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Environment and Energy Landscape in Latin America and the Caribbean: An Analysis of Trends 2020-2030

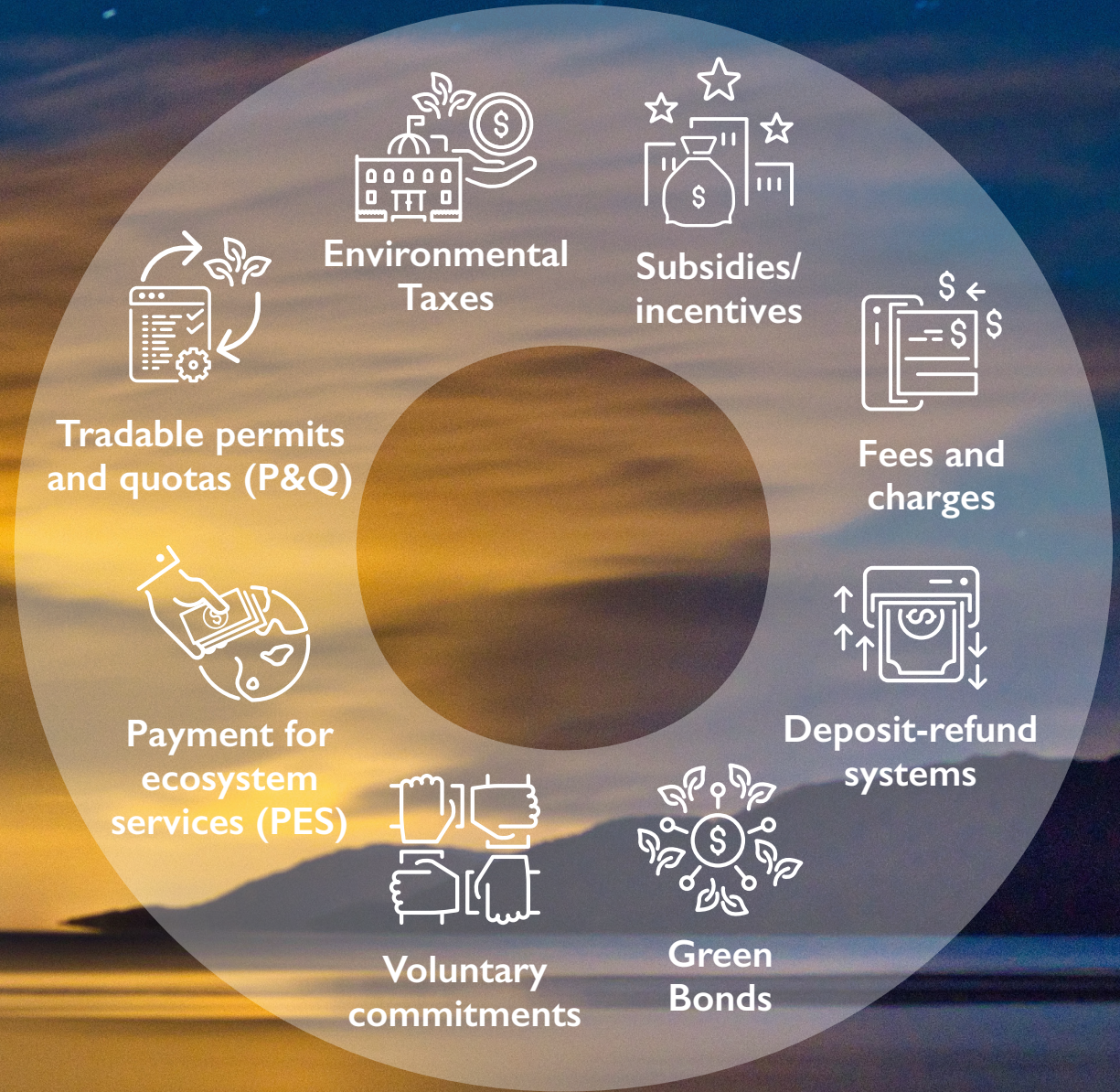
Expanded Use of Market-Based Mechanisms for
Environmental Management and Conservation

December 2020

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Examples of market-based mechanisms

“Market-based mechanisms refer to alternatives, complements or supplements to nature management that depend on market forces, financial mechanisms, or other economic instruments, and align economic incentives with environmental outcomes in order to encourage entities to solve environmental issues”



Note: 1. Based on the definition from “EPA, Market Mechanisms and Incentives for Environmental Management, 2000” and adjusted from Dalberg.

PES, tradable P&Q, environmental Taxes and green bonds are the most common and expanding market-based mechanism in LAC

Payment for ecosystem services (PES)



• **PES** occur when a beneficiary/user of an ecosystem service makes a payment to the provider of that service. The idea is that whoever preserves or maintains an ecosystem service should be paid for doing so

LAC Relevance

• **PESs** have gained more traction in recent years with programs implemented for water, carbon, landscapes and a few bundled across sectors. The protection of water sources is the most common sector application in the region. For example, LAC has the largest amount of water funds in the world (25 vs 16 in other regions)

Tradable permits and quotas (P&Q)



• **Tradeable P&Q** are acquired rights that stop the excessive use of natural resources by establishing a maximum amount to be used and use market forces to allocate the resource or emission to its most economically efficient user

• **Tradeable P&Q** have grown in the region. Up to 2017, the PINE database from OECD reported 15 tradable permit systems (vs. 27 in North America, 65 in Europe). Mexico started piloting an emissions trading system in 2020, while Colombia, Chile, and Brazil have expressed interest in establishing one

Environmental taxes



• **Environmental tax** is a charge whose tax base is a physical unit that has a proven specific negative effects on the environment

• **Environmentally related tax revenues** have slowly grown in the region, from 0,9% to 1.1% of GDP on average in 2018 in LAC well below the OECD average of 2.3%. In the last six years, Mexico, Chile, Argentina, and Colombia have implemented carbon taxes, and Brazil has expressed interest, signaling the potential to increase

Green bonds



• **A green bond** is a type of loan allocated to environmental related projects that companies, governments, and banks use to finance projects. The issuer of the bond owes the holder a debt and is obliged to pay back the amount lent

• From 2014-2019, the annual green bonds issuance volume in Latin America and the Caribbean grew 18-fold to \$3.6 billion in 2019

Sources: 1. UNDP, Payments for ecosystem services; 2. AfroMaison, Tradable Permits Quotas and Shares; 3. OECD, Environmental Taxes, 2005; 4. Climate Bonds Initiative, A brief guide for understanding what climate bonds are and why they are important. 5. Fondos de agua, The role of water funds, 2020; 6. OECD, Policy Instruments for the Environment (PINE) Database, 2017; 7. The World Bank, Carbon Pricing Dashboard, 2020; 8. Initiative climate bonds, LAC Green finance state of the Market 2019, 2019.

