

The Lab: Impacts and lessons learned, 2014-2017

January 2018



Global Innovation Lab
for Climate Finance

India Innovation Lab
for Green Finance

Brasil Innovation Lab
for Climate Finance

Fire Awards for
Sustainable Investment

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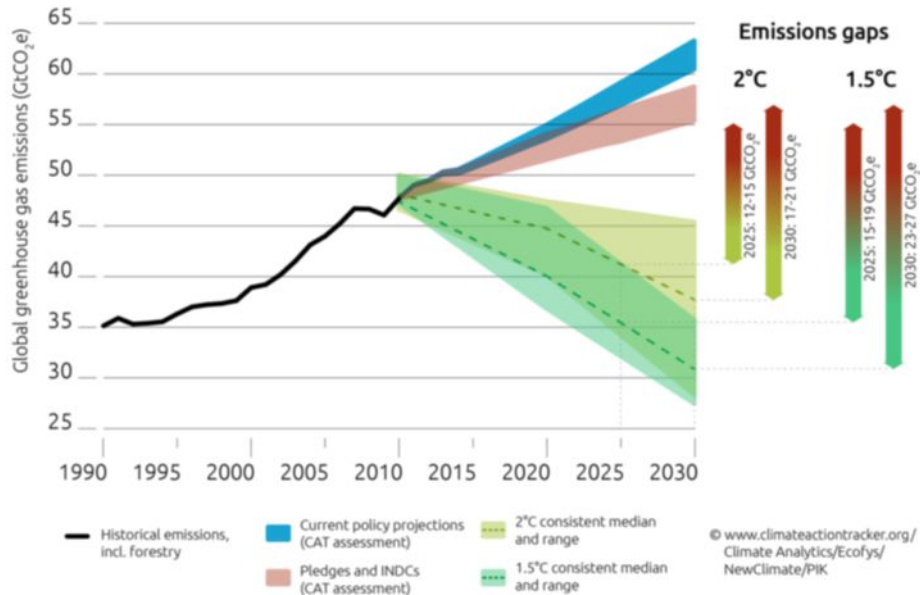
Case studies of many of the Lab's solutions are highlighted throughout the report.

The Need for Sustainable Investment

Key challenges of the 21st century

Climate Change

→ Meeting the Paris Agreement goals for mitigation & adaptation

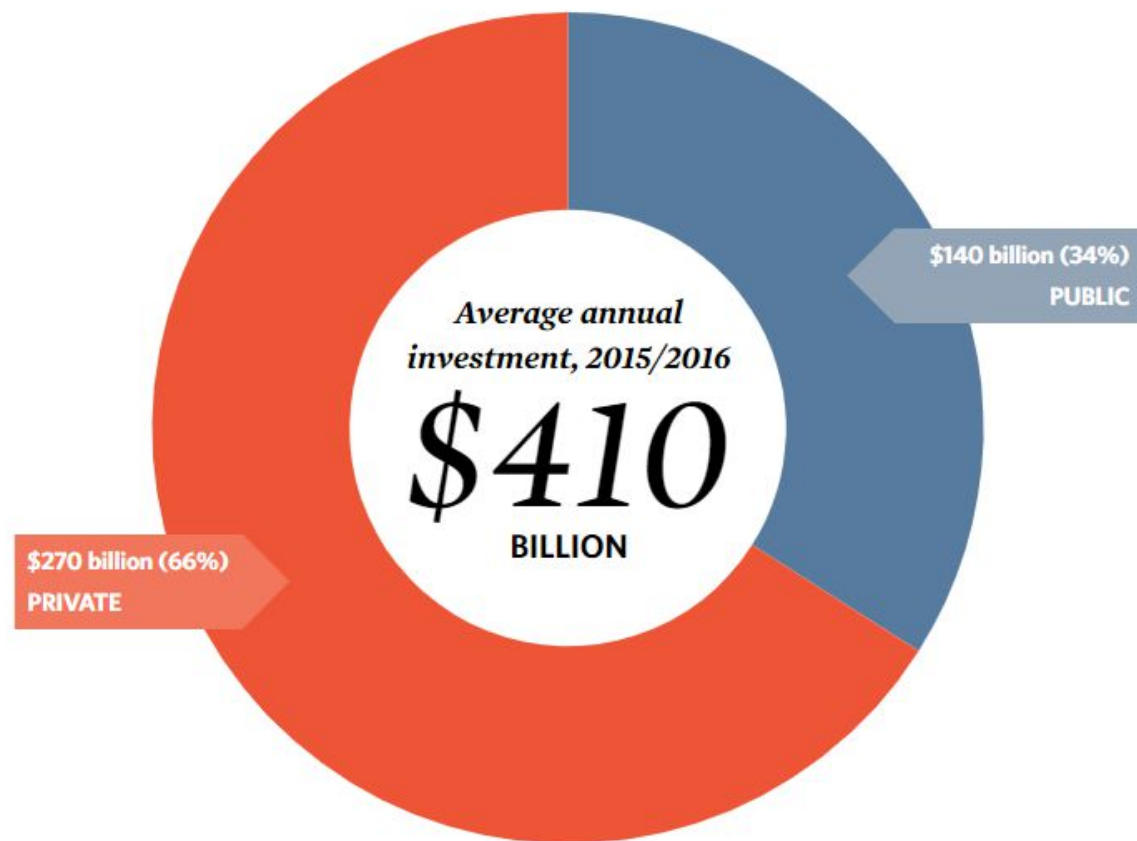


Sustainable Development

→ Meeting the Sustainable Development Goals



Investment is critical to achieve these global goals, but not enough finance is flowing



Finance is flowing, with an average of USD \$410 billion flowing to climate change mitigation and adaptation in 2015 and 2016. But much more is needed to achieve global climate and sustainable development goals.

The IFC estimates that emerging markets need \$1.5 trillion in climate investment annually through 2030.

UNEP estimates that \$140-300 billion is needed annually for adaptation finance through 2030.

