



# Raising US\$23 Trillion

## Greening Banks and Capital Markets for Growth

**G20 Input Paper on Emerging Markets**



# Raising US\$23 Trillion

## Greening Banks and Capital Markets for Growth

### G20 Input Paper on Emerging Markets

**AUTHORS: PEER STEIN; GURSIMRAN ROOPRAI; TIBOR KLUDOVACZ**

**October 2018**



*Creating Markets, Creating Opportunities*

## ACKNOWLEDGEMENTS

This Input Paper was prepared by the IFC's Financial Institutions Group ("FIG") for the G20 Sustainable Finance Study Group. The authors are grateful of the support provided by the Bank of England team including Michael Sheren and Kendall Colman. The authors are also grateful for insightful peer review and expert input from World Bank Group and International Monetary Fund colleagues, including Erik Feyen, Elena Panomarenko, Martin Cihak, Martijn Regelink, Rong Zhang, Wei Yuan and William Beloe.

© International Finance Corporation 2018. All rights reserved.

2121 Pennsylvania Avenue, N.W.

Washington, D.C. 20433

Internet: [www.ifc.org](http://www.ifc.org)

The material in this work is copyrighted. Copying and/or transmitting portions or all of this work without permission may be a violation of applicable law. IFC encourages dissemination of its work and will normally grant permission to reproduce portions of the work promptly, and when the reproduction is for educational and non-commercial purposes, without a fee, subject to such attributions and notices as we may reasonably require.

IFC does not guarantee the accuracy, reliability or completeness of the content included in this work, or for the conclusions or judgments described herein, and accepts no responsibility or liability for any omissions or errors (including, without limitation, typographical errors and technical errors) in the content whatsoever or for reliance thereon. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of The World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries. The findings, interpretations, and conclusions expressed in this volume do not necessarily reflect the views of the Executive Directors of The World Bank or the governments they represent.

The contents of this work are intended for general informational purposes only and are not intended to constitute legal, securities, or investment advice, an opinion regarding the appropriateness of any investment, or a solicitation of any type. IFC or its affiliates may have an investment in, provide other advice or services to, or otherwise have a financial interest in, certain of the companies and parties (including named herein).

All other queries on rights and licenses, including subsidiary rights, should be addressed to IFC Communications, 2121 Pennsylvania Avenue, N.W., Washington, D.C. 20433.

International Finance Corporation is an international organization established by Articles of Agreement among its member countries, and a member of the World Bank Group. All names, logos and trademarks are the property of IFC and you may not use any of such materials for any purpose without the express written consent of IFC. Additionally, "International Finance Corporation" and "IFC" are registered trademarks of IFC and are protected under international law.

---

# TABLE OF CONTENTS

2		CHAPTER I: What is the Size of the Climate Investment Opportunity in Emerging Markets?
5		CHAPTER II: What Level of Bank Financing Does It Take to Meet the Climate Investment Needs for 2030?
7		CHAPTER III: Are Banks Able and Likely to Ramp-Up Lending for Climate Investments?
11		CHAPTER IV: What are Emerging Market Regulators and Policy Makers Doing as Lenders Scale-Up Climate Financing?
14		CHAPTER V: What Debt Capital Markets Instruments May Help Lenders in Scaling Up Climate Financing?
17		CHAPTER VI: Conclusion
18		ANNEX 1: Summary of the Analysis
22		ANNEX 2: About IFC and Case Studies
24		ANNEX 3: A Simplified Schema on Broad Terms of Sustainable Development
25		ANNEX 4: Summary of Green Business Opportunities for Banks in Emerging Markets
27		REFERENCES



# Input Paper on Emerging Markets: Sustainable Banking and Debt Capital Markets

In December 2015, at the Conference of the Parties 21 (“COP 21”) in Paris, France, 196 countries came together to forge a climate change agreement that pledged to keep global warming to 2 degrees Celsius or less. To bring the world to this 2-degree track, the International Energy Agency estimates that the cumulative investments needed in energy supply and efficiency reach US\$53 trillion<sup>1</sup>. Based on the IFC analysis of US\$23 trillion in climate-smart investment opportunities in emerging markets between 2016 and 2030, this paper analyzes the role of the banking sector and debt capital markets to provide the financing necessary. For lenders to finance the expected levels of debt, banks will need to significantly ramp-up financing of

climate related investments – as indicated in the paper – from an estimated 7 percent in 2017 to 30 percent in 2030, including renewables, energy efficiency, green buildings, and climate-smart transportation. Banks will need to rely on debt capital markets to help with the necessary maturity transformation to match primarily longer dated assets with long-term liabilities. The important role that non-bank financial institutions and equities markets can play in financing climate investment opportunities are not discussed in this paper. The paper concludes with several case studies that showcase how lenders leverage debt capital markets to increase their lending capacity to meet the significant financing needs that the climate transition presents. ■

---

## CHAPTER I

# What is the Size of the Climate Investment Opportunity in Emerging Markets?

As outlined in the [Climate Investment Opportunities in Emerging Markets report \(2016\)](#), IFC undertook a bottom-up analysis to assess the market potential for climate-smart investment opportunities in emerging countries<sup>2</sup>. The IFC team analyzed the national climate change commitments, commonly known as the Nationally Determined Contributions ("NDCs"), and other policies in 21 countries, representing 62 percent of the world's population and 48 percent of global GHG emissions. Based on this information, IFC estimated that key sectors in these countries have an investment opportunity of about US\$23 trillion from 2016 to 2030, as shown in Chart 1.

The estimated amount of US\$23 trillion in climate-smart investment opportunities is likely an underestimation, as there are certain data gaps for sectors such as climate-smart agriculture which have not been covered in the report. To illustrate this point, a more recent IFC report further analyzes the potential for climate-smart financing needs in South Asia, and estimates an additional US\$1.1 trillion climate-smart investment opportunity between 2018 and 2030 from India and Bangladesh alone<sup>3</sup>.

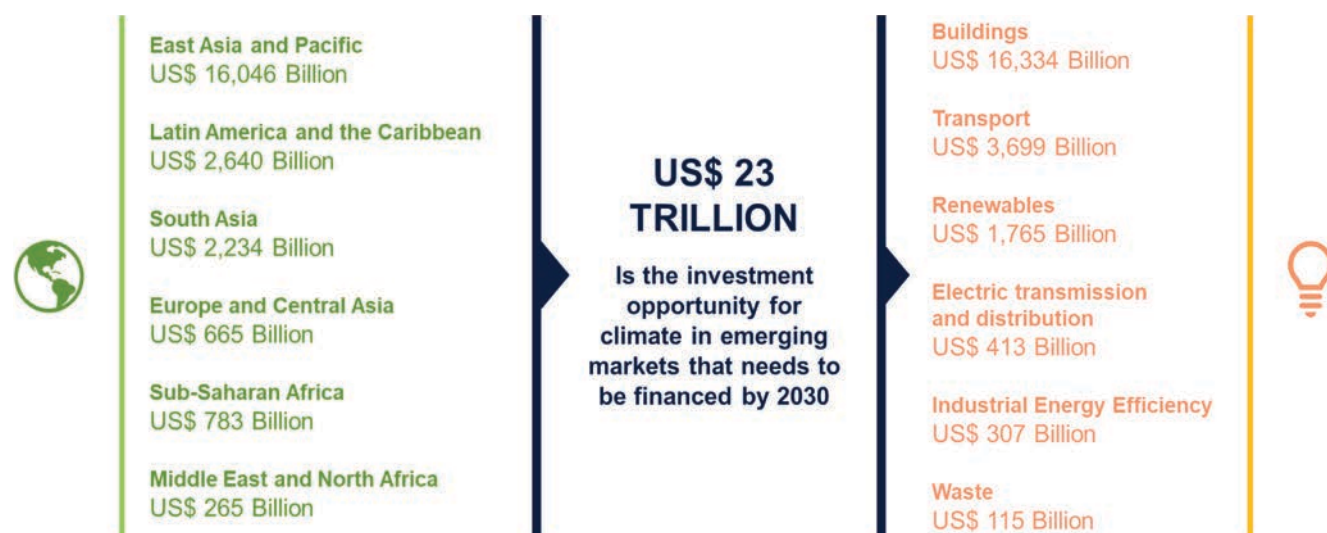
The key climate-smart investment opportunities in these countries include the following:

- **Green buildings** in East Asia: China, Indonesia, the Philippines, and Vietnam have a climate-smart investment potential of US\$16 trillion, which is primarily concentrated in the construction of new green buildings.
- **Sustainable transport** in Latin America: Argentina, Brazil, Colombia, and Mexico have an investment potential of US\$2.6 trillion, almost 60 percent of which is for transport infrastructure.
- **Climate-resilient infrastructure** in South Asia: Bangladesh and India have an investment potential of about US\$2.2 trillion, which is concentrated in the construction of green buildings, ports and rail transport infrastructure, and energy efficiency.
- **Clean energy** in Africa: Côte d'Ivoire, Kenya, Nigeria, and South Africa's total investment potential is nearly US\$783 billion, which is spread across renewable energy generation (US\$123 billion) and buildings and transportation (US\$652 billion).
- **Energy efficiency and transport** in Eastern Europe: Russia, Serbia, Turkey, and Ukraine's estimated climate-smart investment potential of US\$665 billion. Energy efficiency is a priority sector, while renewable energy investments are only beginning to accelerate.
- **Renewables** in the Middle East and North Africa: Egypt, Jordan, and Morocco's total climate-investment potential of US\$265 billion, over one-third of which is for renewable energy generation (US\$97 billion), while 64 percent (US\$169 billion) is for climate-smart buildings, transportation, industrial energy efficiency, electric transmission and distribution, and waste solutions.