Each of these Market-based mechanisms has distinct advantages and challenges

Payment for ecosystem services (PES)



Advantages

- Makes the value of ecosystems explicit, enabling greater willingness to manage these assets optimally
- Supports/empowers communities to benefit directly from environmental stewardship

Challenges

- May require scientific and/or technical expertise to correctly price/value assets and services
- May require significant monitoring to ensure ecosystems are maintained as intended

Tradable permits and quotas (P&Q)



- Limit the use or exploitation of resources to a maximum that (in theory) represents an optimal usage level
- Allocate usage/rights based on highest value (economic efficiency) and/or least cost for compliance (cost-effectiveness)

- Establishing the appropriate/optimal cap may be difficult due to uncertainty or limited data
- Ensuring allocation of rights also delivers equitable outcomes can be a challenge

Environmental taxes



- Generate revenue that can be used for positive purposes, including compensating those hurt by the downstream effects of taxes
- Provide corrective price signals/incentives to market actors
- Understanding optimal tax levels is relatively clear

- Can be difficult to generate political support and/or to operationalize

Green bonds



- Build on existing (and often well-functioning) capital markets and finance ecosystems
- Can be used to mobilize significant funds for large-scale projects

- Relatively new market, with limited track record
- Dependence on underlying finance ecosystem means existing inequities and biases in these systems are likely to shape green bond market as well



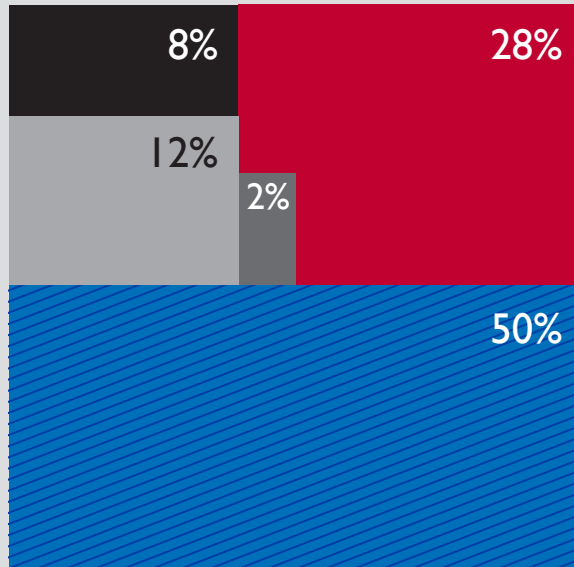
PAYMENT FOR ECOSYSTEM SERVICES (PES)

PES | PES in LAC have mainly focused on local level water solutions

PES in LAC (sample of 40 PES)

Distribution by ecosystem service

Water funds lead the way in the region's use of PES



Design considerations for PES

- PES programs have flourished in Latin America and the Caribbean since the first national PES program was established in Costa Rica
- While PES present an interesting alternative, they tend to be complicated to design, implement, and maintain
- Dimensions of social equity — including the ability to participate in and configure such programs, the recognition of diverse local rights, and the fair distribution of costs and benefits — must not be overlooked in design. Social equity can have long-term effects on ecological results and on project costs
- A critical piece of the effectiveness of PES is the adequate monitoring of the provision of a service or multiple ecosystem services

Source: N. Grima et al, Payment for ecosystem services (PES) in Latin America: Analyzing the performance of 40 case studies, 2016..

PES | LAC is the leading region in the world on water-focused PES (i.e., water funds), currently with 25 funds created and 15 under development

Water Funds in LAC



How water funds work?

- Water funds allow downstream water users such as major brewers or municipal water authorities (service buyers) to finance upstream provision of a clean, regular supply of water
- The land management and land use by the human communities living on private, public, and communal lands in the watershed determine service delivery
- Fund resources are directed toward conservation activities upstream, such as reforestation, enabling rural people who live near key waterways to start small businesses and organic gardens that avoid damaging forests and grasslands
- PES work best when clearly identifiable actions can increase the supply of a service and/or when there is a clear demand for the service(s) in question, whose provision is commercially viable

Source: Fondos de agua, The role of water funds, 2020.

LAC in Numbers vs. the World



25

Water Funds in operation
(41 global)



15

Water funds in
development
(28 global)



89 M

People potentially
benefited



227k

Ha of parallel
conserved forest



~500

Public and private
partners

PES | PES schemes can deliver a range of environmental, economic, and social benefits (1 of 2)



Environment

- **Decreased deforestation and degradation** The evaluation found that Mexico's PES program has indeed reduced deforestation. The effect is quite significant in areas at high risk of deforestation, where participants cut down 29% less forest than they otherwise would
- Deforestation rates decreased 50% in areas with PES, but deforestation rates in areas without PES was low (0.8%)
- **Improved water quality and availability as well as reduced soil erosion** The majority of participants of PES programs perceived that quality and availability of water had improved (79% and 64% of respondents, respectively) over the last two years of the program



Economy

- Increased income, however, was typically not enough to cover the opportunity cost of using the natural resources for other productive purposes**
- Financial benefit comes from income to smallholder farmers or landowners as well as diversification
 - PES programs have a wide range of compensation structure and contributions to household income; rarely do they provide enough to meet the household needs

Sources: 1. World Bank Blog, Paying for ecosystem services, a successful approach to reducing deforestation in Mexico, 2019; 2. Mongabay, Cash for conservation; 3. Do payments for ecosystem services work?, 2017.

PES | PES schemes can deliver a range of environmental, economic, and social benefits (2 of 2)



Social

Expanded access to income and services for vulnerable populations

- In areas with a low state presence and vulnerable populations, such as indigenous and Afro-descendant, PES could serve as a source of income to increase the well-being of the population
- In the Colombian Amazon, 15,000 families have benefited from PES programs, including indigenous and low-income farmer communities

PES | Despite the increased adoption of this mechanism, there are still challenges to further expand its usage across the region (1 of 3)



Technical/Operational

Difficulty in defining the correct price/value assets and services

A common challenge for PES is to determine the value of services and resources, considering that there are no clear parameters on the establishment of an accurate value for each type of natural resource

Lack of adequate monitoring to ensure ecosystems are maintained as intended

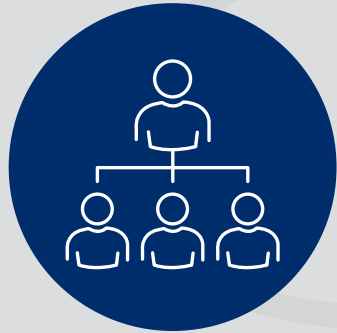
In Costa Rica, ensuring the credibility of offsets is challenging because there are many ways to determine whether a project is additional to a given baseline, and inherent uncertainty exists in measuring emission reductions relative to such a baseline

Insufficient evidence on PES social impact

There is lack of strong evidence and well conducted studies on PES social impact outcomes

Sources: 1.Mongabay, Cash for conservation: Do payments for ecosystem services work?, 2017; 2. Montagnini F, Finney C, Payments for environmental services in Latin America as a tool for restoration and rural development. Ambio. 2011; 3. Profor, Lessons learned for REDD + from payment-for-services programs environmental and conservation incentives, 2012.

