International climate change and conservation policy: Coordination challenges

4

- Evolution of international cooperation in climate change and biodiversity matters
- Key challenges in achieving global targets on global warming and conservation
- Position of countries in the region on these issues
- Commitments made in international forums and projections for their fulfillment

Key messages

1
Although climate change and biodiversity are interconnected natural phenomena, international cooperation in these areas has been addressed through separate channels. More progress has been made in climate change mitigation, partly because the perceived urgency of climate change is greater and it is a problem with clear and measurable impacts, while developing indicators for adaptation or biodiversity conservation presents greater challenges.

2
The decentralized governance of the Paris Agreement has achieved near-universal adherence but has limitations. It is not designed to ensure that national commitments achieve the global target, and there is no explicit negotiation on each country's fair contribution.

3
The goal of limiting warming to 1.5°C is ambitious and requires global mitigation efforts. For low- and middle-income countries, including those in the region, this presents a dilemma: their historical responsibility is low and mitigation is costly, but failure to act would jeopardize the global target.

4
Climate finance is crucial to strike a balance between the need for global mitigation efforts and demands for climate justice. If developing countries have to mitigate more than expected based on their historical responsibilities, resources from industrialized nations can be used to compensate them.

5
Industrialized countries prioritize financing for mitigation, while developing countries prioritize adaptation. This tension could be eased with a different governance approach, where non-industrialized countries propose mitigation goals in exchange for financing that can be directed toward mitigation and adaptation and resilience projects. Such an arrangement would require explicit and concrete discussions among countries about climate justice.

6
International governance bodies have not sought to standardize climate policies, resulting in significant differences among countries. For example, there is considerable variation in emissions pricing mechanisms (carbon taxes and emissions trading systems), which creates tensions between countries.

7
Countries with higher carbon prices have incentives to implement carbon border adjustment mechanisms (CBAM) for emissions embedded in imports, as the European Union (EU) is doing. In the short term, the region's exposure to this EU strategy will be low, but similar instruments may become more common in the future.

8
Developing carbon markets, particularly carbon credits linked to conservation, restoration, reforestation, regenerative agriculture, among others, could be valuable for several countries in the region. It is essential to build robust governance that ensures the integrity, transparency, and additionality of projects, as this determines the effectiveness of carbon credits in achieving real mitigation.

9
International cooperation on biodiversity has been more modest, although the Global Framework for Biodiversity adopted in 2022 may mark a turning point. Pending tasks include developing mechanisms to compensate countries that provide international ecosystem services and increasing resources for financing biodiversity conservation, restoration, and a sustainable use of nature.

10
Subsidies that are harmful to biodiversity are widespread in various economic sectors. Coordination to reduce and reform these subsidies is one of the objectives of international cooperation in this field.

11
Borders between countries often overlap with areas of high biological diversity. Cooperation in transboundary areas is important to prevent overexploitation of resources, prevent or remove physical barriers that impede the movement of species, and regulate infrastructure construction, among other objectives

International climate change and conservation policy: Coordination challenges[1]

Introduction

International coordination in climate and biodiversity policy is necessary because both are issues where the actions of each country affect others. Over the decades, various initiatives have emerged to coordinate these efforts, yet atmospheric greenhouse gas concentrations and biodiversity loss have continued to rise.

This chapter discusses the key challenges and points of interest for international coordination in these areas. To provide context, it first outlines the evolution of cooperation in recent decades. This historical review reveals that despite the interaction between climate change and biodiversity conservation as natural phenomena, negotiation and coordination channels on these issues have evolved independently. This calls for a separate analysis of each case while considering the connection between climate and biodiversity when contemplating specific policies and actions.

The Paris Agreement of 2015 set the goal of limiting global warming to 2°C and preferably 1.5°C above pre-industrial levels. To meet these targets, the remaining carbon budget for humanity is very limited, requiring a resolute global mitigation effort. In addition to the question of how much needs to be done, there is the issue of who should do it and how the costs of these efforts should be distributed. This is the central challenge in international climate negotiations.

The principle of common but differentiated responsibilities (CBDR), formalized in the United Nations Framework Convention on Climate Change (UNFCCC), states that all countries have responsibility for addressing climate change challenges, but the level of responsibility is not equal among them. Therefore, while there is no clear consensus on the specific implications of the CBDR principle, it is expected that industrialized

1 This chapter was written by Gustavo Fajardo, with research assistance from Pilar Toyos.

countries will assume greater mitigation obligations. On the other hand, if the global goals outlined in the Paris Agreement are to be achieved, high-income countries cannot be the only ones mitigating.

In this context, climate finance emerges as a central element in the discussion, serving as a tool to address climate justice claims. If developing countries received resources from industrialized countries—not only to finance mitigation projects but also to cover the costs of adaptation and compensate for losses caused by climate change—this would facilitate their contribution to mitigation efforts.

However, the current governance framework does not establish a clear link between national actions and international flows of climate finance. Under the Paris Agreement, countries have wide autonomy to propose their contributions, and there are no centralized negotiation processes to determine each party's fair share. This decentralization in the formulation of actions has advantages but also limitations, as there is no mechanism to ensure that national targets are sufficient to achieve the global goal .

Climate finance can be a tool to address demands for climate justice

Other points of international tension arise when countries adopt domestic climate measures that have economic implications beyond their borders, particularly when climate policies intersect with international trade policies. A notable example of this intersection is the border adjustment mechanisms that require imported products to pay for their embodied emissions. The European Union (EU) is preparing to implement such a mechanism, which has generated resistance from its trading partners.

Furthermore, carbon markets (or offset markets) represent a form of international trade closely linked to climate policy. These mechanisms allow companies and countries to purchase emission credits by financing mitigation actions in other territories. Understanding how these markets work is crucial because, although they have the potential to drive efficiency in global mitigation efforts, they face significant implementation challenges. Without effective mechanisms to assess and monitor the projects involved in these markets, there is a risk of wasting resources allocated to these operations.

Increasing the availability of international financing and the design of mechanisms to promote conservation should be central topics on the regional agenda

On biodiversity, international governance has progressed less than on the climate field. The main coordination body, the Convention on Biological Diversity (CBD) of 1992, has worked on setting global conservation targets but has had limited capacity to mobilize funding. The issue of economic resources is essential because part of the biodiversity loss problem stems from a lack of incentives. Biodiverse territories do not receive compensation for the ecosystem services they provide. This lack of incentives is particularly pressing in many countries in the region, which are significant reservoirs of biodiversity and whose ecosystems make essential contributions to global climate regulation. However, they often face socioeconomic pressures to exploit natural resources and spaces and have limited state capacities to counteract those pressures (as discussed in Chapter 3). Traditionally, this point has created tension between industrialized and developing countries in international forums. This highlights the importance of developing institutional frameworks to coordinate contributions and resource allocations for biodiversity, aiming to enhance trust among the parties.

Evolution of cooperation

The history of international cooperation on biodiversity is longer than on climate change. Some significant precedents include the 1971 Ramsar Convention (for wetland conservation), the Convention on International Trade in Endangered Species of Wild Fauna and Flora of 1973, and the Bonn Convention of 1979 (on migratory species). These agreements primarily focused on the preservation of specific ecosystems or species. Recognition of climate change and the need for international action only emerged in the late 1980s. An important milestone was the establishment of the Intergovernmental Panel on Climate Change (IPCC) in 1988.

The United Nations Conference on Environment and Development,[2] held in Rio de Janeiro in 1992, marked the beginning of a more comprehensive approach to international cooperation in environmental matters. It was during this conference that both the Convention on Biological Diversity (CBD) and the United Nations Framework Convention on Climate Change (UNFCCC) were born. These agreements have now achieved almost universal adherence (see Figure 4.1)[3] and have become the essential institutions for international governance in their respective areas of action.

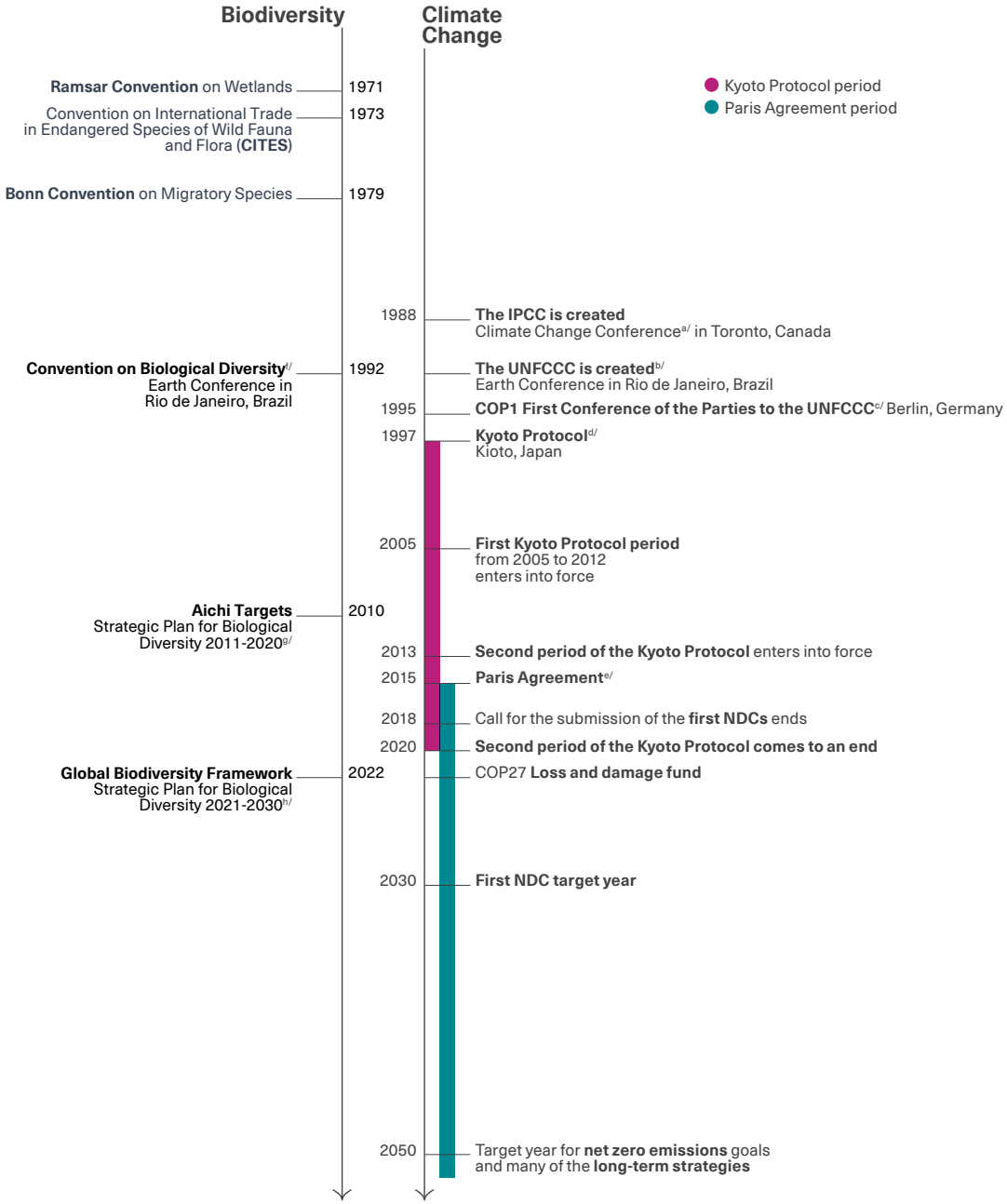
The relationship between biodiversity loss and climate change as natural phenomena is clear, as discussed in previous chapters of this report. In fact, the scientific and technical bodies that support the international conventions—the IPCC for climate change and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)—have started collaborating in recent years (Pörtner et al., 2021). Additionally, both issues present similar governance challenges. Despite this, international cooperation has addressed these causes through separate channels. Climate change has received more attention and resources in recent decades and has developed comparatively more established and capable mechanisms of cooperation and negotiation. There are at least two reasons behind this asymmetry. The first is that the phenomenon of global warming has triggered a greater sense of urgency or threat in global public opinion compared to biodiversity loss. The second reason is that climate change is fundamentally a more manageable problem, that can be captured in a single variable (the concentration of greenhouse gases in the atmosphere) and has relatively well-understood causes (GHG emissions from human activities) and effects (warming). In contrast, biodiversity is a more multidimensional phenomenon, where even defining the variables that would allow for an accurate assessment of conservation status or ecosystem services provided is challenging.

Since the signing of the CBD, there have been few notable events in biodiversity cooperation. Many efforts by the parties have focused on setting global conservation targets. The Aichi Targets for the period 2010-2020 were adopted during the tenth Conference of the Parties (COP) in 2010, and the Global Biodiversity Framework with goals for the decade 2020-2030 was signed during the fifteenth COP in 2022. However, this has not been accompanied by mechanisms to incentivize conservation or compensate jurisdictions based on the ecosystem services they provide. Furthermore, funding has been scarce, and national plans have not been aligned with global targets (CBD Secretariat, 2020a).

2 Also known as the Earth Summit.

3 The most notable absence from the CBD is that of the United States. The United States is a party to the UNFCCC.

Figure 4.1
Timeline of major milestones and cooperation agreements on climate change and biodiversity



Note: The figure presents the main events in the agenda of international agreements on climate change and biodiversity between 1970 and 2022, as well as some milestones scheduled until 2100. The appendix to this chapter, which is available online, provides the references and a brief description of the events included in the timelines.

Source: Prepared by the authors based on Jackson (2007) UNFCCC Secretariat (2012, 2020, 2022b, 2022c, 2022d) and CBD Secretariat (2020b, 2022b, 2022c, 2022d).

In the field of climate change, there has been more activity since the Rio Convention in 1992, although it is also a story marked with fluctuations. The UNFCCC recognized the principle of CBDR, meaning that all states have a role in achieving climate objectives, but industrialized countries have greater responsibilities and capacities. In line with this, the document established a classification of countries into major blocks: Annex I included industrialized countries of the Organisation for Economic Cooperation and Development (OECD), and certain transitioning economies such as Russia, the Baltic States, and some countries in Central and Eastern Europe; the second block (non-Annex I countries) primarily consisted of developing countries, including those in Latin America and the Caribbean. While there was general consensus on the principle of CBDR, there was no definition of what this entailed in practical terms. The convention eventually included some qualitative commitments but did not establish concrete quantitative targets (UNFCCC Secretariat, 2020).

International cooperation has addressed the issues of climate change and biodiversity through independent channels

Negotiations for the Kyoto Protocol began shortly after the UNFCCC came into effect. In this new agreement, a global target was set to reduce GHG emissions by 5% below 1990 levels by 2012, along with specific targets for some Annex I jurisdictions (e.g., the EU committed to reduce its emissions by 8%, and Russia was required to maintain its emissions at the same level). Non-Annex I countries were not bound by quantitative targets. The Kyoto Protocol also introduced the so-called flexible mechanisms, which allowed wealthy countries to contribute to their goals by investing in mitigation projects in developing countries or purchasing emission credits through an international market. In terms of achieving objectives, the Kyoto Protocol was a partial failure. On the one hand, several countries fulfilled their commitments, and the global target was achieved. Furthermore, there is evidence that, on average, signatories of the agreement mitigated more than non-signatories. On the other hand, the targets set by countries were generally modest, and the achievement of objectives was largely influenced by the economic collapse of former Soviet Union countries, while some major emitters did not participate fully or at all[4] (de Silva and Tenreyro, 2021).

The first decade of the 21st century saw few advancements in climate matters, while the geography of global emissions shifted (largely due to China's growth), and tensions among the parties to the UNFCCC intensified. In 2015, international cooperation was revitalized with the signing of the Paris Agreement. The leadership of China and the United States, the two largest emitters on the planet (responsible for 40% of annual GHG emissions at the time), was instrumental in reaching this agreement. One of its strengths is that it has secured mitigation commitments from the vast majority of countries (over 190 to date), which represent 98% of global emissions.

The transition from the Kyoto Protocol to the Paris Agreement marked a shift in governance from a top-down approach, which established negotiated targets for countries, to a bottom-up model, where countries propose their own commitments with autonomy and substantial flexibility. This change of approach facilitated the broad adherence that the Paris framework achieved, but also is a reflection of the inability to reach agreements on what is the fair and appropriate way to distribute climate responsibilities. A more detailed discussion of the history of international agreements can be found in Stevenson (2023).

4 The United States never ratified the agreement and Canada left it in 2011.

Current status: National commitments under the Paris Agreement

Under the Paris Agreement, countries set their commitments through Nationally Determined Contributions (NDCs), which they must update every five years, with the goal of increasing their ambitions in each successive round. NDCs should establish national mitigation and adaptation targets and ideally provide information on the financial strategy for implementation, including international cooperation needs. Mitigation targets often receive particular attention as they are central to the primary objective of the Paris Agreement: "Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels" (Conference of the Parties to the UNFCCC, 2016). Countries are only obliged to report on the progress of their commitments, without any formal mechanisms for sanctioning in case of non-compliance.

Countries have flexibility in setting the benchmark against which they define their mitigation targets. Some set targets relative to a historical emissions level (such as the EU). Others also use a historical level of emissions as a baseline but express the target in terms of emission intensity relative to gross domestic product (GDP), i.e., the amount of GHG emissions per dollar of GDP. Examples of this approach are China and India. Other common modalities include using a future (hypothetical) emissions scenario without mitigation efforts as the baseline (business as usual, "BAU") or presenting an absolute emission target without explicit reference to a reference value. These last two options are the most common alternatives in Latin America and the Caribbean. Lastly, some NDCs do not include an aggregate national emissions target and instead present only sectoral objectives or outline specific lines of action.

Adaptation differs from mitigation in an important dimension: its benefits are primarily local. In other words, adaptation projects and policies address issues within countries and generally do not have externalities on other countries. Therefore, the provision of adaptation does not face the governance challenge that mitigation does. Despite this, national adaptation targets are an important component of NDCs because the need for adaptation is a consequence of the externalities generated by past emissions. Additionally, adaptation goals are valuable for building more resilient territories and societies. If countries fail to adapt, the effects of climate change on them can then lead to consequences with international repercussions (for example, failures in food production or displacement of populations).

