

ARTICLE 6 OF THE PARIS AGREEMENT

Piloting for Enhanced Readiness

NOVEMBER 2018

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Foreword



Climate change is a fundamental threat to sustainable development, requiring urgent efforts by stakeholders at all levels. This threat is particularly acute in Asia and the Pacific, which is already experiencing impacts such as rising sea levels and increasingly devastating storms, droughts, and floods.

For the Asian Development Bank (ADB), supporting countries in the region to address climate change is at the core of the recently launched Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific. Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability are key operational priorities of Strategy 2030, with ADB aiming for 75% of its committed operations to support climate change mitigation and adaptation by 2030. ADB has also set a target to mobilize \$80 billion of climate finance from its own resources cumulatively from 2019 to 2030.

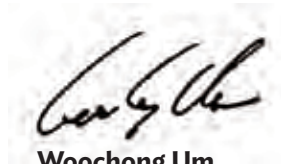
The historic Paris Agreement of 2015 introduced a new global framework for tackling climate change, with countries acknowledging the need to accelerate and intensify actions. It requires all countries to contribute to its long-term goals—to limit the global temperature increase to well below 2 degrees Celsius (°C), while pursuing a 1.5 °C target—through their respective nationally determined contributions (NDCs).

The ambition and actions of the countries in Asia and the Pacific are key to the implementation of the Paris Agreement. The region is large, densely populated, and a major and growing source of greenhouse gas (GHG) emissions due to rapid urbanization and economic growth. This also presents an opportunity for the region to shape global efforts to reduce GHG emissions.

Article 6 of the Paris Agreement provides for voluntary international cooperation that may facilitate the use of market-based approaches that can support ADB's developing member countries (DMCs) in achieving their NDCs and enabling higher ambition over time. It is a key part of the agreement, offering an opportunity for countries to implement new approaches to climate change mitigation including engaging the private sector to enhance the effectiveness and ambition of climate action.

ADB has been supporting its DMCs through its ongoing Carbon Market Program on the development and use of market mechanisms and will continue to play a leadership role in the development of post-2020 carbon markets under Article 6 of the Paris Agreement. As part of these efforts, ADB strives to contribute to knowledge and capacity building to encourage deeper understanding of the ongoing international discussions and technical options available for the development and implementation of market-based approaches under Article 6.

This knowledge product outlines the rationale for pursuing pilot activities under Article 6 and the potential benefits, emphasizing the need for testing alternate approaches and sharing of experiences. There is growing momentum in DMCs to undertake pilot activities under Article 6, and it is our hope that this publication inspires further action, encouraging DMCs to start to identify, develop and test mitigation actions through pilot activities. We hope that this will help the region to play a critical role in the development of the international climate change response and achieving the objectives of the Paris Agreement.



Woochong Um

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Preface

The Paris Agreement on climate change entered into force during 2016, challenging countries to elaborate the rules needed for its implementation. These rules will be developed as part of the Paris Agreement Rulebook, which is expected to be agreed at the 24th Conference of the Parties in December 2018.

In the meantime, stakeholders in the developing member countries (DMCs) of the Asian Development Bank (ADB) are keen to understand the rules that will govern the implementation of the Paris Agreement. This is especially important for Article 6, which covers cooperative approaches involving international transfers of mitigation outcomes (Article 6.2) and the new mitigation and sustainable development mechanism (Article 6.4), both of which provide the basis for using carbon markets and climate finance to reach national climate targets toward the Paris Agreement's goals. Although the guidance and rules for the implementation of Article 6 may constitute part of the Rulebook, technical negotiations on modalities and procedures may continue well beyond 2018. As these technical deliberations may be theoretical and abstract, on-the-ground experience identifying and evaluating alternative approaches to international cooperation will be essential to the operationalization of Article 6.

There is therefore an urgent need to undertake pilot activities that will contribute to the development and road-testing of alternative approaches for many of the elements of Article 6. This will be especially important for those aspects of market-based cooperation that are new under the Paris Agreement compared to the Kyoto Protocol. Pilot activities can potentially deliver similar benefits that Activities Implemented Jointly provided for the Kyoto Mechanisms. Some of the new elements of Article 6 relate to the enhanced role of host countries in identifying and promoting mitigation actions, providing infrastructure such as registries and national guidance for verification, and assessing how an Article 6 activity can be used to accomplish and enhance their nationally determined contributions over time. Other elements relate to new conceptualizations of additionality for upscaled activities and models for structuring of transactions and sharing mitigation outcomes between participating countries.

Pilot activities will also bring about much needed capacity in participating countries to explore a broader scope for mitigation approaches, contribute to the development of international rules through practical insights, and serve as a proof of concept by demonstrating how Article 6 can deliver mitigation through international cooperation. They will also help to develop, test, and implement tools that can enhance the ambition and effectiveness of climate action.

Asia and the Pacific has extensive knowledge of using market-based approaches to reduce greenhouse gas emissions through the Clean Development Mechanism of the Kyoto Protocol, domestic emission trading systems, and more recently the Joint Crediting Mechanism. However, implementation of Article 6, and the development of post-2020 carbon markets, calls for new approaches to be conceived and field tested. There is a need to build an understanding of the requirements and conditions established by the Paris Agreement, and the institutional capacity required for managing mitigation actions.

Pilot activities undertaken in DMCs can develop capacity, readiness, and awareness in the region of the potential for using Article 6 and participating in international carbon markets when implementing nationally determined contributions. This can also help DMCs to consider how to achieve their mitigation targets and raise their ambitions over time. The lessons learned from pilot activities will also strengthen the ability of DMCs to participate as important stakeholders in the ongoing negotiations and implementation of the Paris Agreement.

Decoding Article 6 of the Paris Agreement, published in April 2018, was ADB's first publication on Article 6, which helped build capacity and understanding of the ongoing international discussions and technical options available for establishing the future carbon market guidance, rules, and modalities under Article 6 (ADB 2018). This knowledge product builds on this, and elaborates on the role of pilot activities for preparing stakeholders, negotiators, government representatives, as well as the private sector for the timely implementation of Article 6 in Asia and the Pacific. We hope that it will contribute to the dialogue on the role of Article 6 in meeting the climate ambitions of DMCs, and more importantly, encourage them to engage in critical pilot activities in the lead up to 2020.



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Woochong Um, director general, SDCC, encouraged the development of this knowledge product. Virender Kumar Duggal, principal climate change specialist, Climate Change and Disaster Risk Management Division (SDCD), conceptualized and spearheaded its development under the overall guidance of Preeti Bhandari, director, SDCC.

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Abbreviations

AAUs	-	assigned amount units
ADB	-	Asian Development Bank
BAU	-	business-as-usual
CDM	-	Clean Development Mechanism
CER	-	certified emission reduction
CMA	-	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
COP	-	Conference of the Parties
CO ₂ e	-	carbon dioxide equivalent
DMC	-	developing member country
DNA	-	designated national authority
ETS	-	emissions trading system
INDC	-	intended nationally determined contribution
ITMO	-	internationally transferred mitigation outcome
NDC	-	nationally determined contribution
NMA	-	non-market approaches
SBSTA	-	Subsidiary Body for Scientific and Technological Advice
UNFCCC	-	United Nations Framework Convention on Climate Change

Executive Summary

Parties to the Paris Agreement need to enhance the ambition of their nationally determined contributions (NDCs) by 2020 to close the 2030 emissions gap if they are to collectively achieve the goals of the Paris Agreement to limit the global temperature increase to well below 2 degrees Celsius (°C), while pursuing a target of 1.5°C. The necessity for Parties to immediately and significantly enhance their mitigation ambition was also the key message of the special report of the Intergovernmental Panel on Climate Change, published in October 2018 (IPCC 2018). If this target is to be kept within reach, each successive generation of NDCs needs to be significantly more ambitious than the preceding one. To reach these collective goals, Parties will have to use all available instruments to mobilize mitigation action.

International collaboration will be key to enhancing NDC implementation and raising ambition over time, as it harnesses cost-effective mitigation options and generates a financial incentive for greenhouse gas (GHG) emission reductions even in countries that do not implement relevant domestic GHG mitigation policy instruments.

Article 6 of the Paris Agreement establishes a framework that makes it possible to use international carbon markets to achieve the objectives of the Paris Agreement, specifically through Article 6.2, which covers cooperative approaches involving international transfers of mitigation outcomes and Article 6.4, which covers the new mitigation and sustainable development mechanism. However, the framework must be sufficiently attractive to mobilize Parties and be translated into mitigation actions, and the internationally transferred mitigation outcomes must represent credible emission reduction activities or be part of emissions trading systems with a real scarcity of emissions allowances.

Article 6 has large potential in this regard as Parties can use it strategically to complement domestic climate policies and accomplish and enhance their mitigation policy objectives. Self-determination and alignment with national priorities is a key part of the Paris Agreement's bottom-up approach centered on NDCs. As a result, the potential ways in which different Parties will use Article 6 could be very different, as it will depend on national factors, including the domestic climate policy landscape. Article 6 could be a tool for identifying and bridging policy gaps, and for mobilizing private finance to identify cost-effective mitigation opportunities. Article 6 could also help Parties to further align their mitigation actions with other sustainable development priorities.

To reach the collective goals of the Paris Agreement, countries will need access to a selection of effective instruments. These instruments, tools, or mechanisms, need to be elaborated, tested, proven, and regularly reviewed and improved. In the period when the

Paris Rulebook is being finalized, and the negotiations on the technical details of Article 6 implementation are likely to continue for some time, it is critical that Parties begin to gather practical, on-the-ground experience of these tools and instruments through pilot activities. Even once the basic rules for Article 6 are agreed under the Paris Agreement Rulebook, implementation of mitigation actions will require further elaboration.

Pilot activities are essential to develop an attractive and credible international post-2020 carbon market. This includes preparing countries to participate in cooperative approaches and the new mechanism under Article 6.4, while also feeding knowledge, experience, and the results of testing of different approaches into the negotiations and post-2020 implementation of Article 6.

As shown by the development of the rules for the Clean Development Mechanism (CDM), a successful mechanism is built on a long process of trial and error. Functional approaches can only be developed in a rapid fashion if pilot activities test the key issues related to international market mechanisms, including the contentious issues. This requires engagement by all stakeholders and a transparent process of documenting the results of these pilot activities.

This knowledge product highlights issues that would benefit from practical experience, international collaboration, and information sharing. At the theoretical level, it will be possible to continue to discuss and refine options and provide further details of rules and guidelines to agree on specific definitions, and to further pin down what is to be governed at the national and international levels. However, establishing detailed rules, without solid on-the-ground experience, could prove to be risky and of limited value, since the Paris Agreement and its Article 6 in many aspects breaks new ground.

Pilot activities will help to understand what the forms of cooperation could be, whether bilateral on a baseline-crediting level, or plurilateral level linking several countries' emissions trading systems. Pilot activities will also help to understand how upscaling of activities could be done and how this upscaling may impact measurement, reporting, and verification; baseline setting; and additionality guidance and requirements. They could explore incentive structures and the distribution of mitigation and other benefits under various cooperation models. Pilot activities can also help to operationalize key issues that have been discussed in the development of the Paris Agreement, such as how to better integrate sustainable development into market mechanisms and how to monitor and assess sustainable development impacts.

