



EU-LAC Foundation

The potential of the Green Bond markets

in Latin America and the Caribbean

Universidad EAFIT

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EU-LAC Foundation

The EU-LAC Foundation was created by decision of the Heads of State and Government in 2010 as an instrument to promote the bi-regional partnership, and is made up of the 61 countries of the European Union, Latin America and the Caribbean, as well as the European Union itself, for a total of 62 members. It has been established since 2011 in Hamburg, where it has its sole headquarters and became an international organisation in May 2019 with the entry into force of its founding agreement.

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Universidad EAFIT

Since its creation in 1960, Universidad EAFIT, a non-profit organization, has been transforming into an institution whose superior goal is to inspire lives and irradiate knowledge to forge humankind and society. For this, the University offers several higher-ed programs seeking to encourage life-long learning, serving more than 13000 undergraduate and postgraduate students to date. Moreover, EAFIT aims at research as a means to inspire, create, and transform society through knowledge. As a trustworthy and responsible institution, the University has interests in diversity, environmental management, sustainable finance, and the promotion of entrepreneurship and economic growth, among other aspects.

Hill

Hill Consulting is a Colombian firm that looks for building integral solutions to urban and regional sustainability problems, promoting nicer, cleaner, and healthier territories. Hill bases its work on a wide understanding of local and regional contexts and institutional frameworks and uses analytical tools to formulate technical-supported solutions to today's climate change and sustainability challenges. Hill's team of experts has expertise in climate change mitigation and climate finance, urban mobility, local air pollution, and public policy formulation.

Get2C

Get2C is committed to the goal of decarbonizing society until the second half of the century. We work with our partners and clients to reflect on their businesses, in order to overcome the challenges of climate change, anticipating risks and also the opportunities of this reality.

It's in this commitment that we structure our services in a transversal way to the performance of our partners, from the support in the elaboration of their climate strategy to its application in the field through mitigation and adaptation projects.

Our vision, "Develop Smart Projects aiming at Cooler World", is developed through the implementation of environmentally, socially and economically sustainable projects that lead us to a more "cool" and "cool" world. We have 4 business areas: Climate Strategy, Climate Instruments, Climate Finance and Climate Action.

PRESENTATION

Adrián Bonilla

Executive Director EU-LAC Foundation

The publication of this study is part of the EU-LAC Foundation's continued commitment to supporting the partnership agenda between Europe, Latin America and the Caribbean involving the participation and inputs from civil society and other social actors.

One of the areas of priority for the bi-regional strategic partnership is addressing climate change. The countries of both regions have been the driving force of and have adopted the Paris Agreement on Climate Change, as well as the Sustainable Development Goals (SDGs).

The revised chapter 2 of the EU-CELAC Action Plan (Brussels, 2018) indicates the need for “the optimization and scaling up of existing and upcoming networks and programmes in Latin America and in the Caribbean, taking advantage of the opportunities offered by investment facilities, as appropriate. In addition, promote triangular cooperation to leverage the contributions of other actors and resources, as well as innovative sources and mechanisms of additional financing”

To effectively combat climate change, it is urgent and necessary to fund mitigation and adaptation efforts at various levels. In recent years, green bonds have increasingly stood out as a funding instrument for green projects that contribute to tackling climate change. The success of the green bond market to raise capital for the implementation of the 2030 agenda is stimulating strong interest in a growing number of countries to develop national green bond frameworks that link international good practice to local priorities.

In this context, based on a study carried out by the European Commission in 2016 on the development and functioning of the green bonds market in Europe, the EU-LAC Foundation launched in 2019 a call for a study on the potential of the green bonds market in Latin America and the Caribbean, including comparative aspects with the European market. The consortium of researchers selected by the call was led by EAFIT University and had the participation of Hill Consulting and Get2C.

The study presented in this publication analyses the incentives and barriers for the expansion of the green bond market in LAC. To this end, 4 case studies were deepened to exploring aspects related to the regulatory framework and governance structures, standards, accountability, policies and programmes, actors and sectors. The report also presents a set of recommendations.

This publication is timely as 2020 marks the beginning of a decade of urgent action on climate and sustainability where the role of the financial sector will be crucial.

The EU-LAC Foundation would like to thank Ernesto Jeger, Programme Manager of Sustainable Development and Economic Issues, who coordinated this project from the Foundation.

SUMMARY



DEFINITION

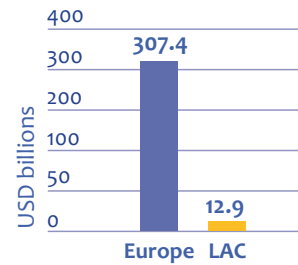
Green bonds are debt instruments created to fund projects that have positive environmental and/or climate benefits.

STATE OF THE MARKET

Countries that have issued green bonds in the region:



Cumulative green bond issuance until 2019



Source: CBI (2020A)

Europe is the most prominent issuer:

40%
of the total green bond issuance until 2019.
LAC has issued **2%** of the total.

COMMON BARRIERS IN EUROPE AND LAC

Barrier	What has been done?	
	LAC	Europe
Higher issuing costs that are not compensated by borrowing conditions.	 <p>In Costa Rica, the National Stock Exchange reduced the subscription costs for green bonds. Colombia has the same benefit for small bond issues.</p>	The Green Bond Standard proposes creation of subsidies to overcome this barrier.
Complex procedures for green bond issuance	 <p>Stock exchanges have published green bond guidelines in Costa Rica, the Dominican Republic, Colombia, and Chile, among others. Some regulators have contributed to make this process more transparent. In Colombia, the regulator published a taxonomy.</p>	The publication of the Green Bond Standard clarifies the steps and requirements for issuance, enhanced by the development of a taxonomy
Demanding processes for reporting and impact measurement	 <p>First practices in impact measurement.</p> <p>Reporting for investors and other actors is a common practice.</p>	Voluntary reporting guide from the Green Bond Principles. The EU Green Bond Standard provides guidelines for measurement and reporting.



DETERMINANTS OF THE GREEN BOND MARKET IN LATIN AMERICA AND THE CARIBBEAN



Education of market actors

ACTORS

Multi-actor process

Supervisors and regulators are key actors

Acknowledgment of the role of the enabler entities: multilateral and development banks, academia

Challenges

Opportunities

Good practice

Demand

Lack of knowledge about how to incorporate ESG factors in investment decisions

Updating the regulation can incentivize the demand for green financial instruments

Stock exchanges and regulators have created working groups and organized socialization events to demystify certain aspects of green bond markets.
Support of multilateral development banks in the process
Technical assistance from multilateral development banks in the process

Supply

Potential issuers ignore the functioning and advantages of green bonds

National governments provide support to issuers through unambiguous institutional backup and key sectors signaling

Size of projects and issues



Challenges

Opportunities

Good practice

Demand

Institutional investors dominate the market and require large bond issues

Motivating private sector and industry groups to develop larger green projects

Participation of investment funds and banks in the green bond market to finance smaller projects.

Supply

Projects that do not reach the size of competitive issues in the fixed income market.
Private sector is not as interested in using these instruments

Financing infrastructure projects and increasing participation of financial entities

RECOMMENDATIONS: FROM ISSUERS TO ISSUERS

Clear sustainability strategy of the issuer

It can contribute to having green bond issuance as a natural step in the quest for funds.



Well defined project pipeline

On the one hand, investors find the issue more transparent and on the other hand, it reduces the costs of resource management.



Creativity is key to the bond's roadshow

This allows to :
Widen investor base
Create visibility for both the issuer and the issue
Potentially reduce the borrowing costs of the issue.



Technical assistance

The experience of multilateral development banks can be fundamental in the process of structuring and issuing green bonds in the market.



Monitoring and reporting should be a priority

Measuring and reporting the impact is a tool to
(i) determine goals and prioritize actions the issuer must take,
(ii) give relevant information to investors and other stakeholders, and
(iii) create visibility for the issuer and other actors



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1. INTRODUCTION

1.1 Finance, climate change and green bonds

Green finance initiatives have rapidly grown worldwide, partly in response to climate change mitigation and adaptation needs, attracting investors' interest in the transition towards a low-carbon economy. Such an interest has risen particularly due to the environmental commitments made by countries at the UNFCCC in Paris in 2015 and the investment needs associated with the 2030 Agenda and the Sustainable Development Goals [SDG]. The International Finance Corporation [IFC] (2016) defines green finance as the practice of financing investments that have environmental benefits. This practice focuses mainly on financing renewable and green energy projects that aim to reduce carbon emissions, and to promote climate-resilient infrastructures and environmental sustainability (Taghizadeh-Hesary & Yoshino, 2019).

In the last decade, innovative mechanisms have emerged to direct private financial resources to climate change initiatives (Inter-American Development Bank [IDB], 2019A). Among these innovative mechanisms, green debt instruments have arisen. According to the Climate Bonds Initiative [CBI] (2019A), green debt instruments are mostly like any conventional debt instrument in the market, and the only marked difference is related to the use of proceeds and reporting requirements. The idea behind these financial instruments is to benefit from the willingness of investors to pay a premium for investing in climate-friendly activities (IDB, 2019A). In fact, the green bond market is usually known as a place for environmental, social and governance focused investors, as well as for investors who aim to green their portfolios (Nanayakkara & Colombage, 2019). Therefore, it is not surprising that the global green bond market is just one percent of the overall bond market (IDB, 2019A).

Green Bonds are fixed-income instruments that allow issuers to raise money specifically for projects with environmental benefits, such as renewable energy, energy efficiency or clean transport, to meet the growing demand from investors for sustainable options that contribute to shareholder value with low investment risk and long-term income. This investor demand-driven decision is often associated with positive stock market reactions, greater long-term and green investors' stock ownership, tax benefits, financial and environmental performance improvement, and green innovation incentives (Flammer, 2018). Climate-friendly projects financed through Green Bonds usually relate to climate change mitigation or adaptation, resilience and other environmental issues, such as natural resources depletion; loss of biodiversity; and air, water or soil protection (Sustainable Banking Network [SBN], 2018).

1.2 The Green Bond Principles

Defining what a green bond is in practice is not so straightforward. Therefore, in 2010 the International Capital Markets Association [ICMA], together with some market participants, developed the Green Bond Principles [GBP] to fulfil the need to assess the robustness and integrity of green bond credentials. The GBP intended to provide international voluntary

process guidelines for green bond issuance to help develop a framework to determine the eligibility of projects and reporting requirements, rather than a rigid regulatory structure, standard or taxonomy, by identifying the most commonly used types of green projects and assets to be financed by the green bond market.

The GBP consist of “voluntary process guidelines that recommend transparency and disclosure and promote integrity in the development of the green bond market by clarifying the approach for issuance of a green bonds” (International Capital Markets Association [ICMA], 2018). The GBP are updated regularly and annually reviewed by the Green Bonds Working Group through the coordination of ICMA.

According to ICMA (2018), the GBP design aims to be comprehensive and help standardize the market by providing issuers with guidance on the four core components involved in launching a credible green bond. In that line, the GBP assist investors by promoting the availability of information necessary to evaluate the environmental impact of their green bond investments. They also help underwriters by moving the market towards expected disclosures to facilitate transactions.

Currently, most, if not all, of the market participants adopt and assure compliance with these principles. Worthy of note is the fact that green bonds are not considered fungible with bonds that do not align with the four key mandatory components of the GBP.

The GBP are based on four core components as described below:

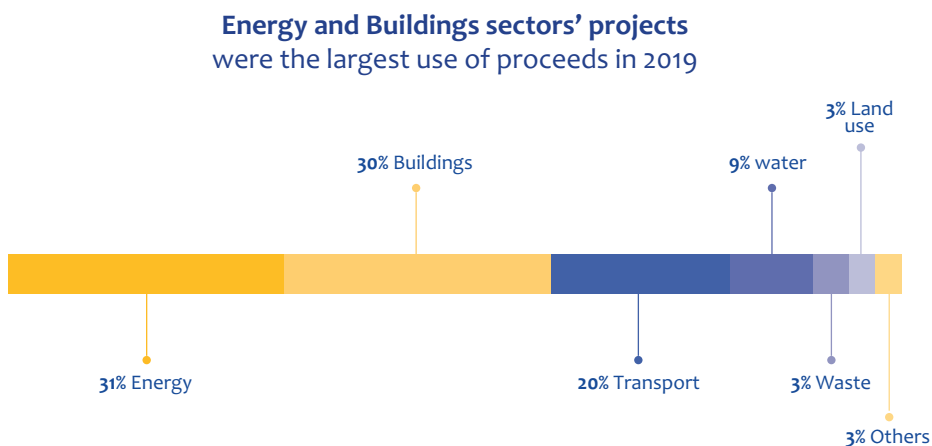
1. Use of proceeds of the bonds for green projects, i.e., how will the proceeds required to fund assets and projects with environmental impacts be utilized and how will the issuer assess and quantify the environmental benefits. The GBP recognize green projects that fall under the following categories of eligibility that contribute to environmental objectives: climate change mitigation and adaptation, natural resources and biodiversity conservation, and pollution prevention and control. Moreover, they list the most common types of green project categories to be supported by the green bonds market.¹ We provide an example in Figure 1, regarding the use of proceeds by issuers in 2019 (by project categories).
2. Processes for green project evaluation and selection, details on how the issuer communicates to investors the environmental objectives, as well as the processes for classifying and determining eligibility criteria. This item must disclose how associated risks will be managed. The GBP encourage this process to be complemented by an external review for transparency reasons.
3. Management of the green bond proceeds, i.e. explaining how the funds are allocated and the internal tracking method. The GBP encourage this process to be complemented by a third party or an auditor verification for transparency reasons.

.....
¹ These are renewable energy, energy efficiency, pollution prevention and control, environmentally sustainable management of living natural resources and land use, terrestrial and aquatic biodiversity conservation, clean transportation, sustainable water, and wastewater management, climate change adaptation, eco-efficient and/or circular economy adapted products, production technologies, and processes, and green buildings that meet regional, national or international recognized standards or certifications.

4. Reporting on the use of proceeds. The information on the amounts allocated and expected environmental impacts of the green project should be updated regularly or until full allocation.

Furthermore, several recommendations are proposed by the GBP, including encouraging an external review and the disclosure of the green bond alignment with issuer's overall strategy (ICMA, 2018).

Figure 1. Green bonds: use of proceeds



Source: adapted from CBI (2020A).

1.3 The green bond market: An overview

The global green bond market started when multilateral development banks [MDB] raised funds for climate-related projects in 2007, with European issuers being the first to enter the market. The Scandinavian Stock Exchange (Oslo, Stockholm), as well as the London Stock Exchange were the first stock exchanges to create specific green bond lists, with the first green exchange happening in Luxembourg when the first green bond was issued by the European Investment Bank [EIB]. In Europe, banks have had an active role and asset managers have been the ones responsible for creating dedicated green bond funds. This has allowed focused investment decisions, visibility, and market growth (CBI, 2018).

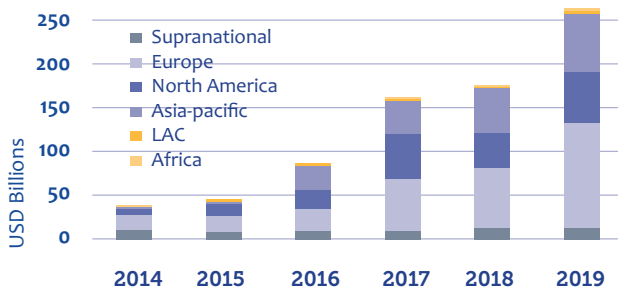
Dedicated green bond lists first appeared mainly in northern and central European countries, with traditionally robust environmental policies and growing climate awareness among the public, due to investors' demand of a safe place to put their money, who were, at the same time, interested in making a difference. So, when the first green bond was issued there was still no market or legislative regulation on green bond issuance. European stock exchanges and

asset managers noticed the opportunity and created dedicated green bond lists to respond to this growing demand in order to raise funds for climate change solutions with environmental benefits. In this manner, visibility was provided to this type of debt, helping the market grow.

The green bond market started with self-labelled green bonds, in which the issuer (borrower) simply delivered to investors details on the green eligibility criteria for the use of proceeds, without any external validation or regulation. The proceeds were earmarked mainly for future projects in the fields of renewable energy and energy efficiency, thereby supporting climate protection. Later, and mostly due to “greenwashing,” lack of transparency, doubts about the allocation of proceeds, and the monitoring of true environmental benefits, it became clear that regulation was essential (World Bank [WB], 2019).

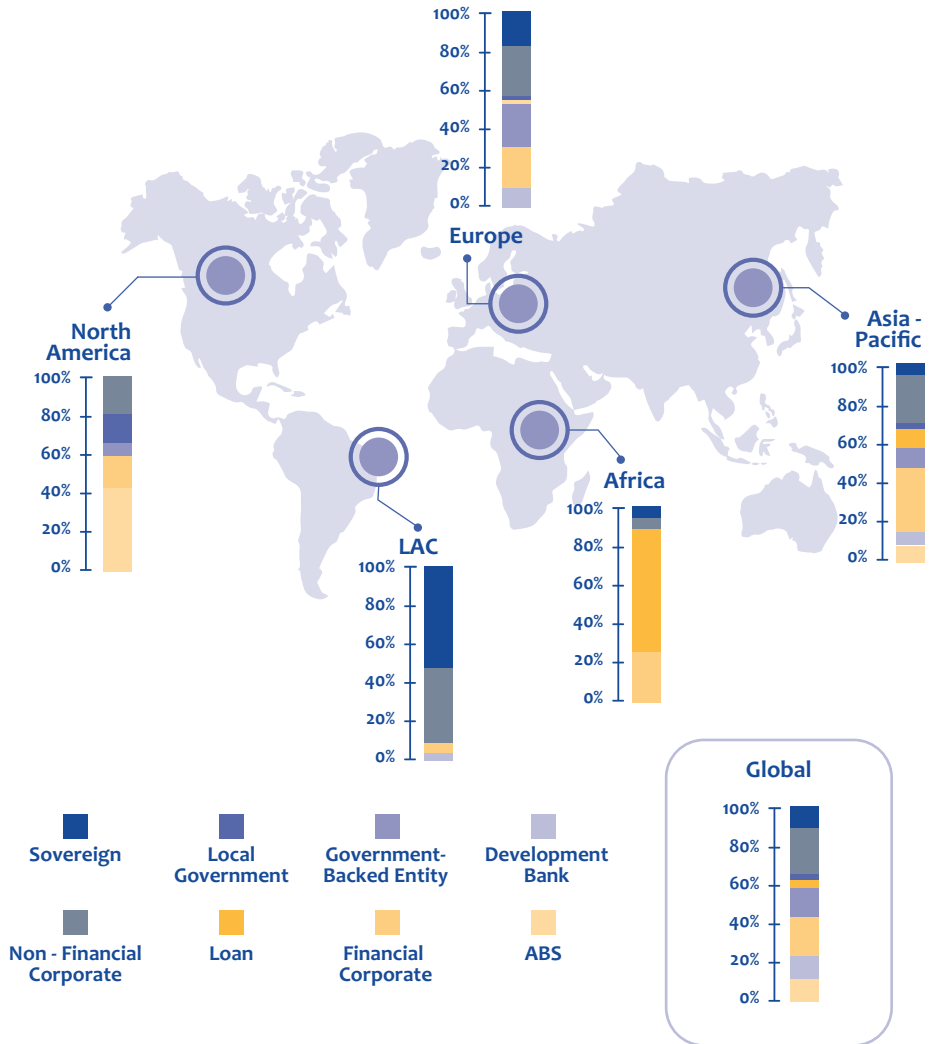
This market has rapidly grown in size and coverage since 2007 (see Figure 2 and Figure 3) and represented, until June 2019, a total of approximately EUR 550 billion outstanding (EUR 100 billion YTD). Issuers based in Europe, North America and Asia-Pacific have been the main parties responsible for global issuance, with European issuers taking the lead in 2018 and 2017 (around 40% and 37%, respectively) (EU Technical Expert Group on Sustainable Finance [TEG], 2019A). In 2018 alone, global green bond issuance increased to EUR 140 bn according to the preliminary data of Bloomberg NEF (BNEF, 2019). In turn, Latin America and the Caribbean [LAC] have contributed 2% to the total of global issuance (CBI, 2019A). However, there is growth potential in the region. Latin American countries are well-positioned to increase green finance funding as these countries exhibit strong prospects and rising demand for green products (IFC, Federación Latinoamericana de Bancos [FELABAN], & EcoBusiness Fund, 2017).

