged electronically, in writing, or over the phone.

a) PoA Design Consultation:

The PoA Design Consultation is a general consultation round covering the PoA as a whole. It aims to obtain feedback from governments, relevant national authorities, NGO communities and other stakeholders on the design framework of the programme in order to ensure it is in line with the national or regional sustainable development goals and priorities.

The consultation can be conducted via email or telephone and does not require a live meeting. Stakeholders should be asked for comments on the actors involved, the institutional framework of the programme, possible synergies or conflicts with other

projects occurring in the same geographic boundary and their thoughts on whether the local stakeholder consultations should be carried out at PoA or CPA level. A period of at least one month should be allocated for stakeholders to provide inputs and all evidence retained. The results should be presented in the PoA Design Consultation Report, which is reviewed by The Gold Standard.

b) Local Stakeholder Consultation

The Local Stakeholder Consultation is a physical meeting with stakeholders that are directly impacted by the programme. The key objective of the meeting is to introduce and explain the scope of the programme to the local community and to collect feedback, comments and concerns regarding the design of the PoA. The Gold Standard requires detailed documentation of how the consultations were carried out, who was invited, who attended, and what issues were identified by the stakeholders. All findings need to be reported in the Local Stakeholder Consultation Report, as well as The Gold Standard Passports. Consultations can be completed either at the PoA level or the CPA level, depending on the programme design (see Box 7.2).

Box 7.2 One or several Local Stakeholder Consultations?

The meeting(s) can be conducted at either the PoA or CPA level. To be able to conduct only one meeting at the PoA level, however, justification as to why this is a representative approach needs to be provided. For instance, if the programme is implementing several CPAs implementing the same technology, targeting the same user type and covering the same geographical area, hosting on consultation on the PoA level may be allowed. Alternatively, to minimise expenses related to arranging and hosting separate meetings per CPA, the CME can opt to conduct a Local Stakeholder Consultation for a group of similar CPAs if appropriate justification is provided in the Local Stakeholder Consultation Report.



To ensure sufficient attendance at the Local Stakeholder Consultation, the CME is required to publicise the meeting via radio announcements, posters, or newspaper advertisements to ensure wide outreach. Records of all invitations, whether done through personal (i.e. through email or telephone) or public means, need to be clearly documented in the Local Stakeholder Consultation Report.

Prior to conducting the physical meeting, the CME also needs to prepare draft versions of both the 'Do No Harm Assessment' and the 'Sustainable Development Matrix'. The content of these two

documents will need to be discussed during the meeting, and any differences in opinion between the documents prepared by the CME and those reported by the stakeholder will need to be reported in the Local Stakeholder Consultation Report. In other words, the CME's own assessment of the sustainable development impacts of the PoA needs to be supplemented by the feedback gathered from all stakeholders participating in this life meeting.

Box 7.3 Setting up your agenda for the Local Stakeholder Consultation

The Gold Standard suggests the following agenda for the stakeholder consultation meeting(s):

1. Open the meeting by introducing the CME and the people present. Explain that the goal of the meeting is to obtain feedback and suggestions for improvement of the project.
2. Introduce the aims of the programme, the project phases and timelines.
3. Pause to allow time for stakeholders to ask any questions and ensure they understand the project.
4. Complete the sustainable development matrix with stakeholders. Explain what the matrix is and how to complete it. Work through each sustainable development indicator and have the stakeholder score each as positive, negative or neutral. If any negative scores come up, discuss how these could be mitigated. For any positive scores, ask stakeholder if they think the project is doing too little/enough/too much for each impact and ask why.
5. Discuss options for how continuous input/grievance mechanism can be provided for the programme.
6. Discuss options for monitoring the sustainable development indicators, including how this could be done cost-effectively and whether stakeholders could participate.
7. Close the meeting. Ask stakeholders to fill out the evaluation form, and explain that a follow-up meeting (the Stakeholder Feedback Round) will take place and give an indication of when and how people can access the minutes of the meeting.

The CME should ensure that throughout the meeting detailed minutes (i.e. notes) are taken as well as photographs. This information will serve as evidence of what took place during the meeting and will facilitate completing the Local Stakeholder Consultation Report.

The **Do No Harm Assessment** uses safeguarding principles derived from the Millennium Development Goals to ensure that the programme does not harm local communities or the environment. This involves assessing the risk of your project breaching these principles, such as the risk of the project resulting in involuntary resettlement. Programmes can only qualify under The Gold Standard if the programme meets all principles. In cases where a risk of breach is identified, a mitigation measure needs to be put in place and monitored over the programme's crediting period to ensure compliance.

The **Sustainable Development Matrix** identifies and quantifies environmental, social and economic benefits or risks of the programme against specific criteria. For each criteria, the programme's impact must be quantified as negative (-), positive (+) or neutral (0). For a programme to be eligible under The Gold Standard the PoA as a whole must contribute positively to at least two of the three categories and neutral to the third category. If a negative impact is identified, a mitigation measure needs to be proposed to neutralise the impact of the project on that criteria. For example, if a programme's impact on water quality was found to be negative due to the project discharging contaminants, a mitigation measure could include introducing an extra water treatment step prior to discharging wastes.



Any indicators that score positively or negatively, or that are neutralised using a mitigation measure must be monitored over the course of the crediting period in addition to the parameters required to be monitored under the CDM. As such, the Sustainable Development Matrix provides the foundation for creating a Sustainability Monitoring Plan, which needs to be outlined in the Local Stakeholder Consultation Report and The Gold Standard Passport. This monitoring plan will need to be followed to monitor, report and verify the programme's impact on sustainable development.

c) Stakeholder Feedback Round

The Local Stakeholder Consultation is followed by the Stakeholder Feedback Round. The objective of this exercise is to show how concerns received during the meeting have been taken into account and to allow for any additional comments to be raised that may be relevant to the programme. It does not necessarily have to be a physical meeting, but all stakeholders invited for participation in the previous consultation must be included in the Stakeholder Feedback Round.

