Key messages

While carbon border adjustment mechanisms (CBAMs) are receiving much attention at the World Trade Organization, there is a striking absence of focus on trade in carbon, carbon markets and carbon standards. However, these aspects feature high on the United Nations Framework Convention on Climate Change (UNFCCC) negotiators’ agendas because they are necessary to support the development of market mechanisms under Article 6, secure environmental integrity and create monitoring, reporting and verification frameworks.

Negotiations for a multilateral framework for trade in carbon under Article 6 of the UNFCCC framework are particularly relevant for Least Developed Countries (LDCs) given their urgent needs to secure climate finance. In addition, common frameworks for carbon accounting are needed to support trade and development objectives.

The imposition of CBAMs will increase the costs of trade. There are limited options to mitigate these for LDCs whose exports may be affected. Mitigating the increased trade costs and complexity that may result from CBAMs will be challenging for LDCs to navigate without commensurate support.

Mozambique is particularly vulnerable to the CBAMs proposed by the European Union (EU). However, as the scope of the EU’s CBAM grows and as other countries also consider applying their own CBAMs, more LDCs could be affected. These trends have important implications for pre- and post-graduation support for LDCs.
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Carbon markets and standards

This brief explores two different types of carbon markets: (1) baseline-and-credit mechanisms, which are primarily structured around offsetting and enable trade in certified emissions reductions between countries and companies (an example being the Clean Development Mechanism – CDM); and (2) cap and trade schemes or emissions trading systems (ETS), which are based on agreed allowances and permits. These schemes have increased in prominence in view of recent moves towards the imposition of carbon border adjustment measures (CBAMs) by the European Union (EU). For both types of carbon markets, given their trade implications, there is a need to ensure effective carbon pricing with agreed methodologies and approaches, including in relation to carbon standards. Currently there are no common carbon standards in use.

The state of play in climate negotiations

Carbon markets are widely used to facilitate low-cost emission reductions. Currently 38 countries and 29 subnational jurisdictions have an emissions trading scheme in place, a dramatic increase from 2005, when the EU launched the world’s first prototype. These initiatives cover 16.1% of global greenhouse gas emissions (World Bank, 2021).

Article 6 of the Paris Agreement underpins the development of international carbon markets. Article 6.2 allows countries to trade emission reductions bilaterally and voluntarily (e.g. emission reductions achieved through increasing renewables use). Article 6.4 establishes a centralised platform – often referred to as the Sustainable Development Mechanism (SDM) – where governments and firms can buy and sell emission reductions. The SDM does not replace but builds on the CDM established under the Kyoto Protocol. However, there is some uncertainty regarding the rollover of certified emissions reductions (CERs) obtained through the CDM and into the SDM.

Parties to the United Nations Framework Convention on Climate Change (UNFCCC) have not managed to agree on a rulebook to implement fair international carbon markets with environmental integrity. Existing schemes cannot straightforwardly be linked up. Carbon credits vary in price from less than $5 per tonne of carbon dioxide equivalent (tCO₂-e) in Kazakhstan to nearly $50/tCO₂-e in the EU (World Bank, 2021). Carbon pricing schemes also vary tremendously in terms of their carbon accounting methodologies, the sectors and emissions sources they cover and available offsets. Ensuring the environmental integrity of a carbon market – that emission reductions are additional and measured against credible baselines – is always a challenge (Schneider and Theuer, 2019).

Working across international borders poses specific challenges. For the purposes of the Paris Agreement, most greenhouse gas accounting is undertaken at the national level (with some exceptions such as the EU). This creates a risk that emission reductions are claimed by both
the country that produced the credit and the country that paid for it. Article 6.5 of the Paris Agreement prohibits double counting, but a credible approach for ensuring that providers adjust their own emissions has not yet been established (Müller and Michaelowa, 2019).