PES | Despite the increased adoption of this mechanism, there are still challenges to further expand its usage across the region (2 of 3)



Structural/Organizational

Complex land ownership structure limit ability to provide a PES

Costa Rica, Mexico, and Ecuador PES programs all recognized title and tenure as a key challenge to participating in PES, although they differ in their specific magnitude

Involve local stakeholders (rural and indigenous communities)

Communication is key for vulnerable groups to understand how PES work. In countries like Colombia, 53.4% of indigenous territories are in protected areas, which is why they are a relevant actor for the protection of resources

Sources: 1. Profor, Lessons learned for REDD + from payment-for-services programs environmental and conservation incentives, 2012; 2.El Espectador, Pagos por servicios ambientales, la próxima tarea para la Amazonía, 2018.

PES | Despite the increased adoption of this mechanism, there are still challenges to further expand its usage across the region (3 of 3)



Political/Regulatory

Lack of awareness of PES and benefits for environmental management

There is lack of understanding among local/national governments of what PES are and their benefits and limitations

Limited regulatory framework to support PES

Currently, only 17 LAC countries have laws that mention PES. However, in cases such as the PES program for water resources in Mexico, the law's lack of robustness under particular conditions caused it to fail

Source: 1. Flores, et.al, Gobernanza ambiental y pagos por servicios ambientales en América Latina, 2018; 2. Watershed markets, Mexico- National PSAH Programme.

CASE STUDY | São Paulo Water Fund is proving that green infrastructure is key to improving gray infrastructure efficiency

“The Water Fund has proved its value by supporting governments with the best available science for decision-making, which increases coordination and capacity for an integrated watershed management”

– Latin America Water Funds Partnership



Challenge:

- Greater São Paulo, home to 20 million people, is one of the most water-stressed cities in Latin America
- Before the crisis, São Paulo consumed 4% more water than was available in its rivers, a deficit of 3,000 liters per second.



Approach

- The São Paulo Water Fund was created in 2007, with the goals to restore 12,000 ha of Atlantic Forest by working with local communities, implement soil conservation practices in 4,000 ha, and conserve 67,000 ha of forest critical to watersheds ecosystem health
- The fund has mobilized a broad coalition of stakeholders to conserve and restore green infrastructure as a cost-efficient solution to providing quality water in sufficient quantity to greater São Paulo



Outcomes:

- By 2018, there were 8,278 ha in the implemented area, 400 families benefited directly, and there were \$32.1 million in leveraged resources

Source: Fondos de agua, The Sao Paulo Water Fund, 2019.

CASE STUDY | Costa Rica is a leader in LAC in successfully using PES for forest conservation

“The forests cover half of Costa Rica. The reason for these achievements was the PES program. Also, the National Plan contemplates increasing the country’s forest cover from 52% to 60% of the national territory by 2030”

Challenge



- Since the middle of the 20th century, Costa Rica has had high rates of population growth and deforestation
- This has negatively affected economic activities, especially in the tourism and hydropower sectors

Approach



- In the 1990s, Costa Rica launched a PES program to protect forests and reduce deforestation rates, centralizing funds in the National Fund for Forest Financing (Fonafifo)
- This program changed the vision from environmental subsidies to “economic recognition”
- Landowners received payments every five years for basic forest protection (\$45/ha/year), sustainable forest management (\$70/ha/year) and reforestation (\$116/ha/year)

Outcomes



- After 23 years, the program has contributed to a total of 52.4% of the country being currently under forest cover, up from 21% in 1987

Sources: 1. Ella, Pagos Por Servicios Ambientales: Un Mecanismo De Mercado Que Protege Los Bosques Latinoamericanos, 2014; 2. Quirós, Fonafifo paga 17.776 contratos por servicios ambientales a dueños de terrenos privados, 2019; 3. Flores, et. al., Gobernanza ambiental y pagos por servicios ambientales en América Latina, 2018; 4. Rodríguez, Por baja recaudación fiscal, nuevo presupuesto rebaja €1.012 millones a protección de bosques, 2020.

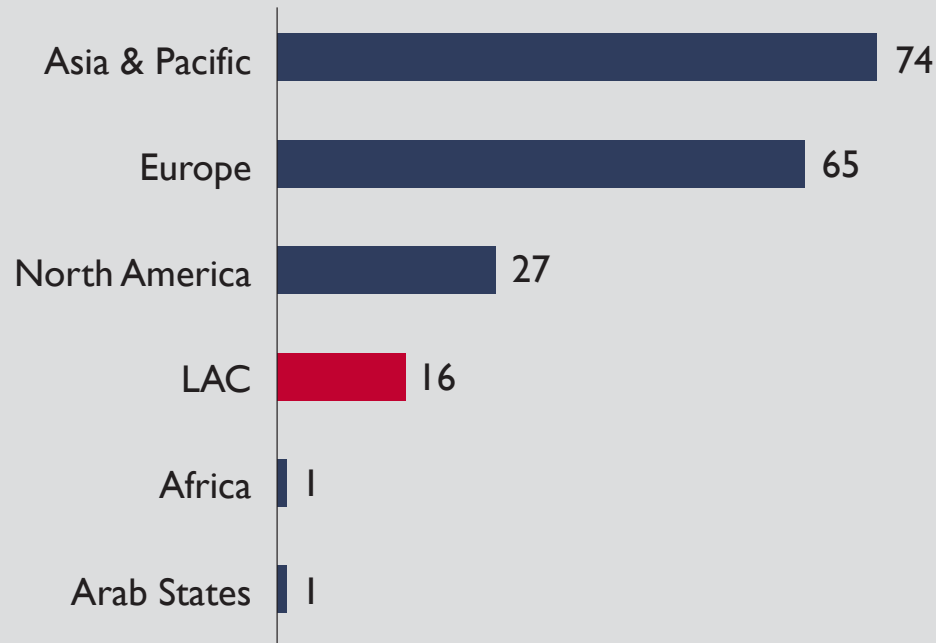


TRADABLE PERMITS AND QUOTAS (P&Q)

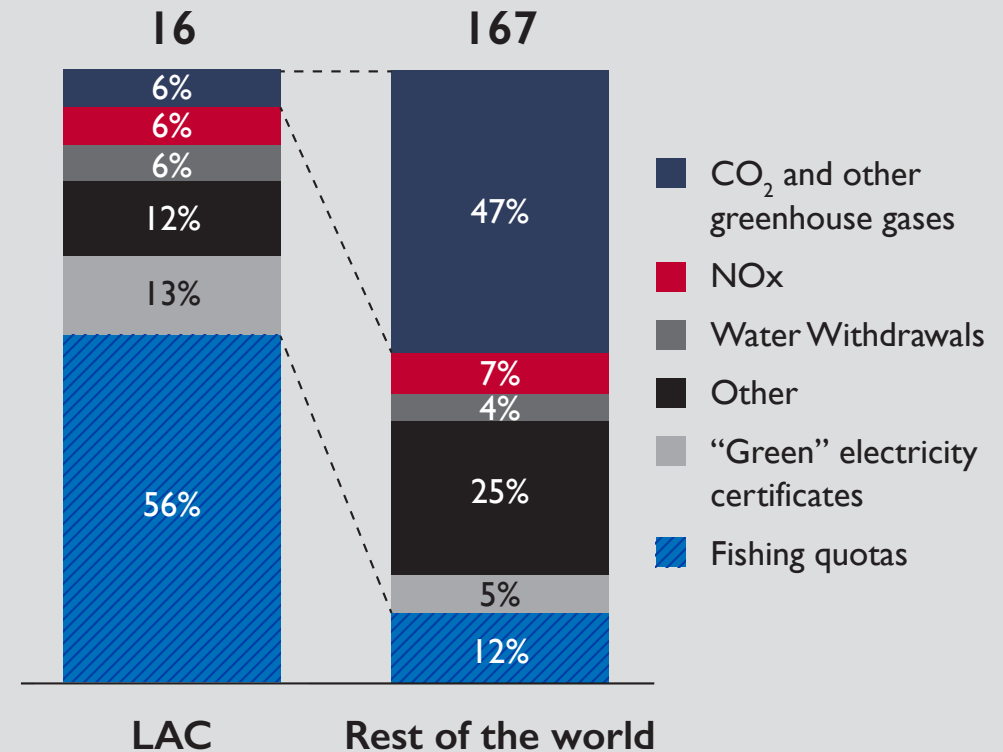
Tradable P&Q | There have been at least 16 tradable P&Q in LAC, most of which have focused on fishing quotas