Figure 2. Total green bond issuance by region.



Source: Adapted from CBI (2020A).

Figure 3. Green Bond regional issuer type participation



Source: adapted from CBI (2020A)

Given the geographical location of Latin America and the Caribbean countries, there is an inherent vulnerability in facing climate change (Yuan & Gallagher, 2018). Even though the LAC region has not significantly contributed to climate change, it is especially vulnerable to its negative consequences (Galindo & Samaniego, 2010). Since key economic sectors depend on weather conditions, South American and Caribbean countries must sustainably use the region's natural resources to adapt to climate change (Mapplecroft, 2014), and work to mitigate its economic consequences.

In this context, this project seeks to analyse the potential of the green bond markets in the LAC region and the benefits it could bring for the Paris agreement and the 2030 agenda on sustainable development, considering lessons learned from the European markets. To do this, we base our analysis in four case studies, whose aim is to understand how financial, environmental, and institutional factors foster or constrain the green bond market development in the region.

2. METHODOLOGICAL APPROXIMATION

2.1. Methodology summary

This report's methodological approximation considers several items that we describe below and summarize in Figure 4.

Literature review

The literature review focuses on the definition and scope of green bonds, as well as market determinants and good practices in the EU and LAC. Scientific papers and technical reports are key inputs for the research. For this, we use indexed literature databases such as Scopus and Web of Science. The sources also include reports by multilateral institutions and stock exchanges, papers on the evolution of stock indexes, and reports on specific cases drawn up by development banks. Government documents of EU and LAC countries, such as climate and green finance strategies, internal market analysis, and green bond guidelines, were also studied.

Selection of LAC case studies

The selection of case studies accounts for several factors. First, we consider economic and financial criteria. On the one hand, macroeconomic and institutional conditions of the countries are fundamental elements for legal certainty and investor confidence. On the other hand, we cover the financial system level of development and fixed-income market size of each country, along with the potential to proxy for the market conditions dimension. Second, we consider environmental and climate change aspects regarding the analysis of vulnerability indicators, adaptation objectives, mitigation targets, and sustainable development goals. Finally, a third criterion includes, when possible, green bond market considerations.

After a multicriteria analysis of such type, we selected the following LAC countries as case studies: Chile, Colombia, Costa Rica, and the Dominican Republic. This selection process is further explained in Section 2.

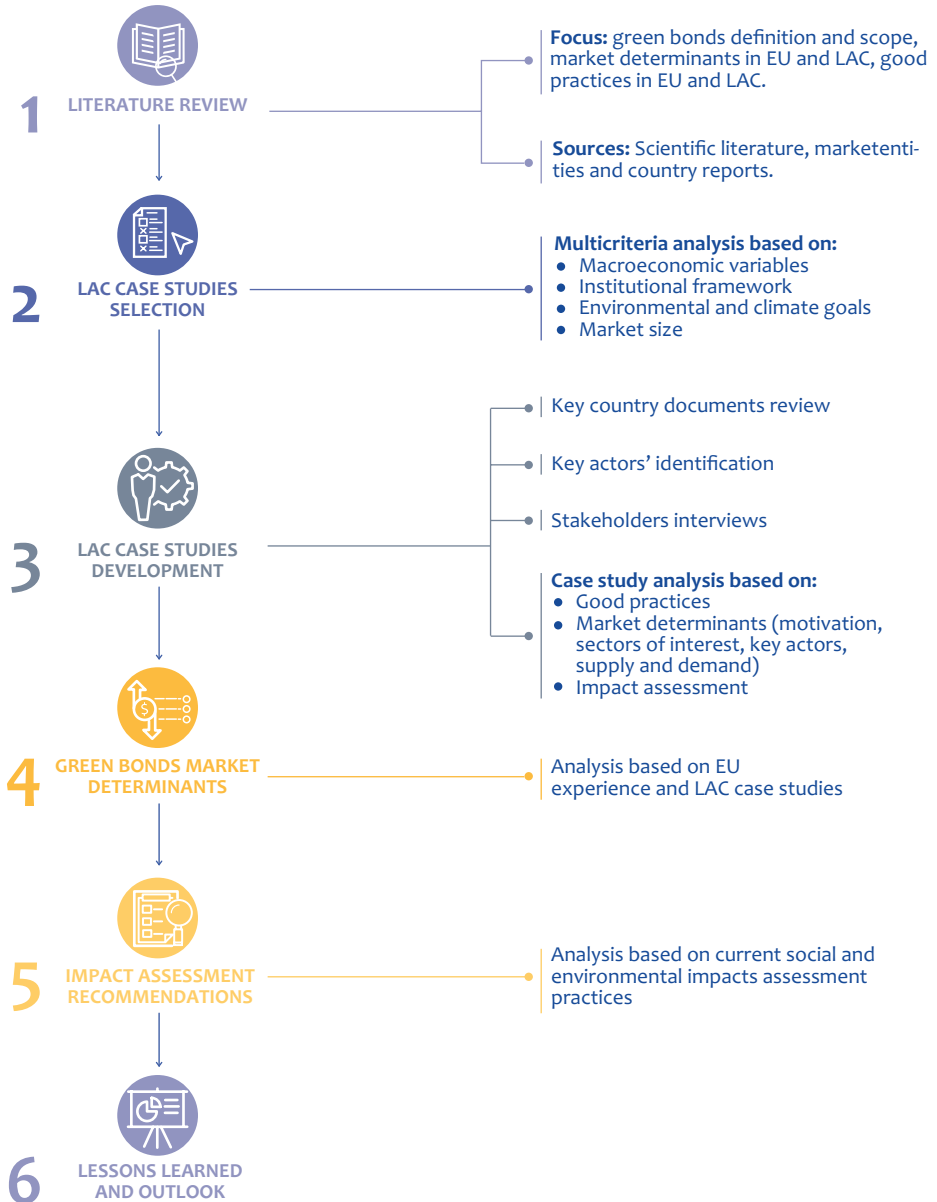
Development of LAC case studies

The development of selected case studies includes two main activities:

- i) Reviewing key country documents, such as national public policies, market guidelines, and green bonds.
- ii) Interviewing of key stakeholders in the process: national government, supervisors, regulators, issuers, investors, project executors, and facilitators.

For the country documents review, we conduct a desk research and analysis of relevant elements for the study, such as market determinants, good practices, sectors of interest, and initial approaches to impact assessment.

Figure 4. Methodological approximation



Source: Prepared by the authors.

For the interviews we developed a guideline questionnaire as an instrument to follow during the interview, and as an input for this methodology to be replicable in the future.

The questionnaire has two main groups of questions:

- i) a general questions section for all actors, to learn about their perceptions, experience and expectations;
- ii) a specific questions section, to get a better understanding of each actor's role. Annex 1 presents a model questionnaire.

Impact assessment recommendations

This section addresses the experiences from EU green bonds impact assessment, and the recent practices in LAC.

The analysis was based on the social and environmental impacts and the aim was to present initial recommendations for LAC on methods and indicators to guide the inclusion of impact assessment in the green bond cycle.

Lessons learned and outlook

As a final section of this report, we present a policy outlook highlighting the determinants for the promotion of the green bond market in LAC, and a list of lessons learned from the EU process and LAC experiences in order to improve climate and green action resource mobilization through green bonds.

2.2 Selection of case studies

Only eleven countries in Latin America and the Caribbean have entered the green bond market.² Therefore, to select the case-studies, we propose a multicriteria analysis drawing from two main dimensions: i) climate change and public awareness; and ii) financial market potential.

- 1) Environmental and public awareness dimensions. We use a climate change vulnerability index (Development Bank of Latin America [CAF], 2014) that considers each country's exposure, sensitivity, and adaptive capacity as a measure of their needs to respond to climate change impacts.

We also analyse Nationally Determined Contributions [NDC] and Sustainable Development Goals targets as a measure of each country's commitment to reduce global greenhouse gases [GHG] emissions and their level of awareness related to the international environmental agenda.

- 2) Financial market potential. We analyse the state of the fixed-income markets of each country (since green bonds are fixed-income instruments) as an indicator of the

² These are: Barbados, Brazil, Chile, Mexico, Peru, Argentina, Costa Rica, Colombia, Ecuador, Panama, and Uruguay (CBI, 2019A; Bolsa de Valores de Panamá, 2019; Bolsa de Valores de Quito, 2019).

degree of development of such a market. For this analysis, we consider the percentage of debt issued by non-government institutions as a proxy for the development of the bond market (Smaoui, Grandes & Akindede, 2017). Moreover, we include the number of issuers and issues in each market to get a glimpse of the market structure –i.e., to gauge the participation of private actors.

One reason to include this dimension in our case selection methodology is that trading fixed-income instruments regularly can only occur with the appropriate infrastructure (in terms of capital markets). As Eichengreen (2006, p. 3) points out, “a bond market must operate at a minimum efficient scale. Otherwise, market participants will not be able to acquire or dispose of their holdings without moving prices”.

2.2.1 Caribbean region

In general, the Caribbean region is comprised of Small Islands Developing States [SIDS] sharing two common characteristics. On the one hand, their financial markets are at the early stages of development (Table 1), judging by the size of their debt markets. On the other hand, they display a high degree of vulnerability to climate change (Table 2). They are particularly prone to sea-level rise, and it was one of the main concerns expressed by members of Universities Caribbean,³ along with the fact that the most vulnerable population resides in the lower lands –thus facing more substantial risks. These climate change risks and high costs to cope with and adapt to climate impacts exceed their financial capacity, although some are important financial centres and their issuance is unlikely to be a major financing source.

After analysing these two dimensions, we decided to study the case of the Dominican Republic for the Caribbean region, due to several reasons. Regarding debt markets, despite being quite small when compared to other markets in the LAC region, the Dominican Republic, Jamaica, and Trinidad & Tobago account for the largest fixed-income markets in the Caribbean (Table 1). In particular, the Dominican Republic outnumbers the other markets in the region, considering the number of issuers and bonds, and the amount of debt outstanding. Even though government debt represents more than 80% of the total debt outstanding, it is the country with more non-government issuers and bonds (see Table 1). We can interpret this figure as an indicator of the interest/possibility of private actors to participate in the Dominican fixed-income market.

Although the country does not have any green bond issues yet,⁴ the Dominican Republic Stock Exchange (BVRD by its Spanish acronym)⁵ organized the first International Forum on Climate Finance in July 2019, intending to inform market participants about the characteristics of these instruments and foster the development of such a market (El Dinero, 2019). During this event, the entity introduced two guidelines: one for the green finance segment, and another one for green bonds (see BVRD (2019A, 2019B). Judging by this, there is a clear interest in the financial sector to move forward on green finance.

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3 See <http://www.universitiescaribbean.com/>

4 Barbados is the first Caribbean country to have entered the green bond market so far, with USD 1.5 million raised in June 2019 to finance solar energy. The issuance program covers additional issues up to USD 20 million until mid-2020 (CBI, 2019C). See Table 5.

5 Bolsa y Mercados de Valores de la República Dominicana

Table 1. Fixed income market: Caribbean countries.

Country	Year end 2018	As of January 2020						
	Current GDP 2018 (USD Million)	Government debt	Total debt (Includes Gvt)	Non-Government debt (% of total)	Number of issuers (Gvt)	Number of issuers (Total, includes Gvt)	Number of bonds (Gvt)	Number of bonds (Total, includes Gvt)
Antigua & Barbuda	\$ 1.611	--	--	--	--	--	--	--
Bahamas	\$ 12.425	\$ 2.702	\$ 5.057	46,57%	2	6	70	77
Barbados	\$ 5.145	\$ 1.565	\$ 2.317	32,46%	2	5	23	29
Belize	\$ 1.871	\$ 530	\$ 530	0,00%	1	1	2	2
Cuba	\$ 100.023	--	--	--	--	--	--	--
Dominica	\$ 551	--	--	--	--	--	--	--
Dominican Republic	\$ 85.555	\$ 40.244	\$ 42.975	6,35%	5	28	65	223
Grenada	\$ 1.186	--	--	--	--	--	--	--
Guyana	\$ 3.879	--	--	--	--	--	--	--
Haiti	\$ 9.659	--	--	--	--	--	--	--
Jamaica	\$ 15.714	\$ 11.637	\$ 12.595	7,61%	4	19	51	82
St Kitts & Nevis	\$ 1.011	--	--	--	--	--	--	--
St Lucia	\$ 1.922	--	--	--	--	--	--	--
St Vincent & Grenadines	\$ 811	--	--	--	--	--	--	--
Suriname	\$ 3.591	--	--	--	--	--	--	--
Trinidad & Tobago	\$ 23.808	\$ 6.777	\$ 9.935	31,79%	8	14	71	87

Source: GDP, from the World Bank (2020). Debt markets from Bloomberg (2020).

Note: we only account for independent Caribbean countries. Debt in USD millions.

With respect to environmental factors, after Haiti, the Dominican Republic is the second most vulnerable country in the Caribbean (see Table 2). Not only does it have extreme exposure to the effects of climate change, but its population and economic system are highly susceptible to weather events, amid a low adaptive capacity. In line with this, the country has set action based NDCs related with several SDGs that point to increase resiliency and sustainability (e.g. SDGs 4, 8, 12, and 13), as well as adaptation goals involving tourism, education, and disaster risk management (Climate Watch, n.a.).

2.2.2 Latin America

We intend to study three countries from Latin America: Chile, Colombia, and Costa Rica. Each one of them offers different insights from the Financial Market Potential (Table 3) and Environmental and Public Awareness perspectives (Table 4). As shown in Table 3, most Latin American fixed-income markets are in a more advanced development stage than countries in the Caribbean. However, there is a large degree of heterogeneity. In absolute terms, Chile and Colombia are among the five countries with the most important markets in the region, as measured by debt outstanding, and with the most significant participation of private debt –when compared to total debt. In turn, Costa Rica is a small-sized economy and has a debt market that is similar in size and debt distribution to that of the Dominican Republic.

Table 2. Vulnerability to climate change and environmental commitment: The Caribbean

Country	Vulnerability		Exposure		Sensitivity		Adaptation Capacity		Vulnerability acknowledgment (NDC adaptation goals?)				NDC and SDGs			
	Value	Grade	Value	Grade	Value	Grade	Value	Grade	NDC	NDC ratification	Mitigation goal type	Adaptation goals	SDG 6	SDG 11	SDG 12	SDG 15
Antigua & Barbuda	5,64	medium	3,16	high	7,98	low	7	medium	yes	nd	nd	yes	yes	yes	yes	yes
Bahamas	8,68	low	2,5	extreme	8,89	low	9,89	low	yes	yes	Single-year target	yes	yes	yes	yes	yes
Barbados	9,77	low	9,07	low	3,3	high	9,58	low	yes	yes	BAU	yes	no	yes	yes	no
Belize	2,25	extreme	3,56	high	7,81	low	2,75	high	yes	yes	Action based	yes	yes	yes	yes	yes
Cuba	3,9	high	1,39	extreme	3,15	high	8,44	low	yes	nd	Action based	yes	no	no	yes	no
Dominica	3,85	high	1,24	extreme	8,5	low	6,86	medium	yes	yes	nd	yes	no	yes	yes	yes
Dominican Republic	1,01	extreme	2,28	extreme	0,76	extreme	2,31	extreme	yes	yes	Action based	yes	yes	no	yes	no
Grenada	9,58	low	9,79	low	4,12	high	7,26	medium	yes	nd	nd	yes	yes	yes	yes	yes
Guyana	4,23	high	7,58	low	7,17	medium	0,66	extreme	yes	yes	Action based	yes	yes	no	yes	yes
Haiti	0,58	extreme	2,14	extreme	0,22	extreme	0	extreme	yes	yes	BAU	yes	yes	yes	yes	yes
Jamaica	1,5	extreme	0,84	extreme	2,11	extreme	6,15	medium	yes	yes	BAU	yes	no	yes	yes	yes
St Kitts & Nevis	6,24	medium	2,36	extreme	8,68	low	7,5	medium	yes	nd	nd	yes	no	yes	yes	yes
St Lucia	8,25	low	8,7	low	5,45	medium	6,31	medium	yes	nd	nd	yes	yes	yes	no	yes
St Vincent & Grenadines	9,63	low	9,85	low	4,69	high	6,74	medium	yes	nd	nd	yes	yes	yes	yes	yes
Suriname	5,85	medium	7,99	low	8,89	low	3,31	high	yes	No adhesion	nd	yes	yes	no	yes	yes
Trinidad & Tobago	7,22	medium	7,02	medium	5,75	medium	6,78	medium	yes	yes	BAU Goal in Transportation	no	no	yes	no	no

Source: CAF (2014).

Table 3. Fixed income markets: Latin America.