The benefits of conducting pilot activities will perhaps be most obvious in regard to capacity building, where removing barriers and testing alternative approaches will enhance the ability of countries to participate in mitigation actions under Article 6. Pilot activities will also contribute to identifying the elements and practices that could be retained from the Kyoto Protocol mechanisms as well as those that need to be expanded or modified.

Pilot activities will allow Parties to have a head start in using cooperative approaches and the new mechanism under Article 6.4 for achieving and enhancing their NDCs, making it possible for them to take advantage of additional flows of finance and innovative ways of designing mitigation actions, while helping to clarify their positions in the climate change

negotiations. Pilot activities can also help with the translation of NDCs into mitigation investment plans. To consider exporting internationally transferred mitigation outcomes, Parties need to have good control of their domestic emissions and the potential impact that exporting could have on the accomplishment of their NDC. This implies a significantly stronger role for host countries compared to their role under the CDM.

The enhanced role of host countries means responsibility but also opportunity. With the possibility of tailoring approaches under Article 6, countries can use market mechanisms to go beyond mobilizing revenues from sale of carbon credits and integrate various sources of financing, including public climate finance. This will be a necessary part of the development of the post-2020 markets to provide time for Parties to understand how they can use Article 6 in relation to their NDCs.

Asia and the Pacific is a region well suited for implementing pilot activities.

GHG emissions from Asia and the Pacific are significant and likely to increase under the business-as-usual scenario due to fast economic growth. The region has a successful track record in using market mechanisms for sector transformations and emission reductions. This track record brings a wealth of knowledge and expertise that could contribute to facilitating the implementation of pilot activities.

Many countries in the region have expressed their willingness to use market approaches as a key tool for NDC implementation and are working to understand how to engage in mitigation actions under Article 6. Most of these countries have provided commitments in their NDCs that are conditional (fully or partially) on international support and cooperation under Article 6 could provide part of this support. However, while there is some momentum in the region for engaging under Article 6, there are very few examples of practical on-the-ground activities, and there are challenges in understanding what the new approaches called for under the Paris Agreement would look like in practice. For example, how mitigation activities can be scaled up and go beyond project-based approaches. The ongoing negotiations on the implementation of the Paris Agreement are expected to continue for some time, and as important stakeholders, all countries in the region have a responsibility and desire to be meaningful participants in developing the modalities, rules, and procedures and supporting the forthcoming work of international Article 6 oversight bodies.

The Asian Development Bank (ADB) has a long-term engagement in carbon markets and has worked extensively with project developers and carbon market participants in its developing member countries (DMCs) to increase GHG mitigation action by providing carbon finance and supporting carbon market development. ADB will play a leadership role in the future development of carbon markets and is currently working with its DMCs to assist them to contribute to the development and implementation of market-based approaches under Article 6.

As part of this, ADB is encouraging DMCs to recognize the range of potential benefits to be gained from engaging in pilot activities. This includes how DMCs can contribute to significant institutional learning on the ways that Article 6 can be used to fulfil national climate change ambitions as well as be a basis for considering raising these ambitions.

1. The Paris Agreement and Nationally Determined Contributions

1.1 Introduction

The Asian Development Bank aims to contribute to the development of a framework for the operationalization of Article 6 of the Paris Agreement through this knowledge product. The objective is to assess and illustrate how pilot activities under Article 6 can benefit the future implementation of cooperative approaches, the new mechanism for mitigation and sustainable development, and help countries, through learning by doing, to prepare for the operationalization of post-2020 markets (or market mechanisms under Article 6 of the Paris Agreement).

This knowledge product provides an overview of the Paris Agreement and its ambition raising (ratcheting up) process, presents the basics of Article 6 and its role in the Paris Agreement. It then explores how pilot activities will benefit future implementation of upscaled mitigation activities under Article 6 and provide insights for negotiators tasked with the elaboration of the details of Article 6 as part of the Paris Agreement Rulebook and subsequent work programs under the United Nations Framework Convention on Climate Change (UNFCCC).

1.2 The Paris Agreement

In December 2015, at the 21st Conference of Parties (COP21) to the UNFCCC, Parties to the UNFCCC adopted the Paris Agreement, a global framework to tackle climate change.¹ Through the Paris Agreement, all Parties acknowledged the need to contribute to achieving ambitious and collective goals to fight climate change.² The Paris Agreement is the result of almost a decade of negotiations under the UNFCCC. A formal mandate was adopted in Durban in 2011 to “develop a protocol, another legal instrument or an agreed outcome with legal force under the Convention applicable to all Parties.”³

¹ There are 197 Parties to the UNFCCC, which includes 196 states and the European Union.

² Under the Kyoto Protocol of 1997, the predecessor to the Paris Agreement, mitigation goals covered less than one-fifth of global emissions.

³ UNFCCC. Ad Hoc Working Group on the Durban Platform for Enhanced Action. <https://unfccc.int/adp-bodies-page>.

The Paris Agreement entered rapidly into force on 4 November 2016, within a year from its adoption in December 2015. This represents an unprecedented accomplishment for an international environmental agreement and marks a unique experience for UN treaties.⁴ It reinforces the renewed global commitment to addressing climate change and acknowledges the importance countries place on an international framework.

The mitigation goals of the Paris Agreement are set out in Article 2, to hold the increase in global average temperature to well below 2 degrees Celsius (°C) above pre-industrial levels and to pursue efforts to limit it to 1.5°C; and Article 4, to reach a balance between anthropogenic emissions by sources and removals of sinks of greenhouse gases (GHG) in the second half of the century, sometimes referred to as net zero emissions or carbon neutrality. The Paris Agreement also aims to increase Parties' ability to adapt to the adverse impacts of climate change, foster climate resilience and low GHG emissions development, and make finance flows consistent with a pathway toward low GHG emissions and climate-resilient development.

1.3 Nationally Determined Contributions

In anticipation of reaching an agreement at COP21, Parties were invited to communicate their post-2020 climate change mitigation targets and commitments ahead of the conference through intended national determined contributions (INDCs).

This represented significant progress, as more than 190 developed and developing countries submitted emission reduction and adaptation commitments in the form of INDCs during 2015.⁵ For most countries, INDCs define GHG emission reduction targets in the energy, industry, agriculture, waste, land use and forestry, and transport sectors for 2020–2030, but the sectoral focus and time frames vary from country to country.⁶ When countries formally ratify the Paris Agreement,⁷ their INDCs are converted into their nationally determined contributions (NDC), unless the Party expressly states otherwise.⁸ As of October 2018, 177 NDCs have been submitted.⁹

The bottom-up characteristics of the NDCs, which reflect each country's national circumstances and capabilities, may become a key strength of the Paris Agreement, as they respect national autonomy and thus may increase participation.¹⁰ Almost 80% of the Parties have presented a GHG-reduction target, and 25% of the Parties have also put forward a non-GHG target. Non-GHG targets include renewable energy targets, energy efficiency targets, and forestry targets.¹¹

⁴ By comparison, the Kyoto Protocol was adopted in 1997, but did not enter into force until 2005.

⁵ World Resources Institute. What is an INDC? <https://www.wri.org/indc-definition>.

⁶ ADB. 2016. Assessing the Intended Nationally Determined Contributions of ADB Developing Members. *Sustainable Development Working Paper Series No. 44*. Manila.

⁷ Parties ratify the Paris Agreement by submitting an instrument of ratification, acceptance, approval, or accession.

⁸ This is the case for Senegal, which ratified stating that it would have to further revise its INDC before it would become its NDC.

⁹ UNFCCC. NDC Registry. <http://www4.unfccc.int/ndcregistry/Pages/Home.aspx>.

¹⁰ ADB. 2018. *Decoding Article 6 of the Paris Agreement*. Manila.

¹¹ T. Fransen et al. 2017. Enhancing NDCs by 2020: Achieving the Goals of the Paris Agreement. *Working Paper*. Washington, DC: World Resources Institute. p. 21.

Some NDCs list specific actions and/or policies rather than quantified targets. A small number of countries (small-island developing states and least developed countries), submitted policies and actions only. Most of the NDCs submitted (87%) also contain adaptation components, although this is not required by the Paris Agreement.¹² Most of the (l)NDCs (about 80%) include a conditional element, representing the mitigation potential that could be realized with international financial and technical support.¹³

In Asia and the Pacific, many DMCs (68%) have indicated mitigation contributions in terms of GHG emission reductions. More than half of the INDCs indicated key measures on agriculture and natural resources, energy, and transport. About 76% of INDCs have indicated adaptation targets or measures, while only 42% have specified estimates on financing needs for the implementation of the INDCs. More than half of the DMC's INDCs (55%) have provided combined conditional and unconditional targets.¹⁴

The combined national pledges made by the parties are unlikely to achieve the goals of the Paris Agreement. The UN Environment Emissions Gap Report estimates the gap between the emissions reductions needed to achieve the Paris Agreement targets, and the likely emissions reductions that will result from the implementation of the Parties' NDCs.¹⁵ The report clearly shows that more ambitious NDCs are needed by 2020 to close the 2030 emissions gap. If fully implemented, NDCs will achieve only one-third of the emission reductions necessary by 2030 to meet the Paris Agreement goals, and the current pledges make a temperature increase of at least 3°C by 2100 very likely.¹⁶ This highlights the absolute necessity for parties to increase their ambitions.

However, this does not imply that the NDCs, if fulfilled, will not make a difference. They represent significant potential for progress in that business-as-usual emissions would lead to a 4°C–5°C increase by 2100, while the current INDC emission reduction pledges would limit temperature rise to 2.7°C–3.7°C by 2100. The current commitments are enough to bend the curve of emissions growth but will not reverse it.¹⁷

1.4 The Ambition Cycle

The Paris Agreement contains provisions for Parties to submit updated NDCs in 2020. This system is referred to as the “ambition mechanism.”¹⁸ The global stocktake, which is a collective assessment of efforts so far, starting in 2023 and occurring every 5 years (Article 4.9), is another key element in the ambition mechanism. The “Talanoa Dialogue,”

¹² T. Fransen et al. 2017. *Enhancing NDCs by 2020: Achieving the Goals of the Paris Agreement. Working Paper.* Washington, DC: World Resources Institute. p. 6.

¹³ T. Day et al. 2016. *Conditionality of Intended Nationally Determined Contributions (INDCs).* New Climate Institute.

¹⁴ Footnote 6, p. 16.

¹⁵ United Nations Environment Programme. 2017. *Emissions Gap Report 2017.* <https://www.unenvironment.org/resources/emissions-gap-report-2017>.

¹⁶ Footnote 15, p. 18.

¹⁷ Footnote 6, p. 1.

¹⁸ According to Article 4.2, each Party shall prepare, communicate, and maintain successive NDCs, and each successive NDC must introduce a progression in ambition targets (Article 4.3), i.e., that the ambitions in NDCs are “ratcheted up.” Paragraph 23 of decision 1/CP.21, stipulates that Parties who have indicated in their INDC a time frame up to 2025 can communicate a new NDC by 2020. Parties who have indicated a time frame up to 2030 can either communicate or update their NDC by 2020 (Decision 1/CP.21, paragraph 24).

a facilitative dialogue launched at COP 23, has started the process, serving unofficially as the first global stocktake in which Parties assess their progress toward the achievement of the NDCs (Decision 1/CP.21, paragraph 20).¹⁹

There is also accountability built into the Paris Agreement at the Party level. Parties shall account for their NDCs and regularly provide information that helps to track individual progress toward achieving NDCs, as well as collective progress toward achieving the Paris Agreement's purpose and goals. The information reported will undergo a technical expert review.

