

A photograph of an industrial facility, likely a refinery or chemical plant, at night. The structure is illuminated by warm yellow lights, highlighting the complex network of steel beams, walkways, and platforms. The sky is a deep blue, suggesting dusk or dawn. The overall scene conveys a sense of industrial activity and scale.

# **CARBON MECHANISMS RESEARCH**

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## **Taking the Host Country Perspective** Aligning carbon market activities with climate finance and unilateral mitigation

**Nicolas Kreibich and Victoria Brandemann**



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with climate finance and unilateral  
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# Key Messages

- Under the Paris Agreement, **developing countries are confronted with the challenge** of having to decide which of their mitigation options they want to exploit unilaterally or, as an alternative, use carbon markets or climate finance for implementing mitigation activities.
- While, at first sight, taking the climate finance route seems to always be the best way forward as it does not require mitigation outcomes to be exported and accounted for, such a **'climate finance first' strategy does not align with the dynamic reality on the ground**.
- Despite the lines becoming increasingly blurred - **climate finance and carbon finance differ in numerous regards**. Differences that clearly set both approaches apart include: the conditionality in terms of funding disbursement and the associated accounting requirements, the possibility to support governments vs. the potential to incentivise the private sector and possibilities for adapting activities to national priorities.
- **Specific features of mitigation options influence their suitability** for being subject to climate finance or carbon crediting, including: the relationship between the mitigation option and the NDC's scope, the relationship between the mitigation option and the conditional and unconditional elements of the NDC and whether mitigation outcomes will be reflected in the national inventory.
- When deciding on how to tap a specific mitigation potential, host countries should pay particular attention to the **complementarity of climate finance and carbon crediting**. Complementarities identified relate the type of stakeholders to be targeted, the stage of the transformational change process that is to be supported, and the mitigation costs levels and risks associated to a specific activity.
- Developing an **integrated financing strategy** for host countries requires strengthened exchange between the staff involved in national data processing and individuals involved with Article 6. Furthermore, an enhanced collaboration between carbon markets and climate finance communities at the domestic and at the international level is needed.
- The complexity of the task ahead does not only call for stronger endorsement by host country governments but also for **strengthened political coordination and oversight**, tasks that are ideally performed by a coordination body that is designated at an early point in time.
- Countries with currently limited capacities will require **external support for developing domestic capacities and infrastructure** as well as support for ad-hoc assistance that could be provided through climate finance. Such an international support structure could build on the existing infrastructure established within and beyond the UNFCCC.

# Summary

The Paris Agreement requires all Parties to develop and communicate Nationally Determined Contributions (NDCs), confronting developing countries with a multiple challenge: Developing countries do not only have to decide which of their mitigation options they want to exploit but they must also determine whether to exploit this potential unilaterally or, as an alternative, use carbon markets or climate finance for implementing mitigation activities.

At first sight, taking the climate finance route seems to always be the best way forward as - in contrast to carbon crediting - no export of mitigation outcomes and no accounting through corresponding adjustments is required, which may jeopardise NDC attainment. However, such a **'climate finance first' strategy does not align with the dynamic reality on the ground** that does prevent policymakers from making funding decisions in a consecutive manner and where (public) climate finance is limited. Furthermore, mitigation options display specific features that influence their suitability for one of the two financing approaches. Identifying these features and how they can inform the host country's mitigation strategy is the overarching objective of this paper. The paper first compares carbon crediting and climate finance in a top-down manner to then adopt a bottom-up approach that explores specific features of mitigation options.

*Despite the lines becoming increasingly blurred - climate finance and carbon finance differ in numerous regards*

The top-down comparison of climate finance and carbon crediting allowed for the identification of key differences. **The conditionality in terms of funding disbursement and the associated accounting requirements clearly set both approaches apart**, but there are also

other aspects that clearly differentiate both approaches:

- Climate finance is better suited to support governments in establishing the infrastructure and capacities required, while carbon crediting has a stronger potential to directly incentivise the private sector.
- Climate finance provides less possibilities for adapting the activity to national priorities as the funding priorities of the donor country or the fund must be taken into consideration, while carbon crediting might provide more leeway in this regard, in particular if activities are implemented unilaterally.
- Access requirements of carbon crediting and climate finance will be largely dependent on the specific funding instrument.

*Specific features of mitigation options can inform the choice of the financing approach*

The bottom-up analysis explored **specific features of mitigation options that influence the suitability of mitigation options** for being subject to climate finance or carbon crediting, including:

- The relationship between the mitigation option and the NDC's scope largely influences the suitability of the mitigation option as activities not covered by the NDC are less suitable for carbon crediting and unilateral action but might be compatible with (bilateral) climate finance.
- The relationship between the mitigation option and the conditional and unconditional elements of the NDC will influence the choice of the financing approach.
- Whether mitigation outcomes will be reflected in the national inventory has also been identified as a key factor for deciding

whether mitigation options should be targeted by carbon crediting or climate finance.

When taking these factors into account, **developing countries should pay particular attention to the complementarity of both instruments** in tapping mitigation potentials. The authors have identified several such complementarities:

- In terms of the type of stakeholders to be targeted, climate finance could for instance be used to support the administration in developing the framework conditions needed to implement and monitor mitigation activities, which would in turn be triggered through a price signal that incentivises private sector participation.
- Another complementarity identified relates to the contribution to transformational change: While climate finance could in particular support the initial phases of the transformational change process and unilateral action is more suitable for later phases, carbon crediting could support rolling out existing yet not widely dispersed technologies during the process.
- More generally, climate finance could be used for activities associated with higher mitigation costs and a larger risks, while mitigation potentials with limited risks could be targeted through carbon crediting.

These complementarities indicate that the question is not about whether countries should focus on climate finance or carbon crediting but how both approaches could be combined to maximize synergies. **Table 1** below provides an overview of the factors that influence the suitability of mitigation potentials for the different financing approaches.

*Develop an integrated financing strategy based on robust data*

In order to properly take the specific features of mitigation options into account during decision-

making, **developing an integrated financing strategy based on robust data** is needed.

Deciding on how to use and combine climate finance and carbon crediting is technically more difficult than ever while at the same time the repercussions of a wrong decision can be particularly severe for individual countries and the climate. In order to **develop truly integrated financing approaches and strengthen domestic capacities**, the following is needed:

- Exchange between the staff involved in national data processing activities and those more closely involved with Article 6 should be strengthened.
- Exchange of carbon markets and climate finance communities at the domestic and at the international level must be enhanced.

As the links between carbon markets and climate finance become closer, so should policymakers, practitioners, researchers and other players in both communities.

*Ensuring high level buy-in while strengthening coordination and oversight*

The complexity of the task ahead does not only call for stronger endorsement by host country governments but also for strengthened political coordination and oversight. These tasks are ideally performed by a coordination body that will have to closely engage or include representatives of key ministries in order to understand sectoral activities and to identify potential for activities that need support from climate finance and/or crediting. This coordinating body is to operationalize the relevant features of mitigation potentials identified and integrates them into an overarching strategy that is aligned with the national priorities and the broader development strategy, while allowing for case-specific assessments of proposed mitigation activities. **In light of the increased complexity of the tasks ahead, an early designation of a coordinating bodies of market-based activities will be key.**

	Carbon crediting	Climate finance	Unilateral action
Relationship with NDC scope	Activities that lie outside the scope of the NDC are less suitable due to the need to account for mitigation outcomes	Activities outside NDC are suitable in principle, in particular for bilateral climate finance	Activities outside the NDC scope are not suitable as mitigation activity cannot contribute to NDC
Relationship with cond. / uncond. part of NDC	Suitability of mitigation activities is highly dependent on how conditional elements are defined, see <b>Table 4</b> above for details.		
Reflection of mitigation outcomes in the inventory	Activities leading to MOs not reflected in the inventory are less suitable	Activities leading to MOs not reflected in the inventory are suitable in principle for climate finance	Activities leading to MOs not reflected in the inventory are not suitable for domestic climate finance (cannot contribute to NDC)
Contribution to the transformational change process	Activities that support phase 2 of the transformative change process and act as an incubator are particularly suitable	Activities that support phases 1 and 2 of the transformative change process are particularly suitable	Activities that support phases 3 and 4 of the transformative change process are particularly suitable
Abatement costs and risk profile	Activities with high to medium abatement costs are suitable	Activities with very high abatement costs are suitable	Activities with low abatement costs are particularly suitable
Sustainable development and adaption benefits	Activities with significant SD benefits that are difficult to quantify could benefit from carbon crediting and therefore suitable	Activities with strong SD and adaptation benefits align with the broader intervention logic of climate finance and therefore suitable	Activities with strong SD benefits are particularly suitable as the synergies can help in overcoming political economy barriers while concerns about lacking additionality are not relevant in this context.
Intervention level	Activities requiring incentivisation of the private sector are suitable	Activities aiming at supporting the national government are suitable	n.a.

**Table 1:** Factors relevant for the suitability of mitigation options for carbon crediting, climate finance or unilateral action

*International support and coordination to assist developing countries in the process*

Countries with currently limited capacities will require **support for developing their capacities and infrastructure as well as support for ad-hoc assistance** that could be provided through climate finance.

- A support infrastructure exclusively dedicated to questions related to carbon crediting could be integrated into existing initiatives, such as the NDC Partnership. This would allow host countries to share the experiences made and inform other countries on key aspects that should be taken into account when deciding on the most appropriate funding approach.
- Countries with currently limited capacities that are confronted with the challenge of having to decide on whether to accept an Article 6 proposal could benefit from an

independent institution that provides them with ad-hoc assistance and allows for South-to-South exchange. The institution should be included in the existing UNFCCC infrastructure and equipped with a mandate by the CMA. It should not only be composed of carbon market and climate finance experts but also include staff familiar with NDC development, inventory data processing and modelling. Among the institutions to be considered are the Regional Collaboration Centres (RCCs), whose mandate has been expanded considerably and who are now also supporting countries in the implementation of their NDCs.