Country	Year end 2018	As of January 2020						
	Current GDP 2018 (USD Million)	Government debt	Total debt (includes Gvt)	Non-Government debt (% of total)	Number of issuers (Gvt)	Number of issuers (Total, includes Gvt)	Number of bonds (Gvt)	Number of bonds (Total, includes Gvt)
Argentina	\$ 519.872	\$ 250.408	\$ 275.103	8,98%	37	193	346	710
Bolivia	\$ 40.288	\$ 26.657	\$ 27.742	3,91%	3	30	270	325
Brazil	\$ 1.868.626	\$ 1.062.465	\$ 1.269.880	16,33%	8	798	70	3837
Chile	\$ 298.231	\$ 74.155	\$ 140.311	47,15%	8	185	158	1601
Colombia	\$ 331.047	\$ 93.143	\$ 132.438	29,67%	7	67	52	436
Costa Rica	\$ 60.130	\$ 41.792	\$ 45.419	7,99%	6	26	177	325
Ecuador	\$ 108.398	\$ 21.578	\$ 22.011	1,97%	3	5	81	84
El Salvador	\$ 26.057	\$ 7.748	\$ 7.834	1,10%	3	5	23	26
Guatemala	\$ 78.460	\$ 5.963	\$ 5.998	0,58%	2	3	17	18
Honduras	\$ 23.970	--	--	--	--	--	--	--
Mexico	\$ 1.220.699	\$ 449.519	\$ 689.638	34,82%	22	313	265	1201
Nicaragua	\$ 13.118	--	--	--	--	--	--	--
Panama	\$ 65.055	\$ 22.652	\$ 44.804	49,44%	6	125	47	638
Paraguay	\$ 40.497	--	--	--	--	--	--	--
Peru	\$ 222.045	\$ 95.812	\$ 125.536	23,68%	6	107	99	440
Uruguay	\$ 59.597	\$ 28.387	\$ 29.129	2,55%	7	22	83	110
Venezuela	ND	\$ 36.695	\$ 64.440	43,06%	2	7	90	104

Source: GDP, from the World Bank (2020). Debt markets from Bloomberg (2020).

Note: we only account for independent Caribbean countries. Debt in USD millions.

Table 4. Vulnerability to climate change and environmental commitment: Latin America

Country	Vulnerability		Exposure		Sensitivity		Adaptation Capacity		Vulnerability acknowledgment (NDC adaptation goals?)				NDC and SDGs			
	Value	Grade	Value	Grade	Value	Grade	Value	Grade	NDC	NDC ratification	Mitigation goal type	Adaptation goals	SDG 6	SDG 11	SDG 12	SDG 15
Argentina	6,66	medium	7,32	low	7,22	medium	6,07	medium	yes	yes	BAU	yes	no	no	no	no
Bolivia	2,48	extreme	6	medium	4,58	high	0,8	extreme	yes	yes	Non-GHG target and actions	yes	yes	yes	yes	yes
Brazil	5,77	medium	5,11	medium	6,32	medium	7,88	low	yes	yes	Single-year target	yes	no	yes	no	yes
Chile	9,54	low	8,57	low	8,04	low	9,4	low	yes	yes	Carbon intensity	yes	no	yes	yes	yes
Colombia	4,3	high	5,41	medium	3,72	high	5,66	medium	yes	yes	BAU	yes	yes	yes	yes	yes
Costa Rica	7,7	low	3,7	high	4,22	high	9,23	low	yes	yes	Absolute Emmission Goal	yes	yes	yes	yes	yes
Ecuador	3,76	high	5,82	medium	3,47	high	4,44	high	yes	yes	BAU	yes	yes	yes	yes	yes
El Salvador	0,79	extreme	2,68	high	0,93	extreme	1,44	extreme	yes	yes	TBD	yes	yes	yes	no	no
Guatemala	0,75	extreme	1,66	extreme	1,38	extreme	0,64	extreme	yes	yes	BAU	yes	yes	yes	yes	yes
Honduras	0,92	extreme	2,73	high	2,43	extreme	0,5	extreme	yes	yes	BAU	yes	no	no	yes	yes
Mexico	4,47	high	3,35	high	5,32	medium	7,66	low	yes	yes	BAU	yes	yes	yes	yes	yes
Nicaragua	1,19	extreme	3,81	high	2,01	extreme	0,13	extreme	No Adhesion	Adhesion	Action based	yes	yes	yes	yes	yes
Panama	5,57	medium	5,26	medium	4,61	high	6,7	medium	yes	yes	Non-GHG target and actions	no	yes	no	no	yes
Paraguay	1,58	extreme	4,3	high	3,9	high	0,94	extreme	yes	yes	BAU	yes	no	yes	no	yes
Peru	4,98	high	6,69	medium	4,5	high	5,32	medium	yes	yes	BAU	yes	yes	no	no	yes
Uruguay	8,33	low	7,27	low	8,61	low	8,18	low	yes	yes	Defined by sector	yes	yes	yes	yes	yes
Venezuela	3,64	high	5,07	medium	6,25	medium	3,62	high	yes	yes	BAU	yes	yes	yes	yes	yes

Source: CAF (2014).

Table 5. Green bond issuance in Latin America until April 2020.

Country	Amount issued	Number of bonds	Number of issuers
Chile	7000	11	5
Brazil	5963	26	19
Mexico	1932	9	6
Peru	886	5	5
Argentina	637	5	4
Costa Rica	504	2	2
Colombia	500	6	5
Uruguay	361	2	1
Ecuador	150	1	1
Panama	27	1	1
Barbados	1,5	1	1
Supranational	206	4	2
Total LAC	18168	73	52

Source: The Climate Bonds Initiative ⁶

⁶ See https://cdkn.org/webinarbonosverdes/?loclang=es_es

An additional factor to analyse is the development of the green bond markets, which we explore more in detail for each case below. Table 5 shows green bond issuance in the LAC region until April 2020. Chile surpassed Brazil in 2019 and 2020 as the most prominent green bond issuer in the LAC region, due to (i) two sovereign issues in the international market; and (ii) the political uncertainty in Brazil around 2018 that slowed down the local green bond market. The list of Latin American countries issuing green bonds grew in 2019 and 2020 with the debut of Ecuador and Panama, which entered the market with one financial institution each, CIFI and Banco Pichincha (CBI, 2020B; Bolsa de Valores de Panamá, 2019).

Chile

Chile is the least vulnerable country to climate change in the LAC region, according to CAF (see Table 4). Despite this, the country has clear environmental commitments, setting NDCs that point to reduce the country's carbon intensity and adaptation goals. According to this, it was one of the pioneers regarding a national agenda for sustainability in Latin America when the government introduced the National Green Growth plan in 2014 (CBI, 2019A), a policy document that recognizes the environmental costs of Chile's economic growth in the last three decades, and proposes to create incentives that lead to a more sustainable economic model through a change in consumption and production patterns (Ministerio de Hacienda, 2013). Chile is also one of the few countries that has already updated its NDCs with more ambitious objectives and had offered to host the UNFCCC COP25 (but it was finally transferred to Madrid, due to political and social protests).

Regarding the fixed-income market, Chile is among the five largest markets in the LAC region, with extensive participation from private actors, since private debt accounts for more than 47% of the total debt outstanding and almost 180 non-government issuers (see Table 3).

As for the green bond market, Chile poses an even more compelling case. First, the country issued a green bond Guideline in 2018 with a clear intention to provide a road map for potential issuers. Second, the CMF⁷ joined the Network of Central Banks and Supervisors for Greening the Financial System, a network that seeks to enhance the financial system in terms of risk management and resource mobilization towards climate finance (Network of Central Banks and Supervisors for Greening the Financial System [NGFS], n. a.). And finally, in 2019, it became the first sovereign government in the Americas to issue certified green bonds. These instruments were issued in the international markets and denominated in Euro and US dollars, by an approximate amount of USD 2.4 billion (Ministerio de Hacienda, 2019). Early in 2020, the Chilean Government went for a second round, issuing more than USD 3.3 billion in green bonds in international markets (Ministerio de Hacienda, 2020). Chile became the second green bond issuer in the region after Brazil (see Table 5). Not only does this issue constitute a landmark in the LAC region (and the continent), but it also reaffirms the government's commitment to tackling climate change.

Colombia

Colombia is highly vulnerable to climate change impacts (see Table 4), mainly due to its population's high sensitivity and moderate adaptive capacity. The country has developed

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different institutional coordination mechanisms and public policies to move forward to sustainable development. These include the National Climate Change System (SISCLIMA), the National Climate Change Policy, the Green Growth Policy, the recent roadmap for the development of the Colombian long-term strategy, called Strategy 2050. Such instruments will guide the path to meet Colombia's GHG emissions reduction target of 20% of a business-as-usual scenario, by 2030, and to move forward to achieve a climate resilient development. Furthermore, the Financial Superintendence and the Colombian Central Bank joined the NGFS in 2019 (CBI, 2019A).

Turning to financial aspects, Colombia's fixed-income market is the fifth largest market in the region, and one of the markets with the most representative participation of private actors. They correspond to almost 30% of total debt outstanding and 60 non-government issuers (see Table 3).

In terms of the green bond market (see Table 5), the country has made efforts, such as creating a map for the green bond market in 2017 (CBI, 2019A). Furthermore, the issuance of a green bond by Bancoldex and a sustainable bond by Findeter, two national development banks, shows an apparent interest from the government to aid green finance through the fixed-income market. Finally, the country pioneered the entrance of financial institutions to the Latin American green bond markets, with issues by two Colombian banks. This is important, because in smaller economies, with firms that cannot finance green projects that are the size of a regular bond, the financial sector can play a leading role in closing the gap through green bonds.

Costa Rica

Costa Rica is a leader in low-carbon and resilient development in LAC. Data shows that Costa Rica went from extensive deforestation to doubling forest cover since the 1980s. Moreover, the country has turned to renewables for energy generation (close to 100%) and established a goal to become carbon neutral by 2021. Moreover, Costa Rica revised its national decarbonization plan, which is one of the first in world to roadmap a transition to net zero emissions by 2050 (IDB, 2019B). This can explain why, despite having a high level of exposure to climate events, Costa Rica has one of the lowest overall vulnerability levels within the region (see Table 4).

Costa Rica's debt market is one of the smallest in the region. While government debt represents about 90% of the total debt issued as of January 2020, non-government issuers outnumber by far government-related issuers (see Table 3), which is indicative of the interest of private actors in participating in the fixed-income market. Regarding green finance, Costa Rica's Central Bank became a member of the NGFS, manifesting a concern for translating its green approach into financial actions. Furthermore, despite the size of the market, the country entered the international green bond market in 2016 with a USD 500 million issue by the Banco Nacional de Costa Rica, a government-owned entity, and in 2018 the Bolsa Nacional de Valores (BNV) released a green bond Guideline that serves for both public and private issues. Following this, in August 2019, Ecosolutions issued the first green bond in the local market through a private placement (see Table 5).

2.3 Literature review: Green and conventional bond markets

Sustainable Development and Climate Change agendas demand substantial funding.⁸ Governments and companies need to diversify sources to finance green projects (Green Finance Study Group [GFSG], 2016). The green bond market provides an additional source of funds to traditional bank lending and equity financing. It is set up as an alternative to close the financial gap in green investment. This market allows borrowers to get long-term funding in geographies where the supply of long-term bank loans may be limited (Cochu et al., 2016). However, in these regions, the deepening and the development of the fixed-income markets become necessary to expand and improve the liquidity level, to the point that it boosts the issuance of bonds and the financial sector as a whole (Ng & Tao, 2016).

Variables related to macroeconomic aspects, the financial market structure, the institutions, and regulations, as well as the interaction among them, are the principal factors that promote or constraint the bond market (Eichengreen & Luengnaruemitchai, 2004; Smaoui, Grandes, & Akindele, 2017). According to this, to understand the potential of the green bond market in LAC countries, it is necessary to analyse the determinants of bond markets in at least three aspects (see Table 6):

- 1) Macroeconomic and financial features, which affect the debt market in general.
- 2) Institutional factors that may provide stimuli (or barriers) to the evolution of green bond markets and for the participation of institutional investors, which play an important role.
- 3) Structural features that characterize green bonds and that directly affect their demand and supply.

In emerging economies, the development of green bond markets faces several challenges related to macroeconomic factors. The underlying conditions in these countries, such as high interest rates and inflation, significant infrastructure needs, heavy government borrowing, and less developed financial systems present further restrictions for the deepening of traditional and green bond markets (Nelson & Shrimali, 2014). In fact, emerging and developed countries with stable inflation rates have more developed local bond markets. These lower inflation rates reflect a more stable monetary and fiscal policy, which boosts the local bond market by increasing investor confidence (Burger et al., 2006). In general, fiscal sustainability (carbon taxes, green subsidies and green public investment) is essential to the political feasibility of the green economy (Dafermos & Nikolaidi, 2019).

Also, firm size is related to the size and development of financial systems. Countries with larger firms are more likely to develop a corporate bond market due to the existence of economies of scale. In other words, there is a positive correlation between firm size and the size of the corporate bond market (Borensztein, Cowan, Eichengreen, & Panizza, 2008). This positive relationship exists both in emerging and developed economies (Smaoui et al., 2017). Empirical studies point out that a minimum efficient scale is required to decrease the lending costs and

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⁸ Around USD 90 trillion in the next 15 years

Table 6. Major factors affecting the development of green and conventional bond markets

Macroeconomic factors	Expected effect	Variables
Economy size	Positive	Capital markets size, size companies.
Saving rates	Positive	GDP per capita, interest rates.
Monetary and fiscal policy	Negative	Inflation, government borrowing.
Macroeconomic factors		
Government commitment	Positive	Green policies (NDCs), regulations and tax incentives.
Institutional investors	Negative	Constraints and incentives.
Transaction costs	Negative	Stock exchanges and certification fees.
Structural features		
Information disclosure	Positive	Green label, taxonomy, and impact evaluation.
Funding cost	Positive	Green Premium (lower rates) and an expanded investor base.
Bond risk profile	Positive	Credit rating and collateral.

Source: This was drawn up by the authors, based on the literature review.

risks to promote broader access of firms and governments to bond financing (Bhattacharyay, 2013).

Countries with higher saving rates have more funds available for investment in debt securities (Eichengreen, Borensztein, & Panizza, 2006). Household savings provide funds for investment to banks, firms, and the government (Borensztein et al., 2008). Particularly, Latin American markets have low saving rates and have experienced low-interest rates, resulting in a disincentive to investing (Serebrisky, Suárez-Alemán, Margot, & Ramirez, 2015). The presence of institutional investors, such as pension funds, mutual funds, insurance companies and banks, becomes even more important for LAC countries, since this type of investors have a natural appetite for bonds and provide convenient mechanisms for channelling savings toward the bond market (Eichengreen et al., 2006).

Regulatory limitations restrict the participation of some institutional investors. It is critical to increase their involvement and promote a feasible investment environment for bond market development. Empirical studies find that the privatization of a country's pension system has a positive impact on the capitalization of bond markets (Borensztein et al., 2008). Around 2006, the privatization of such funds in Latin American countries created a broad constituency of institutional investors, who have been an essential factor contributing to higher demand for locally issued bonds (Eichengreen et al., 2006). However, the positive effect of pension funds on the bond market is more substantial for government bonds and weaker for corporate issues, which may reflect the historical limitations on speculative credits for pension funds. In this sense, for the development of green bond markets, it may be necessary to limit restrictions that constrain the pension funds' ability to hold speculative credits and that have a more significant effect on the demand for corporate bonds.

On the other hand, there are adverse selection and moral hazard problems that arise from information asymmetry in financial contracts and, hence, in financial markets (Law & Azman-Saini, 2012). In emerging economies, high levels of information asymmetries are common. They affect debt markets, given that they have prerequisites for information disclosure necessary for investor participation. In that sense, information asymmetries can become quite significant a constraint (Borensztein et al., 2008). In turn, low levels of asymmetric information lead firms to reach out to the debt market since they disclose information to investors about their financial constraints, facilitating investor decision-making processes (Nagano, 2018). In fact, in the green bond market, this asymmetric information may be greater as issuers must provide information that allows investors to know the details about green projects and their impact. Thus, the importance of developing impact reporting frameworks is stressed, as we discuss below.

As for green investments, several institutional factors may hinder market development. Empirical evidence shows that green bond markets are bigger in countries with environmental commitments. The environmental commitments made by countries at the UNFCCC in Paris in 2015 are one of the factors driving the growth of green bond market (Tolliver, Keeley, & Managi, 2020), as well as the need for investments associated with the 2030 Agenda and the SDGs. This type of signalling encourages the participation of suppliers and buyers in green bond markets by promoting unambiguous investment rules and institutional cooperation among the different intermediaries in the financial system (Ngwenya & Simatele, 2020). In contrast, private investors may find green investments unattractive due to uncertainty about a real long-term commitment of public policies or support to ecofriendly investments (Raberto, Ozel, Ponta, Teglio, & Cincotti, 2019).

As regulating authorities, governments play a crucial role in boosting green bond markets. Government regulations seek to establish a legal and regulatory system, which involves the protection of property rights, contract enforcement, and sound accounting practices (Law & Azman-Saini, 2012). However, the implementation of these government policies faces critical coordination challenges at both regional and national levels, especially in emerging markets. At the national level, ministries must develop plans and projects aligned with each other, as the priorities of the finance ministry often differ from those of the environment ministry (Banga, 2019). Moreover, there is a need for integration between regional and national government policies, which requires inter-institutional arrangements to ensure that environmental governance is maintained (Elliott & Zhang, 2019).

On the other hand, the increased demand for investments with a better sustainability rating suggests that investors are more aware of the risks posed by climate change to business - giving more economic value to adaptation and mitigation activities (Bender, Bridges, & Shah, 2019; Hartzmark & Sussman, 2019). Despite that, the lack of information and a detailed description of the proceeds of green bonds is one common problem that may affect the investor decision-making of whether to lend to the issuer (Zhang & Li, 2018). The transparency information and reporting on the use of proceeds from green bonds are important factors that distinguish this instrument from conventional bonds. Transparent, accurate, and timely information on the use of proceeds is of essential value to investors, since they need assurance that the green bonds have a positive impact on the environment (IDB, 2019A).

Therefore, for the development of the green bond market it is necessary to reduce such information asymmetries. CBI's green bond Treasurer Survey finds that investors think standardized mechanisms of certification, classification and result reporting are basic steps to boost green bonds markets (CBI, 2020C). For instance, the definition of national taxonomies in China about what constitutes a green investment project allows the green bond market to attract more international investors (Zhang & Li, 2018), and the green bonds with green certifications have lower interest costs than those without them (Li, Tang, Wu, Zhang, & Lv, 2019).

With the above in mind, theoretically, the only structural difference between conventional bonds and green bonds is the green label (in practice, the difference resides in the potential of green bonds to support a resilient and low-carbon growth path). Currently, the risk characteristics of an issuer are the same for traditional and green bond issuers (Nanayakkara & Colombage, 2019). Therefore, the pricing of the two types of bonds should not be different when issuers use proceeds for projects with similar levels of risk. However, several studies have sought to determine if a "Greenium" or yield differentials exist. There is still no consensus. Results go from no premium identified to positive premium (IDB, 2019A).

Some studies find that green bonds have a pricing premium over conventional bonds (Partridge & Medda, 2020; Zerbib, 2019). Baker (2018) shows that green bonds are issued at a negative premium and held in higher concentrations by investors, which evidences investors' willingness to sacrifice return when holding green bonds. The premium may reflect the investor demand for bonds with a green label over conventional bonds, which will encourage project owners to issue green bonds to fulfil their financing needs at a lower cost of capital (Nanayakkara & Colombage, 2019). Bond issuers and underwriters with more social reputation and certified by CBI have bigger pricing premiums (Wang, Chen, Li, Yu, and Zhong, 2020).