Reaching the NDCs and increasing the level of ambition after each global stocktake are critical for the credibility and the success of the Paris Agreement. To keep the Paris Agreement's goals within reach, it is necessary for countries to enhance the ambition of their mitigation pledges by 2020. This is where Article 6 plays an important role.

1.5 Overview of International Cooperation in the Nationally Determined Contributions

1.5.1 Why Nationally Determined Contributions Include International Cooperation and Mechanisms

International market-based cooperation is key for promoting the cost-effectiveness and flexibility of mitigation action. The strong support for the use of international cooperation among Parties indicates that they believe it can bring many benefits.²⁰ The report, *State and Trends of Carbon Pricing*, states that by using international cooperation through carbon markets, the global cost of delivering the emission reductions identified in the current NDCs can be reduced by about 30% by 2030 and more than 50% by 2050.²¹

International collaboration will make it easier for Parties to meet their current NDCs and allow them to consider increasing their level of ambition. Therefore, Article 6, as the section of the Paris Agreement that deals specifically with international cooperation, is a crucial toolbox to achieve cost-efficient emission reductions, and to deepen ambition levels.

There are also other potential benefits that are expected to emerge from Parties using international cooperation, and specifically carbon markets under Article 6.2 and Article 6.4. International cooperation through markets can generate carbon revenues for host countries as well as technology transfer, and deliver significant sustainable development (environmental and socioeconomic) co-benefits, for example, by reducing emissions of air

¹⁹ The Talanoa Dialogue (the facilitative dialogue) is not formally part of the global stocktake since it takes place before the Paris Agreement period.

²⁰ For example, S. Fujimori, T. Masui, and Y. Matsuoka. 2015. Gains from Emission Trading under Multiple Stabilization Targets and Technological Constraints. *Energy Economics*. 48, pp. 306–315.

²¹ World Bank Group, Ecofys, and Vivid Economics. 2017. *State and Trends of Carbon Pricing 2017*. Washington, DC, November. https://openknowledge.worldbank.org/bitstream/handle/10986/28510/wb_report_171027.pdf.

pollutants such as sulfur oxides and nitrogen oxides and providing jobs. Such co-benefits would reduce transboundary environmental stresses and improve the economic and social systems between the Parties involved.²² Collaboration can also lead to the discovery of technology-specific mitigation costs, which provides a solid basis for target setting in the revision of NDCs, and facilitate regional economic integration, given the increasing importance of carbon-related issues. Several of these benefits were also present for the Kyoto Protocol mechanisms and we expect to see them continue in post-2020 markets.

A major difference with the use of market approaches under Article 6 is that all Parties, not least host countries, will be able to use Article 6 strategically to attract additional finance streams to achieve and enhance their NDCs. This means that the political commitment for participation in international cooperative approaches will potentially be stronger. It also means, in particular under Article 6.2, that mitigation activities could be tailored specifically to national needs and circumstances. This may impact on the design and type of mitigation activities that are pursued, for example, in terms of sector, country, or size.

There may also be more subtle differences that occur as Parties try to learn from the past and improve on certain aspects of previous market approaches. For example, there is an expectation that sustainable development will be more of a focus and that, as a minimum, there will be requirements to monitor and report on the sustainable development impacts of mitigation actions. The push for upscaled mitigation action may also result in more programmatic and sectoral mitigation actions and less of the project-by-project approach.

The linking of domestic carbon markets could also provide many benefits for Parties, including contributing to reducing the cost of reaching NDCs and incentivizing an increase in ambition.²³ The linking of carbon markets should enable the aggregate caps to be achieved at a lower cost, since the cheapest abatement actions would be carried out irrespective of the system in which they fall. This reduces compliance costs for participants.

Linking also enhances regional or international cooperation on climate change mitigation and by leveling carbon prices, helps to address competition and carbon leakage impacts between the systems (but not with regions outside the systems). Linking carbon markets should also increase liquidity, improve price discovery, and reduce volatility. This would be particularly beneficial to countries that are unlikely to have enough liquidity in their own market. Linking is also expected to increase efficiency, through a more diverse system, with greater abatement options.

1.5.2 Who Will Use Market Mechanisms

A total of 103 Parties have communicated in their NDCs that they are considering using market mechanisms under Article 6 to meet their targets. While most of these Parties are prospective sellers of units, at least a dozen countries are potential buyers that will rely on international market cooperation to achieve their ambitions, or have indicated different levels of ambition, based on the possibility of having access to international

²² J. Ewing. 2016. *Roadmap to a Northeast Asian Carbon Market*. Asia Society Policy Institute. September.

²³ International Carbon Action Partnership. 2016. *On the Way to a Global Carbon Market: Linking Emissions Trading Systems. ETS Brief #4*. https://icapcarbonaction.com/en/?option=com_attach&task=download&id=388.

Table 1: Planned Use of Market Mechanisms

	Asia	North Africa and Middle East	Sub-Saharan Africa	Eastern Europe and Central Asia	Europe	Latin America and the Caribbean	Northern America	Oceania	Total
Intention to use market mechanisms mentioned in NDCs^a									
Number of Parties	16	8	35	9	6	22	1	6	103
Type of market mechanism^b									
International	14	7	34	9	4	20	1	6	95
Regional	2	1	2	1	3	3	2	2	16
Bilateral	5	0	0	1	0	4	0	1	11
National Trading Scheme	4	1	0	1	30	4	2	2	44
CDM	2	0	18	2	2	6	0	1	31
JCM	10	1	2	0	0	3	0	1	17

^a Parties that are counted in this row are those that expressly claim in their NDC the intention to either use market mechanisms or to consider their usage.

^b Parties counted here are not only those that claim their intention to use or to consider the use of market mechanisms, but also those that actually use market mechanisms (to the extent of the authors' knowledge) but do not mention it in their NDC.

CDM = Clean Development Mechanism, JCM = Joint Crediting Mechanism, NDC = nationally determined contribution.

Source: Institute for Global Environmental Strategies, NDC Database, version 5.1. <https://pub.iges.or.jp/pub/iges-ndc-database> (accessed 28 September 2018).

market cooperation. Table 1 provides an overview of how countries intend to use market mechanisms for achieving their NDCs.

In Asia and the Pacific, there are several examples of interest in international market-based cooperation. Thailand acknowledges the important role of market-based mechanisms and will explore the use of such cooperation, as well as Pakistan, whose government is reviewing policy considerations to further integrate market mechanisms. The Republic of Korea states that it will partly use international market mechanisms to achieve its 2030 mitigation target, while Bangladesh does not rule out the use of market-based mechanisms.

Examples on the demand side include Canada, which will explore the use of international mechanisms to achieve its 2030 target, and Switzerland, which indicated that it is aiming to achieve its NDC mainly through domestic means but will also use carbon credits from international mechanisms. In Asia and the Pacific, New Zealand is an active demand-side actor, which “intends to use international market mechanisms, cooperative approaches and

carbon markets that enable trading and use of a wide variety of units/emission reductions/mitigation outcomes that meet reasonable standards and guidelines.”²⁴

1.6 Article 6 of the Paris Agreement

1.6.1 International Collaboration

The Paris Agreement recognizes that some Parties choose to pursue voluntary cooperation in the implementation of their NDCs to allow for higher ambition in their mitigation and adaptation actions and to promote sustainable development and environmental integrity.

International cooperation for achieving NDCs falls under Article 6 of the Paris Agreement, which enables cooperation through market and non-market approaches, enabling countries to access cost-effective mitigation opportunities and additional climate finance streams. By recognizing both market-based and non-market-based cooperative approaches, Article 6 provides a spectrum of complementary alternatives for Parties to use in cooperating internationally in implementing the Paris Agreement and their respective NDCs.

1.6.2 Scope of Article 6 of the Paris Agreement

Article 6 covers several concepts:²⁵

- (i) **Voluntary cooperation.** Paragraph 6.1 covers the general concept that Parties may choose, on a voluntary basis, to cooperate in the implementation of their NDCs. Article 6 is meant to cover all existing cases of cooperation, and others that may emerge in the future. This reinforces the decentralized and bottom-up nature and ethos of the Paris Agreement governance.
- (ii) **Transfers of mitigation outcomes.** Paragraph 6.2 and Paragraph 6.3 cover the concept that when Parties are involved in the specific case of cooperative approaches that involve mitigation outcomes being transferred internationally and used toward their NDCs, they need to observe the guidance of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) on accounting. This guidance contains the requirement that Parties shall “...promote sustainable development and ensure environmental integrity and transparency, including in governance, and shall apply robust accounting to ensure, inter alia, the avoidance of double counting...”²⁶ Paragraph 6.3 stresses that cooperative approaches are voluntary and require authorization by the affected Parties.

Paragraph 6.2 and Paragraph 6.3 are not about markets, but rather lay out the requirements for transfers between Parties including for their robust accounting, thereby enabling carbon

²⁴ Government of New Zealand. Submission under the Paris Agreement: New Zealand’s Nationally Determined Contribution. <http://www4.unfccc.int/ndcregistry/PublishedDocuments/New%20Zealand%20First/New%20Zealand%20first%20NDC.pdf>.

²⁵ Footnote 10, pp. 3–4.

²⁶ UNFCCC. 2015. *The Paris Agreement*. 12 December. Paris, France. https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf.

markets to service the Paris Agreement. What is particularly important is that these are internationally transferred mitigation outcomes (ITMOs), which can be produced from any mitigation approaches (mechanism, procedure, or protocol) provided they are consistent with the principles listed in Article 6.2 and the guidance provided by the Parties.

- (iii) **Mechanism to contribute to mitigation and support sustainable development.** Paragraphs 6.4 to 6.7 refer to the establishment of a mechanism to produce mitigation outcomes and support sustainable development, and which operates under the authority of the COP. Emission reductions resulting from the mechanism can be used to generate emission reductions that may be, but are not necessarily, used by other (nonhost) Parties to fulfill the NDC of another Party. Emission reductions that are used by other Parties toward their NDCs shall not be used to demonstrate achievement of the host Party's NDC. The mechanism could also be used for purposes that do not involve the international transfer and use of emission reductions toward another Party's NDC. The rules, modalities, and procedures for the mechanism are being negotiated under the Subsidiary Body for Scientific and Technological Advice (SBSTA) and will be presented for consideration and adoption at the first session of the CMA in December 2018. One of the key issues currently under debate is whether the scope of these paragraphs is limited to a mechanism covering specific projects or programs like the Clean Development Mechanism (CDM) of the Kyoto Protocol, or it is much broader in scope. A broad scope seems to be widely supported based on the Parties' submissions as well as from positions expressed in formal and informal discussions.
- (iv) **Framework for non-market approaches.** While Article 6.9 defines a framework for non-market approaches, Article 6.8 lists the aims of these approaches: to promote mitigation and adaptation ambition, to enhance public and private sector participation in the implementation of NDCs, and to enable opportunities for coordination across instruments and relevant institutional arrangements. The coverage of this framework is still largely unclear, but some focus is starting to emerge. One area seems to be coordination of different non-market cooperation approaches, including public climate finance.

