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Evaluation
of the activities of the foundation
”Future of the Carbon Market“

Evaluierung der Tätigkeiten der Stiftung „Zukunft des Kohlenstoffmarktes“

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Executive summary (English)

The Foundation *Future of the Carbon Market* has the objective to support programmatic approaches in international carbon markets through acquisition of emission credits (CERs) under the Clean Development Mechanism (CDM), as well as through consultancy and promotional activities for programmatic activities. Its lifetime is the period 2011-2021. In 2018, the Foundation commissioned Perspectives Climate Group Leaders Digest to undertake an external evaluation of its activities, including:

- A review of the Foundation's objectives and its mission, vision and values
- An analysis of the Foundation's strategy, including the chosen type of action and the chosen approach for providing project support through up-front payments
- An assessment of the staff structure of the Foundation, including external support
- An evaluation of the processes defined by the Foundation, as well as responsibilities of its bodies
- An in-depth review of the four Programmes of Activities (PoAs) that have been financially supported by the Foundation
- A discussion of the consultancy and promotional activities of the Foundation, and
- An outlook on options for the future work of the Foundation.

Our conclusions are as follows:

The Foundation properly defined its mission and followed the principles of strategy development, including a continuous environmental analysis. Defining a foundation-specific vision was not possible, as this is predetermined by the German law for foundations and the German tax regulation[1]. The Foundation's strategy was developed on the basis of a detailed assessment of the environment for programmatic activities as well as an organisational analysis. The Foundation's continuous assessment of the market environment and resulting adjustment of its strategic focus is exemplary, as illustrated by the CDM moratorium issued in 2017.

For the selection of supported projects, the Foundation chose a process where project developers could submit their project proposals to the Foundation and apply for funding. This can be seen as a pragmatic approach that enables quick results, as it supports project that are in an advanced stage of development, i.e. close to implementation. The tenders generated over 50 proposals covering a wide range of sectors and countries. An alternative to open tenders would have been to conduct a strategic evaluation to determine priority sectors and/or project types (e.g. transport as a traditionally difficult sector for climate change mitigation). A detailed description of these options and other alternatives can be found in section 2.4.4 of this report.

The "implementation of innovative carbon market mechanisms" has been defined as the key target of the Foundation. The Foundation's governing bodies see this mainly achieved through the up-front payment

[1] Para 58 of the German tax regulation defines an institution's purpose (= vision) which can be acknowledged as justifying a tax exemption. For the Foundation's case, environmental protection (para 2, 1 of the statutes) applies.

approach which allows to implement activities that cannot be mobilized by the general carbon market due to its payment on delivery approach. It can be confirmed that the Foundation's approach is new in the context of German climate protection measures, while it has been applied internationally by credit acquisition programmes of countries and development banks developed since the CDM crisis, such as NEFCO and CiDev[2]. Moreover, the criterion "innovative project approach was defined as a soft criterion for financial support in the Foundation's funding guidelines. The evaluators would have expected that the focus on innovation in the statutes would have led to the definition of "innovation" as "hard" financing criterion. The innovative character was checked for all selected funding projects, but not with the level of priority the evaluators would have expected given its references in the statutes.

With regards to the four selected PoAs, it is striking that 50% relate to dissemination of efficient cookstoves, and 100% of them are located in Africa. At a first glance, cookstove dissemination cannot be considered a highly innovative project type, as there has been a high number of such successfully registered and operated projects under the CDM. Yet, it can be argued that the Foundation's projects partially have innovative features such as the intention to establish dedicated biomass plantations in order to achieve sustainability in terms of energy supply. The focus on African countries can be explained by the interest to implement activities in LDCs and the large number of good proposals received from this region.

The approach of up-front financing, coupled with milestone payments, is considered in principle as adequate and was seen by recipients as a key difference to "standard" CDM which was crucial for the implementation of the projects. A key target of thee Foundation was achieved in this way. The consultancy activities of the Foundation – i.e. the provision of support for the development of standardised baselines (SBLs) - are also in line with the Foundation's objectives. However, the choice of consultancy provided again appears demand-driven and apparently was not derived from a top-down strategic assessment. Both approaches are valid, as through a demand-driven approach the specific requirements of an active partner organisation can be addressed in an optimal way while a top-down focus on specific topics new initiatives could be generated.

The Foundation has a professional management and staff structure. All members of the Board and Management have long-term experience with carbon markets and international and domestic climate policies. As a critical note it has been observed that until 2016, the Board of Trustees lacked private sector representatives who could have brought in valuable additional perspectives and ideas. The Foundation assigned specialised experts where required, e.g. with regards to tax issues, fund management and legal questions. This is professional and good practice.

Regarding processes and internal communication, there is a clear allocation of responsibilities. The Foundation's bodies have met regularly and discussed the important topics. Decisions were made in accordance

[2] See e.g.: http://siteresources.worldbank.org/INTCARBONFINANCE/Resources/Ci-Dev_Brochure_for_printing_Nov_29_v2.pdf, https://www.ci-dev.org/sites/cidev/files/doucments/Ci-Dev%20-%20Carbon%20Finance%20%26%20Traditional%20Finance%20-%202015-11-25%20-%20FINAL.pdf, https://www.nefco.org/news/continued-progress-for-nefcos-carbon-finance-and-funds/ and http://www.fao.org/fileadmin/user_upload/rome2007/docs/NEFCO%20Carbon%20Finance%20and%20Funds.pdf

to previously and clearly defined rules, and summarised in written minutes. Transparent processes were defined for the evaluation of project ideas and for the decision-making process for awarding funds.

The Foundation supported the development of several standardised baselines (SBLs) for important project types in Africa, Peru and Thailand. Those SBLs reduce the efforts required for developers of programmatic approaches to implement their activities. Hence, the SBL support can be evaluated positively. We would like to note that the evaluation did not look at the quality of the developed SBLs, which is crucial for its environmental integrity. Also, two out of three baselines were successfully approved by the UNFCCC; however, no CDM activity has actually used them yet.

The Foundation was present at important carbon market conferences and fairs over the years. The scope of the evaluation did not comprise the assessment of the preparation and internal ex-post-evaluation of those events, however.

In terms of GHG mitigation, the performance of the four supported PoAs varies significantly, even among projects using the same technology. Two projects are overperforming, while the two other projects have strongly underperformed to date. However, all projects have clear co-benefits in terms of sustainable development.

The fact that some projects are facing challenges is unsurprising in the CDM context – in particular when considering that it is the explicit objective of the Foundation to “support innovative projects that so far have not been reached by the market”. As an example, the most severe problems of the PoA in Senegal relate to the innovative feature of trying to set up a dedicated value chain for renewable biomass fuel which failed as the equipment was inappropriate for the available type of wood.

All PoAs had strong presence on the ground through locally well-anchored non-governmental organizations or businesses. Generally, the performance is strongly linked to the managerial capacity of the project developer and its ability to carefully assess technology use, adjusting the technology continuously to the user needs. For example, the best performer undertook seemingly tiny changes in cookstove design which were instrumental in achieving a very high utilization rate. Underperformers hectically switched technologies leading to high transaction costs and lacked inhouse CDM competence leading to CER issuance delays and methodological challenges.

While the milestone-linked upfront financing by the foundation prevented liquidity crises among the project developers and thus enabled them to carefully develop their project rollout, it was unable to prevent systemic underperformance in project management. In our view, a combination of upfront and increased results-based payments at later project stages could have yielded a better project performance. However, the comparatively short lifetime of the Foundation was a limiting factor for this approach.

We would like to stress that all PoAs have clear co-benefits in terms of sustainable development. These co-benefits should be monitored and reported in a more systematic manner. Optimally, this would be done on the basis of measurable criteria and indicators as proposed in Annex 2 of this report.

The Thai offsetting scheme for renewable energy and energy efficiency in cities has a different character than the PoAs. It reflects the quickly changing character of the UNFCCC regime due to the transition from the “top down” Kyoto Protocol to the “bottom up” Paris Agreement. It has been developed in the absence of international rules and thus could play a relevant role in defining the rules for the Art. 6 mechanisms under the Paris Agreement. The Thai scheme is clearly the most innovative of the Foundation’s activities

as it tries to upscale carbon markets in a difficult, yet important sector for GHG mitigation. Thus, we find that the Foundation's support is well-justified.

Recommendations for the future work of the Foundation

- Given that three years remain in which the Foundation can make a difference, we suggest that the two overperforming PoAs – **C-Quest Capital's cookstove PoA in Zambia** and **Impact Carbon's water filter PoA in Uganda** could be supported to achieve upscaling in their host country and the region, provided they exceed a predefined mitigation threshold. Given that COP 25 in late 2019 is now tasked to finalize the rules for the market mechanisms under **Art. 6 of the Paris Agreement**, there is a window of opportunity to showcase success parameters of upscaling through pilot activities.
- Likewise, the methodological lessons of the Thai city level activity could be showcased at the 50th session of the subsidiary bodies as well as the I4C carbon market fair in June 2019. However, as an acknowledgement of the Thai programme as an Art. 6 activity is uncertain, much less than the discussed 2 million € should be spent.

Key conclusions

Overall, the review results in a positive evaluation of the Foundation's strategy, processes and activities. While some aspects could have dealt with in a more optimal or more comprehensive manner, the performance can be assessed as good in view of the limited financial resources and staff-capacities available.

Generally, on the basis of experiences made so far, the Foundation's approach of upfront payment seems to be appropriate to mobilize carefully chosen activities that would not be harnessed by the general market. The upfront payments enabled the investment and implementation decision of the project developers. At the same time, project performance shows that even a very careful selection cannot overcome a significant failure risk. This implies that the approach of upfront financing will be seen as risky by commercial banks. However, a portfolio approach for management of risks and payment of risk premia can address such risks. Therefore, taking into account these limitations, the concept of upfront payment seems to be a generally applicable concept for mobilization of programmatic approaches by commercial actors.

Whether this approach can also be applied under Art. 6 of the Paris Agreement depends on the situation in the host country as well as the envisaged activity types and needs further assessment.

Executive summary (German)

Die Stiftung *Zukunft des Kohlenstoffmarktes* hat das Ziel, programmatische Ansätze auf den internationalen Kohlenstoffmärkten durch den Erwerb von Emissionsgutschriften (CERs) im Rahmen des Clean Development Mechanism (CDM), durch Beratungsmaßnahmen sowie Maßnahmen zur Steigerung des Bekanntheitsgrades von programmatischen Emissionsreduktionsaktivitäten sowie des Abbaus etwaiger Vorbehalte gegen solche Aktivitäten zu unterstützen. Ihre Lebensdauer ist der Zeitraum 2011-2021. Im Jahr 2018 beauftragte die Stiftung die Perspectives Climate Group sowie Leaders Digest eine externe Evaluierung ihrer Aktivitäten vorzunehmen, einschließlich:

- einer Überprüfung der Ziele der Stiftung sowie ihrer Mission, Vision und Werte
- einer Analyse der Strategie der Stiftung, inkl. der gewählten Maßnahmenart und des gewählten Ansatzes zur Projektunterstützung (Anschubfinanzierungen)
- einer Beurteilung der Personalstruktur der Stiftung, einschließlich externer Unterstützung
- einer Evaluation der von der Stiftung definierten Prozesse, sowie der Zuständigkeiten ihrer Organe
- einer eingehenden Überprüfung der vier „Programmes of Activities“ (PoAs), welche von der Stiftung unterstützt werden
- einer Diskussion der Beratungs- und Werbemaßnahmen der Stiftung und
- eines Ausblicks auf Handlungsoptionen für die zukünftige Arbeit der Stiftung.

Wir kommen zu folgenden Evaluierungsergebnissen:

Die Stiftung hat ihre Mission adäquat definiert und folgte den Grundsätzen der Strategieentwicklung, einschließlich einer kontinuierlichen Umfeldanalyse. Die Definition einer stiftungsspezifischen Vision war nicht möglich, da dies durch das deutsche Stiftungsgesetz bzw. die deutsche Abgabenordnung vorgegeben wird[3]. Die Strategie der Stiftung wurde auf Grundlage einer ausführlichen Umfeldanalyse sowie einer Organisationsanalyse entwickelt. Vorbildlich ist die Tatsache, dass die Stiftung das Marktumfeld kontinuierlich beobachtet und ihre strategische Ausrichtung entsprechend angepasst hat – beispielhaft sei hier das im Jahr 2017 von der Stiftung erlassene CDM-Moratorium genannt.

Zur Auswahl von Förderprojekten wählte die Stiftung einen Prozess, bei dem Projektentwickler ihre Projektvorschläge bei der Stiftung einreichen und sich um Finanzierung bewerben konnten. Dies kann als ein pragmatischer Ansatz betrachtet werden, der schnelle Ergebnisse ermöglicht, da er nahezu umsetzungsfähige Projekte unterstützt. Auf Basis der Ausschreibungen wurden über 50 Projektvorschläge aus verschiedenen Sektoren und Ländern eingereicht. Eine Alternative zu offenen Ausschreibungen wäre gewesen, eine strategische Bewertung durchzuführen, um vorrangige Sektoren und/oder Projekttypen zu bestimmen (z.B. Transport als traditionell schwieriger klimapolitischer Sektor). Eine ausführlichere Bewertung dieser Optionen und weiterer Alternativen findet sich in Kapitel 2.4.4 des Berichtes.

Die „Anwendung innovativer Kohlenstoffmarktmechanismen“[4] wurde als wesentliches Ziel der Stiftung definiert. Aus Sicht der Stiftungsorgane trägt im Wesentlichen der gewählte Ansatz der Anschubfinanzierung

[3] § 58 der Abgabenordnung (AO) definiert, welche Zwecke (= Vision) einer Institution als gemeinnützig anerkannt werden können. Im Fall der Stiftung ist dies die Förderung des Umweltschutzes (§2, 1 der Satzung).