National commitments and global targets

Table 4.1 presents a comparison of emission targets for 2030 against the emission levels of 2015 (the year the Paris Agreement was adopted), aggregated at the regional level. The emission targets for Latin America and the Caribbean aim for a collective reduction of approximately 10%. Globally, the targets outlined in the NDCs indicate a small increase in emissions of 0.5% compared to the 2015 level.[5]

5 These calculations are susceptible to methodological considerations, especially to the data used for the level of emissions in the base year (2015), as there are differences between sources. In addition, for China and India, which set their targets in terms of GHG levels relative to GDP, economic growth projections are also important. The methodology followed for the calculations is detailed in the note to Table 4.1 and the appendix of this chapter, which is available online.

Table 4.1
Ambition of NDC mitigation targets relative to 2015 emissions by region

Region	Number of countries	Target GHG emissions in 2030 (in $MtCO_2e$)	GHG emissions in 2015 (in $MtCO_2e$)[a/]	GHG difference between 2030 and 2015 (in $MtCO_2e$)	GHG difference between 2015 and 2030 (%)
Africa	37	3,805	2,861	944	33.0
North America	2	3,766	6,506	-2.741	-42.1
Latin America and the Caribbean	16	2,947	3,276	-329	-10.0
Asia (excluding China and India)	19	6,081	6,013	67	1.1
China	1	12,804	11,109	1.695	15.3
India	1	3,910	3,003	907	30.2
Oceania	6	390	636	-246	-38.7
European Union	27	2,085	3,128	-1.043	-33.4
Rest of Europe	19	3,927	2,985	942	31.6
Total	128	39,715	39,518	197	0.5

Note: The table presents the NDC target of GHG emissions for 2030 and compares them with the GHG emissions in 2015 by region. Target emissions for 2030 were estimated by applying each country's unconditional mitigation target to the baseline emissions level stated in their respective NDCs. The appendix of this chapter, which is available online, provides detailed information on the implemented methodology and the countries grouped in each region. a/ For countries that announce a global target without specifying which sectors are included, it is assumed that the target includes all sectors. In these cases, 2015 GHG emissions also include all sectors. If countries clarify that the target does not include LULUCF, 2015 emissions exclude that sector.

Source: Authors based on the UNFCCC Secretariat's registry of NDCs (2022a) and the Climate Watch (2022) historical series of GHG emissions by country based on FAO Statistics Division (2022g) and OECD (2022a).

One disadvantage of the governance model of the Paris Agreement is the lack of a centralized vision of the problem. This has two direct consequences. First, national commitments are not designed to "add up" or achieve global goals. Second, there is no centralized instance where the fair contribution of each country is agreed upon, taking into account their history and capabilities.

Considering this, a natural question arises as to whether the NDCs proposed so far are ambitious enough to achieve the Paris Agreement targets. Existing estimates suggest that they are not: the probability of keeping global warming at or below 2°C, if the current NDCs are met, is moderate to low, and the likelihood of reaching 1.5°C is close to zero . The good news is that these projections have been improving with successive updates of the NDCs, as the ambition of countries' proposed contributions has increased markedly (den Elzen et al., 2022; Ou et al., 2021). In any case, it is important to note that these are exercises based solely on announced targets.

Analyzing the actual progress that has been made toward these goals is more challenging. The first global stocktake of the Paris Agreement is currently underway, a process that will conclude at the COP28 in 2023. Its objective is to assess the implementation and progress achieved to date in terms of mitigation and adaptation. This process will provide a comprehensive overview of the situation. For now, studies that have looked at this issue indicate that implementation has fallen short of the targets (IPCC, 2021; Kuramochi et al., 2021; NewClimate Institute et al., 2021). For instance, the Climate Action Tracker (CAT), a scientific collaboration project between Climate Analytics and NewClimate Institute, analyzes countries' policies and actions to estimate a likely emissions trajectory until 2030. It finds that this trajectory is above what would result from full implementation of the NDCs and significantly exceeds what would be compatible with the goal of limiting global warming to 1.5°C (see Graph 4.1).

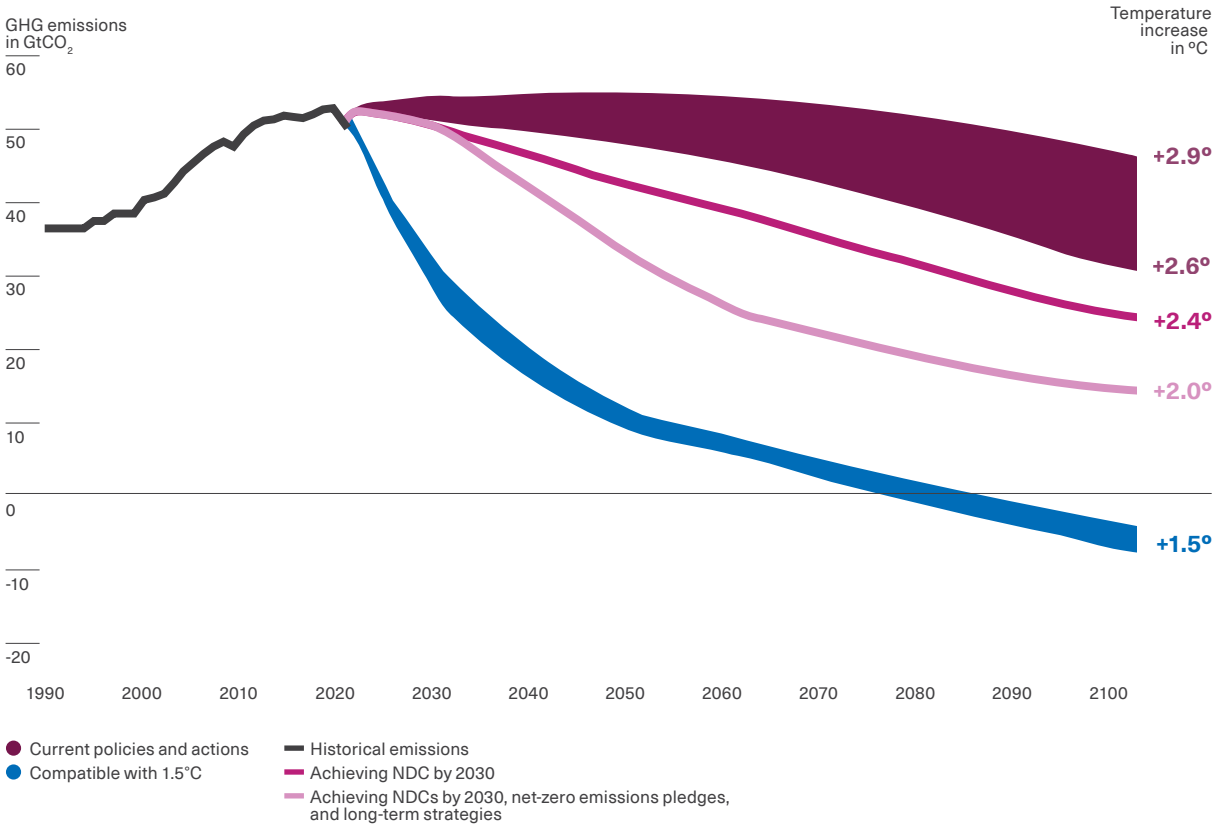
On the other hand, there is the issue of climate justice and the question of how much each country should contribute to mitigation efforts. This is impossible to answer definitively as there is no universally accepted criterion for fairness. Additionally, under the Paris Agreement, there is no explicit discussion on this topic as each country autonomously defines its own targets. However, a positive correlation is observed between the income level of countries and the ambition of their mitigation targets (reflected at a regional level in the values of Table 4.1). This correlation is consistent with the CBDR principle, but it is not sufficient to draw conclusions about the fairness of these efforts.

Existing estimates suggest that the NDCs proposed to date are not ambitious enough to achieve the Paris Agreement targets

Nevertheless, the discussion on climate justice is relevant and requires some context. A large part of historical emissions is the responsibility of a few countries. It is intuitive to think that it would be fair to allow the rest of the countries to emit until some measure of per capita cumulative emissions is roughly equalized. However, this would imply giving up on global warming targets and reaching catastrophic levels of GHG concentration. For example, the United States has generated around 500 $GtCO_2$, which represents more than one-fifth of cumulative global emissions (Friedlingstein, O'Sullivan et al., 2022). For the rest of the world to reach a similar level of per capita cumulative emissions, an additional 10,000 $GtCO_2$ would need to be added to the atmosphere. In contrast, the remaining CO_2 budget, i.e., the amount that can still be emitted to limit warming to 2°C, is just over 1230 $GtCO_2$.[6]

6 Estimates regarding the magnitude of the CO_2 budget have a degree of uncertainty, as explained in Chapter 1 of the report. The numbers reported here are from Friedlingstein, O'Sullivan et al. (2022), who update estimates from the IPCC Sixth Assessment Report (Masson-Delmotte et al., 2021).

Graph 4.1
GHG emissions trajectory and projections for 2100 under various scenarios

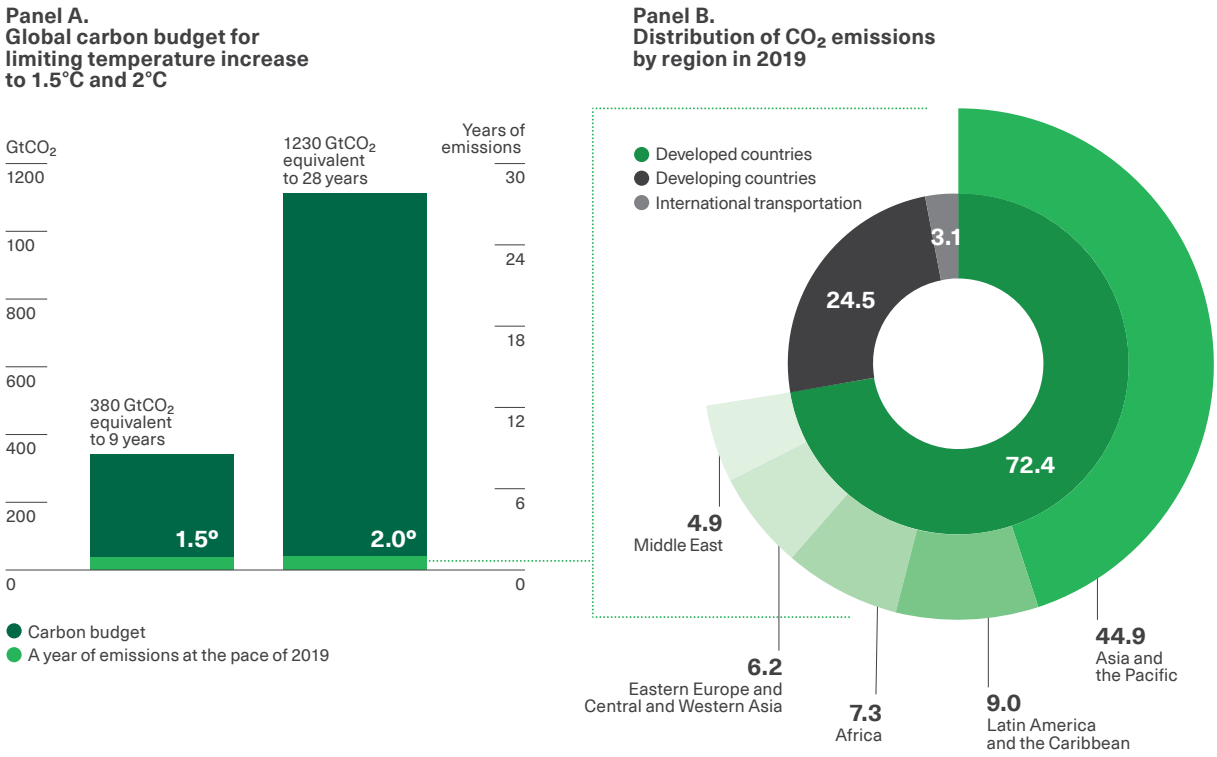


Note: The graph presents the trajectory of global GHG emissions from 1990 to 2020 in $GtCO_2eq$ (gigatons of carbon dioxide equivalent) and projections from 2021 to 2100 under different scenarios of compliance with the Paris Agreement. On the right side, the figure shows the expected temperature increase compared to the average temperature of the pre-industrial era, under each scenario. The historical emissions (black line) include the LULUCF sector. The thickness of the areas in the projections represents uncertainty regarding the emission levels.

Source: Climate Action Tracker based on Climate Analytics and NewClimate Institute (2022b).

This is relevant to the issue of climate justice because it highlights some tensions between what would be fair and what is necessary. Graph 4.2 shows that the available CO_2 budget (for 2°C of warming) is equivalent to a little over 28 years of emissions (at the 2019 rate), and the budget for 1.5°C is approximately nine years of emissions. Along the same lines, IPCC reports indicate that to maintain the goal of limiting warming to 1.5°C, annual emissions must drop by 43% by 2030 compared to the 2019 level and then continue to decrease until achieving carbon neutrality in the coming decades (IPCC Press Office, 2022). On the other hand, annual emissions from high-income countries currently account for less than 25% of the global total, as shown in Panel B of Graph 4.2. Therefore, even if developed countries were to immediately reduce their GHG emissions to zero (a completely unrealistic scenario), it would not be sufficient. The rest of the world would also need to cut its emissions in the short term and stay on a path toward decarbonization.

Graph 4.2
CO_2 budget and distribution of annual emissions by region



Note: The bars in Panel A represent the carbon budget associated with a 50% probability of limiting temperature increase to 1.5°C and a 67% probability of limiting the increase to 2°C compared to the pre-industrial era. The budget is expressed in $GtCO_2$ on the left axis and, on the right axis, in years of CO_2 emissions equivalent based on the global emission levels in 2019. Panel B shows the distribution of CO_2 emissions by regions in the same year. Panel B considers 193 countries and territories with information on carbon emissions in 2019. With the exception of countries in the LAC region, which include countries belonging to the Community of Latin American and Caribbean States (CELAC), the definition of regions follows the classification by the IPCC in the Sixth Assessment Report of Working Group III, Chapter 2 (Dhakal et al., 2022).

Source: Authors based on data from Global Carbon Budget (Friedlingstein, O'Sullivan et al., 2022; Global Carbon Project, 2022; Masson-Delmotte et al., 2021) and from Minx et al. (2022).

To achieve the goals of the Paris Agreement, mitigation efforts must be global. While there is some leeway to distribute these efforts over the short term, granting more time to certain economies to continue emitting, this margin is limited. This clashes with the reality faced by many low- and middle-income countries, including those in Latin America and the Caribbean, which have historically emitted relatively little, are experiencing the consequences of climate change, and find mitigation efforts to be an additional cost in their development. Therefore, for many countries in the region, responding to this situation is particularly challenging.

In this context, climate financing becomes a central issue to align clashing interests. If developing countries are required to undertake domestic mitigation efforts that exceed what would be fair considering their capacities and historical emissions, resources from industrialized nations should be used to finance these countries and compensate for the costs caused by climate change. The section on "International climate financing" will further discuss this issue.

Box 4.1
Calculations on the fair share of emissions

The Climate Action Tracker (CAT) is an initiative that compiles numerous calculations from specialized literature on how to distribute mitigation efforts among countries based on fairness criteria. It compares these numbers with the targets proposed by each country in their NDCs and assesses whether countries are doing their "fair share" to achieve the global goal of limiting warming to 1.5°C, classifying them into five categories ranging from "Paris Agreement compatible" to "critically insufficient."

According to CAT's analysis, out of the 38 jurisdictions studied, only seven have targets that reflect a fair effort and are compatible with the goal of limiting warming to 1.5°C (Climate Analytics and NewClimate Institute, 2022a).

Of the seven countries in the region included in CAT's analysis, Costa Rica is the only one that receives a favorable rating (Paris Agreement compatible). Globally, countries receiving a favorable rating generally have lower incomes and fewer historical emissions than countries in Latin America and the Caribbean. Some examples include Ethiopia, Nigeria, and Morocco. Although the NDCs of these countries do not present particularly ambitious targets, the criteria of fair share allow them to increase their emission levels in the short term.

As mentioned earlier, there is some room in the short term to distribute mitigation efforts. On this point, there is a specialized literature that uses different fairness criteria to perform numerical exercises that estimate how to distribute mitigation efforts among countries (or regions). Box 4.1 briefly describes some of the conclusions from these exercises.

The long term: Zero emission targets

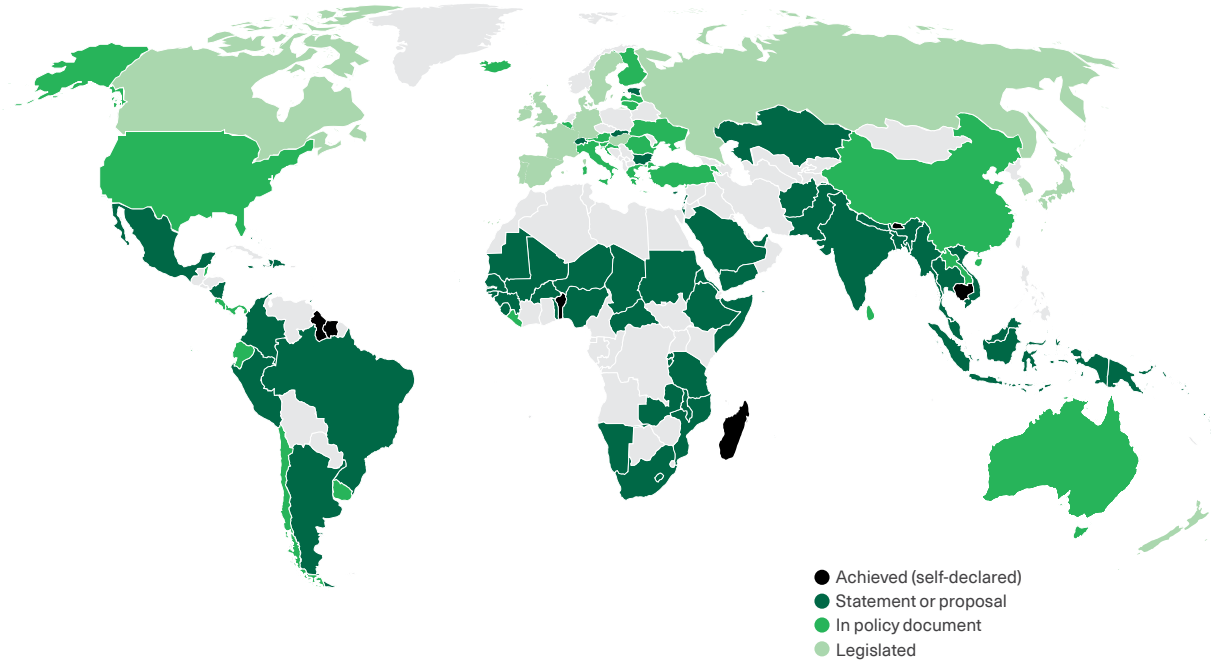
Decarbonization is a long-term goal for many countries, as reflected in the increasing number of announcements of carbon neutrality since 2020. However, these announcements generally lack clear plans.