As part of the Stakeholder Feedback Round, the Local Stakeholder Consultation Report, PoA- and CPA-DDs, and The Gold Standard Passports should be made available to all participants of the previous consultation round. All these documents should contain revisions featuring any comments raised during the meeting and must be available for public commenting for period of two months before validation can be finalised. Note that the Stakeholder Feedback Round can be performed in parallel to validation .

4. Validation, Registration and Issuance

The results reported in the Local Stakeholder Consultation Report and the Design Consultation Report need to be submitted to The Gold Standard Secretariat for review. If deemed complete, the programme will become officially 'listed' in The Gold Standard Registry and the validation process can start.

The aim of The Gold Standard validation process is to validate the programme's sustainable development benefits and ensure that any comments raised during the consultations have been taken into account in the programme design. For this reason, under the retroactive crediting approach (i.e. where The Gold Standard is added to a registered CDM PoA) the validator will mostly focus on the assessment of the additional Gold Standard documents. In case both the CDM and Gold Standard documentation are drafted in parallel, the entire package will need to be validated. It is important to ensure that the contracted validator has prior experience with PoA rules under The Gold Standard to avoid unnecessary delays during the validation process.

Once the validation is completed, the PoA needs to undergo an internal review by The Gold Standard's in-house technical team before the PoA can become registered. This internal review consists of checking the sustainable development aspects of the programme and verifying the validator's work. A registration fee associated with the estimated volume of carbon credits for the first 12 months of the

crediting period of the PoA applies (USD 0.10 per carbon credit).

Once the GS CDM PoA is registered, GS CERs can be issued following the verification of the monitoring effort of each CPA included under the programme. Both CDM and Gold Standard monitoring parameters need to be regularly monitored throughout the programme's crediting period, as outlined in the monitoring plan of the CDM PoA-DD and The Gold Standard Passports. Upon issuance, the CME may choose to either pay a fee (USD 0.10 per carbon credit) or a share of proceeds fee (1.5% of total volume of net issued GS CERs).

7.4 Developing PoAs under the voluntary Gold Standard

Project developers that do not opt to develop their programme through the CDM and are not targeting the compliance market can apply The Gold Standard certification framework to implement a voluntary PoA. A voluntary PoA registered under The Gold Standard generates Gold Standard Voluntary Emission Reductions (GS VERs), which can be sold on the voluntary market. The voluntary market consists of corporate buyers and individuals that voluntarily purchase carbon credits to reduce the impact their operations or actions are having on the environment – whether it is an American IT company neutralising the carbon footprint of its servers or a tourist offsetting the carbon emissions of his or her flights. The voluntary carbon market has been growing rapidly over the past years and presents an increasingly more attractive source of demand for carbon credits.

While Gold Standard certification can be used as an 'add-on' to an existing CDM PoA, the standard also presents separate guidance on developing stand-alone voluntary PoAs that stand separate from the CDM. This section provides an overview of the tasks that need to be carried out by project developers to set up a voluntary PoA under the Gold Standard and subsequently include Voluntary Project Activities (VPAs). The guidance is derived from the rules, requirements and guidelines presented by The Gold Standard Version 2.2 as well as a set of guidance notes that are tailored to voluntary PoAs. These rules are also in line with The Gold Standard Version 3.0, which will be released in 2014³. It is important to note that although certain Gold Standards rules are different from those applicable under the CDM, the two standards have a considerable amount of overlap.

This section focuses on the rules that differ under The Gold Standard, and relates to the CDM for concepts covered in Chapter 3 of this PoA Handbook. All guidance presented in the previous section regarding checking eligibility with The Gold Standard, opening up an account with The Gold Standard Registry, conducting the stakeholder consultation sessions and completing the Local Stakeholder Consultation Report and Gold Standard Passports are applicable to the voluntary Gold Standard as well and are referred to in this section assuming the reader is already familiar with the concepts.

³ As at the time of publishing The Gold Standard Version 3.0 was not released yet, the reader is advised to consult The Gold Standard website for any updates regarding PoA guidelines.



1. Drafting project documentation

Having ensured your programme meets all Gold Standard eligibility criteria outlined in the section above, the drafting of the PoA documentation can start. Similarly as under the CDM, a PoA-DD and separate VPA-DDs need to be drafted. On top of this, as previously mentioned, an additional Local Stakeholder Consultation Report and a Gold Standard Passport need to be drafted per VPA. While the templates for the PDDs are similar to those used under the CDM, there are a number of concepts that differ. These include the programme size, application of methodologies, the demonstration of additionality and the definition of the crediting period. In many scenarios, the options presented by the voluntary Gold Standard allow the project developer for more flexibility in PoA implementation than when CDM rules are followed.

Programme size

The Gold Standard also offers Microscale Programme Rules that allow for the inclusion of microscale VPAs. Microscale VPAs may not generate more than 10,000 carbon credits per year, and may

be included in both large and small scale programmes if this cap is adhered to for that VPA. Microscale VPAs benefit from the possibility of applying a simplified approach to demonstrating additionality, and validation and verification procedures are simplified and more affordable. The Microscale Programme Rules are only applicable to voluntary PoAs and cannot be applied in combination with a CDM PoA.

Small scale PoAs need to apply the same thresholds as set forth by the CDM (see Table 3.3 in Chapter 3).