If green bonds are issued with a premium over conventional bonds, this provides an additional incentive for issuers to issue more bonds to the market with a green label (Zerbib, 2019). However, Larcker and Watts (2020) find no evidence of a green premium in the municipal market of the US. They suggest that investors are unwilling to withdraw benefits to invest in green assets and show that a zero-premium is still present on securities with a smaller issue size. This means that the lack of supply does not affect the green bond price. As the authors do, it is worth noting that this result might not be generalized for other markets. Moreover, Tang and Zhang (2019) show that firms that issue green bonds have a positive stock price response, but they do not find evidence of a green premium.

Finally, issuers' credit risk profiles also affect green bond pricing. In the green bond market, issuers with a high credit rating have a lower interest cost than green bond issuers with a low credit rating (Li et al., 2019). Companies that issue green bonds may be considered less risky as they invest the proceeds in managing environmental risks that may affect their profits. Therefore, for the valuation of a green bond to reflect this decrease in risk, rating agencies must include analyses of environmental, social and governance [ESG] factors, which can either improve the risk profile of environmentally friendly companies or worsen the profiles of those that are not (IDB, 2019A).

3. GOOD PRACTICES IN GREEN BOND MARKETS: LESSONS FROM EUROPE AND THEIR POTENTIAL APPLICATION IN LATIN AMERICA

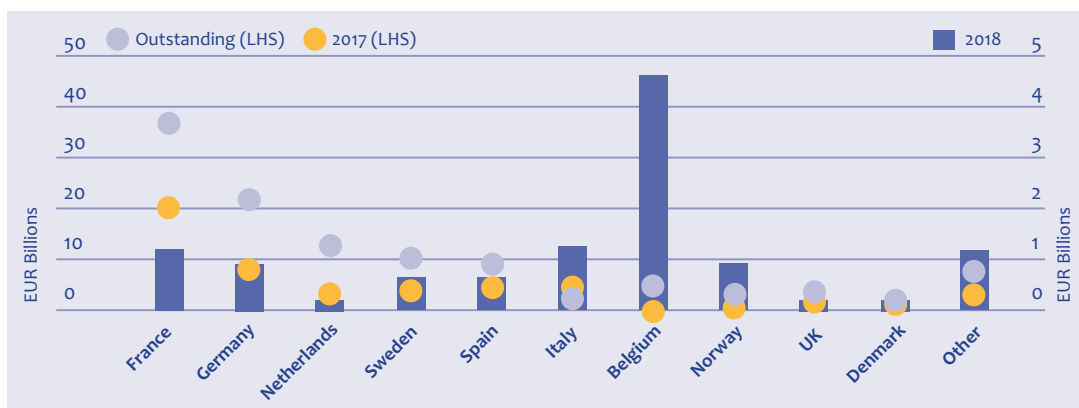
The fight against climate change requires billions of dollars of funding, to move towards a low-carbon economy and achieve the Paris Agreement goals by mid-century. The European Union [EU] is leading the way by adopting policies and instruments and promoting regulatory changes to facilitate the transition. Still, the investment scale is unlike any other seen before and goes beyond the public sector, calling for joint action from all sectors of the economy. Thus, the EU is providing incentives to help attract the required investments and mobilize funding capacity of private capital (EU High-Level Expert Group on Sustainable Finance [EU HLEG], 2018) (see Box 1).

The EU Green Bond Standard (EU TEG, 2019A) states that in the European bonds market, since 2017, the green, social and sustainability bonds (excluding government issuances) represent on average 4-5% and have risen constantly to approximately 10% of the total amount of bonds issued by European issuers in the last quarter of 2018.

Since 2007 the cumulative issuance of green bonds in Europe was of EUR 122 bn, a third of the global total. Europe has been the largest regional market of green bond issuance in 2017 with EUR 52 bn, 1.4 times the volume of 2016 (CBI, 2018).

Until the first quarter of 2018, 145 entities have issued green bonds in the European market, including 48 energy companies, 35 financial institutions, 23 property companies, 17 local governments and three sovereigns. Despite the diversification of the issuers operating the market, there is a need to incentivize corporate issuance from countries with large economies and highly-developed and active bond markets, such as the UK, Germany and France (see Figure 5). (CBI, 2018).

Figure 5. Green bond issuance by country.



Source: CBI (2018)

In Europe, sector diversity has grown over time, with all types of green bonds issuers spanning the territory, issuing a wide variety of debt formats, currencies, and tenors (CBI, 2018).

According to the same report (CBI, 2018), approximately 70% of the green bonds issued in Europe have a tenor of ten years or less, 28% have tenors of up to 5 years and 41% between 5 and 10 years. While public and private non-financial corporations usually use medium- to long-term debt (5-10 years to perpetually) for financing, financial institutions issue mostly shorter-dated bonds (up to 5 years). On the contrary, sovereigns often chose long-dated bonds (15 years or more) since they are particularly suitable for the development of infrastructure assets and very sought out by institutional investors.

BOX 1. THE EU GREEN DEAL

The European Commission assumed in 2019 the Green Deal as the new European growth strategy, with the overarching goal of making Europe the first climate neutral continent by 2050. In an effort to step up global climate action and make the necessary transition to a climate neutral society, the plan has an explicit environmental objective, which is to align economic growth with the reduction of the environmental impact of economic activities, capable of generating innovation, employment and well-being. This strategy will be based on a Climate Law for Europe and encompass a comprehensive set of policies that will allow the EU to “establish a framework for the irreversible and gradual reduction of greenhouse gas emissions and for the increase of removals by natural sinks or other sinks in the EU” and to define “a binding objective of climate neutrality in the Union by 2050, with a view to achieving the long-term temperature objective set out in Article 2 of the Paris Agreement, and it provides a framework for making progress on achieving the global adaptation objective set out in Article 7 of the Paris Agreement”. In light of this climate-neutrality objective, the EU will explore options for a new 2030 target of 50% to 55% emission reductions in relation to 1990, helping accelerate Europe’s 2050 decarbonization intentions.

It is precisely the Green Deal and its growth approach that may be the answer to economic recovery and societal reconstruction following the coronavirus pandemic, both at European and global level, resorting to transformative policies to promote actual, effective and sustainable change.

To aid in the implementation of the Green Deal, the EU has developed the European Green Deal Investment Plan (EGDIP), also referred to as the Sustainable Europe Investment Plan (SEIP), which is the investment pillar of the Green Deal. To achieve its goals, the Plan will mobilize at least €1 trillion in sustainable investments over the next decade, guarantee that at least 25% of the EU budget contributes to climate investment, reduce the environmental risks associated with private entities’ investments and, inclusively, transform the European Investment Bank (EIB) into a climate bank. The Plan will also include the Just Transition Mechanism, to allow for a fair and just green transition, mobilizing at least €100 billion in investments over the period 2021-2027 to support workers and citizens of the regions most impacted by the transition. The Plan will enable the transition through targeted actions in areas that directly touch upon investment decisions of private investors and public entities.

In the context of the Green Deal, the European Commission will present in the third quarter of 2020 a renewed strategy to further strengthen sustainable finance, namely, companies will have to disclose more environmental and climate information and data, so that investors are fully informed of sustainable investment opportunities and can better target their investments and can better direct their investment in support of the Green Deal. To this end, the Commission will review the Non-Financial Reporting Directive. Also, investment opportunities are expected to grow, since it will be easier to identify sustainable investments through clear labels for a wide variety of investment products and the development and application of the EU Green Bond Standard¹⁹. Additionally, the EU hopes to develop a robust pipeline of investment projects aligned with the European Green Deal, because the availability of projects that are compatible with the expectations and requirements from investors does not yet match the demand.

Figure BOX 1.1 General functioning of the European Green Deal Investment Plan.



Source: Adapted from European Commission (2020), Sustainable Europe Investment Plan – European Green Deal Investment Plan.

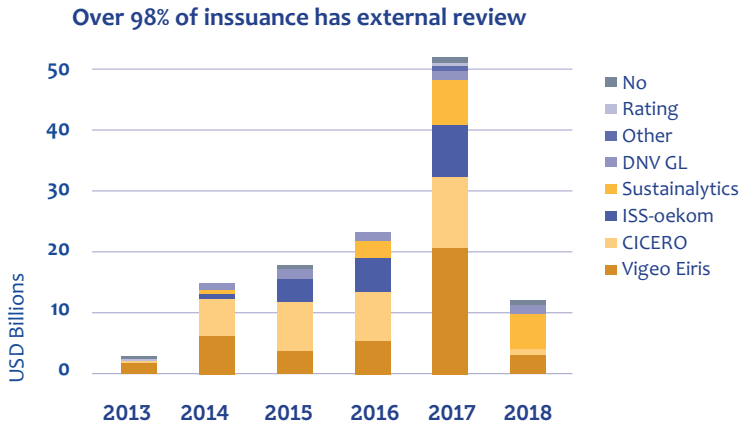
.....
 9 European Commission (2020). Sustainable Europe Investment Plan – European Green Deal Investment Plan. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Brussels. Available at: https://ec.europa.eu/commission/presscorner/api/files/attachment/860462/Commission%20Communication%20on%20the%20European%20Green%20Deal%20Investment%20Plan_EN.pdf

3.1 The need for guidelines and regulation

As a voluntary market, green bond issuers disclose information to investors on the basis of their own experience or international best practice. Since the issuance of the first green bond in 2007, it has become increasingly evident to regulators, stock exchanges and market associations that some level of guidance has to be provided to market participants on the green debt issuance process and that some kind of guidelines needed to be developed to promote integrity and consistency in the market. In the past years, international, national and even regional green bond guidance has been developed in the form of regulation, guidelines, standards and listing requirements that vary in terms of level of detail and eligibility of assets and projects (CBI, 2019B).

The green bond market has evolved from self-labelling green bonds, in which the issuer simply provided details on the green eligibility criteria for the use of proceeds to the investors, without external validation, to an externally reviewed market, with second party opinions [SOP], verification against the Green Bond Principles, certification under the Climate Bond Standard (that way issuers and investors do not have to interpret a second party opinion), the recent EU Green Bond Standard [EU GBS], and government/national/regional guidance (Global green bond Partnership, 2019). More than 98% of European green bond issuance benefits from at least one external review, and 93% of these include a SOP, with Vigeo Eiris and Cicero leading the market, as shown in Figure 6 (CBI, 2018).

Figure 6. External review in the European green bond market.



Source: CBI (2018).

All guidance developed so far has been on the basis of the GBP, which were designed to drive the provision of information needed to increase capital allocation to green assets and projects, emphasizing the use of proceeds to help issuers transition to a sustainable business model whilst facilitating disclosure, transparency and reporting.

Since the definition and categorization of green bonds keep evolving given their relatively new entrance into the financial market, a simple framework must be defined that entities can use to help design their own green bond for a market that is moving towards more transparent and independent standardization and labelling.

3.2 Review of the EU Green Bond Standard

3.2.1 History

The EU High-Level Expert Group on Sustainable Finance advised the European Commission [EC] to “introduce an official European standard for green bonds -the EU Green Bond Standard- based on the association with the EU Sustainability Taxonomy, which should include an explicit definition of an EU green bond and the existing and widely accepted market-developed principles for market processes”.

The EU GBS is intended to enhance transparency, integrity, consistency, and comparability of green bonds in the European market and it will be applied to all issuances. Drawing on the work of the CBI’s Climate Bond Standard and ICMA’s Green Bond Principles, the text of the EU GBS may be read along with the GBP, however it will prevail over it. The objective is to provide a framework of key components to EU green bonds that must meet the following three requirements as described in the HLEG’s Final Report (EU HLEG, 2018):

1. The proceeds will be exclusively used to finance or re-finance in part or in full new and/or existing eligible green projects, in line with the future EU Sustainability Taxonomy (see below section 4.1., Use of Proceeds); AND,
2. The issuance documentation of the bond shall confirm the alignment of the EU green bond with the four components of the EU Green Bond Standard; AND,
3. The alignment of the bond with the four components of the EU GBS has been verified by an independent and accredited external reviewer.

Based on the recommendations of HLEG Final Report, in March 2018, the European Commission announced its Action Plan on Financing Sustainable Growth that aims at developing a comprehensive strategy to further connect finance with sustainability in order to “(1) reorient capital flows towards sustainable investment to achieve sustainable and inclusive growth; (2) manage financial risks stemming from climate change, resource depletion, environmental degradation and social issues; and (3) foster transparency and long-termism in financial and economic activity” (EU TEG, 2019A). The Action Plan includes the commitment to create standards and labels for green financial products.

The European Commission [EC] set up a Technical Expert Group on Sustainable Finance [TEG] to assist with the development of a unified classification system for sustainable economic activities, including the EU Green Bond Standard, benchmarks for low-carbon investment strategies and guidance on transparency and disclosure of climate-related information.

An EU Taxonomy for economic activities is being created based on the proposed regulation of the establishment of a framework to facilitate sustainable investment and of the work done by TEG to create criteria for the climate related environmental objectives of the European Union.

3.2.2 Barriers to the green bond market development

One of the main hurdles for issuers and investors has been defining a robust and consistent concept of “green”. Due to this difficulty, regulators are working on standards to help protect against greenwashing and reputational risks (CBI, 2019B). In recent years, taxonomies have been developed to help identify and classify green assets and projects to provide harmonization and eligibility across the market.

Investors’ demand for green bonds surpasses the capacity of issuers to identify eligible green projects and assets for financing, and there is a lack of real green investments due to the uncertainty of what is perceived as “green” by the markets (EU TEG, 2019A), as explained above.

There has been a low liquidity of Green Bonds in the secondary markets mostly due to lack of supply from issuers. The EU TEG believes that this is due to the difficulty of some potential issuers to view the benefits of Green Bond issuance in detriment of other financing options (EU TEG, 2019A).

According to the EU Green Bond Standard (EU TEG, 2019A) the following represent barriers to the Green Bond market development:

- Issuers have difficulties in perceiving the economic benefits of Green Bonds because the internal costs related to the additional effort to manage the processes and reporting requirements are substantial in comparison to standard bonds.
- The price benefits of Green Bond issuance seem small and not universal;
- External review procedures appear to be complex and costly and prone to conflicts and quality control issues;
- Increasing reporting procedures on the projects and activities financed by such bonds, since the information needs to be provided annually until the full allocation of the proceeds, and on the non-financial aspects of Green Bonds make it labour intensive and less attractive for issuers;
- A certain degree of uncertainty concerning the type of assets and expenses that can be financed by Green Bonds makes it unclear what can constitute an eligible green use of capital.

3.2.3 EU Green Bond Standard’s recommendations to address the barriers

As we have mentioned before, Green Bond markets face certain barriers for growth. In Table 7 below, we summarize some recommendations stemming from the EU GBS.

Table 7. Barriers and possible solutions to Green Bond market growth.

Barriers to development of the green bond market	How the EU GBS and related recommendations seek to address the barriers
Lack of green Projects	The EU GBS builds on the EU Taxonomy Regulation to clarify and expand the universe of eligible green projects; it hopes to facilitate the development of green finance by complementing (not substituting) policy measures that directly increase real economy investments in green assets and operations.
Issuer’s concerns with reputational risks and green definitions	The EU GBS builds on the EU Taxonomy Regulation to clarify green definitions; it hopes to reduce reputational risks due to a robust accreditation scheme for external verifiers that clarify their role and responsibilities; additionally, reporting is expanded and standardised and issuers are required to report on impact and upfront on the impact reporting methodology.
Absence of clear economic benefits for issuers	The EU GBS builds on standardisation and incentivises the design of policies and instruments by policy-makers that promote green bond issuance; it also describes potential incentives to support and stimulate market growth, both supply and demand, including a possible subsidy to offset the additional cost of external verification, and enhanced disclosure of EU GBS holdings by institutional investors to indirectly stimulate demand.
Complex and potentially costly procedures for reporting and external review	The standardisation of the verification process in the EU GBS defining a clear scope of services based on essential components hopes to streamline it, avoiding duplication of efforts, thus reducing the cost of external reviews.
Labour intensive reporting procedures	The standardisation of the reporting requirements in the EU GBS provides clarity on what is necessary in Green Bond Reporting, by simplifying the process and differentiating between Allocation Reporting (which needs to be verified) and Impact Reporting (which is encouraged to be verified, but not required); also, only one allocation report is necessary for Green Bond Programmes, i.e. programmes with several issuances under the same Green Bond Framework.
Uncertainty on the type of assets and expenses that can be financed	The EU GBS defines and expands the scope of eligible expenditures.

Source: EU TEG Report on EU Green Bond Standard (2019)

3.3 Policies and programs

Here we highlight some examples of Europe’s crucial sustainable finance policy developments to explain the situation in Europe. We start with a general context of what has been done by the European Commission at a pan-European level, followed by some examples of what some of the most active EU member states have done at the national level.

In light of the EU Action Plan for Sustainable Finance, the EC recognized that financial institutions should incorporate sustainability into their strategies, risk management (both at the business and investment levels), and reporting. It was also evident that companies of a specific size across all sectors should report on their approach to climate issues, in addition to the more conventional corporate responsibility topics.

In December 2016, the EC established the High-Level Expert Group [HLEG] on Sustainable Finance to provide guidance and steer public and private capital towards sustainable investments. The HLEG released two comprehensive reports, an interim report in July 2017, and a final report in January 2018. These documents outline recommendations for financial institutions to protect the stability of the financial system from environment-related risks and deploy these policies on a pan-European scale.

Soon after, in May 2018, the EC adopted the EU Action Plan on Sustainable Finance, a package of measures defining a detailed strategy and key actions to further connect finance with sustainability and suggesting the implementation of three subsequent legislative proposals on: i) regulation on the establishment of a framework to facilitate sustainable investment, creating a unified EU classification system (“taxonomy”) for environmentally sustainable economic activities; ii) regulation on disclosures relating to sustainable investments and sustainability risks and amending Directive (EU)2016/2341, incorporating sustainability in institutional investors and asset managers duties; iii) regulation amending the benchmark regulation, creating benchmarks for low-carbon and positive-carbon impact strategies to inform investors¹⁰.

In line with the Commission’s legislative proposals of May 2018, the EC set up the Technical Expert Group on Sustainable Finance [TEG] composed of 35 members from civil society, academia, business, and the financial sector, as well as additional members and observers from EU and international public bodies. The TEG began operating in July 2018¹¹ to assist and develop the Action Plan, which called for the creation of:

- 1) an EU taxonomy
- 2) an EU Green Bond Standard [EU GBS] and eco-labels for green financial products
- 3) methodologies and disclosures for EU climate benchmarks, and
- 4) guidance for corporate disclosure of climate-related information.