Such an international support structure could allow to prevent a situation in which developing countries accept a disadvantageous carbon crediting proposal or miss the potential such an engagement might provide.

# 1 Introduction

In order to maintain a reasonable chance of staying within the temperature limits established by the Paris Agreement and limit global warming to well below 2 °C or even 1.5°C, all countries must contribute to climate change mitigation. While all Parties to the Paris Agreement must develop and communicate Nationally Determined Contributions (NDCs), developing countries require external support for their implementation, to varying degrees. Barriers to climate action include but are not limited to lack of financial means, institutional capacity constraints and access to mitigation technologies. Climate finance and carbon crediting (also known as carbon finance) are two possible avenues for developing countries that can help in overcoming some of these barriers, in particular the lack of financial means (see Box 1).

Despite important similarities between climate finance and carbon crediting, there is one key difference that is of particular relevance from the perspective of a host country, i.e. the country in which the mitigation activities are implemented: The mitigation outcomes generated by a crediting activity are (at least partially) transferred and the host country must account for these exports by implementing so called ‘corresponding adjustments’. These adjustments can adversely impact the achievement of the host country’s NDC, at least from a static perspective.

Climate finance, by contrast, does not involve the export of mitigation outcomes and therefore corresponding adjustments do not apply. This raises the following question: **Why and under which circumstances should a developing country engage as a transferring Party and authorize the crediting of specific mitigation activities, and which circumstances call for using the climate finance route?**

The easy answer to this question is: Developing countries should only engage as transferring Parties under Article 6 if there is no alternative to fund the underlying mitigation activity. Some observers opine it is “in all cases” preferable for the host country to find alternative funding opportunities for mitigation activities and to consider these first and foremost so that mitigation outcomes can be used for achievement of national targets (Kachi et al., 2020). While this seems plausible at first sight, this statement implies a consecutive process which does not seem to align with the dynamic reality on the ground. Moreover, there might be other factors that could influence the decision on how to finance a specific mitigation option, which will be explored in this paper.

Host countries will hence be confronted with a triple challenge: First, governments must identify the mitigation activities that should be implemented. Second, the mitigation options they want to target unilaterally must be differentiated from those they intend to tap with external support. And third, a decision on whether these activities should be supported through carbon crediting or climate finance must be taken. However, it can be assumed that not all countries will be in a position to identify existing mitigation options. These countries may therefore build on the ‘search function of the market’ by allowing project developers to request authorization for a specific mitigation activity. The host country would then have to explore possibilities on how to integrate the activity in its broader NDC strategy.

This policy paper aims to assist in this process by focusing on carbon crediting and climate finance as the two main external funding approaches. We explore the key features of carbon crediting and climate finance. What are their

advantages and disadvantages from a host country perspective? Under which circumstances is one approach preferential to the other and when should both be combined (blended finance)? In exploring these questions, we focus on crediting as one potential way of engaging under Article 6 of the Paris Agreement. Other modes of voluntary cooperation such as policy linking or direct government to government transfers that are delinked from the actual implementation of activities will not be considered.

The policy paper combines literature-based research with insights obtained from interviews with selected stakeholders as well as experiences made with selected Article 6 pilots. Our paper builds on a broad range of literature that discusses the changes introduced with the Paris Agreement and their political and technical consequences for the operation of crediting activities in host countries (inter alia: Hood et al., 2014; Prag et al., 2013; Schneider et al., 2016; Kreibich & Obergassel, 2016; Spalding-Fecher et al., 2020; Schneider et al., 2020). It elaborates on and goes beyond previous work by Spalding-Fecher et al. (2020) and Schneider et al. (2020) by more closely examining the effects corresponding adjustments can have for host countries with different types of NDC targets and by also taking into consideration conditional and unconditional elements. Lastly, the paper brings together the discussion about climate finance and carbon crediting, juxtaposing their different rationale and outlining what this could mean for developing countries.

The paper is structured as follows: Section 2 provides an overview of climate finance and carbon markets from a top-down perspective by outlining their basic rationale, their commonalities and differences as well as the functioning of both approaches. In section 3, a bottom-up perspective is taken to explore the features that make a specific emission source or mitigation option more or less suitable for being targeted by one of the approaches. Section 4 discusses the findings of the analysis and concludes with key policy recommendations for developing countries and international level.

**Box 1: Differentiation under the Paris Agreement: Article 6 and climate finance**

The Paris Agreement is in many regards fundamentally different from its predecessor, the Kyoto Protocol (KP). Building on the Annex of the UN Framework Convention on Climate Change, the KP categorically differentiates between develop (Annex I) and developing (non-Annex I) countries. This 'firewall' was partially torn down by the Paris Agreement, which incorporates a tailored differentiation between developing and developed countries (Bodansky & Rajamani, 2018).

Climate finance is one of the areas in which a differentiation between developing and developed countries is made: Art. 9.1 requires developed countries to provide financial resources to assist developing countries to address climate change. In the area of voluntary cooperation under Article 6, by contrast, no such differentiation applies, allowing all countries to host respective mitigation activities as well as to use the mitigation outcomes generated for NDC attainment.

As only developing countries can access climate finance, the decision on whether to finance mitigation activities through climate finance or carbon crediting is only relevant for these countries.

## 2 Key features of climate finance and carbon crediting

Curbing climate change will not be possible without a strong involvement of developing countries in climate change mitigation. At the same time, however, climate change is only one of numerous challenges developing countries are confronted with, and it may not necessarily be the top priority for all countries. Given the need for external support and the scarcity of finance, developing countries will be confronted with a broad range of challenges. They must not only identify the mitigation activities that best align with their national development strategy but they will also have to take a decision on how to finance these activities. One key question is whether these activities should be supported through carbon crediting or climate finance. In order to arrive at a better understanding of both approaches, this section illustrates the overarching rationale and functioning of climate finance and carbon crediting to then explore their requirements as well as their benefits from a host country perspective.

### 2.1 The broader picture

#### *The climate finance landscape and the role of carbon crediting*

Climate finance has become an increasingly complex field of climate policy involving a multitude of different instruments and arrangements, such as grants, concessional loans, public guarantees as well as results-based payments, being applied at various policy levels.

Despite being commonly referred to, even in the international climate negotiations and its key legal documents such as the Paris Agreement, a

clear definition of the term 'climate finance' is yet to be agreed on. A wide definition includes all financial resources mobilised internationally and domestically to fund activities to mitigate and adapt to the impacts of climate change (Watson & Schalatek, 2020). This broad definition is used by the CPI's Global Landscape of Climate Finance (CPI, 2019), which estimates the total amount of climate finance to USD 579 billion per year in 2017 and 2018. The major part (around 76%) of this climate finance is being invested in the same country (domestic climate finance) while only one quarter or USD 138 billion is international climate finance (CPI, 2019). The CPI numbers, however, do not differentiate between developing and developed countries in terms of the origin and destination of investments. Only a small share of these financial flows comprises resources flowing from developed countries to developing countries as part of their obligations under the Convention and in line with Article 9 of the Paris Agreement. According to a recent report by the OECD, the public and private climate finance provided and mobilised by developed countries for developing countries lay at around USD 78.9 billion in 2018 (OECD, 2020).

Another source of funding for climate change mitigation activities is carbon finance (or carbon crediting) where funding comes from carbon markets. Carbon markets have in the past mobilised substantial amounts of resources, numbers yet stay clearly behind those of climate finance: An analysis commissioned by the CDM Policy Dialogue in 2012 found that annual investments in Clean Development Mechanism (CDM) projects during the instrument's "gold rush period"

(Michaelowa, Shishlov, et al., 2019) amounted to up to USD 40 billion in 2008 (Spalding-Fecher et al., 2012). An analysis from 2015 finds that the CDM has mobilised more than 360 billion of mainly private financing (Shishlov and Belassen (2015) in Michaelowa, Moslener, et al., 2019). In the future, however, these numbers could raise considerably. According to an analysis based on an integrated assessment model, depending on the political framework conditions, in particular the yet to be agreed rules for Article 6, the financial size of the global carbon market may reach about USD 167 billion/year in 2030, increasing to USD 347 billion/year in 2050 and reaching USD 1.2 trillion/year in 2100 (IETA et al., 2019).

So where should carbon markets be located in this broader climate finance landscape? This is by no means an easy question to answer. Watson and Shalatek (2020), for instance, include the CDM and JI in their representation of the global climate finance architecture, but highlight the specific character of these instruments in their overview figure (see figure 1 in: Watson & Schalatek, 2020). Michaelowa et al (2019) posit that market-based financing that is aimed at generating mitigation outcomes to be exported and used for compliance purposes would not be covered by a definition of climate finance consistent with Article 9 of the Paris Agreement, which requires developed countries to provide financial resources to assist developing countries to address climate change. We follow this line of argumentation as acquiring mitigation outcomes and using them for compliance purposes is fundamentally different from the idea of providing financial means to assist another country. Therefore, carbon markets should only be considered a climate finance instrument if the units generated are not used for compliance but instead cancelled – so-called results-based finance.

*Different rationales: Conditionality and modes of funding disbursements*

The rationale on which climate finance is based differs fundamentally from the logic under-

pinning carbon markets. As a carbon market co-operation involves the exchange of emission reductions against investments, payments are traditionally tied to the generation of these reductions. This approach is fundamentally different from conventional up-front climate finance that is disbursed in the form of grants. However, grants only account for a small share of the climate finance disbursed: Only 5% of the total climate finance is dispersed in the form of grants taking into account all countries and both private and public finance. The largest share (66% in 2017/2018) of global climate finance is issued in the form of debt (market-rate debt, low-cost project debt). Almost all low-cost project debt originate from public sources. Equity is the second largest instrument type, accounting for around 30% of the finance provided (CPI, 2019).

