
Latin America and the Caribbean: Financing Nature-based Solutions for Cities

Lizzie Marsters | Environmental Finance Manager

Water Program | Cities4Forests | November 17, 2021



WORLD
RESOURCES
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Seventy-five member cities, and growing



AGENDA

- The Opportunity for Cities in Latin America and the Caribbean (LAC)
- Key Challenges to Unlocking Climate Finance for City-led NBS
- Successful Strategies and Case Studies
- Next Steps

EVER-INCREASING CAPITAL FOR GREEN INVESTMENTS

COMPANIES / FINANCIAL SERVICES

BusinessDay

Natural Capital alliance targets \$10bn by 2022 to invest in nature

New strategy is to allocate capital to companies that harness or preserve basic resources and the environment

BL PREMIUM

11 JANUARY 2021 - 20:12 by WARREN THOMPSON

COP26

November 3, 2021
11:27 AM PDT

COP26 coalition worth \$130 trillion vows to put climate at heart of finance

By Simon Jessop and Andrea Shalal

- Finance firms managing \$130 trillion join net-zero pledge
- Carney says the money is there, but needs mechanisms
- Investors want scale, transparency and public commitment



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LEVERAGE OPPORTUNITY IN LAC

**Infrastructure investment need:
\$179 – 313 billion per year***

* Cavallo et al. 2020

NATURE IS COMPLEMENTARY INFRASTRUCTURE



Nature-based solutions (NBS) refer to the “strategic restoration, protection, or management of ecosystems to intentionally address societal challenges”



An economy focused on nature-based solutions creates about

7%

more jobs globally than the business-as-usual scenario and stimulates

8%

more short-term domestic **economic activity.**

Source: Vivid Economics 2020



An aerial photograph of a city street intersection. A road runs vertically through the center, flanked by dense green trees and vegetation, forming a buffer zone. The road has several cars driving on it. In the background, there are residential buildings and more urban development. The text is overlaid on the image.

Creating **forested buffer zones** near
roadways at risk of landslides can be
16 times
more cost-effective than repairing
damages from disaster-related events.

Source: Grima et al. 2020



Restoration and
conservation practices in
agriculture can yield
18-56 times
the return on investment
after 30 years.

Source: Hawken 2017

Geographic Distribution of 156 Nature-Based Solution Projects



Source: Authors.

2/1/2018



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INCREASING CAPACITY & FINANCE

NEWS RELEASES

November 02, 2021

IDB Leads Multilateral Development Banks to Boost Nature-Based Investments

INTERNATIONAL INSTITUTIONS SIGNED AN IDB LED JOINT-STATEMENT AT COP26 AND ANNOUNCE PLAN TO MAINSTREAM NATURE INTO POLICIES, ANALYSIS, AND INVESTMENTS

Glasgow - Multilateral Development Banks (MDBs) led by the Inter-American Development Bank (IDB) pledged today to mainstream nature across their policies and to significantly boost nature finance for member countries. The banks' joint statement "**Nature, People, and Planet**" commits support for countries to define and enact sustainable strategies.

IDB President Mauricio Claver-Carone led the announcement during the World Leaders Summit event on Forests and Land Use at the [UN Climate Change Conference COP26](#).



NBS FAILS TO SECURE GREEN FINANCE

***\$30 billion** spent on adaptation in 2017-18, only roughly \$500 million--a mere **1.6%**--came from private adaptation spending. – World Bank Report*

*NBS for adaptation only accounts for **\$3.8–\$8.7 billion of international public assistance** —or **0.6–1.4 percent of total climate finance flows** —and relative to more than \$140 billion per year in adaptation investment needs in developing countries (UNEP 2021)*

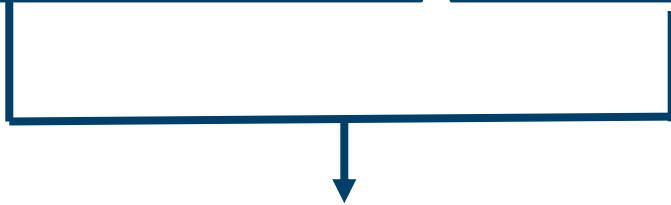
BUSINESS AS USUAL

PHILANTHROPIC

- Foundations
- Corporate Social Responsibility (CSR) contributions

GOVERNMENT

- Sovereigns
- Cities



Natural Climate & Conservation Solutions

- Forest restoration
- Regenerative agriculture
- Coral & Oyster reefs
- Beaches & sand dunes
- Natural floodplains

Small-scale (>\$5 million)

- Community-led
- Impact-driven
- Unproven business case
- Sector Expertise

KEY ACTORS FOR COLLABORATION

PHILANTHROPIC

- Foundations
- Corporate Social Responsibility (CSR) contributions

GOVERNMENT

- Sovereigns
- Subnationals
- Utilities

CLIMATE FUNDERS

- MDBs
- Green Climate Fund

CORPORATE

- Institutional Investors
- Corporations
- Impact Investors

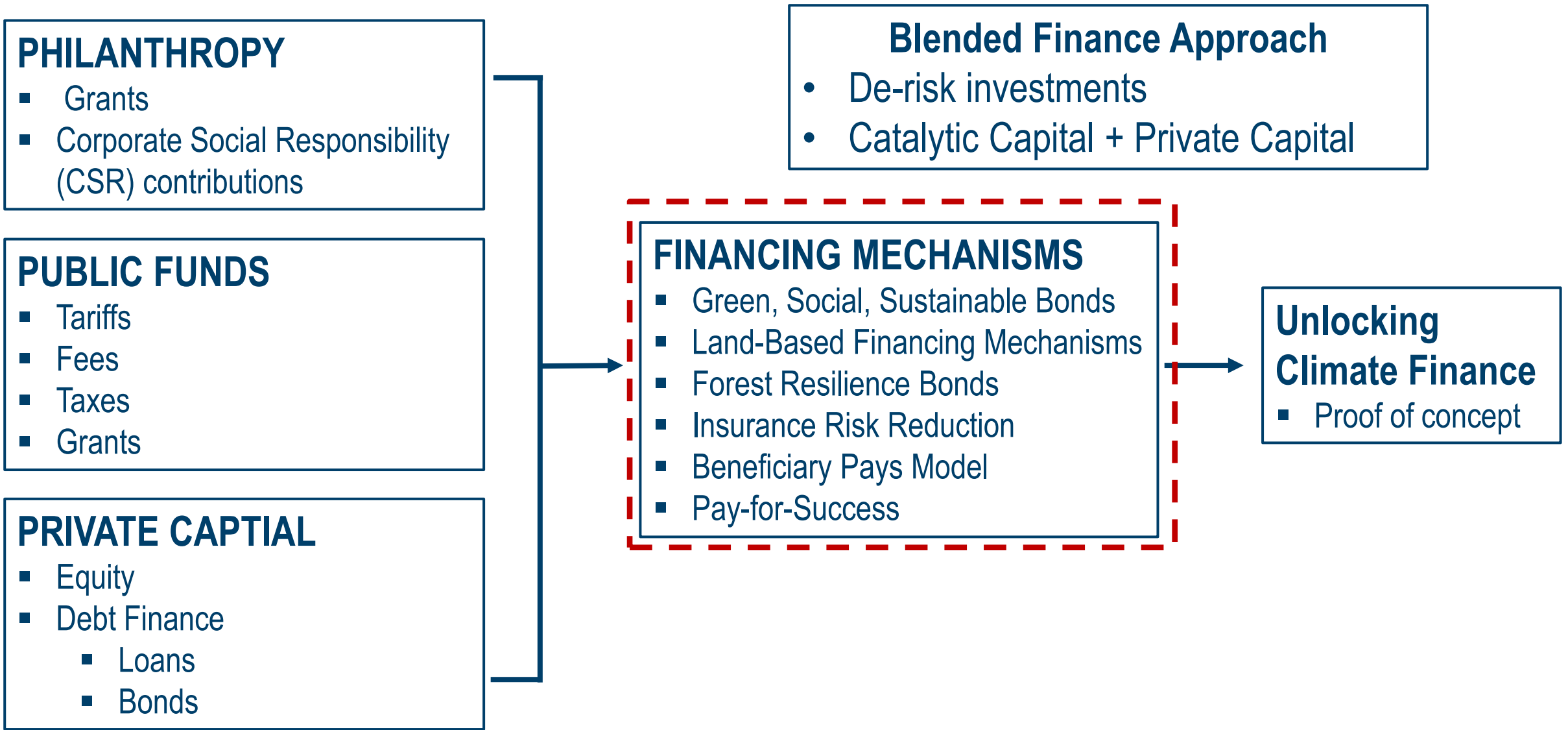
Landscape -scale (<\$25 million)