Characteristics of tradable P&Q (as of 2017)

Number by region



Distribution by environmental domain



Markets for CO₂ (or carbon markets) are complex and costly to implement, and as such historically been an instrument employed only by developed countries, but LAC is starting to catch up

Source: I. OECD, Policy Instruments for the Environment (PINE) Database, 2017.

Tradable P&Q | Emissions trading systems are emerging in the region; Mexico is piloting a system and three other countries are considering them

Emission trading systems in LAC



Emissions trading systems (ETS) create incentives to reduce emissions where these are most cost-effective; they represent almost 50% of all P&Qs globally

- In 2020, Mexico launched a pilot ETS. The system covers power, oil and gas, and industrial sectors, which account for ~40% of the country's greenhouse gas emissions
- ETS have been under consideration in some areas of the region such as Colombia, Chile, and Brazil since 2020
- While Brazil is not looking to implement nationwide ETS, Sao Paulo, and Rio de Janeiro have expressed interest on this mechanism

Note: Emissions trading systems are markets where polluters buy permits that allow a specific number of emissions over a period of time. The polluters need to have as many permits as the emissions they produce. To be able to go over that limit, they can buy additional permits from others willing to sell them.
Source: The World Bank, Carbon Pricing Dashboard, 2020.

Tradable P&Q | Tradable P&Q has shown positive environmental and economic outcomes (1 of 2)



Economy

Enables to allocate usage/rights based on highest value (economic efficiency) and/or least cost for compliance (cost-effectiveness)

- Carbon pricing systems are increasingly attractive as they do not dictate by how much individual entities reduce emissions; instead, they send economic signals to let emitters decide whether to change their business logic toward reducing emissions or continue emitting and pay the price
- Carbon pricing can stimulate technological and market innovation. It can also be a significant source of public revenues



Governance

It is not necessary to develop a law or large bureaucratic programs for its application

- Emissions transaction programs could be applied independently of the environmental institutional structure of each LAC country. Even the lack of an institutional framework should not be a brake on its application. For example, Chile had the emissions transaction program for industrial boilers before the Environmental Bases Law and the establishment of the National Environmental Commission

Sources: 1. CEPAL, Instrumentos económicos para la gestión ambiental, 2015; 2. Trinidad, Precio al carbono en América Latina: tendencias y oportunidades, 2019; 3. LT La Tercera, Las cinco claves de la Ley de Pesca que genera protestas en las ciudades portuarias de Chile, 2012; 4. The World Bank, Carbon Pricing Dashboard, 2020; 5. Calfucura, Permisos comerciables de emisión en Chile Lecciones, desafíos y oportunidades para países en desarrollo.

Tradable P&Q | Tradable P&Q has shown positive environmental and economic outcomes (2 of 2)



Environment

Limit the use or exploitation of resources to a maximum that (in theory) represents an optimal usage level

- In countries like Chile, tradable P&Q helped control the over-exploitation of marine species (more detail in the case study)
- There are some successful cases of environmental management using permits and quotas in the region
 - In Mexico, hunting permit to control wildlife trafficking
 - In Chile, commercialization of water rights and the NO_x emissions compensation system
 - In Peru, Conditional Direct Transfers of the Forest Program

Sources: 1. CEPAL, Instrumentos económicos para la gestión ambiental, 2015; 2. Trinidad, Precio al carbono en América Latina: tendencias y oportunidades, 2019; 3. LT La Tercera, Las cinco claves de la Ley de Pesca que genera protestas en las ciudades portuarias de Chile, 2012; 4. The World Bank, Carbon Pricing Dashboard, 2020; 5. Calfucura, Permisos comerciables de emisión en Chile Lecciones, desafíos y oportunidades para países en desarrollo.

Tradable P&Q | Political will to incorporate tradable P&Qs and technical knowledge to design them are the main challenges to increasing adoption of them (1 of 3)



Technical/Operational

Difficulty establishing the appropriate/optimal cap

Defining the upper aggregated limit on the resource use is challenging due to lack of good baseline data and ongoing monitoring

Complex allocation of rights to ensure equitable outcomes

In Chile, despite having a successfully designed system for fishing quotas, the artisanal and industrial sectors still do not agree that the rights will be automatically renewed after 2023

Sources: 1. Tom Tietenberg, Tradable Permits in Principle and Practice; 2. BioBioChile, Sector industrial y artesanal enfrentados por proyecto que elimina renovación de licencias de pesca, 2019; 3. ICAP, International Carbon Action Partnership (ICAP) Status Report, 2018; 4. ICAP, ETS Detailed Information, 2020.

Tradable P&Q | Political will to incorporate tradable P&Qs and technical knowledge to design them are the main challenges to increasing adoption of them (2 of 3)



Technical/Operational

Inadequate monitoring and enforcement

Monitoring and enforcing the limits has proven to be challenging in certain cases, for example in multispecies fisheries and in transnational fisheries

Limited evidence on social impacts

Given the nascency of the instruments in the region, there is lack of strong evidence and well-conducted studies on tradable P&Q social impact outcome

PES | Political will to incorporate tradable P&Qs and technical knowledge to design them are the main challenges to increasing adoption of them (3 of 3)



Political/Regulatory

Limited awareness of tradable P&Q and benefits for environmental management

It is necessary to develop pilot programs with stakeholder involvement to communicate the benefits of tradable P&Q. For example, Chile plans to start a pilot ETS program in 2025

Lack of political will to incorporate tradable P&Q as an environment management tool

Only three countries in the region (Mexico, Colombia, and Chile) have regulatory bases to implement a pilot program of ETS. In the case of Colombia, since 2018 there has been an emission quota law in place that has not yet been executed

Sources: 1. Tom Tietenberg, Tradable Permits in Principle and Practice; 2. BioBioChile, Sector industrial y artesanal enfrentados por proyecto que elimina renovación de licencias de pesca, 2019; 3. ICAP, International Carbon Action Partnership (ICAP) Status Report, 2018; 4. ICAP, ETS Detailed Information, 2020.

