

Greening Development Finance in the Americas



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Global Economic
Governance Initiative

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Executive Summary

Development banks operating in Latin America and the Caribbean (LAC) are falling far short of playing the key role they need to in spurring economic recovery and sustainable development. Given the significant market failures involved in shifting investment into sustainable infrastructure, and the fact that the region is in the midst of an economic downturn, development banks are essential to filling a \$260 billion dollar annual infrastructure gap and a \$110 billion dollar annual gap in financing for climate change. According to our estimates however, development banks provide just \$8.7 billion per year in terms of green finance in general, and climate finance in particular is just \$5.9 billion per year. Green financial flows from development banks need to be scaled up significantly, and alongside proper governance structures to ensure that green financial flows translate into sustainable development outcomes.

Development banks will be essential in achieving two of the most important Sustainable Development Goals (SDGs). Development banks can help smooth the burden of risk with long run investments, and can help correct for market failures. Development banks can also help mainstream sustainable practices, climate change considerations (i.e. low carbon development and climate resilience) as well as play a catalytic and convening role in fostering dialogue and exchange of experiences on these topics. Development banks also can help ‘crowd-in’ the private sector and other sources of international finance.

Two of the SDGs are important to emphasize. Goal seven is to “Ensure access to affordable, reliable, sustainable and modern energy for all,” while goal nine is to “develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all (United Nations, 2015). Bhattacharya, Oppenheim, and Stern (2015) argue that development banks have an essential role to play to help move nations and regions from ‘business as usual outcomes’, to ‘sustainable infrastructure outcomes’ as depicted in Table E.S. 1.

Table E.S. 1 Development Banks and Sustainable Development

From “business as usual” outcomes...	... to sustainable and inclusive infrastructure outcomes
Inadequate investments in sustainable infrastructure in most countries, constraining growth and development	Scaled investment in sustainable infrastructure globally, leading to improved development and growth
Inadequate provision of affordable infrastructure for the poor , creating risk of serious reversals in the fight for development and poverty reduction	Increased infrastructure access and affordability for the poor , leading to improved development outcomes
High proportion of high-carbon infrastructure investments and inefficient use of infrastructure, creating danger of lock-in and irreversible climate change	Increased preference for investments in low-carbon infrastructure , mitigating climate change risks and increasing probability of a 2-degree scenario.
Low resilience infrastructure , creating vulnerability to risks of climate change (especially among the poor)	More resilient infrastructure that accounts for climate risks and protects populations most vulnerable to climate change

Source: Bhattacharya, Oppenheim, and Stern (2015)

To this end a number of development banks have pledged to increase finance for sustainable development in general, and low carbon development in particular. In 2015, after China pledged to infuse \$3.2 billion into a developing country fund for climate change, the Asian Development Bank, the World Bank and others began pledging major increases as well. The World Bank pledged to increase climate finance to \$29 billion (an increase by one third) by 2025 and the Inter-American Development Bank pledged to make climate finance 25-30 percent of total lending by that time.

This study provides an initial assessment of the extent to which the existing development banking regime in LAC is poised to achieve these goals. More specifically, we ask two research questions. First, to what extent do IDBs operating in LAC support green finance in the region? Second, to what extent do IDBs deploy environmental and social safeguard systems in LAC? LAC has made strides in green financing and in safeguarding large projects in a manner that is environmentally sustainable and socially inclusive. However, development banks will need to rapidly increase their engagement in both of these areas in order help turn the region's economies toward sustainable development.

We create a database of development lending across the Americas and estimate the extent to which such finance is 'green' based on a new tracking methodology agreed upon by major multilateral, sub-regional, and national development banks. These banks define green finance as financing for climate change mitigation or adaptation, as well as environmental protection and remediation at the project level. According to our estimates we find that:

- **Total development bank finance in Latin America and the Caribbean has stood at approximately 1.2 percent of GDP** per annum since 2003. The emergence of Chinese and Brazilian development banks as lenders to LAC governments has helped fill a gap left by the World Bank in development bank finance in the region.
- **Thirty-three percent of all development bank finance in LAC is not green.** This significant amount of development bank finance flows into extractive industries, the generation of fossil fuels, and conventional infrastructure projects that can accentuate global climate change, trigger local environmental problems, and adversely impact local communities.
- **Green finance is 20 percent of total development bank financing in LAC.** Since 2007, green finance has been \$61 billion equal to \$8.7 billion per year. \$5.9 billion of the green finance is for climate mitigation and adaptation.
 - **Three leaders in green financial flows** are the Inter-American Development Bank, the World Bank, and CAF-Development Bank of Latin America when measured by total volume of green financing
 - **Two laggards are banks from the United States and China.** The United States Export-Import bank is the most lacking in providing green finance to Latin America in terms of total volume and green finance as a percent of total finance. The China Development Bank provides the largest amount of finance for fossil fuel energy and conventional infrastructure.
- **There is a lack of coherence in the monitoring and governance of development bank finance from a social and environmental perspective.**
 - Whereas there is a uniform set of common principles and tracking methodologies among development banks for defining green financial flows, there is a **lack of a unified understanding and principles with respect to monitoring the environmental impacts of green financial flows and setting environmental and social safeguards.**
 - **Many large projects, whether classified as green or not, may not be well safeguarded** and could bring significant risks to local communities, the local and global environment, and the balance sheets of development banks and private firms engaged in those projects.

Drawing from these findings we recommend that development banks:

- **Strengthen the capacity of development banks to invest in green finance**-- through increasing the capital base of existing banks, creating new 'green' banks, scaling up "green bond" programs, expanding sustainable co-financing programs, and creating a better awareness in the financial sector about the unique characteristics of green finance;
- **Strengthen the governance of development finance in LAC.** International development banks in LAC need to put in place the proper monitoring systems to evaluate the social and environmental impacts of both green and non-green financial flows, and to safeguard such finance so as to prevent and mitigate significant social and environmental risk.

1. Introduction

Development banks have a unique role to play in LAC and in emerging market and development countries across the globe. Development banks seek to correct key market and government failures and crowd in private sector economic activity into areas such as infrastructure and cleaner energy technologies, as well as into policy formation and anti-poverty programs. What is more, as LAC seeks to move past this latest economic downturn, development banks can act in a counter-cyclical manner in order to spark economic recovery and trigger structural transformation throughout the region's economies.

LAC faces a significant infrastructure gap, with more than US \$170 to \$260 billion needed in infrastructure investments annually over the next decade (ECLAC, 2011). Moreover, the region faces a \$100 billion annual gap in finance for climate change mitigation and adaptation (IADB, 2012). According to the International Monetary Fund (IMF) infrastructure spending has the highest multiplier impact during a downturn (IMF, 2014). In an examination of LAC, World Bank researchers found that every one percent increase in spending and upgrading of infrastructure in the region could add as much as 2 percentage points of annual economic growth in growth over the long run (Calderon, 2010). An Inter-American Development Bank (IADB) study shows that a 1 percent reduction in transport costs would increase exports by as much as 4 percent in Mexico and 7.9 percent in Colombia (Mesquita Moreira et al, 2013).

Development banks have also been asked to play an enhanced role in meeting the Sustainable Development Goals (SDGs) that pledge to both "ensure access to affordable, reliable, sustainable and modern energy for all," and to "develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all (United Nations, 2015)." The geographical location of LAC endows the region with abundant wealth in natural resources, but also a particular vulnerability to climate change. The extraction of such resources can also often strain sources of livelihoods and threaten biodiversity as well as sources of water and sustenance for people and economies over the long run. Moreover, the over-reliance of economic activity in natural resources has also been characterized with dramatic boom and bust cycles that have hindered the development process in the Americas for over a century (Bertola and Ocampo, 2012).

In terms of climate change, LAC is only responsible for approximately 12.5 percent of global greenhouse gas (GHG) emissions, but is disproportionately impacted by climate change as many areas in the region are seriously affected by droughts, flooding, cyclones and the El Nino-Southern Oscillation (ENSO) phenomenon (Maplecroft, 2014). Damages resulting from extreme weather related to climate change have not only jeopardized socioeconomic activities but also eroded wealth accumulated from previous episodes of economic growth. According to a joint study by the IADB with the United Nations Economic Commission for Latin America and the Caribbean (ECLAC) and the World Wildlife Fund (WWF), the annual economic costs of climate change in LAC are \$100 billion per year (IADB, 2012).

In this study, we examine the extent to which development banks are providing international financing to Latin American governments for environmentally sustainable development projects, and the extent to which environmental safeguards are incorporated into the project operations of these development banks. To answer this question, we create a database of development bank finance in LAC from 2003 to 2014 and code that data to examine the environmental profile of such lending. Second, we conduct a comparative analysis of the environmental safeguards provisions of these banks operating in LAC. After sharing the results of these exercises we provide recommendations for policy and future research.

This study comprises of five additional parts following this introduction. Part two is a discussion of the methodology deployed to generate our findings. Part three is a presentation of the dataset and general levels of green finance in LAC. Part four is a detailed analysis of green finance in LAC between 2007 and 2014. Part five is a comparative analysis of environmental and social safeguards in LAC. The final part summarizes our findings, offers policy recommendations, and directions for future research.

2. Methodology

We create a database of development bank finance to sovereign governments in LAC and estimate the extent to which such financial flows can be designated as green finance according to a new definition of green finance. Moreover, we conduct a comparative analysis of policies to safeguard the social and environmental risks of large projects and programs finance by development banks operating in the region.

Eleven development banks provide the majority of international development bank finance to Latin American and Caribbean governments. We define an international development bank (IDB) as a development bank that provides finance to sovereign governments outside the country of the bank's origin. Our sample thus includes traditional multilateral development banks (MDBs) operating in the region such as the World Bank and the Inter-American Development Bank (IADB), sub-regional development banks like the CAF - Development Bank of Latin America and the Caribbean Development Bank (CaDB), as well as a number of national development banks that have been making loans to other LACn governments, such as Brazil's National Development Bank (BNDES), the China Development Bank (CDB) and Germany's KfW.

We create a database of international lending to LACn governments and state-owned enterprises (SOEs) for each of these banks for the period 2003-2014. For national development banks operating in the region, we only track and analyze their activities outside of their country of origin. The full list of banks examined for this study are:

- The World Bank Group (WB)
- Inter-American Development Bank (IADB)
- CAF-Development Bank of Latin America
- The Caribbean Development Bank (CaDB)
- European Investment Bank (EIB)
- Agence Française de Développement (AFD)
- The Brazilian Development Bank (BNDES)
- KfW Development Bank (KfW)
- China Development Bank (CDB)
- China Export Import Bank (CHEXIM)
- Export-Import Bank of the United States (US EXIM)

We examine the extent to which international development banks operating in LAC support green finance and safeguard their portfolio of environmentally sensitive projects. For the 12-year period under examination we track the annual flows of each bank to LAC to demonstrate the evolution of development finance in the region in terms of the total volume and composition as well as each bank's contribution. Furthermore, we create a more detailed project-level database for the period of 2007-

2014 in order to pinpoint the composition of development bank lending for this latter period (project-level data is not widely available for all the banks previous to 2007).

We compile official data from banks' project databases and annual reports. The project information of the IADB and the IBRD of the World Bank group is downloaded directly from respective project datasets, and the data of CAF, CaDB, EIB, AFD and US EXIM Bank was extracted from their annual reports. We refer to the newly launched transparent portals of KfW and BNDES for their project info and the China-Latin America Finance database at the Inter-American Dialogue for data from China's policy banks in LAC (see Gallagher and Meyers, 2014).

Our research is limited to IDB finance to sovereign governments rather than to both sovereign governments and the private sector. Indeed, many of the banks in our study provide lending to both public and private sectors, and many of them even have a private sector financing arm, such as the International Finance Corporation (IFC) of the World Bank Group, the Proparco of the French Development Agency (AFD) and the German Investment and Development Corporation (DEG) of the KfW group. Taking the year of 2014 as an example, the non-sovereign guaranteed operations of IADB were only \$2.8 billion compared to the total commitments of \$13.8 billion, which accounted for 20 percent. A similar percentage was seen in the lending of KfW and AFD. The private sector share of World Bank and EIB's financing was higher, at 30-40 percent. CAF was an exception, whose non-sovereign guaranteed operations were larger than sovereign operations, reaching 60 percent of total commitments.

We limited the scope of study to public lending, which is lending to governments or national companies, based on two considerations. First, the majority of loans provided by IDBs are still sovereign guaranteed loans and for some banks in our sample there is either no private sector lending or the data for such lending is difficult to obtain. Second, since our study focuses on green finance, an area that is less attractive to private investors because the returns of many green projects are less likely to be commensurate with risks in the short term, we restrict this analysis to public lending in order to illuminate this process and examine the possibility of leveraging more private investment to support green and sustainable development throughout the operations of IDBs.

There are a variety of definitions and approaches to measuring 'green finance,' even among development banks. We deploy the definition of green finance and methodology of green mapping of the International Development Finance Club (IDFC)—an association of national and sub-regional development banks across the world— as our benchmark. In our sample, CAF, BNDES, CDB, AFD, and KfW are all members of the IDFC. The IDFC compared its methodology for tracking climate finance with that of the MDBs and found them 'largely consistent' for climate change mitigation but less so for climate adaptation (IDFC, 2015a). To close the gap, IDFC collaborated with the major MDBs in 2014 to create a common set of principles for tracking development bank finance for climate mitigation and adaptation (IDFC, 2015b). We deploy the newly agreed-upon methodology to track green development finance across this sample of development banks operating in LAC. The IDFC defines 'green finance' as financing for climate change mitigation or adaptation, as well environmental protection and remediation at the project level. Table 1 shows how we deploy the IDFC mapping method to our study.

