Presentation from

2016 World Water Week in Stockholm

www.worldwaterweek.org

Eye on LAC: Towards a Green Infrastructure Agenda: *Benefits for Water Security and Thriving Communities*

Todd Gartner | Senior Associate, WRI

World Water Week, Stockholm | August 31, 2016

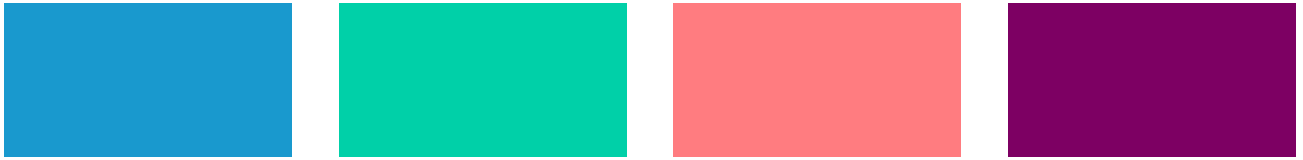
WORLD RESOURCES INSTITUTE

WRI is a global research organization that turns big ideas into action at the nexus of environment, economic opportunity and human well-being.

Finance · Economics · Governance · Business

AGENDA

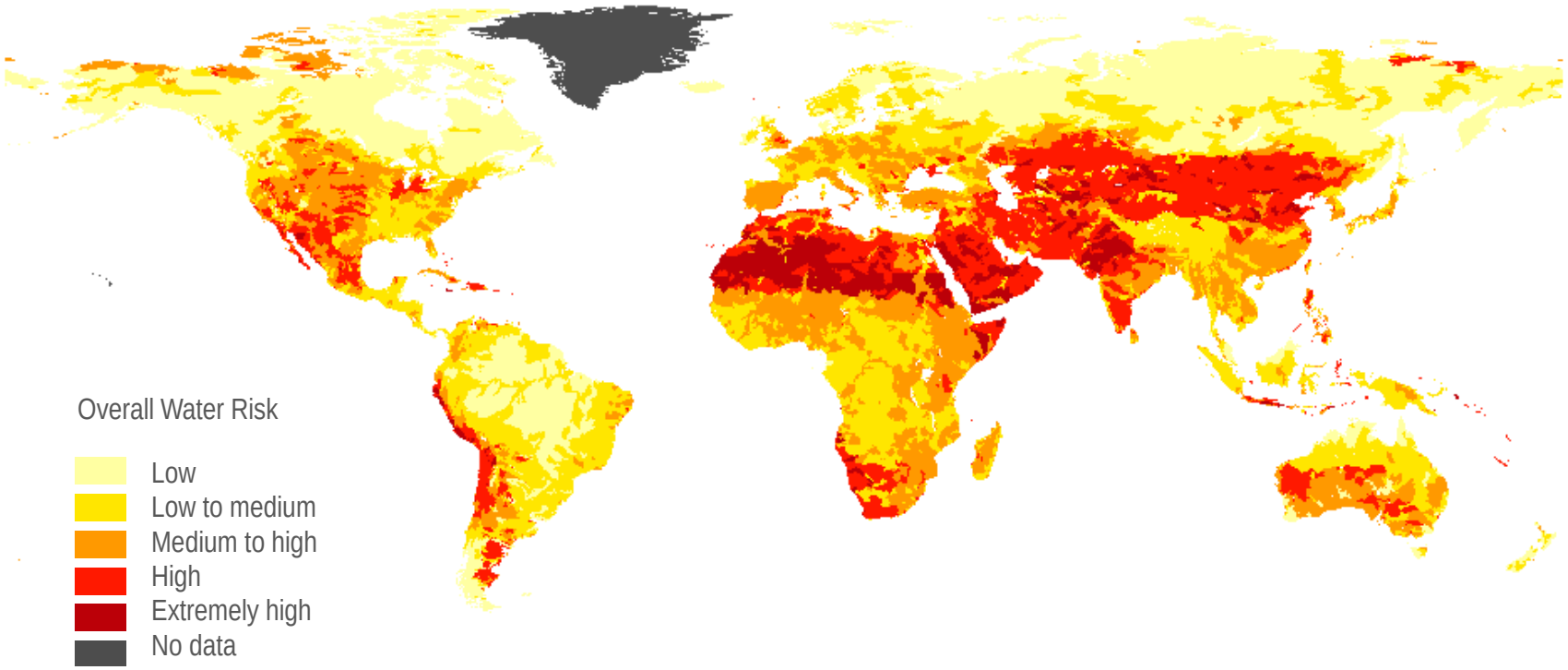
00	01	02	03	04
Intro	Inspire	Enable	Finance	Scale