[4] (5) der Präambel der Satzung

zur Erfüllung dieses Ziels bei. Dieser soll ermöglichen, Projekte zu mobilisieren, die am regulären Markt (der im Wesentlichen einen payment-on-delivery Ansatz verfolgt) nicht bestehen können. Es kann bestätigt werden, dass dies im Kontext der deutschen Klimaschutzmaßnahmen ein neuartiger Ansatz ist, wohingegen im internationalen Kontext Vorauszahlungen durchaus getätigt werden, gerade in Ankaufsprogrammen von Ländern und Entwicklungsbanken (so z.B. NEFCO und CiDev[5]), die nach der CDM-Krise aufgelegt wurden.

Zudem wurde das Kriterium „innovativer Projektansatz" als „weiches" Förderkriterium in den Förderrichtlinien der Stiftung definiert. Aus Sicht der Bewerter wäre vor dem Hintergrund der in der Präambel der Satzung betonten Relevanz des Faktors „Innovation" zu erwarten gewesen, dass Innovation als „hartes" Förderkriterium definiert wird. Bei allen ausgewählten Finanzierungsprojekten wurde ihr innovativer Charakter geprüft, jedoch nicht mit der Priorität, die die Bewerter aufgrund der Satzung erwarten hätten.

In Bezug auf die vier ausgewählten PoAs fällt auf, dass sich 50% davon auf die Verteilung bzw. Nutzung effizienter Kochherde („cookstoves") beziehen und 100% in Afrika implementiert werden. Auf den ersten Blick sind derartige Projekte nicht als hoch innovativer Projekttyp anzusehen, da es bereits zahlreiche erfolgreich registrierte und betriebene Projekte dieser Art im Rahmen des CDM gab. Jedoch ist hervorzuheben, dass die Projekte der Stiftung teilweise innovative Merkmale aufweisen, wie z.B. die Absicht, spezielle Biomasseplantagen zur Förderung der energetischen Nachhaltigkeit zu errichten. Der Fokus auf afrikanische Länder erklärt sich durch den Wunsch, Projekte in den am wenigsten entwickelten Ländern umzusetzen sowie der Vielzahl guter Projektvorschläge aus dieser Region. die

Der Ansatz der Anschubfinanzierung in Verbindung mit Meilensteinzahlungen ist prinzipiell angemessen und wurde von den Empfängern als wesentlicher Unterschied zum „Standard-CDM" angesehen, der für die Umsetzung der Projekte entscheidend war. Ein wesentliches Ziel der Stiftung konnte damit erreicht werden. Die Beratungstätigkeit der Stiftung – z.B. die Entwicklung standardisierter Baselines (SBLs) - entspricht ebenfalls den Zielen der Stiftung. Die Auswahl der Beratungsaktivitäten erscheint nachfrageorientiert, und wurde offenbar nicht von einer strategischen Top-Down-Bewertung abgeleitet. Beide Ansätze haben ihre Berechtigung: mit einem nachfrage-orientierten Ansatz kann der spezifische Bedarf eines aktiven Partners am besten erreicht werden; mit einer Fokussierung auf bestimmte Themen (top-down-Auswahl) könnten dagegen ggf. neue Initiativen mobilisiert werden.

Die Stiftung verfügt über eine professionelle Führungs- und Mitarbeiterstruktur. Alle Mitglieder des Verwaltungsrates und des Managements haben langjährige Erfahrung mit Kohlenstoffmärkten und der internationalen sowie inländischen Klimapolitik. Als kritische Anmerkung wurde festgestellt, dass bis 2016 keine Vertreter des Privatsektors im Verwaltungsrat waren, die wertvolle zusätzliche Perspektiven und Ideen einbringen hätten können. Die Stiftung hat bei Bedarf spezialisierte Sachverständige beauftragt, z.B. bei

[5] Siehe z.B.: http://siteresources.worldbank.org/INTCARBONFINANCE/Resources/Ci-Dev_Brouchure_for_printing_Nov_29_v2.pdf, https://www.ci-dev.org/sites/cidev/files/doucments/Ci-Dev%20-%20Carbon%20Finance%20%26%20Traditional%20Finance%20-%202015-11-25%20-%20FINAL.pdf, https://www.nefco.org/news/continued-progress-for-nefcos-carbon-finance-and-funds/ and http://www.fao.org/fileadmin/user_upload/rome2007/docs/NEFCO%20Carbon%20Finance%20and%20Funds.pdf

steuerlichen Fragen, Fondsmanagement und rechtlichen Fragen. Dies ist ein professionelles und gutes Verfahren.

In Bezug auf Prozesse und interne Kommunikation gibt es eine klare Aufteilung der Verantwortlichkeiten. Die Organe der Stiftung haben sich regelmäßig getroffen und die wichtigen Themen erörtert. Die Entscheidungen wurden gemäß vorher festgelegten und klar definierten Regeln getroffen und in einem schriftlichen Protokoll zusammengefasst. Es wurden transparente Prozesse für die Bewertung von Projektideen sowie für den Entscheidungsprozess bei der Vergabe von Geldern definiert.

Die Stiftung unterstützte die Entwicklung mehrerer standardisierter Baselines (SBLs) für wichtige Projekttypen in Afrika, Peru und Thailand. Diese SBLs reduzieren den Aufwand für Entwickler programmatischer Ansätze zur Umsetzung ihrer Aktivitäten. Daher kann die SBL-Unterstützung positiv bewertet werden. Wir möchten darauf hinweisen, dass bei der Bewertung die Qualität der entwickelten SBLs nicht berücksichtigt wurde, welche für ihre Umweltintegrität entscheidend ist. Aufgefallen ist auch, dass zwei der drei entwickelten SBLs vom UN-Klimasekretariat zwar erfolgreich registriert wurden; aber diese bislang nicht in CDM-Projekten genutzt wurden.

Die Stiftung war im Laufe der Jahre auf wichtigen Kohlenstoffmarktkonferenzen und -messen vertreten. Im Rahmen der Bewertung wurden die Vorbereitung und die interne Auswertung dieser Ereignisse nicht bewertet.

In Bezug auf die Reduzierung von Treibhausgasemissionen variiert die Leistung der vier unterstützten PoAs selbst bei Projekten mit derselben Technologie erheblich. Zwei Projekte entwickelten sich hinsichtlich Implementierungsfortschritt und CER Generierung überdurchschnittlich gut, während die beiden anderen Projekte bislang stark unterdurchschnittlich abschnitten. Die Tatsache, dass einige Projekte vor Herausforderungen stehen, ist im CDM-Kontext nicht überraschend – insbesondere, aufgrund des Stiftungszieles, diejenigen Projekte zu fördern, die bislang nicht vom Kohlenstoffmarkt erreicht wurden. Die schwerwiegendsten Probleme hängen u.a. im Fall des PoAs in Senegal mit der innovativen Komponente des Aufbaus eigener Plantagen für erneuerbare Biomassebrennstoffe zusammen, der deshalbt scheiterte, weil das verfügbare Holz für die Weiterverarbeitung ungeeignet war bzw. das technische Gerät dafür nicht kompatibel war.

Alle PoAs waren vor Ort gut mit lokal verankerten Nichtregierungsorganisationen bzw. Firmenstrukturen vernetzt. Im Allgemeinen hängt der Projekterfolg stark von der Verwaltungskapazität des Projektentwicklers und seiner Fähigkeit ab, die Nutzung der Technologie sorgfältig zu beurteilen und kontinuierlich an die Bedürfnisse der Benutzer anzupassen. Zum Beispiel hat der beste Performer scheinbar winzige Änderungen im Design des Kochherdes in Sambia vorgenommen, die für eine sehr hohe Nutzungsrate entscheidend waren. Die weniger erfolgreichen Projektpartner wechselten hektisch die Technologien – was zu hohen Transaktionskosten führte – und es fehlte ihnen an interner CDM-Kompetenz, was zu Verzögerungen bei der CER-Ausgabe und methodischen Herausforderungen führte. Während die mit der Meilensteinfinanzierung verbundene Anschubfinanzierung der Stiftung Liquiditätskrisen bei den Projektentwicklern vorzubeugen halt und die Projekte daher sorgfältig phasenweise umgesetzt werden konnten, konnte sie Mängel im Projektmanagement nicht verhindern. Aus unserer Sicht hätte eine Kombination aus Vorauszahlungen und graduellem Übergang zu ergebnisabhängigen Zahlungen zu einer besseren Projektleistung führen können. Durch die vergleichsweise kurze Laufzeit Stiftung war diese Möglichkeit jedoch begrenzt.

Wir möchten betonen, dass alle PoAs klare Vorteile für die nachhaltige Entwicklung haben. Diese zahlreichen und wichtigen Nebeneffekte sollten umfassender überwacht und systematisch berichtet werden – optimaler Weise basierend auf messbaren Kriterien und Indikatoren (siehe Anhang 2).

Das thailändische Kompensationsprogramm für erneuerbare Energien und Energieeffizienz in Städten spiegelt den sich schnell ändernden Charakter des UNFCCC-Regimes aufgrund des Übergangs von den "Top-down" Regeln des Kyoto-Protokolls zum "bottom up"-gesteuerten Pariser Abkommen wieder. Letzteres wurde in der Abwesenheit internationaler Regeln entwickelt und könnte daher eine relevante Rolle bei der Festlegung der Vorschriften der Art. 6 Mechanismen im Rahmen des Pariser Abkommens spielen. Das thailändische Programm ist eindeutig die innovativste Aktivität der Stiftung, da es versucht, die Kohlenstoffmärkte in einem schwierigen aber außerordentlichen wichtigen Sektor zu verbessern. Daher ist die Unterstützung des Programms durch die Stiftung aus unserer Sicht sehr gerechtfertigt.

Empfehlungen für die künftige Arbeit der Stiftung

- In Anbetracht der verbleibenden Laufzeit von voraussichtlich drei Jahren schlagen wir vor, dass die beiden überdurchschnittlichen performenden PoAs – das **Kochherd PoA von C-Quest Capital in Sambia** und das **Wasserfilter PoA von Impact Carbon in Uganda** – unterstützt werden, um eine Ausweitung in ihrem Gastland und der Region zu erreichen, sofern sie vordefinierte Anzahl an Emissionsreduktionen überschreiten. Da die COP 25 zum Ende des Jahres 2019 die Aufgabe bekommen hat, die Regeln für die Marktmechanismen gemäß Art. 6 des Pariser Abkommens fertigzustellen, besteht die Möglichkeit, die erfolgreichen Parameter des Ausbaus durch **Art. 6 -Pilotaktivitäten** aufzuzeigen.
- Ebenso könnten die methodischen Lehren aus den thailändischen Städten auf der 50. Tagung der Nebenorgane sowie auf der I4C-Emissionsmarktmesse im Juni 2019 präsentiert werden. Da eine Anerkennung als Art. 6 - Aktivität unklar ist, sollten jedoch weit weniger als die diskutierten 2 Millionen € aufgewendet werden.

Schlussbetrachtungen

Insgesamt führt die Evaluierung zu einer positiven Bewertung der Strategie, der Prozesse und der Aktivitäten der Stiftung. Während einige Aspekte optimierter oder umfassender hätten behandelt hätten werden können, kann die Leistung angesichts der begrenzten verfügbaren Finanzmittel und Personalkapazitäten als überzeugend bewertet werden.

Das von der Stiftung gewählte Konzept der Anschubfinanzierung erscheint vor dem Hintergrund der bisherigen Erfahrungen grundsätzlich als geeignet, um sorgfältig ausgewählte Maßnahmen, die vom regulären Markt nicht erreicht werden, zur Umsetzung zu verhelfen: die Vorauszahlungen der Stiftung haben zu einer positiven Investitions- und Umsetzungsentscheidung seitens der Projektentwickler geführt. Gleichzeitig ist aus der Projektperformance ersichtlich, dass es trotz sehr sorgfältiger Auswahl von Fördermaßnahmen ein durchaus signifikantes Ausfallrisiko gibt. Dies impliziert, dass das Konzept der Anschubfinanzierungen für kommerziell ausgerichtete Banken entsprechend risikobehaftet ist. Ausfallrisiken können jedoch z.B. durch einen Portfolioansatz (zur Streuung der Risiken) und Einsatz von Risikoprämien gesteuert werden. Daher erscheint das Konzept der Anschubfinanzierung grundsätzlich, und unter den oben genannten

Einschränkungen, auch für kommerzielle Marktakteure ein gangbares Instrument im Kontext programmatischer Ansätze.

Ob der Ansatz auch auf Maßnahmen unter Art. 6 des Pariser Abkommens anwendbar ist, hängt u.a. von den Umständen im Gastland sowie die avisierten Maßnahmentypen ab und bedarf näherer Untersuchung.

1 Background

The foundation „Future of the Carbon Market“ (Zukunft des Kohlenstoffmarktes; http://www.carbonmarket-foundation.org/home) was established in 2011 with funds of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Security (https://www.bmu.de/en/). The basic assets of the non-for-profit foundation amount to 10 million € that have to be spent within 10 years.

The Foundation's key objective is to promote environmental protection, in particular climate protection, in developing and emerging countries as a special form of development cooperation. It particularly aims to support **innovative carbon market mechanisms** and access emission reduction potentials that so far have barely been tapped by the carbon market. A particular focus has been set on **programmatic activities** of existing carbon market mechanisms as a means to develop more effective market mechanisms for global climate protection (Statutes of the foundation, p. 2).