In recent years, the number of jurisdictions and entities (countries, regions, cities, companies) making pledges to achieve net-zero emissions at some point in the future, typically by 2050, has significantly grown. Prior to the signing of the Paris Agreement in 2015, only three countries had made such pledges (also known as carbon neutrality pledges). In 2020, some of the world's largest emitters, including the EU and China, proclaimed zero-emission targets, leading to a heightened trend of adopting similar objectives. As shown in Graph 4.3, as of July 2022, over 130 countries, 230 cities, and 700 companies had made announcements of this nature, including 23 countries and 22 cities in Latin America and the Caribbean (Lang et al., 2022).

●●

Pledges to achieve carbon neutrality by 2050 have increased in recent years, but they generally lack clear plans

Graph 4.3
Countries with net zero targets by type of target announcement



Note: The map presents countries that have declared a target of net zero emissions, based on the type of announcement or implemented policy. Net zero targets encompass announcements of carbon neutrality, zero carbon emissions, net zero GHG emissions, or climate neutrality. Countries classified under the "achieved" (self-declared) category are those reporting negative GHG emissions in their inventories. The "declaration" or "proposal" category includes countries that have declared a net zero target through press releases, verbal statements, or joining an international net zero initiative, but have not formalized the commitment. The "policy documents" category corresponds to countries that have formalized their target in a policy document, including those stated in NDCs or Long-Term Strategies submitted to the UNFCCC Secretariat. The "legislated" category corresponds to countries that have supported their target with legislation or administrative orders. Information updated as of July 6, 2022.

Source: Authors based on Net Zero Tracker data (Lang et al., 2022).

However, many of these announcements are vague and not supported by a specific plan. This gap between targets and specific measures is evident in climate projections. Recent calculations estimate that if the announced national pledges of carbon neutrality were fully realized, the global temperature increase could be limited to the range of 2°C-2.4°C by 2100, near the target set in the Paris Agreement. However, the policies and actions effectively implemented thus far are not consistent with these pledges (Höhne et al., 2021).

Neutrality is an important goal to achieve global climate objectives, but plans must be presented clearly to gain credibility. There are at least two specific aspects that need to be accurately addressed when announcing such goals. The first is how this long-term goal aligns with the short-term initiatives and objectives of each country, typically reflected in their NDCs. The second aspect is the premises from which neutrality projections are made, particularly the weight given to domestic emission reductions versus alternative channels, such as interjurisdictional offset mechanisms or the implementation of negative emission technologies (carbon capture). The risk is that projected neutrality heavily relies on these alternative channels, rather than focusing on domestic efforts. International offset mechanisms are a legitimate complementary tool, but they cannot be the primary

focus of national strategies; emissions need to be reduced somewhere. Moreover, there is still significant uncertainty regarding the scale that negative emission technologies can achieve in the coming decades.[7]

The region's NDCs

Countries in Latin America and the Caribbean have met their obligations to submit their contributions in a timely manner. Almost all states in the region (30 out of 33) have a current NDC with the Secretariat of the UNFCCC and have demonstrated moderate compliance with the formal requirements of information and transparency that they should provide.[8]

Regarding the content of the NDCs, there are some aspects that need improvement, especially regarding the articulation and concreteness of the proposed objectives. Many of the shortcomings observed in the NDCs are associated with the fact that countries do not sufficiently incorporate their specificities into defining priorities and lines of action on climate issues. Some of these shortcomings are discussed next.

Adaptation targets often lack precision and do not facilitate effective monitoring of their progress

First, although many countries' climate policies emphasize the importance of adaptation, the submitted adaptation targets often lack precision and are drafted in a way that does not allow for measurement or monitoring of their progress. In part this is because adaptation is more difficult to quantify in specific metrics compared to mitigation. However, and more importantly, it is also a consequence of insufficient knowledge about how to measure progress and set goals for adaptation.

Some of the proposed measures reflect countries' efforts to better understand the problem. For example, some include conducting studies and developing methodologies to estimate the effects of climate change on their territories.[9] This is positive as policy should be informed by rigorous knowledge that helps identify needs. However, it is important to expedite these tasks to move towards defining and implementing actions. Most NDCs also include sectoral adaptation goals (agriculture and livestock, water resources management, and sanitation being the most mentioned, as shown in Graph 4.4), but in many cases, they are not very precise.[10] The design of climate monitoring and early warning systems is mentioned in the majority of the region's NDCs (25 out of 33). The incorporation of resilience guidelines into territorial development plans and sectoral regulations is also regularly mentioned.[11] On the other hand, the importance of infrastructure and technology in adaptation is recognized, but there is little specificity regarding investment projects or programs in these dimensions.

7 Beyond afforestation and reforestation, technologies for negative emission include bioenergy with carbon capture and storage (BECCS), direct air capture and carbon capture and storage (DACCS), ocean fertilization, and enhanced weathering stand out. There is a lot of uncertainty regarding the practical possibilities of these tools.

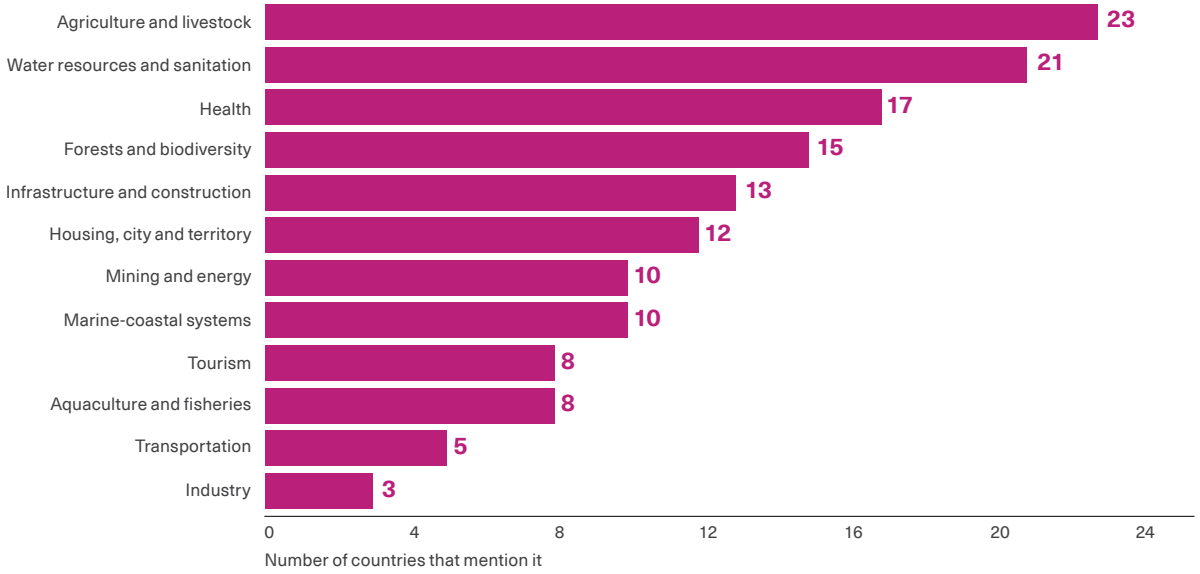
8 There are some deficiencies in the information provided by the NDCs, mainly associated with some countries not adopting a reference baseline year, not defining a global GHG reduction target, or not specifying a clear timeframe to implement the measures to reach their target.

9 For example, Ecuador's NDC proposes the generation of knowledge and scientific studies on the effects of climate change on health (Government of Ecuador, 2019); Uruguay´s NDC speaks of understanding the country's situation in relation to migratory movements and human displacement due to conditions linked to climate change and its derived chains of impacts (Government of Uruguay, 2022).

10 For example, Paraguay's NDC proposes increasing the capacity to adapt to the impacts generated by climate change through technified production and good agricultural practices (Government of Paraguay, 2021).

11 For example, Colombia's NDC foresees including climate change considerations in planning instruments of the agricultural sector planning instruments and the implementation of adaptation actions (Government of Colombia, 2020); Costa Rica's NDC states that the agricultural sector should have its own sectoral plan for climate change adaptation in implementation by 2024 (Government of Costa Rica, 2020).

Graph 4.4
Sectors included in the adaptation targets of the NDCs



Note: The graph shows the number of LAC countries that explicitly mention the sector in their adaptation goals and actions. LAC countries are the 33 countries belonging to CELAC.

Source: Authors based on the active versions of the NDCs of the countries as of January or February 2023.

Apart from the NDCs, the UNFCCC includes a process for countries to formulate national adaptation plans (NAP) that identify medium- and long-term needs for enhanced resilience. Box 4.2 summarizes progress in the formulation of such plans.

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Although the countries present a list of mitigation measures, they do not submit estimates of how they will contribute to the national target

Second, countries acknowledge that they must play a role in mitigation, and in almost all cases, they propose specific targets regarding their emission levels (with Bolivia being the main exception), regardless of whether these targets are sufficiently ambitious or not (see the previous subsection).

However, while countries outline a list of mitigation actions or measures, they do not submit estimates of how these actions will contribute to the national target. In other words, there is often a certain disconnect between the general and the specific.

Some of the countries with high emissions in the agricultural sector emphasize the role of this sector in their mitigation strategy, particularly Paraguay and Uruguay. Regionally, the most frequently mentioned areas of action in the NDCs regarding mitigation are electricity generation, energy efficiency, and electromobility, followed by the management of industrial processes and waste (see Graph 4.5). However, there is generally no clear prioritization of policy informed by the specificities of each country.

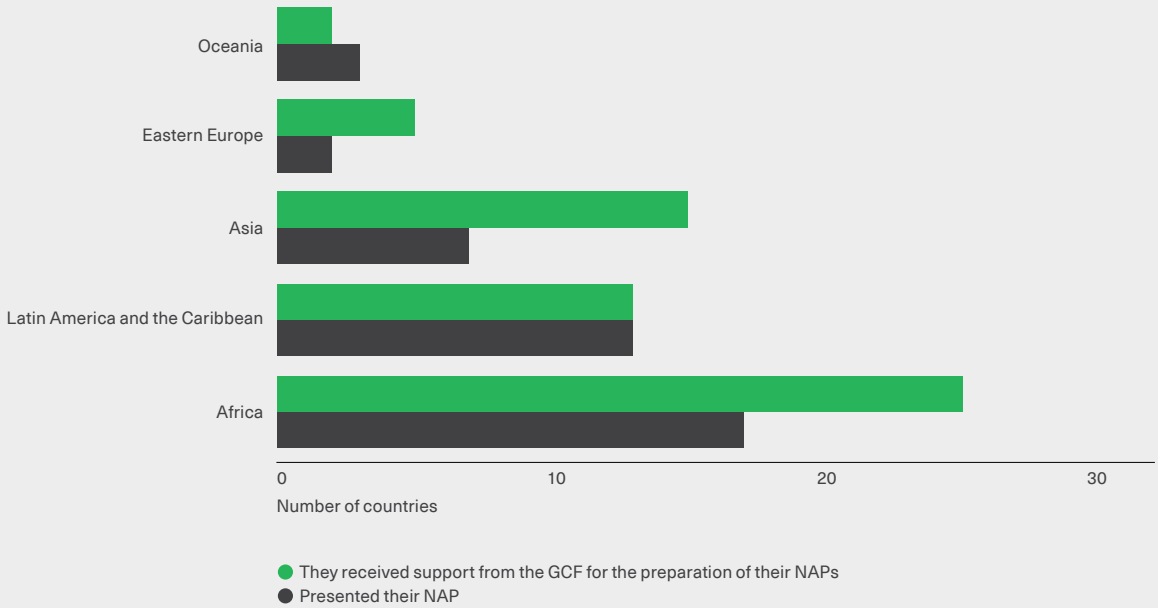
Box 4.2
National Adaptation Plans

During the COP16 in 2010, the Cancun Adaptation Framework was established, inviting least developed countries (LDCs), Small Island Developing States (SIDS), and other developing countries to formulate and implement National Adaptation Plans for climate change (NAP). The objective was to provide a framework within the UNFCCC to identify and address the consequences of climate change in the most vulnerable countries, integrating national adaptation strategies and programs into each country's development policies. As a result, the NAPs were established, and the Green Climate Fund (GCF) was assigned to finance their formulation and implementation (LDC Expert Group, 2023a).

In the following years, the structure of the NAPs was developed through the work of the Least Developed Countries Expert Group under the UNFCCC. The promotion of adaptation policies was also expanded in other institutions and agreements under the umbrella of this convention, including the establishment of Adaptation Communications through Article 7 of the Paris Agreement. Under this article, parties committed to periodically submit and update an adaptation communication, including information on their priorities, implementation needs, and action plans (Conference of the Parties to the UNFCCC, 2016).

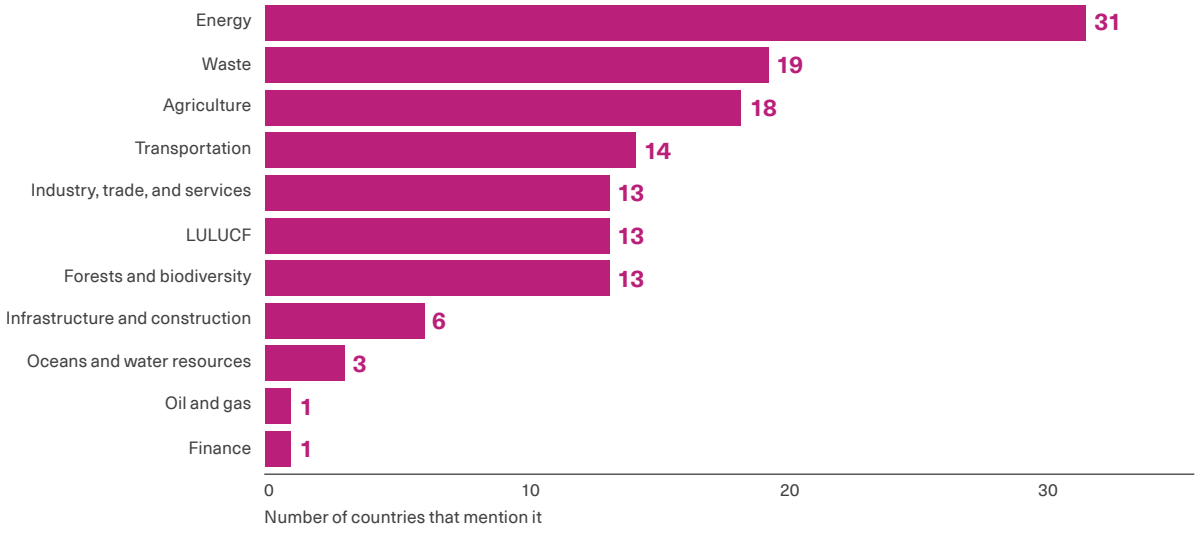
Despite the institutional momentum given to this agenda over the past decade, numerous countries have not completed national adaptation plans or communications. As of February 2023, only 42 developing countries had submitted their NAPs to the UNFCCC, with 13 of them from Latin America and the Caribbean (LDC Expert Group, 2023b). Furthermore, the latest progress report warns that as of October 2021, only 13 countries worldwide had taken actions within their NAPs to reduce vulnerability and facilitate the integration of adaptation into national development policies (LDC Expert Group, 2022).

Graph 1
Actions of developing countries in formulating their NAPs



Source: Authors based on PMA Expert Group (2022, 2023b).

Graph 4.5
Sectors included in mitigation targets of the NDCs



Note: The graph shows the number of LAC countries that explicitly mention the sector in their mitigation goals and actions. LAC countries are the 33 countries belonging to CELAC.

Source: Authors based on the versions of the NDCs of the countries in force as of January or February 2023.

Third, while several NDCs emphasize the importance of support from developed countries to implement their own mitigation contributions,[12] there is insufficient clarity regarding how that support conditions the achievement of the goals. One approach to link the receipt of international resources with domestic actions is by introducing conditional targets. Indeed, the majority of the analyzed countries propose conditional targets, but the region's major emitters do not. Furthermore, it is observed that a widespread shortcoming of conditional targets is the lack of clear definition of the condition for their fulfillment,[13] which undermines their credibility. Ideally, they should clearly specify how many and what type of resources are required to meet the proposed targets.

Fourth, NDCs provide very little information on climate action financing. While some countries provide aggregate estimates of the financing required to implement their NDCs, most do not. In almost no case are these needs disaggregated, although some countries have compiled lists of projects with partially estimated costs (e.g., Venezuela). Panama provides estimates of investment required for the energy transition agenda. In the case of Chile, while the NDC does not contain information in this regard, it does refer to the country's Financial Strategy for Climate Change, published in 2019.

12 For example, Uruguay asserts that the availability of means of implementation provided by developed countries is a requirement for climate action to occur within a framework of fair transition and climate justice (Government of Uruguay, 2022).

13 For example, Mexico's NDC states that the country can, under certain conditions, increase its 2030 target if international financing, innovation, and technology transfer are scaled up, and if other countries, particularly major emitters, make commensurate efforts toward the more ambitious goals of the Paris Agreement (Government of Mexico, 2022). Venezuela's NDC notes that the extent to which its target is achieved depends on the fulfillment of commitments by developed countries regarding the provision of financing, technology transfer, and capacity-building (Government of the Bolivarian Republic of Venezuela, 2021).