00 | INTRO

Why Natural Infrastructure

CURRENT WATER STRESS

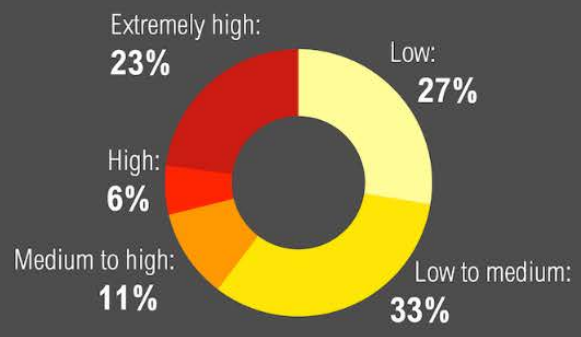


AQUEDUCT
Measuring and Mapping Water Risk

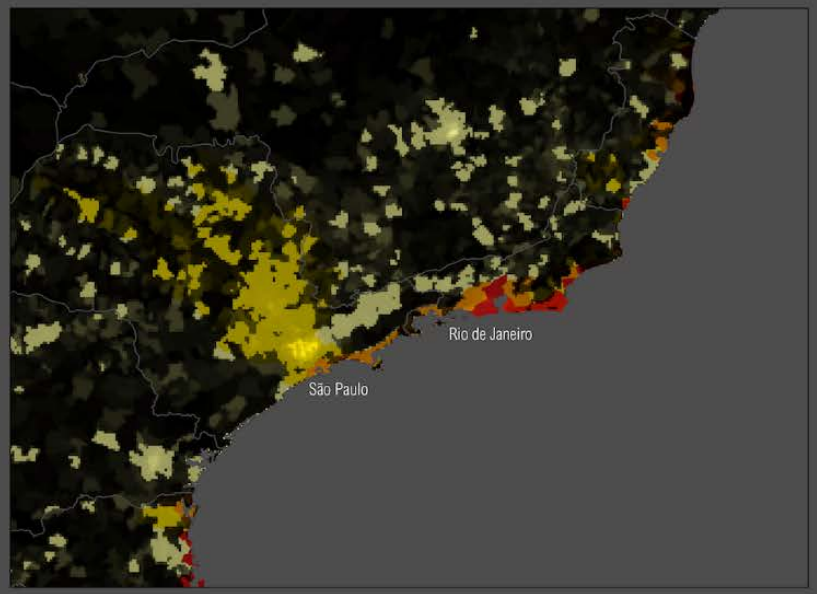
Sources: WRI Aqueduct 2014

BRAZILIAN POPULATION DENSITY & **BASELINE WATER STRESS**

DISTRIBUTION OF URBAN WATER STRESS



40% OF BRAZIL'S URBAN POPULATION FACES **MEDIUM TO EXTREMELY HIGH WATER STRESS**



Sources: Water Stress, WRI Aqueduct 2013; Population, WRI Aqueduct 2013
Notes: Higher color saturation indicates higher population.
Urban is defined as living in a city of 1 million or more.