Since its incorporation, the Foundation has undertaken numerous activities to support selected emissions reduction projects under the Kyoto Protocol – so-called Programmes of Activities (PoAs) –, to promote the idea of programmatic approaches globally and to support governments of developing and emerging economies to connect their national climate strategies to programmatic approaches.

Given that about half of the Foundation's lifetime is over, and considering that the market conditions for programmatic approaches as well as the international climate policy environment have changed significantly since its establishment, the Foundation initiated an independent evaluation following a strategy workshop that took place in April 2017. This evaluation looked at past as well as current activities and provides an outlook for potential new activities until 2021, while keeping in mind the new political framework following the entry into force of the Paris Agreement (PA) of the United Nations Framework Convention on Climate Change (UNFCCC) in 2016.

The evaluation therefore consists of three different elements:

1) Evaluation of the general concept and strategy of the Foundation (chapter 2)
2) Evaluation of the projects/activities supported by the Foundation (chapter 3)
3) Outlook for the remaining lifetime of the Foundation (chapter 0).

We would like to note that the evaluation takes place at an optimal time for the Foundation's work. If the evaluation results in recommendations for adjusting its activities, there are still sufficient time and funds for implementation. The evaluation was suggested internally (Board). It can therefore be concluded that there is an honest interest in the evaluation and its results.

2 Evaluation of the general concept and strategy of the foundation

2.1 Scope of the evaluation

Figure 1 provides an overview of the structure applied for the evaluation of the Foundation's general concept and strategy. The overarching question is if the Foundation's strategy, personnel structure, processes and activities are fully aligned to its vision and objectives.

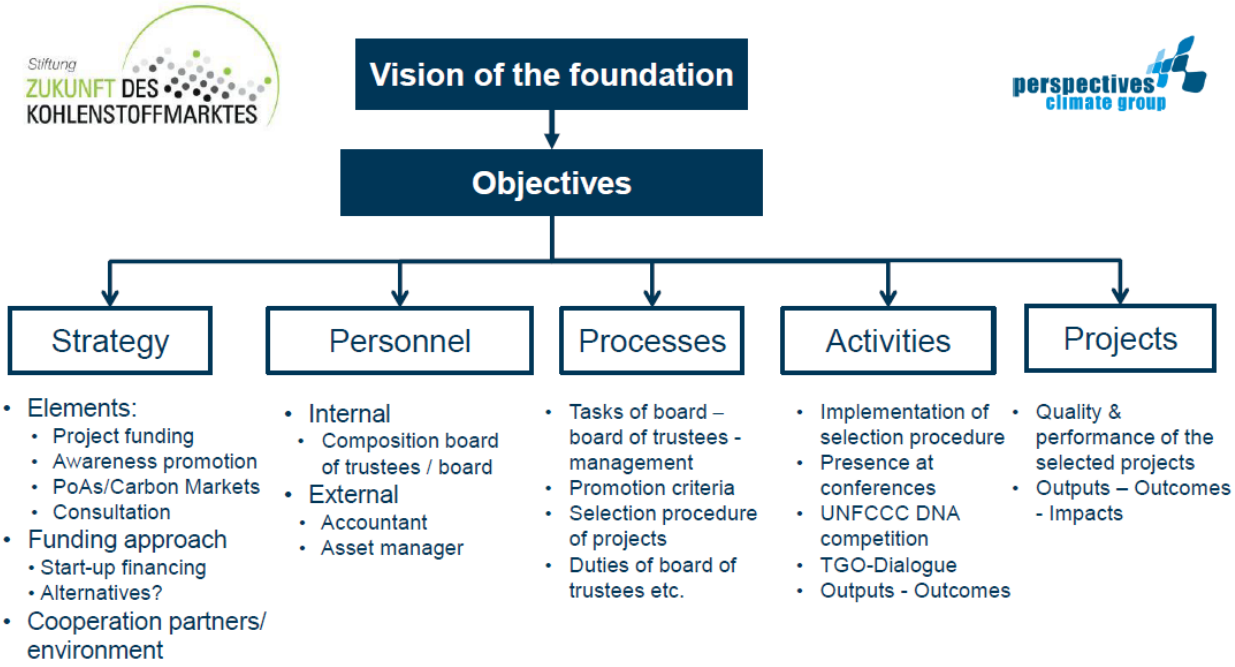


Figure 1: Elements of the evaluation

Source: Own illustration.

When evaluating the Foundation's strategic settings, one needs to consider the market environment at the point in time when its strategy was defined.

2.2 Market environment and international climate policy setting before 2011

The development of international carbon markets in the early 2000s can be described as extremely rapid. At the UNFCCC level, the 2001 Marrakech Accords (COP7) marked the beginning of the carbon market development through defining operational rules for international emissions trading (IET), Joint Implementation (JI) and the Clean Development Mechanism (CDM). In the case of CDM, these rules were proactively refined over time by the CDM Executive Board.

Nearly in parallel, the EU decided to implement the EU Emissions Trading System (EU-ETS) which covers thousands of power stations and manufacturing plants in EU member states. Covered entities are allowed to make use of Certified Emission Reductions (CERs) from CDM projects for compliance with their emissions targets. The EU ETS for a long time was the major demand driver for CERs and thus CDM projects.

In addition, several other countries considered the implementation of domestic emission trading schemes. All this led to the development of a flourishing CDM project pipeline, see Figure 2.

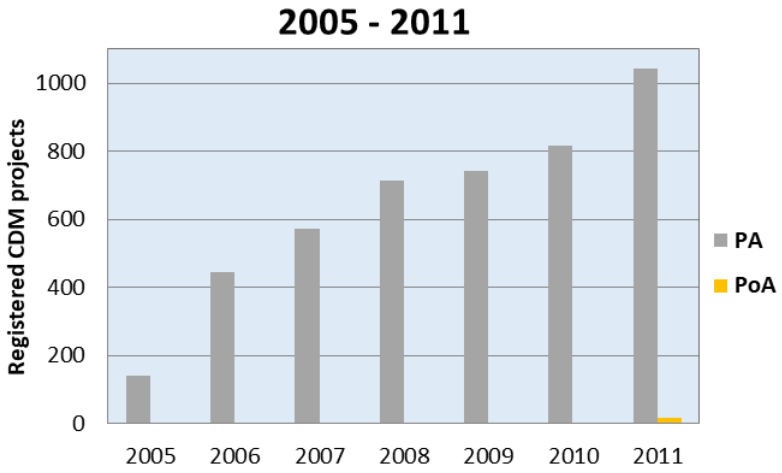


Figure 2: CDM projects registered from 2005 – 2011

Source: UNFCCC.

However, this rapid development was heavily impacted towards the end of the decade. The EU economic crisis starting in 2008 led to significant emissions decreases by companies covered by the EU ETS – all of a sudden making it easy for them to comply with their emissions targets and thus lowering demand for CERs. Jointly with a lack of post-2012 regulatory clarity for the CDM[6], this led to a significant drop of the value of the primary CERs: while the average market price was slightly above 20 €/CER in 2008, it dropped below 10 €/CER in 2009.

On the supply side, origination activity declined in 2009 *"as the financial crisis spurred financial institutions and private investors to deleverage and redirect their positions away from risky investments and toward safer assets and markets, leading to a major reduction in the capital inflow to developing countries […] This made it* ***impossible for many CDM and JI project developers to lock in finance****, and as a result, project origination ground to a halt*" (World Bank: State of the Carbon Market 2009, p. 37).

In parallel, the political focus changed. In light of the post-2012 negotiations at UNFCCC level and following the initial years of practical experience with project-based mechanisms, many policy makers found that a project-by-project approach could not reach the scale required for solving the climate change problem. The following statement of the EU Commission brings it to the point: "*Despite its successes, as a project-based system – and one that in practice covers so far a limited number of project types – the CDM is simply not designed to drive the structural transformation of industry in developing countries that the transition to a low-carbon economy requires. By definition, offset mechanisms such as the CDM cannot reduce global emissions in net terms – yet this is what is needed if we are to keep global warming below 2°C*." [7]

[6] Due to the end of the first commitment period of the Kyoto Protocol.
[7] Damien Meadows, Head of Unit, International Carbon Market, Aviation and Maritime, DG Climate Action European Commission. In State of the Carbon Market 2010, p. 15.

Hence, the political mind-set was to rather focus on sectoral mechanisms and programmatic approaches, also with a view to promoting project types that typically cannot be reached with single CDM project activities. This led to two key decisions:

- At UNFCCC level, the concept of Programmes of Activities (PoAs) was developed in order to simplify project preparation and registration and to expand the scale of CDM project activities.
- The EU decided to restrict imports from 1 January 2013 onwards to CERs from CDM projects that had been registered by 31 December 2012.8 This led to peak of CDM project registrations – both single projects and PoAs – in 2012.

2.3 International influences on the vision, mission and strategy of the foundation

Against this background, the foundation Future of the Carbon Market was established at a time following economic turmoil and political uncertainty about the post 2012 policy regime, triggered by the failure of COP15 in Copenhagen in 2009. It should be noted that by 2011 CER prices had recovered to 13 € and thus the future of the CDM market was not generally seen as bleak.

The programmatic approach under the CDM was a relatively new instrument with the first substantive rules being approved in 2007 (EB32). By the end of 2010, a total of only 75 PoAs entered into validation (mostly large scale; only 7 small scale PoAs). At the same time, however, only 5 PoAs had successfully registered at the UNFCCC (17 by end of 2011).[9] Progressive governments like Germany saw the need for new approaches to tap the mitigation potential in sectors, project types or countries that are difficult or impossible to reach by single projects (which, in turn, are typically financed by private market investors).

2.4 Evaluation: strategy of the Foundation

2.4.1 Introductory remarks: strategy development and review of organisations

The evaluation of an organization and a consistent strategy development should not be done without taking into account the *vision, mission and values* of the organization. These aspects, together with an *environmental analysis* and *organizational analysis*, form the basis for the definition of *success criteria* and *success factors*.

Success criteria and success factors are the starting point for the definition of strategic goals. Success criteria are ideally measurable, e.g. in terms of reduction of greenhouse gas (GHG) emission in t $CO_{2\text{-eq}}$. In order for the success criteria to be achieved, corresponding success factors must be given (e.g., there is a benefit of reducing GHG emissions). In sum, the following components of a strategy development are:

[8] Decision No. 406/2009/EC of the European Parliament and of the Council, 23rd of April, 2009. Projects located in Least Developed Countries were exempted.
[9] See https://cdm.unfccc.int/Statistics/Public/PoA/index.html. Last accessed 24th of August, 2018.

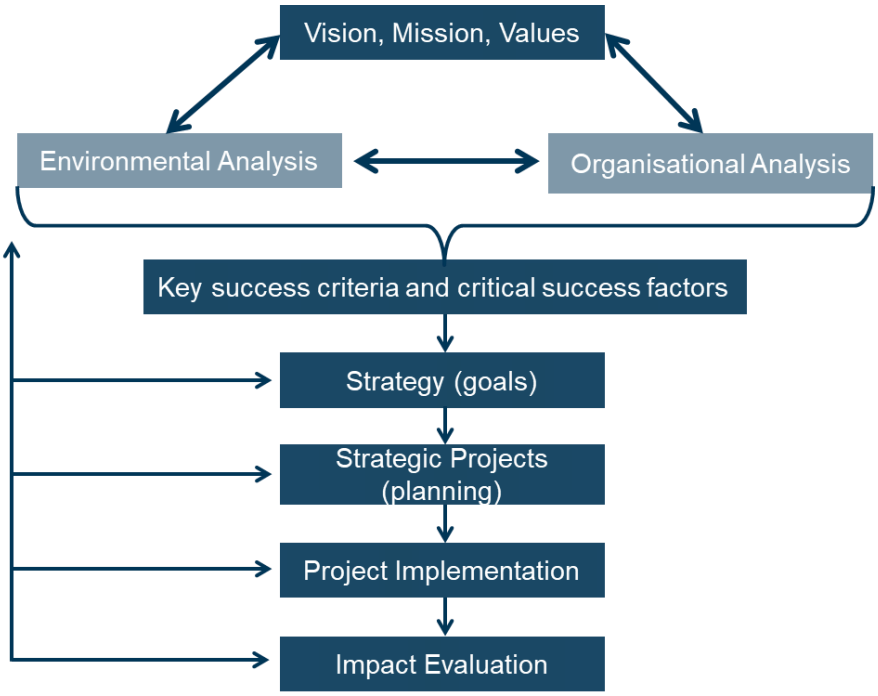


Figure 3: Vision, mission, values and strategy definition in organisations

2.4.2 Vision, mission, values and objectives of the Foundation

The vision and the objectives of the foundation are the basis for the evaluation and are thus described in detail.

Vision of the Foundation

Regarding the definition of a vision, foundations are much more limited than other types of organisations: possible purposes of a foundation for recognition as a non-for-profit/charitable foundation are pre-defined by the German Tax Code. Accordingly, there is no way to formulate an individual vision. Moreover, formulating a vision as *"a future description of the final state the non-profit organization is working towards"*[10] is difficult for a limited-term foundation with a pre-defined limited lifetime.