To fill this finance gap, there is a need for innovative solutions that can activate both public and private actors and go to market quickly.

The Lab was launched in 2014 as a solution to unlock finance for low-carbon climate-resilient development

By identifying, developing, and supporting transformative sustainable finance ideas, the Lab aims to drive billions of dollars of private investment to a low-carbon, climate-resilient economy.



India Innovation Lab
for Green Finance

Brasil Innovation Lab
for Climate Finance

Global Innovation Lab
for Climate Finance

Fire Awards for
Sustainable Investment

The Lab is a public-private partnership with broad support from institutions around the world

Funders



Federal Ministry for the Environment, Nature Conservation and Nuclear Safety



Department for Business, Energy & Industrial Strategy



Ministry of Foreign Affairs of the Netherlands

Bloomberg Philanthropies

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Secretariat



CLIMATE POLICY INITIATIVE

Key endorsements of the Lab

The Lab has been endorsed by the governments of the G7, India & Brazil.

In 2017, the Lab was included in the Center for High Impact Philanthropy's "Top 11 Best Bets" out of 1,904 submissions to the Macarthur Foundation's 100&Change competition.



Ambassador J. Antonio Marcondes, Under Secretary-General for the Environment, Energy, Science and Technology, Ministry of Foreign Affairs, Brazil – *"By developing bankable, actionable initiatives that can scale up finance quickly, the Brasil Lab instruments will be additional tools to the achievement of our climate and sustainable development goals."*

Claire Perry, Minister of State for Climate Change and Industry, UK – *"It's vital for governments and the private sector to work together on initiatives like the Lab to provide financial support to developing countries, helping them transition to a low carbon economy."*

Karsten Sach, Director General Climate Policy, European and International Policy, Federal Ministry for Environment, Nature Conservation, Building and Nuclear Safety, Germany – *"Germany has been a proud supporter of the Lab and its instruments since its inception. We are pleased to see the rapid progress, particularly for sustainable development in Africa."*

Santosh Vaidya, IAS, Joint Secretary, Ministry of New and Renewable Energy, India – *"The investment vehicles launched by the India Innovation Lab for Green Finance show significant potential to catalyze investment to India's renewable energy targets. They offer exciting new investment opportunities to help accelerate clean energy in India."*

The Lab's Achievements to Date

In 3 years, the Lab has endorsed 25 ideas, and grown to 4 programs targeting different regions and investment stages

In 2014 the UK, German, and U.S. governments launched the first Lab program, the Global Lab. Today, the Lab has three more programs, nine funders, and members from around the world. Together these four programs have crowd-sourced 450+ ideas, with 25 endorsed instruments and winners.

Global Innovation Lab for Climate Finance

The Global Lab, established in 2014, was the first of the four Lab programs. The Global Lab accepts submissions for ideas in all developing country regions. It also incubated the regional Labs.

India Innovation Lab for Green Finance

The India Innovation Lab for Green Finance was launched in November 2015 and focuses on solutions to finance infrastructure for renewable energy and other channels for green growth.

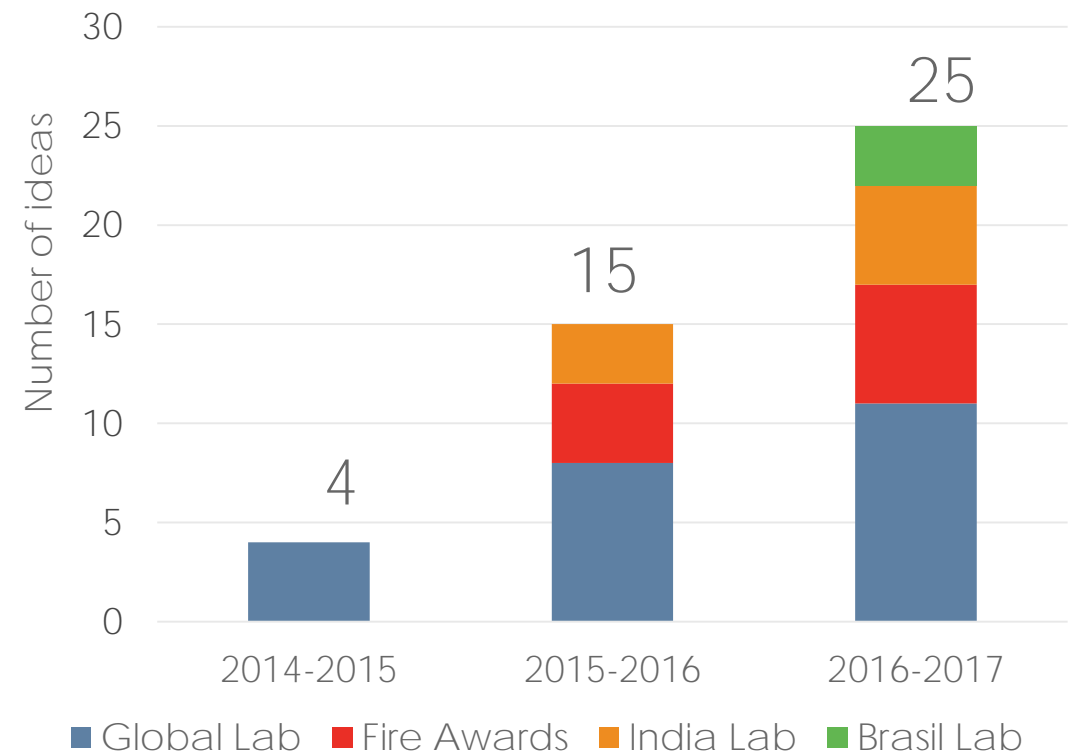
Brasil Innovation Lab for Climate Finance

The Brasil Innovation Lab for Climate Finance was established in November 2016 to identify, develop, and support implementation of finance solutions to drive funds for Brazil's national climate priorities.