- Community-led + aggregation
- Impact-driven + revenue generating
- New partnerships
- Inclusive economic growth
- Proof of Concept

Green-Gray Infrastructure Solutions

- Forest restoration +
- Regenerative agriculture +
- Oyster reefs
- Beaches, sand dunes +
- Natural floodplains +

FINANCING SOURCES AND SEQUENCING



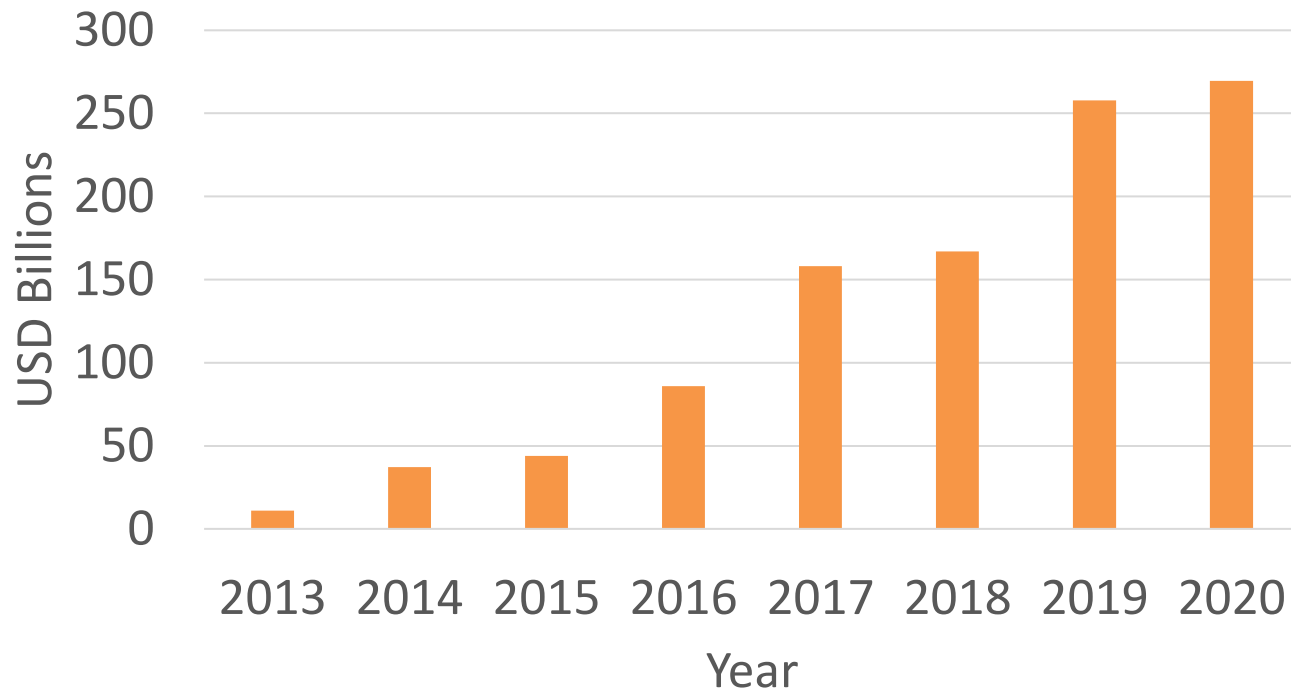
STRATEGIES TO FINANCING GREEN-GRAY

To finance NBS at scale, we need to:

1. Incorporate NBS into traditional gray infrastructure design and plans
 - Green bonds
2. Utilize subnational / utility revenue-generating levers
 - Green bonds
 - Land-based financing mechanisms
3. Establish dedicated annual cash flows to increase investor confidence
 - Taxes
 - Endowments
4. Blended finance approach to de-risk investments and unlock private finance

GREEN BONDS FOR INFRASTRUCTURE

Green Bond Issuances Increase Every Year



Cumulative Issuance to date **US \$1.002 trillion**

Climate Bonds Initiative (CBI)

- 13 out of 33 LAC countries issued green bonds as of 2020
- Climate Benefits & GhG Reductions
- Adaptation & Resiliency

NETHERLANDS SOVEREIGN GREEN BOND ISSUANCES



- Photo: Dutch Ministry of Finance

Netherlands:

- Issuer: Dutch Ministry of Finance
- €5.985 billion certified green bond in 2019
 - Low carbon green/gray
 - Interest Rate: 0.50%
 - 3.5x oversubscribed
- Repayment sources
 - Taxes
- Follow-on 2020 € 1.715 billion green bond

CAW'S FIRST-EVER CERTIFIED GREEN BOND

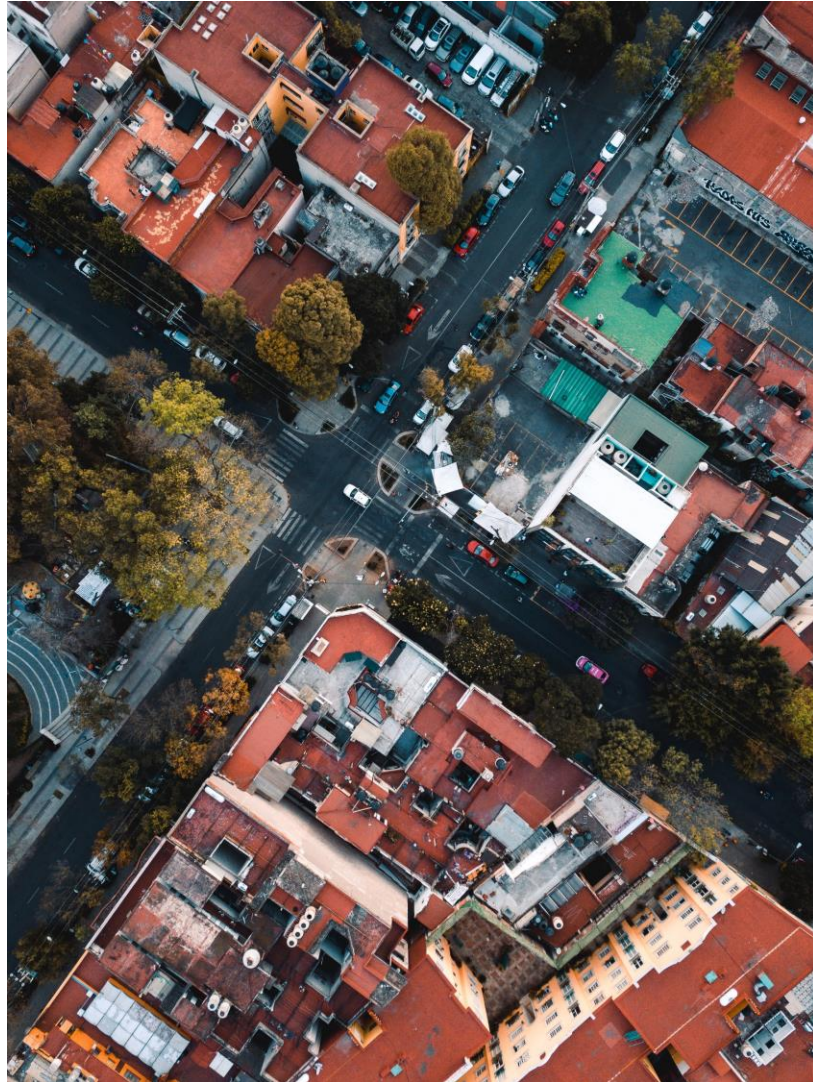
Little Rock, AR:

- \$31.8 million certified green bond
 - 33% for forest protection
 - 66% for gray infrastructure
 - True Interest Cost: 2.136%
 - Premium paid by Morgan Stanley
- Layering repayment sources
 - Sustainable timber
 - Carbon credits
 - Dedicated watershed protection fee
 - Ratepayer fees



• Photo: Central Arkansas Water

TACUBAYA'S LAND-BASED FINANCING MECHANISMS



Mexico City, MX:

- SAC Tacubaya ~425-1,549 million pesos (US\$22-81 million)
 - Transportation Centers
 - Public Markets
 - Affordable Housing
 - Green-gray Water Infrastructure
- Revenue generating sources
 - Impact fees
 - Building rights transfers
 - Development fees

FIRST-EVER INSURANCE POLICY FOR NBS

Quintana Roo, Mexico:

- Trust for Coastal Zone Management, Social Development, and Security
 - Dedicated funding from hotel tax
 - Funding restoration + insurance policy

Parametric Insurance Policy

- Max payout US\$3.8 million (2019) and \$2.1 million (2020)
- Funds pay brigades



FONAG WATER FUND



Quito, Ecuador:

Water Fund Operating Budget: \$2.5 million

- 40% from endowment
 - 32% from dedicated contributions from water utility
 - 28% from grants from businesses, public and private donors
-
- Endowment Size: \$21.5 million
 - Average annual returns: \$1 million

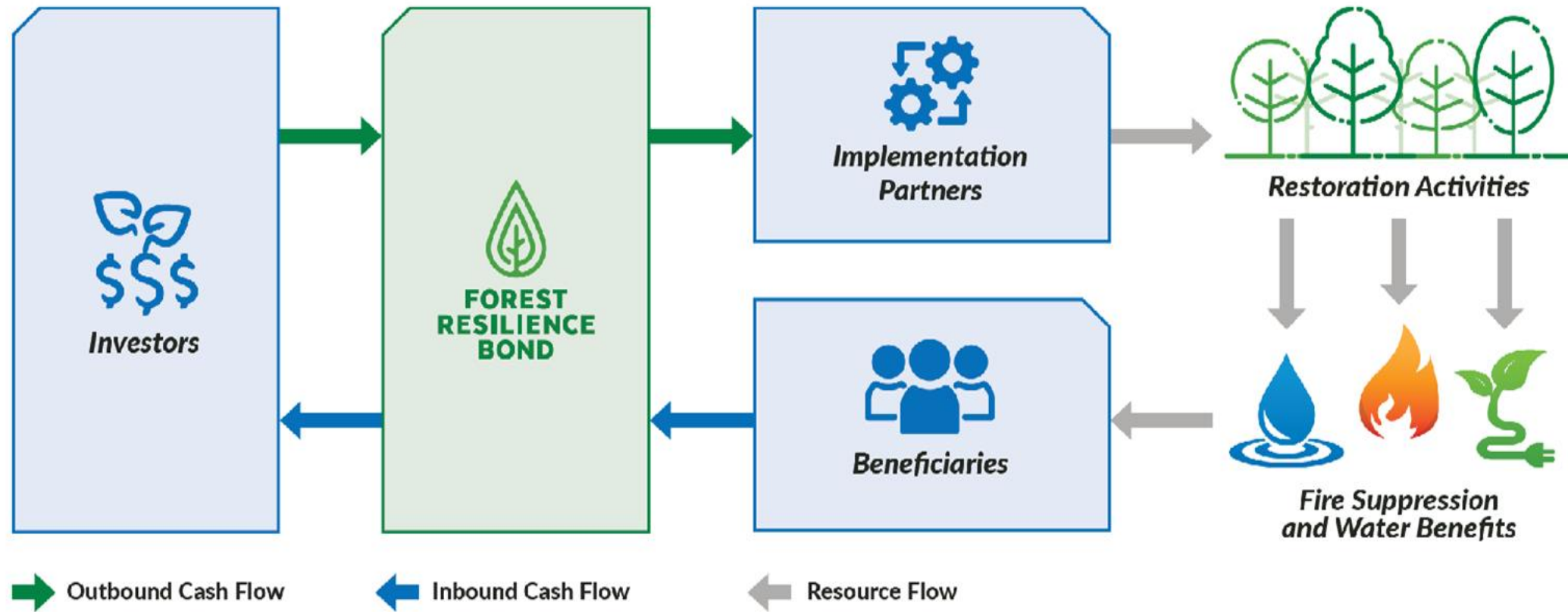
BLENDED FINANCE: FOREST RESILIENCE BONDS

California

- **Forest Resilience Bond**
 - \$25 million raised from private investors
 - Forest restoration on 48,000 acres
 - Increase water yield, quality, and reduce catastrophic fire risk
- Builds on \$4.6 million FRB
 - Fuel reduction on 15,000 acres
- Repayment sources
 - California State Climate Program
 - Yuba Water Utility



BLENDING FINANCE: FOREST RESILIENCE BONDS



NEXT STEPS TO UNLOCKING GREEN FINANCE

1. Establish transparent and dedicated funding mechanisms for infrastructure and NBS
2. Aggregate projects to achieve scale
3. Integrating NBS into planning/policy for optimal green-gray mix
4. Expand pipeline of investment-ready projects
5. Invest in cross-sectoral knowledge and financial capacity
6. Grow evidence base and monitoring data on benefits

Thank you!