Table 1: Summary of IDFC green finance tracking methodology

Category	Definition	Representative Eligible Project Categories
Clean energy and mitigation of greenhouse gas (GHG) emissions	Activity that contributes to reducing or avoiding GHG emissions or to enhance GHG sequestration	Renewable energy supply Energy efficiency in industry and buildings Process emissions in industry and fugitive emissions Sustainable transport Agriculture, forestry and land-use Carbon capture and storage Budget support to a climate change mitigation policy
Adaptation to climate change impacts	Activity that intends to reduce the vulnerability of human or natural systems to the impacts of climate change and climate-related risks, by maintaining or increasing adaptive capacity and resilience	Water preservation Agriculture, natural resources, ecosystem adaptation Coastal protection Other disaster risk reduction Budget support to a climate change adaptation policy
Water, sanitation, and other environmental objectives	Activity that does not directly target climate change mitigation or adaptation but is related to sustainable development with a positive impact on the environment	Water supply Wastewater treatment Waste management Industrial pollution control Soil remediation and mine rehabilitation Sustainable infrastructure Biodiversity

Source: IDFC green finance tracking methodology (2014a)

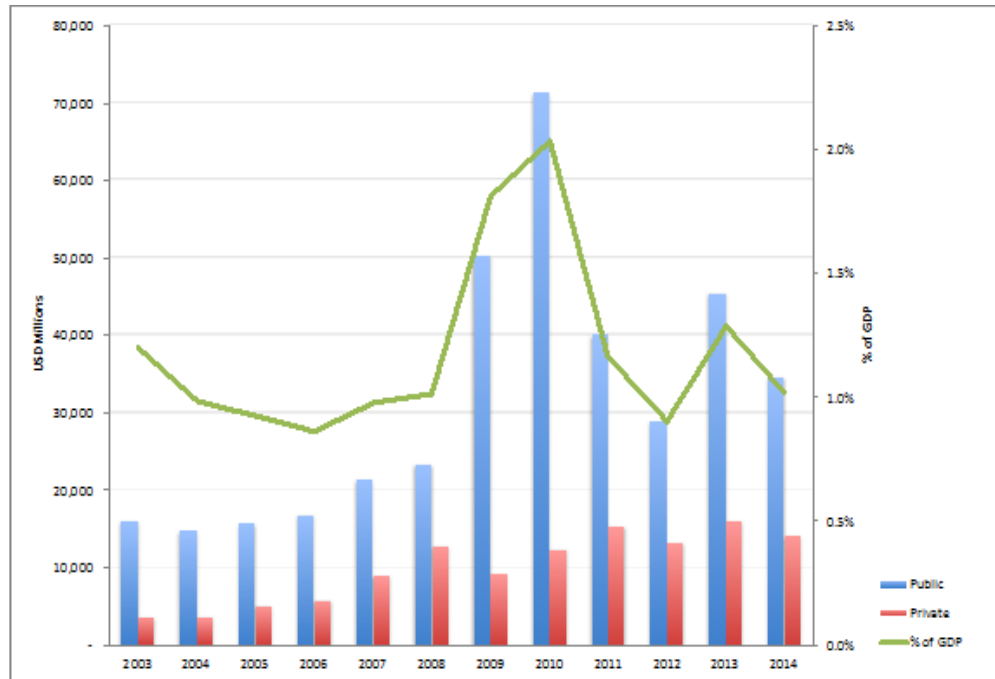
Building a project-level database from 2007 to 2014, we code projects as being ‘green finance’ or not. Then, for green projects we divide them into the subcategories listed here in Table 1. There are significant limitations to the IDFC approach, as it is not clear whether these ‘categories’ of green financial flows are significantly correlated with actual reductions in emissions and other social and environmental impacts.

To answer our research question regarding environment and social safeguards, we conduct a comparative ‘desk’ analysis of development bank safeguard policies as published on bank web pages. In addition, we conducted telephone and email interviews with some of the banks in our sample, and surveyed the secondary literature on the subject. We acknowledge that such an analysis is also limited, and would ideally be coupled with on-the-ground case studies because what is on paper at development banks might diverge from what happens in terms of actual performance. We plan to do such fieldwork as a follow up to this study. Nevertheless, these two exercises allow us to perform an initial survey of the state of green finance and social and environmental safeguards among development banks operating in the Americas.

3. Development Banks in LAC 2003-2014

We estimate that IDBs provided approximately \$500 billion to the LAC region between 2003-2014. The yearly average was \$41.3 billion, representing upwards of 1.2 percent of annual GDP in LAC with a peak of 2 percent of GDP in 2010. As shown in Figure 1, finance to sovereign governments is the lion’s share of IDB finance in LAC, at \$380 billion during the same period or 1 percent of GDP.

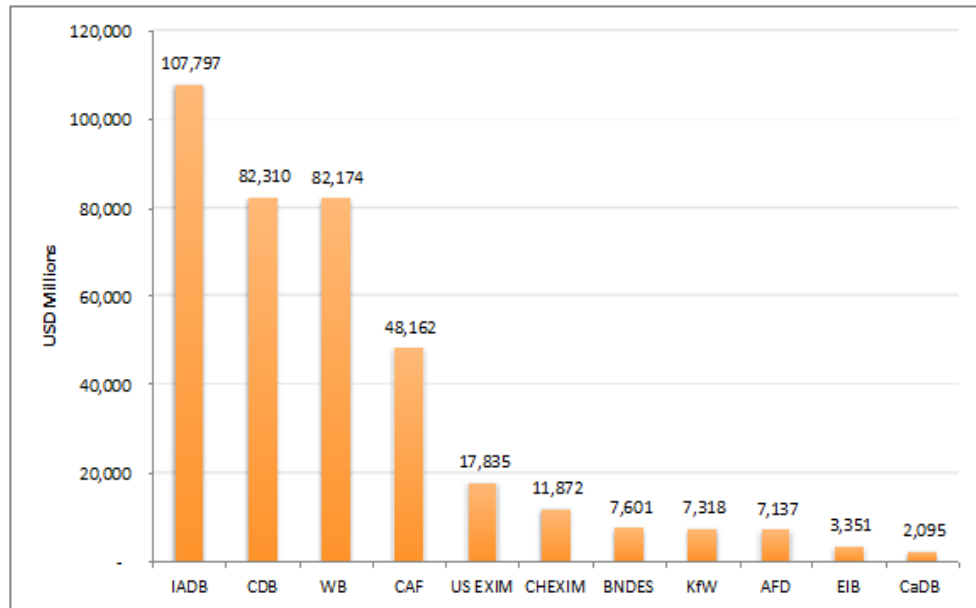
Figure 1: Development Finance in LAC 2003-2014



Source: Respective annual reports and official databases; Chinese source: China-Latin America Finance Database; GDP source: World Development Indicator Database, Latin America and the Caribbean (developing only).

Four development banks provided the lion's share of sovereign development finance in LAC: the IADB, World Bank, CDB and CAF contributed roughly 85 percent of the total loans during the period examined. The most significant newcomers to the LAC development finance landscape are China's policy banks, the CDB and CHEXIM, which combined have become the largest annual lenders in LAC since 2007. Without development finance from China development bank finance in LAC would have been 25 percent less due to the cutting back of commitments from the World Bank and other sources.

Figure 2: IDB Commitments in LAC 2003-2014



Source: Respective annual reports and official databases; Chinese source: China-Latin America Finance Database

Despite the upward trend of development bank finance in LAC, since 2011 the World Bank has tightened its lending to the region to pre-crisis levels. The US EXIM bank and three European financial institutions maintained their shares and accounted for 9 percent of the total, though the US EXIM bank has halted new lending in 2015. Moreover, it is worth mentioning that BNDES, the development bank of Brazil, began to increase its overseas investments in 2007 and has financed projects in several countries in Latin America including Cuba, the Dominican Republic, Venezuela, Argentina, and Ecuador. Although the total amount of commitments is still small compared to other banks, BNDES is a new development finance player in Latin America that is gathering momentum. In three consecutive years from 2009 to 2011, BNDES annually average overseas commitments surpassed \$1 billion.

Table 2: IDB Commitments to Governments in LAC 2003-2014 (USD Millions)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
IADB	6,476	5,564	6,465	5,461	6,870	9,126	14,588	11,370	9,411	9,924	11,799	10,743
CDB	-	-	-	-	4,930	4,000	12,050	33,054	7,800	2,700	15,277	2,499
WB	5,675	5,003	4,921	5,654	4,331	4,354	13,829	13,679	9,169	6,181	4,769	4,609
CAF	2,166	2,330	2,473	3,791	2,984	3,343	5,590	5,796	4,528	4,586	5,523	5,052
US EXIM	972	1,258	1,048	1,247	327	855	1,450	1,016	4,407	2,668	1,589	1,000
CHEXIM	-	-	30	-	45	-	178	2,652	2,579	250	2,494	6,094
BNDES	113	78	239	81	1,165	139	940	1,336	1,480	308	1,172	550
KfW	268	270	216	332	370	649	530	560	745	509	880	1,989
AFD	-	20	-	12	54	337	398	1,477	1,262	1,289	1,192	1,097
EIB	41	61	106	50	37	138	575	54	980	257	479	573
CaDB	192	113	138	121	179	298	152	270	145	104	139	244

Source: Respective annual reports and official databases; Chinese source: China-Latin America Finance Database

Different development banks appear to serve different clients in the Americas. Brazil is the most popular debtor, receiving loans from all the banks in our sample except the Caribbean development bank. US EXIM Bank devotes most of its resources to Mexico and Colombia while China's banks prefer Venezuela, Brazil, Ecuador, Bolivia and Argentina (Gallagher and Irwin, 2015).

Finally, the development banks operating in the region are in part addressing the infrastructure gap. Since 2002 there has only been an annual investment of approximately 2 percent of GDP in LAC, with the private sector providing 1.3 percent of GDP and the public sector providing 0.7 percent (ECLAC, 2011). According to our estimates, development banks provided 29 percent of that annual public finance for infrastructure in the region since 2007.

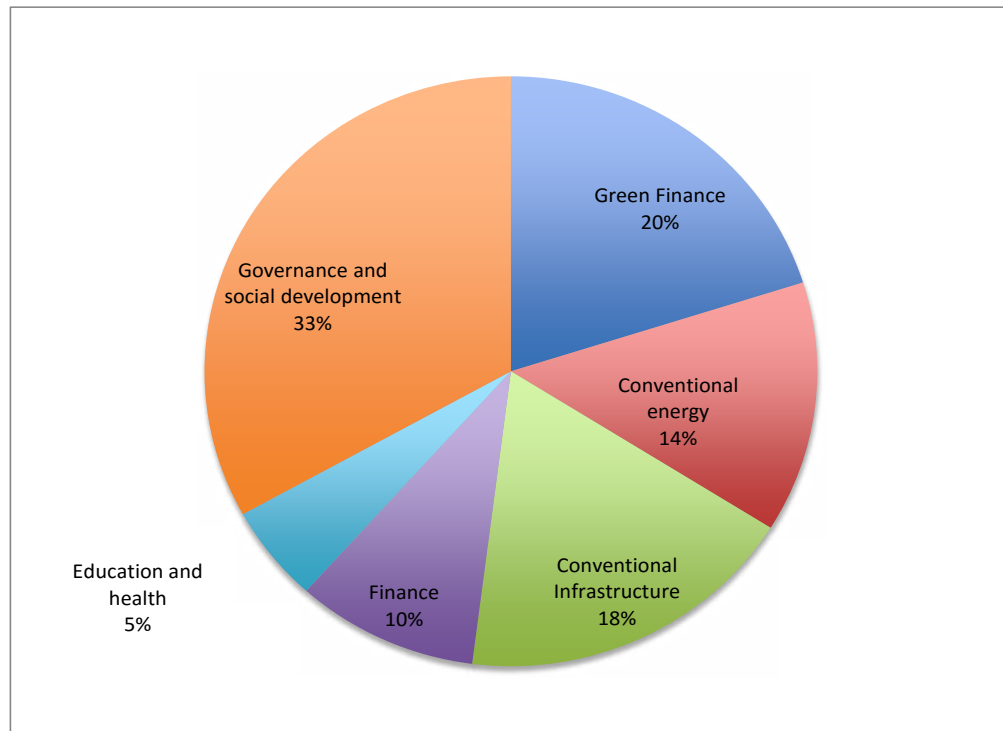
4. Green Finance in LAC: 2007-2014

To what extent has the annual 1 percent of GDP in annual development bank finance to sovereign governments in the region contributed to sustainable development? In an attempt to answer this question we created a project-level database of the banks in our sample from 2007-2014 and examined the extent to which different banks supported green finance (as defined by the IDFC). Between 2007 and 2014, LAC governments received more than \$314 billion from these eleven IDBs in the following six sectors exhibited in Figure 3: governance and social development, green finance, conventional infrastructure, conventional energy, finance, education and health. According to our estimates, one-third of development bank commitments were focused in the first category: efforts to improve the public administration and social development of the region.

The second largest proportion of the development bank finance portfolio in the region is green finance, at 20 percent. Infrastructure projects comprise 18 percent of the development bank finance in the region, while conventional energy stood at 14 percent. Loans and credit lines to support financial

services amounted for 10 percent while another 5 percent of the total loans went into education and health.