¹⁰ Available at <https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance>

¹¹ Available at <https://ec.europa.eu/info/publications/sustainable-finance-technical-expert-group>

In June 2019, the TEG published its first report where it “proposes for the Commission to create a voluntary, non-legislative EU Green Bond Standard [EU GBS] to enhance the effectiveness, transparency, comparability and credibility of the Green Bond market and to encourage the market participants to issue and invest in EU Green Bonds”. Building on this, in March 2020, the TEG published its Usability Guide for the EU Green Bond Standard, “offering market actors’ guidance on the use of the proposed standard and the set-up of a market-based registration scheme for external verifiers”¹², and the TEG final report on EU Taxonomy, a classification system that brings clarity and consensus on which economic activities can legitimately be labelled “green”¹³.

The EU GBS aims to contribute to the EU’s sustainable finance policy objectives, support green bonds market growth, increase comparability and robustness of the Green Bonds, and become the official European and international standard for reporting and verifying sustainability matters. The latter accounts for the fact that the EU GBS is stricter and more demanding than the GBP, helping define what is green and regulating the extent and quality of external reviews. Furthermore, the EU GBS helps to lower costs for issuers, by providing standardization and streamlining reporting requirements and verification processes, avoids greater use of resources, and duplication of time-consuming efforts, and reduces the costs of external reviews, and to increase investors’ interest, confidence, and credibility in the market. This can potentially augment the reliability of the information and the ease of reporting, alleviating reputational risks, and contributing to boosting financial flows to sustainable and green projects with real environmental, economic, and social benefits.

The EU GBS comprises four core components that build on market lessons and existing best practices, with the following mandatory requirements:

- 1) green projects alignment with the EU Taxonomy
- 2) the publication of a Green Bond Framework [GBF]
- 3) reporting on the use of proceeds (allocation report) and on environmental impact (impact report)
- 4) verifying the GBF and final allocation report by an external reviewer (the verification of final impact report remains voluntary).

Besides the primary goal of the EU GBS of creating a protocol for Green Bond issuance, the standard proposes a centralized accreditation scheme for pre-issuance and post-issuance verification, as well as for impact verification (see Figure 7), and a series of recommendations on how the EC, member states and market participants can endorse it through demand and supply-side measures. And, at the same time, the standard expects to overcome current market barriers (EU TEG, 2019B).

Next, we present examples of sustainable finance policies and programs in some EU Member States.

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¹² Available at <https://ec.europa.eu/info/publications/sustainable-finance-teg-green-bond-standard>

¹³ Available at <https://ec.europa.eu/knowledge4policy/publication/sustainable-finance-teg-final-report-eu-taxonomy>

France

France is now one of the largest Green Bond markets in the world. In January 2015, it became the first country to enact a law requiring climate change-related reporting for asset owners and managers, making climate risk disclosure mandatory for French institutional investors. Under this Energy Transition for Green Growth Law - Article 173 - institutional investors must report on the integration of physical and transition risks caused by climate change on their activities and assets.

Moreover, the prudential supervision authority (Autorité de Contrôle Prudentiel et de Résolution) published a document on governance and management of climate-related risks for French banking institutions¹⁴, to encourage the dissemination of good practices in this area. The guide includes recommendations on the use of both qualitative and quantitative metrics to enhance the resilience of these institutions' business model.

Sweden

In December 2016, the Swedish Government's green bond Inquiry¹⁵ was drawn up to highlight ways to promote the market for Green Bonds and respond to increasing demand. It presented proposals on what information investors need to make well-founded investment decisions, proposed a structure for processes and criteria for identifying green projects, and, inclusively, recommended the issuance of a sovereign Green Bond. Almost a year later, in November 2017, Sweden initiated a strategic partnership with France in four key areas for innovation and green solutions, including green finance. This partnership called for the involvement of both private and public stakeholders, to promote joint action and collaborative approaches to sustainable finance, including shared learning and experiences¹⁶.

Parliament echoed Article 173 by approving a new regulation demanding pension fund managers to account for climate-related risks in their investment strategies (CBI, 2018).

United Kingdom

In September 2017, the UK Government established the UK Green Finance Taskforce to boost green finance developments and low-carbon economy and convey the necessary investments to meet national carbon reduction targets. On March 2018, the Taskforce published its final report providing recommendations for the government and the private sector on how to integrate green finance in financial services, including, for example, "driving demand and supply for green lending products, improving climate risk management with advanced data, building a green and resilient infrastructure pipeline, and issuing a sovereign Green Bond"¹⁷.

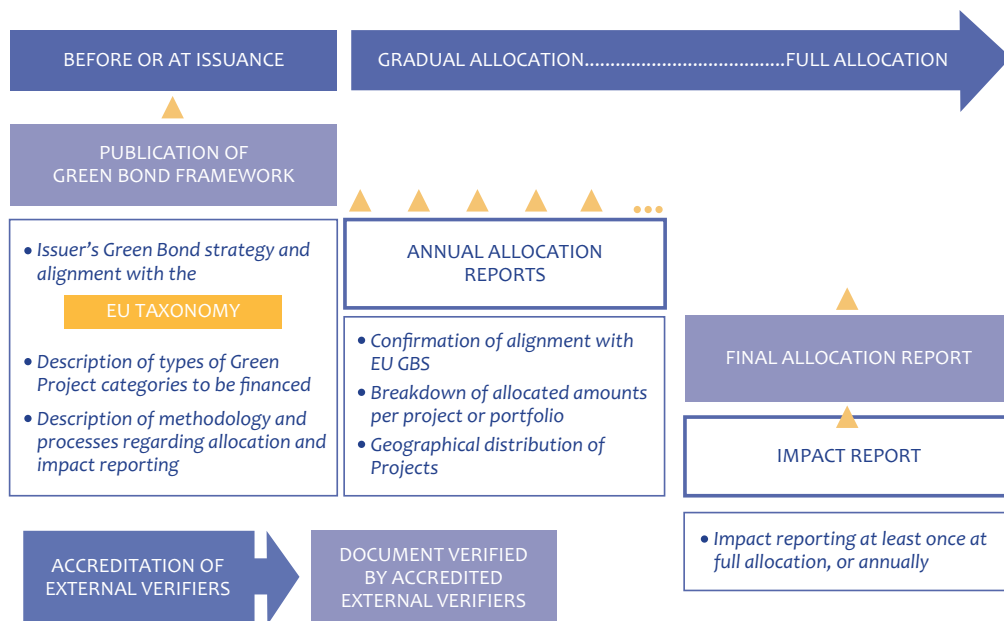
14 See https://acpr.banque-france.fr/sites/default/files/medias/documents/20200525_synthese_gouvernance_anglais.pdf

15 Available at <https://www.government.se/press-releases/2016/12/inquiry-to-promote-the-market-for-green-obligations/>

16 Available at <https://www.tresor.economie.gouv.fr/Articles/2018/03/28/partenariat-franco-suedois-pour-l-innovation-et-les-solutions-vertes-french-swedish-partnership-for-innovation-and-green-solutions>

17 Available at <https://www.gov.uk/government/publications/accelerating-green-finance-green-finance-taskforce-report>

Figure 7. Flowchart showcasing interactions between the four core components of the EU GBS before issuance and until full allocation.



Source: EU TEG (2019B)

3.4 Procedures for green bond issuance in Latin America

Case studies in LAC revealed the emerging roles of stock exchanges and regulators. The first ones are looking closely at international trends and developing tools for Green Bond issuance. The latest ones respond accordingly, with significant advancements in environmental and social factors integration in financial markets.

The increasing role of stock exchanges and other private organizations is visible for the four countries we study in-depth and others in the region. During 2018, Bolsa de Valores de Lima (Peru) published Green Bond guidelines¹⁸, and Mexico's Climate Finance Advisory Group [CCFC] announced the Green Bond Principles MX¹⁹ (based on the GBP but customized to the Mexican context). In Brazil, the first initiative to organize the market came in 2016 from the Brazilian Federation of Banks [FEBRABAN] and the Brazilian Business Council for Sustainable Development [CEBS], as a voluntary guideline²⁰ with recommendations for all market participants (e.g., underwriters, issuers, and investors).

¹⁸ See <https://www.bvl.com.pe/bonosGuia.html>

¹⁹ See https://www.bmv.com.mx/docs-pub/MI_EMPRESA_EN_BOLSA/CTEN_MINGE/GREEN_BONDS_PRIN_MX2.pdf

²⁰ See <https://cebds.org/en/publicacoes/guidelines-for-issuing-green-bonds-in-brazil-2016/#.XxNXDihKiM8>

3.4.1 Chile

The Bolsa de Santiago²¹, which joined the network of Sustainable Stock Exchanges [SSE] early in 2015, opened a Green and Social Bond market segment. The motivation for this came from a collaboration with CLG Chile²²: the idea was to increase market transparency and avoid greenwashing cases. Green Bonds can be privately issued, but there is no public scrutiny in those cases. By being traded in the primary market, and subject to precise conditions, Green Bonds become potentially irrefutable instruments for financing the green transition.

The exchange organized the activities regarding this type of instruments through a series of requirements stated in the Guidelines for the Green and Social Bonds Segment²³. The guidelines are very close to ICMA's GBPs/SBPs and CBI's Climate Bond Standard and require a Green Bond framework that meets the four core principles of green/social bonds. Furthermore, an external review (pre- and post-issuance) is mandatory for issuers that want to enter this market segment. The third-party must be approved by the Climate Bonds Standard Board and comply with minimum requirements for the external verification report, following, for instance, ICMA's recommendations for external reviews.

In terms of regulation, the Comisión de Mercados Financieros [CMF] has not published any further requirements regarding Green Bonds. It has been working with different financial market actors to incorporate environmental and social aspects in reporting and asset valuation.

3.4.2 Colombia

The Bolsa de Valores de Colombia [BVC] defines Green, Social, and Sustainable Bonds in the Circular Única BVC²⁴. These bonds' proceeds must finance activities with environmental or social benefits (or both) in line with ICMA's guidelines. For a bond to be included in this category, the issuer must provide an independent external review by an acknowledged third-party organization.

The Financial Superintendence, which is the authority that supervises the financial markets in Colombia, is currently working on regulating Green Bond issuance in the country, and it contemplates two steps:

1. Promulgating green bond Guidelines that align with ICMA's principles and CBI standards. This document will include a taxonomy. It is worth pointing out that it will not become a norm so that it can progress as fast as the market requires.
2. Issuing an External Circular Letter for the institutions that do not comply with the Guidelines' recommendations. In that case, issuers will have to make an effort to justify that the instrument should be considered "green".

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²¹ There are three stock exchanges in Chile: Bolsa de Comercio de Santiago, Bolsa Electrónica, and Bolsa de Valparaíso.

Only the first one has a dedicated segment for Green and Social Bonds.

²² CLG Chile is a not-for-profit organization of corporate leaders seeking to foster sustainable practices in the country.

²³ https://www.bolsadesantiago.com/bonos_verdes

²⁴ https://www.BVC.com.co/pps/tibco/portalBVC/Home/Regulacion/Sistemas_Administrados/Renta_Variable

The taxonomy answers several market actors' calls that believe it is a crucial element to foster Green Bond market development. Its design is specific to the Colombian situation, a "tropicalized" version of international standards -in the words of a representative from Financial Superintendence. The taxonomy recognizes that some activities that may not be considered green by the international community can have significant impacts in the country, given its development stage. It also aims to reduce the adverse effects of not having a clear definition of green, which can be costly for issuers in reputational terms.

3.4.3 Costa Rica

The Bolsa Nacional de Valores [BNV] has a Green Bond standard that follows ICMA's GBPs and applies to both private and public issues in the debt market. The guidelines allow for bonds that comply with ICMA's principles or CBI's standard to be considered green in the local market. However, an external review is mandatory, and such a report should be available to investors on issuers' websites. The third parties providing these reviews should either be accepted internationally (CBI's list of approved verifiers) or accredit experience regarding environmental sustainability assessment.

As an additional step, the BNV reprogrammed its trading platforms so that the ISIN²⁵ of public debt instruments includes a V (for Verde, which is the Spanish word for green).

The regulation in the country is more dispersed. Four different superintendencies supervise the national financial system. Still, there are no specific regulations on the Green Bond market. The Superintendencia General de Valores [SUGEVAL], focused on the supervision of securities markets, is currently developing guidelines for the issuance of green instruments - bonds and investment funds. It contemplates the requirements for these instruments' subscription in the National Registry of Securities and Intermediaries, and desirable disclosure practices in terms of social responsibility and sustainable development for securities in the public market. According to the Superintendent, their purpose is to contribute to the BNV's initiative and to align the quality of the information with international standards in terms of sustainability.

3.4.4 The Dominican Republic

The BVRD paved the road to bring the sustainability talk to the local financial market. It has taken several steps to promote green bond market development, such as the creation of a specific market segment, and the proclamation of green bond guidelines²⁶. The latter have their foundation on ICMA's four core principles and require:

1. the use of proceeds to adjust to a list of eligible projects designed by the BVRD
2. an external review by a qualified third-party, and
3. that issuers' corporate reports include a section on sustainability.

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²⁵ Abbreviation for the International Securities Identification Numbering system, which is widely used to identify financial instruments at the international level.

²⁶ <https://bvrd.com.do/wp-content/uploads/2019/07/BVRD-Guia-de-Bonos-Verdes-1.pdf>

However, according to them, there was a setback when the regulator decided to publish their green securities standard. It delayed the process for about one year.

The Superintendencia del Mercado de Valores opened for comments a guideline for Green Securities in 2019, ultimately approved in February 2020²⁷. This document is close to CBI's standard and ICMA's Green, Social, and Sustainable Bond principles. It involves only fixed-income instruments and requires disclosing the use of proceeds and their management. The issues must undergo external review by a third party that will be checked by the Superintendencia to verify that no conflicts of interest exist. To improve transparency, they recommend that the bonds' impact reporting follow ICMA's harmonized framework when available²⁸.

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27 <https://simv.gob.do/circulares-simv/>

28 Moreover, they have signed a Memorandum of Understanding with the International Financial Corporation [IFC] to develop a green taxonomy that aligns with the current regulation. See: <https://ifcextapps.ifc.org/IFCExt/Pressroom/IFCPressRoom.nsf/0/1F94BF8877D1CF618525854300476EF5>

4. DETERMINANTS OF GREEN BOND MARKET DEVELOPMENT IN LATIN AMERICA AND THE CARIBBEAN

4.1 Key actors of the green bond market

Different actors and their roles are decisive for fostering or constraining the development of Green Bond markets. Having an accurate and complete picture of the green and climate finance actors is a key step to meet the challenges of closing the gaps in financing and implementing actions for sustainable development.

Moreover, the interaction level between the actors and how they complement each other is an opportunity to establish synergies that catalyse the mobilization of resources for social and environmental action. Figure 8 presents a map of the main actors by their role in the green bond markets. This general map is the result of the reviews carried out for the European case, as well as the interviews conducted for the case studies for LAC countries.

One interesting thing about this exercise is to understand that the evolution of the green bond markets is not an exclusive responsibility of a single actor or sector. Instead, the extent of the market development will largely depend on the degree of involvement of all actors in the process and how they align to work toward the same objective.

The case studies analysis allows us to identify mechanisms for inter-institutional coordination established in some countries. Some cases to highlight are:

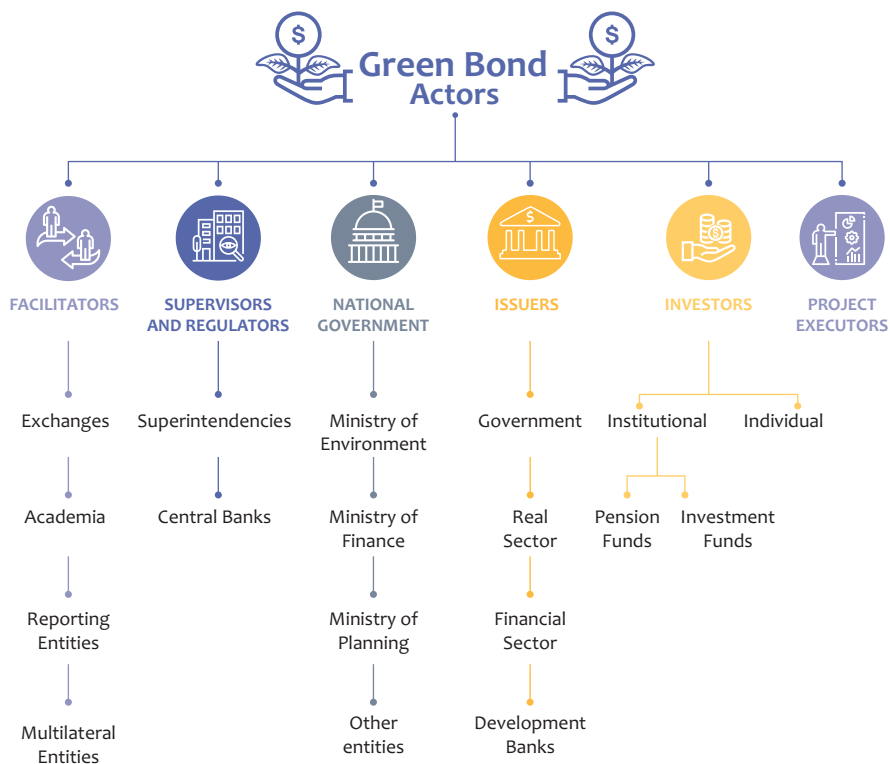
- Colombia: Climate Finance Committee of the National Climate Change System (SISCLIMA), the Green Protocol, and the Interinstitutional Table for Responsible Investment.
- Chile: Green Finance Board.

These instances are pertinent given their allowing the confluence of public and private sector actors. Not only do they give guidelines to promote green finance mobilization but they also discuss barriers and challenges that might boost the market.

From the case studies, another element that is worth highlighting is the role that regulatory and supervisory entities begin to play. These entities have a critical role in facilitating the standardization of the Green Bonds' issuance and placement processes and, therefore, in generating confidence for the development of the market.

In the specific case of the Caribbean countries, actors with the capacity for multilateral action, such as development banks and cooperation agencies, can play a very relevant role in facilitating the mobilization of resources for climate action. Thus, understanding that the role of these entities can help to enhance the impacts on climate change adaptation and mitigation, so that there are no isolated actions in one country of the region, but rather broader actions in a group of nearby countries that have the same needs.

Figure 8. Key actors in the green bond markets



Source: Drawn up by the authors.

4.2 Sustainable development goals and green bonds in Latin America: Key sectors

The recent review on the progress in the accomplishment of the Sustainable Development Goals targets²⁹ in Latin America and the Caribbean presents modest general progress.

Table 8 shows the SDG Index 2019²⁹ for the countries of our case studies. From the SDG Index data, the small change in the value of the indicator between 2015 (base year) and 2019 is striking. This suggests insufficient progress by the countries to achieve the 17 SDGs targets by 2030. Figure 9 shows a specific qualitative representation of the advance of each objective between 2015 and 2019. Such a graphical approach facilitates the identification of indicators in which the level of achievement of the initial target lags behind.