This shows that the distinction between climate finance and carbon crediting is not as clear cut as one would assume. Furthermore, the modalities of how climate finance is disbursed have significantly changed over the last years. The application of results-based approaches has gained considerable attention as a tool to increase the effectiveness and acceptance of climate finance interventions (Warnecke et al., 2015). At the same time, a movement in the opposite direction can be observed within carbon markets. Under the CDM, buyers provided up-front payments to pre-finance the interventions. Emission Reduction Purchase Agreements (ERPAs) have been an important instrument that allows for a better distribution of risks between investors and project proponent. The latter have also used signed ERPAs to access commercial bank loans (Warnecke et al., 2015). Experiences made with the CDM have shown that the lack of seed funding has been a main barrier for project development, in particular hampering more transformative activities yielding strong sustainable development benefits and activities in less developed regions. Numerous carbon funds have been established to address this problem and

support the development of new projects. The dominant market model in the CDM has however been “payment on delivery” (Fuessler, Wunderlich, et al., 2019).

While these more recent developments blur the line between carbon and climate finance, conditionality of funding disbursement still allows to clearly differentiate both approaches. This distinction becomes particularly relevant in light of the accounting framework of the Paris Agreement, as will be shown in the following.

## 2.2 Climate finance and carbon crediting under the Paris Agreement

### *Legal basis, binding character and regional differentiation*

The legal basis for the future operation of market-based cooperation and the functioning of climate finance is enshrined in Article 6 and Article 9 of the Paris Agreement, respectively.

Article 9 of the agreement states that developed countries are to provide financial resources to assist developing countries in their efforts to address climate change “in continuation with existing obligations under the Convention”. While this reference to Article 4.3 of the Convention indicates continuity, the Paris Agreement introduces a broader understanding of climate finance that is no longer limited to the provision of public financial flows from developed to developing countries (Gastelumendi & Gnittke, 2017). Article 9.4 further specifies that climate finance is to particularly support countries that are particularly vulnerable to the adverse effects of climate change and which have capacity constraints, without excluding other Parties from access to climate finance. On this legal basis, all developing countries are entitled to access climate finance. Some countries, however, might encounter practical challenges in accessing climate finance as they are not eligible for official

development assistance (ODA). Examples include Chile, Seychelles and Uruguay (Pauw et al., 2020).

Article 6 of the Paris Agreement provides the basis for Parties to pursue voluntary cooperation in the implementation of their Nationally Determined Contributions (NDCs) with market-based activities being envisaged under Articles 6.2 and 6.4. In contrast to the CDM, which was envisaged as an approach in which mitigation activities are implemented in developing countries while the certified emissions reductions are to be used for compliance by developed countries, Article 6 does not differentiate between country groups.

Hence, at least in theory, both developed and developing countries could host and finance mitigation activities. While the details of both types of cooperation are still to be agreed, the Paris Agreement itself and draft decision texts allow to derive some first expectations regarding the functioning of Article 6.2 and 6.4. Article 6.2 provides a framework for internationally transferred mitigation outcomes (ITMOs) to be transferred between Parties that engage in bi- or multilateral cooperative approaches. These cooperative approaches must be consistent with a guidance still to be adopted by the COP. Article 6.4 introduces a “mechanism to contribute to the mitigation of greenhouse gas emissions and support sustainable development” that will be supervised by an international body and follow dedicated rules, modalities and procedures.

The comparison of the legal basis of climate finance and carbon markets allows to derive some first observations. One observation relates to the mandatory character of both approaches: While developed countries are obliged to provide financial resources to developing countries and the latter are entitled to access these funds according to Article 9 of the Paris Agreement, the use of Article 6 is entirely voluntary. Another aspect concerns the recipient countries: While Article 6 does not differentiate between

developing and developed countries, such a differentiation lies at the core of climate finance and is even more detailed by lying the focus on specific country groups as recipients of the funds.

#### *Carbon accounting provisions*

Article 6 of the Paris Agreement provides the basis for all future carbon market activities either under the framework for cooperative approaches of Article 6.2 or by using the mechanism to contribute to mitigation of greenhouse gas emissions and support sustainable development established under Art. 6.4. The generic provisions of Article 6 still have to be translated into a more concrete rules which Parties haven't yet been able to agree on in the negotiations. Despite the Article 6 rulebook still pending, the Article 6 text as well as the Transparency Framework adopted in Katowice 2018 allow to derive some observations regarding how (developing) Parties will have to account for internationally transferred mitigation outcomes (ITMOs). These accounting provisions will be an important factor when comparing the impact climate finance and carbon crediting can have on the developing country.

The Paris Agreement states that Parties willing to use cooperative approaches under Art. 6.2 are to apply robust accounting to inter alia avoid double counting, while Article 6.5 also excludes double counting when using the Article 6.4 mechanism. The accounting provisions for Article 6.2 have been detailed with the adoption of the Transparency Framework, which inter alia requires Parties to submit with their structured summary an emissions balance that is adjusted on the basis of corresponding adjustments (para 77d, UNFCCC, 2019b). Exporting Parties will have to add the ITMOs transferred to their emissions balance, which will lead to an increase of the host countries' reported emissions.

If we take a look at today's Article 6 pilots, we can see that corresponding adjustments are widely accepted and taken into account in the most

advanced pilots. Many pilots see the accounting rules under the Transparency Framework as a sufficient basis for collaboration, while others build on the San José Principles. (Greiner et al., 2020). The San José Principles were agreed by a group of countries led by Costa Rica and Switzerland and launched during COP 25 in Madrid with the aim of establishing high-quality standards for Article 6 transactions (DCC 2019).

Despite Parties having agreed on these provisions, some uncertainty remains as Parties could in principle still decide to opt for a different accounting approach when finalizing the Art. 6 rulebook. This particularly pertains to the Art. 6.4 mechanism which is not explicitly referred to in the Transparency Framework. And there is also some uncertainty regarding the application of these accounting provisions on ITMOs exported from outside the scope of the NDC. While it has for a long time been assumed that Parties exporting ITMOs would only be required to account for those emission reductions that were generated from sources and gases covered by their NDC, the picture has changed more recently as it is argued that allowing Parties to export emission reductions not covered by their NDC may lead to a perverse incentive not to expand the coverage of their NDC.

Furthermore, it became increasingly clear that it can be difficult to determine whether a mitigation activity is inside or outside the scope of the NDC (Schneider et al., 2020). In light of these challenges, proposals were made to require exporting countries to account for all mitigation outcomes exported (Japan, 2017; Schneider et al., 2020). This approach is also gaining ground in the negotiations, as the last draft text from Madrid on Article 6.2 envisages that accounting will also be required for ITMOs generated from sectors and gases not covered by an NDC (UNFCCC, 2019a Annex, para 15). This position is also reflected by the San José Principles which state "...that all use of markets toward

international climate goals is subject to corresponding adjustments.” (DCC, 2019).

There hence seems to be a growing consensus to require corresponding adjustments for all mitigation outcomes exported, irrespective of how they relate to the NDC. As climate finance does not involve any transfers of mitigation outcomes, no such accounting provisions apply.

#### *The potential to contribute to NDC components*

In the run-up to the Paris negotiations in 2015, Parties agreed that Parties are to submit intended Nationally Determined Contributions (NDCs) without, however, specifying the information these NDCs must contain. This has not only resulted in a large diversity of NDCs (for a categorization of NDCs in the context of Art. 6 see: Graichen et al., 2016), but also led to the emergence of conditional targets. Many Parties made their mitigation (and adaptation) contributions conditional upon receiving some type of international support, with financial support being the key condition (see: Day et al., 2016; Weischer et al., 2016). This situation has not changed: Of the 169 NDCs that were submitted to the UNFCCC by mid 2020, 104 make their mitigation contribution either partially (88) or entirely (16) conditional on the provision of mitigation finance (DIE, 2020).

For those countries that have made their contribution partially conditional on the provision of finance, a key question is whether NDCs are formulated in a way that allows to differentiate conditional from unconditional elements. An analysis of the 163 NDCs submitted by May 2017 finds that 20 of the NDCs with conditional components do not make a clear distinction between the conditional and the unconditional part of the target (Herold et al., 2018). In a more recent analysis, Pauw et al. (2020) find that it is often difficult to discern whether a contribution is fully or partly conditional or whether the country simply considers that provision of support is desirable (Pauw et al., 2020).

The differentiation between conditional and unconditional elements is particularly relevant in the context of the support climate finance and carbon markets could provide to developing countries. While it is clear from the outset that conditional contributions will require some form of additional international support, this does not necessarily mean that the opposite is true for unconditional targets: An analysis from the first round of NDCs by Weischer et al. (2016) finds that some developing countries have considered that their unconditional contribution would at least be partially be supported internationally. According to the authors, this is also in line with the fact that developing countries are in general entitled to receive support for implementing climate action, as laid out by the principles enshrined in the Convention and the Paris Agreement (Weischer et al., 2016).

The relationship between conditional NDC targets and the contribution of carbon markets is even less clear. As highlighted by Fuessler et al. (2019), Parties’ interpretation of how conditional and unconditional elements relate to carbon market may differ significantly: While some Parties may understand that they can use carbon markets for achieving their unconditional goals, others limit the contribution of carbon markets to the conditional elements of their NDC. Still others might see crediting as a tool to go beyond their conditional targets, with conditional targets being based on climate finance and other means of implementation not associated to the transfer of mitigation outcomes (Fuessler, Kansy, et al., 2019).

This is also reflected in the more advanced pilot programmes. Some aim to support the achievement of the host country’s NDC goals without specifying the conditional or unconditional part. Others, like the SEA Chilean pilot specify that only emission reductions beyond the unconditional target are eligible for transfer. The NEFCO-Peru pilot also suggests that ITMO transfer will be

conditional on Peru being on track to over-achieving its NDC (Greiner et al., 2020).

An analysis of NDCs from countries located in Asia and the Pacific finds that many countries expect international support to assist them in the implementation of their conditional targets. Many countries with unconditional and conditional targets, however, do not specify the link between carbon markets and their conditional target, while for countries that have only adopted a conditional target the role of carbon markets is more direct (Amarjargal et al., 2020).