The options for participating in markets under Article 6, in one more centralized (Article 6.4), and another, less centralized (Article 6.2) governance mode, were provided in a very deliberate way, to allow Parties to have choices and flexibility. While operationalizing the Paris Agreement, Parties will negotiate the details of all these paragraphs and will agree on the level of governance centralization for Article 6.2 and Article 6.4 as well as for the non-market approaches framework.

Article 6 will have to build on and relate to other parts of the Paris Agreement, which govern reporting of climate action and support and GHGs emissions, processes for tracking the progress of and accounting for NDCs, and facilitating implementation and compliance (Article 4 on features of NDCs, Article 13 on transparency, and Article 15 on compliance). At the same time, Article 6 will also inform the more general Paris Agreement framework, including Article 13.7—information “to track progress,” which will necessarily include information with respect to the use of ITMOs pursuant to Article 6.2.

Box 1: Article 6 of the Paris Agreement

1. Parties recognize that some Parties choose to pursue voluntary cooperation in the implementation of their nationally determined contributions to allow for higher ambition in their mitigation and adaptation actions and to promote sustainable development and environmental integrity.
2. Parties shall, where engaging on a voluntary basis in cooperative approaches that involve the use of internationally transferred mitigation outcomes towards nationally determined contributions, promote sustainable development and ensure environmental integrity and transparency, including in governance, and shall apply robust accounting to ensure, inter alia, the avoidance of double counting, consistent with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement.
3. The use of internationally transferred mitigation outcomes to achieve nationally determined contributions under this agreement shall be voluntary and authorized by participating Parties.
4. A mechanism to contribute to the mitigation of greenhouse gas emissions and support sustainable development is hereby established under the authority and guidance of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement for use by Parties on a voluntary basis. It shall be supervised by a body designated by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement, and shall aim
 - (a) To promote the mitigation of greenhouse gas emissions while fostering sustainable development;
 - (b) To incentivize and facilitate participation in the mitigation of greenhouse gas emissions by public and private entities authorized by a Party;
 - (c) To contribute to the reduction of emission levels in the host Party, which will benefit from mitigation activities resulting in emission reductions that can also be used by another Party to fulfill its nationally determined contribution; and
 - (d) To deliver an overall mitigation in global emissions.
5. Emission reductions resulting from the mechanism referred to in paragraph 4 of this article shall not be used to demonstrate achievement of the host Party's nationally determined contribution if used by another Party to demonstrate achievement of its nationally determined contribution.
6. The Conference of the Parties serving as the meeting of the Parties to the Paris Agreement shall ensure that a share of the proceeds from activities under the mechanism referred to in paragraph 4 of this article is used to cover administrative expenses as well as to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation.
7. The Conference of the Parties serving as the meeting of the Parties to the Paris Agreement shall adopt rules, modalities, and procedures for the mechanism referred to in paragraph 4 of this article at its first session.
8. Parties recognize the importance of integrated, holistic, and balanced non-market approaches being available to Parties to assist in the implementation of their nationally determined contributions, in the context of sustainable development and poverty eradication, in a coordinated and effective manner, including through, inter alia, mitigation, adaptation, finance, technology transfer, and capacity building, as appropriate. These approaches shall aim to
 - (a) Promote mitigation and adaptation ambition,
 - (b) Enhance public and private participation in the implementation of nationally determined contributions, and
 - (c) Enable opportunities for coordination across instruments and relevant institutional arrangements.
9. A framework for non-market approaches to sustainable development is hereby defined to promote the non-market approaches referred to in paragraph 8 of this article.

Source: UNFCCC. 2015. *The Paris Agreement*. 12 December. Paris, France. https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf.

1.6.3 Paris Agreement Rulebook

The operationalization of the Paris Agreement is characterized by a demanding timeline. In 2015 at COP21, countries set a deadline of December 2018 to finalize the implementing guidelines (Paris Agreement Rulebook) at the 24th session of the Conference of the Parties (COP24).²⁷

This period is comparable with the period between the adoption of the Kyoto Protocol in 1997 and the Marrakech Accords in 2001.²⁸ It should, however, be noted that for the Kyoto Protocol mechanisms, it took another 4 years for the first certified emission reductions (CERs) to be issued in 2005.²⁹ Nevertheless, this constituted a prompt start for the CDM, which made it possible to generate CERs prior to the first commitment period, but also to build experience and generate lessons and institutional capacity in advance of the first commitment period. For international emissions trading and joint implementation, the situation was different since trade under these mechanisms required the establishment of Kyoto Protocol carbon budgets (assigned amounts and issuance of assigned amount units and emission reduction units).

The Paris Agreement Rulebook is the sum of rules and guidance developed under the Ad Hoc Working Group for the Paris Agreement, the SBSTA, and the Subsidiary Body for Implementation. The ad hoc working group is confined to issues that are key to the Paris Agreement, including the regulatory framework for NDCs and the enhanced transparency framework. The SBSTA deals with technical aspects, including the detailed rules and guidance for cooperative approaches under Article 6.

Once the Rulebook is completed, Article 6, together with other work program items, should commence and become operational. However, given limited progress in the negotiations to date, the approach now taken in the negotiations aims at having a substantial section with key decisions to be taken at COP24, but also outlining issues and details that can be elaborated by a work program for 2019 and beyond. Under the CDM and Joint Implementation, such further work was assigned to the CDM Executive Board and the Joint Implementation Supervisory Committee, as well as to the annual meeting of the Parties to the Kyoto Protocol.

It is becoming clear that negotiations are unlikely to be concluded at the end of 2018 to a level of detail that will allow Article 6.2 and Article 6.4 to become fully operational. Therefore, more work is expected to be required post-COP24. While the workload will be different in the case of the two articles, it will nevertheless be significant to ensure that all operational aspects are covered.

²⁷ The Paris Agreement Rulebook is to be adopted at the first Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (1CP/21, Decision 11), which takes place at COP24.

²⁸ UNFCCC. 2001. *The Marrakesh Accords and the Marrakesh Declaration*. http://unfccc.int/cop7/documents/accords_draft.pdf.

²⁹ UNFCCC. Clean Development Mechanism. Projects. <https://cdm.unfccc.int/Projects/DB/DNV-CUK1101980215.28/view>.

2. Rationale of Doing Pilot Activities

2.1 Learning by Doing

Due to the new concepts covered by Article 6 of the Paris Agreement and for a number of other reasons, Article 6.2 and Article 6.4 would greatly benefit from pilot activities starting as soon as possible.

Currently, negotiations are very theoretical, lacking the benefit of learning from experience on-the-ground. Many options for definitions, technical solutions, as well as modes of reporting, some of which may be unrealistic, are still in play as no one has the benefit of knowing how they would take place in practice, how the private sector and civil society would react, and what are the loopholes or unanswered and undefined issues.

It is likely that many of the international regulatory conditions under the Paris Agreement will be determined in the Paris Agreement Rulebook through negotiations. But in many cases, there may be “floor” conditions, that is, minimum conditions, which especially in the case of Article 6.2, Parties may choose, or even strive, to exceed. Pilot activities should try to elaborate on the interpretation of such conditions, testing both “high quality” and “bare minimum” approaches. One example could be testing an ambitious approach to sustainable development monitoring and reporting that is likely to go beyond the guidance for Article 6.2 and modalities or procedures for Article 6.4.

To participate in Article 6, Parties need to establish regulatory conditions that, as a minimum, would have to mimic Article 6 and cover the three main areas: (i) a system that ensures avoidance of double counting, (ii) confirmation that it promotes sustainable development, and (iii) a system that ensures environmental integrity. Each of these conditions will need to be translated practically into what is needed in terms of governance and infrastructure in the context of the cooperative activity.

Pilot activities are of crucial importance for Article 6.2 and Article 6.4 to become operational, elaborating, for example, methodologies for crediting of policy instruments and sectoral activities under Article 6.4, the national level authorities, and the development of accounting systems that will ensure that a government is always fully in control of the net balance of internationally transferred mitigation outcome (ITMO) inflows and outflows. In a way, there is now a situation similar to the emergence of the Clean Development Mechanism (CDM) from 2001 to 2005; the key principles of Article 6 have been defined but the detailed rules have yet to be developed.

Were there no pilot activities for CDM and Joint Implementation? Indeed, there were. The idea of carbon markets was launched long before the Kyoto Protocol. Article 4.2 of the United Nations Framework Convention on Climate Change (UNFCCC)³⁰ provided a “hook” for collaboration on mitigation that resulted in the creation of a pilot phase named as Activities Implemented Jointly.³¹ The pilot phase, which did not generate any emissions reduction credits, made it possible to test project-based mechanisms at an early stage, experience that could feed into the creation of CDM and Joint Implementation. By comparison, the Paris Agreement and its Article 6 can build on a wealth of experience from international emissions trading, CDM, and Joint Implementation (see figure on p. 13) while testing new concepts and elements.

As different approaches are tested through pilot activities, these will inform negotiations and contribute to the development of modalities and procedures. This can be done through broad stakeholder participation, ensuring all stakeholders are committed to the idea of learning by doing, and publication of the findings and experiences from the pilots. Piloting activities will contribute to showing that international cooperative approaches under Article 6.2 and Article 6.4 will work, are attractive, and that Parties are making efforts to ensure that they are operational in time.

Parties participating in pilot activities will, together, learn how to develop cooperative approaches and activities within the new mechanism under Article 6. Other Parties will learn from the documented experience of these pilot activities. This will help operationalize Article 6 faster and will also allow for a rapid learning process as to what works and what does not.

The mitigation action that is at the heart of the cooperative agreement is a critical consideration for any pilot activity. It could range from projects and programs, to mitigation policy instruments. It should most likely not be a completely new type of mitigation action, which would require a significant amount of work to manage from a technical point of view and become the focus of the pilot activity. Rather, it should be something that is understood well enough and is not the central focus of the pilot activity.

Countries interested in indirect linking of markets would also benefit from pilot activities. This would help them evaluate mitigation outcomes from different jurisdictions given that under the Paris Agreement there will be many types of units and credits available. This needs to be seen in the context of those Parties that need to acquire mitigation outcomes and will need to make judgements on the quality of mitigation outcomes available.³² Pilot activities can prove that Article 6 can provide a supply of credible mitigation outcomes.