Mission of the Foundation[11]

The mission of the Foundation has been defined in the preamble of its statutes: to promote **innovative carbon market mechanisms** to enable the carbon market to, in the long term, contribute to the mitigation of greenhouse gas emissions and prove the required funds. The Foundation is particularly keen to support those **areas (i.e. project types, sectors, regions) that so far have not been reached by the market.** The new programmatic approaches of existing carbon market mechanisms allow for more effective market mechanisms for global climate protection that can also lead to a higher level of participation of developing countries. Hence, the basic assumption is that in the current development phase of the carbon market,

[10] See http://wirtschaftslexikon.gabler.de/Archiv/596505831/npo-leitbild-v3.html. Last accessed 24th of August, 2018.
[11] Source: preamble of the statutes.

programmatic approaches are strategically important for both the existing and the future mechanisms of international climate finance. Finally, the aim of the Foundation was to **explore if up-front financing** can substantially support the implementation of programmatic approaches.

Values of the Foundation

The values[12] of the Foundation are particularly important to the outside, given that an internal codex is not very effective due to lack of staff and hierarchies. The values for the actions of the foundation are stated in the foundation's statutes and funding guidelines.

It can be certified that the Foundation's Management Board in cooperation with the Board of Trustees has responsibly and timely taken into account the changed framework conditions through an environmental analysis.

Objectives of the Foundation[13]

The Foundation's key objective is to **promote environmental protection**, in particular climate protection, in developing and emerging countries as a special form of development cooperation through:

1. Provision of **start-up funding for Programmes of Activities (PoAs)** under the Kyoto Protocol (KP). The projects that receive funding are located in developing and emerging countries.
   The foundation would like to fund measures that
   - support the dissemination of the programmatic project approach;
   - use the market to exploit further emission reduction potentials;
   - acquire knowledge and experience that might be valuable for future carbon market mechanisms and enhance the ability of countries hosting PoAs to develop more far-reaching climate policies
2. **Raising the profile/popularity** and overcoming reservations towards investing in programmatic emission reduction projects.
3. **Offering expertise** to governments of developing and emerging countries on integrating market-financed programmatic projects with national climate policies and programmes.

In 2014, new statutes were adopted in order to reflect new political developments. It has been specified that the funding also encompasses programmatic mechanisms under the **successor agreement to the Kyoto Protocol** as well as under **other bi- and multilateral agreements**. Initiatives which are developed **outside the** framework given by the **UNFCCC** can be eligible for funding as well, provided that they are aligned with the funding criteria.

[12] "A value is an orientation, an idea or a behavior that a person considers right and important. Corporate values, for example, represent a level of universal agreement in an organization as well as in a company, i.e. what people consider desirable in this context or expect from one another. There are basically two different categories of values: on the one hand the material and economically relevant values, and on the other the interpersonal, social and ethical values. A company shouldn't include anything into a shared value definition that not everyone can meet. The corporate values to which a company commits itself are codified in the mission statement and the code of conduct or translated into concrete action and behavioral orientations. Ideally the corporate values determine and guide the business policy, the goals and strategies, all relevant management processes as well as the daily cooperation among company employees respectively with customers, suppliers and contractual partners". (Foundation CLUB OF HAMBURG, HTWG Konstanz: Development Model "Success with decency", forthcoming).

[13] Source: § 2 of the foundation's statutes as of 18.03.2014 ("Stiftungszweck").

Excursus: success criteria and impacts

Non-profit organizations derive their right to exist from the social benefits they generate. This means that success criteria shall be more demanding than what one expects from regular businesses. While the assessment of the effect on the target groups usually is quite simple, the measurement of the social effect is rather difficult. However, reviewing the process from action to impact can be helpful for adjusting the organization's strategy. Figure 4 shows such a process exemplarily.

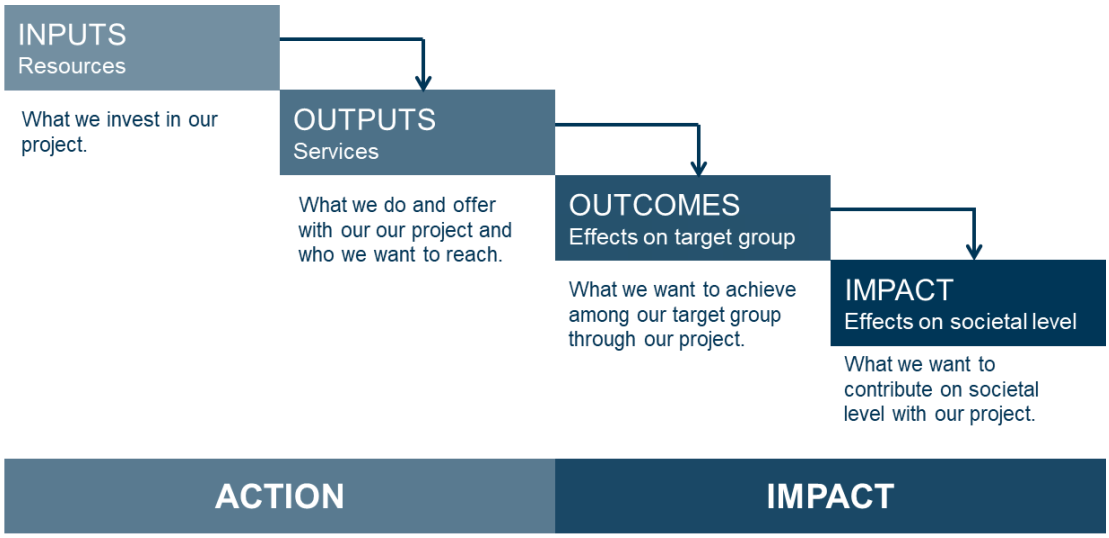


Figure 4: Input-Outputs-Outcomes-Impact model

Source: Phineo gAG.[14]

The activity of the Foundation would actually be the prototype of the so-called **impact investing**. Due to its assets, the Foundation can pre-finance measures that initially do not pay off in the market and therefore face an implementation barrier. Theoretically, the Foundation could (partially) refinance itself by selling the CERs generated in the projects. However, this model could be carried out by other actors (banks, state funding agencies) as well. Therefore, the – simplified formulated – function of the Foundation's assets is:

- Taking risks from business models that other actors (such as banks) cannot take on and thus enable project activities that would not be possible in a purely market-driven environment;
- Accelerating further GHG emission reductions by supporting “lighthouse projects” and showcasing that the supported project activities work;
- Facilitating direct reduction of GHG emissions through cancellation of CERs;
- Achieving co-benefits of mitigation, such as social and/or environmental benefits

Direct outcomes, i.e. direct GHG-reductions as well as social and environmental co-benefits, can best be determined for the first objective of the Foundation, the provision of start-up financing. For example, direct GHG emission reductions can easily be determined for the supported PoAs[15]. The Foundation’s activities in the fields marketing and consulting should and can only support the core business. In this context, it

[14] Phineo gAG (2017). Kursbuch Wirkung, 4th ed., Berlin, p. 35. https://www.phineo.org/downloads/PHINEO_KURSBUCH_WIRKUNG_HQ.pdf. Last accessed 24th of August, 2018.
[15] For non-PoA funding, as in case of the Thai TPO-support, this procedure can be expected to be more difficult.

should be clarified – also in reporting – to what extent these areas have contributed to an improved realisation of the measurable purpose of the foundation.

In addition, the Foundation must be able to show with which resource use the Foundation's assets have achieved its goals (funding per retired CERs). Since the Foundation's assets were financed by the taxpayer[16], efficiency criteria must also be applied for this aspect. If it turns out that the use of resources has been relatively high, this can only be legitimized by achieving high environmental and social co-benefits. This will be further analysed and discussed in work packages 2 and 3.

2.4.3 Key questions of the strategy evaluation

The key questions related to the evaluation of the strategic approach are:

1. Is the strategic approach chosen by the Foundation adequate for meeting its mission and objectives? In particular: Is the chosen strategic approach adequate for
   - promoting innovative programmatic approaches in areas not (yet) tapped by the market
   - raising the popularity of PoAs and overcome reservations investing in PoAs
   - offering expertise to developing countries on integrating programmatic approaches into domestic climate policy schemes?
2. Regarding the provision of start-up finance: is the chosen model of upfront and milestone payments adequate?
3. Did the Foundation engage in an environmental analysis ("Umfeldanalyse") to ensure that there are no counter-productive overlaps with activities of other actors such as World Bank (WB), Asian Development Bank (ADB) and Green Climate Fund (GCF)?
4. Did the Foundation analyse cooperation potential with other actors that follow similar targets?
5. Did the Foundation update its strategy in view of the changing market environment?

2.4.4 Strategic choices of the Foundation

Strategy for promoting innovative programmatic approaches in areas not (yet) tapped by the market

The Foundation seeks to promote programmatic approaches that clearly go beyond what is typical on the market. There are several strategic options how to promote innovative programmatic approaches, including the following examples:

1. ***Conducting a strategic analysis of priority market segments***. Such an analysis allows assessing which project types/activities can be considered innovative, which geographical regions are of particular interest, what the typical market barriers that prevent innovative projects are, etc. Based on such an analysis, the foundation could have made an informed decision which types of activities to support and, based on this insight, could have started specific tendering processes.
2. ***Pre-definition of sectors***. For instance, the transport sector is known to be very difficult to tackle and yet holds potential for public-private partnerships or purely privately-driven innovative transportation solutions. As one strategic option, the foundation could have selected such priority sectors and started to identify and support e.g. one programmatic activity in each of these sectors during its lifetime.

[16] Even if funded with IKI funds, and therefore at least partially through the auctioning of EU allowances, the money could have been spent for reducing taxation elsewhere.

3. ***Engaging in general public tenders without sectoral/project-type specific limitations*** to identify concrete project ideas. Evaluation criteria and preconditions could have been used to select the best projects for the overall objectives.

The Foundation did not engage in options 1 or 2 but focused on option 3. In the phone interviews, members of the Board of Trustees highlighted that this was due to the fact that the time period required for all steps from conducting such research over identifying and developing respective projects until finally implementing them was too long under consideration of the foundation's limited lifetime. They also pointed out that it is the Foundation's objective is to provide start-up finance for "ready to go" projects instead of *developing* new projects from an early stage. Those arguments are very reasonable, and the open tendering approach chosen by the Foundation resulted in over 50 project applications from different countries and sectors. Yet, one might argue that due to the lack of a fundamental analysis – as exemplarily described for options 1 and 2 –, the foundation might have missed chances to spot *highly innovative* activities that are ahead of how the carbon market is already thinking. It might also have missed chances to support particularly *difficult* sectors or subsectors.

This does not mean that the tendering approach chosen by the Foundation is a bad option. We will come back to this topic in work package 3 and under consideration of the results of the evaluation of supported project activities.

Further observations

- The funding guidelines of the Foundation specify the promotion criteria for project activities. They entail several important requirements to ensure the environmental integrity of the projects and also refer to the German *Projektmechanismengesetz*. However, it is surprising that "innovation", "strategic significance for the further development of the carbon market" and "use of pioneering approaches improving the regional spread of mitigation projects" appear to be only secondary requirements. I.e. they are not listed as mandatory ("shall") criteria, but rather as "nice to have" criteria in the Funding Guidelines. While the Board of Trustees pointed out that those aspects had been considered on a higher level, from an evaluation point of view we conclude that they should have been defined as priority criteria.
- A strong focus was put on checking the economic viability of the projects. In some cases, economic preconditions were defined such as requiring the project developer to sell the remaining CERs at a good price[17]). The intention is to achieve a high level of certainty that the Foundation does not invest in economically unviable projects. This approach is in line with the formal requirement to spend public funds in an economic manner ("sparsame Mittelverwendung").
- 4 out of the 5 project activities selected for start-up financing are located in Africa. This regional focus can be justified with the unbalanced overall distribution of CDM projects. Out of all CDM projects submitted for registration between 2005 and 2011, only 2% were located in Africa (see Figure 5). Supporting activities in Africa, in particular Sub-Saharan Africa, was high on the German political agenda. Yet, this regional focus appears somewhat one-sided, given that there are many other countries outside

[17] See detailed assessment of C-Quest Capital proposal, p. 7: "Um das CER-Preisrisiko zu minimieren, könnten Auszahlungen von dem erfolgreichen Abschluss eines CER Kaufvertrages abhängig gemacht werden. Es wäre zu entscheiden, ob diese Bedingung vor einer ersten Auszahlung erfüllt sein muss, oder ob zunächst eine geringere Tranche Arbeitskapital zur Verfügung gestellt wird, damit die Projektumsetzung parallel zur CER-Vermarktung vorangetrieben werden kann."

Africa that could certainly benefit from the Foundation's support, and also bearing in mind that the statutes of the Foundation do not restrict activities to Africa.

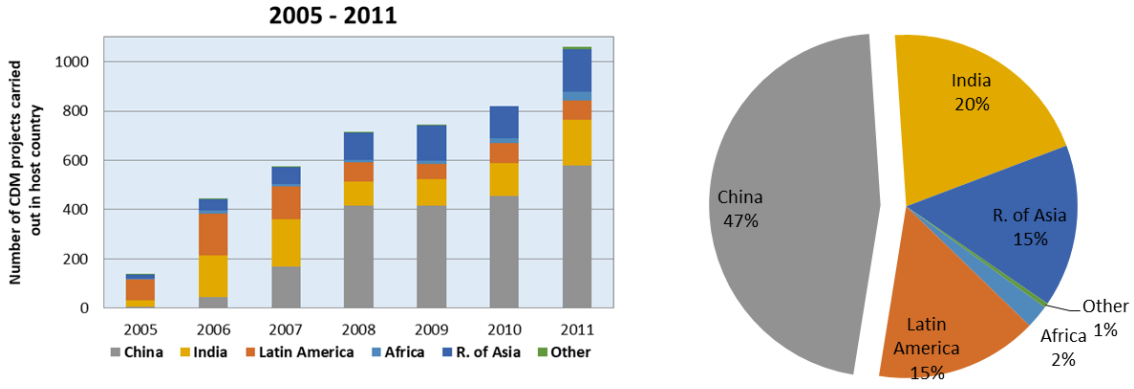


Figure 5: Geographical distribution of CDM projects 2005-2011

Source: UNFCCC CDM data base, own illustration.