Fire Awards for Sustainable Investment

The Fire Awards were created in 2013 and integrated in the Lab in 2016. Fire seeks to support and build momentum for ideas that are already showing promise through market testing or existing pilots.

Cumulative Lab instruments and Fire Award winners



The 25 Lab ideas launched to date have mobilized nearly USD \$1 billion in investment for sustainable development

The Lab crowdsources and selects ideas, and supports them with analysis, stress-testing, and guidance from experts and investors. Lab Members then vote to endorse ideas and launch them for piloting and implementation.

March 2018 Update: Endorsed Lab solutions reached the milestone of over \$1 billion in investment

They have attracted another \$535 million in expressions of interest. Furthermore, Lab ideas have mobilized 300 times funders' investments in the Lab Secretariat.



Energy Efficiency:

Energy Savings Insurance was endorsed in 2015 by the Global Lab and has mobilized \$100 million to date. It provides an insurance product for projected savings for energy efficiency projects.



Resilient Infrastructure:

The Water Financing Facility was endorsed in 2016 by the Global Lab and has mobilized \$20 million to date. It mobilizes domestic investment into climate compatible water sector projects through the local bond market.

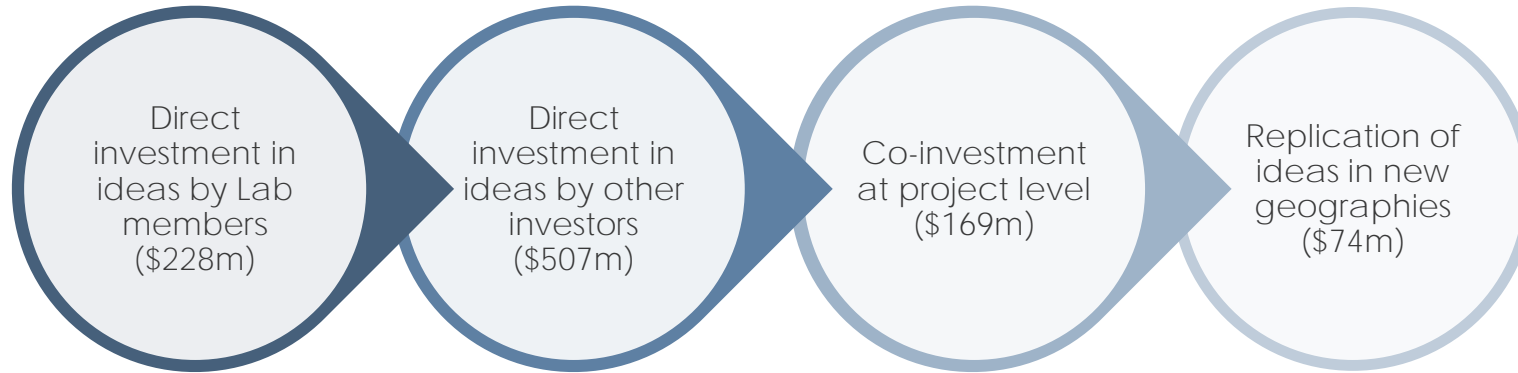


Renewable Energy:

Loans4SME was endorsed in 2016 by the India Lab. An initial investment of \$50,000 has mobilized \$7.4 million to date. It is a platform that crowdsources finance for renewable energy projects.

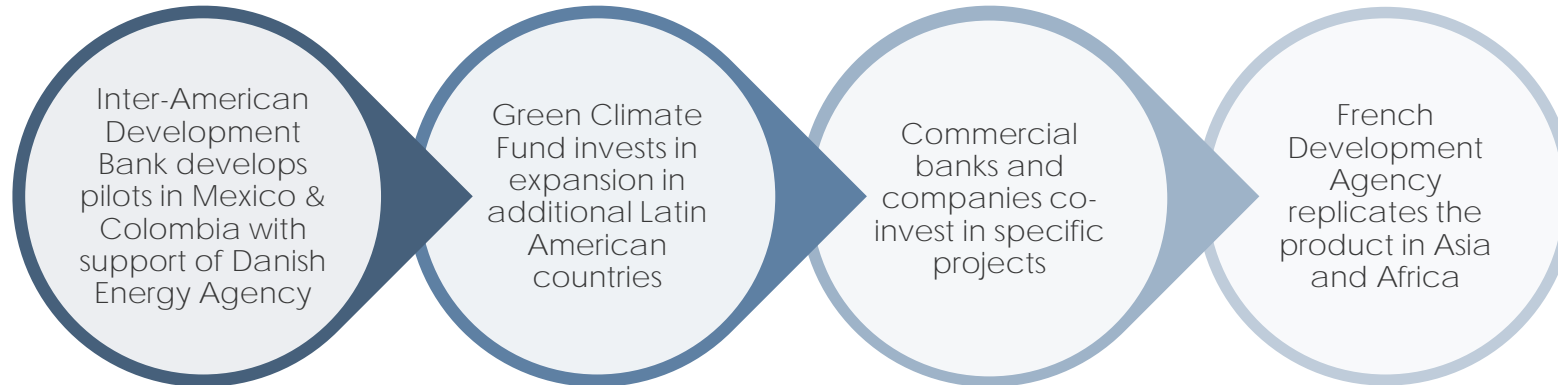
Lab members have invested over \$200 million into ideas

How the
Lab has
mobilized
finance



Lab members' investments of USD \$228 million have mobilized another \$750 million in investment.

Example:
Energy Savings Insurance



Energy Savings Insurance has expanded in Latin America and is now being replicated in Asia and Africa.