These analyses indicate that there is still a lack of clarity among policymakers in developing countries with regard to the role climate finance and carbon markets could play as means to assist in achieving conditional and unconditional elements of their NDC. With regard to the potential role of carbon markets, some observers maintain that it “may not be possible for carbon markets to support host countries in achieving even their *conditional* commitments.” (Fuessler, Kansy, et al., 2019). As will be shown in section 3.2, however, the potential to contribute to conditional or unconditional elements of the NDC will be highly dependent on how the NDC is formulated.

## 2.3 The host country context of carbon crediting and climate finance

### *Access to funding*

As outlined above, the field of climate finance is characterized by a large diversity of instruments with specific objectives and different requirements. This makes it challenging to compare the institutional and legal requirements of carbon markets and climate finance. Exploring the requirements of (future) carbon market participation is also difficult since future market-based cooperation under Article 6 could be different from the experiences made under the Kyoto

Protocol and the rules for this cooperation still have to be agreed.

Despite these caveats, some general observations can be made: Barriers to access climate finance are high. The multitude of funding instruments operating in parallel leads to a large variety of options with different requirements and provisions that make it difficult for the host country to access the funding. Meeting the requirements for participating in carbon markets, such as the future Article 6.4 mechanism, can be expected to be less demanding. However, meeting the participation requirements does not mean that actual mitigation activities will be implemented, as the host country still has to attract investors if it cannot implement the activities unilaterally. According to Fuessler et al (2019), carbon market activities are not fundamentally different from other foreign direct investment projects as they require favourable investment conditions, such as sound institutional and regulatory settings and transparency.

### *Potential to involve private and public stakeholders*

Climate finance has for a long time focused on the role of public entities, in particular with regard to the origin of funds. Consequently, the Convention requires developed countries to provide new and additional financial resources (Article 4.3) without referring to private or other sources. However, private finance accounts for the majority of climate finance (CPI, 2019; Watson & Schalatek, 2020). This reality and the fact that public funding alone will not be sufficient has been acknowledged by the Paris Agreement which in its Article 9.4 underscores that finance will have to be mobilized from a “wide variety of sources, instruments and channels”.

A similar development can be observed within carbon markets. While originally conceived as a mechanism that would allow for a cooperation among countries, both demand and supply under the CDM were largely privatized (Shishlov & Bellassen, 2012). On the demand side, private

sector actors could participate in a fast-growing markets despite being confronted with numerous barriers, including ambiguities in the CDM rules and standards and unfavourable investment conditions in host countries (Fuessler, Wunderlich, et al., 2019). By establishing an overarching incentive for the generation of emission reductions without prescribing specific types of activities, the CDM made use of the market's "search function" (Kreibich & Fechtner, 2013), allowing investors to identify the most cost-effective mitigation options. This incentivisation is particularly relevant as private sector actors are often more directly involved in the economic activities that generate emissions and do also have access to the technologies and information needed for addressing these emissions.

This experience is also mirrored by Article 6.4 of the Paris Agreement which explicitly aims at incentivising the participation of private entities in mitigation activities (Art. 6.4 (b) PA). Private sector actors could be involved under Article 6.4 at different activity scales: from project and programme as under the CDM to sectoral and policy crediting. Under Article 6.2, governments could also decide to cooperate on a government-to-government basis, with the role of private sector actors being less clear.

Despite the increasing relevance of private sector participation in both, climate finance and carbon crediting, the latter approach allows for a stronger involvement of the private sector while the former usually envisages a stronger involvement of the government.

This is where a key difference of both approaches can be identified, which could allow for a complementarity: Climate finance could be used to support the national infrastructure and governmental capacities while carbon crediting could be used to incentivise private sector actors at the level of the individual mitigation activities.

### *Aligning the selection and design of activities with national priorities*

From a host country perspective, aligning mitigation activities with national priorities and development strategies will be key. This will be fundamentally different from the Kyoto Protocol, where many host countries were happy to receive any external carbon or climate finance. Under the Paris Agreement, carbon and climate finance must be better aligned with the national planning as the Agreement requires all Parties to implement climate policies and exports of mitigation outcomes affect the host Party's ability to achieve its own NDC. However, the two approaches differ to some extent.

Climate finance activities must usually be aligned with national priorities and embedded within the overarching national framework. At the same time, the overarching objectives of the activities are more dependent on the funding priorities of the donor country or the intervention logic of the fund under which the activity is supported. This limits the host countries' options to align the activity with national priorities to some extent.

Carbon crediting, by contrast, can be fundamentally different in this regard, depending on how the activity is set up. While the adoption of the Article 6 rulebook is still pending, its provisions can be assumed to remain rather generic. Host countries would have to meet these provisions and also account for any mitigation outcomes exported, they could, however, more freely adapt the design of the mitigation activity to their national needs if the mitigation activity is implemented unilaterally, for instance under the Article 6.4 mechanism. Carbon crediting activities that are implemented in collaboration with other countries, for instance in the context of bilateral or multilateral cooperative approaches under Article 6.2, will however limit the host country's leeway in adapting the design to national priorities, as an agreement among all stakeholders involved must be found. Another

aspect pertains to the scope of the impacts achieved and their remuneration. Under carbon crediting, results have until now been limited to concrete emission reductions. Climate finance, by contrast, may also consider other impacts as results on which payments are made, such as broader sustainable development benefits, adaptation benefits or long-term resilience.

The host country's possibilities in adapting the design of the mitigation activity to national priorities will hence be more limited if it is implemented under climate finance, while there might be some more leeway for carbon crediting activities if they are implemented uni-

laterally. At the same time, the focus of carbon crediting being limited to direct mitigation impacts might exclude some activities that could be better aligned with the national priorities.

*Different risk profiles*

Due to the different rationales of climate finance and carbon crediting the two external funding approaches also involve different risks for host countries. While the use of climate finance seems at first sight more advantageous for the host countries' NDC achievement, it may potentially increase public debt. As stated above, the majority of public climate finance is issued in form of debt that must be repaid. Loans are not

	<b>Carbon crediting</b>	<b>Climate finance</b>
Legal basis, binding character and regional focus	Based on Article 6 PA Developing countries are not entitled to obtain support through Art. 6 No differentiation between developing and developed Parties	Based on Article 9 PA Legal requirements for developed countries to mobilise funds, developing countries entitled to obtain funds Clear differentiation between developed and developing Parties
Conditionality and modes of funding disbursements	Funding conditional on pre-defined results Disbursement of funds mainly ex-post	Payments not exclusively conditional on pre-defined results Disbursement ex-post and ex-ante
Accounting requirements	Requirement to account for exported mitigation outcomes through corresponding adjustments	No export of mitigation outcomes and no accounting requirements
Contribution to NDC components	Contribution to unconditional targets unclear Contribution to conditional targets unclear	Contribution to unconditional targets unclear Contribution to conditional targets possible
Involvement of private and public stakeholders	Stronger involvement of private sector Possibility to directly incentivise private sector mitigation activities	Stronger involvement of public sector Potential to support national infrastructure and capacities
National alignment and scope of impacts	More leeway in aligning the mitigation activity to national priorities Focus of activities limited to mitigation impact	Stronger need to meet more specific requirements of donors or funds Focus not necessarily limited to mitigation but also remuneration of adaptation impacts, SD benefits etc.
Risks profile	Risks related to the functioning and regulation of the market	Climate finance loans may increase public debt
Access to funding	Lower participation requirements Challenges in attracting external finance	Considerable challenges in accessing funding

**Table 2:** Relevant features of carbon crediting and climate finance from a host country perspective

only going in large volumes to middle-income countries. An Oxfam report estimates that the majority of climate finance to least developed countries (LDCs), and around half of small island developing states (SIDS), was provided in the form of loans and other non-grant instruments. Oxfam criticises the use of non-grants instruments as it could contribute to the debt burdens of many low-income countries (Oxfam, 2020). The risk should, however, not be overestimated as it depends largely on the respective terms of the loan. Unlike carbon crediting, the climate finance approach incentivises host countries to invest the climate finance loans in profitable activities. The Green Climate Fund, for instance, through its loans only supports “revenue-generating activities that are intrinsically sound from a financial point of view” (GCF, 2020).

As carbon crediting generate emission reductions, there is no risk of increasing the public debt burden of the host country. Even if activities are debt-financed, activity operators and hence debtors will presumably come from the private sector and the financial risk for the host country government will be limited. However, host countries can encounter other risks related to the nature of markets. Price fluctuations for mitigation outcomes can affect the incentive to start carbon crediting activities, as well as uncertain demand for credits. In addition, carbon markets currently still face major regulatory uncertainties.

**Table 2** summarises relevant features of carbon crediting and climate finance from a host country perspective as discussed in this chapter.

# 3 Suitability of mitigation options

Building on the observations made in section 2, this chapter will explore which features make a specific mitigation option more or less suitable for being targeted by one of the instruments. This question is explored by looking into the role carbon and climate finance could play as part of a broader NDC strategy. In doing so, the analysis will focus on aspects that can inform the decision about which approach should be used to support the activity, not whether a mitigation activity should be supported or undertaken at all. With this, the analysis aims to answer the question of whether there is a sweet spot for carbon markets on the spectrum between unilateral mitigation activities and activities supported by climate finance. The analysis does not consider features that are specific to the sector in which the activity is implemented or which depend on the design of the individual activity, such as the MRV system applied, how stakeholders are involved or whether the activity complies with key legal requirements (for an overview on these aspects see: Kachi et al., 2020).