- 50% of the supported PoAs are cookstove projects. This project type definitely meets the criteria of sustainability and is also well-suited for promoting programmatic approaches. One may argue that cookstoves are not a new, innovative project type as plenty of them have been implemented under the CDM[18] without additional financial support. However, when looking at the selected projects in detail, one finds that they contain innovative *elements* such as using dedicated biomass plantations for renewable fuel production (see chapter 3). Hence, the innovative character is given, even if not dominantly at the level of project type. Nevertheless, the high share of cookstove projects in the Foundation's portfolio appears unbalanced.

Strategy for raising the popularity of PoAs and overcome reservations investing in PoAs

Since its incorporation, the Foundation was engaged in a large number of activities aiming to promote PoAs and programmatic approaches. Numerous talks have been held with various actors at the conferences, workshops and events listed in Table 6Table 6 (see Annex I). Obviously, the focus has been on governmental actors such as Designated National Authorities (DNAs).

In the phone interviews, members of the Board of Trustees highlighted that the Foundation talked to private players as well. However, at the point of when the Foundation was finally fully operational, the private market driven CDM/PoA investments had stopped activities due to the CER price crash after 2011. Hence, the vision to win private sector entities as co-sponsors of the Foundation did not materialise. From the documentation received, it is however not clear what measures were taken to overcome reservations investing in PoAs.

Hence**, the long political and organizational lead time between having the initial idea to establish a foundation with a concrete focus (here: supporting PoAs) and having reached an operational cruise**

[18] In 2012 alone, a total of 20 cookstove PoAs were successfully registered at the UNFCCC (13 of them are located in Africa). Source: own analysis based on UNFCCC PoA database.

mode proved to be too long for the very dynamic, frequently changing field of international climate policy.

Strategy for consulting developing countries in integrating programmatic approaches to their domestic policy schemes

Again, the Foundation was very active with a large number of activities and initiatives (see Table 6 in Annex I). The most comprehensive consultancy activities were the development of standardised baselines (SBLs) for charcoal and the building sector (assigned to consultants) and well as the funding of preparatory studies for the Thai Low Carbon Cities Programme (LCCP) managed by the Thailand Greenhouse Gas Management Organisation (TGO), a governmental organization under the Ministry of Natural Resources and Environment (MNRE).

The Foundation has chosen a demand-driven approach, i.e. followed up on ideas and proposals that had been developed through bilateral talks, e.g. during conferences and workshops in which the foundation participated. The only exception seems to be the funding of preparatory studies for TGO which are part of a longer-term cooperation / support activity of the Foundation. As discussed above, while such a demand-driven approach is not principally bad, it prevents a systematic strategic evaluation of the priority fields of the Foundation.

Strategy for the provision of start-up finance

The main objective of the Foundation is to provide start-up finance for innovative PoAs / programmatic approaches that face implementation barriers. Start-up finance can be provided in many different ways, such as grants, loans, up-front payments, fixed-share CER-acquisition or auctioning.

From an economic point of view, auctioning – i.e. offering to the market to buy CERs and asking for price offers – may be assumed to be the most cost-effective approach. Auctions work well if the commodity is a homogeneous good, such as a certified emission reduction unit ($tCO_{2\text{-}eq}$). However, without any qualitative conditions, the Foundation would not be able to reach the innovation target or other quality expectations. One could theoretically implement quality requirements by defining what project types, projects, etc. are eligible for bidding, but this would likely create a significant administrative burden for the Foundation as it would need to engage in pre-assessments of all projects that might submit an offer.[19] Hence, auctioning is not a suitable approach to meet the Foundation's targets.

Another option is providing support by upscaling existing PoAs through fixed CER-share emission reduction purchase agreements (ERPAs). For instance, the foundation could buy x% of CERs generated for each further CPA. An advantage of that approach would be that it promotes PoAs that have already shown that their business model can work in practice. Key disadvantages are, however, that it does not mobilize new technologies or project types without access to the market, and that the total budget volume needed remains uncertain. Hence, this approach does not appear feasible neither.

The provision of loans can be an interesting option to provide targeted financial support to selected projects that meet all expectations of the Foundation. However, a loan might not be sufficient for certain projects (as it has to be paid back). In addition, it is the Foundation's explicit purpose to spend its assets until the

[19] Alternatively, an eligibility-test could only be done for successful bidders. In this case, however, one needs to consider the necessity to re-do the auction if one or several bidders turn out to be non-eligible ex-post.

end of its lifetime. Finally, discussions with the Federal Financial Supervisory Authority *BaFin* indicated that providing loans could be legally challenging for the Foundation.

These legal restrictions would also apply to the option "combination of loans and grants or upfront-payments". Without these restrictions, the approach of offering project developers e.g. 50% of the total budget in loans and 50% in grants or upfront-payments could be an interesting approach to financially support a higher number of projects (because part of the assets will be returned). However, the lifetime limit of 10 years might be a barrier, and it also means that the financial relief for project developers is lower compared to the upfront-financing option chosen by the Foundation.

Grants have the highest value for the receiving party and can help best to overcome typical start-up barriers. They can also be channelled to those projects that the donor perceives as most attractive, i.e. a consideration of qualitative aspects is possible. The disadvantage is that there is no return for the money spent and that the Foundation's assets are spent faster than in case of a combined approach. In addition, one needs to check carefully if the project has a realistic future after the donations come to an end.

To conclude: on the basis of experiences made so far, the Foundation's approach of upfront payment seems to be appropriate to mobilize carefully chosen activities that would not be harnessed by the normal market. The upfront payments enabled the investment and implementation decision of the project developers. At the same time, project performance shows that even a very careful selection cannot overcome a significant failure risk. This implies that the approach of upfront financing will be seen as risky by commercial banks. However, a portfolio approach for management of risks and payment of risk premia can address such risks. Therefore, taking into account these limitations, the concept of upfront payment seems to be a generally applicable concept for mobilization of programmatic approaches by commercial actors.

Strategy for cooperation with other actors:

Both the Board of Trustees and the Management Board have been working in the field for a long time, providing them with an excellent overview of the "business model" of other players such as the World Bank's Ci-Dev programme, ADB, etc. The Foundation engaged in talks with the World Bank to identify potentials for collaboration, but finally it was concluded that the World Bank's focus on results-based finance does not match well with the Foundation's objective to provide start-up financing. Potentials for collaboration with ADB or GCF have not been considered a priority because of different settings and regional focus (ADB) and lack of operational readiness in 2011 (GCF).

Updating of the Foundation's strategy in view of the changing policy and market environment

The Foundation reacted to changes in the policy and market environment from that described in section 2.2. From 2012 onwards, CER prices crashed and private sector engagement in the CDM evaporated; the market retreated to narrow niches. As early as 2014, the statutes of the foundation were updated to allow for programmatic approaches a) other than PoAs and b) outside the CDM.

Since the adoption of the Paris Agreement (PA) and its Article 6 mechanisms at the end of 2015, it is clear that future carbon markets will look rather different than the ones under the Kyoto Protocol. Since then, the Foundation investigated several options of what to do in its remaining lifetime, including:

- Assessing options how Art. 6 mechanisms of the PA can be combined with programmatic approaches
- Support of local emissions trading schemes (e.g. in Thailand)
- Combining carbon pricing with carbon taxes
- Results-based climate finance
- ABM – Adaptation Benefit Mechanism
- Expansion of support to existing programmes (PoAs) as means of voluntary carbon markets

In 2017, the Foundation decided not to support CDM projects any longer – the so-called "CDM-moratorium". One might ask why it took the Foundation comparatively long for making this decision (as the political "mood" regarding the CDM was already negative in the years before), but this can reasonably be explained with interests of the Foundation to "keep the door open" and not to send even more negative messages to the market.

The Foundation has elaborated several concept papers, discussed ideas with project partners and stakeholders and got legal opinions on the (legal) viability of the voluntary carbon market option. In April 2017, a strategy workshop was conducted where all relevant options were discussed between the Management and the Board of Trustees. Subsequent discussions between the bodies of the Foundation continued this process. Hence, one can attest to the Foundation that it carefully observed the environmental settings and explored alternatives for future action.

The overall process of carefully assessing options, and the way how it was done to far, can be evaluated as good practice. A critical point is that, in light of the limited lifetime of the foundation, a lot of time has been lost. **Therefore, the Foundation now needs to react quickly to achieve implementation of new activities before 2022. This will be discussed in more detail in chapter 4.**

2.5 Evaluation of personnel structure

Internal structure

According to the Foundation's statutes, the Board of Trustees shall consist of 3-7 members, out of which the Federal Ministry of Finance (BMF) holds one position, and the Federal Ministry for the Environment, Nature Conservation and Nuclear Security (BMU) holds the remaining two to six positions. The Management Board shall consist of 3-5 members, with two positions reserved for the BMU and one for KfW. The composition of Board members from 2011 until 2016 is summarized in Annex 1.

All of the members of the Board of Trustees as well as of the Management Board are well-experienced experts in the fields of carbon markets, climate finance and programmatic approaches. These choices can thus be evaluated as exemplary.

Yet, it is striking that until 2016, there was no Board member from the private sector or CDM host countries / developing countries. One can expect that inputs to strategic and / or operational aspects, their viewpoints on barriers to PoA investments and their perspectives on the future carbon would have further improved the Foundation's work.

From a formal point of view, it needs to be noted that after the resignation of Mr. Schaaff in 2016, no new Board member was appointed from BMF side. Hence, the structure of the Board of Trustees currently does

not meet the requirements of the Foundation's statutes. The Board is aware of this and plans to adjust the statutes in the near future.

The Foundation's operational management, which until then had been executed by KfW, was outsourced in late 2016. Following an international tender process, Kommunalkredit Public Consulting (KPC) GmbH from Vienna has been entrusted with the operational management ("Geschäftsbesorger"). Taking into consideration the usual principles of corporate governance, this step is consistent. The previous management of the company by the KfW, which is represented on the Board of the Foundation, could only be a temporary solution during the start-up phase of the Foundation.

External support

Financial responsibilities such as financial accounting, preparation and filing of tax declarations and required formal notices have been outsourced to professional service providers. The Foundation applied a reasonable check of expertise of those providers.

The same applies to the management of the Foundation's capital. According to the Foundation's statutes, the following applies: "*The basic assets are to be managed profitably, unless they are consumed in accordance with paragraph 2. It must be invested in such values that are considered to be safe through adequate evaluation"*[20]. In addition, there are investment guidelines for the Foundation's assets which were elaborated when the Foundation was founded. This constitutes very good practice.

However, these investment guidelines are formulated in a comparatively conservative way. Accordingly, there is little scope for the asset manager (UBS) to generate income. Hence, the guidelines do prevent the achievement of normal market returns, even taking into account the special terms and conditions for foundation assets. In addition, the time horizon of the investment also defines a clear reduction of the earnings potential of the Foundation's assets in recent years[21]. We argue that, in doing so, the potential for partial re-financing of the administrative expenses of the Foundation remains unutilized. Finally, although the applied Environmental Social Governance (ESG) criteria are a good first step for sustainable investment of the Foundation's assets, there are now other approaches to playing a pioneering role in managing these assets.

2.6 Evaluation of processes

Based on the information gathered from document reviews and interviews, we conclude that all formal processes are well-managed. The Foundation elaborated rules of internal procedure for its management. Its bodies meet at least on an annual basis (typically even 2-4 times/year) with well-documented minutes of meetings. The Foundation publishes its *Corporate Governance Reports*, its *Activities Reports* and its *Annual Accounts* on an annual basis on its website. This is best practice.

[20] Source: § 4(2) of the Foundation's statutes as of 18.03.2014.

[21] Bei einem Anlagevermögen zzgl. Bankguthaben von EUR 5,6 Mio wurden in 2016 nur TEUR 24 an Erträgen erzielt. Dies entspricht einer Rendite von 0,42%. Dies ist der Tatsache geschuldet, dass nur 22% des Vermögens angelegt werden konnte. Unter der Annahme, dass das Bankguthaben wegen der Auszahlung der Förderungen 50% des Ist-Wertes 2016 betragen sollte und einer üblichen Rendite nach Kosten von 2% hätten TEUR 68 und damit fast das Dreifache an Erträgen erzielt werden können. Dies hätte 70% des Verwaltungsaufwandes gedeckt (Source: Report on the fulfillment of the Foundation's purpose 2016 ("Bericht zur Erfüllung des Stiftungszwecks 2016"), p. 7).

The bodies of the Foundation, i.e. the Board of Trustees and the Board of Management, operate at an arm's length and at the same time follow good-practice in involving each other and coordinating processes and decisions. The Foundation also considers gender issues to the extent possible.

Besides these formal processes, the process for selecting project activities for financial support is of key relevance from an operational and strategic point of view. This process is also well-structured, organized and documented. The Foundation has elaborated *Procurement Guidelines* that are publicly available and has created a transparent process for evaluating applications for the financial support of project activities. In addition, there is a well-defined two-step evaluation process.