CASE STUDY | Chile's regulatory framework has fostered a market for sustainable fishing permits

“The 2020 fisheries report reveals improvements in horse mackerel, cod, and other key resources. The report also shows that there is a common denominator among the resources that improve: all of them are subject to tradable fishing licenses or special fishing permits”



Challenge:

- By 2012, 70% of the main fishing resources of Chile were collapsed or in the process of overexploitation
- 90% of the fishing industry was dominated by 4 large companies

Approach



- In 2012, the Chilean general law on fishing and aquaculture established a system of tradable fishing licenses
- Licenses are granted through annual auctions, where no bidder may be awarded more than 40% of the quota subject to auction
- For each type of marine animal, a lot is assigned in tons on which the fishing percentages are estimated
- Fishing permits are assigned according to the region, the fishing class, and the season of the year (from January to June, and from July to December)

Outcomes:



- The number of species at risk of collapse has decreased from 8 to 5 during 2019
- In 2019, of the 27 species monitored, 26 improved or maintained their condition compared to the previous year

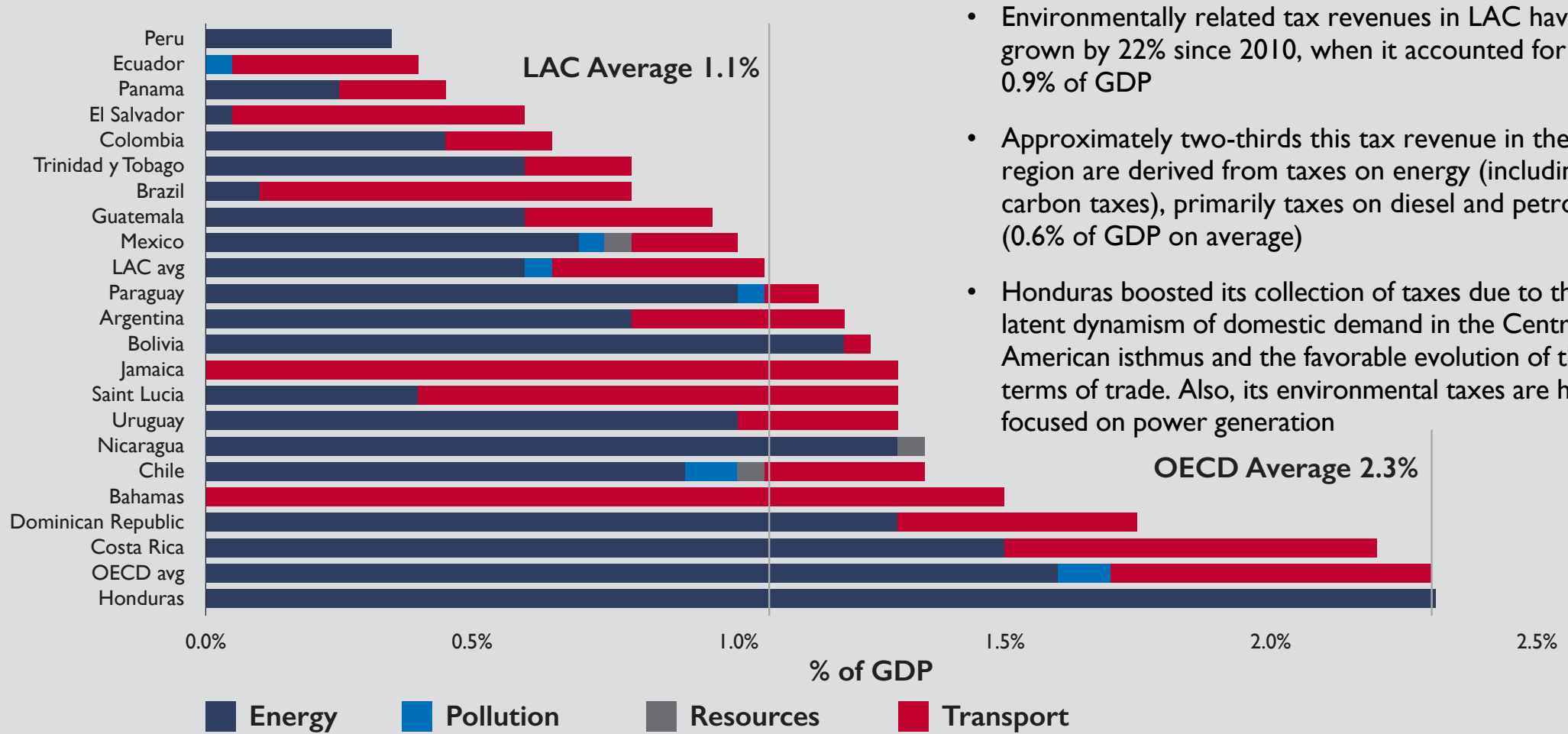
Sources: 1. La Tercera, Las cinco claves de la Ley de Pesca que genera protestas en las ciudades portuarias de Chile, 2012; 2. Industrias Pesqueras, Chile abre el proceso anual de subasta de cuotas de pesca, 2019; 3. Ministry of Economy, Promotion, and Tourism, Modifica Resoluciones Exentas N° 4012 Y N° 4014 Ambas De 2019 Y De Esta Subsecretaría, 2020; 4. Industria Pesquera, Chile reduce a 5 el número de pesquerías en riesgo de colapso, 2020; 5. Subpesca, Nuevo informe anual de pesquerías revela mejoras en jurel, bacalao y otros recursos clave, 2020.



ENVIRONMENTAL TAXES

Environmental Taxes | LAC revenues from environmental taxes are growing, but the regional average as share of GDP is still less than half the OECD average

Environmentally related tax revenue by sector as a % of GDP (2018)



- Environmentally related tax revenues in LAC have grown by 22% since 2010, when it accounted for only 0.9% of GDP
- Approximately two-thirds this tax revenue in the LAC region are derived from taxes on energy (including carbon taxes), primarily taxes on diesel and petrol (0.6% of GDP on average)
- Honduras boosted its collection of taxes due to the latent dynamism of domestic demand in the Central American isthmus and the favorable evolution of the terms of trade. Also, its environmental taxes are heavily focused on power generation

Sources: 1. OECD, Revenue Statistics in Latin America and the Caribbean 1990-2018, 2018; 2. OECD, Taxbases - Tax Rates of Environmentally Related Taxes.

Environmental Taxes | Carbon tax adoption is emerging in the region, with four countries with carbon taxes in place and Brazil considering implementation

Carbon tax initiatives in LAC



Characteristic of carbon taxes in LAC

- A carbon tax is a form of explicit carbon pricing directly linked to the level of CO₂ emissions, which can exist alongside other energy taxes.
- Three-quarters of carbon taxes in LAC are upstream, which implies that the taxpayers are oil wells, coal miners, and importers. Unlike other models where the tax burden is offset throughout the value chain
- Only Colombia and Mexico have tax compensation, providing the option to buy an offset/fund projects that reduce greenhouse gas emissions instead of paying the taxes, which improves their acceptability
- The upcoming implementation of the Carbon Pricing in the Americas platform will enable countries to share pricing experiences), which represents an opportunity for regional collaboration

Sources: 1. The World Bank, Carbon Pricing Dashboard, 2020; 2. UN Environment, Carbon Pricing in Latin America, 2019; 3. Konrad Adenauer Stiftung, Policy Brief Carbon pricing instruments in Latin America.