Furthermore, to unlock the private investment potential, governments must prioritize the following actions:

- **Achieve NDC goals:** Many countries have already integrated their NDC commitments into national development strategies and budget processes. Governments must now put in place clear and consistent policies – such as carbon pricing, performance standards, and market-based support – and ensure that climate considerations are integrated





**CHART 1** Climate-Smart Investment Potential 2016–2030 (US\$ billion)

Source: [IFC Investment Opportunities Report 2016](#)<sup>2</sup>

into other sector policies. In addition, based on the IFC-managed Sustainable Banking Network program experience, greater consistency and awareness for the significant role the private sector can play is often missing.

- **Strengthen the private sector investment climate:** Attracting private investment will require a robust domestic enabling environment, with reduced risks, strong competition, and measures to promote investment and capital flows. A stable enabling environment also requires an appropriate combination of macro-financial policies, including monetary/exchange rate policies, fiscal policies, financial sector and macro-structural policies.
- **Strategically use limited public finance:** Government budgets will not be enough to address climate change. Governments should use public funds strategically to mobilize private capital by, for example, creating markets, reducing risk and providing project support.

Although many countries are making good progress in amending policies and improving investment climates, more can be done to set comprehensive long-term targets, provide targeted public finance, eliminate counterproductive policies (including fossil fuel subsidies), and provide the right incentives, such

as carbon pricing and market responsive support mechanisms.

In order for a government to set out and implement a sustainable finance strategy (or, policies) it is critical to strengthen the role of the financial sector to manage climate risks and mobilize capital for green development. This should include actions on disclosure standards to improve climate-related information disclosures, a taxonomy on ‘brown’ and ‘green’ financial assets to support alignment of investment portfolios with a 2 degrees scenario, the integration of sustainability risks in prudential regulation and supervisory practices, clarification of fiduciary duty with respect to sustainable investments, and steps to develop local markets, demand and issuance for green financial products. The European Commission (“EU”) has also laid out its action plan for a financial system that supports the EU’s climate and sustainable development agenda<sup>4</sup>.

Given the underlying type of climate investments focused, in particular, on infrastructure and green buildings, debt financing will likely represent the majority of total financing, with significant demand for longer tenors. While equity investments will have a critical role to play for the overall mobilization of financing, this paper focuses on debt financing only.

And special emphasis in extending debt financing is given to banks, as they provide most of the formal credit in emerging economies. Two key questions arise in this context: **How do total debt financing needs compare to total bank financing and debt capital markets in 2030? And what would it take for banks to extend the estimated debt levels to meet the climate investment opportunity?**

In answering those questions, it is assumed that the assessed climate investment opportunity in emerging markets will translate into bankable projects, which can be financed within sound risk management frameworks of banks. We acknowledge that in many cases there

is a role to play for multilateral development banks, development finance institutions and donors in project preparation and risk-sharing to support and enhance the bankability of projects. Further, while the investment universe in this paper covers climate related investments – i.e. investments that have an impact on climate mitigation and/or climate adaptation – some of the related financial sector policies may cover a broader universe of sustainable finance needs, as do some of the financial instruments such as green bonds. For a good comparison on respective definitions of sustainable vs. green vs. climate please refer to UNEP 2016<sup>5</sup> (see Annex 3 for further details). ■

---

## CHAPTER II

# What Level of Bank Financing Does it Take to Meet the Climate Investment Needs for 2030?

In 2016, total banking sector assets were US\$43.4 trillion and bank loans to the private sector stood at US\$21.9 trillion for the 21 emerging markets that were covered in the IFC analysis of climate investment opportunities<sup>6</sup>. Assuming average growth rates going forward to be the same as over the past ten years, it is expected that during 2016–2030 bank lending to the private sector – including corporate, commercial small and medium scale enterprise (“SME”) and retail lending – will double from US\$21.9 trillion to US\$44.5 trillion. About 75 percent of this growth is expected to come from China. Asia and Latin America & the Caribbean will have a pronounced growth of around 115 percent while the rest of the countries will grow around 73 percent over the same period.

During the same period, climate investment opportunities of US\$23 trillion have been identified by the IFC report in those countries, with key opportunities including investments in construction of low-carbon buildings, renewable energy power production, transport and industrial energy efficiency. Assuming tenors of 15 years, and average debt financing levels of 80 percent, the total climate investment opportunity of US\$23.6 billion from 2016 to 2030 would translate to about US\$13.3 trillion of climate related debt outstanding in 2030.

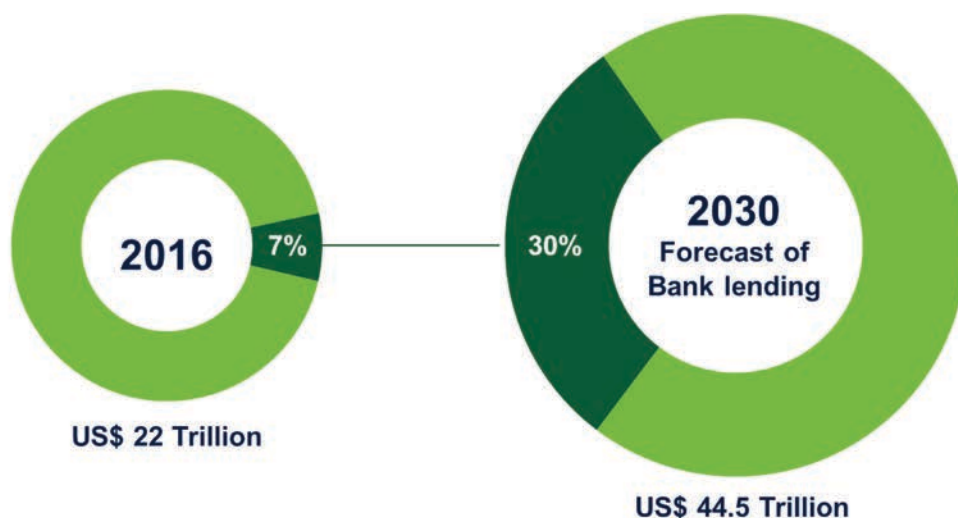
How does this compare to climate financing currently provided by banks? While reliable data of bank financing for climate related investments is still limited, we do have data from both Brazil and China on the respective levels of climate loans by banks, which we can complement with bank level data collected by IFC from its work with banks in emerging markets. Based on the most recent data available from China for 2016, the China Banking Regulatory Commission’s green credit statistics for the top 21 Chinese banks—accounting for about 80 percent of total banking assets - shows green credit accounting for approximately 9 percent of these banks’ portfolios<sup>7</sup>. The most recent survey of banks conducted by Febraban, the Brazilian banking association, indicates that climate related loans by the banking sector stood at 18.8 percent of total corporate loans (in 2016), for the banks participating in the survey<sup>8</sup>. This compares to an

average of 6 percent of climate loans in the loan books of 58 banks in emerging markets surveyed by IFC in 2016, and about 4 percent of climate-smart trade finance for the 58 banks surveyed by IFC in its 2017 trade finance survey<sup>9</sup>. Estimating China and Brazil at the current levels of climate related lending based on the existing industry data, and conservatively assuming 5 percent climate lending for all other countries, we estimate the total climate related loans of banks to the private sector in 2016 to be about US\$1.5 trillion, or about 7 percent of total claims on the private sector.

Based on these assumptions, the share of banks’ loan portfolios dedicated to climate related lending would have to significantly shift between now and 2030, as shown in Chart 2. It would have to grow from the estimated 7 percent today, to about 30 percent of total bank lending to accommodate the debt financing associated with the climate-smart investment opportunities<sup>11</sup>. In absolute terms, it would have to grow from US\$1.5 trillion, to at least US\$13.3 trillion (see Table 1.a of the Annex 1 for the detailed projections).

This raises at least three sets of questions:

- First, will banks be able to make this transition to significantly increase their climate related lending by 2030 to account for about a third of their loan book? What do we know about current trends



**CHART 2** Bank Lending for Climate Investments in 2016 and 2030 for 21 Emerging Markets<sup>10</sup>

Source: [IFC Compilation](#)

amongst banks to increase climate related lending, as well as the efforts by banking regulators and banking associations to support those trends?

- Second, how are financial market policy makers and regulators addressing climate opportunities and risks in the banking sector? What kind of policies and regulations have been implemented in emerging markets, and what is their state of development in different countries?

- Third, what debt capital markets instruments will be available to support banks to either refinance or off-load assets to help them grow their lending capacity? How will debt capital markets solutions support lenders in the required maturity transformation, given that the majority of climate related lending is likely to have longer dated tenors?