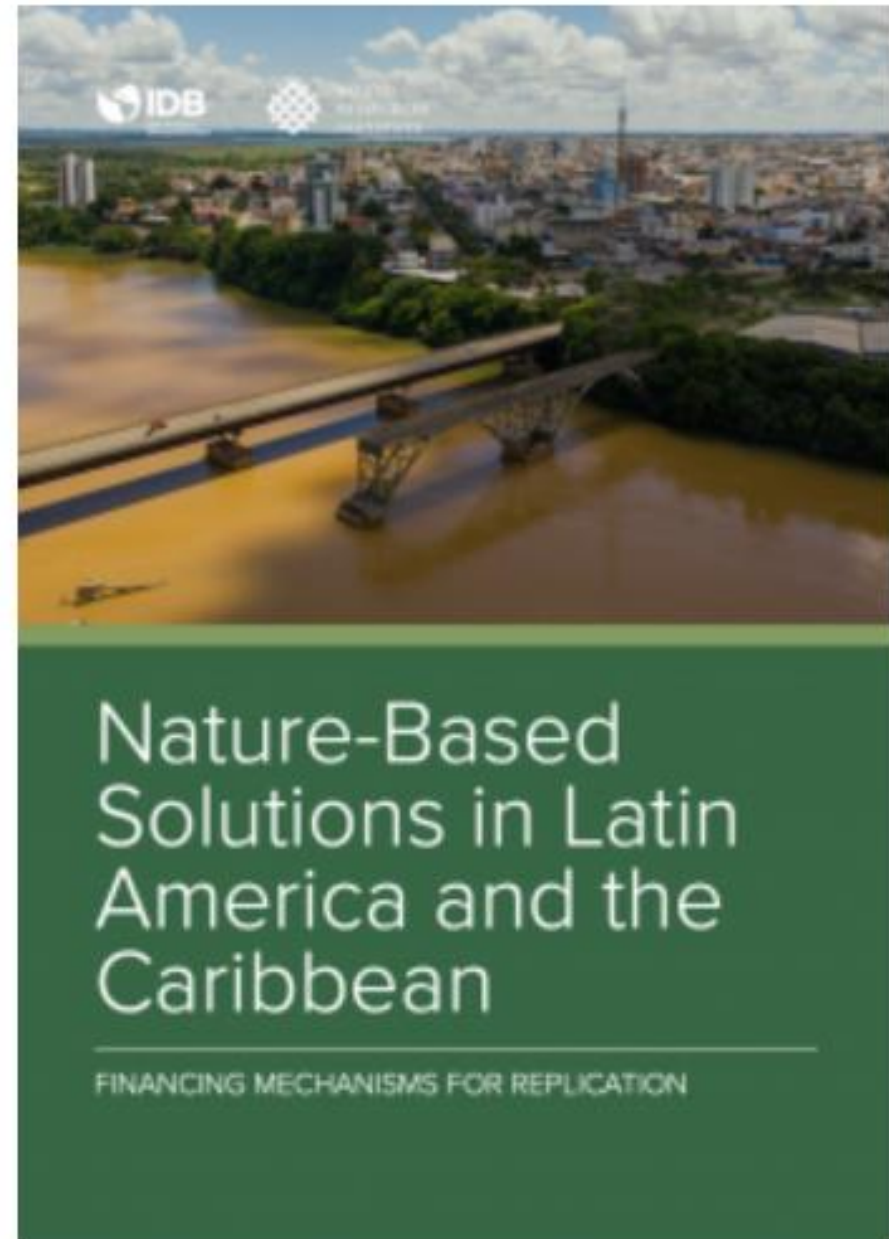
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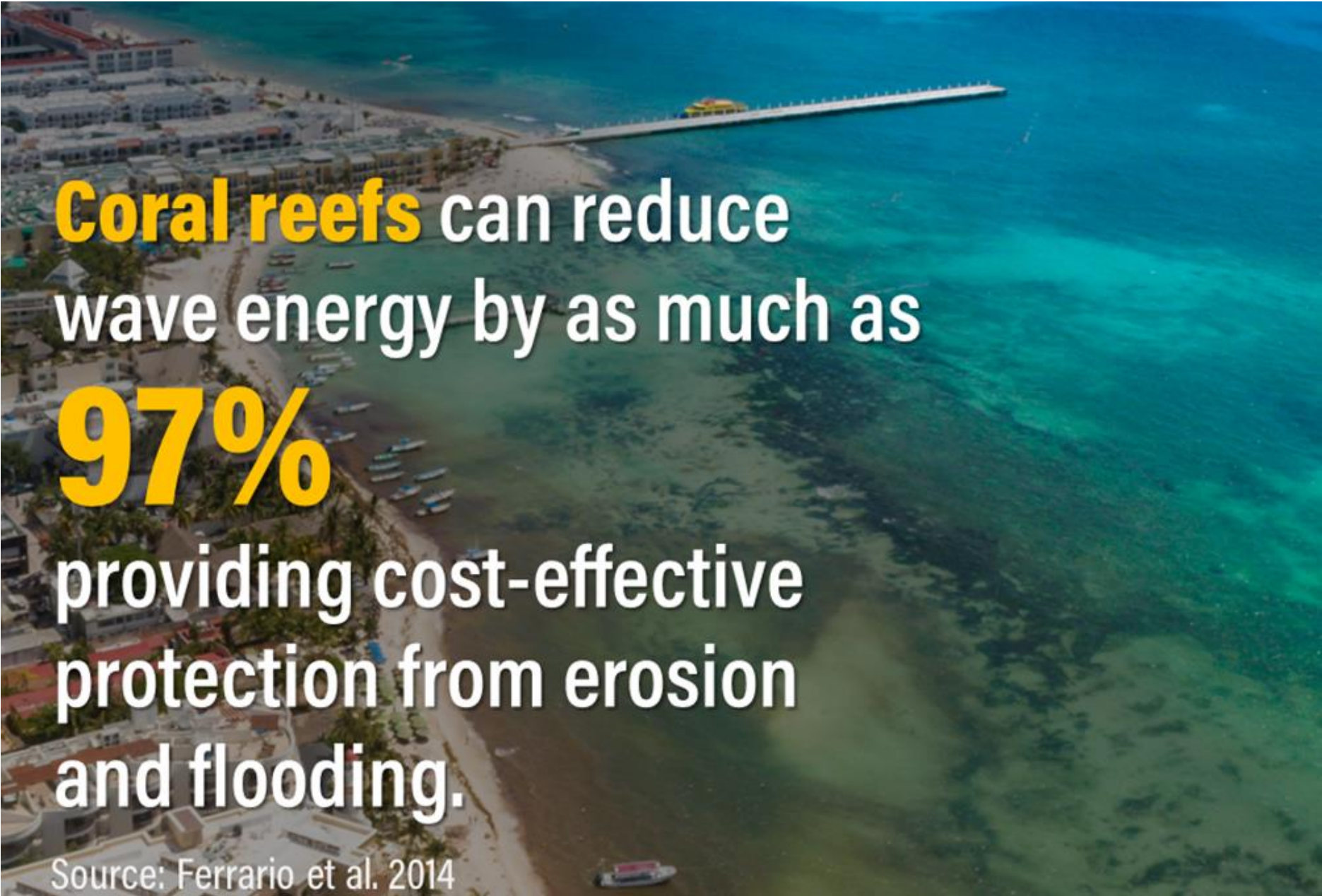
World Resources Institute

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THE OPPORTUNITY IN LAC

- The region hosts over:
 - 40 percent of the world's biodiversity¹
 - 12 percent of its mangrove forests²
 - 10 percent of its coral reefs²
 - The largest expanse of wetlands²



Coral reefs can reduce
wave energy by as much as
97%
providing cost-effective
protection from erosion
and flooding.

Source: Ferrario et al. 2014



Development Promotion Fund **FONPRODE**



November 17th

What is it?

Combating poverty is the main goal of the Spanish Agency for International Development Cooperation (AECID).

The Development Promotion Fund (FONPRODE) makes available to Spanish Cooperation a set of instruments, involving both reimbursable transactions –basically loans and capital transactions– and donations, in order to contribute to achieving this goal.

FONPRODE is a dedicated instrument at the service of the entire Spanish Cooperation system, exclusively dedicated to operations of an untied nature. Its fundamental goals are eradicating poverty, reducing social inequalities and inequities between people and between communities, promoting gender equality, defending human rights, and achieving the sustainable human development of impoverished countries.

FONPRODE was created by Act 36/2010, of 22 October, and was amended by Act 8/2014. Its operations are governed by its own regulations, approved by Royal Decree 845/2011, of 17 June.

Main Features

FINANCIAL OPERATIONS

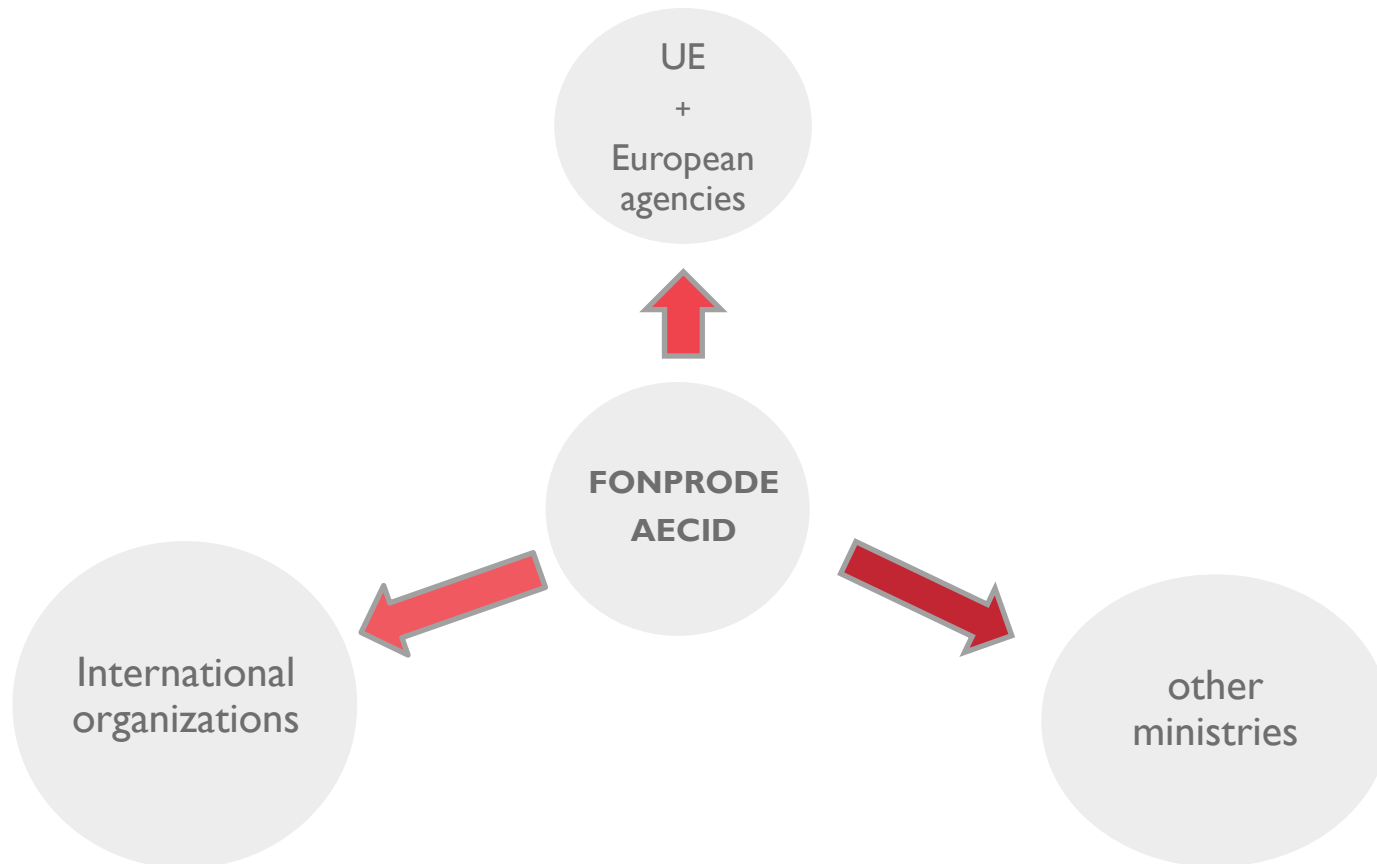
- Credits to States with sovereign guarantee
- Financial inclusion
- Investment funds