Environmental Taxes | Environmental taxes offer environmental, economic, and even social benefits (1 of 2)



Environment

Create economic incentives for environmental outcomes such as reduced energy use or carbon emissions

- This type of mechanism can encourage the use of renewable energy (e.g., one of the objectives of carbon taxes in Colombia is to discourage the use of fossil fuels)
- Carbon taxes can help reduce greenhouse gas emissions in industries with higher levels of pollution



Economy

Taxes leave consumers and businesses with flexibility to determine the lowest-cost way to reduce the environmental damage

- The flexibility of response associated with environmental taxes also provides other benefits
- Ongoing incentive to abate
- Improves competitiveness of low-emission alternatives
- Strong incentive to innovate

Source: I. Konrad Adenauer Stiftung, Policy Brief Carbon pricing instruments in Latin America.

Environmental Taxes | Environmental taxes offer environmental, economic, and even social benefits (2 of 2)



Social

Generate revenue that can be used for positive purpose, including compensating those hurt by the downstream effect of taxes

- If countries such as Bolivia, Ecuador, and Venezuela implemented carbon taxes, with an optimal tax level between \$ 20 and \$ 50/tCO₂, they would obtain benefits on GDP of between 1.16 - 3.01%
- In countries such as Argentina, Brazil, Colombia, Honduras, Nicaragua, Peru, and Uruguay, a carbon tax between \$5 and \$10/tCO₂e would generate an effect on GDP of between 0.01 and 0.23% in the long term

Sources: 1. CIAT, Potential effects of a carbon tax on GDP in Latin American countries, 2017; 2. IDB, Cash transfers for pro - poor carbon taxes in Latin America and the Caribbean, 2019.

Environmental Taxes | Despite existence of some environmental taxes in the region, LAC is lagging in revenue collected and mainstreaming new types of taxes (1 of 3)



Technical/Operational

Need for accurate measurement, report, and verification (MRV) tools

There is a need for accurate measurement tools for emission sources to set an adequate price for carbon (e.g., Chile is studying how to improve its MRV for better management of the carbon tax)

Source: Konrad Adenauer Stiftung, Policy Brief Carbon pricing instruments in Latin America.

Environmental Taxes | Despite existence of some environmental taxes in the region, LAC is lagging in revenue collected and mainstreaming new types of taxes (2 of 3)



Private sector

Limited awareness in and involvement of the private sector

The private sector needs to know the benefits of mechanisms such as taxes. For example, Brazil and Mexico had voluntary simulations with the private sector to evaluate price mechanisms to reduce emissions

Sources: 1. Konrad Adenauer Stiftung, Policy Brief Carbon pricing instruments in Latin America; 2. CIAT, Potential effects of a carbon tax on GDP in Latin American countries, 2017.

Environmental Taxes | Despite existence of some environmental taxes in the region, LAC is lagging in revenue collected and mainstreaming new types of taxes (3 of 3)



Political/Regulatory

Difficult to generate political support and/or to operationalize

LAC countries need to understand how taxes can overlap with other policies, providing flexibility for corrections and policy innovation (e.g., in Mexico and Colombia, tax offsets have been created to reduce the economic impacts of taxes and increase their public acceptability)

Lack of regional collaboration

Despite initiatives such as Carbon Pricing in the Americas, international linkage is still a future objective since even local experiences are quite recent

Need for effective use of tax revenue

In countries such as Chile, Costa Rica, El Salvador, Guatemala, Mexico, Panama, and Paraguay, carbon taxes could hurt productivity if there are no policies to reuse tax revenues (i.e., one sector is discouraged, but other economic sectors must be encouraged)

Sources: 1. Konrad Adenauer Stiftung, Policy Brief Carbon pricing instruments in Latin America; 2. CIAT, Potential effects of a carbon tax on GDP in Latin American countries, 2017.

CASE STUDY | Colombia has had success with its carbon taxes thanks to a strong regulatory framework

“In the country, this tax, which is \$5 per ton of carbon emitted, yielded revenues of \$148 million in 2017 and \$91 million in 2018”



Challenge:

- In Colombia, emissions associated with fossil fuels represent ~35% of the country's total emissions
- In 2015 under the Paris Agreement, Colombia committed to reduce its emissions by 20% compared to emissions projected for 2030



Approach

- In Law 1819 of 2016, Colombia included the carbon tax within a green tax package
- The carbon tax is up-stream, charged to producers and importers of liquid fossil fuels
- In the liquid fossil fuel value chain, the organizations in charge of exploration, production, transport, and refining are the tax collectors. Wholesale fuel buyers, fuel stations, industrial producers, and consumers are direct carbon taxpayers
- The carbon tax in Colombia is accompanied by compensation so that companies can avoid paying the tax collector, instead offsetting their pollution by purchasing carbon credits from eligible mitigation projects
- The tax is recalculated every year to take inflation into account

Outcomes:



- It is estimated that the tax has caused a reduction of around 38% in fossil fuel emissions in the period 2017-2018
- In 2019, income from the tax was \$111 million
- In 2017, carbon taxes represented 67 percent of Colombia's environmental taxes

Sources: 1. Rona, Colombia: Impuesto Nacional al Carbono, 2019; 2. Government of Colombia, Law 1819, 2016; 3. IIIEE, Interaction between the carbon tax and renewable energy support schemes in Colombia, 2017; 4. UN Environment, Carbon Pricing in Latin America, 2019; 5. Konrad Adenauer Stiftung, Policy Brief Carbon pricing instruments in Latin America; 6. The World Bank, Carbon Pricing Dashboard, 2020; 7. Semana, Impuesto al carbono podría funcionar en países como Colombia, 2020.