Figure 3: Development Finance Sector Distribution 2007-14



Source: Respective annual reports and official databases; Chinese source: China-Latin America Finance Database

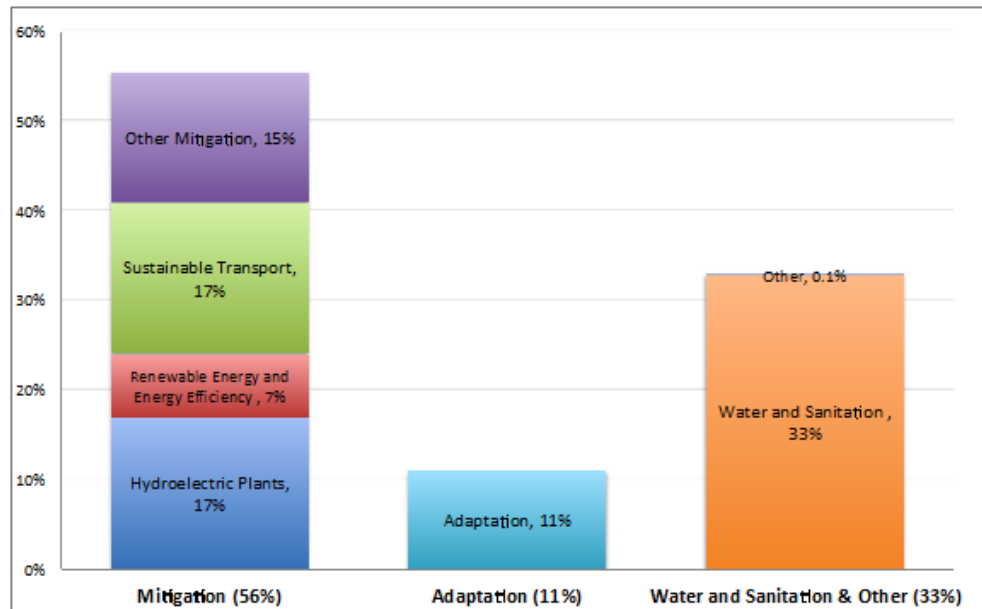
We estimate that development banks provided approximately \$61 billion, or \$8.7 billion per year in green finance between 2007 and 2014—amounting to 20 percent of all development bank finance in LAC.

Until recently, there had not been an internationally agreed upon definition for green and climate finance. It is a broad term that refers to investments that contribute to the reduction of GHG emissions and encourage sustainable development. However, over the past half decade the IDFC has been seeking to create a unified definition of such finance. In addition to helping to sharpen the concept of green finance, the IDFC has also recently published a 'tracking methodology.' While some analysts may take issue with specifics from the tracking methodology, for the purposes of this study we deploy the IDFC methodology given that it has been accepted by the IDFC membership and the MDBs as well. Drawing from the IDFC approach, we first group green finance into three categories: 1) Clean energy and mitigation of greenhouse gas emissions 2) Adaptation to climate change impacts and 3) Water, sanitation, and other environmental objectives. To provide more accurate and precise tracking data, a list of subcategories was created under each theme (IDFC, 2014a).

Using this methodology, we coded all the projects from 11 banks during 2007-14 as "green" or "conventional". Also in accordance with the IDFC guidelines, we divided all the green projects into three categories 1) clean energy and climate change mitigation 2) climate change adaptation and 3) water, sanitation and other environment. We estimate that the annual amount of green finance was about \$61 billion and accounted for 20 percent of total commitments provided by IDBs in LAC during

the same period. The majority of green financial flows in LAC are in climate mitigation representing 56 percent of all green finance, climate adaptation (11 percent), and water and sanitation (33 percent). In all then, climate finance amounts to just over \$40 billion or \$5.9 billion per year.

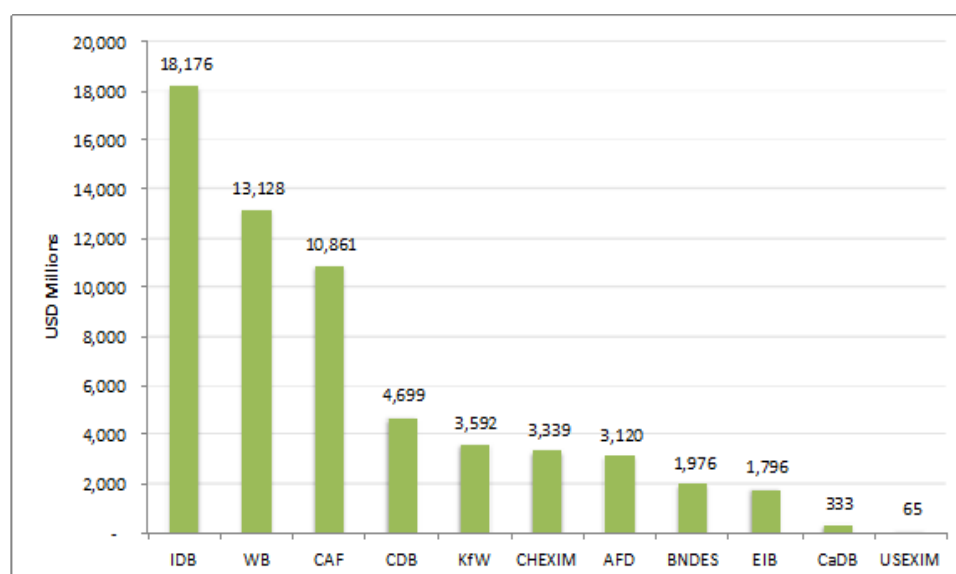
Figure 4: Composition of IDB Green Finance in LAC, 2007-14



Source: Respective annual reports and official databases; Chinese source: China-Latin America Finance Database

Figure 5 ranks IDBs in LAC by the total volume of green financing during the period. By volume, the IADB, the WORLD BANK, and the CAF stand out as the three largest financiers of green finance in the region. The two Chinese development banks, the two European national development banks form the middle group all at approximately \$3 billion during the period. The USEXIM bank provides the least amount of green finance to LAC, along with the EIB, BNDES and CaDB.

Figure 5: Ranking IDBs for Green Finance



Source: Respective annual reports and official databases; Chinese source: China-Latin America Finance Database

The USEXIM Bank also ranks the lowest in terms of green finance as a percent of total finance, with the EIB and KfW ranking the highest. Although the amount of loans provided by three European development banks (EIB, AFD and KfW) was only 4 percent of the total, as a percentage of their own total lending they lead the pack in green finance as a percent of total finance.

Table 3: Green Finance within Banks 2007-14

Bank	Green Finance Amount (USD Millions)	Percentage of Total Commitments
KfW	3,592	71%
EIB	3,094	58%
AFD	6,943	45%
CAF	10,861	29%
BNDES	1,976	28%
World Bank	17,142	28%
CHEXIM	3,339	23%
IADB	18,176	22%
Caribbean DB	333	22%
CDB	4,699	6%
US EXIM	65	1%

Source: Respective annual reports and official databases; Chinese source: China-Latin America Finance Database.

BOX 1: The Western Hemisphere’s Green Bank: North American Development Bank (NADB)

While conventional development banks are being encouraged to increase their level and proportion of green finance, a number of countries including the UK, Australia and Japan have established full green banks where the entire portfolio is centered on green finance (Zhu, Leung and Horn-Phathanothai 2015). Unbeknownst to many, the Western Hemisphere has had a green bank since long before the term had arisen: the North American Development Bank (NADB) is more than 20 years old and engages exclusively in green projects.

NADB was created along with the North American Free Trade Agreement (NAFTA) to mitigate environmental concerns stemmed from increased US-Mexico trade in the border region between those two countries. It started operations in 1994, with initial capitalization subscription from the US and Mexican Governments. NADB offers direct financing to private and public entities for projects implemented in 10 states on the US-Mexico border.¹

One of the three basic eligibility criteria of NADB is the project “must remedy an environmental and/or human health problem.” As of June 2015, NADB has approved loans and grants of \$2.7 billion for projects implemented both in the US and Mexico. The portfolio in Mexico is about \$1.5 billion, including projects that aim to improve air quality, water supply, wastewater management, basic infrastructure and public transportation. Those projects have benefited more than 15 million people living in the border area. NADB has increased its lending for renewable energy projects since 2014. For example, the bank approved loans of \$140 million to support a wind project in Nuevo León, Mexico in 2014, which has also been the largest loan since the bank’s establishment.

Representative projects of NADB

Country	State	Year	Amount (USD Million)	Project
Mexico	Nuevo León	2014	70	Ventika Wind Energy Project
Mexico	Nuevo León	2014	70	Ventika Wind Energy Project II
Mexico	Baja California	2009	57	Comprehensive road rehabilitation project
Mexico	Tamaulipas	2014	55	Tres Mesas Wind Energy Project
Mexico	Sonora	2011	48	Wastewater treatment plant project
Mexico	Nuevo León	2014	46	Air Quality improvement project
Mexico	Baja California	2009	45	Comprehensive road rehabilitation project to improve air quality
Mexico	Tamaulipas	2008	36	Air quality and paving project
Mexico	Nuevo León	2010	32	Basic environmental infrastructure program for substandard urban developments in Nuevo León
Mexico	Chihuahua	2014	31	Comprehensive paving project to improve urban mobility

Source: North American Development Bank, Summary of completed project & Summary of project implementation activities: Active Projects

¹ The 10 states include Baja California, Sonora, Chihuahua, Coahuila, Nuevo León and Tamaulipas of Mexico and California, Arizona, New Mexico and Texas of the US.

EIB and KfW devoted more than half of their financing to support sustainable development, and AFD contributed 49 percent of its commitments to green projects as well. The two banks with the least amount of green finance are the Caribbean Development Bank and the Export-Import Bank of the United States.

We discuss potential shortcomings of counting hydropower projects as ‘green’ in section 4.2 on ‘clean energy.’ We thus also calculated green financial flows to LAC without hydropower. Such

calculations do not significantly impact the order of green finance performance among development banks in LAC, but reduces total green finance during the period to just over \$50 billion. Moreover, in the case of China's two development banks 94 percent of green finance is in hydropower. Without hydropower these banks would be among considered as significantly lagging in green finance for LAC.

4.1 Climate Mitigation

Fifty-six percent—or \$33.8 billion—of all IDB green finance in LAC falls into the category of climate mitigation as defined by IDFC. The largest class of mitigation projects by IDBs in LAC are cleaner energy projects, which amounted to \$14.6 billion during the period under examination. It should be noted that green energy projects are outweighed by conventional energy (fossil fuels) projects by 160 Percent. That may seem high, but there is some evidence that green finance in LAC may be an improvement by global historical standards. While no LAC-wide study has been conducted, a 2008 study of green finance by the MDBs from 1980 to 1999 put global conventional energy finance at three times green finance, down from fourteen times in the early 1980s (Hicks et al, 2008).

4.1.1 Clean Energy

Cleaner energy finance is significant in the region, and is also one of the areas where innovative co-financing and 'green bond' programs are taking place. Table 4 provides some illustrative examples of major cleaner energy projects financed by IDBs in LAC. Hydropower projects are the largest category of cleaner energy investment in our sample, which represent 70 percent of the total cleaner energy finance during the period under examination. There are also significant projects in solar, wind, and access to renewable energy to the poor.

In terms of hydropower, it is important to highlight that, according to the IDFC definition, hydropower plants can be labeled green, "only if net emission reductions can be demonstrated." Especially in the Americas, it is not clear whether all the cleaner energy projects in the region could be classified as green. If none of the hydro projects were great there would be just over \$4 billion in cleaner energy finance—relative to the \$14.6 billion including hydropower.

This stipulation is not to be taken lightly, especially in the Latin American case where tropical hydroelectric projects have long been associated with increases in methane emissions and emissions from associated deforestation. Comprehensive reviews of estimates find that tropical hydroelectric plants tend to emit 7 to 15 times more emissions than non-tropical hydropower, and 2 to 3 times more emissions than gas, oil, or coal plants (Barro et al, 2011; Steinhurst et al, 2012). This is due to the fact that methane emissions are more potent from tropical dams, and because new roads and infrastructure sprout as a result of new dams and can cause further carbon emitting deforestation (Fearnside 1997, 2012, 2015). For instance, there are a number of hydroelectric dams planned for implementation along Brazil's Tapajos River. While the impact of these dams on site may not be significant in terms of net emissions through deforestation, it has been estimated that the project would indirectly trigger the deforestation of 950,000 hectares by 2032 given that the project will spur the establishment of extensive new roads through the Amazon rainforest. As will be discussed in section 5, hydroelectric power projects have been widely shown to be the source of other environmental and social problems beyond climate change such as loss of water and habitat, the displacement of people and indigenous livelihoods, and beyond (Laurance et al, 2015).

Table 4: Selected Cleaner Energy Projects

Year	Bank	Country	Project	Amount (USD Millions)
2014	CDB	Argentina	Nestor Kirchner & Jorge Cepernic Hydroelectric Dam	2,499
2014	CHEXIM	Ecuador	Coca-Codo-Sinclair Hydroelectric Dam	1,683
2014	IADB	Chile	Arica Solar PV Project*	111
2014	IADB	Mexico	Geothermal Financing and Risk Transfer Program	86
2014	KfW	Brazil	Support for Wind Power Projects	335
2013	EIB	Costa Rica	Extension of a Geothermal Power Generating Plant	69
2013	IADB & KfW	Mexico	Program for Renewable Energies, Energy Efficiency and Environmental Protection (EcoCasa)	IADB: 100 & KfW: 105
2012	IADB	Costa Rica	Reventazon Hydropower Project (Costa Rica, 2012)	450**
2011	AFD	Mexico	Support for the Federal Electricity Commission's Clean Energy Investment Program	129
2011	USEXIM	Mexico	Nuclear Fuel Rods and Other Power Equipment	65
2008	KfW	Brazil	Solar World Cup 2014 Minas Gerais	15
2007	CAF	Venezuela	Manuel Piar Hydroelectric Plant Project	600

*Private sector lending

**USD 250 millions public lending and USD 200 millions private sector lending.

Source: Respective annual reports and official databases; Chinese source: China-Latin America Finance Database

Chinese development banks are the largest investors into hydroelectric projects, not only in terms of the total lending amount but also in terms of the largest individual projects. The financing agreement signed between China and Argentina for the Nestor Kirchner and Jorge Cepernic hydroelectric dams set a record of \$4.7 billion, which will be financed by three Chinese banks. The large Coca-Codo-Sinclair project in Ecuador shown in Table 4 is one such project where concerns have been raised over the extent to which it will yield a significant increase in emissions from indirect deforestation and even more so related to the social and local environmental problems that may arise (International Rivers, 2012).