Application of methodologies

When developing a PoA under the voluntary GS, the project developer has the option to either apply an existing CDM methodology or use a methodology developed specifically for voluntary Gold Standard projects. The Gold Standard has developed eight methodologies to date, covering cookstoves, household biogas digesters, improved ignition techniques and water filtration devices, amongst others.

Box 7.4 Methodologies under The Gold Standard

Similarly as under the CDM, The Gold Standard allows voluntary PoAs to use more than one methodology. All methodologies/combinations of methodologies must be introduced in the PoA-DD together with a justification for their use. A real case VPA-DD must be submitted for each combination of methodologies at the time of validation of the programme.

The following methodologies have been approved by The Gold Standard:

1. Thermal energy from plant oil for the user of cooking stoves.
 2. Program, baseline and monitoring methodology for introduction of alternative ignition technique as measure to improve energy efficiency of domestic coal fires.
 3. Technologies and practices to displace decentralized thermal energy consumption.
 4. Ecologically Sound Fuel Switch to Biomass with Reduced Energy Requirement.
 5. Indicative Program, Baseline and Monitoring Methodology for Large-Scale Supply and Distribution of Efficient Light Bulb, Showerheads and Water Saving Products to Households.
 6. Biodiesel from waste oil/fat from biogenic origin for use as fuel.
 7. Fuel switch from fossil fuels to biomass residues in boilers for heat generation.
 8. Reducing Vessel Emissions Through the Use of Advanced Hull Coatings.
-

A new methodology not already mentioned in the registered PoA-DD may be introduced post-registration in a voluntary PoA. In such cases, design change rules at a programme level apply and the activity applying the new methodology will need to undergo a full validation and registration process.



Box 7.5 Benefits of applying Gold Standard methodologies

The Gold Standard continues to develop new methodologies for uptake by project developers implementing PoAs in the voluntary market. Prospective project developers unsure about whether to apply a CDM or Gold Standard methodology should carefully assess and compare the scope, baseline definition and monitoring requirements of available methodologies to pick the one(s) that fit best to the envisaged programme.

For instance, a household biodigester programme aiming to earn carbon credits from the substitution of fossil fuel, non-renewable biomass and methane avoidance will need to use a combination of three methodologies (AMS-I.C., AMS-I.E., and AMS-III.R) if the CDM is followed. This adds complexity both in terms of drafting PDDs and calculating the amount of carbon credits that can be generated. The voluntary Gold Standard has developed one methodology ('Technologies and practices to displace decentralized thermal energy consumption.') that combines all three components. Besides making the calculation of the carbon credit potential easier, the methodology also applies a higher carbon emission factor for biomass than the respective CDM methodology (112 tCO₂/TJ instead of 81.6 tCO₂/TJ), generating more carbon credits. The methodology also offers a simplified approach to estimate amount of carbon credits to be gained from the methane avoidance activity.

Demonstration of additionality

A voluntary PoA is required to demonstrate additionality at both the PoA and VPA level. In case additionality is demonstrated only at PoA level then an inclusion criteria for the same will need to be defined in the PoA-DD to ensure that the VPA included is additional. Large and small scale voluntary PoAs are required to apply the latest version of the 'Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for

programme of activities'⁴. Microscale PoAs can apply The Gold Standard simplified additionality guidelines, which are comparable to the CDM microscale guidelines but offer a different selection of criteria (see Table 7.2). Only one of these criteria needs to be met for a VPA to be considered automatically additional. Microscale additionality is limited to regular VPAs, meaning that retroactively included VPAs need to follow the CDM Project Standard⁵.

Table 7.2:
Microscale additionality guidelines for VPAs

1	The VPA is located in a Least Developed Country, Small Island Developing States or a Land Locked Developing Country.
2	The VPA is located in a special underdeveloped zone of the host country identified by the Government before 28 May 2010.
3	The VPA is located in any host country different from the countries defined above but project participants can demonstrate that project implementation will essentially benefit poor communities.
4	The project activity generates electricity either through: a) on-site generation; or b) feeds into an existing or new local, low voltage isolated grid.
5	The VPA employs specific renewable energy technologies or measures recommended by the host country DNA and approved by the CDM EB or approved by The Gold Standard Foundation.
6	The VPA is an emission reduction project in which each of the independent subsystems or measures achieve annual emission reductions equal to or less than 600 tCO ₂ or annual energy savings equal to or less than 600 MWh or installed capacity is less than 1500 kW for households/SMEs or communities. The limits defined above apply to each subsystem or the measure implemented.

⁴ EB 70, Annex 5

⁵ EB 70, Annex 2, Version 02.1



Crediting period and retroactive crediting

A voluntary PoA has the same crediting period (28 years) as a CDM PoA. Similarly, the VPA can have a crediting period of 21 years (renewed after every 7 years) or a 10-year fixed crediting period.

An interesting feature of the voluntary Gold Standard is that projects can be retroactively credited, given certain conditions are met. A VPA submitted for inclusion under the retroactive project cycle is eligible to receive carbon credits for emission reductions realised up to two years prior to the date of PoA registration. This includes emission reductions generated by equipment that has been operational for more than the two years during which the carbon credits can be claimed. Unlike under the CDM GS PoA rules, no carbon credits need to be surrendered to The Gold Standard in the following years and the carbon credits generated over the two years therefore represent additional carbon revenues.

To ensure that a VPA is eligible for retroactive inclusion, The Gold Standard requires the VPA to go through a pre-feasibility assessment. This is subject to a fee (see Box 7.1).