## 3.1 Relationship with NDC scope

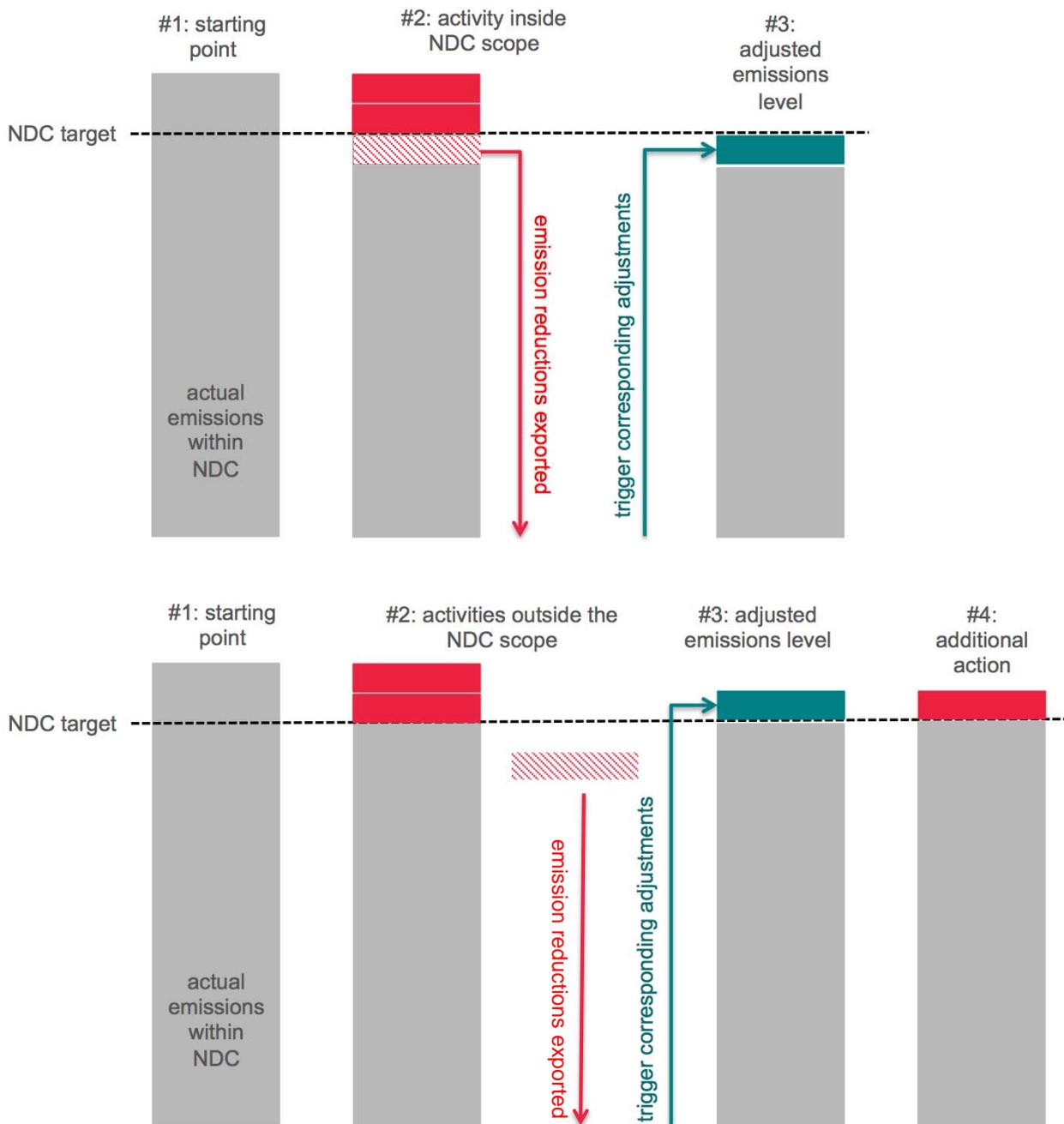
A key factor influencing the suitability of emission sources for being targeted by a specific approach is how they relate to the host countries' NDC. As outlined in section 2.2 above, mitigation outcomes transferred under Article 6 of the Paris Agreement will presumably have to be accounted for through corresponding adjustments irrespective of whether they have been generated inside or outside the scope of the

host country's NDC. As will be shown, this puts carbon crediting of emission sources not covered by the NDC in a particularly disadvantageous situation when compared to the use of climate finance.

It should be noted that there are several factors that make it difficult to assess whether a specific activity lies within or outside the scope of an NDC, including the lack of clarity on the NDC and NDCs containing non-quantified mitigation actions or targets not expressed in GHG emissions. As shown by Schneider et al. (2020), even if the NDC is clearly formulated and there is clarity on the sectors and GHGs covered, mitigation actions outside the scope of the NDC could have indirect impacts on the NDC attainment. The relationship of a specific mitigation option with the host country's NDC will fundamentally impact the incentive structure for it being targeted under carbon markets that require corresponding adjustments for all transfers.

Consider a host country that uses carbon market activities to overachieve its NDC and exports the mitigation outcomes achieved (see upper illustration in **Figure 1**). These exports will trigger corresponding adjustments that will lead to an increase of the host countries' reported emissions level. Since the country only exported ITMOs that are not needed to achieve the NDC, no additional mitigation activities are required to make up for these exports.

If that same country implements mitigation activities that are outside the scope of its NDC, the export of mitigation outcomes will trigger corresponding adjustments which in turn require additional mitigation activities to be implemented



**Figure 1:** The impact of corresponding adjustments depending on the relationship between the mitigation activity and the host country NDC

*within* the scope of the NDC (see lower illustration in **Figure 1**).

Countries exporting ITMOs from mitigation activities generated outside the scope of their NDC will not only have to “do more” to maintain their NDC level. Another disadvantage relates to the political recognition the country can gain from its engagement in climate change mitigation.

While the corresponding adjustment will require the host country to “do more” unilaterally to achieve its NDC, the government will not be able to communicate this additional climate action as an increase of ambition. In consequence, the government will forego the respective political recognition which is, however, particularly relevant under the Paris Agreement and its ambition raising mechanism. In contrast to other

international agreements, the *achievement* of NDCs is not legally binding but the Paris Agreement relies on a mechanism of ‘naming and shaming’ to ensure implementation. It establishes a system of mandatory transparency and review provisions that creates a reputational risk for Parties that are not able to meet their NDC targets (Oberghassel et al., 2016). By the same token, Parties that can demonstrate to have over-achieved their NDC can gain political reputation and recognition at the international level, a concept that has been discussed as “pride and fame” (Milkoreit & Haapala, 2017) in the context of the Global Stocktake. However, the additional mitigation action implemented by the host Party would only serve as a means to compensate for the mitigation outcomes generated outside the scope of the NDC, and it will not allow the host country to overachieve its target and communicate this as an increase of ambition.

An argument often made in favour of implementing mitigation activities outside the scope of NDCs is that they could assist the host country in identifying cost-effective mitigation options, improve data quality and institutional capa-

cities. These contributions could potentially allow the host country to include these emissions in its next NDC. Host countries that aim to achieve these benefits by building on the “search function of the market” will have to balance these contributions with the “costs” implied by the corresponding adjustments.

This brings us to the potential role of climate finance: Could climate finance be used to target emission sources that are outside the scope of the NDC? Many climate finance instruments, such as the GCF and the NAMA Facility, require project proponents to indicate how the activity contributes to the host countries’ NDC, which will not be possible, at least for direct contributions to the current NDC. Bilateral climate finance cooperation, by contrast, might be more suitable to address ‘beyond the scope emissions’ as an agreement could include commitments by the host country to include the respective emission sources in its next round of NDCs. An example of such a structure is the Nitric Acid Climate Action Group (NACAG), which supports countries in the abatement of nitrous oxide on the condition that the host country will address

	Carbon markets	Climate finance	Unilateral action
Compensation	Requires compensation of emission reductions by actions within the scope of the NDC.	No compensation required	No compensation required
Attribution to the NDC	Cannot be attributed to the achievement of the NDC.	Cannot be attributed to the achievement of the NDC.	Cannot be attributed to the achievement of the NDC.
Political recognition for additional mitigation action	The additional effort required for NDC attainment cannot be communicated as an increase of ambition and the host country cannot benefit from the political recognition.	Not applicable	Not applicable
Support to expand scope of NDC	Strong contributions in identifying untapped mitigation potential. Contributions to improve data quality and strengthen institutional capacities that might allow for the inclusion of the emission sources in the next NDC.	Strong contributions to improve data quality and strengthen institutional capacities. Contributions to the identification of untapped mitigation dependent on the design of the instrument.	Not applicable

**Table 3:** Advantages and disadvantages of the three mitigation approaches for addressing mitigation potentials that are not covered by the scope of the host country’s NDCs.

these emissions unilaterally in the future (NACAG Website, 2020). **Table 3** provides an overview of the advantages and disadvantages of the three approaches in addressing uncovered mitigation potentials.

In terms of the capacity-building impacts and the search for untapped mitigation activities, climate finance could achieve similar effects as the carbon market if the investment framework is designed accordingly. Given these considerations, mitigation activities outside the scope of the NDC seem less suitable for carbon market activities, due to the need to account for the mitigation outcomes by implementing corresponding adjustments. It is interesting to note that the most advanced Article 6 pilot activities on the ground generate all emission reductions inside the scope of the NDC (Greiner et al., 2020). The suitability of mitigation activities outside the scope of the NDC for climate finance, by contrast, depends on the type of funding mode.

### 3.2 Relationship with conditional or unconditional part of NDC

Another important factor for determining whether an activity is suitable for one of the approaches is its relationship to conditional or unconditional elements of the NDC. We will explore this by looking at the different types of conditional targets and how they influence the possibility to implement activities funded through carbon markets or climate finance. Building on Day et al. (2016) and Pauw et al. (2020), the following types of conditional targets can be differentiated (country examples taken from: Climate Watch, 2020):

1. **Quantified increase in GHG reductions:** Countries with quantified unconditional targets that express their conditional target as an advance on their

unconditional target. (e.g. Mexico, Rwanda).