CURRENCY: Anyone admitted to trading by the ECB, mainly euro and dollar

MAIN SECTORS

- Water and sanitation
- Environment and renewable energies
- Sustainable Cities
- Financial Inclusion

Lines of Action - Alliances



Lines of Action - Alliances

- Co-financing agreements with IFIs.
 - Signature Framework Agreement with Inter-American Development Bank (04/01/2017).
 - Signature Framework Agreement with the World Bank (01/23/2019).
 - Signature Framework Agreement with IDAF (09/22/2020).
- Strengthening of European financial cooperation.
 - MOU with French Development Agency AFD (05/08/2017).
 - Enhanced cooperation mechanism participation with FIDs (KfW, AFD and CDP).
- **Recourse to EU / BLENDING technical assistance funds. LAIF sustainable cities € 5 million**
- Active collaboration with other departments and financial instruments of the General State Administration (Spain) .
- Active participation in the European Plan for Foreign Investments: Sub-Saharan Africa and the Neighborhood. Approved initiatives (guarantees):
 - RECIDE (Resilient City Development Program): € 100 million;
 - InclusiFI: € 20 million;
 - Renewable Energies: € 20 million.

FONPRODE in numbers

Financed Operations (total Budget)

**517
MM €**

**65
countries**

58 operations

**+276.000
jobs**

**56%
women**



Main Sectors

**52%
International
organizations**

**16%
Investment
funds**

**27%
financial
inclusion
operations**

**5%
Credits to
States**

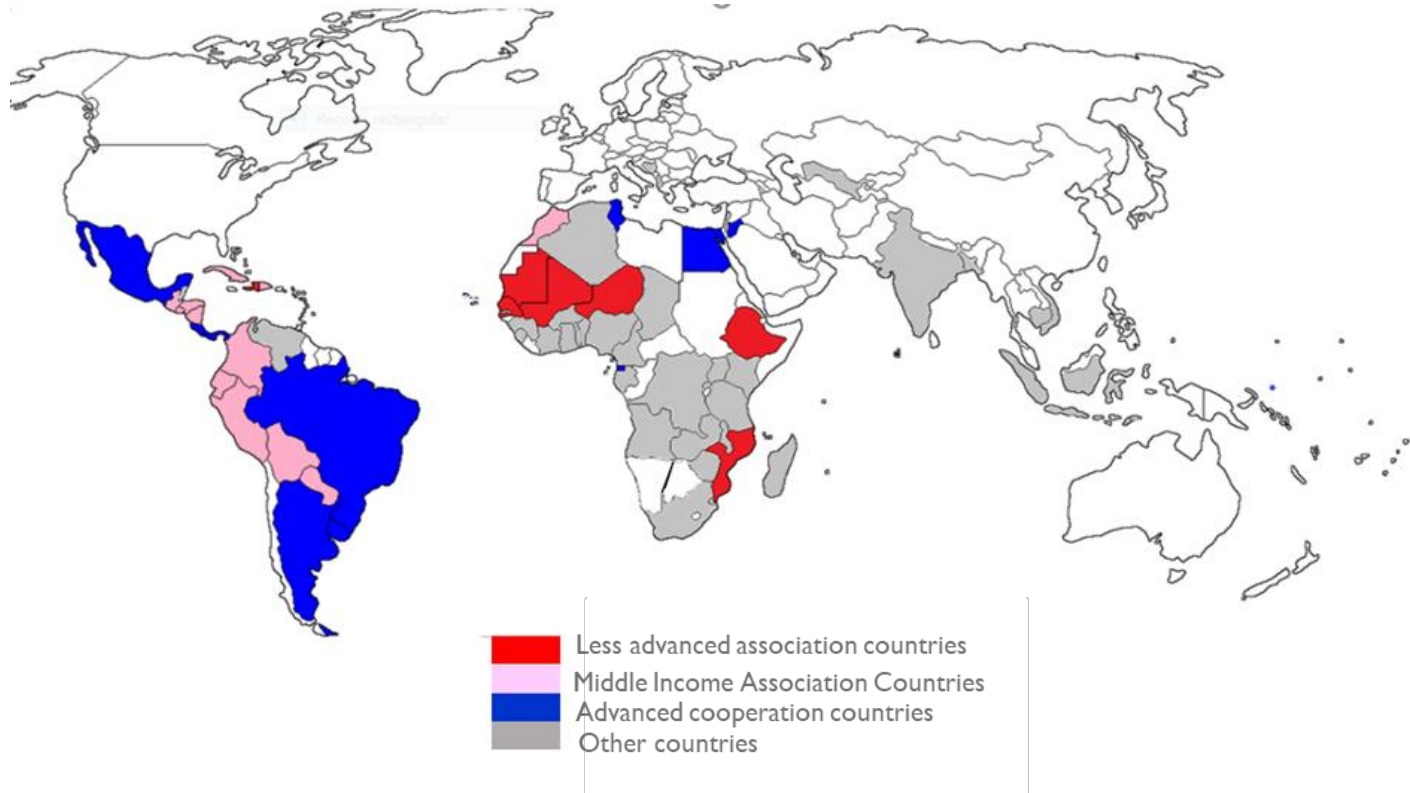
**52%
Agroindustry
and Rural
Development**

**27%
Inclusive
Finance**

**8%
Support for
SMEs and the
productive
sector**

**10%
Productive
infrastructures
3%
Others**

Where?



Where?

PAIS	PROYECTO	IMPORTE (millones)	DIVISA
PARAGUAY	Programa de Mejoramiento de Caminos Vecinales en la Región Oriental	25,0	USD
EL SALVADOR	Programa de Caminos Rurales Progresivos y Mejoramiento de Caminos a Nivel Nacional	30,0	USD
ECUADOR	Proyecto de Irrigación Tecnificada para Pequeños y Medianos Productores y Productoras - PIT	20,0	USD
PARAGUAY	Programa de Agua Potable y Saneamiento para Pequeñas Ciudades y Comunidades Rurales e Indígenas	20,0	USD
PANAMÁ	Programa de Saneamiento de los Distritos de Arraiján y La Chorrera - PSACH	50,0	USD
JORDANIA	Mar Rojo - Mar Muerto	30,0	EUR
BOLIVIA	Programa de Gestión Integral del Agua en Áreas Urbanas	30,0	USD
NIGER	Proyecto de Irrigación PARIIS	15,0	EUR
ECUADOR	Programa de Agua Potable y Alcantarillado para Quito	40,0	USD
ECUADOR	Programa de Agua potable y Alcantarillado del Cantón de Portoviejo	17,0	USD
PANAMÁ	Programa de Acceso Universal a la Energía	15,0	USD
HONDURAS	Programa de Desarrollo Integral en Zonas Rurales	35,0	USD
SENEGAL	Proyecto de Irrigación PARIIS	15,0	EUR
MALI	Proyecto de Irrigación PARIIS	10,0	EUR
PARAGUAY	Programa de Agua y Saneamiento AMA - Cuenca Lambaré	60,0	USD
PERÚ	Proyecto de Revitalización de Centros Históricos I	10,0	USD
SENEGAL	PROMOGED. Programa para la promoción de la gestión y economía de residuos sólidos.	50,0	EUR
TOTAL FONPRODE autorizado por CdM		458,0	USD*

* tipo cambio 1 eur = 1,18 USD 14/09/2021

ODS



Financial Inclusion: +2.7 million borrowers access (directly or indirectly) basic financial services (in 2020).
+546,000 rural families and supported family farms (accumulated)