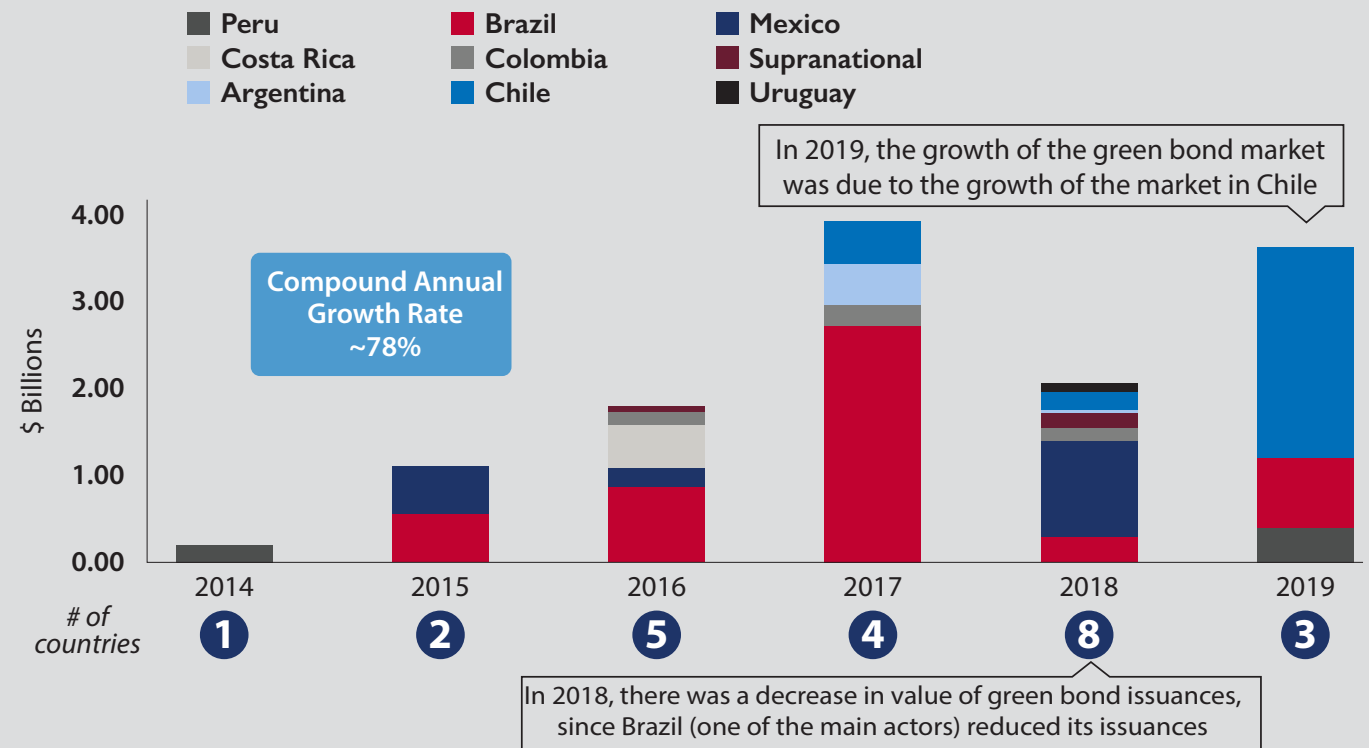
GREEN BONDS

Green Bonds | The green bond market in LAC has expanded rapidly over the past few years

LAC highlights

- Between **2014 and 2019**, a total of **\$12.6 billion** was issued in LAC through 52 issuances
- LAC issuers have contributed with **2% of the global green bond** issuance volume (1% of bonds and 5% of issuers) through 2019
- Local green bond issuance has shown **size and maturity limitations** (some maximum issuance has been lower than \$300 million, and seven to nine years are the maximum maturities)
- Green bond growth is expected across the region, driven by much needed investments in green infrastructure

Green bond market growth in recent years



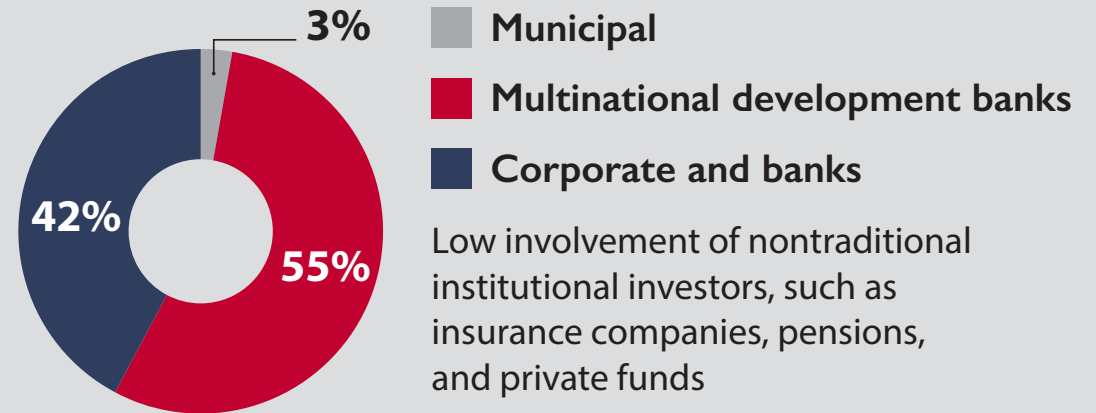
Note: Green bonds are usually classified in the broader category of green finance, which is also growing in the region, but for this report we are focusing only in green bonds.
 Sources: 1. IDB, Green Bond Transparency Platform, 2019; 2. Climate Bonds, Latin America and Caribbean green finance: Huge potential across the region, 2019; 3. ECLAC, The rise of green bonds Financing for development in Latin America and the Caribbean, 2017.

Green Bonds | Green bonds by issuance are concentrated in Brazil, led by multinational development banks supporting primarily energy projects

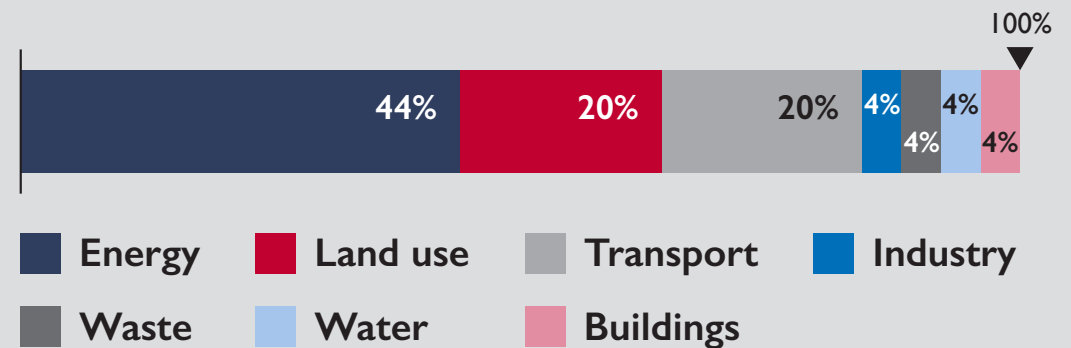
Size of the green bond market by country 2019



Green bond market share 2019 by actor



Green bond market share 2019 by sector



Sources: 1. Climate Bonds, Latin America & Caribbean Green finance state of the market 2019; 2. ECLAC, The rise of green bonds Financing for development in Latin America and the Caribbean, 2017.

Green Bonds | Green bonds have environmental and economic benefits, helping to close the financing gap to transition to a greener economy in LAC



Environment

Increased investment in environmental projects

- Green bonds emerged as a new vehicle to finance **climate-relevant investments**, including renewable energy, energy and water efficiency, sustainable transport, and sustainable land-use



Economy

Able to mobilize significant funds for large-scale projects

- Green bonds would help to close the financial gap of annual investments of between **\$40-50 billion through 2030** to achieve a greener economy in the region
- The money needed for the region to meet the SDGs far exceeds the scope of traditional financing for development
- A large-scale project example: Chile's goal is for 40% of the private car fleet to be electric and for the public fleet to be 100% electric by 2040

Sources: 1. Konrad Adenauer Stiftung, Policy Brief Carbon pricing instruments in Latin America; 2. CIAT, Potential effects of a carbon tax on GDP in Latin American countries, 2017; 3. IDB, Cash transfers for pro-poor carbon taxes in Latin America and the Caribbean, 2019.