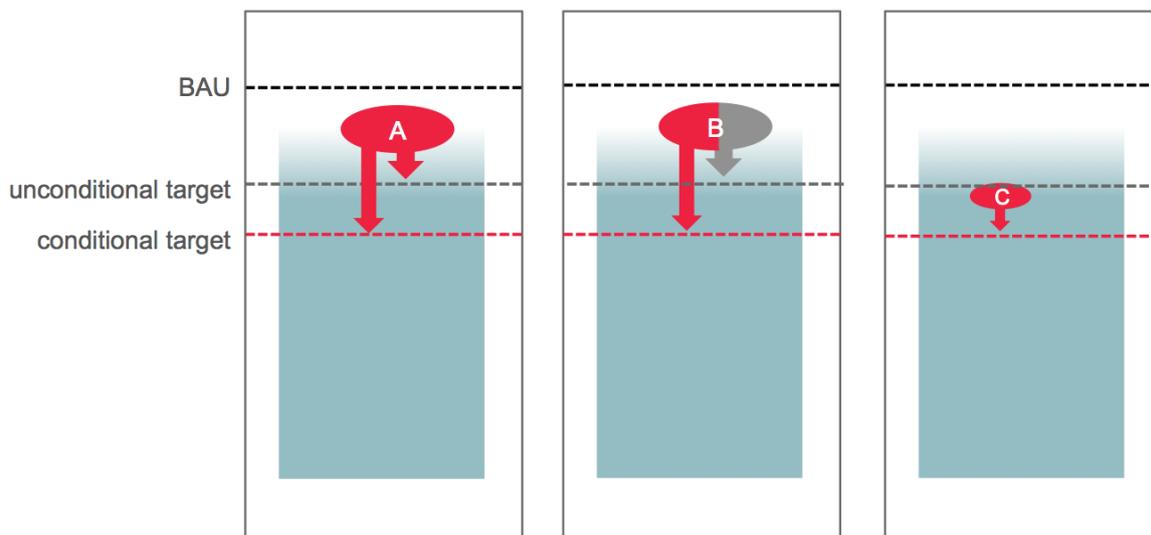
2. **Additional set of actions:** Countries which include in their NDCs additional policies and measures they would be willing to implement as conditional elements outside the scope of their unconditional contribution (e.g. Cambodia).
3. **No clear distinction between conditional and unconditional elements:** Some countries do not specify which part of their contributions is conditional. (e.g. South Africa, Ethiopia).
4. **Conditional target only:** Countries that have only submitted conditional targets (e.g. Afghanistan).

#### *Type 1: Quantified increase in GHG reductions*

We will first consider **countries that have adopted a conditional target by pledging to go beyond their quantified unconditional target (type 1)**. Mitigation activities that are implemented within the scope of the NDC will automatically impact both, the conditional and the unconditional targets of these Parties (see activity A in **Figure 2** below). The same holds for the corresponding adjustments required if the activity is financed through carbon markets and all mitigation outcomes achieved are exported.

One possibility in dealing with this challenge is the sharing of mitigation outcomes: While the activity as such would still contribute to both targets, the host country would only export a certain share of the mitigation outcomes and use the remainder for the achievement of its unconditional NDC. Consequently, corresponding adjustments would only have to be implemented for the contribution to the conditional target (see activity B in **Figure 2**).

A route that does not seem very promising is separating the mitigation activity from the unconditional target. Since the conditional and the unconditional target share the same scope,



**Figure 2:** Impact of mitigation activities in countries that have adopted a conditional target by pledging to go beyond their quantified unconditional target (type 1)

countries could consider a temporal division to only authorize mitigation activities that do not contribute to the unconditional target. In addition to practical challenges, this approach would not solve the fundamental issue, as corresponding adjustments would still impact both targets. It could even exacerbate the problem, since the CAs would apply to both targets while the mitigation contribution would only accrue to the conditional one (see activity C in **Figure 2**).

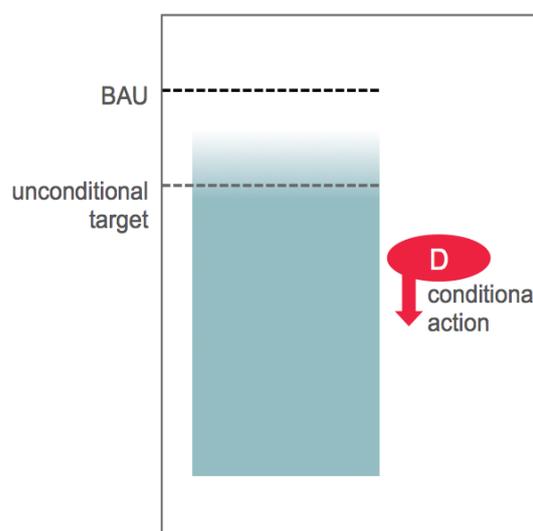
So how do countries that have adopted a conditional target by pledging to go beyond their quantified unconditional target perform in terms climate finance? The effects in terms of contribution to the conditional and unconditional mitigation targets are the same and without further action, mitigation activities would contribute to both targets. However, as climate finance does not require corresponding adjustments, this is less of a problem from a host country perspective.

*Type 2: Additional set of actions*

The situation is fundamentally different for **countries that have specified a set of conditional actions (type 2, see activity D in Figure 3)**. If both targets can be clearly discerned and there are no overlaps, a specific conditional

action would not contribute to the unconditional target.

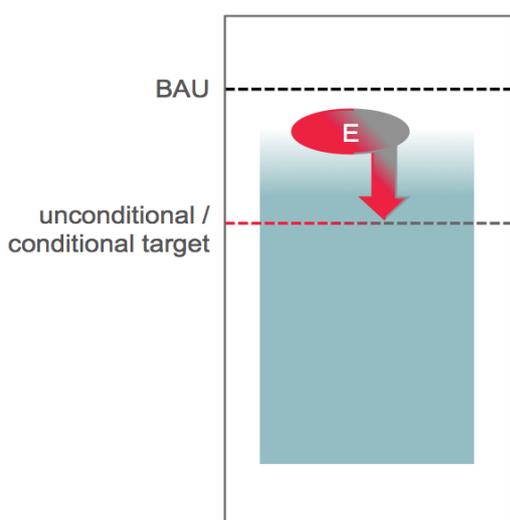
If implemented as a carbon market activity, however, the activity would still trigger corresponding adjustments that affect the achievement of the unconditional target and require additional mitigation activities to be implemented for compensation. This situation is comparable to carbon market activities implemented outside the scope of the NDC.



**Figure 3:** Mitigation impact of an activity implemented as a conditional target expressed as separate action (type 2)

In such a situation, there is little incentive for the host country to use carbon markets for the conditional target and carbon market activities could instead be used within the unconditional part of the NDC in order to overachieve it (see below). From a climate finance perspective, by contrast, conditional targets expressed as a set of activities seem particularly suitable as they provide clarity with regard to attribution.

*Type 3: No clear distinction between conditional and unconditional elements*

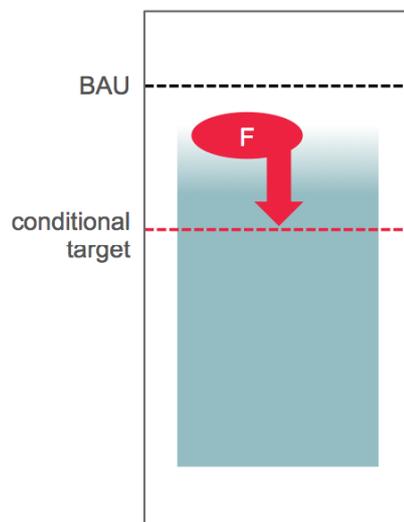


**Figure 4:** Mitigation impact of a mitigation activity of a country that does not provide a clear distinction between conditional and unconditional elements (type 3)

If **countries do not provide a clear distinction between conditional and unconditional elements (type 3)**, the mitigation activity will always contribute to the unconditional and the conditional target (see **Figure 4**). If the activity is credited and all ITMOs are exported, the full mitigation impact of the activity will have to be accounted for and the corresponding adjustments will impact both targets. As it is not possible to distinguish the conditional from the unconditional target, attributing a share of the mitigation outcomes only to one of the targets will not be possible. However, by only exporting a certain share of the ITMOs achieved, the impact of the corresponding adjustments could be limited. This sharing of mitigation outcomes

between the host country and the acquiring country effectively means blending carbon finance with climate finance.

*Type 4: countries that have only submitted conditional targets*



**Figure 5:** Mitigation impact of activities implemented in countries that have only submitted conditional targets (type 4)

In terms of financing of activities through climate finance, the fact that the conditional and the unconditional targets cannot be clearly discerned is less of a problem from a host country perspective.

For **countries that have only submitted conditional targets (type 4)** the corresponding adjustments triggered by carbon market activities cannot impact any unconditional target and no compensation measures are needed (see **Figure 5**).

**Table 4** below provides a summary of the findings, highlighting the suitability of mitigation actions for crediting and climate finance depending on the mitigation target adopted by the host country.

	Type 1	Type 2	Type 3	Type 4
Description	Countries that have adopted a conditional target by pledging to go beyond their quantified unconditional target	Countries that have specified a set of conditional actions	Countries that do not provide a clear distinction between conditional and unconditional elements	Countries that have only submitted conditional targets
Impact of mitigation outcomes (MOs)	MOs will contribute to both targets.	MOs will only contribute to the conditional target.	MOs will contribute to both targets.	MOs will contribute to the conditional target
Impact of corresponding adjustments (CAs)	CAs will impact both targets.	CAs will impact both targets.	CAs will impact both targets.	CAs will impact the conditional target.
Suitability for crediting from a host country perspective	Medium-Low	Low	Medium	High
Suitability for climate finance from a host country perspective	Medium	High	Medium	High

**Table 4:** Overview of different types of conditional targets and their suitability with carbon crediting and climate finance

### 3.3 Reflection of the mitigation outcomes in the inventory

From 2024 onwards, all Parties to the Paris Agreement are to submit national greenhouse gas inventories, either as stand-alone reports or together with their biennial transparency reports. Parties use different methodologies with different levels of accuracy to calculate their inventories, depending on the sectors, data processing capacities and other factors. These methodologies will also differ in terms of and their ability to capture the mitigation outcomes achieved by individual mitigation activities. This “partial lack of visibility” (Prag et al., 2013) has serious implications for countries willing to host mitigation activities: If the mitigation impact of the activity is only partially reflected in the national inventory and corresponding adjustments are applied to all the mitigation outcomes generated and exported, the host country will have to compensate for the difference. The

situation is comparable to the effect of mitigation outcomes generated outside the scope of an NDC.