Upon initiating drafting of the PoA documentation, the project developer should start planning the stakeholder consultation process. The exact components of these consultations are described in detail in the previous section, as they apply to both GS CDM PoAs as well as PoAs developed solely under the voluntary Gold Standard. This means that the programme needs to undergo all three consultation rounds (PoA Design Consultation, Local Stakeholder Consultation, and Stakeholder Feedback Round) during which the sustainable development impacts of the PoA are assessed and the programme design is adapted to ensure any negative impacts on stakeholders and the environment are mitigated.

2. Validation

Once the draft PoA-DD, VPA-DD and the respective Local Stakeholder Report and Gold Standard Passports are completed, validation of the PoA can start. It is recommended that upon this stage, the Design Consultation Report and the Local Stakeholder Consultation Report are uploaded to The Gold Standard Registry. This will allow The Gold Standard to perform an initial completeness check, following which the programme will be 'listed'. Furthermore, project related documentation needs to be made available for public feedback for a period of at least two months before validation can be finalised.

Validation of voluntary Gold Standard PoAs can be carried out by the same validators as under the CDM and follows the same procedures. It is however important to select a validator that has already dealt with voluntary Gold Standard programmes before, as a thorough understanding of the CDM will in itself not be sufficient to carry out the validation process effectively. For an overview of all validators that have been involved in Gold Standard projects and PoAs to date you can view The Gold Standard registry.

Microscale programmes have the option to skip the conventional validation process handled by a validator and can opt for an internal validation process by The Gold Standard. The cost associated with this validation is USD 20,000 for the validation of the PoA, and an additional USD 2,500 for the inclusion of a VPA. This is considerably cheaper than validation by a regular validator.

Box 7.6 Validation of activities in conflict zones and refugee camps

PoA developers have faced considerable challenges in contracting validators for the validation and verification of programmes located in conflict zones or refugee camps. Considering the untapped sustainable development benefits that these projects bring, The Gold Standard has introduced special provisions for validation and verification of these activities. The Gold Standard rules allow non-retroactive VPAs located in conflict zones and refugee camps to limit validation or verification to a desk-review, with the on-site validation or verification conducted by an 'Objective Observer'. The Objective Observer is an independent expert from a local university, NGOs or company proposed by the PoA developer who can credibly carry out an appraisal of the project.



3. Registration and Inclusion of VPAs

Once validation is complete and the programme has received a positive opinion, all programme documentation needs to be uploaded to the Registry. The Gold Standard then conducts an internal review, which lasts eight weeks. In a scenario where no further issues are raised, the programme reaches successful registration and new VPAs can be included to the programme.

The inclusion of VPAs is based on a compliance check completed by a validator with respect to the inclusion criteria defined in the GS PoA-DD. The validator will take into account the following points while preparing the Inclusion Report:

- Geographic boundary of the VPA and whether it is within the boundary of the PoA set at the time of registration;
- Additionality criteria and whether they are met as defined in the PoA-DD;

- Whether the VPA is in line with the baseline scenario identified in the PoA-DD;
- Whether the emission reduction calculations are in line with the procedures defined in the PoA-DD;
- Whether the monitoring plan of the activity is designed as per the applied methodology and in accordance with the PoA-DD;
- In case of Do No Harm Assessment and Sustainable Development Matrix is being conducted at PoA level – check that the monitoring plan is as per the PoA Gold Standard Passport.

For microscale programmes following the internal validation process by The Gold Standard, this procedure takes approximately eight weeks. A registration and inclusion fee of USD 0.10 per carbon credit is applicable for all VPAs.

Box 7.7 Liability and erroneous inclusion

For voluntary Gold Standard PoAs, the liability lies with the CME. This is different from a CDM PoA where the liability lies with the validators. This means that the CME is responsible for erroneous inclusion of VPAs and hence accountable. In case it is found that a VPA has been erroneously included, the VPA may not be issued GS VERs and the GS VERs already issued to this VPA will need to be compensated for by the CME.

4. Verification and issuance of GS VERs

Verification of emission reductions under the voluntary Gold Standard does not differ from the CDM. All parameters defined by the methodology as well as any parameters identified during the Local Stakeholder Consultation need to be monitored throughout the monitoring period. The Gold Standard allows multiple validators to be contracted within a same programme to verify different VPAs. Upon issuance, the programme manager receives 98% of the verified emission reductions as the remaining 2% is retained by The Gold Standard as part of an issuance fee.



Box 7.8 The choice to develop a voluntary Gold Standard PoA

The 'Indonesia Domestic Biogas Programme' (IDBP) disseminates biogas digesters as a local sustainable energy source by developing a commercial, market-oriented sector for them. Hivos, a Dutch Foundation, started the programme in 2009 with funding provided by the Dutch Embassy in Jakarta, in cooperation with the Indonesian Ministry of Energy and Mineral Resources and SNV. Almost 8,000 biogas digesters have already been implemented between 2009 to 2012.

In the project design, carbon finance was considered essential to make the programme successful. At first the CDM was considered, but after a careful assessment Hivos decided to go ahead with the implementation of the PoA under the voluntary Gold Standard. The main reasons behind this choice were as follows:

- Highlighting the programme's sustainable development benefits: The Gold Standard certifies both GHG emission reductions and the contribution to sustainable development;
- Premium price: Gold Standard certified credits generally transact at a premium price due to the additional sustainable development benefits they guarantee;
- Combined methodology: The Gold Standard has developed a methodology integrating both carbon dioxide mitigation from fuel replacement and methane avoidance due to changed manure management;
- Attractive emission reduction potential: the applied Gold Standard methodology allows for the application of a higher carbon emission factor than the responding CDM methodology, resulting in more carbon credits per biogas digester;
- Retroactive crediting: The Gold Standard allows to retroactively credit emission reductions generated by biogas digesters installed before the starting date of the PoA.