First, there is a screening of all submitted proposals. Those applications that successfully pass this screening[22] enter into a more comprehensive evaluation process. As part of this detailed assessment, the Foundation evaluates the proposals according to a predefined set of 7 criteria (plus eventually 3 additional criteria for activities outside the CDM) as defined in the *Funding Guidelines*. The results are summarized in an Excel-based overview. In addition, an about 10-page evaluation report ("*Auswertungsvermerk – Detailprüfung"*) is elaborated that summarises an assessment of:

- Project partners
- Economic feasibility
- Technical implementation
- Monitoring and maintenance
- Sustainability
- Integration into the national (climate) policy context

A summary of the assessment of the 4 selected PoAs is exemplarily given in Table 5 in Annex 1.

Again, it is striking that the term "innovation" does not formally appear as a separate evaluation criterion, also see discussion in chapter 2.4.4.

The evaluation was done by technical experts from KfW that are very familiar with the CDM's rules and modalities. Based on the technical evaluation, the management of the foundation ("Geschäftsbesorger") provided a recommendation to the Board of Trustees, which then approved the recommendation.

Overall, this process is comprehensive and reasonable. It ensures a detailed technical review by experts plus a discussion by all relevant bodies of the Foundation and can therefore be considered best practice.

2.7 Evaluation of activities

The Foundation engaged in a large number of international events with the objective to promote PoAs and programmatic approaches, see Table 6 in Annex 1. There was a systematic review of the achievements of the Foundation at each of the conferences, being used to optimize future activities.

Similarly, the Foundation was active with regard to consultancy services, see **Fehler! Verweisquelle konnte nicht gefunden werden.** in Annex 1. Those activities were reviewed as well.

We therefore conclude that the activity level of the Foundation was solid. However, those activities apparently were opportunistic – i.e. the Foundation reacted to opportunities that arose out of spontaneous

[22] According to our understanding, Board of Trustees and Management decided jointly which applications pass the first screening.

situations rather than planning strategically what would be important e.g. to overcome PoA-barriers or attracting further investors etc.

In terms of providing start-up finance for innovative programmatic approaches, the Foundation chose to engage in a continuous public tender, i.e. project developers have the opportunity to apply for funding any time. The initial step is to submit an application form that can be downloaded from the Foundation's website. The submission of the application will initiate the review process at the foundation. Since 2013, about 80 project proposals were evaluated; see Table 8 in Annex 1.

The support of concrete project proposals was the clear focus of the Foundation – which can be evaluated as adequate and correct with a view to its purpose.

3 Evaluation of the activities supported by the Foundation

3.1 Evaluation of PoAs supported by the Foundation

3.1.1 Scope of the evaluation

The objective of the review of the four PoAs supported by the Foundation has been to evaluate:

- if the selection process of the PoAs was in compliance with the Foundation's funding guidelines,
- what the likelihood is that the PoAs will be able to deliver the contracted CER volumes, and
- the positive co-benefits of the PoAs in terms of contribution to local sustainable development and national climate policy and other policy frameworks.

The report and its conclusions build on information made available by the Foundation as well as on-site visits that were carried out by Perspectives staff in September and October 2018. These missions covered various on-site visits of PoA locations, talks with responsible managers of the project partners, and interviews with the local population and users of the PoA equipment (e.g. cookstoves and biogas collection systems). Overall, ten biogas digesters, five cookstove using villages in Zambia, three cookstove locations in Dakar suburbs and seven schools using water filters were inspected.

3.1.2 Key findings: project selection by the Foundation

3.1.2.1 General selection process

The funding guidelines foresee that parties interested in start-up financing of the Foundation for their PoAs in a first step apply via application forms available on the website of the Foundation. In a second step, the Foundation evaluates the proposals based on the funding guidelines. Finally, the Foundation makes a decision if the PoA would be supported or not.

The review of the selection process shows that the Foundation complied in all four projects with its selection rules: as first steps, the initial applications of the PoAs were evaluated by the Foundation, followed by a due diligence process, during which the applicants submitted detailed documentation to the Foundation as requested by it. Based on this information, PoA experts from KfW prepared and submitted to the Foundation detailed assessment reports (*Auswertungsvermerk – Detailprüfung*) for each project. Those assessment reports included a detailed description of the project status, a risk summary and detailed recommendations for an eventual funding. The risk monitoring and evaluation process continued even after the Foundation made general decision for project support, i.e. during the ERPA negotiation process. [redacted]

To conclude: the general evaluation and contracting process is found to be in full compliance with the funding guidelines.

3.1.2.2 Emission Reduction Purchase Agreements (ERPAs)

The guidelines of the Foundation specify two possible forms of funding:

- Direct purchase of emission reduction certificates from the PoA
- Pre-payments for emission reduction certificates to be delivered from the PoA in the future

In all cases, the Foundation chose the second approach, i.e. it intentionally selected PoA projects in a comparatively early stage. This makes sense in order to maximise the impact of the funding - which can be expected higher in case for early-stage project compared to projects that already have financially mastered the challenges of starting-up and already a fully operating. The ERPAs define milestone achievements for the projects that lead to the payment of the next tranche. This is a common approach in the market and a smart mechanism to reduce financial risks for the Foundation. [redacted] However, interviews with representatives of the Foundation showed that the Foundation was aware of the significant underperformance of the project and consciously decided to continue the financial support of the Foundation for the time being because of the improving sales situation and adjusted marketing strategy of SimGas at this point in time. This can be seen as an adequate decision supporting the overall purpose of the Foundation.

3.1.2.3 Review of funding criteria

The funding guidelines explicitly list and number seven criteria that the funding decision of the Foundation shall be based on – plus two additional criteria for CDM PoAs. These criteria are in the following referred to as “hard” funding criteria. All of the hard funding criteria were - partly only implicitly - considered during the decision-making process of the foundation to sign the ERPA.

Table 1 summarises the results of the review whether those criteria have appropriately been reviewed by the Foundation as part of the selection process:

Table 1: Results of compliance check with "hard" funding criteria

"Hard" funding criteria	SimGas PoA: Criteria met (Y/N)	SEM Fund: Criteria met (Y/N)	Impact Carbon Criteria met (Y/N)	C-Quest: Criteria met (Y/N)
1. Generation of emissions reduction according to Kyoto Protocol or similar bilateral or multilateral agreements can be realistically expected	[redacted]	Y	Y	Y
2. Strategic importance of PoA for national climate policy of host country, including development benefits	[redacted]	N[23]	Y	Y
3. Minimum CER generation of 25.000 per year from PoA	[redacted]	Y	Y	Y
4. PoA is environmentally and socially sound	[redacted]	Y	Y	Y
5. Realistic opportunity to sell remaining CERs from PoA	[redacted]	Y	Y	Y[24]
6. Project partner fit to implement the PoA	[redacted]	Y	Y	Y
8. The disbursement of funding from the Foundation *normally* requires the registration of the CDM PoA at the UNFCCC	[redacted]	Y	Y	Y
9. Maximum funding volume of 2 million € per PoA	[redacted]	Y	Y	Y
10. The PoA fulfils requirements from § 8 of the *Projekt-Mechanismen Gesetz*,	Whether the PoA fulfils § 8 of the Projekt-Mechanismen Gesetz, was implicitly checked for the PoA as part of the CDM approval process.			

Additionally, the funding guidelines mention other aspects that should be taken into account in the funding decision. The same applies to the attributes mentioned on page 4 of the funding guidelines. Here the guidelines specify "nice to have" criteria that make a PoA especially worth to be funded by the Foundation. Hence, all these criteria need to be considered as *not* mandatory, and therefore "soft" criteria, for the funding decision. Our evaluation results are summarised in the following table.

One can conclude that most of the criteria were assessed thoroughly. However, for some of these soft criteria we found no evidence that they have been checked as part of the decision-making process. It must also be noted that some criteria such as "Strategic significance for the further development of the carbon market of the PoA" are difficult to assess appropriately.

[23] *Auswertungsvermerk – Detailprüfung* on p.13f. discusses national policy in detail. However, it states that there is no real national policy on improved cookstoves and that the government expects foreign donors to work in this field.

[24] Not explicitly checked but CER revenues as sole revenue source mentioned in both *Auswertungsvermerk – Detailprüfung* on p.3. and *Projektauswertungsvermerk*

Table 2: Results of compliance check with "soft" funding criteria

"Soft" funding criteria	SimGas PoA-Compliance (Y/N)	SEM Fund Compliance (Y/N)	Impact Carbon Compliance (Y/N)	C-Quest Compliance (Y/N)
PoA success probability is determined and PoA is viable	[redacted]	Y	Y	Y
PoA is innovative	[redacted]	Y	Y	Y
PoA has high replication potential in the host country or other countries	[redacted]	Y	Y	N
Strategic significance for the further development of the carbon market of the PoA	No evidence found that this criterion was checked			
PoA improves the living and working conditions of women and contributes to sustainable development in the host country	[redacted]	Y	N[26]	Y
PoA includes pioneering approaches improving the regional spread of mitigation projects	[redacted]	Y	Y	N
Embedding of the PoA in the national climate of other relevant policy of the host country	[redacted]	Y	Y	Y
Synergies with other political activities of the German Government in developing countries	No evidence found that this criterion was checked			
High success probability of the PoA due to the governance structures for climate protection projects	[redacted]	Y	Y	Y

3.1.3 PoA-performance: CER issuance

In terms of achieved emission reductions and issued CERs, the performance of the four PoAs varies significantly.

The **C-Quest Capital improved cookstoves PoA in Zambia** is a strong overperformer and lighthouse project. The PoA was registered in 2012 and has achieved distribution of 50,000 improved stoves by June 2016, 60,000 by end 2017 and 70,000 by end 2018. 86,000 CERs were issued in January 2017, another 170,000 CERs were issued on 11 December 2017 and 158,000 CERs on 12 October 2018. The total thus reaches 414,000 of which 50% are the Foundation's share. As per late October 2018, all 210,000 CERs due to the Foundation have been cancelled. Hence, it is clearly overperforming on all accounts. Its scale could be doubled until 2023 within the COMACO service area of Eastern Province and replicated 10-fold

[25] Improvement of the living conditions of women not explicitly checked (but contribution to sustainable development discussed in Auswertungsvermerk – Detailprüfung)

[26] Improvement of the living conditions of women not explicitly checked (but contribution to sustainable development discussed in Auswertungsvermerk – Detailprüfung)

in Zambia as a whole. It could also be expanded to other Zambian provinces. Thus, it would be extremely well placed as the cornerstone of an **upscaled crediting Art. 6 pilot** for improved cookstoves in Zambia with a > 1 million annual credit volume; a valuable activity for the Foundation in the remaining period of its existence.

The **Impact Carbon safe water PoA** in Uganda and Rwanda is on a good track regarding its CER-delivery despite some delays related to the first verification in 2017/2018. As per today, it is yet awaiting its first CER-issuance, but chances are good that the initial problems have been solved. The latest Monitoring Report shows that the key CER generating parameters are much better than expected. The average number of people per school using the water filter reaches 651 instead of 275, and so far 96.9% of filters are operational instead of 90% assumed in the estimate. Therefore, per installed filter, an overperformance of 155% results. Overall, the project is significantly overperforming, with 64,474 instead of 28,535 CERs from the Uganda CPA alone.
However, so far no CERs have been cancelled on behalf of the Foundation, and the projected date of November 2018 had to be delayed again. A post-registration change request will be made to include chlorine technologies (Ultraflo). Impact Carbon stresses the important role of KfW support to enable follow-up ERPA closures for PoA expansion to Nigeria and Kenya with the government of Norway for a volume of 2.5 million CERs.
The PoA shows a high degree of versatility and is well administered by Impact Carbon. In the worst case, the PoA would be able to cancel around 358,000 CERs on behalf of the foundation by 2021. This would be more than the 330,000 CERs agreed in the ERPA. There is a high probability that CER numbers rise substantially, reaching over 100,000 per year, especially if expansion into Nigeria functions as planned. Thus, the PoA would be a good candidate for an **upscaled crediting Art. 6 pilot in the Ugandan context**; a valuable activity for the Foundation in the remaining lifetime. This opportunity should be discussed with other German actors, especially the GIZ's Global Carbon Markets office in Uganda which is looking for candidate activities to support. A precondition for such support would be specific interest from the Ugandan government to embark on such a pilot.

[redacted]

The **SEM-Fund cookstove PoA in Senegal** encounters heavy challenges in terms of CER issuance. [redacted]

[redacted] However, there is a severe risk that the PoA will not be able to request any issuances of CERs, as there are various problems from verification issues over a pending change of the methodology, to inability of project upscaling (for details see Annex II). It is thus very likely that the outstanding payment would not increase the amount of CERs. [redacted] This would mean that no CERs would have been cancelled from the PoA until the end of the lifetime of the Foundation.

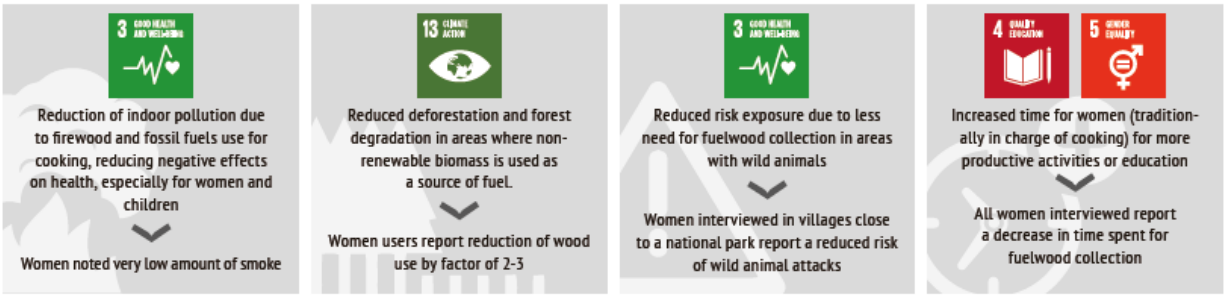
3.1.4 Co-benefits of the selected PoAs

All projects deliver strong co-benefits in terms of sustainable development and further development of national climate policies.