For more: http://bit.ly/1xTiS20

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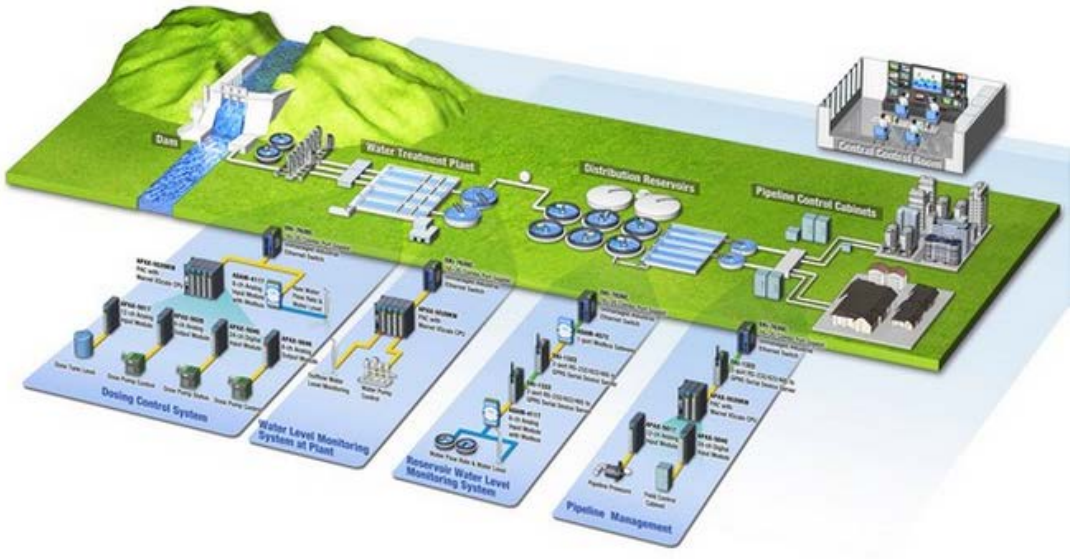
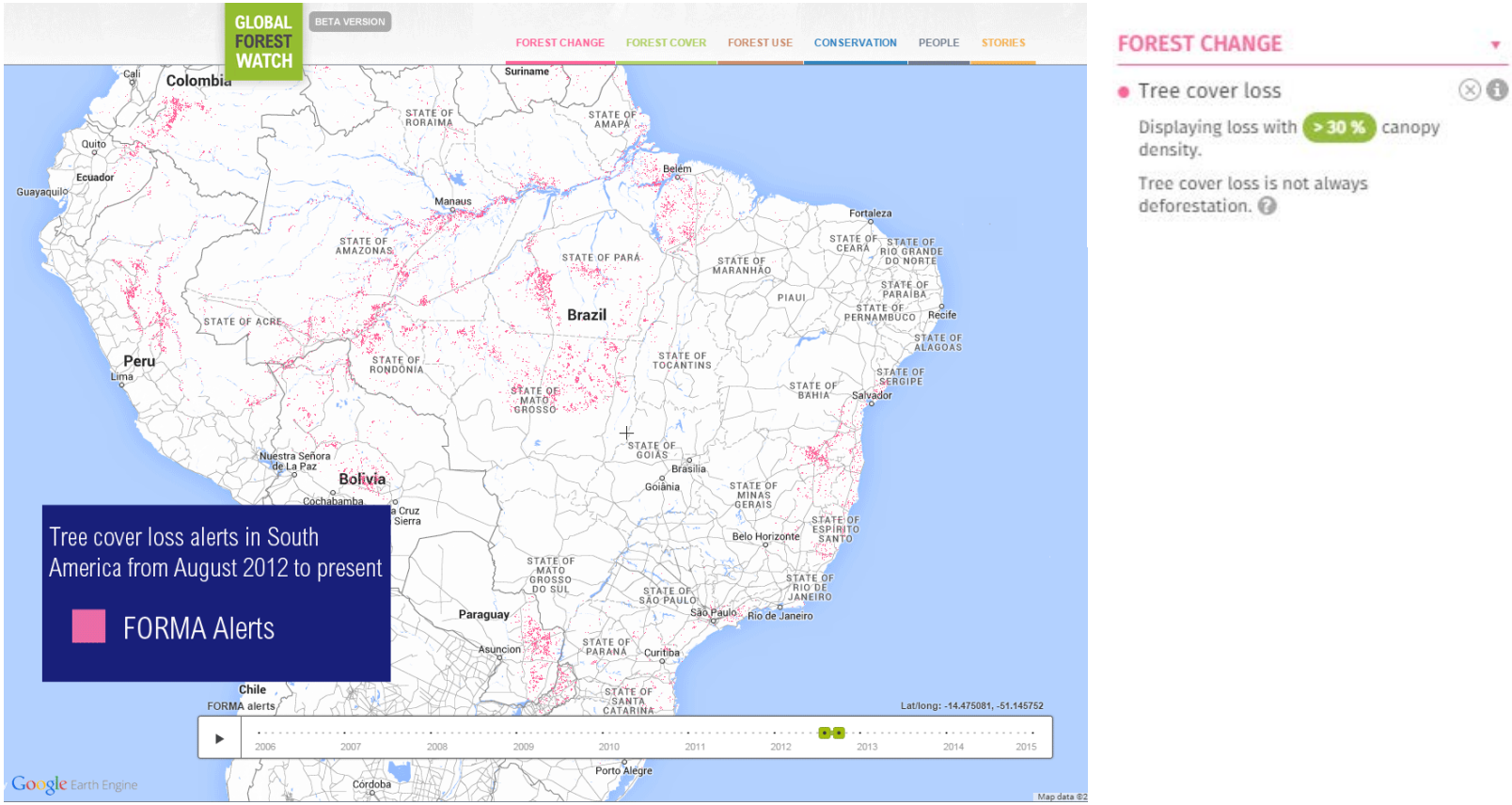
BUSINESS AS USUAL