In the following, we will review each set of questions in turn. ■

---

## CHAPTER III

# Are Banks Able and Likely to Ramp-Up Lending for Climate Investments?

The following assessment is based on IFC's experience in working with banks and other lenders in emerging markets, including its two decades of lending to climate-smart businesses through financial institutions in emerging markets. IFC has a portfolio of 750+ financial institution clients in 118 countries with over US\$5 trillion in assets accounting for over 20 percent of total banking assets in non-BRIC developing countries. Climate finance is a major focus of IFC in its work with financial intermediaries across the world. IFC's climate finance work includes setting up green banks, investing in and issuing green bonds, structuring and providing credit enhancement facilities for green projects, carbon finance, sustainable forestry finance, energy efficiency and green building finance and a wide range of other investment and technical advisory services that increase the availability of climate financing through banks, non-bank financial institutions and debt capital markets.

Since 1997, IFC has worked on climate finance with 150+ lenders in over 50 countries through 270 climate projects, providing nearly US\$8 billion in long-term financing for own-account and in core mobilization financing towards mainly energy efficiency and renewable energy projects. With the corporate goal of reaching 28 percent of climate commitments by fiscal year 2020, IFC plans to quadruple its climate business through financial institutions to reach US\$2 billion in annual commitments by 2020. While today's relative share of climate financing in banks' lending books is still small, based on IFC's assessment it is poised for disproportionately fast growth. This is corroborated by two recent surveys undertaken by IFC that indicate a significant interest from lenders to support climate-smart opportunities in emerging markets. Those surveys are:

- I. **2017 IFC Reach Survey:** An annual survey covering IFC client banks across all emerging markets. The survey is conducted internally by IFC with 135 respondents in the most recent survey.
- II. **2017 IFC Green Finance Latin American Report<sup>12</sup>** in partnership with Felaban<sup>13</sup> and eco.business Fund<sup>14</sup>. The survey covers 400 banks in Latin American region with 101 respondents.

**SURVEY I – IFC Reach Survey:** In 2017, 135 of IFC FIG's investment portfolio clients reported on their climate portfolios and trends through an online climate questionnaire, part of the annual Reach Survey conducted by IFC. The sample represented over 25 percent of the FIG Portfolio clients that have lending operations. Based on this survey, 72 percent of the banks did provide climate lending – up from 61 percent the year before – with the top two lending categories being renewable energy and energy efficiency, as shown in Chart 3.a and Chart 3.c. When asked about the growth trends in their portfolios, most of the banks see their portfolios as steady or growing. With respect to their assessment of the portfolio quality, likewise most banks see their climate portfolios perform in line with their overall portfolio or better, as shown in Chart 3.b.

**SURVEY II – Green Finance Latin American Report:** IFC, Felaban and eco.business Fund jointly published the Green Finance Latin American Report 2017, which is based on a survey of 400 Latin American banks plus 18 regional banking associations<sup>12</sup>. The key features of the report were:

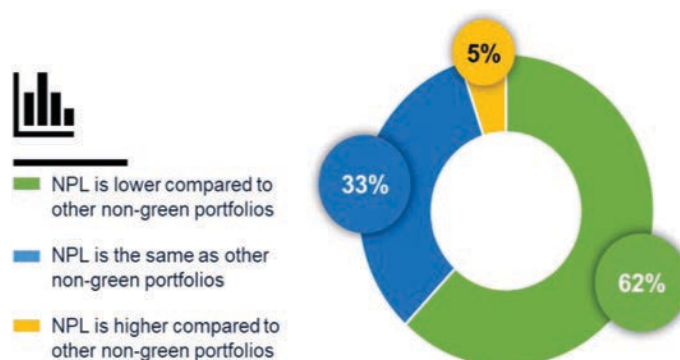
- The report looked at four green business dimensions adopted by Latin American banks in their daily

Chart 3.a: Banks Financing Climate Business



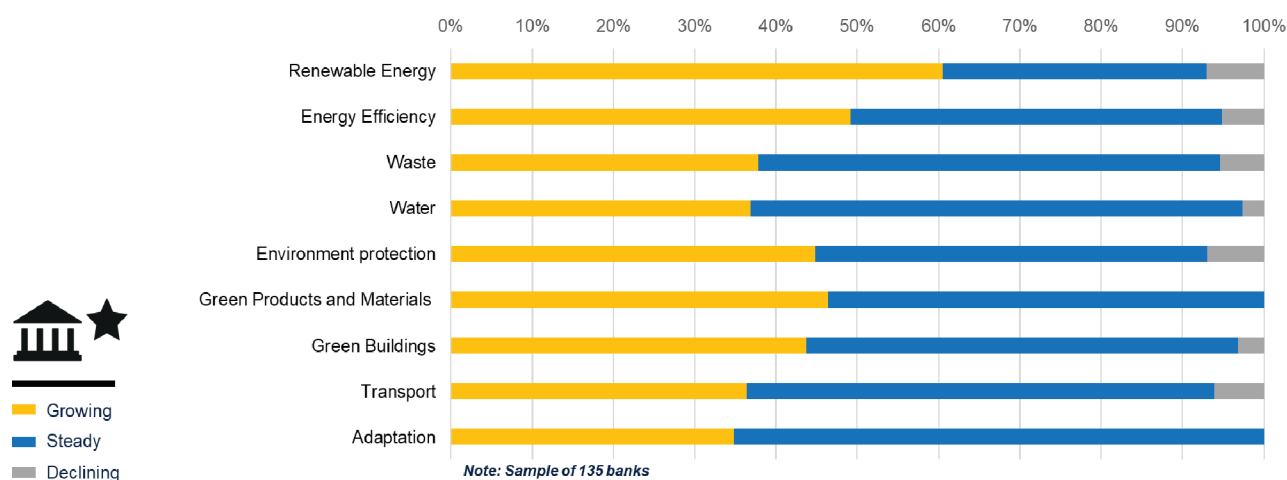
Note: Sample of 135 banks

Chart 3.b: Climate Portfolio Performance



Note: Sample of 42 banks

Chart 3.c: Growth trends in Various Sectors for IFC Client Banks



Note: Sample of 135 banks

### CHART 3 IFC REACH Survey Results

Source: [IFC's Financial Institution Client Survey \(2017\)](#)

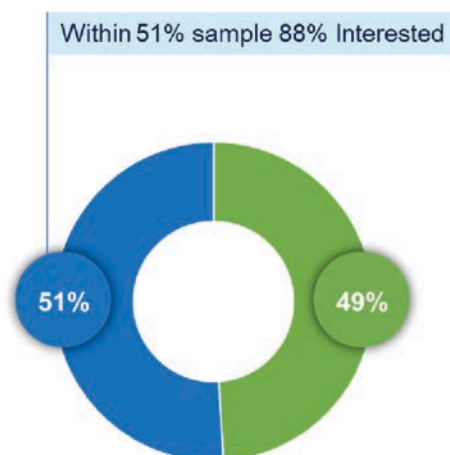
- activities. Firstly, internal resource and energy efficiency practices that banks implement within their own organizations and value chains. Secondly, environmental risk management systems and practices to mitigate climate risks. Thirdly, green products and services offered to their clients, and finally the overall strategic commitment to green finance.
- The report's main goal was to review to what extent banks in the region are adhering to these four green dimensions, and to assess the level of maturity of the green finance market in Latin America, highlighting the gaps and opportunities.

- The report was produced after an extensive regional survey guided by Ernst & Young, with responses from 101 banks in 17 countries (about a quarter of all Latin American banks), as well as 18 regional banking associations.
- Key findings include:
  - The report found that the most popular form of climate commitment by banks was to incorporate resource efficiency into their own operations, which was the case for 74 percent of the 101 participating institutions.
  - Out of the 101 banks surveyed, 49 percent of the banks offered specific green products and





■ Banks Offer Green Products  
■ Banks do not Offer Green Products



#### CHART 4 Survey Results on Banks Offering Green Products to Clients

Source: [IFC Compilation](#)

services, including credit products for renewable energy projects, industrial energy efficiency, green buildings, and climate-smart agriculture. Of the 51 percent that currently do not yet offer dedicated climate products, 88 percent are interested in providing those kinds of products and services in the future, as shown in Chart 4.

- As shown in Chart 5, amongst the banks that are commercializing green products and services, green credit is, at 94 percent, the most widely adopted product. This includes not only green lines but also, green leasing. 64 percent of the banks sell green insurance products, many related to climate risk, and green advisory

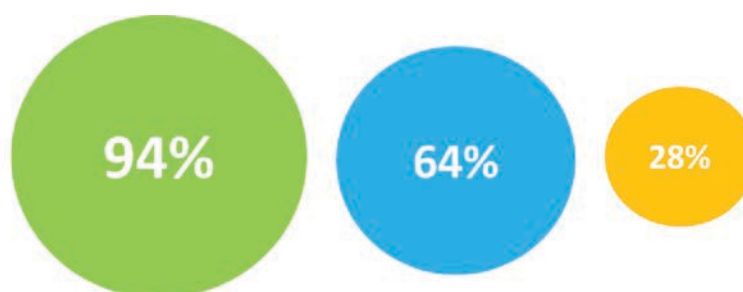
non-financial services. The third most adopted green product are green investment funds, green accounts etc.