3.1.4.1 Co-benefits of the C-Quest Capital cookstove PoA (Zambia)

Besides GHG emission reductions, the PoA has generated a number of substantial sustainable development co-benefits that address the Sustainable Development Goals (SDGs) 1, 2, 3, 5, 7, 10 and 15. Utilization of more efficient cook stoves significantly reduces firewood consumption and, hence, deforestation or land degradation. They also improve the overall health situation in the communities due to reduced smoke and allow women and girls to spend more time for family care, farming and education instead of gathering firewood.

Box 1: Sustainable development benefits of the C-Quest Capital project



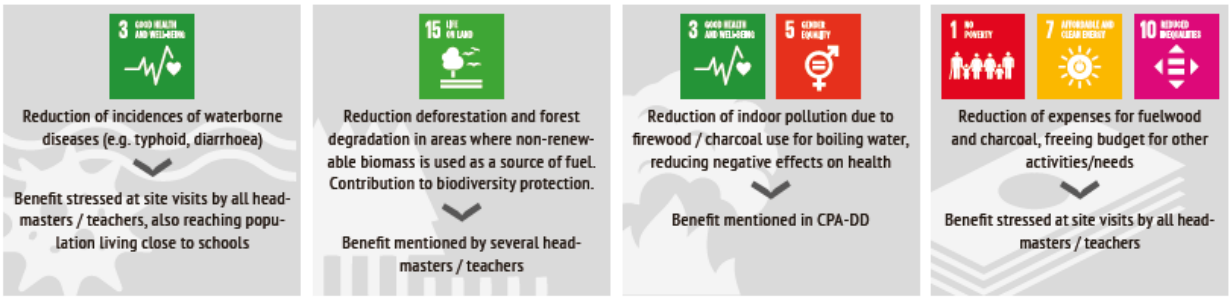
The Foundation should consider whether to fund a SD co-benefit monitoring study with 50,000 €, given the "lighthouse" characteristics of this PoA. It should request CQuest Capital to harness funds from other Foundations (e.g. Rockefeller and UBS Optimus Fund, as in the case of Impact Carbon Uganda) to ensure long-term replicability of co-benefit monitoring.

The PoA makes a strong contribution to the climate policy framework in Zambia, because it relates directly to the NDC target of promoting improved cooking devices including improved biomass stoves. The programme holds a significant potential for upscaling in Zambia and other African countries.

3.1.4.2 Co-benefits of the Impact Carbon safe water PoA (Rwanda and Uganda)

The PoA created several sustainable development co-benefits that are illustrated below. The site visit showed very clear indications that these benefits actually accrue. Table 16 in Annex II also identifies possible indicators for measuring the co-benefits more systematically in the future.

Box 2: Sustainable development benefits of the Impact Carbon project

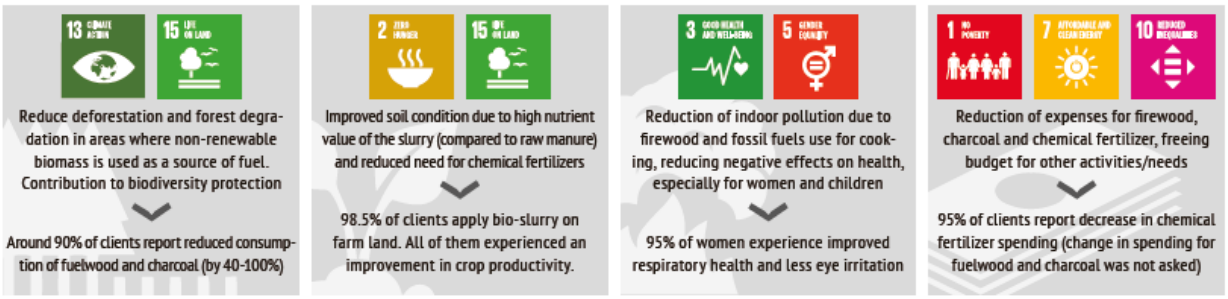


The PoA makes a strong contribution to the (climate) policy framework in Uganda, because the NDCs aims at "making provision for a safe water chain and sanitation facilities to limit outbreaks of water-borne diseases" and "ensuring water supply to […] domestic use. However, Impact Carbon indicated that no continuous interaction with the responsible person, climate commissioner Chebet Maikut was happening and that the PoA is not really promoted as "lighthouse activity" by the central government.

3.1.4.3 Co-benefits of the Simgas biogas PoA (Kenya)

During the survey for the second Monitoring Report, SimGas systematically asked clients a series of questions how the biodigesters have affected their living conditions and what other (if any) benefits the users have observed. The outcomes underpin the theoretical understanding that besides GHG-emission reductions, the PoA has generated a number of substantial sustainable development co-benefits, such as reduction of poverty, access to clean energy, improvement of health and well-being, and contribution to gender equality. Hence, the project addresses the UN's Sustainable Development Goals (SDG) 1, 2, 3, 5, 7, 10 and 15:

Box 3: Sustainable development benefits of the SimGas project

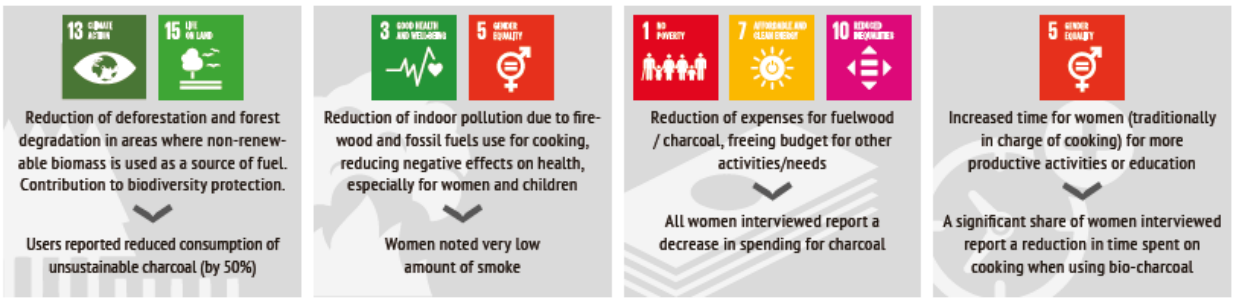


The PoA also makes a strong contribution to national climate policies in Kenya, as access to clean energy and the achievement of a 10% tree cover of the land area are specific objectives of the countries' NDC. In addition, methane capture from manure for rural households is one of Kenya's priority measures in the waste sector.

3.1.4.4 Co-benefits of the SEM-Fund sustainable energy PoA (Senegal)

Besides GHG emission reductions, the PoA has generated various sustainable development co-benefits that address the SDG goals 1, 3, 5, 7, 10 and 15, but on a limited scale.

Box 4: Sustainable development benefits of the SEM-Fund project



The PoA makes a strong contribution to the (climate) policy framework in Senegal, because within its INDC, Senegal states non-conditionally to install 3.8 million improved charcoal stoves and 4.6 million improved woodstoves, whereas the conditional component has a target to install 6.8 million improved charcoal stoves and 7.6 million improved woodstoves.

A more detailed analysis of all PoAs can be found in Annex II.

Overall, the authors are of the opinion that the Foundation has done a good job in selecting the projects. Two of them are performing well to outstanding, two are struggling with on-the-ground realities of project development in African developing countries. Given that it is the Foundation's objective to support innovative projects that that so far have not been reached by the market, it is quite normal that such projects will face challenges. The Foundation's performance is clearly not worse than that of other CDM PoA developers in the sectors covered by the Foundation.

3.2 Evaluation: consultancy activities of the Foundation

The Foundation has been engaged in the development of several standardised baselines (SBL) with a focus on African and Latin American countries. Key activities have been the development of an SBL for charcoal in Senegal and Cote d'Ivoire; as well as an SBL for the building material sector in Peru. To us, it is not clear how the sectoral and geographical scope of SBLs was chosen. The closest link relates to charcoal in Senegal, but the other two baselines did not really fit to the PoA strategy. Moreover, the Foundation did not engage after the initial baseline work had been commissioned.

The SBLs were developed by international technical experts and followed the UNFCCC's quality standards for baseline methodologies. The first of them was submitted in November 2015 and approved as ASB0028 "Fuel switch, technology switch and methane destruction in the charcoal sector of Senegal" on 20 October 2016, with the second one submitted in February 2016 and approved on 20 October 2016 as ASB0029: "Fuel switch, technology switch and methane destruction in the charcoal sector of Côte d'Ivoire". Unfortunately, they have not been utilized by any CDM activity and will expire in October 2019. While the Peruvian SBL has been announced as top-down baseline TSB0002 "Standardized baseline for the brick sector in Peru" in October 2014 it has not been approved since. The SBLs support the international use of Programmes of Activities as they reduce the burden for PoA developers related to the registration of their projects at the UNFCCC.

Besides this, the Foundation has supported the Thailand Greenhouse Gas Management Organisation (TGO), which launched the Thailand Voluntary Emission Reduction Program (T-VER-Program) and the Low Carbon Cities Program (LCC-Program) in 2013. These programmes support Thai provinces, cities, municipalities and communities in establishing GHG inventories and MRV-schemes for GHG emissions and, in particular, in creating a mechanism that incentivises cities to reduce their GHG emissions. Eligible GHG emission reductions can generate Thai Voluntary Emission Reductions (T-VERs) that can then be sold to international or domestic buyers. The World Bank's Partnership for Market Readiness (PMR) supported the structural set-up of Thai programmes as well. Principally, the approach could become a pilot activity under Art. 6 of the Paris Agreement.

The Foundation supported TGO in its efforts to implement the T-VER Program through the sponsoring of the elaboration of standardised baseline studies, i.e. for the project types i) installation of solar PV panels and ii) efficient lighting[27]. In addition to this, the Foundation is considering to spend up to 2 million € for buying T-VERs from such project types. This would make the Foundation the first international buyer of T-VERs from the Thai scheme and would demonstrate international commitment to support innovative carbon market schemes.

As part of an internal clarification and due diligence process, the Foundation hired a specialised legal counsel to clarify if the acquisition of T-VERs from the program would be aligned to the Foundation's objective and statues. We see this as a diligent approach of the Foundation's management, given that the Thai offsetting program goes beyond the original definition of "programmatic approaches" at the time of the

[27] The development of a third SBL for the waste sector was planned, but not undertaken due to concerns of the German Emissions Trading Authority (DEHSt).

Foundation's establishment. A support of such a wider approach can be seen as adequate and aligned to the Foundation's objectives. This is because similarly to PoAs under the CDM, the LCC-Program incentivises programmes (covering a high number of small single mitigation measures) but not large, single activities. The activities will be overseen in a programme-like form by the executing institutions as well as TGO, so this has a similar structure as PoAs under the CDM. Last but not least, the Thai programme can be seen as innovative – as it specifically aims to test the market mechanisms under the Paris Agreement. The support of the Foundation can therefore help to establish, kick-start and scale such new mechanisms.

4 Outlook for the remaining lifetime of the Foundation

4.1 Considerations for future actions by the Foundation

In light of its limited remaining lifetime and the fact that international carbon markets will be changing significantly under the Paris Agreement, the Foundation has spent considerable time to develop a strategy for future action. This process is not yet finalised, and suffers from the fact that even after COP24, there is no international rule book for market mechanisms under the Paris Agreement (see below).

The bodies of the Foundation have identified and discussed the following options:

- Support of local emission trading / offset-schemes, as the Thai T-VER approach
- Approaches to combine carbon pricing and carbon taxes
- Support further work related to results-based climate finance
- Support of the idea of an *Adaptation Benefit Mechanism* (ABM)
- Continuation/expansion of existing approaches through voluntary carbon markets
- Support of the *Carbon Offsetting and Reduction Scheme for International Aviation* (CORSIA)
- Further consultancy support
- Support of the programmatic approach under the Paris Agreement (discussion paper 4/2017)
- Expansion of financial support to existing projects (including a legal check regarding the viability of this approach under the Foundation's statues)

Again, this approach has to be seen as diligent and responsible: the bodies of the Foundation aim to achieve the optimal outcome with the available money rather than continuing to simply support the initial approach without consideration of recent developments in the outside world.

4.2 Outcomes of COP24 in Katowice

Despite significant progress on several elements, final decisions on Art.6 have been postponed to COP 25 in 2019. The following table presents both agreed and controversial elements under Art.6.

Table 3: Elements of Art. 6 on which agreement was/was not achieved by Parties

Agreement reached	
Governance	• No international oversight for Art. 6.2 and a Supervisory Body for Art. 6.4
	• A registry for participating in Art. 6.2 activities
	• Technical expert review related to accounting as under Art. 13, no reporting requirements on SD contributions
	• Establishment of a grievance mechanism for Art. 6.4
Scope	• Agreement on upscaled mechanisms
Accounting	• Different metrics could be used by Parties, in conjunction with a buffer registry
	• Corresponding adjustment (CA) to be made towards the GHG inventory, not towards the NDCs; the CA are due at the end of the NDC period. Parties with

Agreement reached	
	single-year targets can perform the CA only with Parties with single-year targets
	• Possibility to convert intensity targets into absolute emissions levels
	• No discounting for overall mitigation both on Art. 6.2 and 6.4 ("voluntary cancellation" instead but fuzzy definition of overall global mitigation)
	• Report in BTR
	• No increase in global emissions; baselines set conservatively below business-as-usual, compensation of material reversals
	• Consistency check by the UNFCCC Secretariat
Controversial elements	
Scope	• Eligibility of NDC vs. non-NDC sectors
	• Use of units outside UNFCCC systems[28]
	• Inclusion/exclusion of REDD+ and Forestry
Accounting	• Exemption of non-NDC sectors from the CA requirements
Adaptation tax	• To be applied on all mechanisms or only on Art. 6.4
Baselines definition	• Best Available Technologies or benchmarks?
Crediting period	• Length of the crediting period
Transition of Kyoto mechanisms under Art. 6	• Transition of activities (which mechanisms? re-registration? Time thresholds?)
	• Transition of units (vintages)
	• Transition of methodologies

At COP, various institutions discussed engagement in Art. 6 pilot activities. The ADB launched an "Art. 6 Support Facility" financed by Germany and Sweden with a total of 4 million €.