There are also outstanding issues as the institutional architecture of the UNFCCC has evolved over time. Some emerging economies seek to trade their surplus CERs from the CDM, but including these credits would flood the market and reduce the environmental integrity of the new mechanism: one study found that 73% of CERs produced under the CDM were probably not additional (Cames et al., 2016). Although these questions were meant to be agreed at the Katowice COP in 2018, they were unresolved and pushed back to the Madrid COP in 2019. There is now immense pressure to find a solution at the 26th UN Climate Change Conference of Parties (COP26) in Glasgow in 2021, to ensure that carbon markets can play the role intended in helping to secure emissions reductions and leveraging climate finance.

LDCs have a particular interest in the sectors included within the SDM for which agreement is sought within Article 6 negotiations. Reduced Emissions from Deforestation and forest Degradation in developing countries (REDD+) activities were not included in the CDM to avoid leakages and lowering of carbon prices (Angelsen et al., 2014). Small Island Developing States (SIDS) have been calling for recognition of the oceans as a carbon sink. Others acknowledge the important role that agriculture can play in carbon sequestration through improved agricultural practices, which may also have potential positive effects on biodiversity.

Beyond the multilateral framework that could be provided by the UNFCCC should agreement be reached on Article 6, individual countries are also moving at different speeds regarding the development of their own carbon markets and national ETS. In the case of South Africa, for example, the introduction of a carbon tax has spurred offset markets (Elston, 2021). Within the African Union’s Green Recovery Action Plan, a high priority is placed on climate finance and development-oriented carbon markets (AU, 2021). In the case of New Zealand, sectors such as agriculture are under consideration for inclusion within its ETS (MPI, 2021). China will introduce an ETS covering electricity, iron and steel, cement and aluminium by 2025 (Hongqiao, 2021).

Trade tensions may be heightened as countries seek to level up carbon ambitions with trading partners by imposing CBAMs (Mendez-Parra et al., 2020) (see below). While some of the outcomes of recent G7 and G20 discussions have sought to allay these concerns, until CBAMs are imposed in practice the potential ripple effects on trade and supply chains are unknown.

**The state of play in trade negotiations**

While there is a striking absence of focus on trade in carbon, carbon markets and carbon standards within discussions at the World Trade Organisation (WTO) – notably through the Trade and Environmental Sustainability Structured Discussions (TESSD) – increased attention
is being paid to the potential imposition of CBAMs. This is in view of the prominent moves by the EU to begin to implement such measures, in order to support its ambitious climate change mitigation objectives.1

The EU CBAM will require that importing countries participate in the EU’s carbon market, unless they are exempt through participation in the EU ETS. The CBAM is intended to reduce some of the risks of carbon leakage – for example, when EU firms relocate elsewhere because of stringent emissions reductions targets. Since the EU has increased its climate ambition, it has also perceived the need to ensure that the risks of carbon leakage are reduced.

The WTO compatibility of the EU CBAM continues to be subject to debate, as the EU seeks to ensure it becomes operational by 2023. Currently, the only exemptions from CBAMs are for countries that are linked or integrated with the EU ETS. This means that there are no exemptions for LDCs, despite calls from the European Parliament for some provision to be made. The scheme currently covers cement, nitrogen fertilizers, iron and steel, aluminum and electricity. However, over time it is likely that sectoral coverage will grow.

The EU CBAM as proposed would apply to emissions generated in the production processes of the products covered and exported to the EU.

Legal analysts generally posit that country exemptions could complicate WTO compatibility as well as increase the complexity of the CBAM. While attention within the WTO focuses on compatibility with existing rules, very little attention has been paid to date to the underpinnings of ETS’ rules, including the measurement and certification of emissions reductions, which requires carbon standards (for both the certification of emissions reductions, as well as their monitoring and measurement).

Some have argued that the CBAM will increase the costs of trade while having limited impact on global emissions (UNCTAD, 2021) (though estimates are dependent on the approximate trade cost increases). Others argue from an economic efficiency perspective that alternative measures, including carbon standards, could be more effective in encouraging the behavioural changes needed to support emissions reductions (Mendez-Parra et al., 2020).2

There is beginning to be an increased focus on carbon pricing. This is reflected by recent calls from the WTO Director General for a global carbon price (Okonjo-Iweala, 2021). It remains to be seen how these issues will be debated by WTO members in view of the need for agreement on internationally agreed methodologies and common carbon standards to support an international carbon price post-COP26.