Activities that can be expected to lead to mitigation impacts that will not be reflected in the national inventory therefore seem less suitable to be implemented under carbon markets. This is less of a problem for climate finance approaches where emission reductions are not exported and must hence not be accounted for.

### 3.4 Contribution to transformational change

Another open question relates to the potential role carbon markets and climate finance could play in supporting the transformative change process. While there is no commonly agreed definition of what constitutes transformational change, key features of this process can be discerned: transformational change is a dynamic and co-evolutionary process that questions

existing systems, paradigms and regimes and can therefore be discerned from incremental change and reforms. Transformational change is a non-linear and dynamic process the success of which depends on the interplay of multiple factors. While transformational change cannot be strictly planned and governed it can be supported by taking into account the specific types of support needed in the different stages of the transformation process (see Kreibich et al. forthcoming).

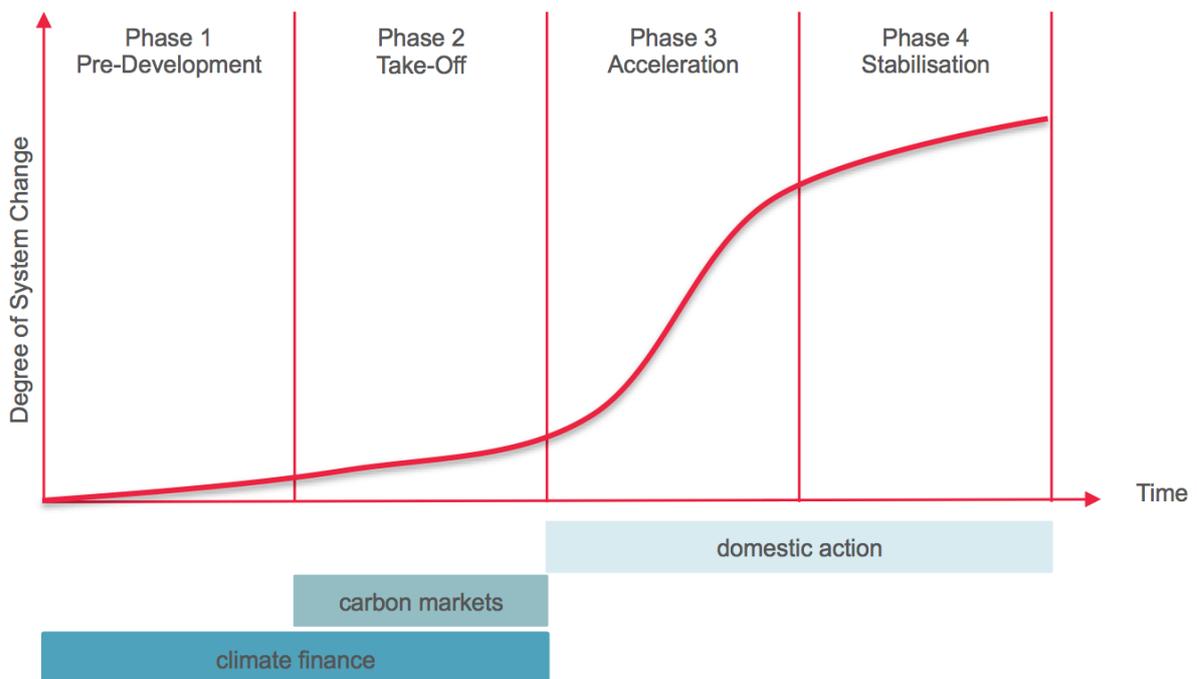
The transformational change process is usually described as an S-curve with four phases, cp. **Figure 6:** A pre-development phase in which innovations are developed in a niche while the overall structure of the system remains unchanged. A take-off phase, during which the regime experiences first changes. An acceleration phase during which these changes accumulate and become visible. And finally, a stabilization phase where a new regime is established (Mersmann et al., 2014).

Carbon markets and climate finance can be assumed to be less suitable for supporting phases

3 and 4 of the process. As these two phases are associated with the scaling of technologies that are already mature and diffused, support of respective activities would raise concerns about additionality, which is particularly problematic for carbon markets. Therefore, these two phases could be subject to domestic policy approaches.

Phases 1 and 2, by contrast, could be supported by both instruments. However, given the need of carbon market activities to lead to an immediate mitigation impact, they seem less suitable to provide finance for the development of entirely new technologies (phase 1) as these technologies will presumably be too costly (see section 3.5 below) and might not directly lead to a measurable mitigation impact. Furthermore, revenue streams from carbon markets have in the past been extremely volatile and cannot be expected to provide the long-term planning horizon needed for the research and development of innovative low carbon solutions.

Therefore, carbon crediting seems particularly well-suited to support phase 2 of the transformative change process by acting as an incubator



**Figure 6:** The four phases of transformative change and potential contributions from carbon markets, climate finance and domestic activities. Source: Own illustration adapted from Mersmann et al. (2014).

that brings niche technologies to the market. The role of climate finance, by contrast, would not have to be limited to phase 2. Since climate finance usually operates with much longer time horizons and activities must not lead to an immediate mitigation impact, it could also support phase 1 of the transformational change process.

### 3.5 Abatement costs and risk profile

Under the Kyoto Protocol, only Annex I Parties had adopted mitigation commitments, allowing the Clean Development Mechanism to focus on low-cost mitigation options in developing countries. With the Paris Agreement requiring all Parties to adopt mitigation targets and to account for mitigation outcomes exported, Parties selling their 'low-hanging fruits' may increase the costs and even compromise the achievement of their NDC (Oberghassel et al., 2020). There hence seems to be a growing consensus that carbon markets are to tap the high cost mitigation potential, leaving the low-hanging fruits for the NDC attainment by the host country.

Under the changed circumstances of the Paris Agreement, these low-hanging fruits are becoming a prerogative for domestic climate action and countries could adopt different strategies to identify and 'protect' these mitigation options from being exploited through carbon market activities (Spalding-Fecher et al., 2020). In theory, the mitigation options included in an idealized MAC curve could be divided into three sections, with the low-cost options being preserved for domestic action and the more expensive ones for external support through climate finance and carbon crediting.

Exclusively focusing on the abatement costs, however, does not seem a promising approach due to the following reasons: First, the host country will presumably not be able (or willing) to tap all low-cost abatement options, as other

barriers might prevent these options from being exploited. Therefore, a host country could decide to tap a part of its low-cost abatement potential with external assistance. Second, climate finance and carbon crediting will not be willing to simply focus on expensive mitigation options, as the ratio dollar per tCO<sub>2</sub> reduced is an important parameter (leverage effect). The host country might also identify specific high-costs mitigation options for domestic climate action if these match the domestic policy priorities. Third, abatement costs change dynamically over time and future marginal abatement costs cannot be known ex-ante. What is considered high-cost today could be seen as a low-cost option in the future, depending on the Long-Term Strategy adopted by the host party. Given these considerations, abatement costs should be seen as one parameter to be taken into account when defining the national mitigation strategy.

### 3.6 Sustainable development and adaptation benefits

While contributions to sustainable development (SD) and the achievement of adaptation benefits have in the past been relevant for both approaches, these impacts have been particularly relevant in the context of climate finance, due to the intervention logic being much broader. Contributions to sustainable development have also been an objective of global carbon markets and they are also a key component of Article 6 pilots, with the specific requirement varying from one pilot programme to the other (Greiner et al., 2020). In the past, actual contributions to sustainable development have however been limited, as the experiences with the CDM illustrate (for an early review of the CDM see: Olsen, 2007). Since then, considerable efforts have been undertaken to improve the sustainable development contributions of carbon market activities by inter alia building on the framework provided

	<b>Carbon crediting</b>	<b>Climate finance</b>	<b>Unilateral action</b>
Relationship with NDC scope	Activities that lie outside the scope of the NDC are less suitable due to the need to account for mitigation outcomes	Activities outside NDC are suitable in principle, in particular for bilateral climate finance	Activities outside the NDC scope are not suitable as mitigation activity cannot contribute to NDC
Relationship with conditional or unconditional part of NDC	Suitability of mitigation activities is highly dependent on how conditional elements are defined, see <b>Table 4</b> above for details.		
Reflection of mitigation outcomes in the inventory	Activities leading to MOs that are not reflected in the inventory are less suitable	Activities leading to MOs that are not reflected in the inventory are suitable in principle for climate finance	Activities leading to MOs that are not reflected in the inventory are not suitable for domestic climate finance as they cannot contribute to the NDC
Contribution to the transformational change process	Activities that support phase 2 of the transformative change process and act as an incubator are particularly suitable	Activities that support phases 1 and 2 of the transformative change process are particularly suitable	Activities that support phases 3 and 4 of the transformative change process are particularly suitable
Abatement costs and risk profile	Activities with high to medium abatement costs are suitable	Activities with very high abatement costs are suitable	Activities with low abatement costs are particularly suitable
Sustainable development and adaptation benefits	Activities with significant SD benefits that are difficult to quantify could benefit from carbon crediting and are therefore suitable	Activities with strong SD and adaptation benefits align with the broader intervention logic of climate finance and are therefore suitable	Activities with strong SD benefits are particularly suitable as the synergies can help in overcoming political economy barriers while concerns about lacking additionality are not relevant in this context.
Intervention level	Activities that require incentivisation of the private sector are suitable	Activities that aim at supporting the national government are suitable	n.a.

Table 5: Factors relevant for the suitability of mitigation options for carbon crediting, climate finance or unilateral action

by the UN's Sustainable Development Goals (see: SDI, 2021).

### 3.7 Intervention level

Another relevant factor is the type of support required for achieving the desired mitigation impact and the type of stakeholders that must be involved. If tapping the mitigation potential requires the development of capacities at the government level, climate finance will in general be more suitable. If, by contrast, the private sector must be incentivised in order to exploit the mitigation potential, carbon crediting could be better suited.