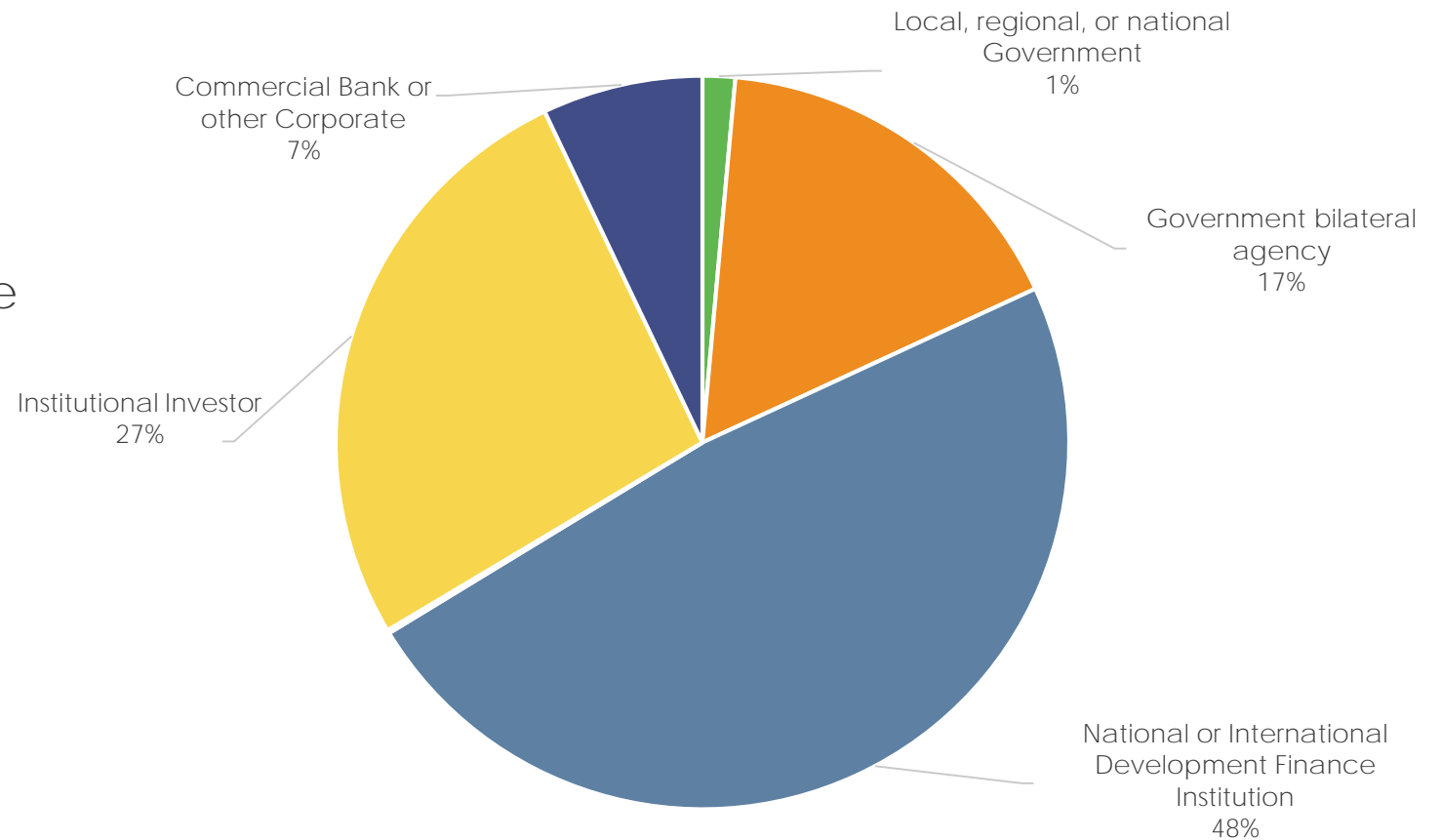
Lab ideas have successfully mobilized at least USD \$300 million in investment from the private sector

Lab ideas have directly raised over \$300 million of finance from private investors.

Private investors also co-invest in projects on the ground, which is more difficult to measure.

Nearly 100% of measured private finance has come from institutional investors and commercial banks. A small amount has also come from private equity investors.

Public and Private Investors in Lab Instruments



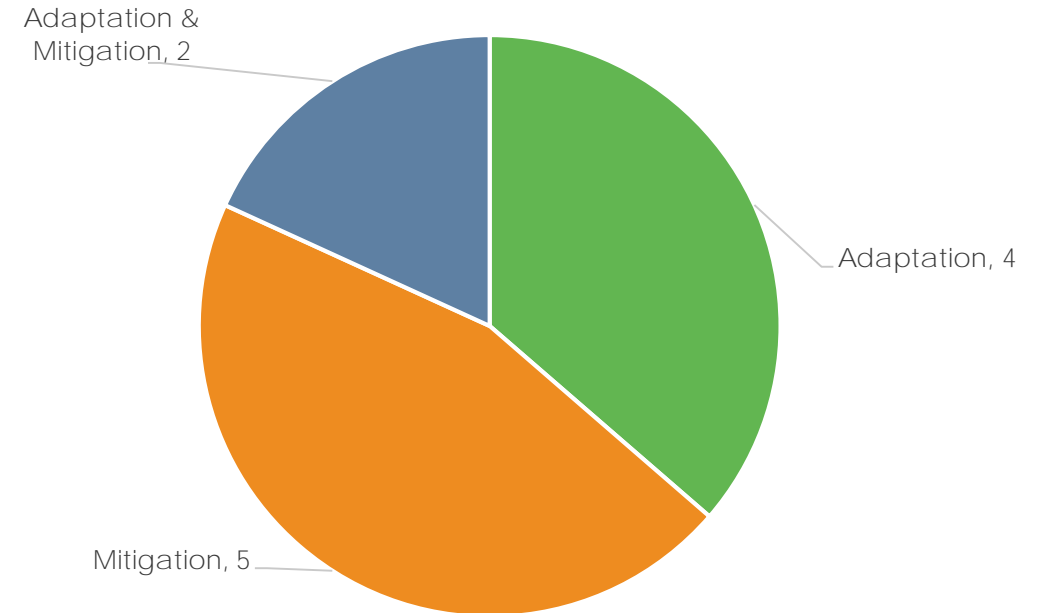
Lab ideas have tackled critical barriers to investment in both climate change mitigation and adaptation

Mitigation includes ideas that reduce greenhouse gas emissions, such as renewable energy, energy efficiency, sustainable transport, and agriculture, land use, and forestry.