4.3 Recommendations by Perspectives

In view of this political situation, it may be considered challenging to make concrete decisions how to invest the remaining capital of the Foundation. If this is seen as a fundamental barrier, the Foundation could explore options to prolong its lifetime. This would allow give more time for initiating and executing activities that go beyond 2021.

From a content point of view, we suggest that the Foundation proceeds with the two well-performing PoAs and scales them up as follows, ideally going beyond 2021:

Negotiate an Art. 6.2 pilot deal with the C-Quest capital PoA in Zambia. The milestone triggering acquisition of units should be 1 million t CO_2 reductions achieved annually, of which the Foundation could take up 20% at a price of ~3 €/t. Methodology support and sustainable development MRV support of 0.15 million € could be added.

Negotiate a regional Art. 6.2 pilot deal with the ImpactCarbon PoA in Uganda, Nigeria and Ethiopia. The milestone triggering acquisition of units should be 0.5 million t CO_2 reductions achieved annually, of which the Foundation could take up 20% at a price of ~4 €/t. Methodology and sustainable development MRV support of 0.1 million € could be added. Collaboration with GIZ's Global Carbon Markets office in Uganda should be sought.

[28] For instance under the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)

For both PoAs methodologies for reasonable quantification of GHG mitigation effects of sectoral policy instruments could be tested provided governments are willing to engage. Different approaches for crediting periods and following transfer of the mitigation into stricter NDCs should be tested in analogy to the NACAG case.

Those pilots could eventually also learn from the experiences made in Thailand where we recommend the following course of action:

- For incentivising additional action, the Foundation should only buy T-VERs from programmes/projects that do start after the "investment decision" of the Foundation. Buying T-VERs from projects that have been implemented earlier could become problematic in terms of justification of their additionality.
- If this approach is followed and T-VERs are only paid on delivery, the Foundation might be challenged with regard to its limited remaining lifetime. This might need a solution going beyond 2021, such as a prolongation of its lifetime or outsourcing of future payments (if legally possible) to a reliable third party such as KfW.
- A document prepared by the Foundation's management suggests that Thailand should be entitled to account for the achieved emission reductions in its inventory („*Die Stiftung unterstreicht, dass die Minderungswirkung in der THG-Bilanz durch Thailand beansprucht werden kann*"). In our view, this could be an ineligible form of double counting, even if the Foundation retires the T-VERs. Hence, we suggest to discuss this aspect in more detail and to eventually revise the approach.
- To ensure the quality of the SBLs and the Thai additionality approach and as both aspects are crucial for the quality and reputation of the approach in particular as long as there is no international supervision of the scheme, the Foundation might want to pilot an Art. 6.4 approach to ensure that there is international oversight.
- Until an Art. 6.4 approach is possible, we recommend the Foundation to select the projects from which T-VERs are bought, and not just the project type as currently foreseen.
- Because the acknowledgement of the programme as an Art. 6 activity is unclear, the acquisition volume of 2 million € seems to be on the high side; and we would not recommend using more than 1.5 million €.

We suggest such programmatic Art. 6 pilots, because there are still numerous open questions that need to answered. Even if COP25 finally agrees on an Art. 6 rulebook, this will be of general nature with many unclear details. We expect that, similar as in case of the CDM, it will take several years until "good practices and standards" will develop. Hence, with starting Art. 6 pilots, the Foundation has a unique chance to develop high quality approaches. Given that the implementation of full-scale Art. 6 pilots will require substantial financial inputs, the Foundation may want to explore collaboration with other actors, such as the World Bank's PMA, the African Development Bank (AfDB) and the International Climate Initiative (ICI).

[redacted]

As a final, but important recommendation, we suggest expanding the monitoring of the co-benefits of the supported PoAs. For each PoA, we make concrete recommendations for indicators and MRV-parameters in Table 11, Table 16, Table 21, and Table 26 in Annex II of this report. If co-benefits are properly monitored and reported, it will be easier for the foundation to demonstrate positive outcomes and impacts of its funds – in particular for those projects that underperform in terms of GHG-mitigation.

Annex I

Table 4: Board members of the Foundation 2011 – 2016

BOARD MEMBERS		
	Management Board	**Board of Trustees**
2011	• Thomas Forth • Malin Ahlberg • Florian Sekinger	• Franzjosef Schafhausen • Dr. Silke Karcher • Ute Hallmann-Häbler • Norbert Gorißen • Bernhard Zander
2012	• Thomas Forth • Malin Ahlberg • Florian Sekinger	• Franzjosef Schafhausen • Dr. Silke Karcher • Ute Hallmann-Häbler • Norbert Gorißen • Bernhard Zander (until 30.11.2012)
2013	• Thomas Forth • Malin Ahlberg • Florian Sekinger (until 30.09.2013) • Matthias Börner (since 01.10.2013)	• Franzjosef Schafhausen • Dr. Silke Karcher • Ute Hallmann-Häbler • Norbert Gorißen
2014	• Thomas Forth • Malin Ahlberg • Matthias Börner	• Franzjosef Schafhausen • Dr. Silke Karcher • Ute Hallmann-Häbler (until 21.08.2013) • Henning Schaaff (since 22.08.2013) • Norbert Gorißen
2015	• Thomas Forth • Malin Ahlberg • Matthias Börner	• Franzjosef Schafhausen • Dr. Silke Karcher • Henning Schaaff • Norbert Gorißen
2016	• Thomas Forth • Malin Ahlberg • Matthias Börner	• Franzjosef Schafhausen • Dr. Silke Karcher • Henning Schaaff (until 31.07.2016) • Norbert Gorißen (until 24.07.2016) • Michael Kracht (from 25.07.2016 until 31.01.2017) • Dr. Petra Opitz (since 25.07.2016) • Dr. Charlotte Streck (since 25.07.2016) • Dr. Hans-Joachim Ziesing (since 25.07.2016)

Table 5: Summary of the detailed assessment reports of the 4 selected PoAs

RISK ASSESSMENT						
	Project partner(s)	**Economic efficiency**	**Technical implementation**	**Monitoring and maintenance**	**Sustainability**	**Integration in national policies**
Efficient cookstoves in Zambia (C-Quest Capital)	Low risk	Medium risk	Low risk	High risk	Low risk	Low risk
Source: Detailprüfung_C-Quest-Zambia_131106_FINAL						
Renewable biomass in efficient cookstoves in Senegal (The SEM Fund)	Medium risk	Medium risk	Medium risk	High risk	Low risk	Low risk
Source: Detailprüfung_SEM_131106_final						
Safe water access in Uganda and Rwanda (Impact Carbon)	Low risk	Medium risk	Medium risk	Low risk	Low risk	Low risk
Source: Detailprüfung_Impact-Carbon_Uganda-Ruanda_141017_Draft						
Generation and use of biogas in households in Kenya and Tanzania (SimGas IP BV)	Low risk	Medium risk	Medium risk	Medium risk	Low risk	Low risk
Source: Detailprüfung_SimGas_Auswertungsvermerk Nov. 2014						

Table 6: Overview of activities to promote PoAs

Year	Activities
2012	Presence at conferences: Carbon EXPO, Cologne; Carbon Forum Asia, Bangkok; UNFCCC Climate Change Conference, Doha
2013	Presence at conferences: Austrian Climate Change Workshop, Wien; Conference on CDM in Africa, Addis Abeba; Carbon EXPO, Barcelona; Carbon Forum Africa, Abidjan; Carbon Forum Asia, Bangkok; Fourth workshop on enhancing the regional distribution of CDM projects in Asia and the Pacific, Manila; Market Based Mechanisms and Results Based Finance Workshop, Stockholm; UNFCCC Climate Change Conference, Warsaw
Z014	Co-organisation of two workshops: one in South Africa (together with the Regional Cooperation Center for Eastern and South Africa as well as East African Development Bank (EADB)) and one in Cameroon (together with the Regional Cooperation Center for Western and Central Africa as well as West African Development Bank (BOAD)) Presence at conferences: Carbon EXPO, Cologne; African Carbon Forum, Windhoek; UNFCCC Climate Change Conference, Lima
2015	Presence at conferences: Carbon EXPO, Cologne; UNFCCC Climate Change Conference, Paris; workshop on SBLs (hosted by Regional Cooperation Center for Western and Central Africa)
2016	Presence at conferences: Carbon EXPO, Cologne; UNFCCC Climate Change Conference, Marrakech

Table 7: Consultancy activities of the Foundation[29]

Year	Activities
2012	• Support of a competition between Designated National Authorities (DNAs) organized by the UNFCCC secretariat (motto: "How to promote PoA in their country"), foundation provided 10.000 € for each of the three winners • Consultancy support was offered to DNAs that participated but didn't win
2013	• Decision to support Standardized Baselines (SBLs) after discussions with heads of the Regional Cooperation Centres in Eastern and Western Africa • Decision to develop a SBL for charcoal in Senegal and other West African countries • Management Board and UNFCCC signed Memorandum of Understanding for the development of a standardized baseline for efficient charcoal production in Senegal, call for applications published in late 2013 • Conversations with Thailand Greenhouse Gas Management Organisation (TGO) regarding cooperation in the context of Thai NAMA / NMM initiatives
2014	• First project phase of SBL for effective charcoal production in Senegal and other West African countries: consulting contract with consortium under the lead of South Pole Carbon • Decision to support UNFCCC in developing SBL for building material sector in Peru
2015	• Decision to expand SBL for effective charcoal production to Ivory Coast and Ghana • Organisation of data gathering workshops in Senegal, Ivory Coast and Ghana, development of SBLs, SBLs handed over to national authorities, Senegal's SBL submitted to UNFCCC, other SBLs still under examination • Mission to Thailand: discussing TGO's application and options for action; preliminary review of Low Carbon Cities (LCC) initiative and T-VER Program; visiting demonstration project and example project; discussing four topics: (1) content and design of LCC as well as linkages between LCC and T-VER, (2) additionality of T-VER projects, (3) creation of additional demand, (4) price setting; signing Cooperation Roadmap Agreement (CRA) that includes 150.000 € funding for preparatory study.
2016	• Ivory Coast's SBL submitted to UNFCCC • Review of TGO proposal, agreement on cooperation and financial support to TGO for development of SBL for selected sectors and concept for implementation

Table 8: Assessment and approval of project activities applying for start-up finance

Year	Activity
2013	• 13 project proposals evaluated • Three projects considered eligible for funding 1. Efficient cookstoves in Zambia (C-Quest Capital) 2. Efficient cookstoves in different African countries (The SEM Fund) 3. Safe water access in Uganda and Rwanda (Impact Carbon) • Audit engagement issued for projects 1 and 2 • Funding approval for projects 1 and 2

[29] Note that some of the items listed here could also be listed in Table 6 ("promotion of PoAs").

Year	Activity
2014	• Foundation widened funding criteria to allow for support of market based programmatic mitigation approaches beyond the CDM • 44 project proposals evaluated • Seven projects considered eligible for funding 1. Safe water access in Uganda and Rwanda (Impact Carbon) (project 3 / 2013) 2. NAMA for national emissions trading system in Thailand (TGO) 3. Energy efficiency in fish smoking industry in Ghana 4. Biogas plants in Kenya and Tanzania 5. Renewable energy (hydro power) in Rwanda 6. Fuel switch and energy efficiency in households in Rwanda 7. Renewable energy in Uganda • Audit engagement issued for projects 1-5 • Funding approval for project 1 • No final decision on funding approval for projects 2-5 • Emission Reduction Purchase Agreements (ERPAs) for two projects 1. Efficient cookstoves in Zambia (C-Quest Capital) 2. Renewable biomass in efficient cookstoves in Senegal (The SEM Fund) • For these projects, the first tranches of start-up funding were provided
2015	• 21 project proposals evaluated • Similar to previous application rounds: regional focus on Africa; sectoral focus on household energy efficiency • Audit engagement issued for one project (household solar systems in Myanmar) • Emission Reduction Purchase Agreements (ERPAs) for two projects 1. Safe water access in Uganda and Rwanda (Impact Carbon) 2. Generation and use of biogas in households in Kenya & Tanzania (SimGas IP BV) • For these projects, the first tranches of start-up funding were provided
2016	• No new project proposals submitted • No additional projects considered eligible for funding • Four Emission Reduction Purchase Agreements (ERPAs) in place 1. Efficient cookstoves in Zambia (C-Quest Capital) 2. Renewable biomass in efficient cookstoves in Senegal (The SEM Fund) 3. Safe water access in Uganda and Rwanda (Impact Carbon) 4. Generation and use of biogas in households in Kenya & Tanzania (SimGas IP BV)
2017	• First transfer of emission reductions to foundation: 42,994 CERs from the PoA Efficient Cook Stoves in Zambia has been cancelled on behalf of the foundation