The relevant of host country capacities for carbon crediting has also been highlighted by a recent report on Article 6 pilots, which comes to the conclusion that "putting in place policy frameworks in host countries is the single biggest task" (Greiner et al., 2020, p. 36). Here, a combination of both instruments seems to be instructive: Climate finance could be used in a first step to develop and improve capacities at the government level. Once a certain level of capacities is established, carbon crediting could be used to incentivise the private sector. Here, a complementarity between both instruments can be observed.

# 4 Discussion and Conclusions

Under the Paris Agreement, developing countries are confronted with a multiple challenge: They have to decide *which* of their mitigation options they want to exploit and they have to decide *how* to tap this potential. They could either exploit it unilaterally or, as an alternative, use carbon markets or climate finance for implementing mitigation activities. For activities that require external assistance, the decision seems straight forward: From a host country perspective, climate finance is always the better option as no export of mitigation outcomes and no accounting through corresponding adjustments is required, which could make it more difficult to achieve the current NDC.

This seems plausible at first sight. However, a **“climate finance first” strategy does not align with the dynamic reality on the ground** and is little instructive due to several reasons: First, given the amount of support required by developing countries, climate finance will presumably be insufficient in terms of volume.

Second, allowing mitigation potential to be exploited through carbon markets only after there is certainty that this potential will not be tapped through climate finance implies a consecutive process which does not seem to align with the dynamic reality on the ground.

Third, other features of a mitigation option could influence its suitability for one of the two financing approaches. Identifying these features and how they can inform the host country’s mitigation strategy was the overarching objective of this paper.

For this purpose, carbon crediting and climate finance were first compared in a top-down

manner to then adopt a bottom-up approach that explored specific features of mitigation options.

*Despite the lines becoming increasingly blurred - climate finance and carbon finance differ in numerous regards*

The top-down comparison of climate finance and carbon crediting allowed for the identification of key differences. **The conditionality in terms of funding disbursement and the associated accounting requirements clearly set both approaches apart.** This has repercussions on whether the mitigation outcomes achieved can contribute to the host country’s NDC and its specific components. Differences have also been identified with regard to the approaches’ potential to involve stakeholders: While climate finance is better suited to support governments in establishing the infrastructure and capacities required, carbon crediting has strong potential to directly incentivise the private sector.

The potential to align the mitigation activities with domestic priorities also differs: While being broader in their intervention logic, climate finance provides less possibilities for adapting the activity to national priorities as the funding priorities of the donor country or the fund must be taken into consideration. Carbon crediting, by contrast, might provide more leeway in this regard, in particular if activities are implemented unilaterally. Access requirements of carbon crediting and climate finance will be largely dependent on the specific funding instrument.

*Specific features of mitigation options can inform the choice of the financing approach*

The bottom-up analysis explored specific features of mitigation options that influence their suitability for being subject to climate finance or carbon crediting. The relationship of the activity with the NDC's scope will be a relevant factor, as activities not covered by the NDC are less suitable for carbon crediting and unilateral action but might be compatible with (bilateral) climate finance. The comparison of different NDC types further highlighted that the relationship between the mitigation option and the conditional and unconditional elements of the NDC will largely impact how it should be targeted. Whether mitigation outcomes will be reflected in the national inventory has also been identified as a key factor for deciding whether mitigation options should be targeted by carbon crediting or climate finance.

When taking these factors into account, **developing countries should pay particular attention to the complementarity of both instruments**, for instance when it comes to the possibilities to involve public and private stakeholders. Climate finance could for instance be used to support the administration in developing the framework conditions needed to implement and monitor mitigation activities, which would in turn be triggered through a price signal that incentivises private sector participation. Another complementarity between climate finance and carbon crediting has been identified when it comes to the contribution to transformational change: While climate finance could in particular support the initial phases (in particular phase 1) of the transformational change process and unilateral action is more suitable for later phases (3 and 4), carbon crediting could support rolling out existing yet not widely dispersed technologies during phase 2 of the process. Other complementarities relate to mitigation options' mitigation costs and their risk profile.

This indicates that the question is not about whether countries should focus on climate finance or carbon crediting but how both approaches could be combined to maximize synergies. If such blended finance is aimed for, mitigation outcomes should be attributed according to the respective contribution provided (for details on attribution see: Fuessler, Kansy, et al., 2019).

*Develop an integrated financing strategy based on robust data*

In order to properly take the specific features of mitigation options into account during decision-making, robust data and strong data processing capacities are required. Robust data is a key stepping stone for any informed decision. In order to understand the current situation, countries should therefore aim to develop a **robust and accurate inventory**. In cases where less sophisticated methods (tiers) are applied, it will be important to have clarity about these methodological limits and their repercussions.

Having **clarity about the NDC will also be of utmost importance**. This does not only relate to the sectoral scope and the GHG coverage of the NDC but Parties also need clarity on the conditional and unconditional elements. As has been shown, whether a mitigation action contributes to the conditional or unconditional part of the NDC will influence the impact corresponding adjustments will have if the activity is credited and mitigation outcomes are exported.

While Parties' NDCs are relevant for assessing the mitigation impact of individual activities, a **long-term low emissions development strategy (LT-LEDS) is required to identify the role carbon crediting and climate finance could play in the long run**. Having an LT-LEDS in place will not only allow countries to better align their current NDC as well as future NDCs with their long-term planning but could also provide for a better coordination of climate finance and carbon crediting with domestic actions. Individual decisions on whether and how to tap a

specific mitigation option should be made taking this long-term vision into account.

Further **information related to specific mitigation potentials in different sectors should be gathered in a bottom-up approach**: What are the (expected) mitigation costs, what are main barriers to their exploitation and what socio-economic impacts could derive from these being tapped? Exploring these and other questions will assist the country to identify the role carbon crediting and climate finance could play as part of its NDC package.

#### *Moving out of the silos to develop truly integrated approaches*

Due to the provisions of the Paris Agreement and the reporting requirements under the Enhanced Transparency Framework, Parties are already enhancing their domestic capacities. In order to build on these ongoing processes and develop synergies with a potential engagement under Article 6, **an increased exchange between the staff involved in these data processing activities and those more closely involved with Article 6 is needed**. Deciding on how to use and combine climate finance and carbon crediting is technically more difficult than ever while at the same time the repercussions of a wrong decision can be particularly severe for individual countries and the climate.

This calls for an **increased exchange of carbon markets and climate finance communities** at the domestic and at the international level. As the links between carbon markets and climate finance become closer, so should policymakers, practitioners, researchers and other players in both communities. A strengthened collaboration between these communities and their individuals could allow for the development of an integrated national strategy on how to align carbon crediting with climate finance and domestic mitigation action.

#### *Ensuring high level buy-in while strengthening coordination and oversight*

Furthermore, carbon crediting does not only require a more precise NDC implementation plan but also calls for a stronger endorsement by host country governments, which has so far been one of the barriers of Article 6 implementation (Greiner et al., 2020). The complexity of the task ahead also calls for a strengthened political coordination and oversight. These tasks are ideally performed by a coordination body that will have to closely engage or include representatives of key ministries in order to understand sectoral activities and to identify potential for activities that need support from climate finance and/or crediting. Close coordination will also be required with finance ministry and agencies responsible for the coordination of climate finance and development assistance (Kachi et al., 2020).

As can be seen, these tasks will be considerably more complex than the activities implemented by the designated national authority (DNA) under the CDM. **In light of the increased complexity of the tasks ahead, an early designation of a coordinating bodies of market-based activities will be key** (Kreibich, 2020). It is this coordinating body that operationalizes the factors identified and integrates them into an overarching strategy that is aligned with the national priorities and the broader development strategy, while allowing for case-specific assessments of proposed mitigation activities.

#### *International support and coordination to assist developing countries in the process*

Developing these capacities and domestic infrastructure will require external support, which could be provided through climate finance. A support infrastructure exclusively dedicated to questions related to carbon crediting could be integrated into existing initiatives, such as the NDC Partnership. This would allow host countries to share the experiences made in the context of carbon crediting and inform other countries on key aspects that should be taken into

account when deciding on the most appropriate funding approach. These capacities will allow countries to develop integrated mitigation strategies and to unilaterally decide on how to use climate finance and carbon crediting.

The development of these capacities can be expected to take considerable amounts of time. Some countries with currently limited capacities might however already today be confronted with the challenge of having to decide on whether to accept an Article 6 proposal. In such a situation, countries could benefit from **an independent institution that provides them with ad-hoc assistance and allows for South-to-South exchange** among host countries. The institution should be included in the existing UNFCCC infrastructure and equipped with a mandate by the CMA. It should not only be composed of carbon market and climate finance experts but also include staff familiar with NDC development, inventory data processing and modelling.

To avoid duplications and overlaps policymakers should not directly establish a new institution. Instead, the suitability of existing institutions to exert these functions should be assessed thoroughly. Among the institutions to be considered are the Regional Collaboration Centres (RCCs) that were originally introduced to support the expansion of the CDM. Since the adoption of the Paris Agreement, their mandate has been expanded considerably and they are now also supporting countries in the implementation of their NDCs and collaborating with partner institutions, for instance in the context of the initiative Collaborative Instruments for Ambitious Climate Action (CI-ACA). This broader perspective paired with local knowledge could put the RCCs in a good position to assist countries in deciding whether and under which conditions they should host a crediting activity under Article 6. The RCCs could also built on experiences made with well-established regional exchange platforms such as the Regional Climate Weeks. A

decision on whether to mandate the RCCs to exert these new functions should be made on the basis of a thorough assessment that also considers alternatives. In any case, the complexity of the tasks ahead will require the institution to closely collaborate with research institutions, regional development banks and other partners in- and outside the UNFCCC.

Such an international support structure could allow to prevent a situation in which developing countries accept a disadvantageous carbon crediting proposal or miss the potential such an engagement might provide.

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