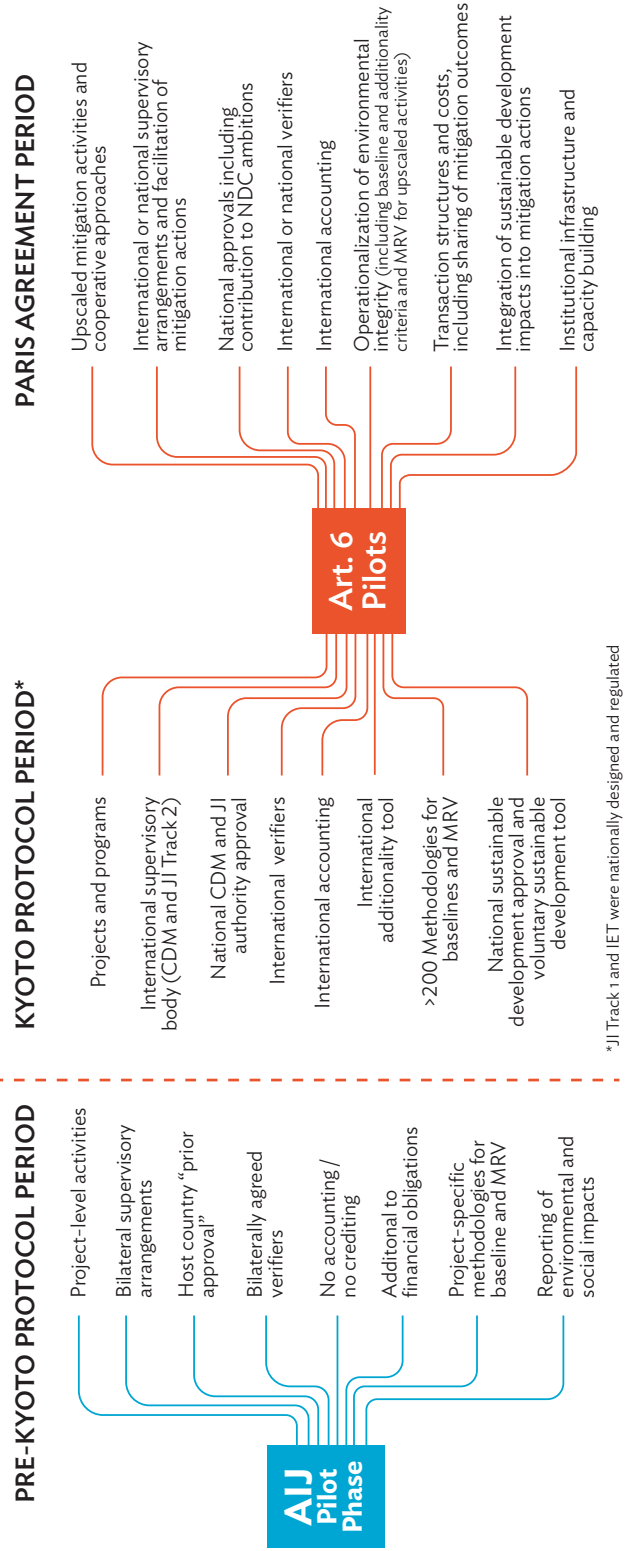
For international cooperation and transfers there will also have to be an international framework in place, which will have several components. Some of the decisions on the international regulatory framework will be made at COP24 and while they may not be operational, the international regulatory framework used for the pilot activity will need to mimic them. Other aspects may be part of the Paris Agreement Rulebook as it is defined at the time of the pilot activity, in which case the Parties to the pilot activity will need to decide what rules they want to test.

³⁰ According to Article 4.2 (a) of the UNFCCC, “These Parties may implement such policies and measures jointly with other Parties and may assist other Parties in contributing to the achievement of the objective of the Convention and, in particular, that of this subparagraph...”

³¹ Decision 5/CP.1 of the Berlin Mandate.

³² Footnote 10.

Learning by Doing: Testing the New using Experience of the Past



AJJ = Activities Implemented Jointly, CDM = Clean Development Mechanism, IET = International Emissions Trading, JI = joint implementation, MRV = Monitoring, Reporting and Verification, NDC = nationally determined contribution.
 Source: Author.

Pilot activities will also contribute to two other critical areas: (i) capacity building, especially in developing countries, and (ii) developing infrastructure, such as national registries and tracking systems and the necessary regulatory apparatus. Pilot activities can also serve to identify elements, processes, and infrastructure that could be brought from the Kyoto Protocol mechanisms.

2.1.1 Building a National Framework

A first national regulatory component will be to ensure that there is a clearly defined public institution that has been created or assigned the responsibility to develop, maintain, and operate the regulatory framework for international cooperation and the infrastructure associated with it.

Parties will have to develop the appropriate infrastructure to issue and hold mitigation outcomes, including a national registry, which will ensure that there is clear ownership of the mitigation outcomes created and transferred. In the case of a pilot activity that includes plurilateral cooperation, some additional means of tracking transfers may be required, possibly similar to an international transaction log. This whole infrastructure and governance will ensure that there is no double counting such as double registration, double issuance, and double use.

Most countries have established a designated national authority for CDM or a focal point for Joint Implementation. These institutions have been set up to assess if the activities are in line with the host country policy for sustainable development and for authorization of participants. Joint Implementation focal points also assessed the impact of proposed project activities on national emissions to safeguard the achievement of the national mitigation target. Article 6.3 and Article 6.4 (b) stress that activities and their participants are to be authorized by Parties. Pilot activities could contribute to analyzing and elaborating issues and conditions that may be different for authorization under Article 6 compared to that under CDM and Joint Implementation.

The national regulatory framework will have to be clear on how the corresponding adjustment is done to meet the international obligations.

Building national capacity will be critical in order to operationalize Article 6. The participation, and especially the early participation of Parties in cooperative approaches, will very much depend on their capacity to engage.³³ Many of the actors that participated in the Kyoto Protocol mechanisms have also moved on to other areas of work, implying a significant loss of institutional memory. A thriving set of pilot activities might help to redirect this expertise into Article 6 work.

Participation under Article 6 will also require additional expertise, particularly related to accounting and governance in the host Parties. Countries will need to expand their expertise to creating, maintaining, and operating national registries; negotiating and operating bilateral or plurilateral cooperative agreements; as well as creating and operating national regulatory regimes that need to be put in place, especially for

³³ Footnote 10; International Emissions Trading Association (IETA). 2018. Greenhouse Gas Market Report. *IETA Insights*. Quarterly report. No.1. March. https://www.ieta.org/resources/Resources/GHG_Report/2018/IETA_Insights_Q1_2018_WEB.pdf.

Article 6.2.³⁴ Article 6.4 will also have additional national regulatory requirements as more decentralization compared to the Kyoto Protocol mechanisms can be expected.³⁵

2.1.2 Types of Cooperation

Article 6 may entail a wide range of types of cooperation. One element that needs to be considered is what type of cooperation the pilot activities would test. Would it be bilateral cooperation, which is likely to be accommodated under Article 6.2 and Article 6.4, or plurilateral cooperation, which is currently mainly envisaged under Article 6.2? A bilateral approach could consist of selling and buying countries collaborating over a baseline and credit activity. This is a typical setup for single projects or programs under CDM, although sometimes there are several buyers involved from several countries. The contract for the purchase of emission reductions would be between the two countries or entities authorized by the countries.

Plurilateral cooperative agreements, which are sometimes also referred to as “carbon clubs,” bring together Parties that have areas of common interest or problems to tackle, and pursue common efforts to combat climate change.³⁶ The Parties may reach an agreement to harmonize their level of effort, which could be instrumental in achieving greater ambition as they promote dialogue and negotiations and faster implementation.

Additionally, carbon clubs may help overcome the “free-riding” syndrome, whereby countries rely on other countries’ emission reductions efforts, without undertaking domestic reductions appropriately.³⁷ By sharing the costs of emission reductions, all Parties involved in a cooperative agreement will derive mutual benefits (e.g., trade in goods; harmonization of standards, joint projects and investments; and joint research and development).³⁸

In this context, it would also be interesting to test the concept of a plurilateral mitigation action under Article 6.4. Plurilateral mitigation has not been discussed extensively, and it would be interesting to test how it would work, what the regulatory arrangements would be, as well as the stakeholder reaction.

Country-to-country cooperation projects, such as the ones that have been undertaken in South Asia, are also types of projects that could provide diversity and test new grounds, while at the same time testing the regulatory framework for the type of cooperation that was challenging to undertake under the Kyoto Protocol.

³⁴ Footnote 10.

³⁵ Footnote 10.

³⁶ L. Weischer, J. Morgan, and M. Patel. 2012. Climate Clubs: Can Small Groups of Countries Make a Big Difference in Addressing Climate Change? *Review of European Community & International Environmental Law*. 21 (3). pp. 177–192; D. G. Victor, 2015. The Case for Climate Clubs. E15Initiative. Geneva: International Centre for Trade and Sustainable Development (ICTSD) and World Economic Forum. www.e15initiative.org/.

³⁷ L. Weischer, J. Morgan, and M. Patel. 2012. Climate Clubs: Can Small Groups of Countries Make a Big Difference in Addressing Climate Change? *Review of European Community & International Environmental Law*. 21 (3). pp. 177–192; W. Nordhaus. 2015. Climate Clubs: Overcoming Free-Riding in International Climate Policy. *American Economic Review*. 105 (4). pp. 1,339–1,370.

³⁸ W. Nordhaus. 2015. Climate Clubs: Overcoming Free-Riding in International Climate Policy. *American Economic Review*. 105 (4). pp. 1,339–1,370.

For example, Bhutan commissioned the Dagachhu Hydropower Project (Box 2), registered in 2010, with the objective to enable Bhutan to export clean energy to India and, additionally, to support sustainable development, improve rural electrification, and provide better road access to rural communities.³⁹ It, therefore, aimed to contribute to overall socioeconomic development in Bhutan while India gained access to clean energy that displaced significant amounts of coal-fired generation.

The Dagachhu Hydropower Project actually represented the first cross-border initiative registered under CDM.⁴⁰ As such, it tested the principles of CDM and provided experiences to share. Regulatory issues such as who is the host country, as well as who gets credit to avoid double counting were not problems in CDM. Given that countries that undertake these types of cooperation now all have nationally determined contributions (NDCs), the situation will still exhibit very interesting issues to be tested in pilot activities.

In summary, pilot activities include outcomes that contribute to

- (i) informing negotiations;
- (ii) helping define scope, including what falls under national and international responsibility;
- (iii) establishing institutional frameworks such as a registry and tracking systems;
- (iv) building institutions and capacity, e.g., for authorization of participants, accounting and data collection and management;
- (v) evaluating mitigation outcomes for use toward nationally determined contribution; and
- (vi) developing methodologies for crediting of policy instruments and sectoral (or upscaled) activities.

2.2 Contribution of Pilot Activities to Operationalizing Article 6

2.2.1 Addressing Environmental Integrity

Pilot activities will contribute to the understanding of how environmental integrity can be interpreted and operationalized in real-life contexts, which means that it will also provide insights as to the governance that needs to be in place. Pilot activities can help countries to identify potential causes or sources of “hot air” and develop the means to avoid them.

It is generally understood that hot air exists when a country’s NDC emission target is greater than the credible business-as-usual (BAU) projection for the country’s emissions. There are two main causes of hot air: (i) insufficient ambition in NDCs and (ii) new developments unforeseen at the time of NDC determination, which lead to a lower BAU emission path

³⁹ T. Gyeltshen. 2012. CDM for Renewable Energy Development—Bhutan’s Experience. Indian Environmental Portal. http://indiaenvironmentportal.org.in/files/file/S352_TseringGyeltshen-BHUTAN.pdf.

⁴⁰ ADB. 2010. Dagachhu Hydropower project. Cross-Border Clean Development Mechanism Initiative. CDM Project Brief. <https://www.adb.org/sites/default/files/publication/29066/cdm-project-brief-dagachhu.pdf>.

Box 2: The Dagachhu Hydropower Project



With new access to electricity, Tilarupa can now use a rice cooker replacing the traditional cook stove that caused poor indoor air quality.

Photo credit: Future Carbon Fund

“Before we had electricity, we used a kerosene lamp for light and firewood for cooking in traditional cook stoves,” recalls Tilarupa, a resident in Dagana in southwest Bhutan. The traditional cook stoves were often inefficient and without a proper smoke ventilation system. Burning of firewood in traditional cook stoves produce high levels of black carbon that result in poor indoor air quality and cause respiratory problems, especially among women and children.