- In line with IFC's global bank survey, the banks that measure the performance of those portfolios see a better loan performance of their green portfolios as well as higher growth rates. One third of the Latin American banks surveyed see year-on-year growth rates above 50 percent.

To summarize, banks are ready, willing and interested to mobilize private sector financing for climate-smart business but require additional support. Indeed, about 1 out of 2 banks surveyed in the IFC Reach Survey



■ Green Credit  
■ Green Insurance Products  
■ Green Investment Funds, etc.



#### CHART 5 Adoption of Green Products by Latin American Banks

Source: [IFC Compilation](#)

indicated that they have used consulting or technical assistance to build their climate related lending business. Based on IFC's experience in working with banks in emerging markets in building their climate finance business, we see the following key areas in which banks require technical assistance:

- **Identify market opportunities and risks related to climate business:** while there are commonalities in global trends for climate business related to renewables, green buildings and energy efficiency, local conditions differ significantly and determine the bankable size of the market.
- **Analyze the banks current portfolio related to climate:** many banks often already finance climate related investments in their corporate, commercial or retail portfolios, which often provides a good starting point for identifying growth areas and articulating value propositions for clients.
- **Acquire technical expertise to develop green lending:** while larger renewable energy or energy efficiency projects typically require bespoke technical expertise, smaller ticket loans such as SME or retail lending for energy efficient equipment, vehicles or homes can often be standardized. However, in all cases banks need to invest in dedicated staff resources.
- **Develop marketing/product strategy and impact reporting:** green finance still provides an opportunity for banks to differentiate themselves, and capture market share in a fast-growing segment. Communicating about this line of business requires additional reporting capabilities for the climate impact of bank financing, which is also a requirement for any refinancing of green assets through green bonds.
- **Mobilize financial resources for green growth:** banks' lending operations for climate business typically deserve a dedicated funding strategy, as they open new funding avenues. Historically, development finance institutions or multi-lateral development banks have provided dedicated climate linked credit lines to banks, while more recently green bonds have emerged as an important avenue for banks' refinancing of green assets.

Given that banks are operating in a highly regulated environment, this further raises further questions about the role of regulators and policy makers.

**How have regulators responded and approached climate finance? Have emerging markets regulators been addressing this topic and what is the state of development of respective policies and regulations in emerging markets?** ■



---

## CHAPTER IV

# What are Emerging Market Regulators and Policy Makers Doing as Lenders Scale-Up Climate Financing?

IFC has led the market in setting up the Sustainable Banking Network (“SBN”) which captures a new trend of country-level sustainable finance initiatives. SBN is a collective learning platform that brings together banking regulators and regional/national banking associations from 35 emerging markets covering 85 percent of banking assets in emerging markets that are committed to advance sustainable finance in line with international good practice. Established in 2012 by regulators from 10 countries, it is facilitated by IFC. The SBN now includes 35 countries, of which 16—Bangladesh, Brazil, China, Colombia, Ecuador, Indonesia, Kenya, Mexico, Morocco, Mongolia, Nigeria, Pakistan, Peru, South Africa, Turkey and Vietnam – have launched national policies, guidelines, principles, or roadmaps focused on green banking, as shown in Chart 6. SBN’s first global progress report reviewed policies and principles developed and launched from 3 perspectives, facilitating green finance flow, managing environmental and social risks and enabling factors.

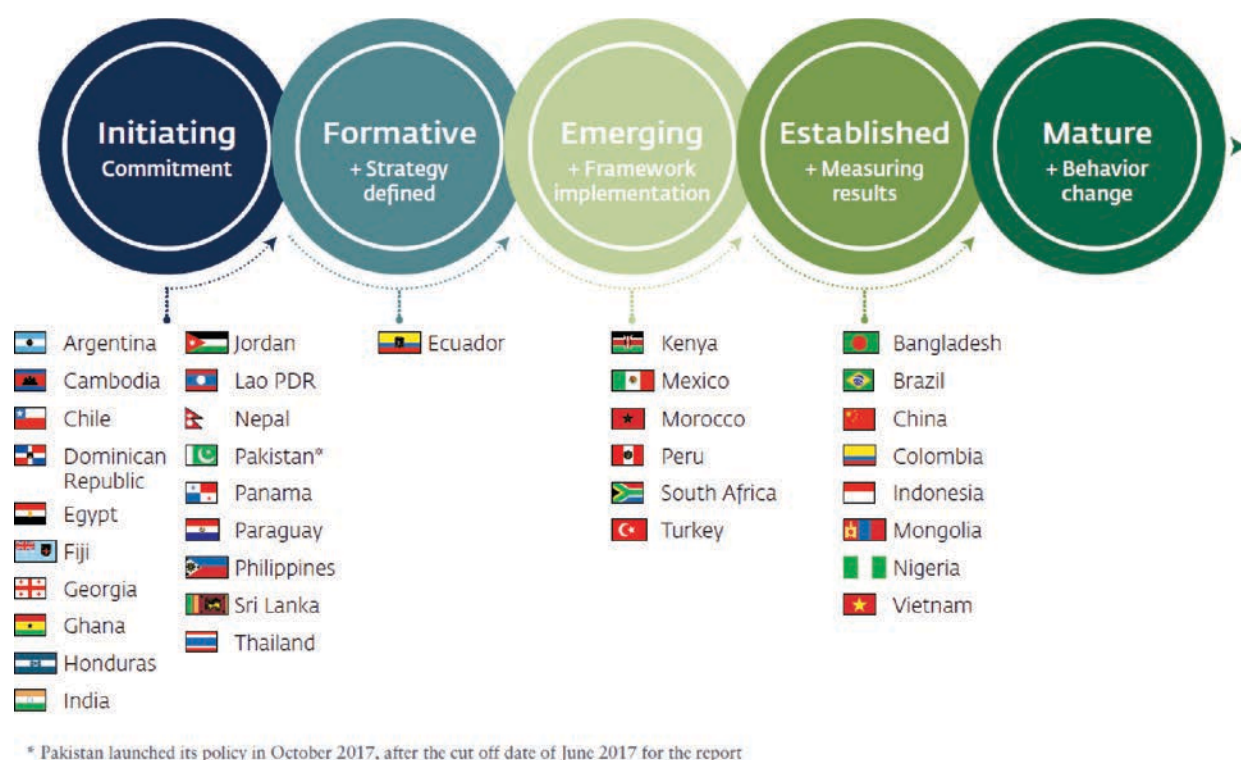
Many SBN members have introduced market incentives to drive banks to step up green investments. Incentives may focus on (i) positive recognition for good performers, such as through awards, preferential considerations and recognition during supervision; or (ii) increased lending to specific green sectors or market segments, such as through dedicated funds or credit lines. However, very few countries have developed and implemented systematic incentive mechanisms to promote and track green finance at this stage.

Some SBN members are tracking the outcomes of green financing policies and principles to demonstrate the business case for sustainable finance. For example, statistics from China’s top 21 banks (accounting for more than 80 percent of total banking assets) show that the loan balance toward green credit is US\$1.09 trillion, representing a 16 percent growth year-on-year, two percent higher than the overall lending growth rate. The percentage of the total that was nonperforming stood at 0.41 percent, which is 1.35 percentage points lower than the overall rate for all loans. Green credit now makes up approximately 9 percent of these banks’

portfolios. Brazilian banks’ lending to green sectors of the economy has grown from 11 percent of the banks’ portfolios in 2013 to 14 percent in 2015.

An enormous gap still exists on green finance definitions, data, reporting, and incentives to facilitate private sector participation. Only a few markets are moving into the definition and reporting space. Bangladesh, Brazil, China, and South Africa have defined green assets and sectors for investment. The Brazilian Federation of Banks developed a methodology and tool to systematically track and report green loans and credit financing. Bangladesh and China are requiring financial institutions to report periodically on green flows data. China is also providing them with a tool to report complex indicators, such as environmental benefits.

Although climate change is driving many sustainable finance initiatives, most policies and principles do not require financial institutions to align climate-related definitions and investment targets with countries’ climate strategies. Only four national policies or principles—in Bangladesh, China, Morocco, and Vietnam—specify



## CHART 6 Assessment of SBN Countries' Progress in Policy and Principles Development

Source: *SBN Global Progress Report, IFC, February 2018*<sup>15</sup>

climate as a standalone and specific environmental risk to be addressed.