+276,000 jobs (20% women through Funds) 75 companies, USD 13 million paid in taxes, ESG systems with international standards (IFC or equivalent) (in 2020)



+546,000 producers (accumulated). +26,900 ha conditioned for agricultural use (accumulated).+ 27 t food production (eggs, pigs, etc.) (in 2020)



56% of women borrowers (financial inclusion) (in 2020)



Average credit lower than GNI per capita (Ecuador, Nicaragua, Senegal, Peru, etc.) (in 2020)
Operation in rural areas (49% of the current portfolio)



Forestry and agrosilvopastoral investments contributing to the sustainable use of terrestrial ecosystems

ODS



207 GWh produced through renewable energies in 2020 (photovoltaic, biogas)



Installation of high-efficiency public lighting in Mexico and Colombia and generation of energy from waste in Mexico, and from oil waste in Angola



191,000 MWh of savings generated by the implementation of energy efficiency projects (accumulated 2020)



Contribution to the mitigation of the carbon footprint of 11.5 million tons of CO₂ (763,000 hectares of surface with restored ecosystems) (in 2020)

LAIF CITY LIFE & FONPRODE

Blending / LAIF (Latin America Investment Facility)

- It is an innovative financial mechanism that combines grants (non-reimbursable financial contributions from the European Union), technical assistance and guarantees with development loans.
- Main objective is to promote additional investments and key infrastructures in the transport, energy and environment sectors, as well as to support the development of the private sector in Latin American countries.



Porto Alegre



Mérida + 5 cities
Edo. Quintana Roo



Barranquilla
(x2)



San Salvador





FELICITY

Financing Energy for Low-carbon Investment –
Cities Advisory Facility

On behalf of:



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety



of the Federal Republic of Germany

COMMISSIONING PARTY

Federal Ministry of the Environment, Nature Conservation and Nuclear Safety (BMU)

RATIONALE

Closing the gap between cities' low-carbon infrastructure projects and financing

GEOGRAPHIC SCOPE

Brazil, Ecuador, Indonesia, Mexico

DURATION & BUDGET

2017 – 2021 | 13 million EUR

PARTNERS

- Federal Ministries
- Project promoters (e.g. municipalities)
- Financial intermediaries (e.g. development banks)



Identify low-carbon urban infrastructure projects and provide support to access international climate finance



Improve capacities for the preparation, financing and implementation of such projects



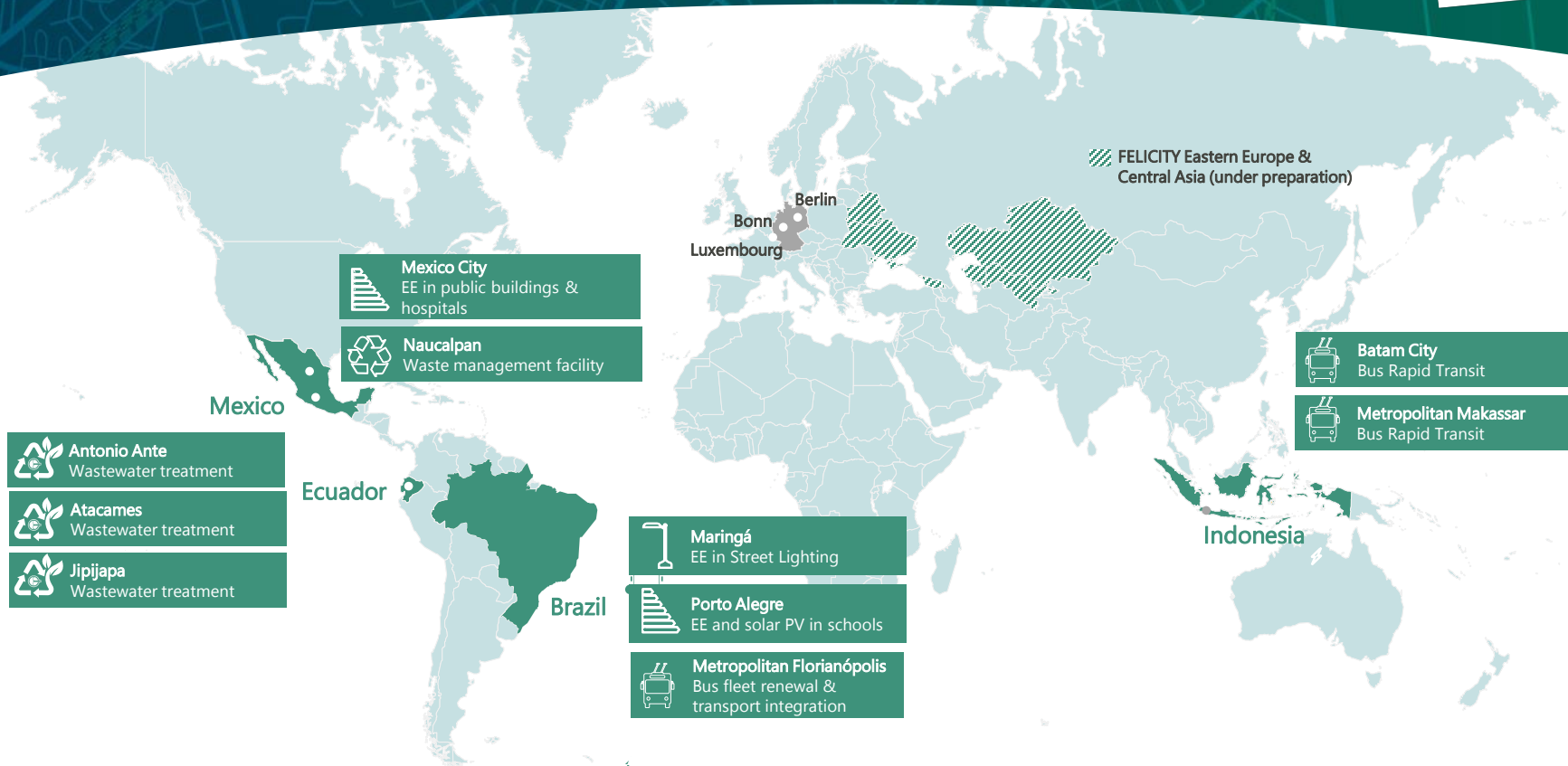
Develop proposals to further improve the regulatory environment for climate financing





Strengthen respective global networks on knowledge management and the creation of partnerships

Today's presentation will bring **lessons learned at the local and national level**, the first from FELICITY's **Technical Assistance to municipalities** in preparing low carbon infrastructure investments, the second from **cooperation with the Ministry of Mines and Energy** and other key stakeholders of FELICITY cooperation framework.

FELICITY: PROJECT OVERVIEW AND STATUS



**Batam City**
Bus Rapid Transit

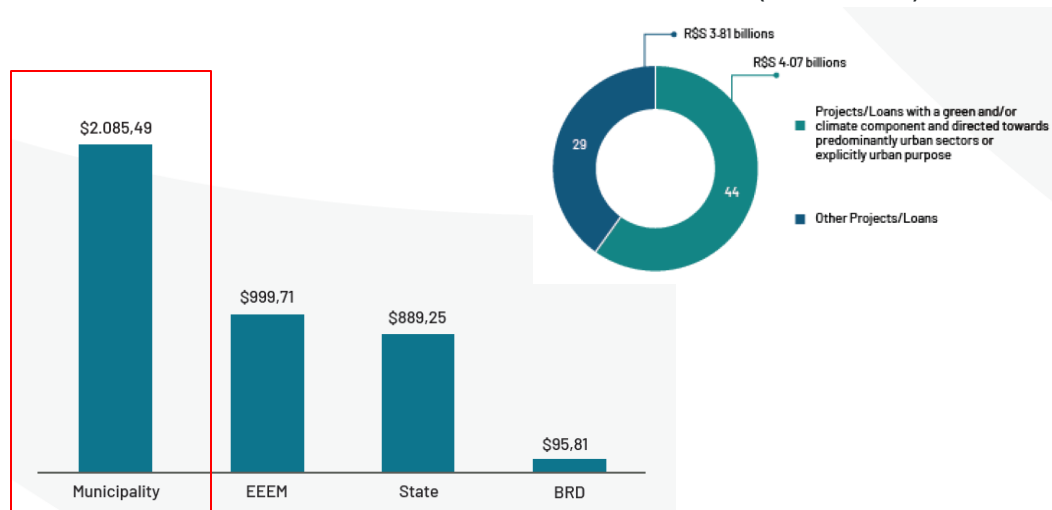
**Metropolitan Makassar**
Bus Rapid Transit

Low carbon urban investments in Brazil

In total, multilateral and bilateral banks contributed approximately \$ 4.07 billion to 44 projects that had a green and/or climate component and were aimed at predominantly urban sectors or had an explicitly urban impact from 2017 to 2019.