- Non-revenue water
- Energy efficiency
- Waste management
- Climate resilience
- Water Reuse
- System monitoring

SOUTH AMERICA TREE COVER LOSS

Tree cover loss in Brazil 2012 - present: 7M+ ha or the size of Ireland



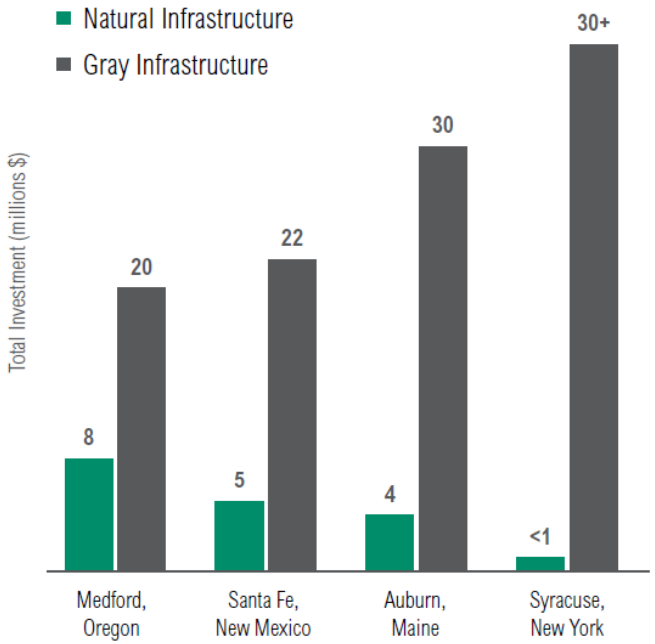
NATURAL INFRASTRUCTURE

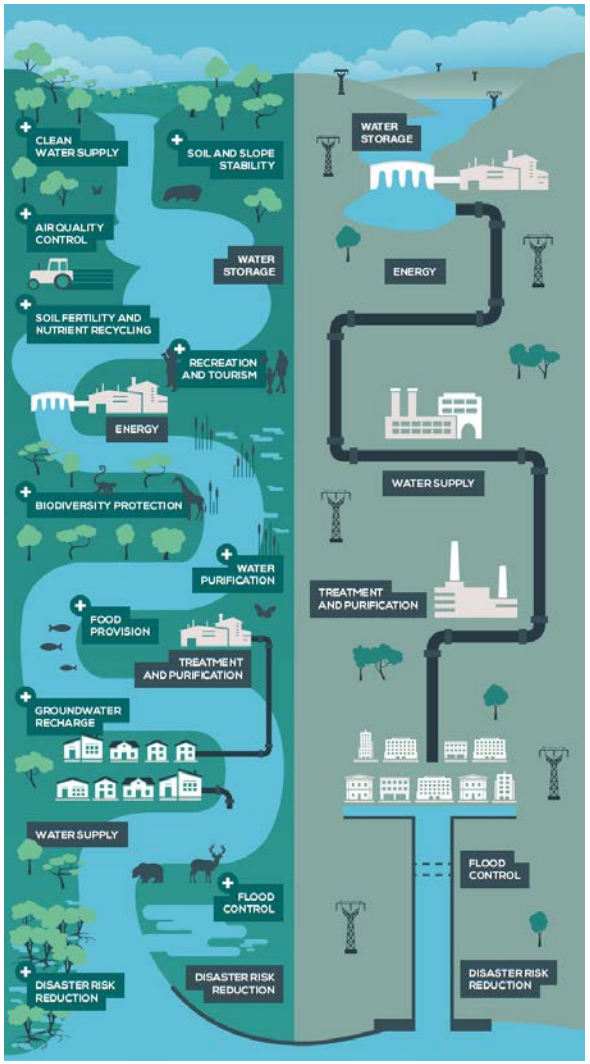
- Improve water quality