Until 2008, the only source of power in Dagana was from a 200-kilowatt mini-hydropower project constructed with a grant from Japan, connected through a 6.6-kilovolt transmission line. This mini-hydropower plant was able to electrify only about 400 households. Due to its low capacity, the Bhutan Power Corporation had restricted the use of power for lighting purposes only.

The 126-megawatt run-of-the-river Dagachhu Hydropower Project was supported by the Asian Development Bank (ADB) and the first public-private partnership venture with Druk Green Power Corporation, Tata Power Company Limited, and National Pension and Provident Fund of Bhutan.

The project is the first cross-border project activity under the Clean Development Mechanism (CDM). It exports 392 gigawatt-hours of renewable electricity to India per annum through an existing cross-border grid. This results in reduction of approximately 382,000 tons of carbon dioxide equivalent emissions per annum. ADB's Future Carbon Fund has provided additional carbon finance to the Dagachhu Hydropower Project by pre-purchasing certified emission reductions generated from the CDM project.

To facilitate the project construction, the Bhutan Power Corporation constructed a 33-kilovolt double circuit line between the Tsirang substation and Dagana to supply electricity from other hydropower plants. One circuit was used for the project while the other circuit was used for the local community. With this, the number of electrified households has increased from 400 to about 5,000 and electricity use is no longer restricted to lighting. The project helped achieve 99% electrification in the district and contributed toward the government target of achieving 100% electrification of other rural regions, using revenue from power exports to India.

With access to stable and low-cost power from the project, Tilarupa no longer relies on firewood. She can now use a rice cooker to prepare her family's meals and electric lamps for lighting rooms without compromising her family's health. Other local residents, especially women, are now free from their daily duties of collecting firewood and are able to use the time saved for more productive activities such as farming or childcare. The reduced dependence on firewood has also helped slow down deforestation in the area.

Sources: ADB. 2010. Dagachhu Hydropower Project: First Cross-Border Clean Development Mechanism Initiative. *CDM Project Brief*. <https://www.adb.org/sites/default/files/publication/29066/cdm-project-brief-dagachhu.pdf>; and ADB. 2017. Future Carbon Fund Delivering Co-Benefits for Sustainable Development. Manila.

than estimated after the fact, e.g., due to an economic recession. One option that has been suggested as a safeguard against hot air stemming from changes of circumstances is a “dynamic baseline approach.”⁴¹ It will involve regular renewals of the BAU projections based on most recent data.

Pilot activities could help Parties to plan sector level actions and activities for achieving their targets and developing the underlying projections of their NDCs. Pilot activities could also provide a platform for collaborating Parties to discuss projected emissions in the context of their respective NDCs.

Since there is no definition of environmental integrity in the Paris Agreement, it will be—unless a definition is provided at COP24—left to Parties to determine their method for ensuring environmental integrity. Under the ongoing negotiation process, one proposal for definition is that, “ensuring environmental integrity includes ensuring that such cooperative approaches do not lead to an overall increase in global greenhouse gas (GHG) emissions.”⁴² Most of the text proposals are concerned with the operationalization of environmental integrity rather than providing a definition. One proposal involves setting baselines in a conservative way and taking into account all existing policies when setting the baseline.⁴³ These are approaches to meet the objective of no overall increase in global GHG emissions and to avoid hot air.

Article 6.2 includes a number of “shall” provisions and states that “Parties shall, where engaging on a voluntary basis in Cooperative Approaches [...] ensure environmental integrity [...] including in governance.”⁴⁴ Thus, there is a clear provision on environmental integrity in Article 6.2, which is not contested by Parties. However, there is still considerable ambiguity concerning how this provision is to be operationalized, and what its governance will be. There is also no explicit work program associated with it in Decision 1/CP.21.⁴⁵

However, there is an explicit work program for guidance on accounting, “including guidance to ensure that double counting is avoided on the basis of a corresponding adjustment by Parties.”⁴⁶ One component of the international regulatory framework will therefore be agreement on how the corresponding adjustment is done. It could be either agreed internationally, or between the cooperating Parties on an interim basis, if the Paris Agreement Rulebook is not clear at the time of the pilot, or it is something that may be decided by the international regulatory framework of the pilot activity.

Another approach to ensure environmental integrity is to apply an additionality test. An additionality assessment aims to prevent growth in global emissions as a result of international transfers of emission reductions from non-additional activities, that is, activities that would occur under BAU. Additionality was indispensable for CDM under

⁴¹ A. Michaelowa and S. Butzengeiger. 2017. Ensuring Additionality under Article 6 of the Paris Agreement. *Discussion Paper*. Perspectives Climate Research. November.

⁴² Draft CMA decision containing draft guidance on cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement, Version 1 of 9 September 02:00 hrs. Section II. Principles, Option A, para 1 (d).

⁴³ Draft CMA decision containing draft guidance on cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement, Version 1 of 9 September 02:00 hrs.

⁴⁴ UNFCCC. 2015. *The Paris Agreement*. 12 December. Paris, France. Article 6.2. https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf.

⁴⁵ Footnote 10, p. 8.

⁴⁶ Decision 1.CP/21 para 37.

which the seller (developing) Parties have no emission reduction targets. While it may seem that international oversight of additionality is less critical for the Paris Agreement than for the Kyoto Protocol due to its requirement for emission reduction commitments from all participating Parties, the risk of NDCs generating hot air is sufficiently high to warrant strong rules on additionality determination.

Pilot activities can explore issues relating to the operationalization of environmental integrity such as the relationship between conditional and nonconditional parts of the NDCs, development of baseline methodologies for upscaled activities, and application of new types of additionality tests.

Article 6.4 explicitly stipulates that the mechanism to be created shall aim to “deliver an overall mitigation in global emissions.” The Paris Agreement provides no further explanation of the concept, but it will be considered in COP24 in December 2018. Some alternatives have been proposed: conservative baselines and a discount on the issuance of emission reductions achieved. For the proposed discount, a percentage of emission reductions could be withdrawn and not counted toward any NDC (i) at issuance, (ii) at the first transfer of mitigation outcomes, and (iii) at point of usage toward the NDC.⁴⁷ Pilot activities will provide an opportunity to discuss and explore how this requirement could be operationalized.

2.2.2 Operationalizing Promotion of Sustainable Development

Article 6.2 state that Parties “shall [...] promote sustainable development.”⁴⁸

However, the Paris Agreement does not define what “promote” means in terms of operationalization. The spectrum of Parties’ positions ranges from those considering sustainable development as a purely national prerogative to be dealt with on a national level and eventually reported on a voluntary basis, to those considering sustainable development as a topic for overarching international supervision and guidance. The fact that sustainable development priorities and policies is a national prerogative is indisputable. For Article 6, what counts is that the activity contributes to achieving national or subnational sustainable development objectives and/or at least does not undermine the achievement objectives (no harm).

A host country can ensure this by assessing the activity at the planning stage, however, in the end it is the real impact of the activity that matters. Thus, pilot activities could not only be used to test the systems for initial assessments, but also develop monitoring and reporting of sustainable development impacts to reinforce and highlight synergies and tackle trade-offs. Pilot activities do not need to address if and what aspects of sustainable development could go into reporting under Article 13 or under Article 6. However, they would provide an excellent opportunity to test how to regularly report and follow up sustainable development impacts, something that could be made alongside GHG monitoring and reporting.

⁴⁷ Footnote 10, p. 31.

⁴⁸ Article 6.2 of the Paris Agreement.

Some Parties suggest that the Agenda 2030 framework should be the basis for managing sustainable development under Article 6.⁴⁹ The 2030 Agenda for Sustainable Development (Agenda 2030) is an internationally agreed framework for countries to define and accelerate their pursuit of sustainable development. It is therefore reasonable to expect that future work on harmonized sustainable development standards will build on Agenda 2030. A universal standard for the monitoring and reporting of co-benefits will be of immense use for the project entities to look beyond the avoidance of GHG emissions and clearly demonstrates the contribution of their mitigation projects to the broader objective of sustainable development. This would be valuable for unlocking the hidden value of carbon for governments as well as the private sector.⁵⁰

A publication from the Asian Development Bank (ADB) in 2017 highlights how the Agenda 2030 framework can be used to show contributions to sustainable development.⁵¹ In this study, ADB developed a co-benefits assessment methodology using the CDM Sustainable Development Tool, the Gold Standard Sustainable Development Tool, and the Social Carbon Standard. Based on the indicators used by these tools to define the social, environmental, and economic impacts of projects, a set of indicators suitable for the Future Carbon Fund (FCF) portfolio projects was developed. Accordingly, 41 indicators were defined, covering 11 co-benefit impact areas. Individual projects were then assessed to determine which of the 41 indicators were relevant. Data was collected based on a literature review followed by field visits, including one-on-one interviews with various stakeholders and beneficiaries associated with 33 of the total 36 projects that comprise the FCF project portfolio. The co-benefits delivered by the FCF portfolio projects were then mapped against the 17 Sustainable Development Goals.

Pilot activities could be used to highlight how mitigation activities can contribute to national sustainable development priorities and policies and how co-benefits could create additional value and support for the mitigation activity. These synergies can be maximized and trade-offs minimized through integrating climate and sustainable development aspects into national development planning and policies. Not least, pilots could show how reporting and assessments of sustainable development impacts could be advanced in comparison with how this reporting was made under the Kyoto Protocol.

2.2.3 Commercial Structure and Transactions

Entering into a transaction based on international cooperation will have two components. One component will be what the Parties involved in the cooperation need to ensure, a second part will deal with the commercial terms and the conditions for the transaction to close between the Parties transacting (not to be confused with the Parties that cooperate under the Paris Agreement).

⁴⁹ Draft CMA decision containing draft guidance on cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement Version 1 of 9 September 02:00 hrs. Paragraph 41. "Each participating Party [shall][should] ensure that the cooperative approach in which it participates: e) Is consistent with the Sustainable Development Goals and the sustainable development objectives of the host Party."

⁵⁰ ADB. 2017. *Future Carbon Fund Delivering Co-Benefits for Sustainable Development*. Manila. p. 17.

⁵¹ ADB. 2017. *Future Carbon Fund Delivering Co-Benefits for Sustainable Development*. Manila. p. 12.

For Parties, the first component will mainly focus on the regulatory and infrastructure requirements. They will try to mimic the conditions that are already known for Article 6, or that are likely to prevail when Article 6 is fully operational.

The regulatory and infrastructure requirements will have national and international components and will depend on what falls under national and/or international jurisdiction. At the national level, the regulatory framework needs to ensure a transaction structure that is able to accommodate the selling country's interests and goals. At the international level, the framework should be set up to attract further international investments, and establish arrangements for sharing mitigation outcomes between the selling country and partner countries that creates the necessary incentives for participation in the long term.⁵²

The commercial component will include conditions to ensure that both cooperating Parties recognize the mitigation outcome that is being created and transferred as good for use toward their NDCs.

At the international level, the regulatory conditions that will need to be met if a transaction is to close will include transaction structures for the sharing of internationally transferred mitigation outcomes (ITMOs). These transaction structures are closely related to ongoing discussions on the attribution for mitigation results achieved. Attribution of mitigation outcomes is a concept that originates from the need to delineate different streams of finance. Mitigation activities are often financed from different sources and several actors may have claims on the mitigation outcome.⁵³ The arrangement for sharing of ITMOs is also important in relation to avoiding double counting (double claiming).