Municipalities are the main promoters of this type of project, comprising 51% of the value of operations. They are followed by state companies of mixed economy (EEEM), with 25% of the value, States, with 22% of the value, and regional development banks (BRD).

Number of green and/or climatic projects urban sectors in Brazil (2017 - 2019)

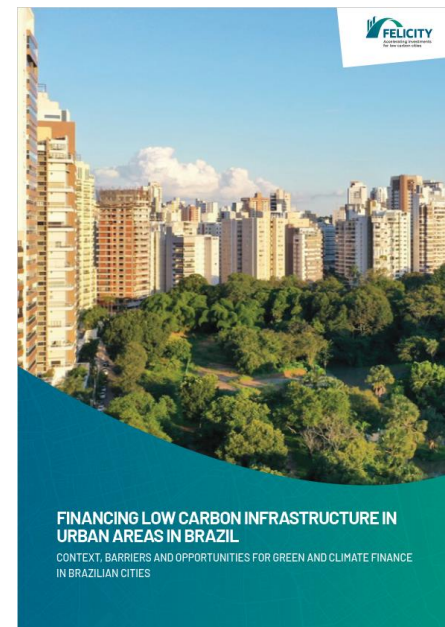


Borrowers of green and/or climatic projects urban sectors in Brazil (2017 - 2019)

IMPROVE THE REGULATORY ENVIRONMENT FOR CLIMATE FINANCING

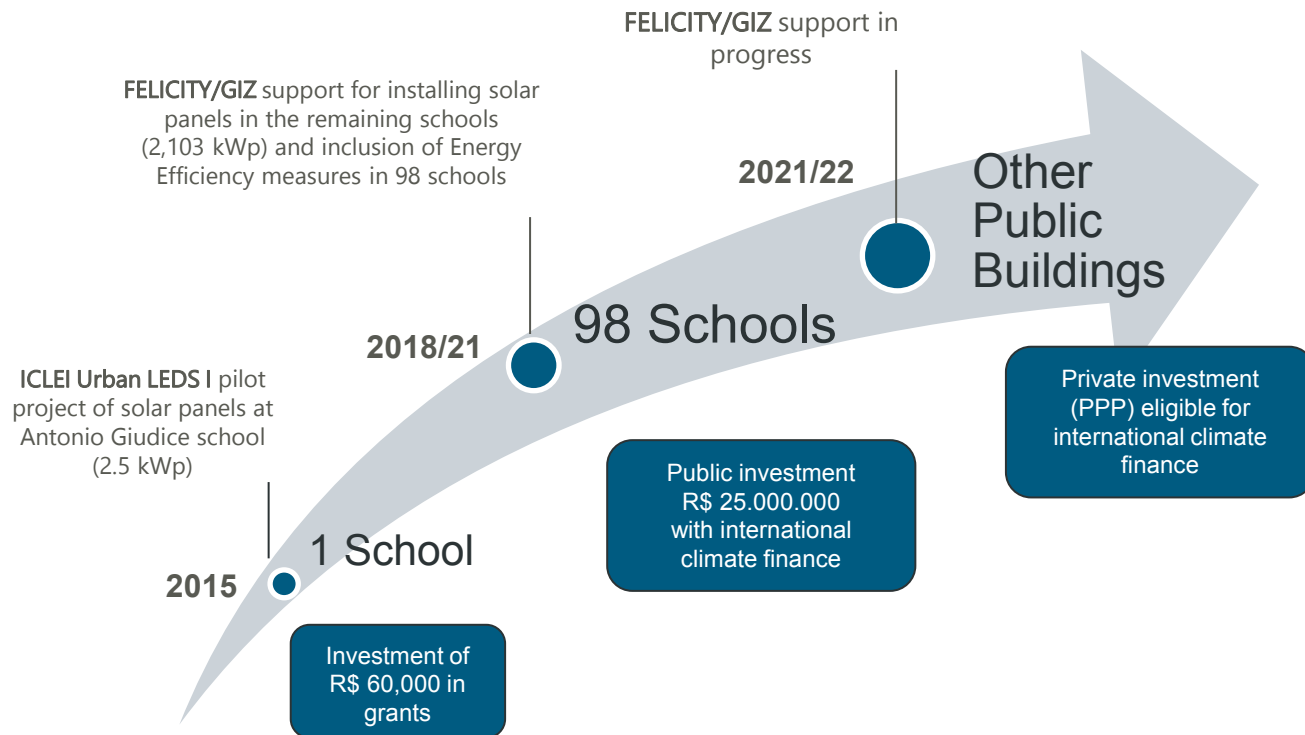
Financing low carbon infrastructure in urban areas in Brazil.

- **Sectors:** energy efficiency in existing buildings and street lighting, low-carbon transportation and sustainable housing, solid waste, wastewater, or the promotion of green areas and biodiversity.
- **Global potential:** investments in mitigation measures can reduce nearly 90% of greenhouse gas (GHG) emissions from urban areas by 2050 generating a global economic return of \$23.9 trillion.
- **Brazil's overview:** climate investment potential is estimated at US\$ 1.3 trillion by 2030. Besides supporting the improvement of the country's climate action, low-carbon projects in cities can contribute to overcoming the historic deficit in the urban infrastructure services supply.



Full report English version [here](#),
Portuguese version [here](#)

FELICITY TECHNICAL ASSISTANCE - PORTO ALEGRE SCALE-UP



Governance & Knowledge Management

- Establishment of *Project Implementation Unit* (PIU)
- Allocation of servers and definition of roles
- Incorporate project management into existing municipal processes
- Capacity building needs (contract management, O&M)
- Monitoring Procedures

Financing

- Implementation strategy (public or private operation)
- Indebtedness and payment capacity of the municipality
- Budgetary forecast (investments and basic project)
- Financing requirements

Procurement

- Definition of the public contracting modality
- Preparation of documentation (bid notice, TOR)
- Need for international bidding
- Transparency and publicity
- Ensuring competitiveness and delivery capacity
- Alignment with bidding requirements demanded by financial institutions

Technical Design

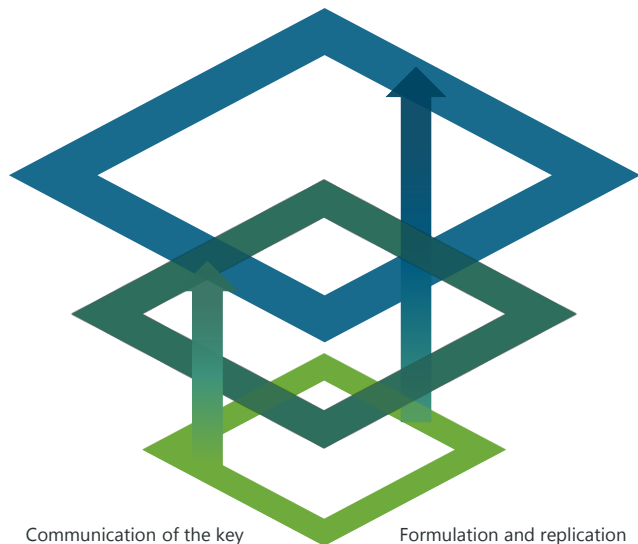
- Preliminary sizing: size of investments, savings and benefits Strategy to prepare the basic project (internal, contracted, cooperation)
- Scenarios and investment definition (technologies, scope)
- Project elaboration: data survey, measurement campaigns, technical visits

Implementation

- Interface with stakeholders (e.g. utilities and contractors)
- Allocation of human resources
- Implementation of the Monitoring plan
- Contract management
- Operation and maintenance

CLIMATE AND GREEN FINANCE ARCHITECTURE

POLICY RECOMMENDATIONS



Communication of the key challenges for development of low-carbon infrastructure projects at the sub-national level