The NDCs provide very little information on climate finance

Lastly, and related to the previous two points, countries have not yet pinpointed the actions for which they require financing or the transfer of resources and capacities from developed countries. This is explicitly stated in some NDCs, such as those of Costa Rica and Colombia.[14] A positive aspect is that countries acknowledge the importance of developing methodologies to identify these needs, a task that should be prioritized in the short term to better link mitigation and adaptation goals with the demand for resources.

International climate finance

As mentioned in the previous section, there is a tension between the need for developing countries to contribute to global mitigation efforts and the demands for fairness in the distribution of responsibilities. Climate financing could be a channel to resolve this tension. While it is crucial that all countries work toward decarbonization, some countries must bear a greater share of the costs of this transition. The idea that climate finance is a way to meet the demands for equity and justice of countries with lower historical responsibilities for climate change is not always explicitly articulated, but it is gaining presence in the NDCs of some countries in the region.

This section raises five key points: 1) the amount of resources mobilized to date are low compared to the existing needs; 2) there is a mismatch between the investment requirements for adaptation in developing countries and the incentives for industrialized countries to finance mitigation; 3) channeling resources through multilateral climate funds has some advantages that justify strengthening the role of these institutions; 4) the criteria for reporting financing activities are unclear, which generates uncertainty and suspicion among countries; and 5) there are still many inaccuracies and uncertainties regarding the financing needs of countries, especially in terms of international financial support. These five arguments, in turn, highlight pending tasks in climate finance, which are presented below.

Increasing the flow of resources in climate finance

Obtaining precise information regarding the amounts dedicated to climate finance actions is challenging due to the multitude of actors involved and the absence of shared criteria for recording and reporting these actions. A report by the Climate Policy Initiative (CPI) provides an estimate of USD 632 billion annually by 2020, with a range of USD 23-35 billion for Latin America and the Caribbean (Naran et al., 2022; Schneider, 2023). These resources include multiple public and private, domestic and international sources. According to CPI, approximately half of the observed global financing comes from the public sector (national and multilateral development banks, national budgets,

14 Costa Rica is currently developing instruments that will facilitate the identification of more specific implementation and support needs (Government of Costa Rica, 2020). According to Colombia's NDC, the country has identified 132 needs related to financing, capacity building, and technology development and transfer, (..) despite not having a standardized methodology for their identification (..) further work will be necessary in these aspects (Government of Colombia, 2020).

etc.), and the other half from the private sector. Moreover, slightly over three-quarters of resources are domestic, with less than a quarter consisting of international flows.

International finance, particularly the channeling of resources from rich countries to developing countries, is of special relevance to this chapter. At the COP 15 in 2009, developed countries collectively committed to providing "new and additional" funds in the amount of USD 30 billion annually, during the years 2010-2012 and to mobilize USD 100 billion annually by 2020[15] (Conference of the Parties to the UNFCCC, 2010, p. 7). This amount was small compared to existing needs, which, according to some estimates, are an order of magnitude higher (see below), but it served at least as a minimum level of ambition. However, the mobilized resources fell short of what was announced.

Furthermore, although there was a widespread acknowledgment that the USD 100 billion target for 2020 was not met, there are divergences among countries and institutions in the estimates of how much was actually mobilized. According to a study by the OECD (2022a), the figures ranged from USD 52.4 billion in 2013 to USD 83.3 billion in 2020 (an average annual growth of approximately 7%). In contrast, a report published by Oxfam estimates the amounts at one-third of that range: between USD 21 billion and USD 25 billion in 2020 (Carty and Kowalzig, 2022). This calculation is much lower mainly because it applies the criterion that loans, especially non-concessional ones, should not be counted towards the climate finance goals in the same way as grants. The argument is that loans, particularly if they are at market rates, do not represent an effort on the part of financiers. This point is significant because over 70% of the public resources mobilized from rich to developing countries take the form of loans, and only a quarter consists of grants (OECD, 2022c).

To clarify some of the differences in criteria, it is important to recognize that within what is called climate finance, there are activities that have a redistributive component and others that do not. Grants, for example, involve redistribution toward the recipient country, but market-rate loans do not. While both types of activities play a role in financing, this difference is crucial. When rich countries made the pledge of USD 100 billion, they did not specify anything about the types of instruments, so, in a sense, it was not a goal linked to redistribution or compensation. Consequently, the criticism from non-rich countries extends beyond the fact that the target was not achieved; it is also about the fact that rich countries and major emitters have done little to compensate the rest of the world.

From the perspective of climate justice, developing countries have reasons to demand more resources in the form of grants and concessional loans. One problem, however, is that it is very difficult to be more specific about how much money and through which instruments these funds should be transferred between countries because, as already mentioned in this chapter, there is no central body that addresses these issues. The dialogue on climate financing could be facilitated if there were specific figures around which to negotiate. This point will be further addressed in the following subsections.

15 The latter commitment was extended to 2025 at the Paris Conference.

Addressing tensions between countries with respect to funding categories (adaptation, mitigation, and damages)

Currently, almost all climate finance is allocated to mitigation projects, with less than 10% dedicated to adaptation (Naran et al., 2022). This is associated with the predominance of credits and the financial profitability of projects. Unlike mitigation ones, adaptation projects often do not generate direct income streams that can be used to repay loans.[16] Consequently, the data shows a bias of credits toward mitigation and grants toward adaptation (there is also very little private financing for adaptation) (OECD, 2022c). The dominance of mitigation projects may also be partly due to the fact that countries seem to have less clarity regarding the specific investments needed for adaptation (see the section "Current situation: national commitments under the Paris Agreement").

Another concept for which developing countries have long demanded resource transfers from industrialized countries is that of loss and damage. The creation of a dedicated fund for this purpose was proposed in several forums and COPs, usually facing resistance from developed nations. The initiative was only accepted at COP27, held in 2022. However, many details remain undefined, including the list of countries that will have to contribute to the fund and the amounts involved.

The overall picture is that industrialized countries have been reluctant to provide climate financing, especially for causes other than mitigation. From their perspective, these countries want to maximize emissions reduction for every dollar spent on climate investments. This reflects a fundamental disconnect between countries that provide and receive climate resources. For the former, it is costly to allocate budget to investments (outside their territory) that do not generate mitigation benefits. For the latter, mitigation entails costs (not only through project investments but also by increasing the prices of the economy)[17] that are perceived as unfair, and they require compensation to incur them.

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There is a tension between the needs of developing countries to invest in adaptation and the incentives of industrialized countries to finance mitigation

Increasing the volume of mobilized resources is a complex task that requires resolving or at least alleviating this disconnect between provider and recipient countries. Keeping the categories of mitigation, adaptation, and loss compensation separate can be counterproductive in this regard: some want to finance mitigation, while others want to receive funds for adaptation and compensation. An alternative would be for developing countries to propose mitigation objectives in exchange for a defined amount of resources that not only cover the implementation of mitigation but also incorporate a compensation component (which the recipient country could use, among other things, for adaptation investments). This could be expressed through conditional targets in the NDCs, outlining mitigation commitments, (verifiable) actions to achieve them, and the required amounts in return.[18] Moving in this direction would mean transitioning from the current approach, where specific projects are financed (e.g., the construction of a set of renewable energy plants), to one where general plans are funded.

16 For example, early warning systems for climate risks, which many countries highlight as part of their adaptation projects, do not generate direct revenues. In contrast, wind or solar plants, which are typical mitigation projects, have a cash flow from the sale of electricity.

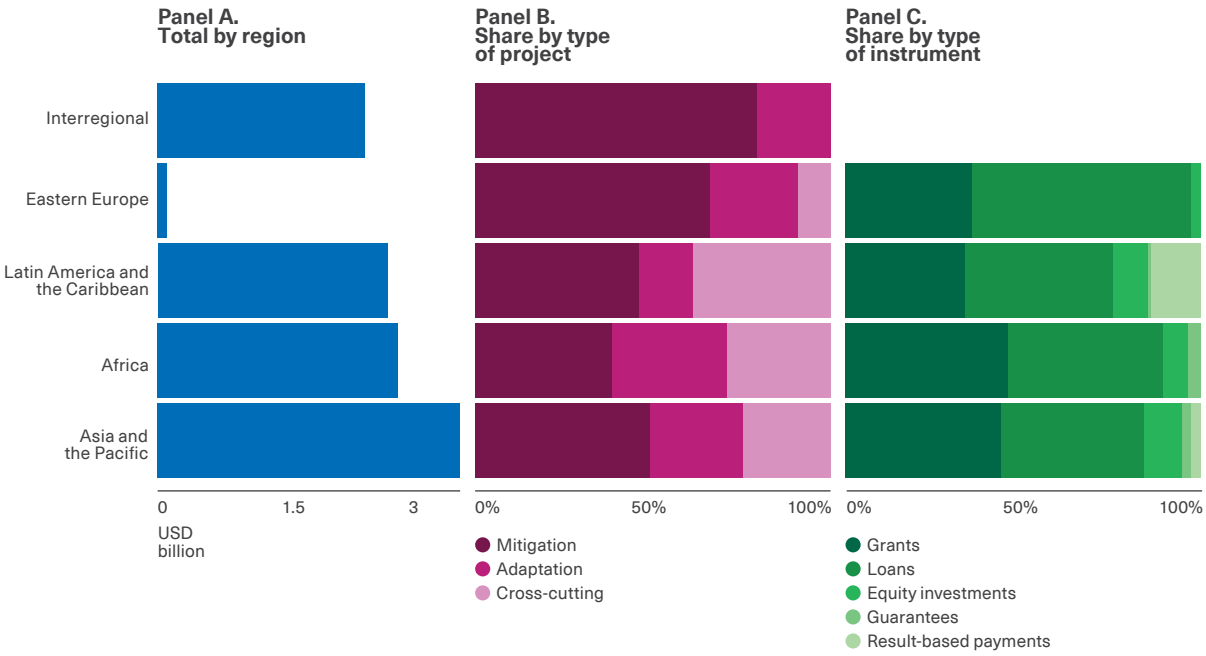
17 There are mitigation actions that do not have significant investment costs but are costly in terms of their effects on the economy in the short term; for example, a carbon tax.

18 Currently, several countries present conditional targets in their NDCs, but information on their commitments and conditions is often very incomplete and imprecise (see section "Current situation: national commitments under the Paris Agreement").

Strengthening the role of multilateral climate funds within the climate finance landscape

Centralizing and channeling contributions from industrialized countries through climate funds has several advantages. First, it increases the visibility of each country's contribution. When resources are primarily moved through bilateral channels, the responsibilities within the collective of industrialized countries can become diluted. Additionally, multilateral funds, along with national development cooperation agencies, offer a higher percentage of their financing through grants and preferential credits. This is a direct result of their mandates (OECD, 2022c). Developing countries should promote strengthening the role of these funds, considering that they currently represent a small portion of climate finance flows (around USD 4 billion annually). The Green Climate Fund (GCF), established in 2010, has become the largest of these funding sources. Since 2015, when it started allocating resources, it has provided over USD 10 billion for various types of projects (see Graph 4.6).

Graph 4.6
Cumulative financing granted by the GCF



Note: Panel A presents the total cumulative amounts of GCF funding by region between 2015 and February 2023, in billions of current dollars. Panel B shows the share (as a percentage) of funding, by region, and by project type. Project types are: climate change adaptation, GHG emissions mitigation, or a combination of both (labeled as "cross-cutting"). Panel C shows the share (as a percentage) of funding, by region, by type of financing instrument.

Source: Authors based on GCF data (2022).

Improving transparency in climate finance figures

There is a lack of clarity regarding the amounts involved in climate financing. This opacity is due to the absence of shared criteria on what should be considered as climate financing and how these activities should be reported. [19] Weikmans and Roberts (2019) outline some of the sources of confusion in this matter. To begin with, when reporting to the UNFCCC Secretariat on these issues, developed countries have broad discretion in defining whether a project is climate related. This opens the door to overestimation. Weikmans et al. (2017) assessed 5,200 projects reported to the OECD in 2012, totaling USD 2.7 billion in climate change adaptation financing, and found that only USD 1.2 billion seemed to genuinely be directed towards adaptation projects.

Associated with this, many countries use reporting methodologies that are not sufficiently granular, attributing the total value of a project to the climate financing category even when only some of its components are related to climate action. Another issue is that in some cases, countries do not sufficiently distinguish between committed funds and disbursed funds disbursed. In the case of funds invested through multilateral organizations (rather than bilateral projects), there is also complexity in estimating the portion of those funds that ultimately go towards climate projects.

There is not much clarity about the amount of resources involved in climate finance, due to the absence of shared criteria to report these activities

It is important to work on the continuous improvement of reporting methods on these matters. This is a valuable task because opacity regarding financing numbers undermines trust between parties and, therefore, acts as an obstacle to increasing resource flows.

Improving knowledge of financing needs

Estimating the cost of mitigation and adaptation is a notably complex task. Therefore, estimates are scarce, uncertain, and difficult to directly compare. With this caveat in mind, recent figures from the International Energy Agency (IEA) and the Climate Policy Initiative (CPI) estimate that global financial flows of at least USD 4 trillion per year are needed by 2030 (IEA, 2021; Naran et al., 2022).[20] These figures highlight the modesty of the annual USD 100 billion commitment made by industrialized countries in 2009.

Despite any difficulties, working on estimates of financing needs can be valuable for setting specific benchmarks in international negotiations. It would be particularly useful to have such estimates at the national level in countries where they are scarce. Countries should dedicate resources to making rigorous calculations of the costs of implementing national commitments and incorporate that information into the NDCs. This information is nonexistent or very partial in most cases. Some countries do report figures but interpreting and comparing them is difficult because there are

19 This discussion about what constitutes climate finance (and what does not) is different from the earlier discussion about how to account for different types of instruments in relation to financing commitments.

20 Other studies that provide insight into this include Fankhauser et al. (2016), which compile estimates from various institutions and place the investment needs for mitigation in developing countries in the range of USD 180 billion to USD 540 billion per year. Additionally, Songwe et al. (2022) estimate that USD 1 trillion in external financing would need to be mobilized annually by 2030 towards developing and emerging countries (excluding China).

differences in how they are presented or what they mean to capture. For example, some countries mention financing needs, while others refer to implementation costs of the NDCs (which are not necessarily the same), and some present costs of specific projects rather than global figures.

Table 4.2 provides a summary of the information stated in the NDCs. There is a lot of variation in the relative magnitude of these needs. As a share of GDP, they tend to be larger for smaller countries. In some cases, the figure is very low with respect to the size of the economy, which suggests that it may be an underestimate of the actual financing needs. In the case of Brazil (which does not appear in Table 4.2 because it did not report financing needs in the most recent update of its NDC), the Ministry of Environment made a preliminary estimation of the resources required to finance the implementation of mitigation actions in the national NDC, resulting in a range of USD 260-280 billion annually during the current decade.

Table 4.2
Financing needs stated in Latin American and Caribbean countries' most recent NDCs

Country	Amounts in billions of USD			Total as a percentage of GDP
	Mitigación	Adaptación	Total	
Antigua and Barbuda[a/]	n.d.	n.d.	1.70	112.8%
Bahamas[a/]	n.d.	n.d.	4.00	32.3%
Belize[a/]	1.24	0.15	1.39	60.3%
Colombia[b/]	n.d.	0.23	0.23	0.1%
Cuba[c/]	13.78	n.d.	13.78	14.4%
El Salvador[b/]	n.d.	0.08	0.08	0.3%
Grenada[a/]	1.05	n.d.	1.05	94.7%
Guyana[e/]	n.d.	1.6	1.60	34.1%
Haiti[a/]	4.06	17.98	22.04	146.7%
Mexico[d/]	85.00	n.d.	85.00	7.2%
Dominican Republic[d/]	8.92	8.63	17.55	21.9%
St. Kitts and Nevis[a/]	0.64	0.127	0.76	73.3%
St. Lucia[a/]	0.37	n.d.	0.37	18.7%
Suriname[a/]	n.d.	0.70	0.70	17.4%
Trinidad and Tobago[a/]	2.00	n.d.	2.00	8.2%
Venezuela[c/]	0.08	n.d.	0.08	0.0%
Total	117.14	29.50	152.33	6.8%

Note: The table presents the reported amounts in the NDCs of the Latin American and Caribbean (LAC) countries for the implementation of their objectives. The calculation and interpretation of the amounts vary among countries, as described below: a/ these countries report the implementation costs of their mitigation or adaptation goals; b/ the global amount is the sum of the amounts declared as "financial support needed" to implement actions related to their climate change adaptation goals; c/ the global amount is calculated based on the sum of the estimated costs to implement the mitigation policies, projects, or actions proposed in their NDCs; d/ amount of climate finance that needs to be mobilized implement the goals declared in the document; e/ total requirements to implement adaptation goals without specifying if the stated amounts correspond to costs. The rest of LAC countries that are not listed in the table do not declare quantified of financing needs for their targets. Brazil and Dominica had reported amounts in previous versions of their NDCs but not in the active ones. The average GDP between 2015 and 2019 (except for Venezuela, where 2014 data is used) is expressed in USD at current prices. The information on the table is updated as of December 31, 2022. The abbreviation "n.d." means no data was included in the corresponding NDC.

Source: Authors based on Schneider (2023), updated with active versions of countries' NDCs submitted to the UNFCCC Secretariat (2022a) and World Bank GDP data (2023b).

Interaction between climate and trade policies

International forums on climate change have neither explicitly sought nor served to homogenize policies and actions among countries. As a result, there are differences between jurisdictions in terms of the ambition of their policies in this area. These differences, in turn, generate domestic and international tensions because environmental regulations affect cost structures and, therefore, the competitiveness of businesses.

A clear example is the differences in policies that set a price on emissions. These create an incentive for carbon-intensive activities to relocate to places where the price is low. Consequently, countries often face internal opposition to implementing more stringent environmental regulations than their peers. This means that the existence of jurisdictions with very low or no emission price limits the ambition of other countries, as they seek to avoid negative effects of very large differences in regulation.