It is crucial, therefore, that a possible transaction between the selling country and a partner country or another international buyer pays particular attention to this and clearly delineates how the mitigation outcomes achieved by the activity will eventually be shared.⁵⁴ Pilots will provide opportunities to address issues relating to transactions and the sharing of mitigation outcomes.

Another interesting contribution from pilot activities would be to start understanding the transaction costs involved in undertaking mitigation activities and making transfers of mitigation outcomes, especially upscaled ones under Article 6.2 and Article 6.4. For the CDM, the transactions costs were initially considerable and affected the behavior of project proponents and stakeholders. Pilot activities will serve to estimate the transaction costs and level of complexity of implementation of the alternatives tested.

⁵² Climate Focus. 2018. *Opportunities for the Implementation of Article 6 of the Paris Agreement in the Solid Waste Sector in Peru*.

⁵³ L. Schneider, R. Spalding-Fecher, and M. Cames. 2015. *Delivering Results-Based Funding Through Crediting Mechanisms*. Berlin: Öko-Institut.

⁵⁴ Footnote 52, pp. 49–50.

2.2.4 Piloting Article 6.2

Article 6.2 is likely to become a bottom-up decentralized approach where governance is expected to be largely left to cooperating Parties; transparency⁵⁵ and the credibility of the ITMOs will play an important role in ensuring sustainable development and environmental integrity. In this sense, Article 6.2 also represents a significant departure from anything that was done under the Kyoto Protocol mechanisms, although there are parallels to international emissions trading and the host-Party-governed Track 1 of Joint Implementation.

Given that the decentralized activities are not defined top-down and specified beforehand, the development of the framework for Article 6.2 will be largely built on a “case law” basis. This could also be true of how ITMOs are generated and issued may look different from case to case. This could also be true of the institutional setup for managing the lifecycle of an ITMO.

The bottom-up approach also implies that the national regulatory framework will need to be put in place for Article 6.2 to determine eligible protocols for creating mitigation outcomes. This will include different provisions depending on the type of mitigation outcome, i.e., project-based baseline and credit, cap and trade, reducing emissions from deforestation and forest degradation (or REDD+) or other approaches.

Linking of carbon markets across different jurisdictions is likely to be undertaken in the context of Article 6.2.⁵⁶ While linking may be a longer-term issue for ADB developing member countries (DMCs) that are early in their carbon market development journey, the experiences elsewhere with linked systems show the importance of early design choices that can later underpin links between trading systems.⁵⁷

Pilots that cover direct linking of markets would be able to explore and test approaches to monitoring, reporting, and verification; accreditation systems; alternatives for cap-setting and allocation methods; registry and tracking arrangements; as well as accounting, including how corresponding adjustments would be made.

While both Article 6.2 and Article 6.4 will benefit from discovery, it would seem that Article 6.2 will present many new and untested features, while Article 6.4 is expected to have similarities to previous market-based mechanisms, including those under the Kyoto Protocol.

2.2.5 Piloting Article 6.4

Article 6.4 provides the “centralized governance option” for international transfers of mitigation outcomes under Article 6. It establishes a mechanism to be “supervised by a body designated by the Conference of the Parties” and creates a centralized window for

⁵⁵ Transparency is given a prominent place in the Paris Agreement, elaborated in Article 13. The enhanced transparency framework aims to “build mutual trust and confidence and to promote effective implementation.”

⁵⁶ Emissions trading systems are considered to be linked if one system’s emissions allowances or emission reduction credits can be used directly or indirectly for compliance purposes in another system, and allowances or credits can flow between them. Direct linking allows market participants to directly trade units (either allowances or credits) between systems and obligated entities to use tradable units for compliance in either one or both of the systems.

⁵⁷ ADB. 2016. *Emissions Trading Schemes and Their Linking: Challenges and Opportunities in Asia and the Pacific*. Manila.

Parties to deliver mitigation outcomes that can be used toward their NDC or transferred to another Party. While the scope of Article 6.4 is still unclear at this time (i.e., what can be done under this article, who can do it, and to what extent it can be used), the expectation is that Article 6.4 will govern baseline and credit-based activities that will bear some similarity, but at the same time will depart, from those under the Kyoto Mechanisms CDM and Joint Implementation. The Paris Agreement decision specifically requires Parties to build on the experiences under these mechanisms.⁵⁸

To operate baseline and credit mechanisms, the United Nations Framework Convention on Climate Change (UNFCCC) can draw upon the significant experience that has been acquired through CDM and Joint Implementation.⁵⁹ However, not all of the elements of the CDM and Joint Implementation (e.g., modalities, procedures, methodologies, etc.) can be transferred directly and used immediately for the new mechanism under Article 6.4, given the fundamentally different setup of the Paris Agreement compared with the Kyoto Protocol, and that a number of countries oppose the full transition of the Kyoto Mechanisms into Article 6.4. Parties are looking for the mechanism under Article 6.4 to go beyond projects and programs, putting in place rules, modalities, and procedures to support this. There may also be differences in the project cycle that have to be addressed to be able to manage a larger set of activity types and scales.

This could include the development of methodologies for the introduction of broad policy instruments and perhaps approving existing methodologies developed outside the UNFCCC. This may also impact how baselines are defined and how to demonstrate additionality, one of the key factors for determining the credibility of Article 6.4.

There are also new elements that were not present in the Kyoto Protocol mechanisms, such as the contribution to overall global mitigation; the nexus between the Article 6.4 mechanism and the cooperative approaches under Article 6.2; and approaches for measurement, reporting, and verification and accounting in a situation where ITMOs are both sold and bought by a country. All these aspects need to be addressed and tested through pilot activities.

Pilot activities will contribute to the development of

- approaches to projections and baseline setting,
- additionality tests for upscaled activities,
- approaches for the operationalization of overall mitigation of global emissions,
- frameworks for reporting and assessing sustainable development impacts and co-benefits,
- analyses of what can be used from Kyoto Protocol mechanisms,
- an understanding of how Article 6 can work under a conditional nationally determined contribution target, and
- approaches for the sharing of mitigation outcomes and attribution of carbon finance to mitigation outcomes.

⁵⁸ Footnote 10.

⁵⁹ A. Marcu. 2016. *Carbon Market Provisions in the Paris Agreement (Article 6)*. Centre for European Policy Studies; Footnote 10.

3. Pilot Activities in Asia and the Pacific

3.1 Center of the Action: Piloting Article 6 in Asia and the Pacific

Implementing pilot activities in the Asia and the Pacific region is important for many reasons. Although the region stands for a limited contribution in terms of historic emissions, it is now responsible for a significant part of global emissions, and this share is increasing. About half of the cumulative fossil fuel carbon dioxide emissions, which are a rough measure of the impact of past emissions on atmospheric concentrations, in 2010 were from the Organisation for Economic Co-operation and Development (OECD) countries, 20% were from the economies in transition region, and 15% were from the rest of Asia.⁶⁰

In Asia, greenhouse gas (GHG) emissions grew by 330% over the last 4 decades, reaching 19 gigaton carbon dioxide equivalent per year in 2010. By comparison, emissions grew by 70% in the Middle East and Africa, by 57% in Latin America, by 22% in the OECD countries, and by 4% in the economies in transition region.⁶¹

Per capita production and consumption growth is a major driver for increasing GHG emissions worldwide. Economic growth is very strong in Asia, averaging 5.0% per annum over the 1970–2010 period⁶² and emerging economies in the region have had very high economic growth rates at aggregate and per capita levels, leading to the largest growth in per capita emissions.⁶³

Another driver of emissions is population growth. The total population of the developing member countries (DMCs) of the Asian Development Bank (ADB) increased from approximately 1.23 billion in 1950 to 3.90 billion in 2015. This number is projected to range between 4.14 billion and 5.19 billion in 2050.⁶⁴

⁶⁰ G. Blanco et al. 2014. Drivers, Trends and Mitigation. In O. Edenhofer et al, eds. *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, UK: Cambridge University Press and New York, p. 360.

⁶¹ Footnote 60, p. 354.

⁶² Footnote 60, p. 371.

⁶³ Footnote 60, p. 355.

⁶⁴ ADB. 2017. *A Region at Risk: The Human Dimensions of Climate Change in Asia and the Pacific*. Manila.

Considering these facts, Asia and the Pacific has an opportunity, and a responsibility, to shape global efforts to reduce GHG emissions, as it is the fastest-growing source of GHG emissions, expected to account for 50% of global GHG emissions by 2030.⁶⁵ This requires all of the countries of the region to consider their national contributions and the use of cooperative approaches under Article 6.

3.2 Considerations for Pilots in Asia and the Pacific

3.2.1 Adapting Piloting Activities to Country Characteristics

To consider pilot activities in Asia and the Pacific, there needs to be a good understanding of the situation in the region and the specific country that will host the pilot. A number of elements must be considered: (i) the nationally determined contribution (NDC); (ii) stage of development; (iii) current domestic policy, strategy, and plan for carbon markets; and (iv) experience with market mechanisms under the Kyoto Protocol, as well as outside the Kyoto Protocol framework.

Asia and the Pacific includes countries at all stages of development, from OECD countries mainly composed of high-income economies like Australia and Japan; to island states like the Philippines and Indonesia; least-developed countries such as Afghanistan, Bhutan, Cambodia, Lao People's Democratic Republic, Myanmar, Nepal, and Timor-Leste;⁶⁶ and middle-income countries, divided in lower middle-income, such as Bangladesh and Viet Nam, and upper middle-income, such as Malaysia and Thailand.⁶⁷

The level of development in the host country may influence the aim and scope of a piloting activity. Table 2 provides an overview of how ADB is working on the challenges for different country groupings in Asia and the Pacific. It shows that the type of country support varies between the groups. This may provide an idea of where the focus of piloting should be for the different groups of countries.

Pilot projects in small-island developing states could be relevant for testing approaches under Article 6.4 where enhancing institutional capacity for participation and the assessment of projects will be key elements. Such activities could also be strongly linked to integrated adaptation and disaster risk reduction measures.

Pilot activities in low-income and lower middle-income countries could enhance institutional capacity of governments and test how carbon finance could contribute to greener infrastructure. Pilots could also address incentives for the private sector to make green investments and build their capacity for monitoring and reporting emissions, emission reductions, and sustainable development.

⁶⁵ ADB. 2016. *The Economics of Greenhouse Gas Mitigation in Developing Asia*. Manila.

⁶⁶ World Bank. Least Developed Countries: UN Classification. <https://data.worldbank.org/region/least-developed-countries-un-classification>. Accessed date: 27 August 2018.

⁶⁷ World Bank. World Bank Country and Lending Groups. <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>. Accessed date: 27 August 2018.

Table 2: Overview of Country Groups in Asia and the Pacific and their Characteristics

Small-Island Developing States	Low-Income and Lower Middle-Income Countries	Upper Middle-Income Countries
ADB's Charter gives special attention to the needs of the smaller or less-developed member countries in the region. ^a	These countries face a broad range of challenges in sustaining and accelerating the pace of progress.	Many of these countries have improved their living standards, but countries differ in economic development, social challenges, access to capital markets, and the strength of institutions.
Small-island developing states are particularly vulnerable to climate change and disaster-related events. ADB's support will focus on climate change adaptation, environmental sustainability, and disaster risk management.	ADB operations typically support green infrastructure, sustainable urbanization, and private sector development.	ADB operations encourage sharing of experiences, best practices, and innovation, and aim to strengthen institutions and capital markets.
These countries are characterized by small domestic markets, high costs of doing business, and challenges in connectivity to regional and international markets. ADB will, for example, help to improve the business environment, reform state-owned enterprises, and enhance public-private partnerships to reduce the costs of doing business.	ADB's focus will include green and inclusive infrastructure, social services and social protection, sustainable urbanization, structural transformation to enhance productivity and competitiveness, public sector reforms, private sector development, and domestic resource mobilization.	The sharing of experiences, best practices, and innovation will be increasingly more important elements of ADB's engagement in these countries.