- Brazil:** has followed a path of combined voluntary and mandatory approaches to sustainable banking driven by the need for stronger efforts in environmental conservation and to foster sustainable development. Facilitated by the banking association, Febraban, voluntary Green Protocols were first adopted by five Brazilian state-owned banks in 2008 and then by commercial banks in 2009. In 2014, the Central Bank of Brazil published a mandatory Resolution no. 4,327 on Social and Environmental Responsibility for Financial Institutions. Based on the most recent study, financing and/or loan balances for Green Economy sectors accounted for 18.8 percent of total corporate loans in 2016 by the Brazilian banks participating in the study<sup>16</sup>.
- China:** China adopted a policy-based approach to sustainable banking to help tackle profound environmental problems and support the transition to a green, inclusive and resilient sustainable growth path. The People's Bank of China ("PBoC"), China Banking Regulatory Commission ("CBRC"), and Ministry of Environmental Protection jointly issued the "Green Credit Policy" in 2007, followed by CBRC's "Green Credit Guidelines" and a monitoring framework to guide the implementation. At the end of 2015, CBRC's green credit statistics for the top 21 Chinese banks (accounting for around 80 percent of total banking assets) show the majority have adopted E&S risk management practices and Green Credit now makes up approximately 9 percent of these banks' portfolios. In 2016, PBOC launched the Guidance on Greening the Financial System, to expanding green finance development in China beyond banking. Before that, PBOC introduced green bond into China inter-bank market supported with green bond catalogue to define eligible green assets.
- Indonesia:** Otoritas Jasa Keuangan ("OJK"), the Indonesia Financial Services Authority, launched a Sustainable Finance Roadmap in December 2014. The roadmap enlists the financial sector, including

banking, capital market, and non-bank financial institutions (insurance, leasing, pension funds) to contribute to the national commitment to address climate change and support the transition to a competitive low carbon economy. In 2017, OJK released the Sustainable Finance Umbrella Policy to provide guidance to the whole financial system in Indonesia. The Policy covers: (i) definition of sustainable finance; (ii) principles of sustainable finance; and (iii) an Action Plan for banking, capital markets and non-banking sectors.

- **Mexico:** The Mexican Banking Association (“ABM”) has led a voluntary industry approach through the development of a “Sustainability Protocol”, which was formally signed by Mexican banks in April 2016. Aligning with national priorities, such as the government climate change targets for the next 15 years, and endorsed by relevant Mexico government agencies, the Protocol provides guidance on both risk management and sustainable lending, coupled with a plan to provide capacity building and tools for implementation.

- **South Africa:** The Banking Association of South Africa introduced voluntary Principles for managing Environmental and Social Risk in 2014. Since 2016, the National Treasury has led and facilitated discussions to develop a Framework Paper, with a goal to frame the discussion and prioritization of sustainable finance at a policy level and to set out a work plan for a multi-stakeholder process to develop the necessary components to enable the market to adopt sustainable finance practices.

Overall, the role of regulators and policy makers in emerging markets has been a proactive one, which has also created market confidence and signals to banks to further embrace this market segment. However, in the assessment of the respective policies and regulations of 15 countries covered in SBN’s Global Benchmarking Report, it is clear that more work specifically on the climate aspects of sustainable finance policies and regulations is needed<sup>15</sup>. This brings us to the final question of this paper, which is about **the link of bank financing with debt capital markets in financing the climate business opportunity in emerging markets.** ■

---

## CHAPTER V

# What Debt Capital Markets Instruments may Help Lenders in Scaling up Climate Financing?

Debt capital markets will play a significant role in supporting banks scale-up their balance sheet to finance the low-carbon transition. This is likely to take different forms. At the one end of the spectrum, lenders may need to access debt capital markets to raise longer dated liabilities to match the longer tenors required for climate investments in renewables and green buildings. This may include the issuance of green bonds and other debt and tier 2 capital instruments, where the loans remain on the books of the lenders. On the other end of the spectrum would be securitizations and other true sales of banks' assets into the debt capital markets, to increase the banks capacity to originate new loans within existing capital constraints. In between those two ends of the spectrum are a range of instruments that extend a bank's capacity to offer longer tenors, including covered bonds and on-balance sheet capital relief transactions.

Total debt capital issuances in the 21 markets covered in this analysis stood at US\$14.8 trillion in 2016. Projecting linear growth based on the past 10 years, debt capital markets would reach US\$28.3 trillion by 2030 (see Table 1.b of the Annex 1 for the detailed projections). It is likely that the green bond market will continue to outpace the overall debt capital market growth, which would specifically benefit the refinancing needs of banks and other lenders. Already banks in emerging markets represent the single largest issuer of green bonds. Based on IFC's survey results of its client banks, this trend is likely to continue. Only 1 out of 3 banks in the survey do not consider issuing a green bond in the next three years, as shown in Chart 7.

The following provides several examples of projects and transactions that are already available today, and which at scale may support the capacity of banks and other lenders to scale their lending to the green economy by 2030:

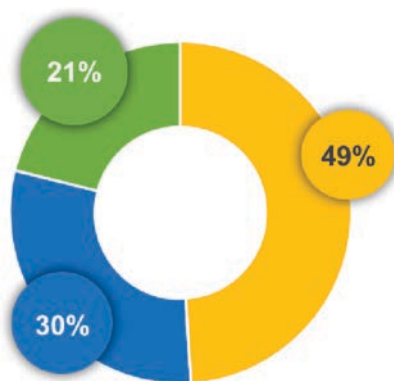
- **Infrastructure Debt Fund, in India:** Infrastructure Debt Fund ("IDF") is co-sponsored by Industrial Credit and Investment Corporation of India, Bank of Baroda, and Citibank, and was introduced by the

Government of India in 2012 to mobilize financing for long term infrastructure projects from capital markets investors. It also serves as a mechanism for commercial banks to address their asset liability mismatches by buying long term infrastructure loans and creating more headroom in their books for new project exposures. The central idea of IDF was to create a mechanism by which the institutional investors could be offered high quality fixed income assets that would be consistent with their investment guidelines in terms of credit quality, tenor and pricing and which would relieve them of the task of evaluating individual projects on a case by case basis. Also, the intent was to offer a mechanism that would service this asset portfolio on behalf of the institutional investors and handle the project portfolio management complexities at the level of the IDF itself.

- **BBOXX, in United Kingdom:** At the end of 2015, Oikocredit and BBOXX, a British-based solar energy provider, had teamed up to fund the distribution and financing of solar technology for low-income households in Kenya. The securitization structure



■ Yes  
■ No  
■ Maybe



Note: Sample of 129 banks

## CHART 7 Banks Planning to Issue Green Bond in the Next Three Years

Source: [IFC Compilation](#)

was created by setting up a special purpose vehicle: a company called BBOXX DEARs, that bundles the contracts of BBOXX customers who have bought solar home systems which are paid off in instalments. BBOXX DEARs then issues notes and sells them to Oikocredit. The value of the notes was based on future receivables on the customers' contracts. BBOXX therefore secured a landmark US\$500,000 securitization deal with Oikocredit. Since 2010, BBOXX has sold more than 55,000 solar kits and impacted over 250,000 lives across 35 countries, by providing more secure energy supplies which don't require an electrical grid infrastructure.

- **Amundi Emerging Planet One – previously, IFC Green Cornerstone Bond Fund – World Region:** Financing developing countries' shift to a greener path of growth can often be a challenge. Private investors frequently have both the capacity and appetite to invest in climate-smart projects in emerging markets, yet they lack the proper tools to make investments happen. To tackle this deficiency, IFC has recently partnered with leading asset management company Amundi to launch the world's largest green-bond fund dedicated to emerging markets—a US\$2 billion strategy aimed at unlocking private funding for climate-related projects. IFC is investing US\$256 million in the Green Cornerstone Bond Fund, which will buy green bonds issued by

banks active in emerging markets. Amundi has raised a total of US\$1.42 billion from investors worldwide and provides its services in managing EM debt. The fund aims to be fully invested in green bonds within seven years.

- **Covered Bonds, in Turkey:** In June 2017, IFC invested US\$150 million in the equivalent of Turkish lira in covered bonds issued by Turkey's Garanti Bank, aimed at helping to boost the development of green buildings in the country's housing sector. The five-year maturity bond is backed by a portfolio of residential mortgages. Half of IFC's funds will be used to provide green mortgages for the purchase of energy-efficient housing. The bond is issued as part of Garanti Bank's €5 billion covered bonds program, launched in 2015 and a relatively new funding instrument in Turkey's capital markets. The bank expects its green housing loans portfolio to be worth US\$100 million by the end of 2020. In a similar transaction, in October 2017, IFC also invested US\$150 million in Turkish Lira equivalent in covered bonds issued by Turkey's Yapi Kredi Bank, to help strengthen the country's capital markets and boost its residential mortgage sector, including green mortgages. IFC's investment in the issuance aims to support Turkey's nascent covered bond market. The bond has a five-year maturity and is issued as part of Yapi Kredi Bank's €1 billion covered bonds program launched in 2016. At least 15 percent of IFC's funds will be used to provide green mortgages for the purchase of energy-efficient housing. Yapi Kredi Bank expects its green housing loans portfolio to be worth US\$250 million by the end of 2021. By offering green mortgages, banks increase the purchasing power of buyers by folding in the costs of the home's improvements. Buyers can thus pay for features that lower utility bills, while banks can offer new loans.
- **FHipo, in Mexico:** Fideicomiso Irrevocable F/2061 FHipo ("FHipo") is the only publicly traded real estate investment trust ("REIT") in Mexico that provides returns to its investors on income generated by mortgages. It co-finances mortgages offered by Infonavit and Fovissste to workers with income levels below the equivalent of six monthly minimum wages. As a publicly listed entity, FHipo contributes to strengthening Mexico's capital markets, maximizing

finance for development by attracting private investors through its public issuances, including securitizations and covered bond offerings. The proceeds from the US\$110 million investment will be used by FHipo to consolidate its business model and grow its mortgage portfolio by at least 13,000 new loans within three years. Half of IFC's proposed investment will be dedicated to Green Buildings, with the main objective to contribute to the consolidation of the

first Mexican mortgage REIT as a unique asset class in Mexican capital markets, increasing liquidity of residential mortgage originators focused on low- and middle-income segments. It will not only contribute to an increase in the overall number of mortgages in Mexico, but also fosters climate change mitigation and promotion of Green Building Finance by financing building developments that reduce water and energy usage. ■