1 As reflected in the EU’s Green New Deal.
2 This also seems to be the perception of the UK as reflected in opinions recently published in its Green Trade report given the complexities of administering a CBAM (UK Board of Trade, 2021).
Currently, the options for suppliers to the EU market for targeted sectors therefore include:

- participating in the EU ETS and paying the price of carbon to enter the EU market, in the absence of equivalent measures, which will raise the cost of trade and penalise exports; or
- implementing equivalent measures such as an ETS or a carbon tax – and seeking recognition by the EU. The UNFCCC Article 6 negotiations could provide some support to this objective, should agreement be reached (for example with regard to ensuring the environmental integrity of carbon markets). However, technical and financial support is likely to be needed, especially for LDCs.

In both options, it will be necessary to provide third-party verified data on actual greenhouse gas emissions. This raises the issue of the use of carbon standards to prove how products were produced and embedded emissions. In order to avoid a proliferation of different methodologies and approaches, greater clarity is needed, along with agreement on common carbon standards.

All of this adds up to greater demands for trade-related support measures to assist LDCs to adapt to the future trading landscape, which will be influenced by CBAMs. Developing country exporters and LDCs in particular will need support to set up accounting schemes for GHG emissions, as well as meeting the costs of certifying emissions data as accurate. LDCs will have to weigh these considerations carefully and determine whether the design of equivalent measures is efficient compared to the increase in trade costs.

The cost of exports to the EU covered by the CBAM is expected to rise regardless of the option and the country. Even exporters that may be already complying with EU emissions standards will need to obtain adequate certification or face the CBAM when products are imported into the EU.

**An LDC perspective**

Increased market access is at the forefront of LDC trade and development objectives, in view of their overall low share of global trade which has been hit hard by the pandemic and growing populations. Indeed, the SDGs include specific targets on increasing LDCs' share of global trade. In the context of climate change, ensuring continued market access assumes a particular imperative, given that international trade is a vehicle to facilitate climate-related adaptation objectives. LDCs are already struggling to meet stringent market access criteria, for example related to sanitary and phytosanitary requirements. Collectively, the group also faces high trade costs compared to other developing countries. The threat of reduced market access because of increased trade costs induced by CBAMs is therefore a major concern.
The options for mitigating CBAMs may seem daunting to LDCs sceptical of carbon markets in view of previous inabilities to effectively tap into the CDM.\(^3\) The conclusion of negotiations on Article 6 of the UNFCCC framework could support LDCs in adapting to future trading conditions, through supporting the development of monitoring, verifying and accounting systems to account for carbon in trade. However, there will be a need to enable participation by LDCs in carbon markets. Carbon markets are a key market-based mechanism that can boost low carbon transition efforts through leveraging carbon finance.

Some of the lessons from the CDM include the need for support to overcome technical and financial barriers that can hinder participation. Underpinning these efforts is the need for workable domestic standards, which could help secure bilateral carbon trade approvals and verification of CERs.

Looking ahead, there may be market access issues to address, including that CERs created in one jurisdiction or of a particular class are recognised in another (especially given bilateral moves to secure environmental integrity in carbon markets) (Swissinfo, 2019).

Opportunities for LDCs in carbon markets include:

- opportunities to secure finance to experiment with low-carbon technologies (e.g. energy-efficient lighting) or to advance global public goods (e.g. forest conservation)
- support for low-carbon transition efforts, and increased finance for adaptation efforts.

Benchmarking to international carbon standards can support low carbon competitiveness within supply chains challenges for LDCs include:

- increased costs of trade, reductions in market access and reduced returns to producers
- developing the regulatory frameworks to support the use of equivalent measures
- supporting producers in adapting to new regulatory requirements.