(Harry Clemens – Hivos)

7.5 Further reading

Useful additional resources include:

- The 'Gold Standard Requirements' and 'Gold Standard Toolkit' documents hosted on their website. These outline in more detail how to apply The Gold Standard to both voluntary and CDM projects. They also make reference to additional guidance hosted on their website where needed.
- 'A Comparison of Carbon Offset Standards' (March 2008) WWF Germany : provides a concise overview of the main carbon standards operating on the voluntary carbon market, as well as their applicability criteria and outstanding characteristics.



8
Opportunities and
challenges for
PoAs in Africa





8.1 Key Recommendations

- Africa, being home to many Least Developed Countries, has become of key interest to investors seeking carbon credits that are eligible for the EU-ETS.
- The PoA model has enabled the pooling of geographically dispersed, small scale project activities that present the most attractive project opportunities in on the continent.
- Simplification of methodologies and additionality criteria for small scale project types have greatly facilitated the implementation of CDM across Africa.
- Various sources of funding are available to kick start your PoA, ranging from grants to interest free loans.
- Microfinance institutions provide attractive solutions to finance PoAs targeting rural households or SMEs.
- Certain challenges remain: obtaining a Letter of Approval from a local DNA can be troublesome, capacity building to the persons in charge of granting approvals may be necessary to speed up the process.

8.2 Introduction

The establishment of the PoA model has greatly contributed to the increased opportunities for implementing carbon projects in Africa. PoAs facilitate the dissemination of a large number of small installations without needing to know exactly where each will be located prior to delivery - this is very practical in Africa where projects often target households and communities.

A number of decisions made at the international level have also helped Africa become an attractive host region for new CDM projects. One such move was the decision to abolish the registration fee and share of proceeds at issuance for CDM projects hosted in Least Developed Countries¹. This measure has eliminated part of the financial burden associated with high transaction costs of the CDM and has stimulated PoA development in the region. In addition, creation of the 'CDM Loan Scheme' which supports CDM project development in Least Developed Countries and countries with less than 10 registered CDM projects, has greatly helped project developers to access the up-front finance needed to develop the carbon component of PoAs. Another important measure is the

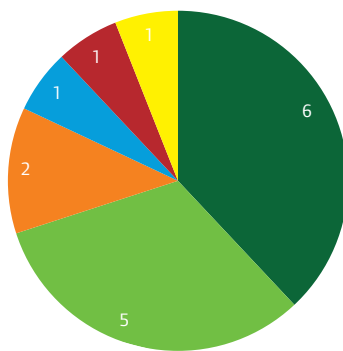
possibility of projects located in LDCs to demonstrate additionality through a simplified approach, opening up new opportunities for microscale project activities that employ renewable energy and energy efficiency².

Finally, demand for carbon credits generated in Africa has picked up as a result of a change in regulation. Since the start of 2013, CERs generated from newly registered projects located in non-Least Developed Countries are no longer eligible in the EU Emissions Trading Scheme, currently the largest source of demand for carbon credits. This means that development of new carbon projects has shifted to Least Developed Countries, many of which are located in Africa.

As a result of these developments, the number of carbon projects in Africa has caught up enormously, and Africa is becoming the centre-stage for the implementation of new CDM projects for years to come. This chapter aims to present key opportunities and challenges of PoA development on the continent.

Figure 8.1
Overview of Africa's registered CDM PoAs by project type.

(source: UNEP Risoe's PoA Pipeline 1st January 2013)

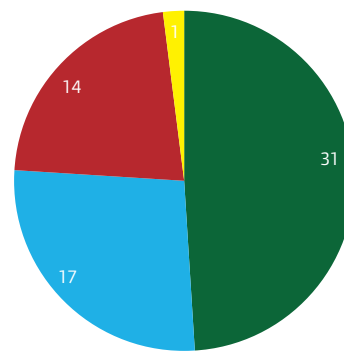


Solar	38%
Energy efficiency households	32%
Hybrid renewables	12%
Wind	6%
Transport	6%
Landfill gas	6%

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Figure 8.2
Overview of registered CDM PoAs per region.

(source: UNEP Risoe's PoA Pipeline 1st January 2013)



Asia & Pacific	49%
Africa	27%
Latin-America	22%
Middle East	2%

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¹ 2/CMP.3, paragraph 31

² EB 68, Annex 26. 'Guidelines for demonstrating additionality of microscale project activities' (Version 04.0).



8.3 Overcoming Africa's historical struggle with the CDM

Africa is becoming a major player in the PoA market. Of the 63 registered CDM PoAs to date, 17 (27%) are being implemented in Africa. There are an additional 96 African PoAs currently at validation. The most common registered PoA types are solar and energy efficiency in households (including efficient cookstoves and lighting).

Suitability of the PoA structure for African projects

Implementation of CDM projects has only recently started to take off in Africa. The fundamental reason for the historically limited CDM action in the continent has been that most African countries have limited GHG emissions in the first place. The small scale and dispersed nature of GHG emissions generation in Africa does not fit well with the original design of the CDM, which was primarily aimed at large, single sources such as electricity generation and industrial

production. Furthermore, the high upfront costs associated with the CDM can only be justified for projects with an emission reductions potential exceeding 30,000 carbon credits per year. Due to low level of industrialisation in most African countries, large abatement opportunities that can be covered under a single CDM project are scarce and most 'low hanging fruit' involving activities like methane capture from landfills or industrial gas destruction had been picked at an early stage, leaving few attractive investment opportunities remaining. Due to the large abatement opportunities elsewhere, countries like China, India, Brazil and Mexico have been attracting the bulk of CDM investments to date.