Adaptation includes ideas that reduce climate change impacts and improve risk management and resilience, including through insurance, land use practices that increase food or water security, resilient and green infrastructure, and risk assessment.

While all Lab programs accept both adaptation and mitigation ideas, adaptation has been a particular priority for the Global Lab.

Breakdown of mitigation and adaptation ideas endorsed by the Global Lab, 2014-2017



Lab ideas address a wide range of mitigation challenges

Many sectors contribute to global greenhouse gas emissions. Lab ideas drive investment into reducing emissions in a number of these sectors.

Forests



Cloud Forest Blue Energy Mechanism mobilizes finance to reforest and conserve cloud forests in Latin America. It uses an innovative “pay for success” financing technique in which hydropower plants pay for measurable ecosystem benefits provided by cloud forests.

Agriculture



Climate Smart Cattle Ranching aims to reduce deforestation in Brazil by establishing a partnership with ranchers that adopt sustainable cattle ranching practices and comply with the Brazilian Forest Code, that could result in up to 95% reduction in emissions intensity per kilo of beef.

Transport



Proterra Electric Bus Battery Service Agreements are enabling wider commercialization of electric buses by transferring up-front costs and technology risk away from customers through the offer of a 12-year lease option to pay for the use of bus batteries. Customers can have a cost break even point on or near day one.

Energy



Solar Investment Trusts is a solar-specific investment trust to mobilize capital to the rooftop solar sector in India. By addressing the investment barriers associated with small-scale projects, SEITs can increase the supply of capital and lower the cost of capital for developers.

The Lab is a leader in building a pipeline of adaptation solutions

The Lab has been a thought leader in adaptation finance and has endorsed solutions that provide more information on climate risks as well as viable business models to build climate resilience. To increase focus on this important area, the Lab adopted adaptation as a priority theme beginning in the second cycle, doubling submissions.

Agriculture



Agricultural Supply Chain Adaptation Facility aims to provide farmers with know-how and finance for climate-resilient investments, by enabling development banks to partner with agribusinesses who empower farmers within their supply chains.

Water



The Water Financing Facility mobilizes investment into climate compatible water sector projects through the local bond market. A World Water Financing Facility would be established to facilitate the creation of and to support national-level facilities.

Risk analysis



Oasis Platform for Catastrophe and Climate Change Risk Assessment and Adaptation is a platform to provide open access to data and open source modeling tools that enable risk assessments as well as the transparent evaluation of economic and financial losses.

Resilient business



Climate Resilience and Adaptation Finance & Technology Transfer Facility (CRAFT) is the first private equity fund to invest in companies that provide climate resilience products and services. The fund and an accompanying Technical Assistance Facility will help companies expand into new sectors and geographic markets.

Lab ideas address a variety of context-specific barriers to investment

All Lab submissions must demonstrate innovation in addressing key risks and barriers to investment. Two-thirds of Lab submissions identify inadequate access to capital and high risk as the main barriers to investment. Non-financial barriers such as lack of technical capacity or lack of adequate policy frameworks make up another 25% of barriers to investment.



Long-Term FX Risk Management addresses currency risk in developing countries due to the mismatch of foreign currency project debt and local currency revenues. The instrument provides long-term fixed and inflation linked cross currency swaps and interest rate swaps to climate-relevant investments.



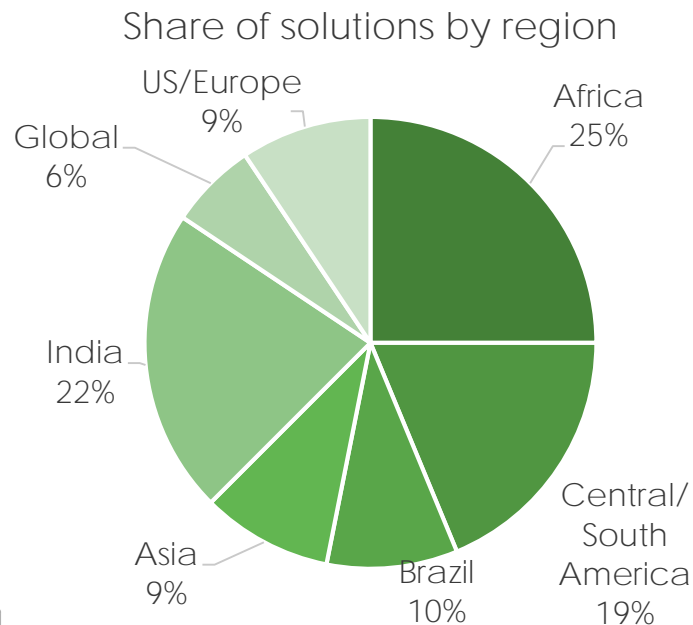
OASIS addresses the lack of availability of high quality catastrophe risk models in developing countries. The instrument provides access to transparent and standardized analytics, thereby facilitating investments in insurance and/or risk reduction.



Energy Efficiency Enabling Initiative (EEEI) addresses the lack of risk capital for energy efficiency projects in developing countries. The private equity fund relies on donor-backed equity capital, technical assistance, and risk mitigation instruments to crowd in private investment in energy efficiency.

Lab ideas address investment barriers in every region globally

A third of Lab ideas focus on Asia, another third on Latin America, and a quarter on Africa. The remaining 15% focus on all developing country regions (Global) or are Fire Award winners in U.S. and Europe.



India: Sustainable Energy Bonds are a class of bonds to drive impact investment to sustainable energy in India by offering debt exposure, sufficient returns, and standardized impact measures.



Brazil: Distributed Energy Generation for Cooperatives Fund scales up distributed renewable energy by partnering with cooperatives and linking generation performance to payments.