As shown in Table 4 there are a number of notable renewable energy investments in the region outside of the hydro-electric sector--though of the more than \$14 billion in cleaner energy invested into the region by IDBs, just over \$4 billion has been in renewable energy beyond the hydropower sector. Overall, the World Bank and KfW invest the most in wind, solar, energy efficiency across the Americas. While quite small, the IADB has innovative programs to provide off-grid renewable energy access to remote indigenous communities in the Ecuadoran Amazon (IDB, 2015a).

The KfW has initiated some notable co-financing relationships with developing country-led banks as well. In 2014, KfW provided a loan of \$335 million to BNDES to finance wind parks in Brazil. This cooperation between the BNDES and KfW aims to mitigate climate change by supporting renewable energy projects. Similar operations were also carried out in previous years, such as KfW's donation of €21 million to the Amazon Fund (BNDES, 2014). A similar collaboration has occurred between CAF and KfW: during 2011-2013 KfW granted \$500 million in credit lines to CAF to support sustainable development by financing projects in renewable energy, energy efficiency, transportation, and water and sanitation (CAF, 2013).

Another interesting co-finance partnership has been formed between the IADB and the People's Bank of China (PBOC), China's central bank. Called the China Co-financing Fund for Latin America and the Caribbean, it was founded in 2013 to "to support public and private sector projects that promote sustainable economic growth in the region" (IADB, 2013). In 2015 the fund provided \$216 million in support for the construction of the Colonia Arias and Valentines wind farms, each with a capacity to

generate 70 MW (IADB, 2015b).

4.1.2 Sustainable Transport

Financing for sustainable infrastructure is also notable in LAC, representing \$10.2 billion. According to the IDFC, sustainable infrastructure refers to loans that support urban mass transportation and related activity (IDFC, 2014a). This area has gained popularity in LAC recently along with the increasing efforts to increase urban mobility through constructing Bus/Rapid Transit (BRT) and metro systems. Main lenders were the IADB, CAF and World Bank as they have been playing a proactive role in promoting sustainable urban development in this area for some time.

Although many countries in LAC have made some progress in improving and modernizing their infrastructure, the region still faces an enormous infrastructure gap. IDB's investments in sustainable infrastructure may play an important leveraging role in attracting private investment besides filling the gap. The region has a long history of incorporating public-private partnership (PPP) in large-scale infrastructure projects, such as the flagship Transmilenio project in Bogota, Colombia. The IFC claims that for every dollar invested in climate related projects such as these can mobilize an additional 3-4 dollars from other private sources (IFC, 2013).

Table 5: Selected Sustainable Transport Projects

Year	Bank	Country	Project	Amount (USD millions)
2014	CHEXIM	Argentina	Buenos Aires Metro Line A	162
2014	IADB	Peru	Lima Metro Line 2 and Line 4	300
2013	IADB	Ecuador	Quito Metropolitan Urban Transportation System	100
2012	AFD	Brazil	Mass Transit Policy in Rio de Janeiro State	384
2011	CAF	Panama	Panama Metro Project	400
2011	CAF	Peru	Lima Mass Transportation System	300
2011	World Bank	Colombia	Support to the National Urban Transit Program Project	350
2010	World Bank & IADB	Brazil	Sao Paulo Metro Line 5 Project	WB: 650 & IADB: 481
2009	BNDES	Venezuela	Caracas Metro Line 2	528
2009	CAF	Peru	The first stage of Transit Plan for the city of Lima	300

Source: Respective annual reports and official databases; Chinese source: China-Latin America Finance Database

Between 1996 and 2012 the CAF engaged in a notable set of sustainable infrastructure projects in Guayaquil, Ecuador. Referred to as a “Cities of the Promise” project, CAF provided upwards of \$515 to help complete a broad group of urban transportation projects including the modernization of the Metrovia rapid transit system, a new sewage system that reached some of the most marginalized people in the city (IDFC, 2014). The CAF and the IADB have also worked to finance sustainable transport in Lima and beyond.

Box 2: Development Banks and Green Bonds in Latin America

Given the political difficulties of increasing the capital base of development banks, many governments and IDBs have attempted to leverage more private capital through various financial instruments. Green bonds are widely acknowledged as an innovative instrument to channel private investment into environmentally friendly projects. According to the Climate Bond Initiative, green bonds are defined as “bonds or debt securities specifically issued to finance environmental protection, sustainability or specific climate mitigation and adaptation measures.” Projects in areas including energy efficiency, renewable energy, climate change, water and sanitation, and sustainable urban development all can be labeled as “green” and can be financed by green bonds.

In 2007, the EIB issued the world’s first green bonds: “Climate Awareness Bonds” with a value of €600 million. In 2008, the WORLD BANK issued its own green bonds. In the later years, more multilateral and national development banks have started to issue their green bonds and corporates have also joined the market since 2013. In LAC, the Peruvian wind energy producer Energía Eólica SA became the first Latin American green bonds issuer in December 2014 by issuing a US\$ 204 million green project bond with a coupon of 6 percent and a 20-year tenure (Kidney, 2015). In terms of financial features, green bonds are almost identical to other bonds. In particular, the yields of green bonds are no less than normal bonds. Currently, green bonds are more common at the portfolio level, meaning that private investors are guaranteed by the credit of a bank or a corporation. Another issue that pertains to green bonds is the “green” identification, that is to say, how to identify and qualify a project could be financed by green bonds. Currently, there are no generally accepted standards in this area and many issuers apply the Green Bond Principals (GBP), a set of voluntary guidelines developed by International Capital Market Association

Among the 11 banks in our study, four banks have issued green bonds. EIB and the World Bank are pioneers in the market while AFD and KfW are among largest global issuers. The four banks accounted for 45 percent of the entire global market, at \$27 billion. The World Bank has lent \$3.5 billion to LAC with capital raised through green bonds.

According to Climate Bond Initiative, by the end of 2014, the total amount of green bonds outstanding was \$53.2 billion. In 2015, market growth is expected at the same rate as 2014, projected at \$100 billion in green bond issuance by December 31, 2015 (Climate Bond Initiative , 2015). As in the case of green financial flow tracking however, little work is done in monitoring or tracking the actual environmental performance of green bond projects.

Representative projects in LAC funded by World Bank Green Bonds

Year	Country	Project	Amount (USD mil.)
2014	Belize	Climate Resilient Infrastructure	30
2014	Brazil	Climate Resilient Infrastructure	30
2013	Brazil	Sao Paulo State Sustainable Transport	300
2013	Ecuador	EC Manta Public Services Improvement Project	100
2013	Peru	National Agricultural Innovation	13
2012	Brazil	Greening Rio de Janeiro Urban Rail Transit	600
2012	Mexico	Mexico Forests and Climate Change Program	350
2012	Mexico	Modernization of National Meteorological Services for Improved Climate Adaptation	105
2011	Brazil	Federal Integrated Water	107
2011	Colombia	Support to the National Urban Transit Program Project	650
2011	Jamaica	Energy Security and Efficiency Enhancement	15
2011	Peru	Second Rural Electrification	50
2011	Uruguay	Sustainable Management of Natural Resources and Climate Change	49
2010	Brazil	Integrated Solid Waste and Carbon Finance	50
2010	Mexico	Efficient Lighting and Appliances	251
2010	Mexico	Urban Transport Transformation Program	150
2009	Mexico	Sustainable Rural Development	100
2008	Dominican Republic	Emergency Recovery & Disaster Management	100

Source: World Bank Green Projects

4.2 Climate Adaptation

Development finance for climate adaptation is lacking in LAC. According to the IDFC methodology, climate adaptation activities aim to reduce the vulnerability and/or to increase country resilience to climate change impacts. LAC, and especially the Caribbean, is fairly vulnerable to climate change due to its large coastal territories and complex ecosystems. However, external funding for climate change adaptation has been relatively scarce: only one-seventh of the amount spent on mitigation projects in the past 10 years (Maplecroft 2014). Our analysis is consistent with this finding. In our project database, the amount of finance for mitigation projects is five times that of adaptation projects. CaDB had the largest percentage of total green finance in climate adaptation, with most projects to help member countries to manage natural disasters. This is not surprising given that many Caribbean countries are under high climate change risks.

In fact, 33 percent of the IDBs' adaptation finance was aimed at disaster prevention and management, ranging from institution strengthening to increasing social and infrastructure resilience. Besides CaDB, the World Bank, IADB and CAF provided the majority of funding to this area. Finance for other adaptation activities, such as agriculture, ecosystems, fishery adaptation, was less common.

Table 6: Selected Climate Adaptation Projects

Year	Bank	Country	Project	Amount (USD Millions)
2014	IADB	Jamaica	Adaptation Program and Financing Mechanism for the Pilot Program for Climate Resilience (PPCR) Jamaica	10
2014	World Bank	Belize	Climate Resilient Infrastructure	30
2013	AFD	Mexico	Support for Agriculture to Fight Climate Change	49
2012	IADB	Panama	Program to Reduce Vulnerability to Natural Disaster and Climate Change II	100
2012	WB	Mexico	Strengthening Social Resilience to Climate Change	300
2011	CAF	Bolivia	Natural Disaster Prevention Program	42
2009	CaDB	St Lucia	Caribbean Natural Catastrophe Insurance	20
2009	CAF	Dominican Republic	Improving the Quality of Housing and Reduce Vulnerability to Natural Hazards in a Population of Over 18,500 Low-income Residents.	80
2008	CaDB	Jamaica	Natural Disaster Management Kingston Metropolitan Area Drainage Rehabilitation Work	30

Source: Respective annual reports and official databases; Chinese source: China-Latin America Finance Database

4.3 Water and Sanitation

Water and sanitation projects top the list of green finance allocations by development banks in LAC. More than a quarter of green finance flowed into areas such as water supply, waste management, water preservation, sanitation etc. These projects generally have two approaches. The first is to extend water and sanitation infrastructure, which contributes to increasing access to basic services of the population in the region. The second is to manage and upgrade the core water supplies themselves.

According to the World Bank, LAC possesses nearly 31 percent of the world's freshwater, making the region the richest on earth in terms of freshwater availability per person. Latin America's water wealth is not evenly distributed however—with wide inequalities in water supply and sanitation services

between urban and rural areas. Furthermore, the increasing urban population has also put water supply and waste treatment services under pressure. Development banks have been seeking to fill this gap, and a number of illustrative examples in this area are exhibited in Table 7. For instance, the coverage of sanitation services in the provinces of the Norte Grande region of Argentina was only 40 percent, much lower than the national level; and the water supply also faced problems such as unavailability of freshwater, discontinuity and low quality. To mitigate these problems, the IADB invested \$500 million in the Norte Grande in order to increase the coverage and improve water and sanitary services in unserved and underserved areas, at the same time, to enhance the efficiency in sector entities and service providers (IADB, Project AR-L1136).

Table 7: Selected Water and Sanitation Projects

Year	Bank	Country	Project	Amount (USD Millions)
2013	CAF	Ecuador	Environmental Sanitation Program for Community Development	275
2013	IADB	Mexico	Sustainability of Water Supply for Rural Communities	450
2012	IADB	Argentina	Development Programme's Norte Grande provinces: Water & Sanitation Infrastructure	500
2011	IADB	Brazil	Environmental Sanitation Program for Municípios in the Guanabara Bay Area-PSAM	452
2010	CAF	Ecuador	Environmental sanitation program for community development	300
2009	CAF	Argentina	Program to support public investment in the water supply and sanitation sectors	275
2009	IADB	Brazil	Tiete River Cleanup Program, Stage III	600
2009	IADB	Colombia	Medellin River Sanitation Program - Phase II	450

Source: Respective annual reports and official databases; Chinese source: China-Latin America Finance Database

In terms of the second approach of managing water resources, IDBs initiated projects that directly target the abundant water sources in LAC. These projects often help to restore the quality of water through increasing the control and treatment of the waste discharged into water resources, for example, the environmental sanitation program of the IADB for municipalities in the Guanabara Bay Area in Brazil (Table 7). Furthermore, environmental sanitation is sometimes combined with social inclusion programs, as CAF allocated \$275 million in Ecuador in 2013 to attend to the basic needs of the poorest populations of the country.

BNDES is another example. In 2010, BNDES subscribed to USD 330 million corporate bonds in a private issue to support Companhia de Saneamento de Minas Gerais's (COPASA) plans to enlarge water treatment and sanitation plants in Brazil. The specific issuance also hopes to foster the reduction of energy and chemicals use and waste and support reforestation and conservation efforts (IDFC, 2014).