The introduction of a defined PoA model has overcome this issue by facilitating the development of geographically dispersed emission reductions activities, each with a small emission reductions

Box 8.1 CDM Loan Scheme

The CDM Loan Scheme was established in 2010 to support the development of CDM projects in countries with fewer than ten registered projects. The loan is administered by the UN Office for Project Services (UNOPS) and the UNEP Risoe Center. Extended loans cover the costs of PDD development, validation and the first verification, and no interest is charged. The minimum requirements for the CDM loan scheme are:

- The CDM Loan Scheme is not established to retro-actively reimburse for past expenses but to provide funding for upcoming, outstanding expenses related to PDD development, validation and 1st verification.
- Projects must be located in countries with fewer than ten registered CDM projects, as of 1 January of the year of submission.
- Projects must have a high probability of registration and generate at least 7,500 CERs per year for projects in Least Developed Countries, and 15,000 CERs per year in other countries.
- Project documentation must be developed by an experienced CDM consultant.
- The loan must not "crowd out" other obvious funding for the development costs (like donor funding or funding by an already identified buyer of CERs from the project).

The CDM loan is normally disbursed in payments upon reaching milestones in the project development. These milestones are:

- 10% of the loan amount upon signing the loan agreement;
- 20% of the loan amount upon start of validation;
- 15% of the loan amount upon completion of validation;
- 10% of the loan amount upon CDM project submission;
- 20% of the loan amount upon registration with the UNFCCC;
- 25% of the loan amount upon the first issuance of CERs.

The approved loans are not directly disbursed to the loan applicant. The standard loan agreements are three-party agreements in which a CDM consultant is established as a co-signatory. In this standard loan agreement with UNOPS, the loan applicant agrees to the funds being disbursed to the CDM consultant, and the CDM consultant should signify acceptance to extend payments for services, as intermediary, with the received loan fund.



Table 8.1:
Examples of loan schemes available for project developers in Africa

Name	Type of support	Intended purpose	Eligibility criteria
CDM Loan Scheme ³	0% interest loan	Support to cover CDM expenses, including PDD development, validation and verification.	<ul style="list-style-type: none"> – Projects must be in host countries with less than 10 registered CDM projects. – Projects must generate at least 7,500 CERs/year if located in a LDC; 15,000 CERs/year if located in a non-LDC. – Project documentation must be developed by a CDM consultant.
Africa Carbon Asset Development Initiative (ACAD) ⁴	Grants; Technical assistance; Carbon finance training for local financial institutions.	To provide support in the early stages of carbon project development.	<ul style="list-style-type: none"> – Afforestation and reforestation projects are not eligible. – Project must be located in Africa
Millennium Development Goal Carbon Facility ⁵	Technical assistance; Preparing CDM documentation; Assisting with identifying buyers; Assisting with validation costs.	To support the development of CDM projects in countries with few or no CDM projects. Priority is given to those projects which strongly contribute to achieving the MDGs in least developed countries.	<ul style="list-style-type: none"> – Projects must make a significant contribution to sustainable development. – Ineligible project types include large-scale hydropower, geo-sequestration and the capture and destruction of industrial gases.

Box 8.2 Combining multiple income streams

The 'Renewable Biomass Pellet Cook Stove Programme' in Tanzania aims to distribute a new type of improved cookstove on the African market called 'Jiko Bomba'. The cookstove runs on renewable biomass fuel pellets, which are produced and sold under the PoA. The biomass used to make the pellets is predominantly rice husk mixed with *Jatropha* seed cake, which is currently a waste product. The idea behind the PoA is to integrate the cookstoves in the existing *Jatropha* and rice value chains. The income generated under the PoA is therefore threefold: from the sale of cookstoves, the biomass pellets and the carbon credits. The combination of multiple revenue streams reduces the project risks and generates extra income, thereby strengthening the business case.

A specialised production facility is currently being developed under the programme designed for a minimum output of 4,000 stoves a year. Production is expected to increase to 25,000 stoves a year in the course of the programme. Vattenfall are in preliminary discussions with the CME for this PoA on supporting the development of the POA-DD and the CPA-DDs and the off-take of CERs from this POA.

(Bjarne Laustsen, Kiwia & Laustsen Limited)

³ For more information on the CDM Loan Scheme, refer to <http://www.cdmloan-scheme.org/>

⁴ For more information on the ACAD, refer to at <http://www.acadfacility.org/>

⁵ For more information on the MDG Carbon Facility, refer to <http://www.mdgcarbonfacility.org/>



potential which in aggregate can be substantial enough to justify implementation under the CDM.

Furthermore, PoAs also offer the possibility of rolling out multinational programmes. Through multinational PoAs, relatively small emission reductions potentials per country can be aggregated into volumes that make the programme attractive. It is not by coincidence that most multinational PoAs currently under development are located in Africa and that many project developers value the possibility of scaling-up to other countries. Adding CPAs over time allows project developers to expand into regions and countries without strictly defining the amount and precise location of units that will be implemented throughout the programme's lifetime. Multinational PoAs in Africa may also enable the convergence of national policies, on which PoAs are based, into regional policies in sectors such as energy and agriculture that can help strengthen the economic and political cooperation efforts already in place in some regions of Africa.

Funding opportunities

Another factor limiting successful implementation of CDM projects in Africa has been restricted access to funding. Low credit rating of many African host countries, poor institutional and technical capacity, and elevated risk of social unrest and political instability have forced international investors to focus on investment opportunities elsewhere or only consider association with African projects at a later stage of development. The lack of start-up finance necessary to conduct initial feasibility studies and develop project design documents had restricted the quest for new project opportunities, while the unavailability of financing at later stages of the development cycle prevented the realisation of projects with a real business case.