In line with this, jurisdictions with more active mitigation policies, specifically the EU, are seeking to integrate aspects of climate policy with trade policy. The main objective is to discourage the importation of emissions-intensive goods from places with less stringent regulations. This is based on two distinct arguments that are important to differentiate:

- The first argument is related to the protection of local industries. In jurisdictions where the carbon price is comparatively high, trade-exposed sectors may lose competitiveness against foreign producers. The concern, therefore, is that companies will relocate to less regulated locations. From this perspective, trade policy plays an important role in counterbalancing the loss of competitiveness caused by environmental regulation on the local industry.
- The second argument is related to the effectiveness of climate policy. If climate regulations vary significantly between jurisdictions, emissions may simply be displaced rather than reduced. This weakens or even nullifies the impact of regulations on global emission levels. Therefore, trade policy can be a tool to align the incentives of global producers and achieve greater GHG reductions.

Although studies on this topic are limited, there is evidence that supports both points. Regarding the first argument, it has been found that (asymmetric) environmental regulations can negatively impact the competitiveness of firms facing stricter restrictions. This results in short-term reductions in trade, employment, and productivity for these companies. Nevertheless, the costs of environmental regulations appear to be relatively modest, meaning they have a small weight compared to other factors that influence production and trade.[21] Also, regulations do seem to encourage innovation in clean technologies by firms, but the scale of innovation is not sufficient to offset the costs of regulation (Dechezleprêtre and Sato, 2017; Lanoie et al., 2011).[22]

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Countries with more active mitigation policies seek to integrate climate policy with trade policy

Regarding the second argument, there is evidence of emissions displacement between jurisdictions, commonly referred to as carbon leakage. This occurs as a result of environmental regulation. The variable typically used to measure the degree of displacement is the increase in foreign emissions as a percentage of the reduction in

21 A limitation of these studies is that the data come from real cases where observed carbon prices are relatively low. Other methodologies, based on models that assess more ambitious but hypothetical increases in carbon prices show quantitatively larger effects (Carbone and Rivers, 2017).

22 The "Porter hypothesis," named after its proponent, Michael Porter, posits that environmental regulations may actually benefit companies by creating incentives to innovation, that in turn results in productivity gains that outweigh the costs of regulatory compliance. The empirical results do not support this hypothesis.

domestic emissions. For example, a value of 100% in this indicator would mean that global emissions remained unchanged and simply shifted elsewhere. There is considerable heterogeneity in the calculations regarding this matter. The rate of emissions leakage has been estimated between 5% and 30% for industrialized countries. When focusing on energy-intensive, trade-exposed industries, the range of estimates increases to between 20% and 70% (Cosbey et al., 2019).

Variation in carbon pricing across countries

Carbon pricing, or emissions pricing, is a crucial policy tool for curbing GHG emissions (Blanchard et al., 2022). The importance of a carbon price lies in its ability to efficiently reduce emissions: companies invest in emission reduction if the cost of doing so is lower than the price of emissions, and if not, they pay for their emissions. This ensures that any global emission reductions are done at the lowest possible cost. Additionally, the overall level of emissions can be controlled –at least theoretically- by adjusting the price of emissions.

Countries with more active mitigation policies seek to integrate climate policy with trade policy

Carbon pricing can be implemented through two alternative instruments: a carbon tax or an emission trading system (ETS).[23] This system sets a cap on total emissions within a jurisdiction and allows trading of permits which results in a price for emissions. As a general rule, these instruments are applied at the national level, but they can also be established at the subnational (especially in federal states) or at the international level. In fact, one of the most emblematic examples of ETS is the EU Emissions Trading System, which governs the 27 member countries of the bloc.

In Latin America and the Caribbean, five countries have implemented fossil fuel taxes (with varying levels of coverage): Argentina, Chile, Colombia, Mexico, and Uruguay. Additionally, there are state-level taxes in three Mexican jurisdictions: Baja California, Tamaulipas, and Zacatecas. Furthermore, there is a cap-and-trade system in pilot phase in Mexico (Graph 4.7). However, the existence of these carbon pricing schemes does not always indicate an active climate policy. Some of these instruments have been designed to ensure they do not cause significant increases in fuel prices (and, as a result, they do not lead to big shifts in consumption patterns either).[24] Moreover, they often include exemptions for commonly used fuels and, in several countries, coexist with direct or indirect subsidies for fossil fuel use.

The list of carbon pricing schemes in the region may expand in the coming years. The Dominican Republic, in its current NDC, announced plans to create a domestic emissions trading system, while one of the objectives in Colombia's NDC is the implementation of a national program for trading emissions quotas by 2030 [Programa Nacional de Cupos Transables de Emisión]. Among the existing schemes so far, taxes predominate over cap-and-trade systems. One reason for this is that taxes are relatively easier to implement. A more detailed discussion on the relative advantages and costs of both systems can be found in Chapter 2.

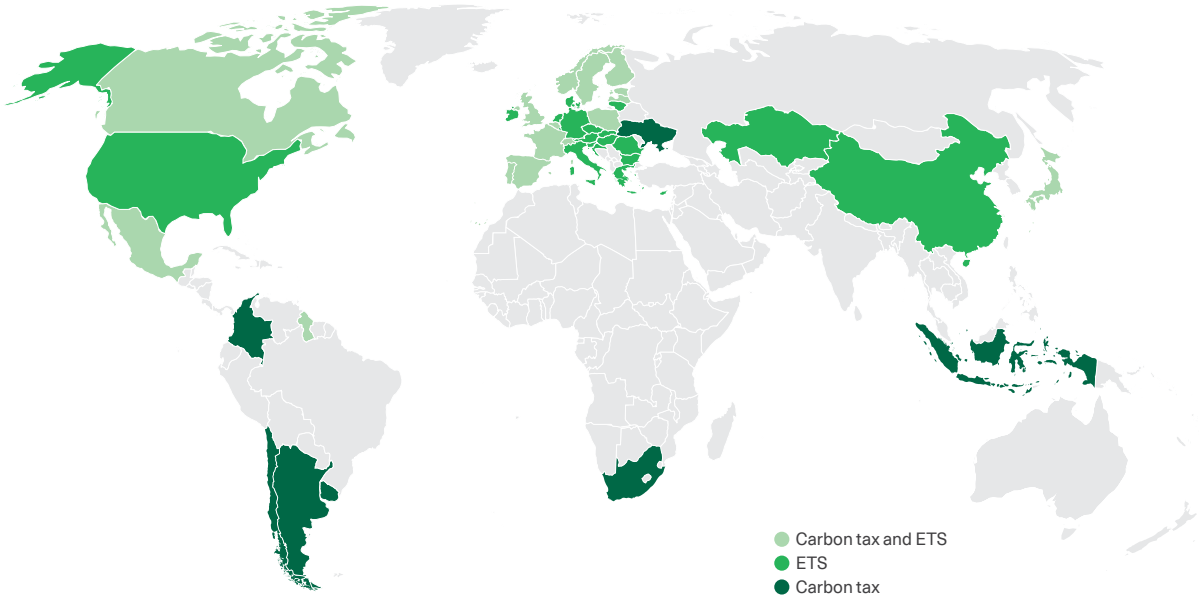
23 Emission trading systems are also known as cap and trade.

24 For example, Argentina's carbon dioxide tax has its origins in an old fuel tax that was not driven by environmental concerns. The tax was redesigned to link it to the CO_2 content of products but preventing a significant increase in the price of products.

Unifying these policies at supranational levels is a technically feasible possibility about which there have been some timid pronouncements. In 2017, the governments of Chile, Colombia, Costa Rica, and Mexico, along with Canada, Canadian provincial governments (Alberta, British Columbia, Nova Scotia, Ontario, and Quebec), and the governments of California and Washington in the United States, signed the Paris Declaration on Carbon Pricing in the Americas. The agreement called for the creation of a platform to align carbon pricing systems and promote carbon markets. However, progress has been almost nonexistent.

It is important to distinguish between taxes and ETS in terms of possibilities for cooperation and international integration. For taxes, jurisdictional alignment would be restricted to unifying tax rates and scope. In contrast, ETS integration is deeper as it involves allowing the buying and selling of permits among emitting companies in different jurisdictions. The best example of this in the Americas is the integration of the cap-and-trade systems between California (USA) and Quebec (Canada) since 2014.[25] This case illustrates two important points: 1) geographic adjacency of jurisdictions is not a prerequisite for integrating ETS, and 2) subnational governments can be important actors in climate policy.

Graph 4.7
Carbon price schemes by country

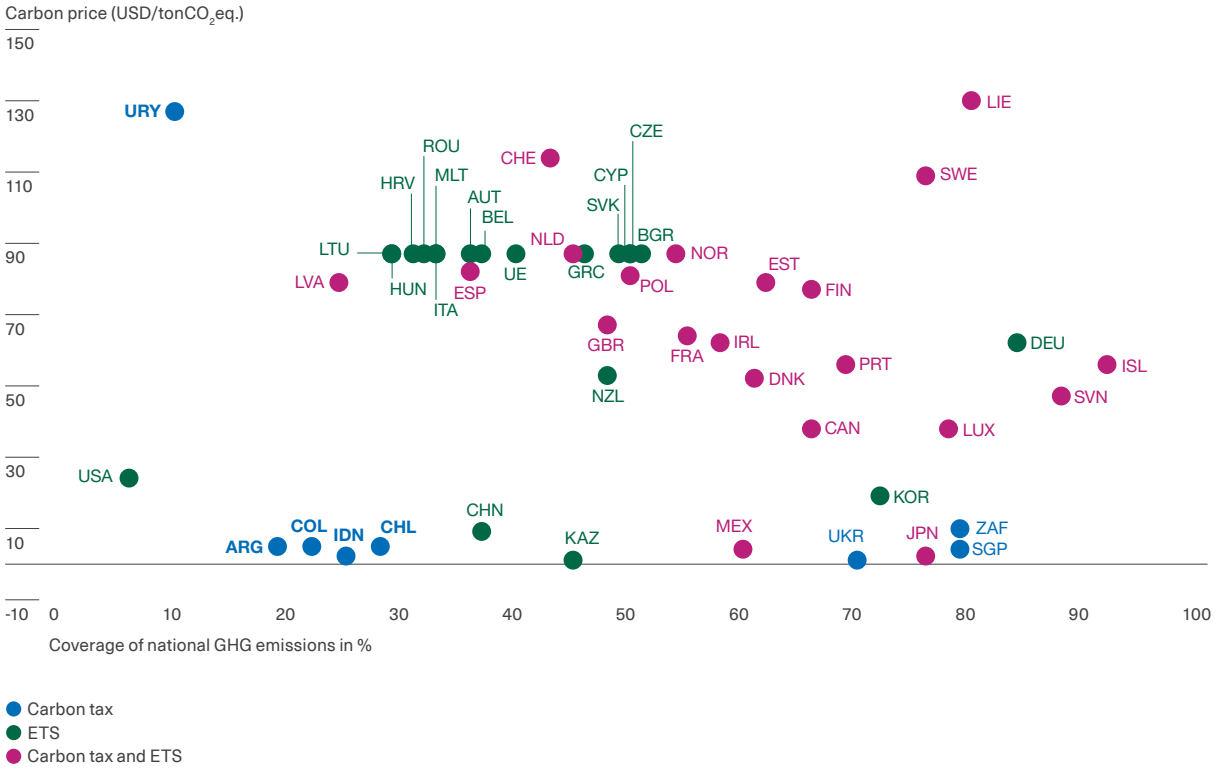


Note: The graph displays countries or subregions that have implemented carbon pricing schemes as of July 2022. In United States there is no national ETS but regional schemes that involve multiple states. Canada and China have a national carbon pricing system along with regional schemes.

Source: Authors based on Black et al. (2022).

25 In the continent, there is also the Regional Greenhouse Gas Initiative, an ETS for power generators in 11 states in the eastern and northeastern United States.

Graph 4.8
Carbon pricing and emissions coverage by type of scheme and country



Note: Each point represents a country. The vertical axis reflects the carbon price in 2021 USD per tCO_2 eq. Where applicable, prices are weighted averages across national, subnational, and supranational schemes (as in the case of the EU). The horizontal axis measures the percentage of the country's emissions covered by the scheme.

Source: Parry et al. (2022).

The California and Quebec ETS shows that geographic adjacency is not a prerequisite for integrating ETSs

Naturally, ETS integration implies equalizing the price of emissions across jurisdictions. Therefore, those wishing to integrate their ETS must share a similar level of climate ambition. Currently, there is a great heterogeneity in emission prices among countries, as shown in Graph 4.8. For example, fossil fuel taxes in Argentina, Colombia, and Mexico are less than USD 5/tCO_2eq, while the price in the Quebec-California ETS has reached 30 USD/tCO_2eq, and the EU ETS has surpassed 100 USD/tCO_2eq at some points.[26] In this regard, Uruguay stands out due to the high value of its fossil fuel tax, although the tax covers a low percentage of the country's emissions. The carbon tax of Uruguay after a reform that took effect in

26 In emissions trading systems (ETS), the price changes.

2022, is approximately USD 130 /tCO_2eq.[27] The heterogeneity across countries is even greater than shown in the graph, as it does not include jurisdictions without carbon pricing.

Border adjustment mechanisms

Given that the EU has comparatively high carbon prices, it is logically interested in introducing mechanisms to counter the consequences of these price disparities. One policy tool that is well advanced in the European legislative process and is likely to be implemented in the coming years is the carbon border adjustment mechanism (CBAM). This mechanism requires goods imported into the EU to pay an amount equivalent to what would have been paid for GHG emissions if they had been produced in EU member countries.

Mechanisms of this kind have a logic that favors global mitigation: in addition to extending the "polluter pays" principle, it creates an incentive to put a price on emissions in jurisdictions where it does not exist (or is very low). Empirical evidence is limited because, to date, there are no international experiences, but simulation-based exercises suggest that these mechanisms could significantly reduce carbon leakage. Some estimates suggest a possible reduction in carbon leakage of 50% to 70% (Böhringer et al., 2012; Branger and Quirion, 2014; Winchester et al., 2011). However, they could also generate political and trade tensions with other countries, as discussed later.

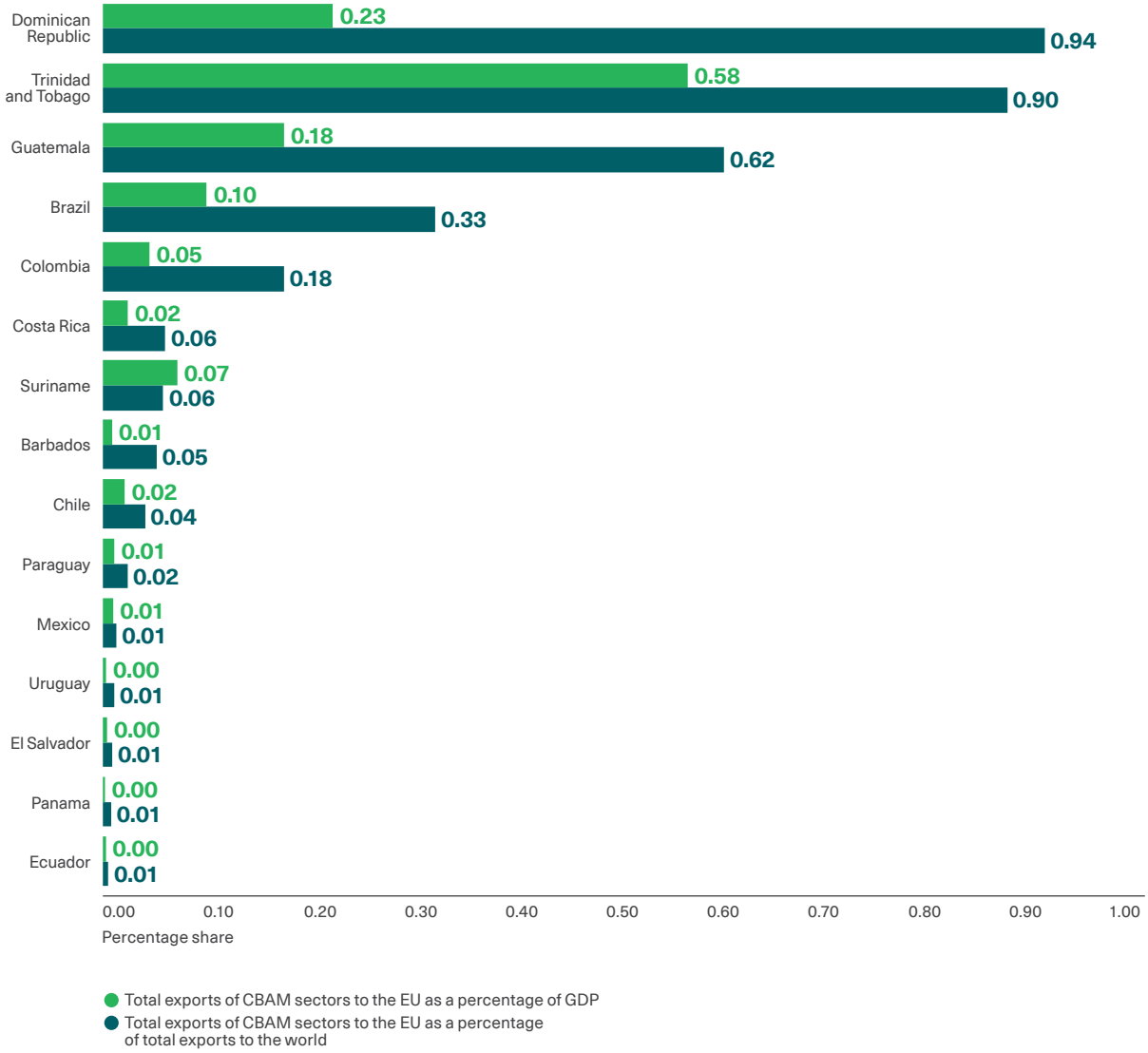
The implementation of border adjustments requires defining many details, including the set of sectors and products to be included, the methodology for calculating the emissions embedded in imported goods, the adjustment price, an exemption regime (e.g., for imports from places with strong environmental regulations), and the destination of the collected revenues. Each of these aspects will determine the effectiveness of the policy and shape the impact of the mechanism on exports and the economies of trading partners.