4.4 Conventional projects

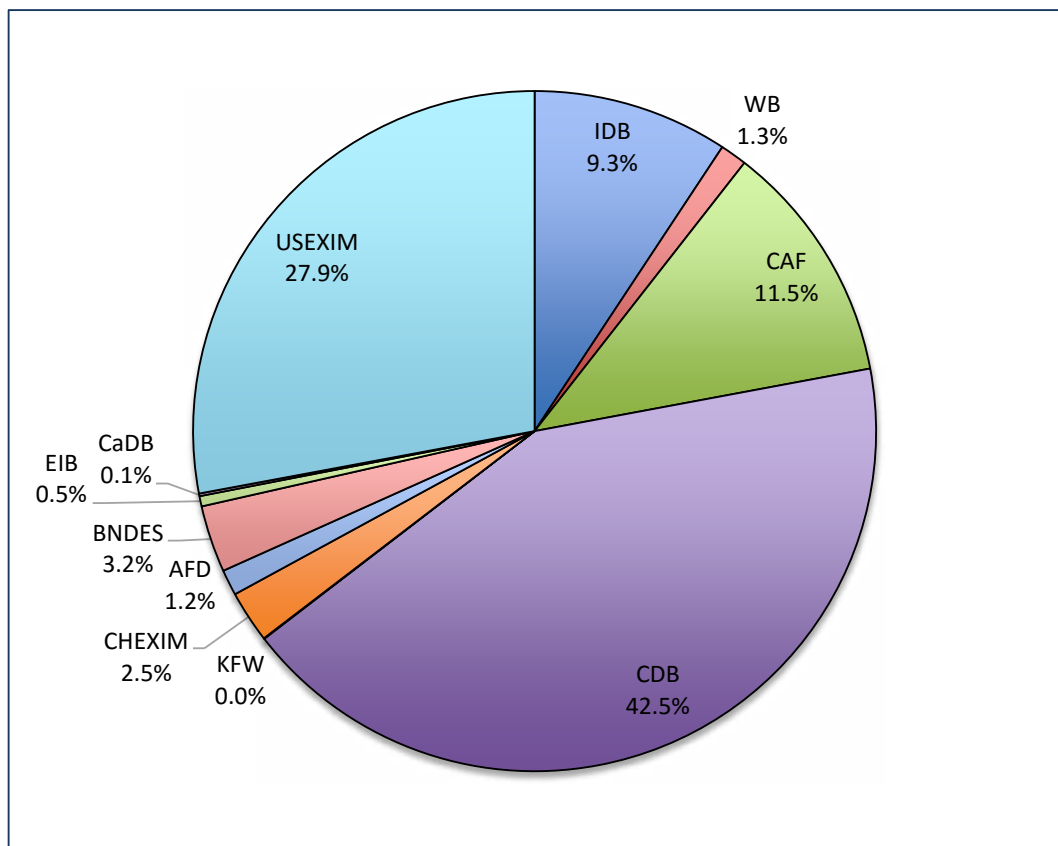
Conventional energy and infrastructure projects comprise 32 percent of all IDB finance in LAC, over \$100 billion of the total and more than 1.6 times larger than all green finance in the region. Development banks still place a large emphasis on financing the region's rich supplies of oil and gas at both the upstream and downstream stages. Development banks also continue to support the coal

sector in the region.

4.4.1 Conventional Energy

Financing for conventional energy still outweighs green energy finance in LAC by IDBs by 160 percent with oil and gas dominating the field. According to the IDFC, conventional energy has three components: electricity distribution, oil and gas, and coal power generation. Oil and gas are still the most attractive resources for IDBs in LAC and they accounted for more than 73 percent of the total loans in energy (green and conventional). US EXIM Bank and the two Chinese banks have the most dominant positions in hydrocarbon investments. Indeed, CDB is also the biggest lender in the area, with a share of 45 percent. Expanding electricity transmission and upgrading electricity grid shared a quarter of total loans. There are still 29 million households in the region that do not have access to electricity and outages are not rare in many areas. Between 2010 and 2013, more than 5 billion was invested to increase access to electricity and the bulk of commitments were made by the IADB and CAF. Furthermore, although financing for coal-fired power plants only represents 2 percent of the total, the fact that the IADB and CAF financed six coal plants (Table 9) is to be noted, as IDBs have received strong criticism for financing “dirty energy” and many have stopped providing loans to coal power generation. The CDB has entered into a \$430 million loan agreement with Petrobras, financing the Candiota coal plant (Electrobras, 2015).

Figure 6: Conventional Energy by Bank 2007-14



Source: Respective annual reports and official databases; Chinese source: China-Latin America Finance Database.

The top 10 conventional energy projects were financed by four banks: CDB, USEXIM, CAF and CHEXIM. The greatest lending was made by CDB to finance Petrobras' pre-salt oil operations in 2009.

In fact, CDB disbursed another \$5 billion to Petrobras early in 2015. The largest loan provided by USEXIM went to support oil refining in Colombia, and the commitments in Mexico were all long-term guarantees for the Pemex Project Funding Master Trust.

Table 8: Top 10 Conventional Energy Project

Year	Bank	Country	Project	Amount (USD million)
2009	CDB	Brazil	Exploit Pre-salt Oil Fields	10,000
2013	CDB	Venezuela	Increase Sinovensa Production in Orinoco	4,020
2011	US EXIM	Colombia	Engineering Services and Equipment for Refinery	2,344
2013	US EXIM	Mexico	Equipment and Services for Oil-Field and Gas-Field	1,500
2012	US EXIM	Mexico	Equipment and Services for Oil and Gas Projects	1,200
2014	US EXIM	Mexico	Equipment and Services for Oil-Field and Gas-Field	1,000
2009	CAF	Venezuela	Thermoelectric Project Termozulia III	600
2009	US EXIM	Mexico	Oil-Field and Gas-Field Equipment	600
2014	CHEXIM	Ecuador	Finance the Power Transmission System for Coca-Codo-Sinclair Hydropower Plant	509
2010	CAF	Argentina	Pico Truncado-Río Turbio-Río Gallegos-Calafate, Extra High Tension Line of 500 KV	500
2010	CAF	Venezuela	Program to Strengthen the National Electric System	500
Subtotal				22,773
Percentage of total financing				7%

Source: Respective annual reports and official databases; Chinese source: China-Latin America Finance Database

Another issue pertains to coal-power plants. US President Barack Obama issued an executive order announcing that the US would stop financing coal plants in 2013. Many MDBs in the US have followed the Treasury's guidance to end their "support of public financing of new coal plants overseas, except under very limited circumstances" (US Department of the Treasury, 2013). The World Bank and EIB followed the new policy in the same year introducing new energy policy and standard to cut their financing of coal plants. Recently, France confirmed its plan to end the financing of coal plant, despite not mentioning a specific timeline. On the other hand, KfW continues to finance coal plants and along with IADB, CAF and other banks. Table 9 lists coal-fired power plant operations in our project sample, and shows that CAF was the largest financier of coal plants in the region.

Table 9: Coal Power Plant Projects Financed by IDBs 2007-14

Year	Bank	Country	Project	Amount (US Million)
2014	CAF	Venezuela	Termozulia II New Project	60
2010	CAF	Venezuela	Termozulia III Plant Project (second loan)	165
2010	CDB	Brazil	President Medici (Candiota) Power Station	430
2009	IADB	Brazil	Pécem Thermoelectric Power Plant Project*	147
2009	IADB	Brazil	TermoMaranhao Thermoelectric Power Plant Project*	50
2009	CAF	Venezuela	Thermoelectric Project Termozulia III	600
2007	CAF	Uruguay	Punta del Tigre Coal Plant	28

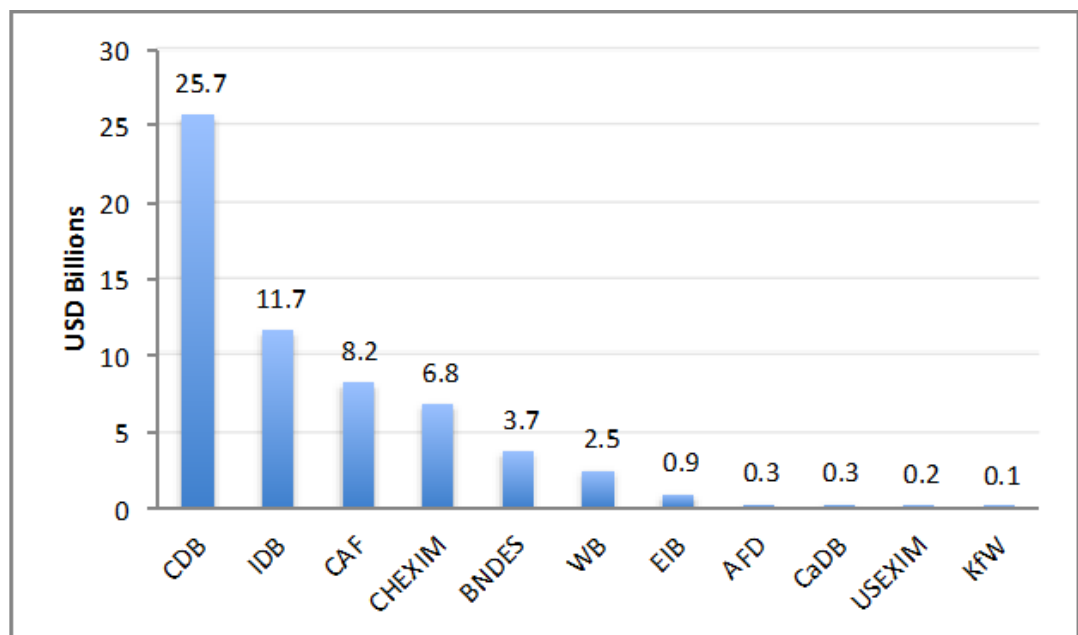
*Private sector financing

Source: Respective annual reports and official databases; Chinese source: China-Latin America Finance Database

4.4.2 Conventional Infrastructure

Conventional infrastructure projects amounted for 18 percent of total commitments, and CDB, IDB and CAF are the three largest lenders. The CDB is the largest lender to conventional infrastructure projects in the region though we labeled most of its lending as traditional instead of sustainable infrastructure because there is not sufficient enough information on the projects. For example, at least \$28 billion in oil-backed loans from CDB to Venezuela was to finance infrastructure ranging from public transit to housing. Furthermore, part of the \$10 billion loan to revamp Argentina’s railway system in 2010 could also be redeemed as “green and sustainable” because the project would help to improve the efficiency of the railway system. However, due to lack of information, it is very hard to assess the sustainability of the Chinese lending and therefore, we believe the actual lending profile of CDB may deserve more green credit.

Figure 7: Conventional Infrastructure by Bank 2007-14



Source: Respective annual reports and official databases; Chinese source: China-Latin America Finance Database

Interestingly, these 10 infrastructure projects represent 82 percent of total loans in this area, because such projects tend to be quite large. Chinese banks provided the bulk of lending, while the IADB financed 2 projects. However, although some individual CDB loans were extremely large, they usually financed multiple projects. But due to lack of access to the full loan portfolio, we could not access detailed information about those projects.

Table 10: Top 10 Conventional Infrastructure Projects

Year	Bank	Country	Project	Amount (\$ Million)
2010	CDB	Venezuela	Funding Infrastructure: electricity, heavy industry, housing, agriculture projects	20,000
2010	CDB	Argentina	Revamping Argentina's Train Systems	10,000
2007	CDB	Venezuela	Funding Infrastructure, Other Projects	4,000
2008	CDB	Venezuela	Funding Infrastructure, including the Simon Bolivar Satellite, Light Rail, Trains, and Highways	4,000
2014	CDB	Venezuela	Joint Fund to Build Infrastructure	4,000
2013	CDB	Argentina	Belgrano Cargas Train Line	2,100
2011	CDB	Venezuela	Abreu e Lima Refinery Construction	1,500
2007	IADB	Argentina	Norte Grande Roads	1,200
2011	IADB	Brazil	Mario Covas Rodoanel Project - Northern Section	1,149
2014	CHEXIM	Venezuela	Mineral Exportation, Construction of a New Cement Factory and the Purchase of 1,500 Chinese Buses	1,000
Subtotal				48,949
Percentage of total financing				16%

Source: Respective annual reports and official databases; Chinese source: China-Latin America Finance Database

This section of the study has revealed the extent to which IDBs have provided green finance in LAC. IDBs have a solid record from which to build upon in this area, with 20 percent of total finance already designated as green finance. The region is also witnessing a number of promising experiments in co-financing, green bonds, and other ways to finance sustainable development—including through the establishment of a 100 percent green bank in the North American Development Bank. However, development banks will have to move from this pilot phase to help fill the infrastructure and sustainability gaps in the region. Moreover, in order to truly meet the objectives of social and environmentally sustainable economic growth in the region, IDBs and host country governments will do well to ensure that all IDB projects, green or otherwise, maintain social and environmental integrity.

5. Safeguarding Sustainable Development? LAC Development Finance in Comparative Perspective

Green finance pertains to those loans that are directly intended to improve the environment, reduce emissions, or help people and ecosystems adapt to changing environments. However, virtually every project of significant scale—even those classified as green—may face a number of social and environmental implications. Whether a project is a large wind farm in Mexico, a hydroelectric power plant in Brazil, or oil exploration in Ecuador, new development finance can have adverse impacts on people, ecosystems, and economies.

To mitigate the risks associated with environmentally sensitive projects many development banks have established their own environmental and social polices for various aspects of the project cycle. Commonly referred to as “environment and social safeguards (ESS),” they have been defined as “rules or institutions that help ensure that investments meet minimum social, environmental, and

governance standards. These rules and institutions can come from a recipient country or the investor” (Larson and Ballesteros, 2014, 16).

Based on our analysis of ESS across IDBs in LAC, it is not clear that development finance is adequately safeguarded in the region. While virtually every bank in our sample is engaged in potentially high impact projects, ESS across development banks range from a required set of international standards to complete deference to the national country systems of borrowing nations. While the most stringent ESS have been criticized for bogging down the project cycle and turning potential borrowers away from certain MDBs, over-reliance on country systems can also result in costly delays, project shut-downs, and tainted reputations for IDBs.

In order to accelerate the scale of green finance and sustainable infrastructure, it is paramount that IDBs have systems in place to help anticipate and mitigate adverse impacts of such projects. A study by the World Bank found that large energy and infrastructure projects were 37 percent more likely to pose significant environmental and social risks in developing countries (World Bank, 2010). Not only do well-safeguarded projects help IDBs fulfill their ultimate goals of sustainable and inclusive development, but they help identify risk and protect the bottom line.

5.1 Major Challenges Lie Ahead

A major increase in infrastructure finance, both green and conventional, is essential for Latin America’s continued prosperity. However, as articulated in the sustainable development goals to “develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human wellbeing, with a focus on affordable and equitable access for all (United Nations, 2015),” it is also imperative that such finance be directed in a manner that is socially inclusive and environmentally sustainable. It is not clear that IDB finance in LAC will be consistent with these goals. According to our analysis above, more than 53 percent IDB development finance between 2007 and 2014 went into fossil-fuel intensive and conventional infrastructure projects that will accelerate global climate change, urban air pollution, and land-use change, as well as impacting local livelihoods.