---

## CHAPTER VI

# Conclusion

The climate investment opportunity in emerging markets will require a significant amount of debt financing. Given that banks are the primary source of formal credit in emerging markets, they will have to play an important role in mobilizing the necessary private sector debt financing for those investments. To meet the expected debt levels associated with the climate business opportunity, banks would have to grow their climate related loans from an estimated 7% of their loan portfolios today, to at least 30% by 2030. Banks are increasingly ready, willing, and interested in climate financing. But they do need support to scale-up this line of business. Given that banks do take their cues from banking regulators, consistent policy support and regulatory guidance about both the risks and the

opportunities for climate financing in emerging markets will be important in accompanying a sound evolution of climate sector financing in emerging markets. Further, given the long tenors and significant financing volumes involved, banks will need to rely on debt capital markets for funding those lending operations. Only as those three elements come together, i.e. banks scaling their climate lending business, regulators providing consistent guidance on climate related risks and opportunities, and debt capital markets evolving to provide means for financing climate related debt, will we properly leverage the private sector to mobilize the necessary debt financing in emerging markets that the climate investment opportunity arising from the Paris Agreement presents. ■

---

## ANNEX 1

### Summary of the Analysis



#	Countries	Claims on Private Sector (2016) (US\$ billion)	Total Assets (2016) (US\$ billion)	GDP (2016) (US\$ billion)	Climate-Smart Lending as % of Claims on Private Sector (2016) in %	Climate-Smart Lending (2016) (US\$ billion)	Claims on Private Sector (2030) (US\$ billion)	Total Assets (2030) (US\$ billion)	GDP (2030) (US\$ billion)	Climate-Smart Investment Potential (2016–2030) (US\$ billion)
1	China *	16,791.6	33,176.2	10,031.6	7%	1,209.00	33,573.0	65,444.3	20,771.8	15,000.0
2	Indonesia	304.9	522.3	920.9	5%	15.25	641.2	1,035.0	1,855.0	274.0
3	Philippines	130.8	289.3	292.5	5%	6.54	234.9	517.6	508.9	115.0
4	Vietnam	206.1	N/A	184.1	5%	10.30	460.7	N/A	405.5	753.0
<b>East Asia &amp; Pacific</b>		<b>17,433.5</b>	<b>33,987.7</b>	<b>11,429.2</b>	<b>7%</b>	<b>1,241.1</b>	<b>34,909.8</b>	<b>66,996.9</b>	<b>23,541.1</b>	<b>16,142.0</b>
5	Argentina	68.4	168.8	505.8	5%	3.42	127.6	285.3	899.9	338.0
6	Brazil**	1,197.5	3,650.4	1,910.0	8%	95.80	2,767.5	7,564.9	3,529.8	1,300.0
7	Colombia	135.3	198.0	287.4	5%	6.77	265.0	387.9	503.1	195.0
8	Mexico	252.1	646.5	943.6	5%	12.60	438.3	1,131.2	1,514.8	791.0
<b>Latin America &amp; Caribbean</b>		<b>1,653.3</b>	<b>4,663.7</b>	<b>3,646.8</b>	<b>7%</b>	<b>118.6</b>	<b>3,598.4</b>	<b>9,369.3</b>	<b>6,447.6</b>	<b>2,624.0</b>
9	Bangladesh	97.0	185.5	219.2	5%	4.85	191.8	364.8	411.0	172.0
10	India	1,052.7	1,522.0	2,237.7	5%	52.64	2,264.6	3,228.1	4,317.8	3,000.0
<b>South Asia</b>		<b>1,149.7</b>	<b>1,707.6</b>	<b>2,456.9</b>	<b>5%</b>	<b>57.5</b>	<b>2,456.4</b>	<b>3,593.0</b>	<b>4,728.8</b>	<b>3,172.0</b>
11	Côte d'Ivoire	7.8	15.3	30.5	5%	0.39	14.0	28.0	51.7	10.0
12	Kenya	22.9	41.2	60.7	5%	1.15	46.4	80.8	123.6	81.0

**TABLE 1.A. Forecasting the Growth in Banking Sector to Support Low-Carbon Transition in 21 Emerging Markets**
*(continues)*

#	Countries	Claims on Private Sector (2016) (US\$ billion)	Total Assets (2016) (US\$ billion)	GDP (2016) (US\$ billion)	Climate-Smart Lending as % of Claims on Private Sector (2016) in %	Climate-Smart Lending (2016) (US\$ billion)	Claims on Private Sector (2030) (US\$ billion)	Total Assets (2030) (US\$ billion)	GDP (2030) (US\$ billion)	Climate-Smart Investment Potential (2016–2030) (US\$ billion)
13	Nigeria	52.7	104.9	336.6	5%	2.64	99.4	211.8	687.9	104.0
14	South Africa	211.6	364.1	315.4	5%	10.58	363.3	647.3	569.8	558.0
	<b>Sub-Saharan Africa</b>	<b>295.0</b>	<b>525.4</b>	<b>743.3</b>	<b>5%</b>	<b>14.7</b>	<b>523.1</b>	<b>967.9</b>	<b>1,433.0</b>	<b>753.0</b>
15	Russian Federation	743.7	1,343.2	1,378.0	5%	37.18	1,655.2	3,525.0	2,855.4	313.0
16	Serbia	15.8	30.8	35.9	5%	0.79	32.9	62.0	64.2	9.0
17	Turkey	485.9	774.3	734.1	5%	24.29	988.2	1,491.1	1,357.5	270.0
18	Ukraine	34.0	65.4	87.9	5%	1.70	74.0	134.5	156.1	73.0
	<b>Eastern &amp; Central Asia</b>	<b>1,279.4</b>	<b>2,213.7</b>	<b>2,236.0</b>	<b>5%</b>	<b>64.0</b>	<b>2,750.3</b>	<b>5,212.6</b>	<b>4,433.3</b>	<b>665.0</b>
19	Egypt	51.0	214.9	149.4	5%	2.55	72.3	309.4	311.5	174.0
20	Jordan	29.0	N/A	38.7	5%	1.45	49.3	N/A	74.8	23.0
21	Morocco	64.3	128.8	100.5	5%	3.21	122.9	235.0	157.8	68.0
	<b>Middle East &amp; North Africa</b>	<b>144.3</b>	<b>343.7</b>	<b>288.5</b>	<b>5%</b>	<b>7.2</b>	<b>244.6</b>	<b>544.4</b>	<b>544.2</b>	<b>265.0</b>
		<b>21,955.2</b>	<b>43,441.9</b>	<b>20,800.6</b>	<b>7%</b>	<b>1,503.1</b>	<b>44,482.7</b>	<b>86,684.1</b>	<b>41,128.0</b>	<b>23,621.0</b>

**TABLE 1.A. Forecasting the Growth in Banking Sector to Support Low-Carbon Transition in 21 Emerging Markets (Continued)**

All Figures expressed in Billions of US\$

Source: IFC. Compilation – using IMF – International Finance Statistics Yearbook 2017 for the period between 2005–2016<sup>12</sup>

Note: \* For China, we have assumed the Climate-Smart Lending as % of Claims on Private Sector, i.e. ~7.2%, on the basis of the data reported by CBRC (8.22 trillion yuan (end of June 2017) ~ USD 1,212.5 billion using the Jun17 Ex). \*\* For Brazil, it is assumed that the Climate-Smart Lending as % of Claims on Private Sector, i.e. ~8%, on the basis of the data reported by Febraban (BRL 309,080 million (in 2016) ~USD 94.96 billion using the Jun16 Ex).