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²⁹ Centro para los Objetivos de Desarrollo Sostenible [CODS] (2020).

Table 8. SDGs Index 2019

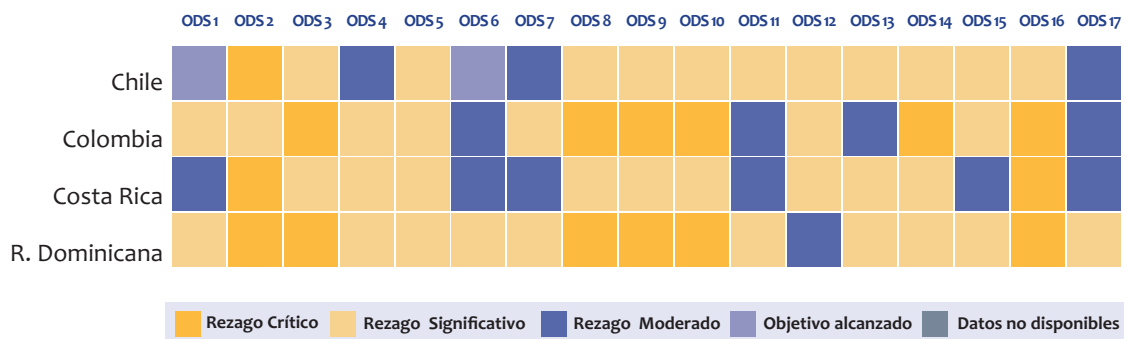
Ranking	Country	Index ³⁰	Score change	Percentage change
1	Chile	73,68	0,90	1,24%
3	Costa Rica	69,98	0,90	1,31%
9	Colombia	64,78	0,98	1,53%
13	Dominican Republic	63,93	0,76	1,21%

Source: Adapted from CODS (2020).

Table 8 shows a complementary representation in which each arrow indicates the trend in the change of the SDG Index value for some of the objectives related to the environment and climate change³¹.

From this analysis, it is clear that the lags in the SDGs fulfilment reflect the development gaps between and within countries. Closing the gap demands the definition of implementation means leading the transition from plans to actions (from planning to execution).

Figure 9. SDGs compliance



Source: Adapted from CODS (2020).

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³⁰ This refers to a country's performance on a numerical scale from 0 (worst) to 100 (best).
³¹ SDG 6 – Ensure availability and sustainable management of water and sanitation for all.
 SDG 7 – Ensure access to affordable, reliable, sustainable, and modern energy for all.
 SDG 13 – Take urgent action to combat climate change and its impacts*
 SDG 14 – Conserve and sustainably use the oceans, seas, and marine resources for sustainable development.
 SDG 15 – Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

One key factor in this transition is to guarantee the financing of programs and projects, for which Green Bonds are an ideal instrument. Likewise, the sectors directly related to the SDGs that lag in achieving their goal must be prioritized to receive financing. For instance, projects aiming at improving practices and efficiency in the energy, water, climate-resilient infrastructure, and agriculture and land-use sectors must be a priority in LAC countries.

Table 9. Selected SDGs scores and trends

Country	SDG 6		SDG 7		SDG 13		SDG 14		SDG 15	
Chile	96,75	↑	84,54	↑	94,67	→	65,24	↗	65,24	↓
Costa Rica	92,33	↑	79,91	↑	93,46	↓	58,22	→	58,22	↓
Colombia	94,25	↑	77,30	↑	90,68	↑	56,55	↗	56,55	↓
Dominican Republic	79,09	↗	73,14	↗	88,91	→	63,04	↗	63,04	↗

 Declining
  Stagnant
  Moderate progress
  Expected trajectory

Source: Adapted from CODS (2020).

In this context, the analysis of potential sectors for the placement of resources for the development of projects that contribute to the needs of climate finance is relevant. The analysis by the International Finance Corporation (2016), on climate investment opportunities in emerging markets, indicates investment scenarios from the signing of the Paris Agreement, estimated at \$ 23 trillion between 2016 and 2030 in key sectors: renewable energy, energy transmission and distribution, industrial energy efficiency, infrastructure, waste and transportation. In the case of Latin America and the Caribbean, considered by the IFC as the region with the greatest potential after China, and highlighting investment possibilities of Argentina, Brazil, Colombia and Mexico for 2.6 trillion dollars, of which 60% would be directed to transport infrastructure.

According to ECLAC (2019), greenhouse gas emissions in Latin America and the Caribbean represented 8.3% of global emissions in 2014. In this scenario with respect to emissions and compliance with climate goals, the composition and dynamics of these emissions show that the energy sector would play a major role in an emissions reduction strategy, followed by the agriculture and forestry sector.

Analysis by the Climate Bonds Initiative (CBI, 2019A) shows that “Green bond growth is expected across the region, driven by much needed investments in green infrastructure” (p. 3). Likewise, it considers that there will be opportunities in sustainable agriculture and ocean-based activities. From another point of view and source of study, in developing the cases presented

in this document, through interviews with market actors, the interviewees, according to the experience in their institutional role, market knowledge and development perspective, indicated potential sectors for the development of projects financed by Green Bonds, among which are infrastructure, energy, and transport (See Table 10).

Table 10. Potential sectors for project green bonds resources placement

Country	Potential Sectors
Chile	Renewable energy, clean transport
Colombia	Climate-resilience infrastructure, public services, energy, agricultural and land use
Costa Rica	Infrastructure, clean transport, agricultural and land use
Dominican Republic	Energy, sustainable mobility, climate-resilience infrastructure

Source: Adapted from CBI (2019A).

4.3 Supply and demand determinants

In interviews with different actors of the green bond market, we find some perceived barriers that are similar to the European case. For instance, the lack of a consistent green premium can become a disincentive for green bond issuers, since the process seems to convey an extra effort that the market is not willing to reward. Moreover, it is still intricate for potential issuers to identify what green assets are, which can be detrimental for expanding supply. Hence, the importance of the efforts made in terms of developing taxonomies.

Nevertheless, the nature of the markets is quite different in both regions. In that sense, the market players we interviewed identified several challenges and opportunities for the development of the LAC region’s green bond markets. We synthesize these perceptions below.

4.3.1 Education of market participants

A common problem identified in the interviews was the market actors’ lack of knowledge regarding environmental aspects and related financial instruments. Environmental, Social, and Governance factors are still somewhat extrinsic to financiers. Issuers, corporate organizations, stock exchanges, and regulators agree about the necessity of creating guidelines to help incorporate environmental aspects into financial decisions. This is particularly important in the case of institutional investors, such as pension funds, which are key players in capital markets.

This problem is partly cultural. For example, according to a CDP³² representative, only 3% of the banks incorporate environmental aspects because they consider other factors to be more critical. Some pension fund managers still conceive their fiduciary duty to be unrelated to climate change effects. According to one of the interviewees, “they do not understand that precisely it is because they have a fiduciary duty that they need to incorporate these factors in their financial decisions”.

But it may also be related to regulations. In the cases we studied, the restrictions facing institutional investors may affect their motivation and ability to move toward sustainable investment alternatives. However, financial supervisors are taking significant steps to foster ESG integration into investment decision processes³³:

- Chile: CMF has opened Norm 386 to public comment³⁴. This norm regulates information disclosure regarding ESG factors. The objective is to update it so that disclosure practices move closer to the Task Force on Climate-related Financial Disclosures [TCFD] standard. According to CLG Chile, the CMF has also invited pension funds to disclose their portfolios’ carbon intensity. Yet, this initiative has two shortcomings: it is not a norm, and the information is not publicly available.
- Colombia: Superfinanciera has at least two measures worth mentioning. First, it conducted a survey launched through an External Circular Letter to the institutions it supervises. The results revealed that pension funds and fiduciary were the most lagged actors concerning environmental aspects. Second, it opened a methodology project to public comment, which provides guidelines for pension funds to invest in private equity funds. It includes a chapter on ESG integration criteria.
- Costa Rica: The Superintendencia General de Entidades Financieras [SUGEF], in charge of regulating financial institutions, has taken steps towards integrating climate factors in the valuation of credit portfolios of financial intermediaries. Progress made on investment portfolios has not begun yet.

Moreover, green finance roundtables and working groups are useful to establish the much-needed conversation on how to move towards low-carbon and resilient economies in a joint effort between public and private actors. It is worth noting that these endeavours may suffer from an efficiency loss due to bureaucracy. In that case, the private sector can have a vital role and dynamize the discussions.

The fact is that institutional investors rules regarding bonds’ demand can also interfere with issuers’ incentives to enter the green bond market. Given their prominence in the demand side, these investors usually set rates and prices for bonds in the primary market. Since they do not often integrate ESG criteria in their valuation, Green Bonds may be subject to mispricing, if

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32 Carbon Disclosure Project, an organization supporting environmental disclosure. For more information, see: <https://www.cdp.net/en/info/about-us>

33 Despite having an organized regulation for the Green Bond market, to date, the financial regulator of the Dominican Republic, Superintendencia del Mercado de Valores de la República Dominicana has not published regulatory projects concerning ESG integration.

34 <http://www.cmfchile.cl/portal/prensa/604/w3-article-27945.html>

their environmental effects are not adequately incorporated - even though green bonds do not always imply lower financing costs than conventional bonds³⁵.

Regarding green bonds, neither issuers nor investors are well informed about what they are and their prospective benefits. IDB states that several national development banks still do not understand how the business of green bonds works. In several cases, companies with a clear potential to become green bond issuers did not consider this option, despite having a well-structured sustainability strategy that conveyed little extra effort to issue a green bond.

The initiatives of the stock exchanges we studied proved to be of great value to inform the market participants about the existence of green bonds. Workshops and conferences offered to companies and investors are standard practices of these stock exchanges. Usually, these events have the assistance of MDBs, such as IDB and the World Bank, which the exchanges consider crucial for their success.

Besides uncovering the potential of green bonds and attracting potential issuers and investors, these activities are useful to demystify market-related aspects. Issuers expect the market to price the bond well above conventional bonds, while investors sometimes relate green bonds with philanthropy.

A case in point of the positive results of the socialization of green bond markets arises from Costa Rica. Two local rating agencies created methodologies to rate the greenness of issuers and issues. According to the BNV, this came after the agencies attended workshops on green bonds, that is, the agencies followed BNV's direction. This reveals the influence of stock exchanges in shaping the market through their central role. According to BNV, stock exchanges have a calling to take leadership on sustainability matters, because they connect all market players. In Costa Rica, the direction toward sustainability in financial markets emerged from the BNV.

Finally, several market actors mentioned that green bonds are still considered unusual instruments -something "cool" to invest in. However, for the market to grow, they should lose this feature of "exotic". Green Bonds should become ordinary instruments in debt markets once we recognize that integrating environmental aspects in economic and financial activities is crucial for tackling climate change effects.

4.3.2 Average issue size in bond markets

In the four countries we studied, the average bond size for an issue to be competitive in the market is excessively large compared with average project sizes. This problem arises due to the concentration of demand for fixed-income assets on institutional investors. Thus, the potential projects of Small and Medium Enterprises do not reach the level required for a successful issue in the primary market. This is true even for larger firms in the real sector³⁶.

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35 As we explained in the literature review, there is no conclusive evidence on a "greenium".

36 This situation is quite different for Brazil, where the proceeds of green bonds are directed mainly to energy and land use, with 40% and 36% of the resources allocated to these activities, respectively. The land-use projects relate with certified forestry products and, in a smaller proportion, conservation activities. In Mexico, 82% of green bond proceeds finance energy projects (CBI, 2019A).

In contrast, there is great potential for green infrastructure projects, which are still currently underdeveloped in the region (CBI, 2019A). For example, according to BVC, there is a Colombian infrastructure fund that includes buildings with LEED certifications in its portfolio. The projects' size would make average-sized issues feasible in the country's primary market. In Chile, Aguas Andinas used a green bond, the first issued in the country's primary market, to improve its storage capacity of drinking water for the Santiago region, in an effort to adapt to climate change. In that sense, a significant step forward in the green bond market development would be to use these instruments to finance water and sewer systems, electricity grids, and other infrastructure projects, including the ones for public transportation systems, roads, harbours, and railways.

The financial sector also has considerable potential to enter the green bond market. In terms of requirements, banks are natural players in debt markets, which grants that issuing green bond bonds entails only a few additional steps in terms of sustainability for them, compared with smaller firms that still have to make a debut in the primary market. By issuing green bonds, banking institutions can create green credit lines that meet the financing needs of smaller firms developing environmentally impactful projects. That is precisely the case of Colombia, where banks dominate issuance at the green bond market.

Some of the actors that we interviewed admit the banking system's importance for the growth of the green bond market and, more broadly, of sustainable finance. CLG Chile recognizes that the banks should have played a more dynamic role in this market's development. It seems as if banks' activities require little innovation to increase profits, so there are no compelling incentives to move toward alternative business lines, and incorporating sustainability is not a common practice for the sector yet, as we mentioned before. An independent consultant from Costa Rica makes an attentive statement: if the banks want to play sustainability, there is a future for this market. If not, it will be challenging to make progress.

Besides banks, investment funds can have a meaningful impact on the environment. The Executive President of the Dominican Association of Investment Funds Managers [ADOSAFI] recognizes that the sector has been financing these activities, despite being a relatively new sector in the Dominican Republic. Some funds focus on hotels³⁷ with given ASG ratings, renewable energy, infrastructure, and the electricity sector. The latter have a substantial social impact, given the country's context, according to him. In Costa Rica, representatives of Banco de Costa Rica and Cámara de Bancos see the potential of investment trusts that serve as investment vehicles for public works and other projects. Some of them have even financed hydroelectric and geothermal power plants.

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³⁷ Tourism is a significant portion of the country's GDP. During the first three quarters of 2019, hotels, bars, and restaurants, alone represented about 7.5% of GDP (see <https://www.one.gob.do/economicas/cuentas-nacionales>)

4.3.3 Other aspects on the supply side

Challenges:

Costs facing smaller firms:

- Smaller firms face more substantial costs associated with technical aspects at the issuance level, in terms of the Green Bond Framework development, credit rating, external reviews, and subscription in the stock exchanges, deposits, and regulators. The perception of high risk for smaller companies adds to the costs of entering the capital markets, and poor corporate governance, which is typical for many of these firms in the region, can worsen the situation according to an independent consultant from Costa Rica.

Macroeconomic conditions:

- According to BNV, Costa Rica's fiscal situation has led to high interest rates in the capital markets. The increase in financing costs has reduced the number of new fixed-income issues, for all sorts of bonds. In turn, firms rely on the banking system to fund their operations. It is worth pointing out that this is already a strong sector in the country, with significant participation of state-owned banks, according to Banco de Costa Rica representatives. Therefore, funding through capital markets has serious competition in the banking sector.

Opportunities:

Potential sectors:

- Infrastructure projects are more suitable for the issue sizes in bond markets. The actors from Costa Rica, the Dominican Republic, and Colombia see great potential in this area, considering the lack of progress in infrastructure.
- In Chile and the Dominican Republic, the change in the energy matrix represents a significant opportunity to get finance through capital markets.

Diversification of instruments and alternative funding sources:

- Although not directly related to green bonds, the sustainable securitization issued by Transmilenio in Colombia shows a market appetite for non-conventional instruments
- Investment funds can potentially become bond issuers to finance various smaller projects
- Smaller firms with interest in green projects can find funding sources that are alternative to the banking system. This is important since many banks still do not understand the term, risk, and return profiles of these projects.

Good practices and other recommendations:

Incentives for green bond issuance:

Although no fiscal incentives exist for green bond issuance, there are different ways to invigorate the supply of green bonds. For example:

- Costa Rica's BNV reduced the subscription cost for green bond issuance
- A project of law intended to reduce formalities and to facilitate procedures for the development of green projects in Costa Rica aims to increase the number of projects that could be financed through capital markets.
- SCRiesgo, a rating agency that developed a methodology to evaluate the greenness of issuers and issues, grants a substantial discount for green ratings.
- Colombia's BVC offers a discount for small-sized issues in the bond market. Although this is not directly intended for green bonds, it does tackle one of the barriers to entry.

At a regional level, IDB offers technical cooperation, such as guidance and funds for:

- Consulting firms to assist in the Green Bond Framework development
- External reviews of Green Bond Frameworks, such as second party opinions
- Certifications that could be CBI's or something more specific, like in the case of FIRA's certified agricultural green bond in Mexico, developed by CBI, IDB and FIRA³⁸

Dissemination of green bonds:

- Given the perceived disconnection between finance and sustainability, having a financial manager advocating for green bonds attracts more attention from potential issuers, according to CLG Chile.

Guarantees for green bonds:

- According to an independent consultant from Costa Rica, a fund that guarantees smaller firms' green bonds can be an alternative to improve the risk-return profile of these instruments. Along the same line, an IDB representative mentioned Ecuador's Sovereign Social Bond case, issued with an improved credit rating, and at a lower interest rate, thanks to the guarantee.
- As reported by an IDB delegate, green bonds do not have a tangible benefit regarding interest rates, despite conveying somewhat higher costs than ordinary bonds. Covered bonds are well-known in Europe and could be an option for the LAC region. The instruments have a direct tie with the underlying assets (usually real estate, and solar or wind power plants), which can improve their risk-return profile.

³⁸ For more information see <https://www.greenfinancelac.org/es/agricultura-prottegida-en-mexico-construyendo-la-metodologia-para-el-primer-enlace-verde-agricola-certificado/>

Market traction:

- Sovereign issuers have a significant potential to generate market traction. For example, the Chilean case sent a signal to the entire market. The government is committed to climate action. According to CLG Chile and the Environment Ministry, this created an echo in many firms.

4.3.4 Other factors on the demand side

Challenges

Transparency:

- Given the nature of green bonds, transparency is of great value to investors and other stakeholders. However, there are still no universal standards for creating either Green Bond Frameworks or subsequent reports. Therefore, it is complicated to assess the actual impact of the green projects and determine whether green finance is moving in the right direction.

Opportunities:

Investor appetite:

- More awareness regarding climate change effects in daily activities.
- The significance of reputation for organizations in the Dominican Republic can potentially generate more demand for these instruments.
- Appetite for diversification. The recent developments of the fixed-income market have shown that investors are willing to receive new issuers with diverse characteristics in Colombia.
- More ambitious agendas for climate change and sustainable development. The urgency of climate change makes governments reconsider their goals and force them to find more resources to implement the necessary actions. Proof of this urgency is the Climate Ambition Alliance, launched at the Climate Action Summit in New York in September 2019, where signatory countries committed to enhancing their NDCs. Later that year, during COP 25, the increased number of signatories demonstrated the commitment of diverse actors to work towards a carbon-neutral economy by 2050³⁹.