Yet even green finance can be associated with significant social and environment risk—including but not limited to hydroelectric power plants. Some of the largest projects in the region, both green and conventional, have been identified as high risk in terms of the potential impacts on people and the environment. A large swath of new projects will be conducted by China’s development banks and will take place in some of the most sensitive ecological and peopled places on the planet. Table 11 lists 7 relatively large projects in LAC, which would all be considered green by IDFC standards, but which are the subject of significant environmental and social concerns.

Table 11: Environmentally Sensitive Projects

Year	Bank	Country	Project	Amount (USD Millions)
2014	CHEXIM	Ecuador	Hydroelectric Dam Coca-Codo-Sinclair	1,683
2012	BNDES	Brazil	Belo Monte Hydroelectric Dam, Para.	10,800
2011	World Bank	Bolivia	Ixiamas-San Buenaventura Road Project (National Roads and Infrastructure Project)	129
2011	IADB	Brazil	Highway Mario Covas Rodoanel Project - Northern Section	1,149
2010	CAF	Peru	Interoceanic Road Corridor Peru-Brazil (IIRSA Sur), Tranches 2, 3, and 4-Final Phase	200
2009	IADB	Mexico	Mareña Renovables Windmills	72
2008	CAF	Peru	Additional Works of the Southern Inter-Oceanic Road Corridor	300

Source: IADB, various years; Derechos Ambiente y Recursos Naturales, 2014; Bank Information Center, 2015.

It should be noted that many of these projects also significantly contribute to improving the economic and social welfare of nations and local people, both directly by use of the services and indirectly by granting access to education, jobs and health care. However, large projects such as these also impose economic and environmental risks. Many of these projects lock the region into a resource extractive economic model that has long been susceptible to boom and bust cycles that have plagued the region's development prospects for centuries (Bertola and Ocampo, 2012).

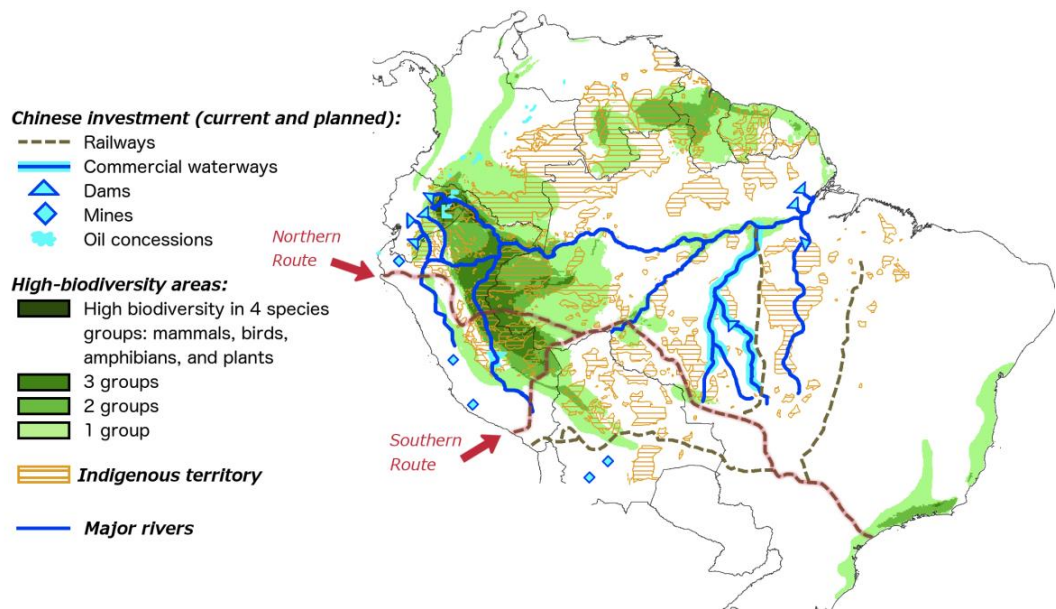
Infrastructure expansion such as paving roads to wilderness areas often generates severe impacts on ecosystems and species, ranging from deforestation to illegal mining and land speculation (Laurance et al., 2015). Projects related to natural resource exploitation have similar environmental impacts. Huge changes caused by large dams can lead to the loss of aquatic biodiversity, massive coastal erosion and other problems. These environmental impacts are exacerbated when local regulations are relatively weak. For example, in the Brazilian Amazon, every kilometer of legal road in wilderness areas is often accompanied by three kilometers of illegal roads (Barber et al. 2014). Even improvement of existing roads and highways may exacerbate the negative impacts because better road conditions facilitate more and faster traffic in sensitive areas, which in turn, increase the likelihood of road kill of animals (Benítez-López, Alkemade and Verweij, 2010; Laurance, Goosem and Laurance, 2009). Similar impacts can be found in large hydro plants and mining projects in remote areas, as they often need to construct road and power transmission networks. As noted earlier, it is estimated that the deforestation of Amazon will increase 950,000 hectares by 2032 due to the construction of 12 dams on the Tapajós River and their road networks (Barreto et al, 2014).

The World Bank-backed Ixiamas-San Buenaventura road project has become the focus of significant concern. Critics of the project worry that the project will increase deforestation and illegal logging in Bolivia, overfishing, a decrease in tourist revenue, and contamination of local waterways. In addition, there are concerns that the project will trigger the displacement of indigenous peoples and erode traditional cultural values (Bank Information Center, 2015). The Mareña Renovables wind farm in Oaxaca Mexico, financed by the IADB, has split local communities. The project has been halted due to local protests on more than one occasion, even though there is significant support from some community members. In 2014, members of two indigenous communities brought a petition of 2000 signatures to the IADB demanding that the bank rescind its plans (Nauman, 2013).

Figure 8 exhibits some of the largest planned projects financed by Chinese banks and companies that are planned over the coming half-decade. Many projects financed by the CDB and CHEXIM are among the most sensitive. Moreover, China and LAC have created a new \$10 billion dollar joint fund to engage in these and other projects. Hydroelectric projects are the triangles, waterways the blue

of the map are the highly biodiverse and the gold horizontal areas are concentrations of indigenous peoples. As is starkly illuminated in this mapping exercise, many of these new planned and projected projects are occurring in some of the most socially and environmentally sensitive areas in LAC—and even the world.

Figure 8: New Chinese Projects, Biodiversity, and Indigenous People in LAC



Source: Ray et al, 2015

One such project is the Twin-Ocean Railway, a railway that promises to connect the Pacific Ocean via Peru to the Atlantic Ocean via Brazil. As shown in Figure 8, there are two potential routes, with the southern route expected to be more benign to people and the environment. Such a railway would facilitate trade and investment for much of South America. At present the region must rely on burdensome northern sea routes and the Panama Canal in order to get its products to its largest trading partner, China (Gallagher, 2016). A new rail has the potential to vastly improve such trade and better integrate the region’s economies with each other as well. However, the Northern route would cut through significantly biodiverse areas in the Andean mountains and in the Amazon region. What is more, the project would impact some of the most remote and long lasting indigenous communities on earth.

Significant controversy has also surrounded the Coco-Coda Sinclair hydroelectric dam project. On the one hand, Ecuador is to be credited for its effort to shift away from fossil fuels and increase the amount of renewable energy in the economy (Ray et al, 2015). However, this particular dam, which is financed by CHEXIM, will partly dry Ecuador’s largest waterfall, the San Rafael Falls—which is a biologically diverse region between the Andes and the Amazon and located in the UNESCO Sumaco Biosphere Reserve (International Rivers, 2015).

5.2: The Evolution of Development Banks' Environmental and Social Safeguards

In the earlier days of development finance there was little to no formal incorporation of environmental and social considerations in project finance. Beginning in the 1980s this began to change, and now such considerations form at least part of the decision-making process of virtually every IDB operating in LAC.

ESG policies date from the 1980s and early 1990s as local communities affected by projects paired with global NGOs to press governments and banks to incorporate social and environmental concerns into development banking. Numerous books and articles have discussed the history and origins of these policies, and it is beyond the scope of this study to go into them in great detail. Mikesell and Williams's 1992 *International Banks and the Environment* provides an overview of the lack of adequate environmental consideration in project design by MDBs during the 1970s and 1980s, specifically noting the importance of the Polonoroeste project in Brazil and the Narmada dam project in India in raising global awareness of environmental concerns in project financing (see also Wade, 1997). Such projects unified environmental activists worldwide to lobby for changes in MDB policies in the 1980s (Aufderheide and Rich 1988; Fox and Brown 1998, 51-80; Horberry 1985; Mikesell and Williams 1992). Aufderheide and Rich's 1989 article "Environmental Reform and the Multilateral Banks" provides an account of the important role of NGOs in overcoming key bureaucratic challenges to implement effective environmental reform within MDBs during this stage. This article also emphasized how international advocacy networks formed to advocate for the incorporation of safeguards in the project cycle—between local communities in host countries and global civil society organizations such as the Environmental Defense Fund. These global advocacy campaigns have been noted as the key driver in changing World Bank policy on projects and the environment (Trócaire, 1990).

During that era the U.S. Congress held hearings that eventually led to the passage of the "Pelosi Amendment" in 1989 to address concerns regarding the environmental impact of development aid projects by the World Bank (Aufderheide and Rich 1988; Babb 2009, 186-196; Horberry; Mikesell and Williams 1992). This additional provision within the International Development and Finance Act of 1989 tied funding to "review the potential environmental impacts of development projects for which they provide funding and to make these environmental assessments publicly available" (Bank Information Center). With the United States as a controlling shareholder and major contributor of funding to MDBs, this requirement led to significant restructuring of international financial institution (IFI) practices and has been credited with refocusing the role of MDBs' aid to more sustainable development practices (Babb 2009, 186-196; Bank Information Center; Park 2010; Rich 1995).

Continued pressure from NGOs has further changed the World Bank's and other MDBs' accountability and transparency practices. Bruce Rich's 1994 *Mortgaging the Earth* provides a critique of the World Bank's lending practices and bureaucratic inefficiencies and pushes for greater accountability and transparency. Fox and Brown's 1998 *The Struggle for Accountability* documents MDBs' responses to NGO and grassroots organization social and environmental critiques and the effectiveness of such NGOs and grassroots organizations in holding MDBs accountable. Such works have provided a solid foundation for understanding the continued evolution of MDBs' transparency and accountability practices to social and environmental norms.

Hicks, Parks, Roberts, Tierney's 2008 *Greening Aid* explores how the incorporation of such environmental concerns has impacted development financing and project selection in leading development banks. Analyzing data from 1980 to 1999, they find that funding for environmentally friendly aid projects grew significantly in both relative and dollar terms. However, the value of environmentally unfriendly projects still outweighed the value of friendly ones threefold in 1999. The World Bank's

record has been criticized due to its continued investments in fossil-fuel intensive projects such as coal-fired power stations and oil and gas drilling (Jowit 2010; Swann 2008; Berger 2010). In response to such criticism, Roger Morier of the World Bank responded that coal plants were only subsidized when there were “exceptional circumstances where countries have few or no prospects for other energy sources” (Jowit 2010). In 2013, the United States government issued an executive order limiting the ability of the United States to participate in the financing of coal projects unless under similar circumstances and in 2014 issued a further executive order mandating that US development finance be climate resilient (US Treasury, 2013; 2014). In 2014, the US Congress also passed legislation that included a provision whereby “The Secretary of the Treasury shall instruct the United States executive director of each international financial institution that it is the policy of the United States to oppose any loan, grant, strategy or policy of such institution to support the construction of any large hydroelectric dam, (Brossard, 2014).

Also in response to civil society pressure in the 1980s and 1990s, export credit agencies (ECAs) have moved to develop environmental and sustainable development standards for export credit supports. Through the auspices of the OECD, in 1998 ECAs made a statement of intent to develop such standards. In 1999, they agreed to “disclose environmental information for big projects.” In the face of further scrutiny ECAs from industrialized countries created a broader but voluntary set of “common approaches.” Under further pressure, a statement of voluntary Common Approaches was drafted in late 2001 and became mandatory in 2003. The latest review of the Common Approaches was undertaken in 2012. The new standards emerging from that process are benchmarked against the World Bank Safeguard Policy and IFC Performance Standards and apply to projects that are officially granted export credits with a payment period of more than two years. “The objectives of the Common Approaches are to increase environmental and social awareness in the buyer countries and to harmonize the environmental and social assessment procedure to be applied by all ECAs (Export Credit Agencies) in order to avoid any distortion of competition” (OECD, 2012,5).

This global focus on environmental and socially responsible investment practices has led to private sector standards for overseas operations as well, dating to a public-private finance initiative between the United National Environmental Program and the private banking sector in 1991. This initiative was later expanded to the insurance and reinsurance industry in 1995 (United Nations). As a result of this collaboration and growing pressure from non-governmental organizations, the private banking sector created the Equator Principles in July 2006. These principles incorporate World Bank practices and guidelines and are voluntarily adopted and applied to projects with over US\$10 million in capital costs. For adopting institutions, these principles are a “credit risk management framework for determining, assessing and managing environmental and social risk in project finance transactions” (Equator Principles 2006). Although non-binding, the requirement for annual public reporting of its implementation of these principles ensures some level of transparency (Wright, 2012). Currently, there are 80 adopting institutions, covering over 70 percent of international project finance debt in emerging markets (Equator Principles 2015). In 2010, the Equator Principles began an internal review process to update and revise the principles to match the growing global demand for accountability and transparency of companies and organizations (Helleiner 2011; Herz and Ebrahim 2007; Wright 2012). As a result, the Equator Principles represent an additional mechanism to influence environmentally responsible lending in both private and public sector banking (Wright 2012).