#	Country	2016 (US\$ billion)	2030 (US\$ billion)	2016 %	2030 %
1	China	9,409.0	17,636.0	63.5%	62.3%
2	Indonesia	279.0	492.3	1.9%	1.7%
3	Philippines	129.0	316.4	0.9%	1.1%
4	Vietnam	3.0	6.2	0.0%	0.0%
5	Argentina	203.0	217.0	1.4%	0.8%
6	Brazil	2,203.0	4,100.2	14.9%	14.5%
7	Colombia	130.0	295.3	0.9%	1.0%
8	Mexico	700.0	1,537.0	4.7%	5.4%
9	Bangladesh	—	—	0.0%	0.0%
10	India	797.0	1,979.2	5.4%	7.0%
11	Côte d'Ivoire	4.0	8.5	0.0%	0.0%
12	Kenya	3.0	6.3	0.0%	0.0%
13	Nigeria	8.0	17.1	0.1%	0.1%
14	South Africa	235.0	399.9	1.6%	1.4%
15	Russian Fed.	423.0	843.3	2.9%	3.0%
16	Serbia	5.0	13.8	0.0%	0.0%
17	Turkey	249.0	357.8	1.7%	1.3%
18	Ukraine	6.0	24.8	0.0%	0.1%
19	Egypt	8.0	10.8	0.1%	0.0%
20	Jordan	5.0	9.9	0.0%	0.0%
21	Morocco	8.0	18.2	0.1%	0.1%
	SUM	14,807.0	28,289.9	100.0%	100.0%

**TABLE 1.B.** Forecasting the Growth in Debt Capital Markets From 2016 to 2030

Source: *Bank of International Settlements, data from December 31, 2005 to December 31, 2016*<sup>18</sup>

## ANNEX 2

# About IFC and Case Studies

### About IFC<sup>19</sup>:

- Member of the World Bank Group with a mission to promote development through investment in private sector;
- Owned by governments of 184-member countries, with over 50 percent of capital held by AAA/AA sovereigns;
- Strong financial profile with substantial capital and high liquidity;
- Consistently rated AAA/Aaa (stable outlook) by Standard & Poor's and Moody's; and
- Highly diversified global portfolio with debt and equity exposure in more than 120 countries and over 2,000 private sector clients.

### Case studies—IFC's experience in climate-smart financing through financial institutions in emerging markets

The following are some examples of IFC's investment and advisory support to scale climate-smart as well green finance activities through financial institutions:

- In China, IFC's CHUEE program was started in 2006 at the request of China's Ministry of Finance ("MOF") to IFC to support the implementation of energy efficiency ("EE") and renewable energy ("RE") projects in China. While financial institutions in China were highly liquid, they were risk averse and access to EE/RE credit was limited especially for SMEs due to lack of access to finance and lower awareness for EE/RE. By June 2016, projects directly supported by IFC's China Climate Finance Advisory program have reduced CO<sub>2</sub>e emissions by about 22 million p.a., and mobilized over US\$2.3 billion to finance over 231 EE/RE projects. In addition, CHUEE partner banks have become more confident on China's green lending market, CHUEE SME partner banks have issued over 1500 green loans independently, which helped to mobilize another US\$12 billion and achieved more CO<sub>2</sub>e emission reduction. Cumulatively, beyond IFC's RSFs, IFC's eight partner banks have now provided over US\$100 billion to green projects, per China's Banking Regulatory Commission.
- IFC partnered with the Agricultural Bank of China ("ABC"), which is the 3rd largest bank in China by asset size with 23,670 domestic branch outlets and more than 500,000 employees, to sign an agreement to provide advisory services that will help the bank increase its green finance portfolio by a minimum of US\$23 billion. The program is expected to reduce greenhouse gas emissions by 50 million metric tons CO<sub>2</sub>e p.a. within the next three years. To achieve this target, IFC and ABC will develop a multi-million-dollar pool of high-quality loans for EE and RE projects. Some of these loans will be securitized in secondary markets. On August 26, 2016, as ABC's green advisor, IFC provided 3rd Party verification on the issuance of green Assets-Backed Securities, the first such securities in China. Green ABS were issued on the Shanghai Stock Exchange for Goldwind Science and Technology. The Green ABS of value US\$190 million (CNY1.275 billion equivalent) were issued with terms of one to five years and issuance rates of 3.4 to 4.5 percent.
- Besides being an early issuer of green bonds, IFC has also been an early investor in green bonds for its clients. In 2014, IFC became the first international investor in a developing market Green Bond when it subscribed to a US\$50 million equivalent Indian Rupee Green Bond issued by YES Bank, a leading

Indian private sector bank. This was IFC’s first Green Bond investment, and first green bond investment denominated corporate bond investment and local currency in India. The investment helped establish a Green Bond program in YES Bank, to diversify its funding sources and tap into the nascent Green Bond capital markets (see Table 2 below for further details).

- IFC has since engaged with 12 more financial institutions in 8 different countries investing US\$1.25 billion in their respective first ever green bond issuances, expected to reduce green-house gas emissions by about 1.4 million tCO2e pa.

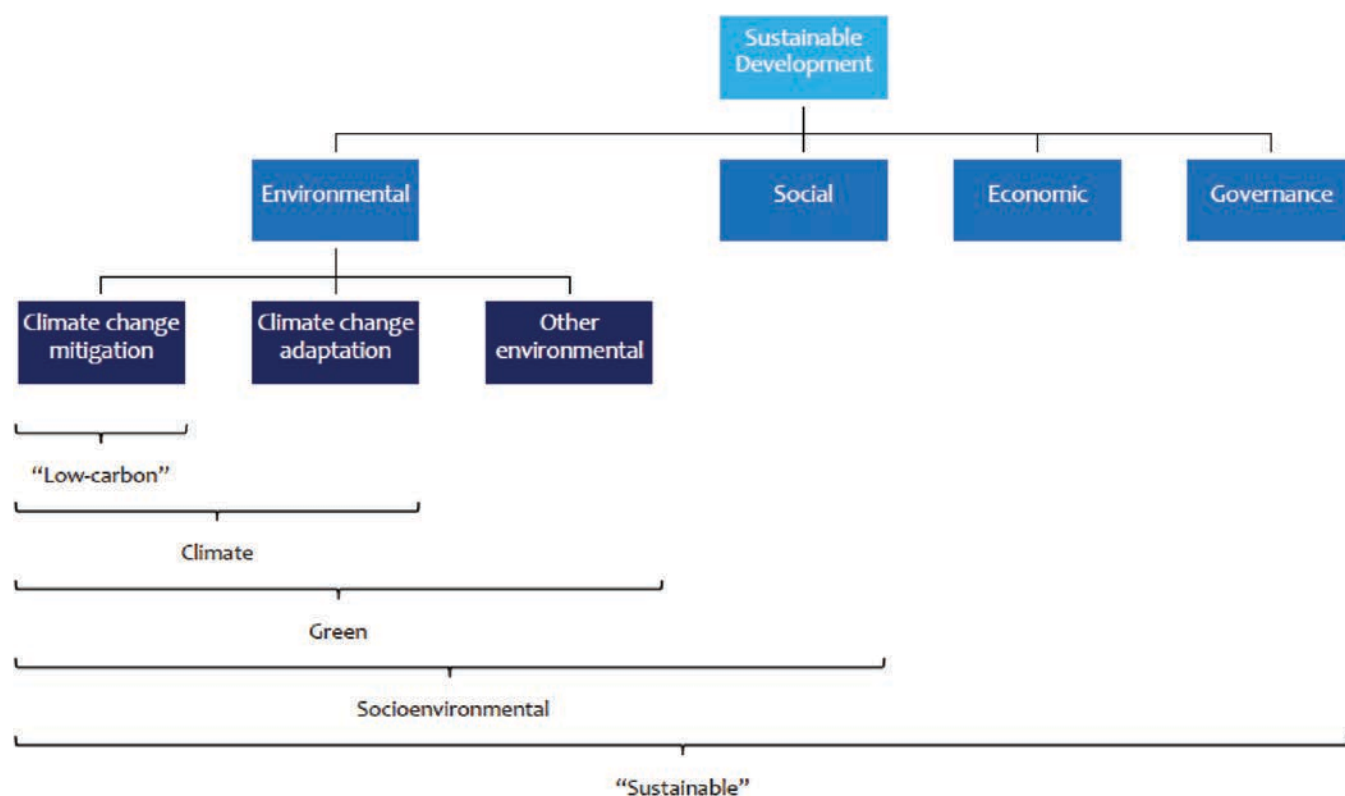
Issuer	Yes Bank, India
Issuance Status	Green Bond, Senior Unsecured
Issue Date	16 April 2014
Size	INR 3.15 billion (approx. US\$49.2 million)
Maturity	April 2024
Tenor	10 years
Coupon	8.95% Fixed
Listing	Not-Listed
Arranger	Citi

**TABLE 2** Investment Summary of YES Bank Green Bond

Source: [IFC Compilation](#)

## ANNEX 3

### A Simplified Schema on Broad Terms of Sustainable Development



Source: [Definitions and Concepts Background Note, UNEP Inquiry Working Paper \(16/13\)](#)<sup>5</sup>

---

## ANNEX 4

# Summary of Green Business Opportunities for Banks in Emerging Markets

# GREEN BUSINESS OPPORTUNITIES FOR FINANCIAL INSTITUTIONS

## HOW TO FOSTER GREEN AND CLIMATE FRIENDLY INVESTMENTS

### East Asia and Pacific

• US\$ 16,046 billion

### Latin America and the Caribbean

• US\$ 2,640 billion

### South Asia

• US\$ 2,234 billion

### Europe and Central Asia

• US\$ 665 billion

### Sub-Saharan Africa

• US\$ 783 billion

### Middle East and North Africa

• US\$ 265 billion

## US\$ 23 TRILLION

Is the investment opportunity  
for climate in emerging  
markets that needs to be  
financed by 2030