Today, however, considerable CDM development funding has been made available for Least Developed Countries and countries where

CDM implementation is struggling. This presents attractive funding opportunities for African project developers (Table 8.1). The setup of a loan scheme that supports CDM development (PDD drafting, validation, first verification) in countries hosting less than 10 registered CDM projects is one such initiative⁶. Project developers in Africa with viable project ideas can use this loan facility to access the necessary start-up finance to go forth with the CDM.

In addition, a recent shift in investors' priorities in the carbon markets presents an exciting opportunity for African PoAs. The African CDM market is expected to experience further growth in the coming years due to the fact that the EU ETS, the largest and most important source of demand for CDM credits, will only accept credits from new CDM projects registered after 2012 if these projects are implemented in Least Developed Countries. As home to 34 of the world's 49 Least Developed Countries, Africa is in a good position to benefit from this shifting investor interest. With the 2012 registration deadline past now, investors are turning towards Africa to secure carbon credits for long term compliance.

Methodological opportunities

CDM in Africa has also been restricted through the absence of appropriate CDM methodologies that reflect the reality of the continent's conditions. Initially, the CDM focused on CDM methodologies targeting countries with higher degrees of industrialisation and more attractive GHG abatement opportunities. In the last couple of years, a number of CDM methodologies specifically tailored to dispersed, small scale emissions typically prevalent in rural areas have been approved. The increasing approval of suitable methodologies and their combinations applicable to PoAs have significantly facilitated the implementation of new CDM projects in Africa⁷.

Table 8.2:
Main features for African PoAs.

Feature	Explanation
Predominance of small scale methodology applications	Opportunities for large, single-point emissions reductions projects in Africa are scarce since the continent's emissions are generally low. More suitable are smaller, dispersed projects that also have directly positive social, environmental and economic impacts, such an efficient cookstove project that has directly health and economic benefits for the household.
Large role of public institutions/international donor engagement	Barriers to accessing up-front finance at the start of the project make public funds and international donor support crucial for the success of PoAs in Africa. Most CDM funding available now is aimed at supporting project development on the African continent.
Predominance of renewable energy and energy efficiency project types	These project types typically lend themselves to being most suitable for small scale, dispersed activities most common in Africa.

³ COP16: Further guidance related to the CDM. Annex 3

⁷ A list of already approved combinations can be found in EB 58, Annex 23, Paragraph 11 'General Guidelines to SSC CDM methodologies' (Version 16)



8.4 Current state of PoAs in Africa

The fit of the PoA model to Africa's realities is clearly reflected in the PoA pipeline, which shows that African programmes currently account for approximately one-third of all PoAs under development⁸. Scattered throughout more than 22 different countries, the programmes primarily target the promotion of small scale technologies that are highly geographically dispersed and involves households and SMEs, such as efficient cookstoves, solar water heating or domestic biogas. To date, 17 African PoAs have been successfully registered.

8.5 Remaining challenges of developing PoAs in Africa

The introduction of the PoA model, along with improved funding opportunities and the availability of suitable methodologies have all contributed to a more enabling environment for the implementation of CDM projects in Africa. However, challenges related to doing business in Africa continue to affect the prospects for successful development of PoAs, and they need to be taken into account by programme managers interested in implementing projects in Africa.

Technical challenges

Limited experience with conventional CDM projects in Africa has resulted in a negligible transfer of project development skills and a small number of best practice case studies that project developers can learn from. While the introduction of simplified procedures for small scale projects has led to shortened procedures and lower

transaction costs, it has not taken away the need for technical knowledge and lengthy preparation time. Many project developers are struggling to meet expectations set forth in monitoring plans outlined in their respective project design documents due to lack of experience and sufficient local expertise, leading to delays in issuance or lost opportunities to capitalise on potential emission reductions. This is even more relevant to PoAs which can be more complex and time-consuming than conventional CDM projects, especially when such activities cover multiple countries.

Further CDM capacity building is needed to increase the technical capacity to design and develop successful PoAs, combined with efforts in simplifying the rules to incentivise small scale project activities to pursue the CDM. Initiatives such as the adoption of simplified guidelines for demonstrating additionality for microscale project activities are exactly the type of measures that Africa needs to make PoAs a success.

Financial challenges

Apart from a lack of knowledge and familiarity with the CDM requirements, a major obstacle for successful PoA development in Africa is the lack of private investment capital. Most PoAs currently in the pipeline are developed with support of international donors that provide technical and institutional support or offer concessional loans or grants (see Table 8.3). A key reason for this is that project participants are often low income households or SMEs with a poor credit history, a target group private investors keeps at bay.

Box 8.3 Tapping into the methane abatement potential of municipal landfills

One of the significant environmental concerns of the growing urban areas in Africa has been the management of municipal solid wastes. The common practice in Africa is to dispose the waste in landfills or dumpsites - many of these sites are located adjacent to wetlands, which play an essential role in regulating water flows. These wetlands run the risk of getting contaminated by the leachate generated from the landfills following heavy rainfalls. These landfills also generate and emit significant amounts of methane to the atmosphere, a potent greenhouse gas.

Vattenfall, a European energy company, is an active investor in the CDM and is supporting a number of PoAs worldwide. The company is currently supporting the 'Landfill gas capture, flaring and utilization program in Africa', which aims to capture the methane released by municipal landfill sites across a number of African countries. The methane will subsequently be either flared or used as biogas for electricity generation. Individual CPAs under the programme will be directly implemented by site owners, but will need to be designed in a way that meets the inclusion criteria established by the PoA. Vattenfall has provided the upfront payment to cover the development of the PoA-DD and the CPA-DDs, and has the right to purchase the CERs from this PoA under pre-agreed conditions.