Sub-Saharan Africa: Affordable Green Homes delivers and builds demand for green homes in South and Sub-Saharan Africa by proving, measuring, and marketing their benefits without charging a higher price for them.

Lab ideas blend public and private finance in innovative ways

The Lab process identifies opportunities to use public finance most effectively to mobilize private investment for sustainable development. All ideas must demonstrate a pathway to phasing out public finance over time.



Climate Investor One is a lifecycle financing facility to fast-track renewable energy projects in developing countries. It uses donor finance for a development fund. Then, it blends donor finance as first loss equity with non-concessional public capital, to de-risk a \$500mn public-private construction fund, and offers a private re-financing facility to issue long-term senior debt to operational projects. The Facility reached 1st close in June 2017 and has already raised over USD412mn.

Goal: Leverage \$2bn of private finance for renewable energy projects.



Climate-Smart Lending Platform introduces a climate-smart credit scoring mechanism to help lenders incorporate private risk in their portfolios, while incentivizing the adoption of climate-smart farming methods by smallholders. In Phases 1 and 2, it will blend concessional finance and first loss guarantees respectively, gradually phasing out public finance over time.

Goal: Leverage over \$150m of private investment in the medium-term.



The Renewable Energy Scale-Up Facility uses concessional funding to demonstrate a mechanism that delivers finance to projects as they achieve key development milestones, in exchange for the option to buy equity at financial close, at better-than-market rate terms. RESF seeks to raise \$110mn for its first fund.

Goal: Leverage \$110mn in private investment with \$30mn of public funding.

How the Lab Has Supported the Results: An Evolving Global Partnership

The Lab focuses on achieving three key outcomes

Public-Private Dialogue

Strengthened collaboration between the public and private sectors builds capacity and knowledge to identify and deploy effective climate finance solutions

Innovation & Transformative Solutions

Innovative, actionable, catalytic and financially sustainable solutions reduce risks and barriers to investment in sustainable development

Mobilizing Finance

Catalytic finance from Lab members and the broader network enables piloting and implementation of transformative solutions

The Lab's process is designed to accelerate implementation of transformative ideas

The Lab accelerates well-designed financial instruments that meet four criteria: actionable, innovative, catalytic, and financially sustainable. All Lab ideas go through the below process:



1. Call for Ideas

Open call for innovative sustainable investment solutions

2. Selection

Lab Members select the most promising ideas.

3. Development

Selected ideas for India, Brazil, and Global Labs benefit from analysis, stress-testing, and guidance from experts and investors. Fire Awards finalists prepare business pitches.

4. Endorsement & Launch

Lab Members vote to launch the ideas for piloting, based on their innovation, actionability, financial sustainability, and catalytic potential. Fire Awards winners are announced.

5. Implementation

The ideas move into action, fundraising to launch pilots, with continued support from the Lab network.

All Lab instruments benefit from the support of the Lab's public and private sector partners throughout the process

- “Investing in climate solutions is a real opportunity in both developed and developing markets. The Lab represents some of the best, most innovative thinking to offer more attractive investment opportunities and track records.” - *Linda Broekhuizen, Chief Investment Officer, Netherlands Development Finance Company (FMO)*
- “Accelerating more finance to sustainable energy and other green sectors in India is essential for meeting the country's sustainable development goals. The instruments launched by the India Innovation Lab for Green Finance show considerable potential and will help mobilize the financial resources needed to meet our clean energy targets.” - *Mr. Krishan Dhawan, CEO, Shakti Sustainable Energy Foundation*
- “Initiatives like the Lab are introducing new innovative climate finance solutions to the financial industry. These solutions are helping to broaden investment opportunities in clean energy and other low carbon initiatives and priorities.” - *Purna Saggurti, Chairman of Global Corporate & Investment Banking at Bank of America Merrill Lynch*



Hon. Dr. Vincent Biruta
Minister of Natural Resources
Republic of Rwanda



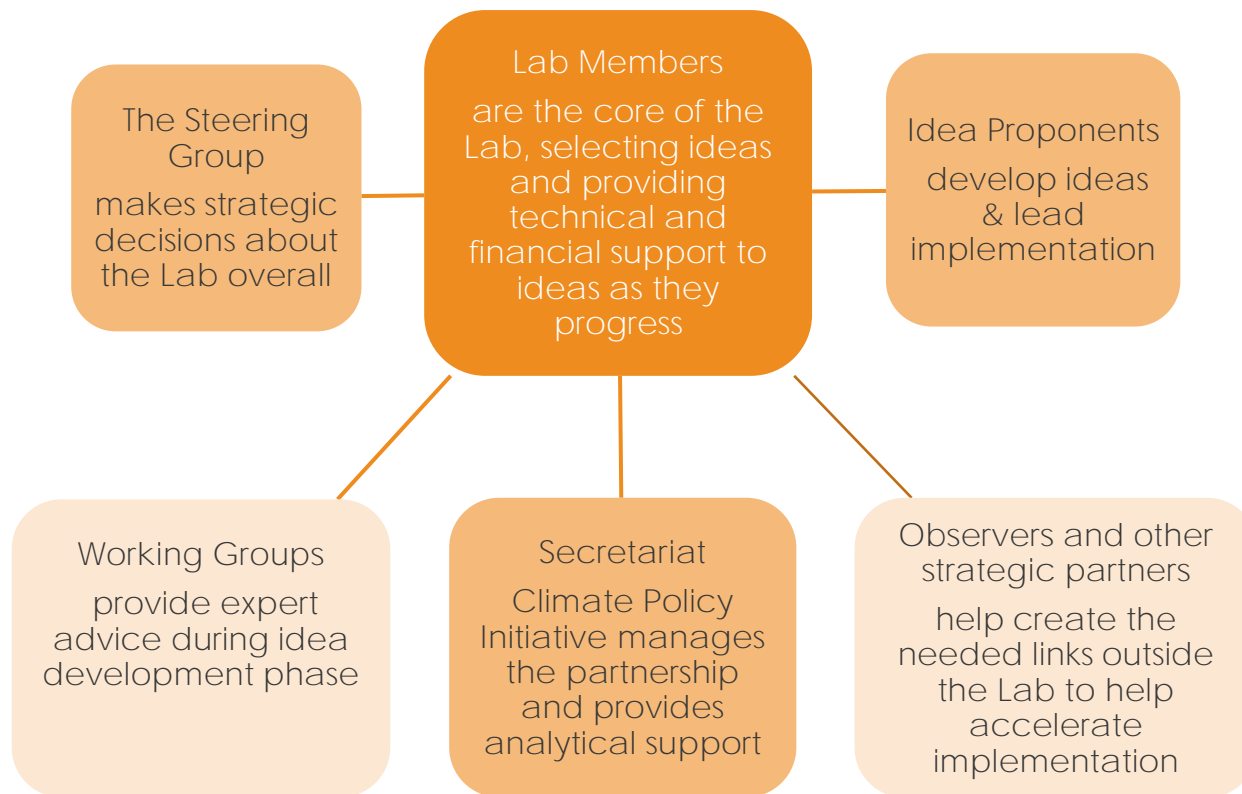
Claire Perry
Minister of State for Climate Change
and Industry Department for Business,
Energy and Industrial Strategy (BEIS), UK