There has been a gradual shift to work with borrowing countries to enable them to take more ownership over such policies. A common complaint from World Bank borrowers has been that ESS have been strictly imposed on countries with little to no capacity building components. A client of the World Bank reported that “The Bank always considers safeguard policies superior to the country’s own laws and systems, reflecting lack of trust and undermining client ownership. With support from the government of Japan, the Multilateral Investment Guarantee Agency (MIGA), part of the World

Bank Group, has set up an environmental and social trust fund that helps fund capacity building in Africa for borrowing countries to adapt to ESS (World Bank, 2010). This is part of a relatively new effort to respect national ‘country systems’ for social and environmental protection (ADB, 2014).

In addition, a number of national and sub-regional development banks have adopted their own sets of safeguards and environmental policies. As will be noted later in this section of the study, the CAF has created a mix of policies pertaining to international standards and deference to national country systems in its projects. Moreover, the CAF has created a climate change division and finances a considerable amount of green infrastructure. The CHEXIM has also adapted a set of environmental and social guidelines for overseas operations (Garzon, 2015).

A burgeoning set of new thinking attempts a more integrative approach to incorporating social and environmental concerns throughout the entire project cycle, including in the initial project design stages and especially in the infrastructure sector. ‘Sustainable Infrastructure’ efforts are underway to define, measure, and monitor the sustainability of infrastructure projects. A variety of initiatives are underway at development banks and in the private sector that attempt to incorporate sustainability throughout the infrastructure project cycle, such as the Infrastructure Sustainability Rating Tool in Australia, the Civil Engineering and Environmental Quality Assessment and Award Scheme in the UK, and the Hydropower Sustainability Assessment Protocol of the International Hydropower Association. Drawing on this work, the IADB is developing a Sustainable Infrastructure Framework (Watkins, 2014).

5.3 Comparative Analysis of ESS in Latin America

To what extent are ESS part of the project cycle in the numerous development banks in LAC? Alongside our quantitative analysis on green finance we also conduct a comparative review to examine the variation of environmental safeguards across the development banks in our sample. Drawing on concepts of standards in international trade law, we put forth a classification system to characterize the different approaches to ESS in our sample. In international trade law, “harmonization of standards” applies to international pacts where two parties agree to a common set of standards, where one country often must increase its level of standards in order to comply. Although the eventual aim may be the harmonization of standards, “mutual recognition” is another principle in international law seen as cases where parties respect and recognize differences in the parties’ law and regulation yet require that such norms be enforced (Sykes, 1995). We find a spectrum of approaches to ESS by development banks in LAC, and depict those approaches in Figure 9.

Figure 9: IDB Safeguards in Latin America and the Caribbean



On the left side of the spectrum are the large MDBs and Western national development banks and export credit agencies. On the right are emerging market and developing country development banks and export credit agencies, both national and sub-regional. By and large, the industrialized country-

dominated banks on the left of the spectrum have adopted a set of international standards and procedures that are required for all projects of a certain level of finance and perceived risk.

The KfW, AFD, CAF, and CaDB also address some international standards and procedures, but have a more flexible approach with respect to incorporating and enforcing ESS into the project cycle. The CaDB stands as an example of an approach that is largely deferential to host country standards but that also brings in some international standards. Moreover, if the CaDB determines that the borrowing country is lacking capacity to enforce its own standards for the project, the CaDB provides technical and sometimes financial assistance to upgrade the performance of the project and build capacity in the host state.

“1.02 All operation activities must comply with the directives of the ESRP as well as all other relevant Bank policies and operational guidelines. Projects are also required to demonstrate compliance with the Borrower’s national legislation and regulations for environment and social requirements, pollution abatement and control and health and safety issues. If an appropriate legislative or regulatory framework is weak or absent, the Bank will work with the Borrower to determine the most appropriate requirements to be used given the nature of the project, the national context and internationally accepted norms and practices. CDB will assist in strengthening BMC’s capacity to manage environment and social issues, either through discrete technical assistance (TA) or the inclusion of specific capacity building components in the design of programmes or projects (Caribbean Development Bank, 2008, 1.02)

The third tier of ESS are what we term “Deferential recognition” where the IDB recommends that the project comply with domestic country systems but does not necessarily monitor project compliance or provide assistance to countries that lack the full capabilities of compliance. An example of this approach is the CHEXIM, which states, “The host country’s environmental policies and standards are the basis for evaluation. Offshore projects of the host country should abide by the requirements of their laws and regulations and obtain corresponding environmental permits. When the host country does not have a complete environmental protection mechanism or lacks environmental and social impact assessment policy and standards, we should refer to our country’s standards or international practices” (CHEXIM,2007 , Article 12(4)). The CDB and the BNDES have a completely deferential set of ESS, guiding project participants to adhere to host country systems but refraining from active monitoring of the project cycle to ensure country systems are adequately met.

Table 12: Thematic Coverage

	Pollution Prevention	Biodiversity/ Natural Habitats	Climate Change Mitigation	Right of Indigenous Peoples	Involuntary Resettlement (of people)	Labor, Health, Safety	Cultural Heritage
World Bank	X	X	X	X	X	-	X
IDB	X	X	X	X	X	-	X
US EXIM	X	X	X	X	X	X	X
AFD	X	X	X	X	X	X	X
KfW	X	X	X	X	X	X	X
EIB	X	X	X	X	X	X	X
CaDB	X	X	X	X	X	X	X
CAF	X	X	-	X	X	-	X
CHEXIM	X	X	-	X	X	X	X
CDB	X	NA	NA	NA	NA	NA	NA
BNDES	NA	NA	NA	NA	NA	NA	NA

We construct this spectrum based on an analysis of official documents in each bank, supplemented by interviews, the results of which are displayed in Tables 12 and 13. According to the official documents of the various banks, the thematic coverage for EGS varies widely across IDBs, as can be seen in Table 12. The difference resides in two areas: climate change and labor, health and security. Many banks have integrated climate change into their safeguard policies while CHEXIM and CAF have yet to do so. On the other hand, the policies of the World Bank, IDB and CAF do not cover labor issues. Moreover, as BNDES and CDB do not have a detailed document regarding the themes in environmental assessments, we could not include them in this comparison.

Table 13: Operational Procedure Requirements

	World Bank	IADB	US EXIM	AFD	KfW	EIB	CAF	CaDB	CHEXIM	BNDES	CDB
Ex-ante Environmental Impact Assessments	X	X	X	X	X	X	X	X	X	X	X
Project Review of Environmental Impact Assessments	X	X	X	X	X	X	X	X	X	X	X
Industry-specific Social and Environmental Standards	X	X	X	-	-	-	X	-	-	X	-
Require Compliance with Host Country Regulations	X	X	X	X	X	X	X	X	X	X	X
Require Compliance with Int'l Environmental Regulations	X	X	X	X	X	X	-	-	-	-	-
Public Consultations with Affected Communities	X	X	X	X	X	X	X	X	X	-	-
Grievance Mechanism	X	-	-	X	-	X	-	-	-	-	-
Independent Monitoring and Review	X	-	X	-	-	-	-	-	-	-	-
Establishing Covenants Linked to Compliance	X	X	X	X	X	X	X	X	X	X	X
Ex-post Environmental Impact Assessments	-	-	-	X	-	X	X	X	X	-	X

Although the various IDBs have similar thematic structures, the procedures by which IDBs examine these themes vary more significantly across IDBs. As shown in Table 13, all eleven banks apply ex-ante and project review of environmental impact assessments at the pre-lending stage, and establish links between the compliance of environmental regulations and disbursement. Regarding environmental standards, host countries environmental regulations are the bottom line for all banks, and the World Bank, IADB, US EXIM, EIB, AFD and KfW also require clients to comply with international standards and procedures as well. Put another way, the World Bank, IADB, US EXIM, EIB, AFD and KfW have mandated safeguard systems, whereas the rest of the sample defer or partially defer to country systems.

All the banks except CDB and BNDES include public consultations with affected communities in their environmental assessments. Although CDB and BNDES do not have an explicit statement regarding this issue, it does not mean they do not apply this requirement in implementation. For disputes on environmental issues, only three banks (World Bank, AFD and EIB) have project-level grievance mechanisms. During the project cycle, only the World Bank and US EXIM Bank require an independent monitoring and review of the environmental compliance. The IADB, KfW and BNDES do not require ex-post assessment while the rest do have this requirement.

Table 14 goes into much deeper detail for each bank's safeguard system across four components: over-arching policy statements, operation requirements for borrowers, banks' social and environmental review procedures and information disclosure.

Over-arching policy statement refers to a hierarchical and integrated document of MDBs' safeguard policies, which usually states the key objectives, policies, principals and institutional approach to potential environmental and social impacts and risks (Himberg, 2015). In our sample, EIB, CAF, BNDES have integrated their social and environmental policies into a safeguard framework under a sustainability strategy or policy, and AFD and CDB have addressed their key principles in corporate social responsibility (CSR). However, other banks including the World Bank, IDB, USEXIM, KfW, CaDB and CHEXM are still lacking in an over-arching framework to organize their safeguard policies.

Regarding operation requirements for borrowers and banks' social and environmental review procedures, while the former describes requirements for borrowers to apply a loan, the latter states the bank's internal procedures to approval a loan request. The operational policies and bank procedures of the World Bank and IFC have been widely referred as benchmark when IDBs establish their own safeguard system. Indeed, EIB, IADB, US EXIM, CaDB, KfW and AFD have aligned their safeguard policies with the World Bank policies, which are recognized as international standards. On the other hand, CHEXIM and BNDES have developed either guidelines or policies of their own to address environmental concerns. However, these policies cover very few specific requirements and hence, are less informative at operation level. According to the official website of BNDES, the bank is preparing more specific environmental policies.

In the case of CDB, the statement of environmental policies is comparatively vague and general. Reviewing its annual sustainability report, we found that CDB's environmental policies are still under development and have been progressing along with the increasing domestic awareness of environmental problems. For instance, in the 2013 sustainability report, the "Sustainable Development in Action" focused on low-carbon development while in 2014, CDB emphasized green credit. We did not find a set of systemic policies on environmental risk management in project cycle. For the purpose of comparison, we referred to a "summary of environmental policy commitments of CDB" compiled by Friends of the Earth based on the CDB Bond Prospectus (2005) and the CDB Corporate Social Responsibility Reports of 2007, 2008 and 2009 (Annex A).

It is worth noting that all Chinese banks, including development banks, can now follow a set of voluntary 'Green Credit Guidelines' that were put in place in 2012. The Green Credit Guidelines emphasized that Chinese financed projects should enhance social and environmental risk management to comply with local regulations. For overseas projects, the Green Credit Directive articulates that "the banking institutions shall make promise in public that appropriate international norms will be followed as far as such overseas projects are concerned, so as to ensure alignment with good international practices." Moreover, these new polices also address procedural risk control through environmental assessment and monitoring, as well as important environmental themes such as pollution prevention, labor, biodiversity and affected local communities.

Table 14: Structure of Safeguard System

	Over-arching Policy Statement	Operational Requirements for Borrowers/Clients	Environmental and Social Review Procedures	Access to Information Policy
World Bank (2011)	None	Operational Policies	Bank Procedures	Access to Information Policy (2010)
IADB (2006)	None. Partially included in OP-703	Operational Policies	Implementation Guidelines for the Environment and Safeguards Compliance Policy and other safeguard policies	Access to Information Policy (2010)
US EXIM (2013)	None	Operational Policies	Environmental and Social Due Diligence Procedures and Guidelines (2013)	Ex-Im Bank FOIA Regulations
CaDB (2008)	None	Environmental and social review process in the project cycle	Environment and social review procedures	Information disclosure policy (2011)
EIB (2013)	Statement of Environmental and Social Principles and Standards (2009)	Environmental and Social Handbook (2013)	Environmental and Social Practices and Procedures (2013)	Transparency Policy (2011)
CAF (2010)	CAF's Environmental Strategy	Environmental and social safeguards applicable to CAF Operations	Environmental and social aspects in the operations assessment process	None
KFW (2014)	None	Sustainability Guideline	Environmental and social impact assessment and climate change assessment	Transparency and participation (2014)
AFD (2011)	Environmental, Social and Governance Responsibility Policy Goals	Guide to financing tenders in foreign countries (2011)	Corporate responsibility in external operations	Transparency in-communications policy (2007)
CHEXIM (2007)	None	Guidelines for Environmental and Social Impact Assessments	Guidelines Chapter2, Article 13	None
BNDES (2010)	Principals of Social and Environmental Policy	Social and Environmental Analysis of Project	Social and Environmental Guidelines	Access to Information Law (2011)
CDB (2013)	Sustainable Development Strategy	NA	NA	None

Source: Author's adaptation from Himberg (2015).

Another important component of safeguard systems is information disclosure. Transparency is considered crucial for an effective safeguard system. Among the banks in our study, seven banks have transparency policies that guarantee access to environmental assessments of any party in interest. In fact, the level of transparency still varies among these banks. For example, environmental assessment reports of each project can be found in the project databases of the World Bank and IDB, while other banks only disclose this type of information upon request. Moreover, only the two Chinese banks and

CAF lack such an information disclosure policy.

Half of the IDBs in our study (the IADB, CaDB, USEXIM, EIB, KfW and AFD) have developed exclusion criteria, or lists of projects or activities that they will not support through financial investments, to supplement the environmental safeguard policies. The World Bank implements the categorical exclusions through its Policy on Procurements as well as “Multilateral Development Bank Harmonised Conditions of Contract for Construction for Building and Engineering Works Designed by the Employer” instead of a formal exclusion list (Himberg, 2015). CAF, BNDES and the two Chinese banks have not issued their own exclusion criteria.

5.4 Benefits and Costs of Environmental and Social Safeguards

When designed properly, environmental and social safeguards (ESS) can bring significant benefits to the majority of stakeholders engaged in development bank projects. ESS may also help development banks and host countries alike meet their broader development goals. That said, in many circles ESS are perceived as being costly and onerous for borrowers. A comprehensive comparative analysis of the benefits and costs of ESS across IDBs operating in LAC is beyond the scope of this study, but is sorely needed.