(Vincent Helfferich, Vattenfall)

⁸ UNEP Risoe's CDM pipeline: <http://cd4cdm.org>



Some programmes also rely on public funds to support the initial stages of programme development, hoping that private sector investors will find the confidence to seek involvement at later stages where registration risk is minimised or eliminated. Against this background, local financial institutions in Africa tend to be risk averse, and often fail to take into account carbon finance in assessing funding proposals, viewing it as an intangible asset associated with a high degree of price uncertainty.

Establishing a partnership with a microfinance institution (MFI) can be an effective way to overcome funding issues. The structure of small scale activities coincides with MFIs' method of operation, which often specialise in providing financial services to rural communities with low incomes. A PoA can thus make use of MFI's working frameworks, existing distribution channels, experience and networks to improve operation. Additionally, MFIs enjoy a reputation of reliability and have the capacity to structure the financial aspects of a programme that carbon buyers are looking for. The carbon revenues generated by a PoA can substantially support the loan schemes that MFIs apply by (i) lowering interest rates; (ii) expanding the outreach of the programme; and (iii) improving the financial feasibility of the project.

Institutional challenges

Countries wishing to participate in the CDM must designate a National CDM Authority (or Designated National Authority – DNA) to evaluate and approve projects. While most African nations have set up DNAs and adopted general procedures for CDM approval, many countries still lack clear selection criteria for approving new PoAs. This has been a key barrier for many project developers, who are facing indefinite delays in obtaining a Letter of Approval from the Host Country.

The Letter of Approval is a key requirement for the registration of a CDM project. The main reason for delays in issuance of such letter is the lack of capacity of the host country DNA, which are in charge of issuing approvals. Having never hosted a CDM project, many DNAs in Africa either do not have any procedures in place for how to issue a Letter of Approval, or are unclear as to their internal procedures, with different entities within the DNA stating different requirements. This can be very frustrating for project developers. To minimise the risk of delays it is advisable to establish contact with the DNA early on in project development to a) establish what the procedures are for issuing a Letter of Approval and b) introduce the planned CDM project to get the DNA's opinion early on in project development.



Table 8.3:
Overview of development organisations involved in supporting African PoAs

Potential source of funding	Details
African Development Bank	The African Carbon Support Programme ⁹ provides technical assistance designed to promote access to carbon finance. PDD preparation assistance, support for grid emission factor development and supporting the commercial carbon potential of projects are key objectives of the programme.
Belgian Technical Cooperation (BTC)	BTC has launched a CDM support programme for Uganda ¹⁰ , providing both financial support and knowledge transfer.
World Bank	Offers both technical and financial support to PoA developers. Ensuing carbon credits can be purchased by the Community Development Carbon Fund ¹¹ .
KfW	KfW's Carbon Fund has set up various purchase programmes for CERs. Through its PoA Support Centre ¹² , KfW offers advisory, structuring and assessment services for programme proposals as well as financing and grants to cover the preparation of concepts, PDDs and monitoring plans.
Nordic Climate Facility	The Nordic Development Fund (NDF) ¹³ grants finance for mitigation and adaptation activities, mainly for technical assistance and investments. The NDF focuses on low-income countries and grants normally constitute a part of the whole programme financing.
The European Investment Bank (EIB)	Established a Climate Change Financing Facility (CCFF), providing long-term loan financing to companies developing CDM projects. The Bank also has a Climate Change Technical Assistance Facility (CCTAF) to provide upfront funding for project-based carbon asset activities. ¹⁴
The Millennium Development Goal Carbon Facility ¹⁵	The Facility assists the development of CDM projects and the marketing of the carbon credits generated by these projects.
Danida (Danish International Development Agency) ¹⁶	Established a Climate and Development Action Programme. The Ministry of Foreign Affairs will purchase carbon credits in accordance with the government's climate strategy and the national allocation plan.
UNDP-UNEP Partnership on Climate Change	This programme is explicitly designed to address the capacity and technical needs of CDM stakeholders in Africa. UNDP and UNEP offer joint support in helping to develop a carbon market in Africa and open up the development opportunities offered by the CDM.

8.6 Further Reading

Useful additional resources include:

- “The CDM Project Potential in Sub-Saharan Africa with Focus on Selected Least Developed Countries” (2011, Wuppertal Institute and GFA Envest): commissioned by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). Background information on the underlying research project can also be found online: http://www.jiko-bmu.de/english/service/host_country_information/doc/996.php
- Another noteworthy publication summarising possible sources of finance and support for CDM projects in Africa has been published by the UNFCCC in 2012, entitled ‘CDM in Africa: Finance and Support’

⁹ For more information on the African Carbon Support Programme, refer to <http://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/african-carbon-support-program/>

¹⁰ For more information on the BTC, refer to <http://www.btctb.org/en/content/clean-development-mechanism-capacity-building-and-projects-support>

¹¹ For more information on the World Bank's carbon fund, refer to <http://cpf.wbcarbonfinance.org/cpf/>

¹² For more information on KfW's carbon fund, refer to http://www.kfw-entwicklungsbank.de/ebank/EN_Home/Climate_Change/Sustainability_and_Climate_Protection/PoA_Support_Centre_Germany/index.jsp

¹³ For more information on NDF, refer to <http://www.ndf.fi/>

¹⁴ For more information on EIB, refer to http://www.eib.org/attachments/eib_and_carbon_finance_briefing_note.pdf

¹⁵ For more information on the MDG's carbon facility, refer to <http://www.mdgcarbonfacility.org/>

¹⁶ For more information on Danida, refer to http://www.rfldc.org/docs/Climate_Action_Progr.pdf





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