Howard Bamsey
Executive Director
Green Climate Fund

Cross-sector cooperation enables solutions to overcome investment barriers that neither the public or private sector could address alone

The Lab's Participants



So far, 160+ experts from 5 continents, half of which come from developing regions, have participated in the first three Lab cycles.

Half of the Lab's participants come from the private sector and half from public institutions including government agencies and ministries, and development banks.

The Lab has strong representation from the financial sector. A quarter of partners are from development banks and another quarter are from financial services.

A recent addition to the Lab has been observers and other strategic partners, who help create linkages outside the Lab to funding opportunities and other technical support, including to help scale ideas once proven.

Lab proponents are the innovators that propose and ultimately implement the ideas – and they are highly diverse

The Lab has attracted proponents from a wide array of sectors. So far, 30% of proponents have come from the public sector and 70% from the private sector, highlighting the interest of the private sector for the Lab model.



Green Receivables Fund (Green FIDC) in the Brasil Lab was proposed by Albion Capital and Get2C Brasil.



Sunshift was a 2017 Fire Awards winner. It is a subsidiary of Laing O'Rourke, an international engineering enterprise.



Rooftop Solar Private Sector Financing Facility in the India Lab was proposed by International Finance Corporation (IFC) and Azure Power.

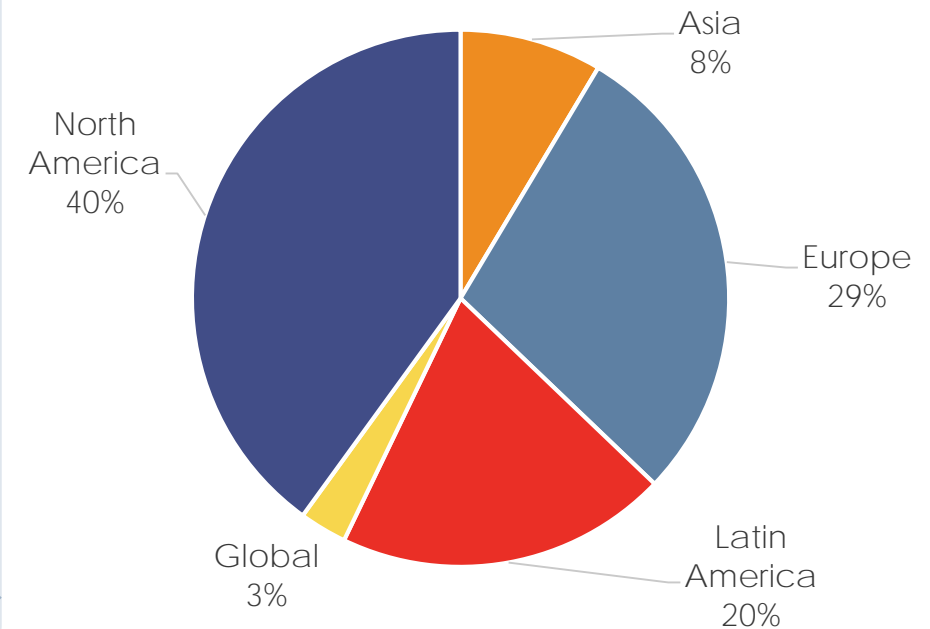
Financial Services

Engineering Company

Public & private partners

The share of proponents from developing countries is ~ 30%.

Lab Proponents (individuals) by region



The Lab actively works to share its work far and wide so that other groups can benefit from the Lab's lessons learned

- 6-7k visits/month to the Lab's website from more than 100 countries around the world
- Media coverage in influential outlets



THE WALL STREET JOURNAL.