### Buildings

• US\$ 16,334 billion

### Transport

• US\$ 3,699 billion

### Renewables

• US\$ 1,765 billion

### Electric transmission and distribution

• US\$ 413 billion

### Industrial Energy Efficiency

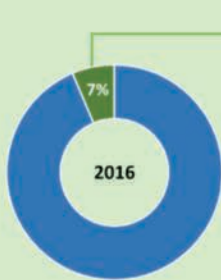
• US\$ 307 billion

### Waste

• US\$ 115 billion

## BANKS ARE READY, WILLING AND INTERESTED TO MOBILIZE PRIVATE SECTOR FINANCING FOR CLIMATE BUSINESS...

### GREEN BANK LOANS NEED TO GROW



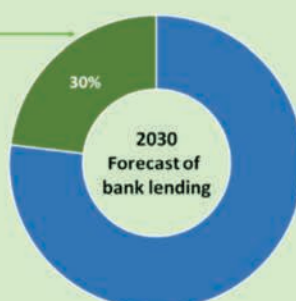
US\$ 22 TRILLION

■ Bank loans ■ Bank lending for climate

...AND

### BANKS NEED SUPPORT

- 1 To identify market opportunities and risks
- 2 To analyze their current portfolio related to climate
- 3 To acquire technical expertise to develop green lending
- 4 To develop marketing/product strategy and impact reporting
- 5 To mobilize financial resources for green growth



US\$ 44.5 TRILLION

Source: IFC's compilation for 21 emerging markets

## THREE KEY INGREDIENTS FOR GREENING THE FINANCIAL SECTOR



IF EVEN ONE OF THESE INGREDIENTS FAILS, PRIVATE SECTOR CLIMATE FINANCING WILL FALL SHORT



# REFERENCES

- <sup>1</sup> International Energy Agency, World Energy Investment Outlook, 2014; access at [https://www.iea.org/publications/freepublications/publication/WEIO\\_2014\\_ES\\_English.pdf](https://www.iea.org/publications/freepublications/publication/WEIO_2014_ES_English.pdf)
- <sup>2</sup> Climate Investment Opportunities in Emerging Markets, An IFC Analysis, 2016; access at [https://www.ifc.org/wps/wcm/connect/51183b2d-c82e-443e-bb9b-68d9572dd48d/3503-IFC-Climate\\_Investment\\_Opportunity-Report-Dec-FINAL.pdf?MOD=AJPERES](https://www.ifc.org/wps/wcm/connect/51183b2d-c82e-443e-bb9b-68d9572dd48d/3503-IFC-Climate_Investment_Opportunity-Report-Dec-FINAL.pdf?MOD=AJPERES)
- <sup>3</sup> Climate Investment Opportunities in South Asia, An IFC Analysis, 2017; access at <http://www.ifc.org/wps/wcm/connect/be4dacbd-18d1-4159-b9e9-e6a95e094d7a/Climate+Investment+Opportunities+in+South+Asia+-+An+IFC+Analysis.pdf?MOD=AJPERES>
- <sup>4</sup> Sustainable Finance: Commission's Action Plan for a Greener and Cleaner Economy, March 2018; access at [http://europa.eu/rapid/press-release\\_IP-18-1404\\_en.htm](http://europa.eu/rapid/press-release_IP-18-1404_en.htm)
- <sup>5</sup> Definitions and Concepts Background Note, UNEP Inquiry Working Paper (16/13), September 2016; access at [http://unepinquiry.org/wp-content/uploads/2016/09/1\\_Definitions\\_and\\_Concepts.pdf](http://unepinquiry.org/wp-content/uploads/2016/09/1_Definitions_and_Concepts.pdf)
- <sup>6</sup> IMF: International Financial Statistics, Yearbook 2017; access at <https://www.bookstore.imf.org/books/title/international-financial-statistics-yearbook-2017>
- <sup>7</sup> Input Paper for the G20 Green Finance Study Group - Greening the Banking System - Experiences from the Sustainable Banking Network; access at: [https://www.ifc.org/wps/wcm/connect/da980744-987e-496d-82e8-e5f146895165/SBN\\_PAPER\\_G20\\_updated+08312016.pdf?MOD=AJPERES](https://www.ifc.org/wps/wcm/connect/da980744-987e-496d-82e8-e5f146895165/SBN_PAPER_G20_updated+08312016.pdf?MOD=AJPERES)
- <sup>8</sup> Measuring financial resources allocated to the Green Economy, November 2017; access at [https://cmsportal.febraban.org.br/Arquivos/documentos/PDF/-L04\\_Mensurando\\_recursos\\_ING.pdf](https://cmsportal.febraban.org.br/Arquivos/documentos/PDF/-L04_Mensurando_recursos_ING.pdf)
- <sup>9</sup> IFC works with its bank partners to support the trade of goods and services that enable their corporate clients to adopt energy efficient technologies, cut carbon emissions, and ensure the sustainability of their operations and their supply chains. Through IFC's Climate-Smart Trade initiative, IFC provides a price incentive or longer tenors for equipment and projects guaranteed under the Global Trade Finance Program ("GTFP") that have clearly defined climate change benefits; access at [https://www.ifc.org/wps/wcm/connect/industry\\_ext\\_content/ifc\\_external\\_corporate\\_site/financial+institutions/priorities/global+trade/gfm-tsc-gtfp-ee-info](https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/financial+institutions/priorities/global+trade/gfm-tsc-gtfp-ee-info)
- <sup>10</sup> While banks are increasing their commitments to climate related lending, they continue to have significant exposure to high GHG emitting projects. In 2017, the world's biggest banks increased their financing of "extreme fossil fuels" by 11 per cent, committing US\$115 billion to fund projects in tar sands, Arctic and ultra-deepwater oil extraction, liquefied natural gas export, coal mining and power; access at <https://www.business-humanrights.org/en/global-funding-for-extreme-fossil-fuels-increased-by-11-in-2017-new-report-finds>
- <sup>11</sup> This is an average across all 21 countries. However, there are countries in which the climate investment opportunity is larger than the bank lending to the private sector. For those countries, the importance of non-bank lending and direct capital market financing becomes even more important.
- <sup>12</sup> Report on Green Finance Reveals Multi-Billion Dollar Opportunity for Latin America Banking Sector Study by FELABAN, IFC and EcoBusiness Fund Also Recognizes Regional Leaders in Climate Finance; access at <https://ifcext.ifc.org/ifcext/Pressroom/IFCPressRoom.nsf/0/E19540BCB622A7E0852581D9006E462E?OpenDocument>
- <sup>13</sup> The Federation of Latin American Banks ("Felaban") is a non-profit entity founded by banking associations and other agencies from 19 Latin American countries in Mar del Plata, Argentina, in 1965, and it includes over 500 regional banks. Its goals are to promote and facilitate communication, understanding and relationships between financial entities; to support the coordination of criteria and the unification of general banking and financial practices in Latin America; to cooperate with economic development; to promote well-being; and to procure greater access to financial services for low income populations. For more information; access at [www.felaban.com](http://www.felaban.com)
- <sup>14</sup> The eco.business Fund is spearheading the promotion of business practices that contribute to the preservation of biodiversity, the sustainable use of natural resources, and climate change mitigation and adaptation through private enterprises. By providing financing for business practices that conserve nature and foster biodiversity, the fund seeks investments with both financial and environmental returns. The eco.business Fund is structured as a public-private partnership (BMZ, European Union, KfW, FMO, OeEB, GLS Bank, Calvert Foundation, ASN Bank, and Conservation International), and it was co-created and advised by Finance In Motion.
- <sup>15</sup> SBN Global Progress Report, IFC, February 2018; access at <http://www.ifc.org/sbnreport>
- <sup>16</sup> Measuring financial resources allocated to the Green Economy, November 2017; access at [https://cmsportal.febraban.org.br/Arquivos/documentos/PDF/-L04\\_Mensurando\\_recursos\\_ING.pdf](https://cmsportal.febraban.org.br/Arquivos/documentos/PDF/-L04_Mensurando_recursos_ING.pdf)
- <sup>17</sup> IMF: International Financial Statistics, Yearbook 2017 and Climate Investment Opportunities in Emerging Markets, An IFC Analysis, 2016. Also, the climate-smart lending data for India and Bangladesh is sourced from the Climate Investment Opportunities in South Asia report, An IFC Analysis (2017).
- <sup>18</sup> Bank of International Settlements; access at [https://www.bis.org/statistics/about\\_securities\\_stats.htm?m=6%7C33%7C638](https://www.bis.org/statistics/about_securities_stats.htm?m=6%7C33%7C638)
- <sup>19</sup> For more information, access at [https://www.ifc.org/wps/wcm/connect/corp\\_ext\\_content/ifc\\_external\\_corporate\\_site/home](https://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/home)





IFC  
2121 Pennsylvania Avenue, N.W.  
Washington, D.C. 20433 U.S.A.

[ifc.org](http://ifc.org)

## **Contacts**

PEER STEIN | [pstein@ifc.org](mailto:pstein@ifc.org)

GURSIMRAN ROOPRAI | [grooprai@ifc.org](mailto:grooprai@ifc.org)