Green Bonds | For the green bond market to grow faster, it must overcome operational and private sector challenges (1 of 2)



Technical/Operational

Early stage market

- Relatively new market, with limited track record
- Dependence on underlying finance ecosystem means existing inequities and biases in these systems are likely to shape green bond market as well
- The size and maturity of the bonds is a limitation for developing more diverse projects and involving other investors

Need for additional emission guarantors

There are not many guarantors for emissions. The IDB is the main guarantor and assistant in bond issues, with support for more than 30 issues. It has also promoted financial innovation and risk-sharing mechanisms

Lack of monitoring platform

The region faces the challenge of making the platform (GBTP) in which they currently work efficient. This platform will have unrestricted access, and will provide clear data on the use of revenues and the presentation of environmental impact reports

Sources: 1. ECLAC, The rise of green bonds Financing for development in Latin America and the Caribbean, 2017; 2. Environmental Finances, Bringing Transparency to Green Bonds in Latin America and the Caribbean, 2020.

Green Bonds | For the green bond market to grow faster, it must overcome operational and private sector challenges (2 of 2)



Private sector

Insufficient involvement of the private sector

- Limited involvement by some investors (e.g., pension funds) who have large pools of savings that would be very useful to solve environmental problems
- Investors need to be more involved in projects other than energy. For example, the region has great infrastructure needs around environmental problems (annual infrastructure deficit of \$50 billion)

Limited Transparency

- According to a report supported by IDB and CBI, only 53% of green bond issuers surveyed in LAC report both how their deal proceeds are allocated and their environmental impact

Sources: 1. ECLAC, The rise of green bonds Financing for development in Latin America and the Caribbean, 2017; 2. Environmental Finances, Bringing Transparency to Green Bonds in Latin America and the Caribbean, 2020.

CASE STUDY | The first green bond in the Caribbean aims to reduce Barbados' carbon footprint by financing clean energy

“The Climate Bond Standard Board approved the certification of WREL green energy bonds as consistent with addressing the two degrees Celsius warming limit in the Paris Agreement”



Challenge:

- In 2019, the Williams Renewable Energy Limited (WREL) company sought funds to finance a project for solar photovoltaic systems in the Caribbean (Barbados)



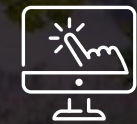
Approach

- WREL financed a solar energy business through a \$20 million green energy bond program
- First green bond in the Caribbean
- Partners: CIBC First Caribbean International Bank (banker), IADB (bond guarantor), and PwC (auditors)



Expected Outcomes:

- The number of species at risk of collapse has decreased from 8 to 5 during 2019
- In 2019, of the 27 species monitored, 26 improved or maintained their condition compared to the previous year



Lessons

- Initial green projects serve as a benchmark to establish viability and replicate successful procedures
- Development banks and multilateral organizations could serve as guarantors and advise on bond issuance processes so that the bond market grows in the region
- Standard projects that provide generic solutions to environmental issues are more easily understood in the green bond market, unlike projects with a higher degree of complexity

Sources: 1. Climate Bonds, Williams Caribbean Capital; 2. Climate Bonds, Green Bond Framework, 2019; 3. Barbados Today, Bizzy's bonds get the thumbs up; 2019.



CALL TO ACTION

CALLS TO ACTION | A holistic, cross-sectoral approach is needed to expand the use of market-based-mechanisms toward environmental outcomes



The underlying drivers of environmental challenges are often systemic issues rooted in local economic, social, and cultural realities that are deeply complex to address

Making progress on these challenges often requires cross-cutting approaches that draw on resources and capabilities from local communities themselves along with support from government, private sector, civil society, academia, and donors

The high-level ideas outlined in this section are often interdependent; they need to be implemented in tandem in order to be effective

They also require a keen understanding of local context to determine whether and how they might apply given the size and diversity of the region

Source: Dalberg analysis

12/12/2020

Call to action | In order to increase the adoption of market-based mechanisms, LAC must have the following enabling factors in place (1 of 5)



Public sector

Expand/complement existing regulation

- Develop regulations with an environmental focus, considering market mechanisms for their execution
- Discourage polluting industries through new regulations (e.g., gradual reduction of fossil fuel subsidies)
- Develop a robust financial system/regulation to adequately manage bond risks
- Develop policies to encourage investors to invest in green projects

Strengthen technical capacity

- Include technical experts in monitoring and formulating market mechanisms (to set the right levels/quotas)
- Design the appropriate valuation of environmental services, so that the PES are properly executed

Strengthen monitoring and tracking

- Develop guidelines for effective monitoring and tracking of environmental damage/benefits to allow for trading

Call to action | In order to increase market-based mechanism adoption, LAC must have the following enabling factors in place (2 of 5)



Civil Society

Facilitate the communication of economic tools to vulnerable communities

- Develop effective communication instruments to make indigenous and peasant communities aware of the advantages of market-based mechanisms (mostly for PES and tradable P&Q)
- Involve indigenous communities and vulnerable communities in the design of local market mechanisms

Help discourage illegal activities

- Develop campaigns that reduce the value of illegal activities, such as the illegal logging or the wildlife trafficking, where alternative solutions are offered through market-based mechanisms

Call to action | In order to increase market-based mechanism adoption, LAC must have the following enabling factors in place (3 of 5)



Private sector

Develop business models innovation

- Involve technical knowledge for the application of market mechanisms within their processes and business models (e.g., PES)
- Formulate financial and technical viable projects on the green economy

Increase financing/investing

- Increase engagement of private sector companies as investors for green projects
- Visualize business case for investing in green infrastructure

Call to action | In order to increase market-based mechanism adoption, LAC must have the following enabling factors in place (4 of 5)



Academia/Research

Research

- Develop research to quantify the impact of market-based mechanisms on improving the environment

Increase monitoring and tracking

- Support implementation of monitoring protocols to certify impacts (e.g., reduced emissions)
- Expand evidence base on impact of market-based-mechanisms

Call to action | In order to increase market-based mechanism adoption, LAC must have the following enabling factors in place (5 of 5)



Support governments to expand technical capacity

- Provide technical expertise in the monitoring and formulation of market mechanisms (e.g., to set the right levels/quotas)
- Design the appropriate valuation of environmental services, so that the PES is properly executed

Facilitate knowledge transfer and collaboration across countries (cross-Mission learnings)

- Cross learning from other Missions e.g., Colombia carbon tax implementation
- Facilitate sharing of experiences on emissions trading through the Carbon Pricing in the Americas Platform

Support pipeline development for green bonds

- Engage private sector companies to showcase business opportunities in the green economy
- Support private sector companies to develop “bankable projects” to access resources available through green bonds
- Provide risk sharing mechanism that enables “riskier projects” to access financing

THANK YOU



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