The EU mechanism would apply, at least in principle, to a limited list of sectors: steel, aluminum, fertilizers, electricity, and cement. Together, these sectors represent 3% of EU imports, of which around 90% are steel and aluminum. Among the largest exporters of these goods (by volume) to the EU are Russia (No.1), China (No.2), India (No.9), and Brazil (No.14), which explains why these countries have opposed the CBAM (Stevenson, 2023).

Given the list of sectors, the exposure of Latin America and the Caribbean to CBAM would be low overall. On average for the region, exports in these sectors to the EU represent 0.15% of the value of total exports and 0.06% of GDP. The most affected countries would be, in this order, the Dominican Republic, Trinidad and Tobago, Guatemala, and Brazil (see Graph 4.9).

27 This tax was designed to replace an old tax (IMESI) that imposed charges on fuels but was not linked to their CO_2 content. Despite the high value of the new instrument, it was introduced in a way that would not impact the price paid by consumers for energy.

Graph 4.9
CBAM exposure of Latin America and Caribbean exports



Note: Value of exports from LAC countries to the EU in the sectors affected by the carbon border adjustment mechanism (CBAM). Only countries where the percentages are higher than 0.01% are shown. The values of exports and GDP are for 2021 in current dollars. CBAM goods are: aluminum, steel and iron, fertilizers, cement, and electric power.

Source: Authors based on Comtrade export data (United Nations, 2022) and GDP data from the World Bank (2023b).

Given its limited impact, the CBAM would not exert significant pressure on countries in the region to respond or adapt to it, beyond a few isolated producers. However, this situation is likely to change in the medium to long term. On one hand, the EU could expand the list of affected sectors including those with higher trading volumes with the region. There is also a possibility of other

countries implementing similar border adjustment mechanisms, although currently this seems unlikely. In the United States, several legislative proposals have been put forward to create such a mechanism, but political polarization surrounding environmental issues has hindered their progress.[28]

In any case, the possible actions that countries in the region could take in response to the CBAM or similar tools implemented by other trading partners are limited. Essentially, they would need to adopt carbon prices comparable to those adopted in the jurisdictions applying the adjustment mechanism, as products that have paid an equivalent amount for emissions in their country of origin would be exempt. Since carbon pricing is a sound climate policy, this simply provides another reason to adopt it. The CBAM can also create incentives for developing capacities to report and certify the carbon content of products, particularly for companies with cleaner processes that would benefit from demonstrating relatively low emissions. However, this incentive will only exist if the CBAM implements a system where carbon content is reported, or can be reported, at the level of individual companies, and it is not clear whether this will happen.

Another possible response to the CBAM is for countries in the region to exert political pressure to be exempted as developing countries, although this is highly improbable. Countries could also exert political pressure to secure the redistribution of revenues generated by these mechanisms toward developing countries. There are valid arguments for these mechanisms to include international revenue redistribution. However, that redistribution would likely target countries in the least developed countries category, as classified by the UN.[29]

There are two main criticisms of the CBAM. The first is that it could constitute a form of protectionism that violates international trade rules. This concern has been raised by several developing countries, including Brazil, which has been the most outspoken among Latin American countries. The criticism is that the CBAM could become a discriminatory tool against imported products in favor of domestic ones, or even among imported products according to their country of origin.

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Channeling the revenues of CBAM toward decarbonization in developing countries would help show that its objective is to reduce carbon leakage

The imposition of border adjustments does not *per se* violate the rules of the General Agreement on Tariffs and Trade (GATT). The implementation details of the CBAM (such as how emissions incorporated in products are calculated, what price should be paid, what exceptions are established, etc.) will ultimately determine whether it is economically discriminatory.[30] Additionally, the GATT allows for violations of its own principles of non-discrimination under exceptional circumstances, including measures "necessary to protect human, animal, or plant life or health" and measures "relating to the conservation of exhaustible natural resources" (General Agreement on Tariffs and Trade, 1994, Art. 20). Jurisdictions designing such mechanisms, including the EU, should have little difficulty justifying the measure on environmental grounds (Cosbey et al., 2019; European Parliament et al., 2020). Taking all this into consideration, it is most likely that these adjustments will be acceptable within the framework of international trade regulation. Nevertheless, it is always important to build mutual understanding between countries to minimize legal conflicts, retaliations, and political tensions.

28 Additionally, in the U.S. there is no domestic carbon price at the federal level, which complicates the design and justification of a tax on embedded emissions. Internally, California has a border adjustment mechanism (CBAM) for electricity imports from other states, which complements the state emissions trading system (ETS).

29 This category, used by the United Nations, currently includes 46 countries. Haiti is the only country in the Americas.

30 Another source of controversy is that the EU's ETS grants free emission allowances to some industries, including those affected by CBAM. The coexistence of these two tools could amount to discrimination against imports. The EU has announced that, for sectors included in the CBAM, the allocation of allowances will be phased out by 10% per year starting in 2025, while the border adjustment will be phased in at the same rate so that it applies to the equivalent of emissions that are not benefited by the free allowances.

The second criticism of the CBAM is that it contradicts the CBDR principle because it increases the costs of climate action borne by developing countries. One possibility that has been considered to counter this point is to include an exemption for least developed countries (LDCs). Although few LDCs export affected products to the EU, this could change if the list of sectors included in the CBAM expands. On the other hand, such an exemption could potentially violate the most-favored-nation principle of the GATT, which would need to be justified. Another way to align the CBAM with the principle of CBDR would be to channel the revenue collected by it towards developing countries, particularly for decarbonization projects. In addition to promoting international equity, this measure would serve to demonstrate that the fundamental objective of the CBAM is not to protect domestic industries but rather to reduce carbon leakage.

Climate Clubs

A climate club, theoretically, is an association of states with a similar level of ambition in climate policy that come together to define domestic actions and policies. They use trade policy to penalize non-member countries with less ambitious environmental regulations (Nordhaus, 2015). Since non-members cannot be excluded from the benefits generated by the club—a world with lower emissions—trade policy becomes the tool for penalization.

The fundamental difference from the governance model arising from the Paris Agreement is that climate or carbon clubs seek to standardize the policies of member countries (which would imply, for example, a common price for emissions) and sanction non-participants. Therefore, these clubs represent a centralized governance model, where policies are defined by member countries with greater ambition and capacity to implement environmental regulations. A necessary condition for such a model to work is the presence of a critical mass of countries with a similar level of commitment to climate action, which are sufficiently significant in international trade for the trade incentives to join the club to be strong.

The CBAM of the EU –which is arguably the jurisdiction with the most stringent environmental regulations at present- is a measure that follows a similar logic to what would govern a climate club. However, an important difference between the CBAM and a climate club is that the latter would use trade policy to coerce non-member countries to join the club or at least adopt similar environmental regulations. The use of trade to force policies on other countries is a practice rejected by the World Trade Organization (WTO), according to interpretations of previous rulings by the organization (European Parliament et al., 2020). Therefore, the CBAM would be more compatible with the current governance of international trade than a climate club.

In December 2022, G7 leaders announced the establishment of a so-called Climate Club. Although there are not many details about this initiative yet, the initial statements talk about building a club open to states interested in pursuing ambitious climate policies (G7, 2022). There is no indication that it is an instance to establish common measures or to penalize non-member countries. In other words, it does not seem to be an entity that will function like the climate clubs proposed by Nordhaus (2015) and described in this subsection. Currently, there are no concrete initiatives to form clubs of that nature.

●●

The requirement that policies be uniform for all members in a climate club deviates from the CBDR principle

Bringing in developing countries -including those in Latin America and the Caribbean, as well as important actors from other regions such as China or India- to climate clubs can be particularly challenging. This is because clubs, at least in their basic design, do not include elements of equity or

internal compensation between countries. In fact, theoretical analyses suggest that clubs should avoid using fund transfers between parties because they make them more unstable (Nordhaus, 2015). The requirement that policies be the same for all members, coupled with the absence of transfers, means that these arrangements deviate from the CBDR principle and a fair transition model. This is a key factor that undermines the political feasibility of these initiatives.

Emission standards for products

Another type of arrangement that countries can use to link climate policy with trade is the establishment of carbon content standards in products, limiting or prohibiting trade with countries that do not meet those standards. Although possible, these types of arrangements are rare in practice, at least partially due to their high implementation costs. This relates to the need for developing methodologies to quantify and certify the carbon content of products. Furthermore, compared to carbon pricing, they provide less flexibility to decide which investments are efficient at the margin.

A potential example of such an arrangement would be the Global Agreement on Sustainable Steel and Aluminum that the United States and the EU have been working on. There is limited information on the progress of this project, but when discussions began in 2021, there was talk of an agreement to restrict market access for non-participants that fail to meet low-carbon intensity standards (Fefer, 2021). The potential significance of such an agreement lies in the fact that the steel sector is a significant source of global emissions, accounting for approximately 7% according to the IEA (2020). However, there is skepticism about what this could achieve in terms of emissions reduction because the agreement is not solely motivated by decarbonization objectives in the sector. Rather, it is an arrangement that seeks to curb trade with third parties for both environmental considerations and other reasons associated with overproduction and unfair practices.

International carbon credit markets

Carbon credits (sometimes referred to as carbon offsets) are certificates that an entity acquires by financing third-party projects that reduce GHG emissions. These credits can then be used to offset the entity's own emissions.[31] Each credit is equivalent to a certain amount of GHG emissions, typically one ton of CO_2 equivalent. For example, if a company wants or is required by regulations to reduce its emissions and is unable to achieve the target internally through adjustments in its production process, they can purchase credits and use them to offset their excess emissions.

Carbon markets, also known as offset markets, can be classified into two types: regulated and voluntary. In regulated markets, companies and entities purchase credits to comply with legal commitments regarding their emissions levels. In voluntary markets, credits are purchased to meet voluntary targets, such as corporate environmental

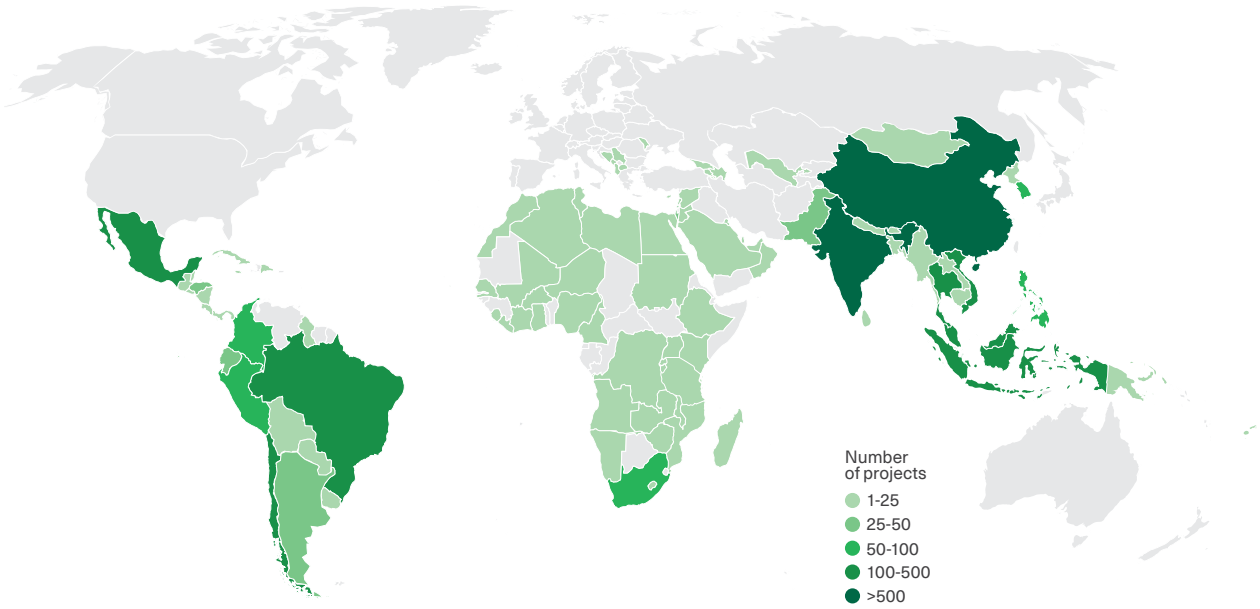
31 The project that is financed, i.e., the one that generates the carbon credit, does not necessarily have to capture or remove CO_2 from the atmosphere; it is sufficient for the project to reduce emissions. For example, a wind power plant that replaces energy production from fossil fuels can provide carbon credits.

objectives. These markets can be either domestic (where the mitigation project generating the credits must be in the same country as the buyer) or international. It is common for offset markets to be integrated into national carbon pricing schemes. For example, Mexico and Colombia have taxes on the use of certain types of fossil fuels but allow companies to partially or fully offset the tax payment by purchasing carbon credits. A recent study prepared for this report by García and García (2023), describes in detail how these schemes work.

Lessons from the Clean Development Mechanism

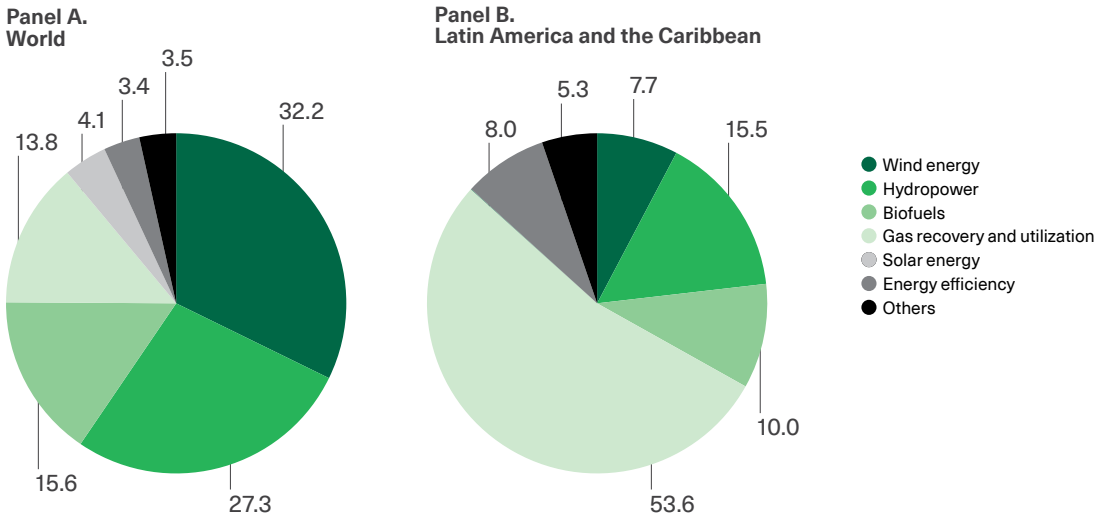
Internationally, carbon markets received a strong boost under the Kyoto Protocol. Article 12 of the agreement established the Clean Development Mechanism (CDM), which became the primary regulated market for carbon offsets internationally. Under the CDM, countries included in Annex I of the agreement could finance mitigation projects in developing countries and count the resulting emissions reductions toward their own targets. It is important to note that, under the Kyoto Protocol, only industrialized countries had specific emissions reduction targets. Consequently, it was not costly for developing countries that the emissions reductions generated by projects in their territories counted towards the targets of industrialized countries.

Graph 4.10
Registered Clean Development Mechanism (CDM) projects by host country



Source: Authors based on data from Louhisuo and Takahashi (2022).

Graph 4.11
Composition of CER's according to project type



Note: The graph shows the percentage of expected certificates in each category. The graph includes expected CERs from 2000 to 2047. Information is updated as of September 2022. Gas recovery and utilization projects include methane, nitrous oxide (N_2O) and fluorinated gases (SF6 and PFCs).

Source: Authors based on Louhisuo and Takahashi (2022).

The CDM began its operations in 2001 and started to see a substantial number of certified emissions reductions (CERs) being registered in 2005, after the Kyoto Protocol came into effect. The period of greatest dynamism for the mechanism was from 2005 to 2012, during which 7150 projects were registered with an expected total of 2.7 billion CERs by 2022. After 2012, the registration of new projects significantly declined, mainly due to the reduced demand from the two largest buyers of CERs: the EU prohibited the use of almost all post-2012 CDM projects in its ETS, and Japan decided not to set quantitative emissions reduction targets for the second commitment period of the Kyoto Protocol.

After the expiration of the Kyoto Protocol in 2020, the CDM remained technically active, awaiting the development of institutional arrangements for a new mechanism to replace it, and allowed transactions with the CERs of already registered projects, although at a low level of activity. Despite not being of much relevance currently, it has been the most significant regulated international market for carbon credits, and its activity has produced some revealing statistics. China was by far the largest host of projects, with over 3,700 registrations and 1.1 billion CERs issued, accounting for 52% of the global total by 2022 (Graph 4.10). India followed with 1,662 projects and 287 million CERs, then Brazil with 344 projects and 182 million CERs.

In terms of project types, there was a significant concentration in the renewable energy sector (wind, hydro, and to a lesser extent, solar), which accounted for over 60% of total CERs issued. Biofuel projects and projects for the recovery and utilization of gas, such as methane, also stood out (Graph 4.11). In Latin America and the Caribbean, the composition was slightly different, with a predominance of gas recovery and utilization projects, accounting for 53% of CERs.

Advantages and limitations of carbon offset markets

Carbon offsets provide flexibility for efficiently reducing emissions. For instance, consider a scenario where there is a profitable Activity A that emits one ton of CO_2 and an Activity B that reduces one ton of CO_2 emissions but is not profitable on its own. Offset markets enable the agent carrying out Activity A to allocate a portion of its profits to subsidize Activity B, so that in the aggregate emissions are compensated. In other words, these schemes enable some activities to continue generating GHG emissions in exchange for an equivalent volume of emissions being removed through another means. The success and real usefulness of these markets depend on strong governance that can establish which investments generate real GHG reductions, a task that is almost never easy. It is also important to emphasize that there is a strong relationship between these markets and the price of carbon emissions, as explained in more detail in Box 4.3.