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39 <https://unfccc.int/news/climate-ambition-alliance-nations-renew-their-push-to-upscale-action-by-2020-and-achieve-net-zero>

Good practices and other recommendations:

Transparency:

Considering the value of transparency, all four stock exchanges require the external review to be provided by a recognized third-party. In Costa Rica and Chile, the exchanges go one step further:

- Bolsa de Santiago only accepts external reviews from CBI's approved verifiers. It also requires an annual report; if not submitted, the bond is withdrawn from the green and social bond market segment.
- BNV has designated some institutions as official verifiers at the local level. External reviews from CBI's approved verifiers are also accepted.

The IDB is building the green bond Transparency Platform⁴⁰ to synthesize green bond issuers' information, including bonds' primary data, environmental impact, and reports. The platform's design will allow visualizing information at the country and issue levels. By creating a cluster for green bond reports, the platform can potentially become a source of information that brings about the standardization of reporting practices through peer consensus. In this sense, such an initiative can contribute to one of the objectives for the Standing Committee on Finance in COP25, by mapping part of the green finance flows in developing countries.

The importance of Multilateral Development Banks on the demand side:

- These entities can play a crucial role as green bond investors through private placements. According to IDB representatives, this type of issuance can be beneficial for certain institutions that might find it costly to go to the public market. Such institutions could not only get a better rate with an MFI, but also use the private issue rate as a reference in subsequent bond issuances in the public market. Besides, the exhaustive due diligence process that MFIs carry out creates trust among investors regarding the issuers.
- Nonetheless, there is a perception that private placements can compete with public issuance in some cases, thus becoming a factor to hinder green bond market development.

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40 www.greenbondtransparency.com

5. RECOMMENDATIONS ON HOW TO MEASURE ENVIRONMENTAL AND SOCIAL IMPACTS DERIVED FROM PROJECTS FINANCED THROUGH GREEN BONDS

Green Bond issuance implies reporting on commitments when developing the Green Bond Framework and defining post-issuance monitoring and reporting processes to achieve the desired environmental objectives, such as the use and management of proceeds and impact reporting.

Over the years, there has been increasing investor's demand for robust reporting, enhanced transparency and consistency, and accountability assurance through the provision of project-specific data and harmonized information, as well as disclosure of environmental and social impacts. Thus, recently, regular reporting on projects to which green bond proceeds have been allocated and their impact has become the norm.

5.1 Importance of measuring the impact of green bonds

Confidence in the markets is a relevant sign of their level of growth and development. In this sense, it is essential for the green bond market to generate the results expected by investors, and its maximum objective is to generate positive impacts on sustainable development and the global environment.

The practice of impact measuring allows investors to understand what they are financing and becomes a way of aligning objectives, strategies, and actions of actors involved in the green bonds process. For example, continuous impact measurement generates baselines, allows scenarios projections analysis, and is useful to set specific goals and objectives.

Likewise, impact reporting generates confidence in the transparency of the process, gives visibility of the results to other actors such as local and international community, and allows corporations and governments to account for projects results in the progress of their sustainable development and climate change commitments

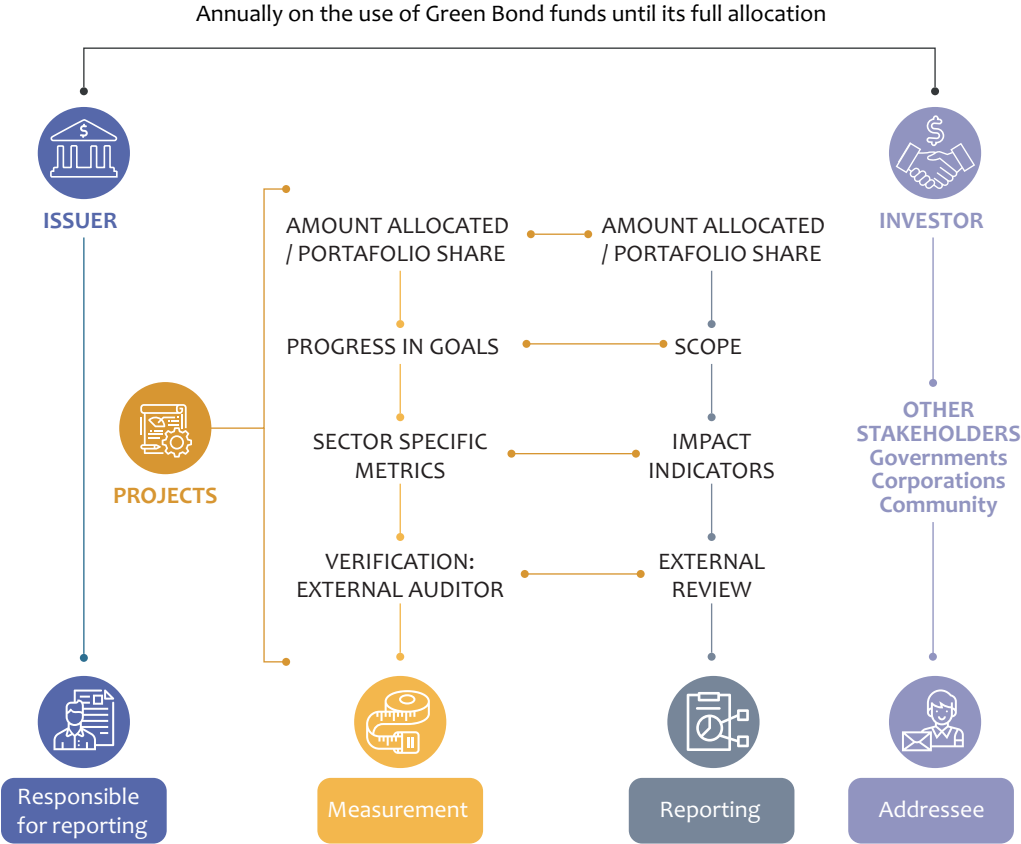
5.2 Measurement and reporting process

Traditional project impact assessment methodologies are rigorous and well defined. However, they have a high level of complexity and demand specific knowledge in baseline estimations, the definition of control groups and comparison of scenarios. green bonds impact measurement process should certainly be more practical, but no less rigorous.

green bond impact reporting produces some challenges, particularly in the absence of standard procedures, limited resources; lack of coordination and supervision; lack of systematic project

data and environment-related information; inconsistency in the use of metrics; specific project conditions and circumstances; data confidentiality; and competitiveness issues. In response to that, initiatives such as the Green Bond Principles (GBP) (ICMA, 2018) have established a voluntary guideline for issuers. Such a guideline underlines the need to keep reporting on the use of green bond funds on an annual basis, until their full allocation is completed. It also suggests general aspects to disclose, such as a list of the projects to which green bond proceeds have been allocated, a brief description of the projects and the allotted amounts, and their expected impact (see Figure 10).

Figure 10. Measurement and reporting of green bond impact



Source: Drawn up by the authors. Based on ICMA (2018)

The responsibility for monitoring and reporting rests primarily with the issuer. However, other actors participate in the process. For instance, project implementers in many cases oversee direct measurement or estimation of environmental and social variables on the ground. Also, external auditors contribute to data validation and verification. Figure 10 presents a simplified scheme on green bonds measurement and reporting.

One experience to spotlight in terms of impact measurement process is the Eco.business Fund Impact Framework (2019)⁴¹. This presents the impact pathway in which the Fund develops metrics to estimate the effect of the projects and how they contribute to the fulfilment of the sustainable development objectives. In addition to the proposed indicators, the impact route shows an interesting way to document each project's documentation, through field visits, direct measurements, and estimates.

5.3 Green bond impact indicators

One thing is certain: impact measurement is not just an indicator value. However, the correct identification of these indicators allows for establishing clear metrics, goals, and a monitoring approach. Different organizations have started to generate a sector indicator guideline to standardise the processes. One useful reference is the sector-specific guidance and reporting metrics compiled in the Handbook of Harmonized Framework for Impact Reporting (ICMA, 2020), which presents an updated version of core indicators and benchmarks for the analysis. Other multilateral institutions, development banks, and some investment funds have also developed impact indicators guidelines for different project types. Table 11 summarizes what these entities suggest in terms of indicators classified according to project areas.

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41 "The eco.business Fund raises capital from private and public institutions to provide dedicated financing and technical assistance to local financial institutions and businesses that are committed to implementing sustainable business practices". (eco.business Fund, 2019)

Table 11. Impact indicators according to project areas

Organization and role	Project Areas	Impact Indicators
<p>ICMA⁴² Harmonized Framework for Impact Reporting</p>	<p>Renewable Energy</p>	<p>Core indicators</p> <ul style="list-style-type: none"> • Annual GHG emissions reduced/avoided in tonnes of CO₂ equivalent /a • Annual renewable energy generation in MWh/GWh (electricity) and GJ/TJ (other energy) • Capacity of renewable energy plant(s) constructed or rehabilitated in MW <p>Other Sustainability indicators</p> <ul style="list-style-type: none"> • Capacity of renewable energy plant(s) to be served by transmission systems (MW) • Annual Absolute (gross) GHG emissions from the project in tonnes of CO₂ equivalent
	<p>Biodiversity</p>	<p>Core indicators</p> <ul style="list-style-type: none"> • Maintenance/safeguarding/increase of protected area/OECM/habitat in km² and in % for increase. • Absolute number of predefined target organisms and species per km² (bigger fauna) or m² (smaller fauna and flora) before and after the project. <p>Other Sustainability indicators</p> <ul style="list-style-type: none"> • Number of conservation workers (e.g. game wardens, rangers, natural park officials) trained in biodiversity conservation • Number of forestry personnel trained in biodiversity conservation • Number of farmers trained in sustainable farming and biodiversity
<p>Bancoldex (2019) Issuer responsible for impact reports</p>	<p>Control of contamination and efficiency in the use of the resources</p>	<ul style="list-style-type: none"> · Reduction in waste generation (tons) · Amount of recycled waste (tons) · Contaminated areas recovered (tons of soil / pollutants / pollutants treated) · Reuse of water (or % of total use) · Annual reduction in water consumption · Annual reduction in water withdrawal · Water and effluent treatment (of water / treated effluents).
	<p>Sustainable transport</p>	<ul style="list-style-type: none"> · Absolute annual reduction in GHG emissions / avoided emissions (Tons of eq.) · Reduction in GHG emissions / avoided emissions (Tons of eq./km) · Absolute annual reduction in emissions of non-GHG pollutants (Tons of pollutants) · Reduction in emissions of non-GHG pollutants (Tons of Pollutants)

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42 Harmonized Framework for Impact Reporting (ICMA, 2020).

	Energy Efficiency and Sustainable Construction	<ul style="list-style-type: none"> · Annual reduction in energy consumption (MWh / GWh or GJ / TJ / kg or product) · Annual reduction in GHG emissions / avoided emissions (Tons of eq.) · Absolute annual GHG emissions of the project (Tons of eq.)
	Renewable energy	<ul style="list-style-type: none"> · Annual generation of Renewable Energies (MWh / GWh electricity or GJ / TJ other forms of energy) · Renewable Energy generation capacity of the new project or existing (MW / GW) · Renewable Energy Consumption (% total energy consumption) · Annual reduction in Greenhouse Gas emissions (GHG) / emissions avoided (Tons of eq.) · Absolute (annual) GHG emissions from the project (Tons of eq.)
International Finance Corporation, (IFC, 2019) Issuer responsible for impact reports	Energy Efficiency	<ul style="list-style-type: none"> · Expect to reduce 137,056 MWh in energy consumption per year, equivalent to electricity use of 16,900 homes over one year.
	Biomass	
	Green Banking	
	Green Buildings	
	Solar Energy	
	Wind Energy	
	Renewable energy	
World Bank, (2019B) Issuer responsible for impact reports	Renewable Energy & Energy Efficiency	<ul style="list-style-type: none"> · Annual energy savings · Annual energy produced from renewable resources. · Renewable capacity from solar, wind, and hydro technologies. · Have access to cleaner energy sources.
	Water & Wastewater	<ul style="list-style-type: none"> · Hectares with new, rehabilitated, or restored irrigation service. · Tons of untreated wastewater prevented from flowing into rivers annually · Residents benefiting from a secured water supply. · Waste Dumps closed or rehabilitated.
	Agriculture, Land Use, Forests, Ecological Resources, Resilient Infrastructure & Built Environment	<ul style="list-style-type: none"> · Hectares of forest restored or reforested · Tons of emissions reduced annually · People benefited from flood protection
	Clean Transportation	<ul style="list-style-type: none"> · Tons of equivalent emissions reduced annually · People with access to quality urban transport services
Eco.business Fund Investment fund Issuer responsible for impact reports	<ul style="list-style-type: none"> · Conservation of biodiversity · Sustainable use of natural resources. · Mitigation and adaptation to climate change · Socio-economic improvements 	<ul style="list-style-type: none"> · Area under agroforestry systems. · Absolute amount of stored by agroforestry systems. · Water saved. · Agricultural area under soil conservation practices · Backed businesses and producers.

Source: Drawn up by the authors

5.4 The practice in Europe

In the EU context several impact reporting tools have emerged, providing acceptable standards, criteria, and certification schemes to enable market growth and consistency and help guide more capital towards green investments. Helping resolve accountability and transparency issues and increase investors' trust in green bonds.

The EU Green Bond Standard [EU GBS], similarly to ICMA's Green Bond Principles, recommends issuers to report annually on the use of proceeds until full allocation (and as necessary thereafter in the event of material developments) and on the temporary investment of unallocated proceeds. Besides allocation reporting per sector, the standard also calls for describing on a project level the eligible green projects funded by the proceeds, as well as on the allocation per taxonomy environmental objectives pursued, amounts disbursed, results, and expected impacts, either on a project-by-project basis or in the form of aggregated portfolios, due to confidentiality and competitiveness reasons-.

The EU Green Bond Standard requires issuers to report both on allocation and impact of the green bonds. Inclusively, recent developments are taking into consideration making reporting on the use of proceeds (allocation reporting) and environmental and social consequences (impact reporting) mandatory.

According to the EU GBS, the allocation report should include: a statement of alignment with the EU GBS; a breakdown of the amounts allocated to green projects - at least on a sector level, or as detailed as possible -; and the regional distribution of green projects (recommended on a country level). And the impact report should include a description of the green project; the environmental objective pursued with the green projects; a breakdown of green projects by the nature of what is being financed (assets, capital expenditures, operating expenditures, etc.); the share of financing; information and, when possible, metrics about the projects' environmental impacts, which needs to be in line with the commitment and methodology described in the Issuer's Green Bond Framework [GBF]. If it has not been already detailed in the GBF, the report must include information on the methodology and assumptions used to evaluate the green projects' impacts. Allocation and impact reports may cover more than one green bond issuance as long as it belongs to the same GBF and may be combined or presented separately.

Based on EU GBS recommendations, to disclose and communicate the projects' expected impact, issuers should use quantitative and, whenever possible, qualitative metrics and key underlying assumptions/methodologies used⁴³. While reporting, the issuer must explain the qualitative and quantitative impact metrics that will determine the green bonds contribution to environmental objectives and demonstrate no-significant-harm alignment per project category in relation to the criteria as defined in the relevant taxonomy activity. Also, the issuer must identify and analyses any metrics, both quantitative and/or qualitative, that will be part of the

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43 Another EU impact reporting guideline: Nordic Public Sector Issuers "Position paper on green bond Impact reporting". Available at <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Resource-Centre/NPSIPositionpaper2019final-120219.pdf>

impact report in addition to the ones described in the EU taxonomy and provide embedded links to relevant guidance documentation.

The issuer must make the allocation and impact reports available to the public by publishing them online or in any communication channel. Moreover, along with the GBF, they must remain accessible until the maturity of the bonds, unless replaced by other or updated documents in case of material changes of allocation.

Green Bond reporting is of the utmost importance since it provides investors with reliability in the information and confidence that their funds are truly financing “green” projects, increases disclosure on the use and management of proceeds, assures alignment with environmental objectives and provides disclosure on the environmental and social impact.

6. FINAL REMARKS

The case studies in LAC (Chile, Colombia, Costa Rica, and the Dominican Republic) allowed us to spotlight two challenges for market development that are also visible in the EU:

- i. The lack of knowledge and consensus defining “green”. This reduces the incentives of potential green bond issuers to enter the market. Hence the necessity of fostering the efforts towards designing common taxonomies and issues standards for the Region, adaptable to the economic context and sustainable development needs of the LAC countries.
- ii. Report standardization is still at an early stage. This reduces transparency practices required by the market. In the case of the LAC region, this can even impair the overall debt market development.

We discuss these and several other critical aspects below.

Working on the development of capital markets

Trading green bonds requires a given infrastructure of fixed-income markets. So far, the LAC fixed-income markets are relatively young. The literature review we conducted suggests that promoting broader access of firms and governments to bond financing requires a minimum efficient scale. Creating adequate conditions to encourage participation in debt markets involves institutional changes. Therefore, the LAC countries must take steps to develop their debt markets if green bonds are to catalyse climate finance.

Transparency and reporting

Green Bonds call for transparency regarding the use of proceeds, management of resources, and environmental impact. In that sense, they can contribute to two fundamental aspects. First, as we mentioned in the literature review, and evidenced through the case studies, debt markets are subject to asymmetric information, especially in developing economies. Such a problem can increase the cost of entering capital markets, thus hindering their development. By reducing the level of informational asymmetries facing market actors, green bonds can add to the development of fixed-income markets.

Second, they can help assess the impact of climate finance on the environment through the measurements reported by bond issuers. However, reporting still requires standardisation to attain such aspirations. Consequently, it is of the utmost importance to strive for establishing impact reporting frameworks. Initiatives, such as the green bond Transparency Platform from IDB, can be instrumental for this process.

It is worth noting that measuring the impact of projects financed through green bonds will not be sufficient to establish the contribution of corporates and governments to climate change. For instance, there is not a proper assessment of the carbon footprint that supply chains

generate (The Economist, 2020). Therefore, appraising the real effect of green finance calls for a more integrated approach to identifying and regulating GHG emissions at an aggregate level.

The importance of the banking sector and other financial institutions

There is a dissonance between firms and issue sizes. Most of the firms in LAC countries are small and medium enterprises that lack sufficient capacity to issue bonds of the scale required to be competitive in the market. Since banks and other financial institutions are natural players in capital markets, they have considerable potential to propel climate finance through the issuance of green bonds, whose proceeds can then finance smaller projects. The importance of such institutions was evident in the interviews we conducted. Peer-to-peer communication could help promote their participation in the path to sustainability by diversifying the sectors funded through green bonds.

Diversifying the sectors funded through green bonds

Most of the green bonds in the region fund energy projects. Though this sector is crucial to move toward sustainable and low-carbon economies, there are other critical sectors unattended by green bonds in LAC countries. Projects on green infrastructure, sustainable agriculture, and water and sewer systems have great potential to dynamize the green bond market by contributing to climate change mitigation and adaptation and several SDGs.

Exploring other instruments with the potential to catalyse green finance in the region

Green Bonds are one financial instrument (not *the* instrument). To meet sustainable development and climate change 2030 agendas, LAC region countries must diversify sources and green financial mechanisms.