**Case studies**

Colonial links as well as a comprehensive unilateral preferential regime make the EU the main destination for exports from many LDCs. The introduction of the EU CBAM therefore raises important questions as to how it will affect the exports of these countries and their diversification opportunities in the future.

To date, there have been no comprehensive studies assessing the impact of the EU CBAM on LDCs. UNCTAD (2021) assesses the impact of the EU CBAM, but its simulations consider that LDCs are exempted from the mechanism.

\(^3\) The major beneficiaries of the CDM include China and India, see Keane and Potts (2008).
The simplest and most direct approach is to assess the importance of CBAM-targeted products in LDCs’ exports to the EU and as a share of total exports (Table 1). While overall, there seem to be limited direct exports of other products targeted by the CBAM, LDCs may be affected through changes in the export prices of these products. For example, UNCTAD (2021) highlights that the EU and others exempted from the CBAM would benefit from improvements in the terms of trade as import prices fall relative to export prices.

The situation may change if the CBAM is extended to products down the value chain (these are products exported to the EU using inputs covered by the CBAM) or if the inputs used in the production of covered products are also targeted by the CBAM in the future (particularly electricity).

The following section reviews two LDC case studies: Mozambique and the Solomon Islands (a forthcoming LDC graduate). It provides an overview of the sector of interest in relation to carbon markets and standards. It then outlines key issues for consideration from both a trade and climate perspective.

Case study: Mozambique – aluminium exports to the EU (direct and indirect)

The EU Commission acknowledges the importance of aluminium in Mozambique’s exports to the EU and, consequently, the CBAM’s potential negative impact on imports of this product (European Commission, 2021). The EU represents accounts for between 63% and 87% of the total exports of Mozambique’s aluminium, which in the case of aluminium bars, rods and profiles (HS 7604) accounted for the totality of the exports (Table 1).

The EU CBAM will apply exclusively to direct emissions of greenhouse gases in the production process (European Commission, 2021). This means that it will apply neither to emissions contained in the aluminium used in products exported to the EU by third countries, nor emissions contained in the inputs used in the production of aluminium (e.g. electricity). This limitation in the scope of the CBAM implies that Mozambique’s emissions on indirect exports of aluminium to the EU will not be affected. Without reliable information about global input-output relationships, it is hard to assess the overall impact of the CBAM. However, exports of aluminium to the rest of the world represented between 13% and 37% (with the UK, South Africa and Singapore as the largest destinations). The overall impact will depend on how much of Mozambique’s aluminium is used in exports of these countries going to the EU.
Table 1 Exports of aluminium from Mozambique (2017–2019)

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<td>European Union (US$ millions)</td>
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<td>Total (US$ millions)</td>
<td>816</td>
<td>1,154</td>
<td>663</td>
<td>1,190</td>
<td>1,320</td>
<td>1,046</td>
<td>68.5</td>
<td>87.4</td>
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<td>Share of EU in total exports (%)</td>
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<tr>
<td>Total</td>
<td>1,071</td>
<td>1,558</td>
<td>1,237</td>
<td>4,719</td>
<td>5,196</td>
<td>4,722</td>
<td>22.7</td>
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Note: The HS headings correspond to those in Annex I of the EU Commission proposal for regulation. Source: UN Comtrade

The other important implication of the limitation of the scope of the CBAM relates to the use of inputs by Mozambique’s smelters. This is critical as aluminium production is intensive in the use of electricity. Currently, emissions in electricity generation (either domestic or imported) will not count towards the computation of the CBAM on Mozambique’s exports of aluminium.

Even with the currently limited scope of the CBAM, a significant share of Mozambique’s total exports (around 18%) will see increased costs by both the CBAM directly, or by any measure necessary to comply with EU requirements. Moreover, after the transition period, the EU Commission will evaluate whether the CBAM needs to be extended down the value chain or to ‘indirect’ emissions. In this scenario, costs are likely to rise even more for Mozambique’s aluminium exports.