Although the theoretical argument in favor of compensation mechanisms is clear, in practice there are doubts about their real effectiveness. The main reason is that, in general, it is difficult to demonstrate that the resources mobilized by credit purchases meet the additionality criterion. This is a very important concept in the context of investments in environmental initiatives. Carbon credits are deemed as additional when the revenue generated from their sale leads to a reduction in emissions that would not have taken place otherwise. Take, for example, the case of a company that purchases offset credits to finance the construction of a wind farm. It is possible that the wind farm would have been built anyway (e.g., because it was profitable, even without receiving the proceeds from the sale of the offset credits). In that case, even though the credits were purchased, and the plant was built, the proceeds from the credits did not cause any change from what would have happened without them. It would then be said that the investment from these resources was not additional and there was no real offsetting of emissions.

Box 4.3
The relationship between offset markets and carbon pricing

Transactions in offset markets are closely tied to the price of carbon. For example, a company that is subject to an emissions tax will have incentives to purchase offset credits as long as they are cheaper than the tax itself. Therefore, one way to increase demand in regulated offset markets is to tighten regulations by raising carbon taxes or reducing the permitted emissions in cap-and-trade systems.[a]

Extending the same logic, international transactions in offset markets are closely associated with differences in emissions prices among jurisdictions. In jurisdictions where emitting is inexpensive, very few mitigation projects are financially viable. Projects in these locations require additional compensation (e.g., through the sale of offset credits) to become profitable. Consequently, it is to be expected for credit-generating projects to be located in countries with a low or zero emissions price, and buyers of these credits to come from countries with higher emissions prices. In the case of the Clean Development Mechanism (CDM), a significant portion of offsets were directed towards investments in renewable energy plants in developing countries (see Graph 4.11).

a. In the case of voluntary markets, the level of demand is mainly determined by the intrinsic motivation of individuals and companies to comply with environmental integrity policy or the reputational cost of not doing so.

The success and value of carbon markets depend on a strong governance that can determine which investments yield real GHG reductions

Determining *ex ante the addi*tionality of an investment is a complex task. Part of the difficulty is technical, because the necessary calculations (comparing the flow of emissions that would result from carrying out the investment with a counterfactual without it) involve a high degree of uncertainty. But beyond the technical aspects, the incentives of the different agents involved (the buyers and sellers of offsets) can add complications. On the one hand, project promoters have incentives to overestimate their benefits and the importance of selling credits to be able to move forward. Buyers, in turn, do not have strong incentives to validate the actual additionality of the credits, as their interest is in buying and using them. If anything, lenient approval standards may suit them, because they would result in an abundant supply of credits and a low price.

A study by Calel et al. (2021) examines the case of the construction of 1350 wind power plants in India, 472 of which received funding through the Kyoto Protocol's Clean Development Mechanism (CDM). The results suggest the following: 1) most plants subsidized by the CDM were sufficiently profitable even without those resources, and 2) at least 52% of the offset credits used for the construction of those plants did not generate additional mitigation investments. As those credits were likely used by purchasing companies to emit above their allowed limits, the overall result is that these credits increased global emissions (compared to what would have occurred without them). Another study by Cames et al. (2016) assesses the additionality of CDM projects by project type and finds that several frequent projects (such as hydroelectric, wind, and biomass power plant construction) have a medium to low probability of being additional. Lastly, an analysis for Latin America also revealed that the low quality of additionality assessments decreased the success in certifying projects in the region (Watts et al., 2015).

Therefore, the most crucial aspect of an offset market is the certification of the additionality of projects and the credits generated from them. Whether the registered credits achieve real mitigation depends on this task. Each market or mechanism determines who is in charge of this. In the case of the CDM, there were two levels of certification: national authorities (e.g., a ministry of the country) and a global CDM executive committee. This process faced several challenges, including information deficiencies about projects, capacity limitations in the organizations involved, and conflicts of interest or political pressures. Addressing the governance of these processes should be the top priority for any offset mechanism.

The case of the forestry sector

Forestry projects are particularly relevant in Latin America due to the region's high deforestation rates, which provide opportunities for mitigation through conservation and reforestation. In other words, there is potential for a significant supply of forest-based credits. However, in this sector, the challenges to guarantee that real mitigation is achieved are exacerbated. It is very difficult to ensure additionality in forestry-related projects, especially in the case of conservation. A conservation project is additional only if, in the absence of the revenue generated by the project, the protected area would have been deforested, which is hard to prove.[32] Moreover, forestry projects may face issues of permanence, where a forested parcel is deforested shortly after the project period

32 This may also create perverse incentives to increase deforestation threats, in order to demonstrate that carbon credits are necessary to preserve the forests.

ends, releasing the originally sequestered carbon. Another potential issue is carbon leakage, which occurs when reforestation in the project area leads to increased deforestation outside of that area due, for example, to general equilibrium effects through land prices. In such scenarios, emissions are displaced rather than reduced. A more detailed discussion of these issues can be found in chapter 3 of this report.

The region has potential to provide forestry credits, but the challenges to guarantee the additionality of projects are exacerbated in this sector

The use of credits from forestry projects is restricted in some carbon markets precisely because of the difficulty of demonstrating and guaranteeing the mitigation that they allegedly achieve. For example, the EU ETS does not allow the use of credits from LULUCF projects, and the CDM allowed afforestation and reforestation initiatives, but not conservation ones. In fact, less than 1% of the CERs issued under the CDM came from forestry projects (3.7% for CERs originating in Latin America and the Caribbean).[33]

The situation is different in the case of voluntary markets, where nature conservation and restoration projects (mainly forest-based) accounted for approximately 45% of the credits generated in 2021, according to Trove Intelligence data (see Graph 4.12). Of course, voluntary markets are not exempt from the aforementioned problems, and controversies have arisen regarding the quality of credits created and traded within them. Recent studies evaluating certified conservation projects in voluntary markets indicate that the emissions reductions achieved by the projects are significantly lower than the number of credits issued, and several projects do not generate any mitigation (Guizar-Coutiño et al., 2022; West et al., 2020).[34]

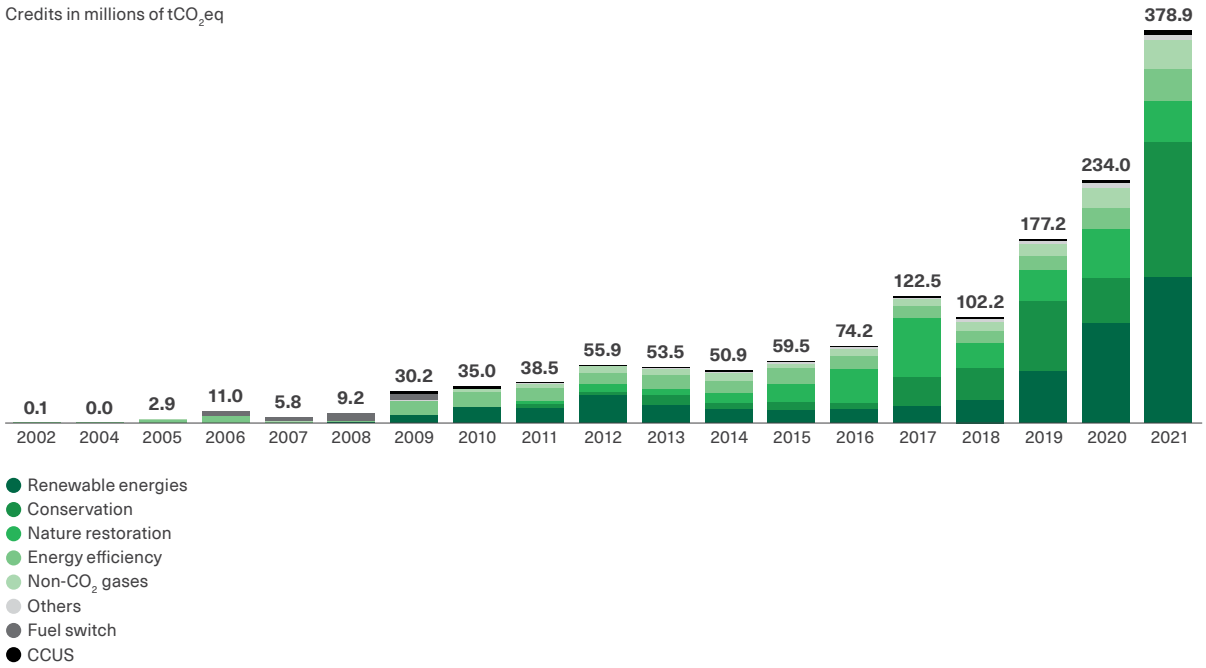
Experiences from voluntary markets provide valuable lessons on what are the most common mistakes related to the governance of forest-sector credits. The primary issue is approving conservation projects in areas that were not actually at risk of degradation or deforestation. Therefore, if the use of forest credits is to be promoted, it is important to take measures to avoid these errors, which means ensuring that accepted projects are additional, permanent, and do not generate carbon leakage. Some recommendations in this regard include:

- Establish minimum project sizes to reduce leakage issues (larger areas have less risk of emission displacement).
- Set clear and strict baselines for assessing additionality.
- Favor initiatives that promote a systematic change in forest use patterns and maintain constant monitoring to address the problem of permanence (or reversion) of projects.
- Reward differentially projects with biodiversity co-benefits.
- Focus credit approval criteria on the technical demonstration of emissions mitigation and ecosystem co-benefits (avoid, for instance, granting credits based on poverty reduction criteria).

33 Parties to the UNFCCC have recognized the importance of forest conservation for mitigation. This has been addressed through the creation of REDD+, an institutional framework to channel efforts to prevent forest degradation and loss. In recent years, some REDD+ projects have included payment-for-results components.

34 The certifiers in charge of validating and approving the projects dispute these findings.

Graph 4.12
Number of credits in the voluntary carbon market worldwide by project type



Note: The conservation category includes projects for forest conservation (emission reduction from deforestation and degradation); the nature restoration category includes afforestation, reforestation, and revegetation projects; the fuel switch category includes, for example, the transition to alternative energies for cooking stoves; the CCUS category refers to carbon capture, utilization, and storage; non-CO_2 gases include, for example, projects aimed at reducing methane emissions from landfills.

Source: Authors based on Trove Research data (2022).

In cases where offsets are accepted to reduce tax payments on emissions, there are reasons to set a limit on the percentage of the tax burden that can be offset in this manner. By establishing a limit, the incentives for agents to reduce gross emissions from their operational processes are preserved. A more comprehensive discussion of the elements necessary for the proper functioning of forest credit markets can be found in García and García (2023).

Despite the mentioned difficulties, investing in robust governance and promoting the supply of forestry-based offsets could be very valuable for some countries in Latin America and the Caribbean, where there are areas with significant potential for reforestation and conservation. Offset credits can play two distinct roles: if integrated into national carbon pricing schemes (taxes or ETS), they provide greater flexibility and efficiency in achieving national mitigation goals. Alternatively, if sold in international markets, offsets can generate monetary resources. Regardless of whether they are sold domestically or internationally, these projects contribute to increasing forest coverage and their corresponding local ecosystem benefits. Considering these benefits, CAF—the Development Bank of Latin America and the Caribbean—has launched a regional initiative to boost carbon markets (see Box 4.4).

Box 4.4
CAF initiative to promote carbon markets in the region

In 2022, CAF launched the Latin American and Caribbean Initiative for Carbon Market Development (ILACC, by its Spanish acronym), a proposal to boost the competitiveness of carbon credit supply in the region and foster the growth of these markets. It is based on the recognition of the great potential of Latin America and the Caribbean to offer credits from nature-based solutions (NBS).

This initiative's approach emphasizes the importance of strengthening the certification processes for project additionality. It identifies some of the main challenges that the region must overcome to develop these markets, including: 1) the definition of standards, norms, methodologies, and certifications; 2) technical and professional capacities; and 3) institutional frameworks, transparency, and governance. As a result, ILACC proposes a work agenda aimed at building a service infrastructure that enables the proper functioning of carbon markets, avoids greenwashing,[a] and allows for the region's potential to be fully realized (CAF, 2022).

a. Greenwashing refers to the promotion of an organization's (e.g., a company's) processes and products as "green" or environmentally friendly based on false or misleading premises.

Recent changes in offset markets

Article 6 of the Paris Agreement includes provisions for employing market mechanisms for the international exchange of allowances and emission credits. Article 6.4 envisions a mechanism that would replace the now-defunct Clean Development Mechanism (CDM) of the Kyoto Protocol (Conference of the Parties to the UNFCCC, 2016, p. 27). Nevertheless, this mechanism has not yet become operational. Despite being an item on the agenda of the most recent COPs, negotiations have progressed very slowly.[35]

Most countries in the region have indicated in their NDCs their intention to participate in the market mechanisms outlined in Article 6 (see Graph 4.13).[36] This would mean a continuity with the participation they had in the CDM. However, there is a fundamental difference between the arrangements in Kyoto and Paris, which affects how offset mechanisms work, and countries in the region must consider this difference: under the Paris agreement, all countries have quantifiable mitigation targets. Thus, in order to avoid double counting, a country that sells credits to another party must add an equivalent amount of GHG emissions to its own emissions inventory. For example, if country A purchases 1 metric ton of CO_2 credits from a project executed in country B, country A can subtract that metric ton from its emissions, while country B must add one metric ton to its inventory. This was not a concern under the Kyoto Protocol since countries selling credits did not have quantifiable targets.

There is a trade-off between monetizing projects through the sale of credits and meeting mitigation objectives

35 During the transition, some projects already registered in the CDM continue to emit CERs, even though new projects are not being registered.

36 Although Bolivia does not specifically mention Article 6, its government would oppose its use. In its NDC, the country "considers that the financing schemes provided by carbon markets do not represent an option to undergo ambitious national policies in the country and opposes to any form of commodification of the environmental functions of nature (Government of Bolivia, 2022).

Graph 4.13
Stance of LAC countries on Article 6 instruments, as declared in their NDCs

Note: The date of the NDCs analyzed can be found in the appendix of this chapter, which is available online.
Source: Authors based on the NDCs (UNFCCC Secretariat, 2022a).

This means that compared to the previous situation, the sale of offset credits becomes less attractive for developing countries, including those in LAC. Therefore, the trade-off between monetizing projects through credit sales and fulfilling their own mitigation objectives must be carefully weighed. On the other hand, the new arrangement also opens the possibility for the countries in the region to participate in these markets as buyers of credits.

The Paris Agreement also includes other mechanisms for emissions trading between countries. Article 6.2 outlines guidelines for the formation of bilateral agreements. Under this scheme, two countries could establish an agreement where one country finances mitigation projects in the other and, in return, receives emission credits. Negotiations to define the institutional framework for this mechanism, known as Internationally Transferred Mitigation Outcomes (ITMOs), are also underway. Even so, some countries in the region have already signed cooperation agreements under Article 6.2. For example, both Peru and Dominica have done so with Switzerland (Government of the Swiss Confederation and Government of Dominica, 2021; Government of the Republic of Peru and Government of the Swiss Confederation, 2020).

International biodiversity governance

The main reason why conservation efforts for biodiversity require mechanisms of international governance is that ecosystems provide services that have regional or even global benefits. In other words, the conservation actions taken by one jurisdiction on its ecosystems have positive externalities on other countries. Without mechanisms that recognize these externalities, the incentives for conservation are insufficient. This has a corollary: the primary aim of an international governance system should be the implementation of mechanisms that compensate countries for the ecosystem services they provide to the rest of the world . This is especially important because biodiversity is not evenly distributed across the planet, and there are areas of high concentration. Latin America and the Caribbean, in particular, is a highly biodiverse region (see Chapter 3).

Despite this, cooperation efforts in this matter have not had that spirit. The main global forum for negotiations on these affairs—the Convention on Biological Diversity (CBD)— has remained primarily a space for policy discussion. While it has directed many efforts toward setting global conservation targets, it has done little to design supranational mechanisms and policies to meet these goals. The CBD has also failed to increase the flow of resources for conservation financing. National strategies submitted by countries to the CBD Secretariat have had low levels of compliance, and in many cases, they are not well-aligned with global objectives (CBD Secretariat, 2020a). As a result, the outcomes have fallen short of the targets.

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International biodiversity governance should implement mechanisms that compensate countries for the ecosystem services they provide to the rest of the world

The complexity of the problem

While the current governance surrounding this issue may seem weak, it is important to recognize that it is an inherently complex problem, for which even the definition of goals is difficult, let alone the organization of collective efforts. A comparison with the issue of climate change serves to illustrate this complexity.

The phenomenon of climate change can be reduced to a single outcome variable: the concentration of GHGs in the atmosphere. The origin of these gases is known, and their effects are understood.[37] This makes it relatively easy to define the problem and set a goal, such as keeping the volume of global cumulative emissions below a certain threshold. Organizing the contribution of countries is complicated for political reasons, but technically it is a manageable problem given the tangibility and clarity of the goals and outcomes. In contrast, biodiversity loss is a more complex and multidimensional phenomenon, difficult to quantify in precise quantities. Ecosystem services are also multiple and challenging to quantify. There is no single variable that captures the amount of biodiversity or the number of units of ecosystem services on the planet or how many there should be. This makes it difficult to set a conservation target. Of course, there are ways to approach certain relevant

37 Not only are their effects understood but they are also relatively well quantified. The IPCC has established a linear relationship between atmospheric GHG concentration and global climate (as explained in Chapter 1 of this report). There is greater uncertainty in estimating the impact of these temperature increases on the economy and human wellbeing.

quantities, such as the percentage of territory or certain biomes that are protected, which is what international agreements have done so far.

Another technical complication of the problem is that not all ecosystem services are global. For example, a forest contributes to climate regulation, which has global benefits, while also contributing to the regulation of humidity and precipitation, which has regional benefits, and it also improves water retention in soils, which helps prevent flooding with local benefits. In theory, countries should be able to internalize the benefits that occur within their borders and not the benefits that occur outside. In other words, ideal international compensation mechanisms should compensate countries for some of the services their ecosystems provide, but not for all. However, the task of separating local services from global ones and computing a corresponding value for each is almost impossible.

Another factor -more political than technical- that slows down international action is that most people do not directly perceive the effects of biodiversity loss on human wellbeing. This, again, contrasts with the case of climate change and the well-established association between GHG emissions and events such as heatwaves, droughts, and floods. These perceptions are crucial because they determine the political support that these agendas receive. In this regard, investing in campaigns to raise awareness and disseminate the threat posed by ecosystem loss could be valuable.