Formulation and replication of best practices and piloting of innovative approaches

POLICY LEVEL

In order to increase **the coordination between federal, state, and municipal governments**, and **improve sectoral regulatory framework** for low-carbon projects

- Align national and subnational climate action plans
- Improve sectoral regulatory framework for low carbon urban projects
- Create and strengthen sub-national entities to improve urban planning coordination and low carbon investments implementation in cities, specially for metropolitan regions

FINANCE LEVEL

In order to increase cities' **access of climate action financing**

- Incorporate the urban climate agenda in the Brazilian financial system
- Create and strengthen national and regional project preparation and technical training facilities for city staff (associated with national and regional financing institutions)
- Foster financial innovation products and new investment models aligned with low carbon urban development

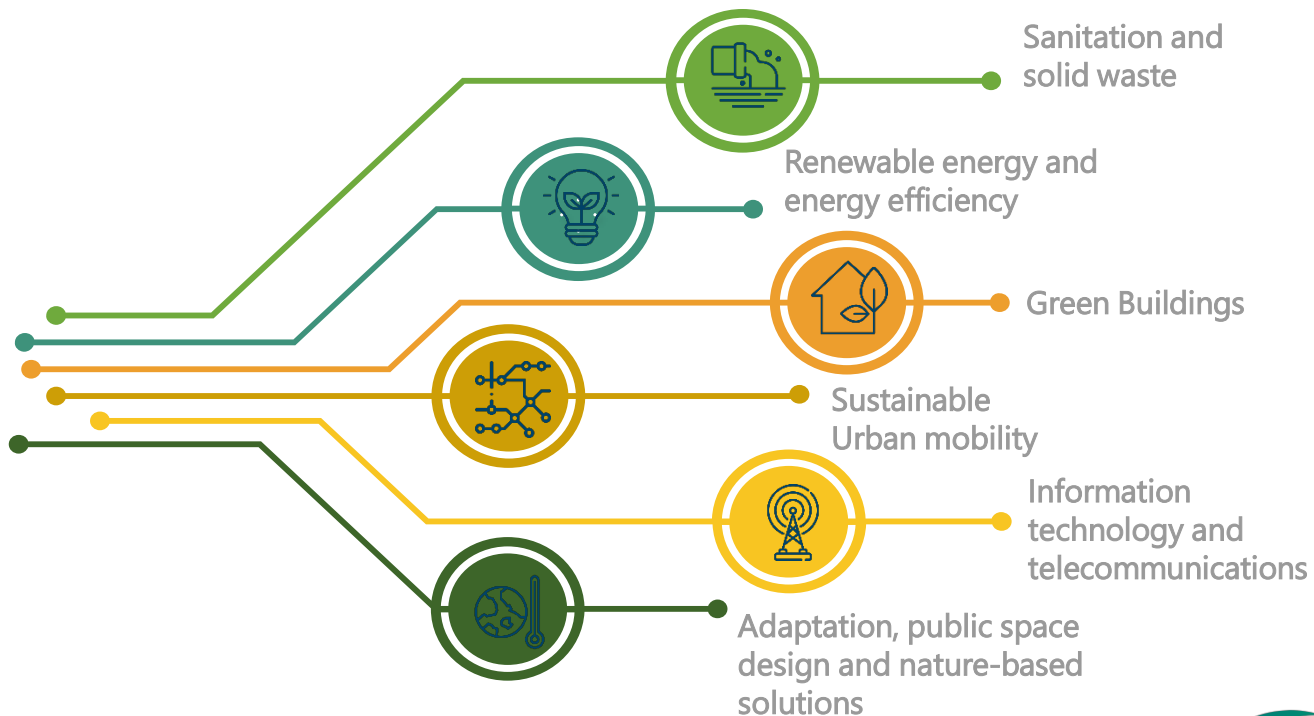
CITY LEVEL

In order to improve **cities capacity for implementing low carbon investments**

- Improve municipal fiscal conditions to ensure access to financing
- Mobilize private investments on urban and low carbon infrastructure
- Create project implementation units with transversal governance encompassing different secretaries of the municipality

Definition of sectors

Proposed sectors and activities for initial classification of the potential for cooperation with Green Recovery*



GREEN RECOVERY - CRITERIA FOR THE SELECTION OF KEY SECTORS



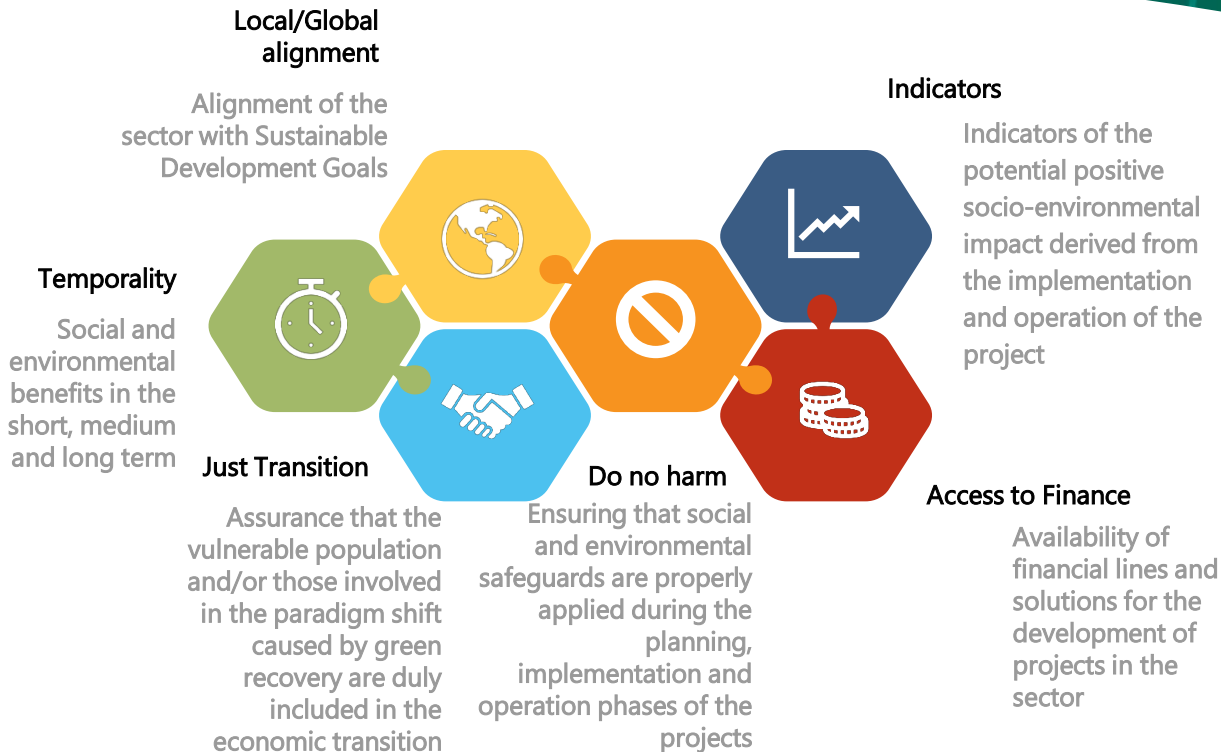
Green Jobs generation



GHG mitigation
(tCO₂e)



Investment Return



The first ten projects supported by FELICITY in Mexico and Brazil have



an estimated investment volume of **EUR 322 million** in climate finance;



an emission reduction potential of **up to 1.98 million tCO₂eq** over 15 years.

In Mexico and Brazil, FELICITY



trained 3600 professionals in preparing, financing and implementing low-carbon infrastructure projects in cities.

FELICITY
Technical and Financial Assistance
(integrated approach)



CONTACT AND MORE REFERENCES ON FELICITY

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Financing Energy for Low-Carbon Investment
Cities Advisory Facility (FELICITY)

More information at

<https://www.eib.org/en/products/advisory-services/felicity.htm>



THANK YOU
FOR YOUR ATTENTION

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On behalf of

German Federal Ministry for the Environment,
Nature Conservation and Nuclear Safety, Bonn / Germany

This project is part of the International Climate Initiative (IKI).

The German Federal Ministry for the Environment, Nature
Conversation and Nuclear Safety (BMU) supports this initiative
on the basis of a decision adopted by the German Bundestag.

On behalf of:



of the Federal Republic of Germany