Mozambique will need to consider how to adapt to the imposition of the CBAM, as will its international development partners. In recognition of Mozambique’s LDC status, the EU should directly address the challenges posed, including through the provision of aid for trade to support adjustment and future competitiveness in the aluminium sector (as well as others).

Case study: Solomon Islands – forests and carbon markets

The Solomon Islands still retains 94% of its humid primary forest stock. In total (above ground, below ground and soil storage), the islands’ forests store 844 million tonnes of carbon and
capture about 588,000 tonnes of CO₂ equivalent per year (Global Forest Watch, 2021). However, forested land, especially in low-lying areas, is under pressure from changing agricultural land use (Global Forest Watch, 2021), alongside mining and logging (Hunt, 2019).

Customs duties from logging are a key government revenue source, estimated to comprise around 20% of total revenue in 2018, while total foreign exchange receipts from logging represented 32% (Piemonte and Fabregas, 2020). This dependence is however unsustainable: at the current rate the islands’ natural forests will disappear by 2036 (Hunt, 2019).

There is a need to move away from unsustainable logging practices and towards the recognition of forestry resources as a specific asset class (more valuable in-tact rather than deforested). The Solomon Islands Nationally Determined Contribution (NDC) submitted in 2021 to the UNFCCC states its intention to use market mechanisms under Article 6 of the Paris Agreement and develop carbon trading legislation (SIG, 2021). To date the country has one commercial carbon project which avoids deforestation, currently functioning in the Babatana area in the Choiseul Province. Plan Vivo certifies the carbon kept in the ground and removed from the atmosphere (MyClimate, 2021). Data on price and success of the scheme is not publicly available but is listed as a project on the Swiss carbon offsetting platform called MyClimate.

The Solomon Islands has also agreed on a REDD+ Roadmap (2014–2020). However, this has not been reviewed for 2021. So far, most progress in establishing a carbon market has been made under donor-funded environmental, rather than trade facilitation, programmes.

Currently, the absence of legislation on carbon trading and of regulatory frameworks – in other words, weak forest resources governance for carbon markets – is a deterrent to buyers and investors. These shortcomings must be addressed in view of the objectives specified within the country’s NDC. This clearly illustrates the need for support to enable greater participation in carbon markets, including those established under Article 6 of the UNFCCC. Graduating by 2024 from LDC to low-income country category as per the World Bank classification is likely to have a limited effect on carbon market development, as the Solomon Islands will remain as a Non-Annex I country after graduation. In addition, the country is listed as a Small Island Developing State (SIDS) at the UN and as such benefits from specific platforms and programmes addressing issues specific to such nations.

Recent LDC graduate Vanuatu is more advanced in the development of carbon markets: it established a carbon monitoring system and local monitoring capability using remote sensing and forest inventory methods and systems. Having such systems in place is a guarantee for certification programmes to build on. The country is also looking into expanding its carbon markets to marine and coastal ecosystems (Laffoley, 2013).
Recommendations

The recommendations arising from this analysis are targeted at trade and climate negotiators, as well as development partners. They include:

- Making the case for Aid for Trade to support participation in carbon markets, and helping to secure greater access to climate finance. This is in view of technical and financial barriers to participation in carbon markets by LDCs, and in recognition that the needs to secure climate finance are acute given extreme environmental vulnerabilities to climate change. Moreover, it would be in line with calls for development-oriented carbon markets.
- Addressing any increased trade costs that may arise for LDCs through CBAMs through appropriate international support measures. This includes supporting trade-related adjustment, assisting in understanding embedded emissions, and supporting low carbon export competitiveness.
- Ensuring pre- and post-graduation support mechanisms for LDCs take account of developments within international carbon markets and carbon standards to assist LDCs in maintaining and boosting export competitiveness. LDCs should advocate for common carbon standards and internationally agreed methodologies to reduce trade barriers.
- Recognising that LDCs are not currently exempt from EU CBAM proposals and may require extended transitional periods to adapt including through developing equivalent measures.
- Considering how the resources raised through CBAMs may be channelled to LDCs requirements for adaptation to climate change.
References