Although the green bond market is still growing, it will not be sufficient to finance the agendas. A combination of instruments is required to meet the goals and achieve the transition to low-carbon and climate-resilient economies.

However, as the elements for the issuance and use of green bonds become standardized, and different actors interact in the process, this will pave the way for the use of other financing mechanisms (blended finance) in sustainable development programs and projects.

Recommendations: from issuers to issuers.

Having a clear sustainability strategy. Banitsmo,⁴⁴ Bancoldex, an independent consultant from Costa Rica, and Chile's National Government agree on how important it is to articulate green bond issuance with the entity's sustainability strategy. In all four cases, before the green bonds came to light, these issuers had incorporated environmental and social aspects in their economic and financial decisions. Therefore, issuing a green bond was some sort of a natural step when looking for funding. In this sense, this recommendation became an invitation for ESG integration.

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⁴⁴ Banitsmo is a part of Bancolombia, a Colombian bank that was one of the first green bond issuers in the country.

A well-defined project pipeline is crucial. Considering that the GBPs call for a transparent management of unallocated proceeds, it must be very costly to issue a green bond and to wait to allocate the resources. Moreover, there may be gains in transparency that attract international investors if the issuers identify the projects before the issuance and specify them in the Green Bond Framework.

Get creative with the green bonds' roadshow. According to the experience of Bancoldex, during their green bond's roadshow, they devised a strategy to attract a more diverse investor base that ended up lowering their interest rate by 20 basis points. The plan consisted of offering a larger fee to the underwriter for bringing non-conventional investors who considered both financial and environmental aspects in their valuation.

Ask for technical assistance. Several issuers recognize the importance of MFIs' support for green bond structuring. According to Chile's Ministry of Environment, the advice of IDB was crucial in every step of the green bond issuance process. It ended up in a successful auction in international markets and granted the government one of the lowest interest rates in its history. Other issuers, such as Bancoldex and FIRA (Mexico),⁴⁵ also acknowledge that this type of assistance can play a fundamental role in successfully structuring a green bond.

Monitoring is an essential practice. Measuring and reporting the impact of green bond projects is more than a requirement for the investor. It is a tool for defining targets and it is an essential process to align objectives and strategies, and prioritize actions. A proper monitoring and reporting practice provides transparency between the issuer and the investor and other stakeholders such as governments, corporations, and civil society.

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45 "Lecciones aprendidas de la emisión de bonos verdes de los países miembros de la Alianza del Pacífico". CDKN, 2020. Retrieved from: https://cdkn.org/webinarbonosverdes/?loclang=es_es

BOX 2. Post-covid-19 Scenario for Financing Sustainable Development

Latin America and the Caribbean, and Europe are regions that have been particularly affected by the global health crisis of covid-19. As a result, many countries have imposed abrupt and restrictive confinement measures, with people staying at home, schools closing, entire sectors shutting down, and only essential and health services remaining active to try to contain the spread of the coronavirus. Such conditions brought restrictions and uncertainties on economic and social aspects.

Latin America and the Caribbean

Recent estimations suggest an economic contraction of 9.4% in 2020 (IMF, 2020). In particular, Small Island Developing States [SIDS] in the Caribbean are experiencing more difficulties than other countries during these times.

Besides SIDS's significant vulnerability to climate change, their exposition to global shocks is high, partly due to their remoteness and dependence on food imports (Young, 2020). Moreover, the tourism sector accounts for almost 50% of the Gross Domestic Product [GDP] in countries like Saint Kitts and Nevis and Grenada (UN, 2020). Therefore, these countries are experiencing significant revenue losses, together with high external debt burdens, around 61% of GDP on average, according to the Alliance of Small Island States (AOSIS, 2020).

Those are relevant situations since the fiscal conditions of a country influence the dynamics of the fixed-income markets. Consequently, the pandemic and its subsequent effects are likely to halt the development of both green and conventional debt markets in the Caribbean countries.

Latin America is suffering pandemic effects as well. Being one of the world's most urbanized and densely populated regions makes it particularly prone to covid-19 transmission. On the other hand, micro, small, and medium-sized businesses generate around 67% of employment in the Region (Florida, 2020). The lockdowns have negatively affected these businesses, jeopardizing many jobs and the income for many families. This situation led governments to prompt humanitarian and healthcare needs over other public agenda aspects, increasing the fiscal burden as well.

The fiscal space of LAC governments is shrinking considerably due to weak economic growth combined with the fall in the oil market, the sharp drop in remittances and tourism, as well as low commodity prices. Given these budgetary pressures on governments, mobilizing private sector finances will be critical to supporting economic recovery. Therefore, despite the pandemic uncertainty, there is still an opportunity to appeal to the debt market to finance the recovery and green bonds could be an important instrument for mobilizing financial resources to support an economic recovery aligned with building zero-emission.

Europe

The European Union (EU) members presented in last July its latest economic forecast pointing to a contraction prospect of at least 8.3% in 2020, almost 1% above the 7.4% previously calculated only two months earlier, and significantly worse than in the crisis of 2008. Nonetheless, with the

gradual and steady relaunch of economic activities and social interactions in most member states as of June, and in light of current events (e.g., the number of newly infected people continuous to grow worldwide), with the growing possibility of a second wave, the EU believes that even this contraction forecast might be underestimating the scale of an inevitable recession in the near future.

Governments, companies and society as a whole have been greatly affected by the pandemic. Job loss and increasing unemployment rates, contraction in expenditures, with people unwilling to spend due to prolonged confinement and increasing uncertainty, with businesses facing disruptions in their supply chains and reduced returns, governments see tax revenue falling and welfare expenditure increasing, which will produce budget deficits and higher levels of debt, and will increase borrowing costs.

On 21 July 2020, EU leaders agreed on the next long-term budget of €1824.3 billion and, as a response to the current global crisis, included recovery measures from covid-19 to the plans in order to mitigate the effects of the pandemic and pave the way for a more sustainable and resilient future (The European Council [TEC], 2020). The aim is for the recovery package to be complementary to the needs of existing EU programs, helping the EU rebuild after covid-19 and support investment in the green and digital transitions, by combining the multiannual financial framework (€1074.3 billion) and this extraordinary recovery effort known as the Next Generation EU (€750 billion) for the next 7 year period (2021-2027).

Opportunities for a thematic bonds market

A covid-19 recovery requires a joint effort from governments, the private sector, and civil society. In this process, green and social projects are a must for nations and territories moving towards more sustainable development models. These types of projects allow a more efficient usage of natural resources, reducing GHG emissions, implementing regenerative economics, and cutting inequality. To achieve such goals innovative financing instruments such as green and other thematic bonds should be widely promoted.

In a post-covid-19 scenario thematic bonds can catalyse investment towards social, sustainable, and green activities in Latin American and the Caribbean. Thematic bonds can also provide the Region with financial and technical knowledge, as well as opportunities to share valuable experiences.⁴⁶ In particular, green bonds could be paramount in mobilizing resources from the private sector to attain the net-zero emission target and to build resilient economies (Ferro and Frisari, 2020). The World Economic Forum also argues that, beyond fighting climate change, governments should promote a fundamental transformation in how we conduct business in a wide range of activities, from food production to infrastructure (WEF, 2020). Such a transformation has the potential to generate 395 million jobs and USD 10.1 trillion worth of business opportunities by 2030.

For Latin America and the Caribbean, the conversations held with the different stakeholders during case-study formulation highlighted the uncertainty when predicting what to expect in economic, social, and environmental aspects after the pandemic. However, there is a consensus on the need to change the current path's inertia, and thematic bonds are an instrument for mobilizing money towards a sustainable recovery.

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⁴⁶ Thematic Bonds: Essential Tools for Development. Retrieved from: <https://blogs.iadb.org/bidinvest/en/thematic-bonds-essential-tools-for-development/>

Recent examples in Colombia include the case of La Hipotecaria, which last June became the first private entity to issue a social bond in the Colombian market, for about USD 13 million, intending to finance Social and Priority Housing. BID Invest was the sole investor of this issue, indicating the MDB's potential to dynamize the market. ISA Colombia is also preparing a USD 80 million green bond issuance for the second half of 2020 in the country's principal market,⁴⁸ with a Second Opinion already in place by SITAWI.⁴⁹

At a regional level, the Development Bank of Latin America (CAF), issued the first covid-19-response bond, a €700 million five-year social bond to support countries' covid-19-related relief and recovery costs⁵⁰. In other areas, the use of proceeds will be allocated to financially assist micro-, small- and medium-sized enterprises in sectors such as hospitality, tourism, retail and transport; and to other economic recovery initiatives such as poverty alleviation and employment programs.

Another recent milestone for the Region is the Sustainable Development Bond issued by the Inter-American Development Bank (IDB) in April 2020. This 3-year USD 4.25 billion bond is the largest ever IDB public bond issuance and it raises awareness for the Sustainable Development Goal #3 (Good Health and Well-Being). This issuance aims to ensure healthy lives and promote well-being for all ages, while supporting countries in Latin America and the Caribbean in their response to the covid-19 pandemic and its consequences.

In the EU, this urgency to divert attention and resources to address pressing covid-19 issues and implement pandemic recovery measures has had a great impact on initiatives to establish legislation and policies for the Green Deal (see Box 1). All over Europe, businesses and economic interests have started lobbying against measures that have been having nefarious consequences on their profit and rapid recovery, constituting an added challenge towards the Green Deal implementation. Nonetheless, this unexpected crisis presents itself as a unique opportunity to rethink a more resilient and efficient future and to promote a new paradigm of sustainable development.

After all, recovery after covid-19 implies making a commitment to technology, innovative processes, and strategies, setting different approaches. It is clear that it is essential to strategically rethink the various sectors of the economy, namely the financial sector by analysing the environmental risk of projects that need financing and the availability of funds to invest in those that promote a low-carbon economy and a positive social impact.

47 La Hipotecaria: Social and Priority Housing Bond. Retrieved from: <https://www.lahipotecaria.com/colombia/blog/boletin-de-prensa-la-hipotecaria-compania-de-financiamiento-s-a-realiza-exitosamente-emision-de-bonos-sociales/>

48 Dinero (2020). ISA lista emisión de bonos verdes por hasta \$300.000 millones. Retrieved from: <https://www.dinero.com/inversionistas/articulo/emision-de-bonos-verdes-de-isa-por-hasta-300000-millones/293498>

49 Segunda opinión para emisión de bono verde de ISA. SITAWI, 2020. Retrieved from: http://www.isa.co/es/relacion-con-inversionistas/Documents/SITAWI_SegundaOpinio%CC%81n_BonosVerdes_ISA.pdf

50 CAF launches first covid-19 response bond in Latin America. Retrieved from: https://cib.bnpparibas.com/sustain/caf-launches-first-covid-19-response-bond-in-latin-america_a-3-3581.html

51 IDB launches its largest Sustainable Development Bond. Retrieved from: <https://www.iadb.org/en/news/idb-launches-its-largest-sustainable-development-bond>

LIST OF ABBREVIATIONS

Meaning	Abbreviation
Asociación Dominicana de Sociedades Administradoras de Fondos de Inversión	ADOSAFI
Bloomberg New Energy Finance/ Bloomberg NEF	BNEF
Bolsa Nacional de Valores de Costa Rica	BNV
Bolsa de Valores de Colombia	BVC
Bolsa y Mercados de Valores de la República Dominicana	BVRD
Business as Usual	BAU
Development Bank of Latin America	CAF
Centro para los Objetivos de Desarrollo Sostenible	CODS
Climate Bonds Initiative	CBI
Comisión de Mercados Financieros de Chile	CMF
European Commission	EC
Economic Commission for Latin America and the Caribbean	ECLAC
European Investment Bank	EIB
Environmental, Social and Governance factors	ESG
European Union	EU
EU Green Bond Standard	EU GBS
Federación Latinoamericana de Bancos	FELABAN
Fideicomisos Instituidos en Relación con la Agricultura	FIRA
Green Bond Framework	GBF
Green Bond Principles	GBP
Green Finance Study Group	GFSG
Greenhouse Gases	GHG
EU High-Level Expert Group on Sustainable Finance	HLEG
International Capital Market Association	ICMA
Inter-American Development Bank	IDB
International Finance Corporation	IFC
Latin America and the Caribbean	LAC
Multilateral Development Bank	MBD
Nationally Determined Contributions	NDC
Network of Central Banks and Supervisors for Greening the Financial System	NGFS
Sustainable Banking Network	SBN
Sustainable Development Goals	SDG
National Climate Change System-Colombia	SISCLIMA
Second Party Opinions	SOP
Small Islands Developing States	SIDS
Superintendencia General de Entidades Financieras	SUGEFIN
Superintendencia General de Valores de Costa Rica	SUGEVAL
Task Force on Climate-Related Financial Disclosures	TCFD
The European Commission's EU Technical Expert Group on Sustainable Finance	EU TEG
The European Council	TEC
World Bank	WB

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ANNEX 1. MODEL QUESTIONNAIRES

The Potential of the Green bond markets in Latin America and Caribbean

SURVEY

CITY AND DATE

NAME	INSTITUTION
POSITION	COUNTRY

INSTITUTIONAL ROLE											
National Government		Supervisor/Regulator		Issuer		Investor		Project executor		Facilitator	

SECTION I. GENERAL QUESTIONS ON PERCEPTION, EXPERIENCE AND EXPECTATION (FOR ALL ACTORS).

- What is the role of your institution on the sustainable development and climate change agenda in the country?
- Does the country/institution have a clear sustainability agenda? For example, green growth policies, strategies for climate change.
- Who are the key actors in the development of the agenda, public and private?
- How much does the private sector participate in the development of the agenda?
- Is private sector participation encouraged?
- How are the institutions involved coordinated?
- Out of the following, which one is given a more predominant role: mitigation, adaptation, or both?
- How do you perceive the country's commitment to meeting climate goals?
- What is your expectation about the development of the green bond market and other financing instruments for climate change?

SECTION II. SPECIFIC QUESTIONS: THE INSTITUTIONAL ROLE.

a. National Government

1. Does the country have a clear sustainability agenda? For example, green growth policies, strategies for climate change.
2. Are there mechanisms (fiscal and market) to encourage emission reductions? Which? If applied, have they been effective?
3. What potential do you perceive in these mechanisms?
4. Who are the key actors in the development of the public and private agenda?
5. Which financing instruments has the government considered for its international commitments (NDC)?
6. What percentage of financing needs has the government considered to cover with green bonds?
7. What is the position of the national government on green bonds and their scope in the country?
8. Has the government set goals for the issuance of green bonds as a source of financing?
9. What incentives has the government considered?
10. How were the climate goals of the agenda defined?
11. Has the government built indicators to assess exposure to climate risk?
12. What level of disaggregation do these indicators have (national, sectoral, subregional)?
13. Is there an updated measurement of the climate finance gap?
14. What kind of monitoring was done to determine the use of resources and the impact that these investments have had?

b. Supervisors and regulators

1. Are there mechanisms (fiscal and market) to encourage emission reductions? Which? If applied, have they been effective?
2. What potential have you perceived related to these mechanisms?
3. What are the guidelines for green bonds issuance in Colombia?
4. What barriers have you noticed for green investments?
5. Are there measurements of climate risk for the financial system? Can green bonds contribute to hedging/mitigating this type of risks?

c. Issuers

1. Are there mechanisms (fiscal and market) to encourage emission reductions? Which? If applied, have they been effective?
2. What potential have you perceived related to these mechanisms?
3. How were eligibility criteria defined for project selection?
4. Has the entity considered including other sectors or projects to finance?
5. What types of requirements must companies meet to access the credits? How do they differ from other lines of credit?
6. Which is the credit process?
7. What controls are carried out at each stage for the request, evaluation, approval, disbursement and other aspects? Do they include instances of control over the allocation of resources as indicated in the projects?
8. What was the response of the demand to the issuance of green bonds?
9. What is the status of the loan portfolio?
10. Has the entity defined periodicity for the issuance of green bonds? When do you plan to make a future issuance?
11. Is there an explicit requirement to make reports on sustainability and on the social and environmental impact of investments?
12. Does the practice of evaluating the alignment of the investment with the country's sustainability priorities form part of this?
13. What types of green investments are made in the country? What types of instruments?
14. What barriers do you believe exist for green investments?

d. Investors

1. What are the main motivations to invest in green bonds?
2. What are the main motivations to invest in green bonds in Colombia?
3. Do national regulations favour or restrict the execution of projects financed through green bonds?
4. Is there an explicit requirement to make reports on sustainability and on the social and environmental impact of investments?
5. Does the practice of evaluating the alignment of the investment with the country's sustainability priorities form part of this?
6. What types of green investments are made in the country? What types of instruments?
7. What barriers do you believe exist for green investments?

e. Project executors

1. What are the main motivations to invest in green bonds?
2. What are the main motivations to invest in green bonds in Colombia?
3. Do national regulations favour or restrict the execution of projects financed through green bonds?
4. Is there an explicit requirement to make reports on sustainability and on the social and environmental impact of investments?
5. Does the practice of evaluating the alignment of the investment with the country's sustainability priorities form part of this?
6. What types of green investments are made in the country? What types of instruments?
7. What barriers do you believe exist for green investments?

f. Facilitators

1. Are there mechanisms (fiscal and market) to encourage emission reductions? Which? If applied, have they been effective?
2. What potential have you perceived related to these mechanisms?
What initiatives are developed and/or promoted by the academic community regarding the financing of climate change?
3. Do national regulations favour or restrict the execution of projects financed through green bonds?
4. Is there an explicit requirement to make reports on sustainability and on the social and environmental impact of investments?
5. Does the practice of evaluating the alignment of the investment with the country's sustainability priorities form part of this?
6. What types of green investments are made in the country? What types of instruments?
7. What barriers do you believe exist for green investments?
8. What kind of projects are green bonds targeting? What kind of project are you implementing?
9. How are you monitoring the impact of these projects? Which indicators and goals are being used?

ANNEX 2. LIST OF INSTITUTIONS INTERVIEWED

- Asociación Dominicana de Sociedades Administradoras de Fondos de Inversión, ADOSAFI
- Bancoldex, Colombia
- Banco de Costa Rica
- Banitsmo, Panamá
- Bolsa de Santiago, Chile
- Bolsa de Valores de Colombia, BVC
- Bolsa de Valores de la República Dominicana
- Bolsa Nacional de Valores de Costa Rica, BNV
- Cámara de Bancos de Costa Rica
- CDP, Latin America
- Corporate Leaders Group, Chile
- Departamento Nacional de Planeación, Colombia
- Ecobusiness Fund
- Independent consultant from Costa Rica
- Inter-American Development Bank, IDB
- Ministerio de Hacienda, Chile.
- Ministerio de Hacienda y Crédito Público, Colombia.
- Ministerio del Medio Ambiente, Chile
- SCRiesgo
- Superintendencia Financiera de Colombia
- Superintendencia General de Valores de Costa Rica, SUGEVAL
- Superintendencia General de Entidades Financieras, SUGEF