It is clear that some IDBs, particularly the World Bank, have a long approval process and the World Bank’s Independent Evaluation Group has said that ESS are part of the delay and have a poor perception among some stakeholders. On the other hand, ESS at other banks such as the IADB appear to have no impact on the length of the project cycle and may not be as costly. Moreover, in independent cost-benefit analyses, even the World Bank’s perceived onerous safeguards were shown to outweigh the costs of implementation (World Bank, 2010).

Table 15: Benefits of Environmental Safeguards

Stakeholder	Benefit
Global	Equitable use of resources Enhancement of global public goods
Development banks	Greater project effectiveness Mitigation of environmental and social risk Management of reputation risk Realization of broader development goals
Borrower governments	Better management of natural resources Strengthening of institutional capacities Mitigation of environmental and social risk Realization of broader development goals
Local communities	Enhanced voice and ownership Reduced vulnerability Improved livelihoods

Source: Author’s adaptation from World Bank (2012)

ESS can bring benefits to a variety of actors in the development banking process. Of course, development banks that conduct projects with minimal harm to the environment and communities can better provide public goods and help allocate scarce natural and economic resources in a more efficient manner. For the development banks themselves, ESS can create better project effectiveness by miti-

gating the social and environmental risks of a project and helping to address the broader development goals of their charters. Identifying ahead of time that a particular project could cause environmental degradation and/or create mass social conflict is important to maintaining project schedules and creating more certainty regarding future costs. When such risk is not accounted for the costs can be unexpectedly high, resulting in project overruns and sometimes resulting in project cancellation. Moreover, problem projects can tarnish the image of a development bank and decrease its ability to provide future services in a country or region. These same benefits hold for national governments that need to manage debt burdens and political constituencies in a manner that will maximize national benefit. ESS can help developing countries build institutions to address market failures such as environmental externalities and meet their own broader development goals and international obligations. Engaging local communities and civil society through ESS can also bring benefits by helping communities assume ownership of projects through letting their voices and concerns be heard and incorporated. Designed properly, ESS can also reduce the vulnerability of communities from certain projects and thus improve their livelihoods of such communities.

Alongside these benefits there are also costs associated with ESS. There is a broad perception that safeguards contribute to costly project delays and they can be seen as impositions on borrowing countries that rely on receiving project support. A recent study based on over 100 interviews with staff from various MDBs finds that ESS make it:

“... extremely difficult for borrowers and even staff to fully understand. Requirements often include time-consuming, lengthy studies to be undertaken by third-party experts (usually at the government’s cost), lengthy consultations with affected parties (sometimes including unelected non-governmental organizations), extensive mitigation measures, and lengthy mandatory prior public disclosure and comment periods during which time the project cannot move ahead. These requirements supersede whatever national laws may be in place in the borrowing country—a particularly troubling point of principle for many borrowing countries, beyond the practical impacts of safeguards. (Humphrey 2015a, 15).”

The World Bank’s own Independent Evaluation Group partly confirm these perceptions in a comprehensive assessment of World Bank safeguard policies published in 2010. Out of a survey of more than 100 stakeholders, the World Bank found that in LAC, 60 percent of initially proposed large scale World Bank projects were avoided by clients because of ESG systems and “38 percent of task team leaders, 72 percent of social specialists, and 55 percent of environmental specialists had encountered clients who wanted to avoid all or part of a project because of safeguard policies. The impact of this chilling effect was reported by a majority of team leaders from Latin America and the Caribbean and over 40 percent from East Asia and Pacific and South Asia, which have the most active safeguards portfolios. (World Bank, 2010, 46)”

In another study, Humphrey (2015b) was told by IADB environmental staff that “There was a point when some folks at the IADB were trying to court Brazil to finance that project, and the immediate response from the Brazilians was, ‘Not on our life, you’ll come running in here with your safeguards,’” the staffer said, in others borrowing countries.” (Humphrey, 2015). Another cost is project delay: Humphrey estimates the length of approval time for projects on a whole (including ESS) and estimates that approval time in LAC for the World Bank is 14 months (Humphrey, 2015b). As we will see below, there are also costs involved with deferring ESS to national country systems. Although such deference is considered faster and less costly, relying on national country systems for ESS costs the World Bank \$104,000 on average for a particular project to ensure that such systems are enforced (Larson and Ballesteros, 2014).

There is also evidence showing that safeguards can be done in a manner that does not trigger delays

in the project cycle, can avoid cost overruns, and can avoid immensely costly tail risks. A recent study by the private bank BNAmericas found that LAC infrastructure projects currently face \$133 billion in cost overruns, but environment and social concerns were cited as the least likely cause of an overrun. In an interview with the study author we were told that this was due to the fact that ESS mitigate the potential of certain classes of overruns (BNAmericas, 2015). Moreover, internal research by the IADB finds that the costs of ESS are just 1 percent of project costs and that the ESS do not have an independent impact on the length of the project cycle (IADB, 2015c). In contrast with the 14 months that a World Bank project takes to come to fruition (and an estimated cost of 3 percent of project costs), the IADB project cycle is just 5.8 months (Humphrey 2015a).

It may be that the most costly and delayed projects are those that occur when ESS are not implemented well, resulting in mass protests and environmental destruction. When ESS go well they may go unnoticed and be taken for granted. In Brazil, the Belo Monte hydroelectric dam, financed by the BNDES, did not incorporate key ESS measures and has been met by massive local and global resistance--costing the participating firms and banks \$1.4 to \$5 million per day of delay due to protests (Nielson and Lima, 2013). In contrast, few have heard of the Revantazon hydropower project in Costa Rica—Central America’s largest hydropower project that will supply ten percent of Costa Rica’s electricity per year. The safeguards process revealed that the project would rip through a jaguar migration corridor, contaminate and redirect fish that form the source of local livelihoods, and impact local communities. As a result of the process, the Revantazon project includes payments to landowners to set aside land for jaguar migration, a fisheries preservation project, and housing and health clinics for local communities (CNN, 2014).

While full assessments of the costs and benefits of ESS are hard to quantify, the Independent Evaluation Group (IEG) of the World Bank (an independent monitoring group) conducted an assessment of the costs and benefits of ESS in 2010 and concluded that benefits from the “environmental safeguards far outweigh the incremental costs. In the case of social safeguards the benefits do not exceed the costs, but a number of benefits cannot be quantified” (World Bank, 2010, 78). According to the World Bank, the typical cost of safeguards programs ranges from \$116,000 to \$225,000 per large-scale project, ranging from 3.3 to 7.6 percent of project preparation and supervision costs by the World Bank. For borrowing countries the average cost of compliance was \$6 million, or 3 percent of the total project cost for the borrowing country. Weighting risks and benefits from a sample of bank projects, the World Bank found that most sensitive projects yielded “low cost - low benefits or high cost - high benefits for recipient countries.” In the same IEG survey mentioned above, the World Bank also found that over half of the “task team leaders surveyed reported that the Bank’s safeguards increased acceptability of the project among beneficiaries, and the safeguard policies also increased acceptability among nearly 30 percent of cofinanciers” (World Bank, 2010, 47).

A comprehensive comparative analysis of ESS across development banks operating in LAC is necessary to determine the extent to which there is a lack of balance between costs and benefits of ESS in the project cycle. In the meantime perception will serve as reality as ESS are often perceived in a negative manner among borrowers in LAC (Humphrey 2015b).

6. Summary and Recommendations

Development banks in LAC are poised to help shift the region's economies from a "business as usual" scenario to a sustainable one. In this study we have conducted an initial examination of the extent to which development banks operating in the region are providing green finance in LAC and analyzed a spectrum of approaches to ESS practiced. We find that green finance is upwards of \$61 billion dollars since 2007, representing 20 percent of total development bank finance in LAC. We also find that a significant number of new projects are in inherently environmentally sensitive project areas—and it is not clear whether such projects are adequately safeguarded to anticipate and mitigate associated social and environmental risk.

While development banks in the region have made inroads with respect to green finance and ESS, significant effort will be needed to scale up green finance and to adequately safeguard both green and conventional development projects. Given the high priority that has been given to increasing green finance, and infrastructure in particular, we recommend the following policy options to improve green financing in LAC:

- **Sharpen the definition, measurement, and monitoring of 'green finance' and sustainable infrastructure.** Development banks have made great strides in attempting to define and measure 'green finance.' The recent effort by the MDBs and the IDFC deserves particular praise. However, some classifications such as the hydro-electric dams in tropical climates, deserve more attention. Moreover, links need to be defined, drawn and measured on the extent to which green finance categorizations translate into reduced emissions and other environmental impacts. Given the importance and focus on infrastructure, a new set of indicators for sustainable infrastructure finance should be developed that incorporates both environmental and social risk.
- **Increase the operational capacity of development banks.** Significant new resources will be needed to meet country needs and the broader sustainable development goals. New capital increases are often hard to come by, although the recent financial crisis triggered major increases in the MDBs, in the BNDES, and the China development banks. Given the scale of the needs and the political momentum for such finance, the SDGs could be a common entry point for re-capitalization. A related consideration is to create new 'green banks.' In many ways, the North American Development Bank featured in this study is one example of a green bank for the Western Hemisphere.
- **Develop and scale up 'green bond' programs.** The EIB and the World Bank are pioneers in the green bond market while AFD and KfW are among largest global issuers. These four banks have issued upwards of \$27 billion in green bonds and the World Bank has issues \$3.5 billion in LAC. Other banks operating in the region could experiment with this approach, possibly for the co-financing of projects. However, equal attention will need to go into monitoring of projects covered by green bonds to ensure that such financial flows are indeed green.
- **Expand and replicate sustainable co-financing.** In this study we discussed innovative co-financing funds such as the China Co-financing Fund for Latin America and the Caribbean and the co-financing of green finance at the project level between the KfW and CAF and the KfW and BNDES at different times. Pooling resources in this manner not only allows for increasing green finance, but also provides opportunities for joint learning, technological transfer, and other forms of cooperation.
- **Review and reform environmental and social safeguards.** The IDFC and the MDBs have developed a set of common principles for tracking climate finance and the IDFC banks have set a common goal to increase green finance to \$100 billion by the end of 2015. This convergence

is not replicated with respect to ESS. A comparative and comprehensive review of ESS across IDBs, perhaps under the auspices of the IDFC, is necessary in order to help IDBs meet their broader sustainable development goals, and properly identify and mitigate social and environment risk. In parallel with the green finance approach, the IDFC and MDBs can strive to achieve a set of common principles and trackable monitoring systems for ESS across development banks. Particular attention is needed to improve access to information policies and grievance mechanisms with all stakeholders at the host country level.

As an organizing principle for a safeguards review, development banks should aim to recognize and enhance the national regulations and institutional capacities. It is paramount that the BNDES and the Chinese development banks re-evaluate their approach to safeguards, as their relatively less developed approach may accentuate the risks associated with large energy and infrastructure projects. That said, policies do not always determine performance. The World Bank has very stringent safeguards but had long been criticized for its lack of incorporation of environmental considerations (Rich, 1995, 2013). Whereas China's banks and firms have weaker safeguards on paper, a recent study found that in some cases actors financed by China's development banks performed better than their Western counterparts in mitigating social and environmental risk (Ray, et al, 2015).

In safeguards evaluations, **co-financing can provide official means to engage on these issues**. The co-financing arrangements between KfW and Bndes and IADB and China's banks could prove to be solid ground for mutual learning. Whereas China has the capital and infrastructure/energy expertise, the Western banks have a long history of engaging with local communities and conducting environmental analyses in the region that was often learned the hard way. By learning lessons in these areas all IDBs can meet their goals in the least risky manner.

As part of the re-evaluation process there is a significant **need for more research** and better methodologies. In the tracking of green finance we need better metrics to assess the environmental and social footprint of certain investments, particularly hydro-electric power. There is also a significant amount of research needed on the costs and benefits of the various approaches to EGS. Where some approaches along the spectrum may be too onerous, others may be wholly inadequate. The 2010 study by the World Bank's Independent Evaluation Group found that the World Bank 'does not collect data on environmental and social benefits and costs (World Bank, 2010, 69). This is highly concerning as such information is essential for proper decision-making that balanced risks and reward for development finance. Finally, there is a need for on-the-ground case studies of various projects and the implementation of policies in order to draw better insights into these phenomena.

Development banks need to make policies today in order to foster sustainable development in the future. In this regard, the next decade or more is crucial. Policy decisions taken now will have long-term impact on development, social, and environmental outcomes. We cannot afford to miss the opportunity offered to put in place a more sustainable and inclusive set of financing mechanisms for sustainable development.

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Annex: China Development Bank (Summary of Environmental Policy Commitments)

Compiled by Friends of the Earth (US) based on CDB 2005 bond prospectus; CDB 2007, 2008 and 2009 CSR reports; 2008 CDB presentation during Green Credit Policy delegation meeting in Washington, DC; 2012 CDB presentation during International Green Credit Forum in Beijing, China.

Pre-lending stage:

Clients must be in compliance with all environmental laws of the People's Republic of China;

All loan applications require an environmental impact assessment (EIA);

For highly polluting and energy-intensive industries such as coal mining, oil and gas exploration and development, power generation and transmission, hydropower, etc., EIAs must be approved by relevant environmental authorities;

EIAs must be completed by an independent evaluator;

Environmental standards and costs can be written into loan covenants in order to commit borrowers to environmental promises;

The Bank can exercise the "one-ballot veto" procedure that allows loans to be rejected by the credit committee solely for environmental reasons;

The Bank assigns two personnel to do due diligence for each loan application: one to evaluate the loan and the other to evaluate the client;

The Bank also has an appraisal department to assess environmental and social risks, and also manages environmental and social issues across business units.

Post-lending stage:

In order for loan requirements to be considered fulfilled, clients must provide proof from a relevant environmental department that the project meets environmental protection requirements.