Despite these complications, the general idea that supranational bodies should seek ways to compensate countries for conservation efforts and the provision of global ecosystem services should be a guiding principle. This directly addresses the issue of funding for biodiversity, an aspect that has been heavily debated in international negotiations.

Biodiversity finance

The Global Environment Facility (GEF) has been the CBD's financial arm since the convention was first signed, serving as the main multilateral vehicle through which donors channel their contributions.[38] For the 2022-2026 cycle, the GEF projects a total fund of USD 5.3 billion, of which nearly USD 2 billion is allocated to biodiversity (GEF, n.d.). Approximately one-fourth of the GEF's biodiversity resources have been dedicated to projects in Latin America and the Caribbean, with Brazil standing out as the largest recipient globally (see Graph 4.14).

A study by the Paulson Institute (Deutz et al., 2020) provides several figures on biodiversity finance. According to their estimates, the total amount dedicated to this issue globally ranges between USD 124 billion and USD 143 billion annually. The majority of this funding comes from domestic public funds, while international financing from public sources is estimated to be between USD 4 billion and USD 10 billion annually.[39] Financing needs are estimated to be between USD 720 billion and USD 970 billion annually,[40] which would have to be allocated to various activities, including the adoption of sustainable production practices (in agriculture, livestock, forestry, aquaculture), the maintenance of protected areas, and the management of invasive species.

These calculations should be approached with caution, but they do provide an indication of the order of magnitude of the amounts involved. According to these estimates, the world currently allocates between 13% and 20% of the necessary resources for halting biodiversity loss to conservation efforts, and only between 3% and 8% of those funds come from international public resources. These data also reveal that international financing for biodiversity is much lower than that directed toward climate change.

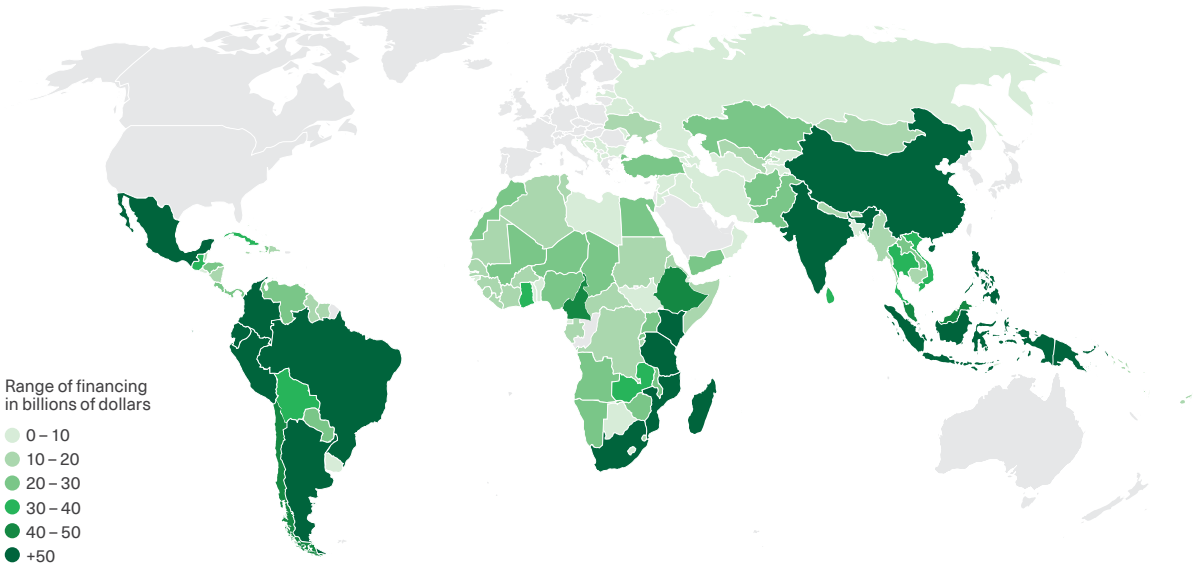
38 Countries in the region such as Argentina, Brazil, and Mexico have contributed to the GEF.

39 This includes what is mobilized though multilateral vehicles -the GEF and others- and as well as resources allocated bilaterally.

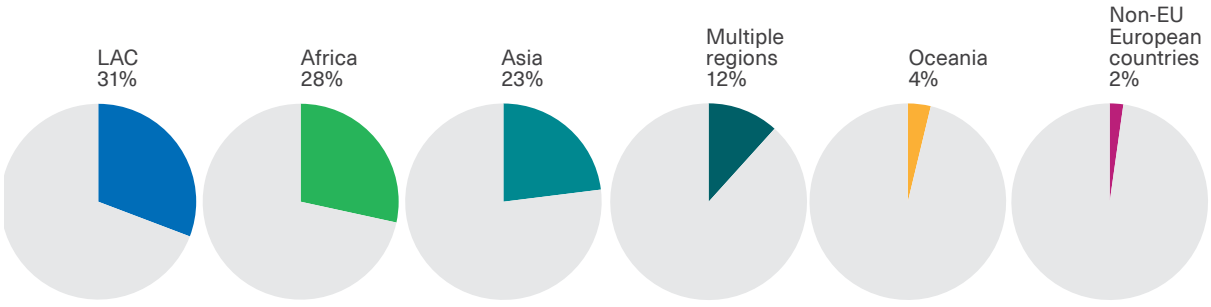
40 The difference between the estimated needs and the current flows indicates a financing gap of approximately USD 700 billion per year. This figure has become a benchmark used in international fora, including official CBD negotiations.

Graph 4.14
GEF resources for biodiversity projects by country and region

Panel A.
GEF Funding for Biodiversity Projects



Panel B.
Resources distribution by region



Note: The graph shows the distribution of GEF funding for biodiversity projects approved between 2003 and 2022 by country and region. Panel A includes only projects implemented in a single country; Panel B presents the share of funds by region, including projects in multiple regions. Amounts are in billions of US dollars.

Source: Authors based on GEF data (2022).

International funding for biodiversity is much lower than that directed toward climate change

Financing has been a topic of contention in the CBD COPs, leading to clashes between the positions of developed and developing countries. At COP15, held in 2022, several targets were agreed upon: 1) mobilize at least USD 200 billion annually from all sources of funding (domestic and international, public and private); 2) increase international flows from developed to developing countries to reach USD 25 billion annually by 2025 and USD 30 billion annually by 2030; and 3) phase out or reform subsidies that harm biodiversity equivalent by at least USD 500 billion annually (Conference of the Parties to the CBD, 2022).

At COP15, global targets for conservation by 2030 were also agreed upon under the Kunming-Montreal Global Biodiversity Framework. These targets, which replace the Aichi targets, include quantitative objectives regarding the percentage of territory under protected regimes, restoration of degraded areas, and reduction of food waste, among others.

Alongside other financial announcements, the Parties mandated the GEF to create a specific fund dedicated to the implementation of the objectives of the new Global Biodiversity Framework, although the details of the fund's operation have yet to be defined.

The availability of financial resources alone is insufficient to guarantee the achievement of conservation goals. To complement this, it is important to enhance the impact of the investments made with those funds. Currently, there is limited knowledge about the impact of conservation interventions due to a lack of quantitative assessments. This is another point where there is some contrast with the case of climate change. While in the realm of climate finance the effectiveness of investments is not guaranteed and there are significant concerns about many tools, such as carbon credits (see the section "International carbon credit markets"), there are at least greater efforts to evaluate interventions and an increasing demand to demonstrate their additionality. This is a pending task within the area of financing for biodiversity conservation and requires further attention.

International cooperation for the management of areas and species

The CBD is a generalist forum aimed at addressing all relevant conservation issues. Another way in which countries cooperate with each other in biodiversity matters is through institutions, sometimes global but more frequently regional or bilateral, focusing on the management of specific ecosystems or species.

Often, country borders overlap with areas of high biological diversity. This occurs because, in many cases, mountain ranges or other complex landscapes serve as natural barriers that later become geopolitical borders. Moreover, border areas are often far from densely populated centers, making them refuges for species whose habitats are displaced by human presence. In marine areas, it is also common for countries to share ecosystems. Examples of transboundary biodiverse areas in the region include the Amazon rainforest, the Mesoamerican Biological Corridor, and the Caribbean Basin.

Some of the biodiversity threats posed by climate change also manifest in border areas. Therefore, coordination between jurisdictions is crucial to address these situations. An example of this can be seen in the Uruguay River basin, on the border with Argentina, where changes in precipitation patterns have increased the incidence of floods, with projections of further risks of similar episodes in the future. This affects both human populations and ecosystems in the area. To address this problem, an adaptation program for cities and coastal ecosystems has been formulated, funded by the Adaptation Fund and administered by CAF.

International borders often overlap with areas of biological diversity, which makes cooperation especially necessary in these transboundary areas

This program emphasizes institutional strengthening and highlights the importance of understanding ecosystems as ecological corridors that do not respond to jurisdictional borders in order to articulate appropriate policies for their conservation and sustainability (CAF Press Office, 2020).

Even before the emergence of new threats from climate change, the region has had experiences of ongoing cooperation with an established track record in conservation. These include the Amazon Cooperation Treaty Organization (see Box 4.5), the Eastern Tropical Pacific Marine Corridor (involving ministries from Costa Rica, Ecuador, Panama, and Colombia), and the Caribbean Biological Corridor (Cuba, Haiti, Puerto Rico, and the Dominican Republic). The stated purpose of these organizations is the management and conservation of biodiversity in their respective areas.

International cooperation is particularly valuable for addressing governance issues in transboundary areas. Some of the tasks that these organizations must address include the following:

Avoid overexploitation of ecosystem resources. Many commercially exploited species are distributed in geographical areas that encompass the territories (including exclusive economic zones) of multiple countries. This is especially common in the case of marine species. This situation creates an externality that incentivizes overexploitation. Indeed, there is evidence that fishing rates have declined more in previous years for transboundary species than for non-transboundary species (Palacios Abrantes et al., 2020). The traditional way in which some states have dealt with this problem is by agreeing on quotas, such as the cod total allowable catch (TAC) arrangement between Norway and Russia in the Barents Sea (Gullestad et al., 2020). Similar agreements exist in the region, but there are no studies on their effectiveness in implementing quotas or safeguarding species' sustainability.[41] Strengthening the rules for the exploitation of these resources is an essential task of international cooperation. Furthermore, in the present context, the definition of these rules must consider the present and future effect that climate change is having and will have on the geographical distribution of marine species (Palacios Abrantes, 2021).

Prevent or remove physical barriers that impede the movement of species. The construction of physical barriers at borders, such as fences and walls, is detrimental to many species whose habitats or migratory routes span multiple countries. For example, over 60% of American mammals are transboundary (Thornton and Branch, 2019). Fortunately, this is not a significant problem in the region. A recent study by Thornton et al. (2020) presents two interesting findings. The first is that in the Americas, there are proportionally more protected lands near borders than in the interior of countries. Calculations made for this report indicate that 31% of the area located within 25 km or less of the land borders in Latin America and the Caribbean is protected, a much higher proportion than the 22% represented by protected areas in the continent's total land territory (Graph 4.15 shows protected areas within 100 km or less of the borders). The second finding is that on the American continent there is greater connectivity of protected areas near borders than away from them (Thornton et al., 2020). The barriers at the United States-Mexico border are exception to this positive scenario. Their effects have been recognized for some time (Flesch et al., 2010; Peters et al., 2018). The relative absence of physical barriers on the continent is partly due to the low population density that characterizes the border areas of countries and the low incidence of interstate conflict in the region's history. Therefore, it is not evident that the degree of existing connectivity can be specifically attributed to biodiversity cooperation. However, preserving this situation must be a priority on this agenda.

41 Some examples of agreements in the region include the Treaty of the Río de la Plata and its Maritime Front, and the Agreement for the Protection and Development of the Marine Environment of the Greater Caribbean Region. These agreements involve measures such as the regulation of fishing fleets and the establishment of fishing quotas.

Box 4.5
The Amazon Cooperation Treaty Organization

The Amazon Cooperation Treaty Organization (ACTO) is an intergovernmental organization that brings together the eight signatory countries of the Amazon Cooperation Treaty of 1978: Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela. The objective of the treaty is to promote sustainable and equitable development in the Amazon territories, involving multiple areas of work, including natural resources, biodiversity, indigenous peoples, infrastructure and transportation, tourism, and knowledge management, among others.

ACTO coordinates the implementation of important projects. One notable example is the Amazon Basin Project, co-financed by the GEF, aimed at promoting integrated water resource management through strategic action programs in the member countries. Another good example is the Bio-Amazonia Project, funded by KfW, the German Development Bank, dedicated to improving the management, monitoring, and control of threatened flora and fauna species affected by trade, particularly those included in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (ACTO, 2021).

Assess infrastructure development. The construction of large infrastructure projects such as highways, railways, or dams can pose a threat to biodiversity by fragmenting ecosystems. This risk is particularly pronounced in tropical forests where many specialized organisms avoid even very narrow clearings within the forest (Laurance et al., 2009). While these constructions are not exclusively carried out in transboundary areas, it is important to address the issue of biodiversity in the context of international infrastructure, especially in LAC where there is a need for greater trade integration (Sanguinetti et al., 2021). These projects should always include rigorous analysis of their impact on biodiversity. Furthermore, the influence of environmental considerations and institutions working on conservation on infrastructure decisions will primarily depend on the political weight given to these issues.

Strengthen efforts to monitor and track species. The study of ecosystems and the monitoring of their health and conservation status has historically been weaker in border areas. For example, there are relatively few transboundary species inventories and assessments. Generally, this is associated with issues of accessibility and security.

Building State capacity is essential to ensure a positive human presence in areas of natural wealth

Strengthening state capacities is essential to increase interstate collaboration and to ensure the conditions that allow for a positive human presence in areas of natural wealth. State capacities are also crucial in addressing another threat to ecosystems: the various illegal practices of natural resource exploitation. It should be noted, however, that the need for institutional strengthening exists equally in interior areas of countries and is primarily responsibility of national governments and not of international cooperation bodies.

Graph 4.15
Protected areas along the land borders in Latin America and the Caribbean

Note: Light gray shows the terrestrial area 100 km or less from international borders. In green, areas belonging to protected areas with IUCN categories I to IV and multiple-use protected areas. The appendix of Chapter 3, available online, presents the methodology implemented to estimate protected areas.
Source: Authors based on UNEP-WCMC and IUCN data (2022).

Interaction between trade policy and conservation

In late 2022, the European Union made progress in the approval of a regulation that seeks to prohibit the entry into its borders of products from deforested areas. Specifically, this legislation would require companies wishing to market imported products to undergo a due diligence process to demonstrate that they are "deforestation-free". More precisely, the regulation would mandate that traded products were not produced on land deforested after December 2020. The sectors affected would include palm oil, livestock, soy, coffee, cocoa, timber, rubber, and derivatives of these products

(e.g., beef, furniture, or chocolate) (European Commission, 2022).

This law recognizes that European countries are major consumers of many of these commodities and that this consumption may be fueling forest loss in the places of production. Similar to the CBAM, this regulation seeks to employ trade policy to pursue environmental objectives (in this case, biodiversity conservation in addition to emissions mitigation from land-use change).

Also like the CBAM, this regulation is a unilateral initiative that imposes costs on exporting countries of the affected products by making trade more expensive and difficult. In this case, the affected sectors are important for the countries in the region, and governments have responded with concern. This is reflected in a joint letter addressed to the Agriculture Committee of the World Trade Organization and signed by ten Latin American countries, in which they acknowledge the importance of environmental objectives and ask the EU to consult with the affected countries before advancing with the legislation and to recognize the efforts they have made in forest and conservation policy (Grinspun et al., 2022).

The impact of this legislation on trade patterns and economic activities in the countries of the region will ultimately depend on the implementation details and the mechanisms established to certify the products. These details should be defined during 2023.

Focal issues for the climate change and conservation agenda in the region

As discussed in this chapter, climate change and biodiversity issues are often addressed through separate channels in international forums, although there are specific areas where the two conversations converge. Furthermore, Latin America and the Caribbean is a region where these phenomena overlap most clearly. Agriculture, cattle ranching and land-use change related to those sectors constitute a significant portion of regional emissions and also constitute a relevant area for climate change adaptation. These sectors are also focal points in the biodiversity agenda, which seeks to promote the protection of forested areas and the adoption of sustainable agricultural practices. This intersection should inform the region's position on these issues. In particular, it is important to demand increased international resources for funding projects in these areas, and that those resources be directed not only toward the adoption of good practices but also towards research and development (R&D) of sustainable and low-emission techniques. Moreover, it is essential to insist that those resources, at least a significant part of them, take the form of grants.

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The region should push for increasing international and domestic resources devoted to adopt good agricultural practices and to fund R&D in sustainable techniques

There are three main arguments supporting the case for increasing grants-based funding for these areas, as highlighted throughout the chapter: many of these projects (e.g., in the case of protected areas) do not generate direct income flows to repay loans; international financing flows should include a compensation component that goes from higher to lower historical emitters; and the activities to be promoted generate ecosystem benefits (including climate regulation), some of which are global in scope.

Another important task for countries in the region is to more explicitly and clearly link the resources and technology transfers they aspire to receive from the developed world with their own mitigation targets. This means applying a similar logic to that of the conditional targets existent in current

NDCs, but with much greater specificity regarding what countries are requesting and which policies and targets would be implemented in return. This exercise should serve two purposes: on one hand, it should provide a channel for countries to specify what transfers (financial, technological, or other types) they believe they should receive based on climate justice criteria and in line with their own action plans; and on the other hand, it should foster an increase in countries' mitigation ambitions whenever possible and deemed fair. This task of linking resource transfers with domestic targets would probably expose the significant heterogeneity that exists among countries in the region (e.g., in terms of current emission composition and intensity, as well as historical responsibilities).

Finally, it is necessary to acknowledge that environmental policies aimed at mitigating emissions and conserving biodiversity come with costs, especially in the short run. Therefore, they lead to tensions with the multiple social and economic needs that still exist in Latin America and the Caribbean. Understanding these tensions is crucial for placing these issues within the broader development agenda of the countries, a big undertaking that will be discussed in Chapter 5 of this report.