REUTERS



FINANCIAL
TIMES

Bloomberg
NEWS

- Presentations at key events to reach influencers

**The Future of Energy
Summit**



Opportunities for the Future

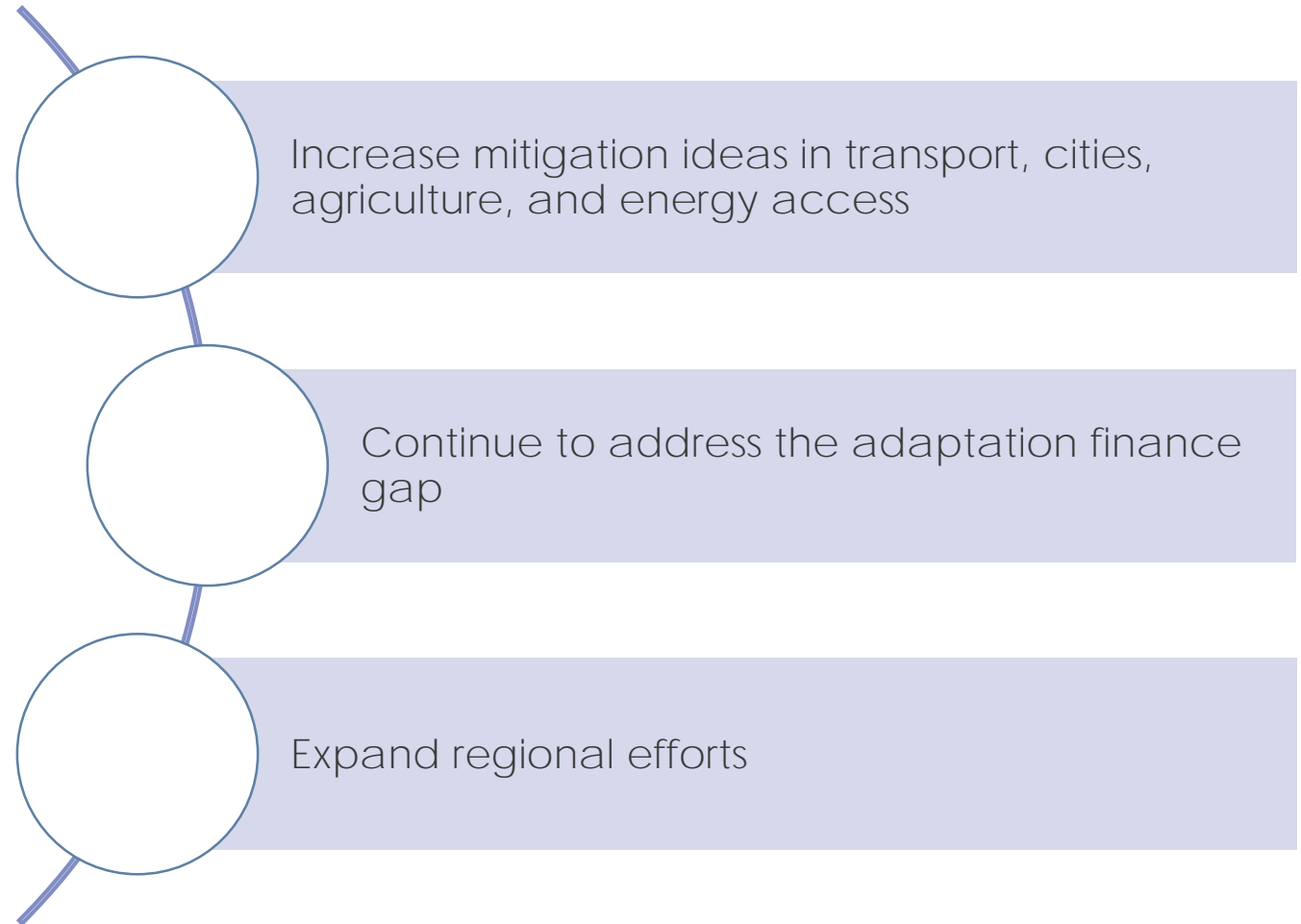
Incubating ideas in the most difficult sectors and geographies

The Lab focuses on the most challenging, highest impact sectors and geographies, and continuously evolves to make sure that it is selecting and developing ideas to meet sustainable development needs.

In mitigation, sectors such as transport, cities, agriculture, and energy access have had fewer ideas endorsed but could be focuses for the Lab going forward.

The Lab will continue its focus on sourcing solutions to close the adaptation finance gap.

Finally, regional efforts can bring together local stakeholders in developing ideas. The Lab is currently planning a Southern Africa Lab for 2018-2019 to add to the Brasil & India Labs.



Accelerating implementation of endorsed ideas

After Lab endorsement, ideas typically still require time and interim financing to prepare for implementation. This preparation can take one or more years and cost over USD \$1 million, with some requiring far more.

The Lab is testing different approaches to help Proponents bridge the gap between endorsement and implementation.

Challenges

Long lead times

It can take 1-3 years for Lab ideas to build teams, align investors, and execute MOUs with implementing partners.

High up-front costs

Pilot preparation is often costly – with legal & other administrative fees, travel, and personnel costs often totaling from \$1-4 million

Opportunities

Provide ad-hoc technical support to help Proponent teams with discrete tasks
Offer investor networking opportunities
Investors could streamline approval processes

Build strategic partnerships with potential working capital providers
Develop a working capital fund

Replicating and scaling ideas that work

Getting instruments from pilot to scale is a critical gap in the innovation pathway. The Lab's support focuses on launching new ideas, but to date replication and scale have been the responsibility of proponents. Some instruments have already had success in this area. For example, the French Development Agency is replicating the Energy Savings Insurance instrument in new geographies. Long-term FX Risk Management and Climate Investor One are also pursuing greater investment in light of early successes.

Challenge

Ideas that have mobilized investment sometimes still need catalytic support to scale or replicate in new geographies, and address persistent barriers.

Opportunity

Support the replication and scale of proven ideas, to unlock more investment.

- Increase financial and technical support to expand successful ideas.
- Develop strategic partnerships with other networks that can take early successes to scale.
- Provide continuing networking and knowledge sharing opportunities to Proponents.
- Explore new potentially catalytic models to secure funding to expand successful ideas.

This report was prepared by Climate Policy Initiative, the Lab Secretariat

With deep expertise in policy and finance, Climate Policy Initiative (CPI) works to improve the most important energy and land use practices around the world. Our mission is to help governments, businesses, and financial institutions drive growth while addressing climate risk. CPI works in places that provide the most potential for policy impact including Brazil, Europe, India, Indonesia, and the United States.

70 analysts in 5 global offices ensure high global and local expertise and impact.

Climate Policy Initiative, as Lab Secretariat:

- Manages the Lab
- Leads analytical support
- Supports ideas to succeed and scale
- Communicates findings, impacts, and lessons learned
- Convenes the Lab and gathers public and private investors



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