ADB = Asian Development Bank.

^a ADB. 1966. *Agreement Establishing the Asian Development Bank*. Manila.

Source: ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific*. Manila <https://www.adb.org/sites/default/files/institutional-document/435391/strategy-2030-main-document.pdf>.

Pilot activities in upper middle-income countries could focus on strengthening the capacity to design and implement carbon pricing and test approaches for broad introduction of innovative mitigation technologies.

ADB would be a strong partner for implementing pilot activities in these countries, since it already has a long track record of capacity building in its DMCs. The learning process regarding Article 6 would be shared, where both ADB and the DMC would gain from the experience of developing and implementing a pilot activity.

The experiences could be fed into the UNFCCC process, in the form of knowledge products from ADB, and in the form of country-to-country sharing of the implementing country's experiences. The capacity and resources of ADB could contribute to developing pilot activities such that a race to the bottom is avoided, i.e., testing more elaborate

approaches to e.g., sustainable development impact reporting or baseline scenario development.

3.2.2 Adapting Piloting to Nationally Determined Contribution Characteristics

One challenge that will affect the implementation of Article 6 pilots is that the NDCs in many countries are expected to be further elaborated in terms of plans for implementation. Many NDCs were produced quickly, with limited consultations and/or underlying analysis, and not fully reflecting local priorities and capacity. In many cases, the coherence between countries' energy sector plans and their NDC could be better understood.⁶⁸ For instance, a review of the NDCs of six countries in Southeast Asia⁶⁹ shows that (i) there is great variation with regard to targets, including absolute and relative reduction targets; (ii) while there are many types of policies presented in the NDCs, there are few measures that are quantified in terms of the mitigation impact; and (iii) there is limited discussion of the feasibility or likelihood of achieving the NDC targets (Box 3).⁷⁰

A review undertaken by ADB of its DMCs' intended national determined contributions (INDCs) shows that there is a large range in the details presented by each country with regard to the actions and their estimated costs, as well as the need for external financial and technical support. None of the INDCs would match a "sector investment plan" in terms of technical, spatial, temporal, and financial details that ADB operational departments are accustomed to relying on for country operational planning. However, a few of the DMCs' INDCs are adequately detailed and therefore can be readily translated into climate action plans that are similar in planning detail to sector plans.

Many of the more detailed INDCs are summaries of more comprehensive national climate action plans and other sector plans that could be built upon to translate them into climate investment plans or road maps. Well-developed NDC implementation plans will be useful in facilitating a country dialogue with ADB and other sources of financial and technical assistance. Currently, less detailed INDCs indicate a need for support from institutions, such as ADB, to define objectives and outline actions that will help a country meet its objectives and commitments and then set priorities for investments in the form of climate investment plans.⁷¹

Pilot activities could support the elaboration of several aspects (technical, spatial, temporal, and financial details) relating to the development of strategies and plans for sectors. Pilot projects could also be used to understand how to determine the value of the country's own mitigation outcomes, including an assessment on how the baseline underpinning the NDC ensures that no hot air will be generated. As opposed to the Kyoto Protocol, all Parties have to contribute toward the goals of the Paris Agreement (Article 3). Consequently, Parties will have to make hard decisions on whether or not they would allow some of the mitigation outcomes to be exported and identify which ones, as they will need to use them toward their own NDC. Evaluating and making decisions on what to sell and what to keep will be an important exercise to go through.

⁶⁸ LEDS GP. 2017. Multi-level Governance and the NDCs in Asia: Accelerating Subnational Implementation and Raising National Ambitions. Workshop Report for Local Governments for Sustainability. Bangkok, Thailand.

⁶⁹ Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam.

⁷⁰ L. Fulton et al. 2017. Climate Change Mitigation Pathways for Southeast Asia: CO2 Emissions Reduction Policies for the Energy and Transport. *Sustainability*. 9 (7). p. 1160. 3 July. <https://www.mdpi.com/2071-1050/9/7/1160>.

⁷¹ Footnote 6, p. 28.

Box 3: Overview of Nationally Determined Contribution Target Types in Asia and the Pacific

- Up to 39% of the countries with a mitigation target provided relative emission reduction goals for the target year 2030, compared with a projected business-as-usual emissions scenario, either for the whole economy or for different sectors.
- As much as 31% of the countries specified an absolute emissions target, compared to a base year, which vary across countries. Base years were typically selected based on data availability and modelling that had already been undertaken as part of emissions monitoring and reporting efforts.
- Ten countries specified mitigation targets in the form of policies and measures indirectly contributing to greenhouse gas emission reductions. The share of renewable energy installed capacity targets or consumption for a certain target year are the most commonly used types of measures. This type of target is mostly used by small or least-developed countries, and is predominant in the Pacific subregion.
- Carbon intensity reduction targets are pursued by four countries: India, Malaysia, the People's Republic of China, and Singapore. These seek to reduce emissions intensity per unit of gross domestic product, compared to 2005 as a reference year.
- Twenty countries in Asia and the Pacific have included financial needs for achieving their climate change mitigation and resilience targets, totaling \$3 trillion. Of this total, the biggest share corresponds to the needs expressed by nationally determined contributions in South Asia; India, in particular, which communicated a need of \$2.5 trillion for its climate actions up to 2030.
- Most countries' nationally determined contributions contained sectoral and subsectoral mitigation targets, reflecting their priorities. Of these, energy emerges as the priority sector. Out of 42 countries analyzed, 40 cited energy as their priority for mitigation, typically emphasizing the importance attributed to increasing the share of renewable energy
- Energy efficiency emerged as the second main pillar for the energy sector to contribute to low-carbon development. Envisaged measures for energy efficiency improvement are not only targeted toward energy production, but also toward subsectors such as transport, households, buildings, industry, services, or agriculture.
- Agriculture, forestry, and other land use also received strong attention by countries in the region as part of their mitigation commitments, reflecting this sector's significant contribution to greenhouse gas emissions in the region, after energy.
- The transport sector was featured in the nationally determined contributions of 32 member countries. The Pacific subregion has placed the highest emphasis on this sector, with 10 Pacific states highlighting it as a priority, reflecting the importance of shipping as a source of emissions. Most mitigation measures concerned biofuels, e.g., using coconut or waste cooking oil as biodiesel.

Source: United Nations Economic and Social Commission for Asia and the Pacific. 2017. *Responding to the Climate Change Challenge in Asia and the Pacific: Achieving the Nationally Determined Contributions (NDCs)*. Bangkok.

3.2.3 Scope for Piloting Market Linking

Some countries in Asia and the Pacific are advanced economies, which are likely to pursue national cap-and-trade systems and be primarily buyers in the market.⁷²

These advanced economies may also think of linking with each other and potentially linking with others outside the area. New Zealand, the People's Republic of China, the Republic of Korea, and Thailand are economies that are operating and building emissions trading systems and may benefit from pilot activities that would help understand what linking would look like.⁷³

A few countries in East Asia — Japan, the PRC, and the Republic of Korea— together stand for a large part of global GHG emissions, roughly 28% in 2014. The mitigation actions in these countries will, to a large extent, affect how the Paris Agreement will perform toward its objectives. It is essential that these, as well as other large global emitters, implement effective climate change policies. Collaboration between governments in the region with regard to designing and implementing policies will be very important since it has the potential to accelerate and amplify national ambitions to reduce GHG emissions.⁷⁴

Without prejudging the political reality, linking emissions trading schemes could be one approach to this type of collaboration, and it would—as far as international transfers of mitigation outcomes are involved—be subject to Article 6.2 guidance.

3.2.4 Piloting Considering the Kyoto Mechanisms Heritage

While much expertise still exists based on CDM experience, there is much less experience on the type of cooperation envisaged under Article 6.2 that will require innovation and totally new approaches.⁷⁵ The need for, and the appropriateness of, pilot activities in Asia and the Pacific also depends on the previous experience with the carbon market. The region dominated CDM both in terms of volume and number of projects. This means that in several countries, there is a deep understanding of the carbon finance concept and solid technical experience. The experience from carbon markets is partly reflected in the NDCs, in which 26 countries in the region have expressed their willingness to use market-based approaches and are exploring the possibility of pursuing cooperative approaches under Article 6 of the Paris Agreement.⁷⁶

Other countries in the region will clearly, for the short- to medium-term, still see themselves as sellers, very much in the same light as they were during the carbon market in the Kyoto Protocol period. Creating pilot projects for bilateral, project-based cooperation, under Article 6.2 or Article 6.4 rules, may be seen by some as not very innovative, but will help get things off the ground, provide the learning experience, and draw attention to opportunities in carbon markets under the Paris Agreement.

⁷² IETA. 2018. Greenhouse Gas Market Report. *IETA Insights*. Quarterly report. No.1. March. https://www.ieta.org/resources/Resources/GHG_Report/2018/IETA_Insights_Q1_2018_WEB.pdf.

⁷³ IETA. 2018. Greenhouse Gas Market Report. *IETA Insights*. Quarterly report. No.1. March. https://www.ieta.org/resources/Resources/GHG_Report/2018/IETA_Insights_Q1_2018_WEB.pdf.

⁷⁴ R. N. Stavins and R. C. Stowe, eds. 2018. *International Cooperation in East Asia to Address Climate Change*. Cambridge, Massachusetts: Harvard Project on Climate Agreements. February.

⁷⁵ Footnote 10.

⁷⁶ UN Economic and Social Commission for Asia and the Pacific. 2017. *Responding to the Climate Change Challenge in Asia and the Pacific: Achieving the Nationally Determined Contributions (NDCs)*. Bangkok.

This chapter has illustrated the need for pilot activities to be adapted to the specific conditions of the region and its countries and has shown that pilot activities will serve different needs for different countries. However, a common thread is that regardless of the aim and scope of the pilot activity, the knowledge and lessons learned can also be used by the piloting country or countries in the formulation of their objectives and positions in the climate change negotiations. They can also contribute to the development of the guidance and rules under Article 6 that facilitates their participation and their approach to achieving and enhancing the NDCs.

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Article 6 of the Paris Agreement

Piloting for Enhanced Readiness

This publication outlines the rationale for and benefits of piloting activities for Article 6 of the Paris Agreement. It emphasizes the need for testing alternate approaches and sharing of experiences. Article 6 provides for voluntary international cooperation that may facilitate the use of market-based approaches to help countries achieve their nationally determined contributions and enable greater gains. Pilot activities in developing member countries of the Asian Development Bank can help Asia and the Pacific develop capacity, readiness, and awareness on using Article 6 and participating in international carbon markets.

About the Asian Development Bank

ADB is committed to achieving a prosperous, inclusive, resilient, and sustainable Asia and the Pacific, while sustaining its efforts to eradicate extreme poverty. Established in 1966, it is owned by 67 members—48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.