- Regulate hydrologic cycle
- Mitigate flood
- Reduce erosion
- Improve energy security
- Conserve biodiversity
- Protect coastlines
- Sustain livelihoods
- Reduce costs

Source: IUCN 2015

WHY GREEN + GRAY?

Reduce capital expenses and treatment costs

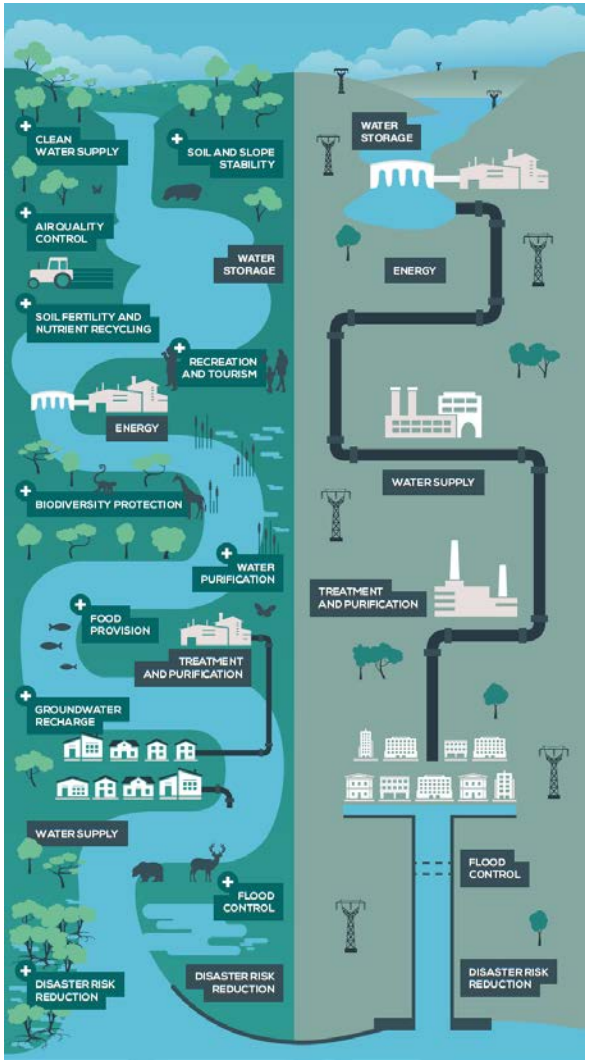




Source: IUCN 2015

WHY GREEN + GRAY?

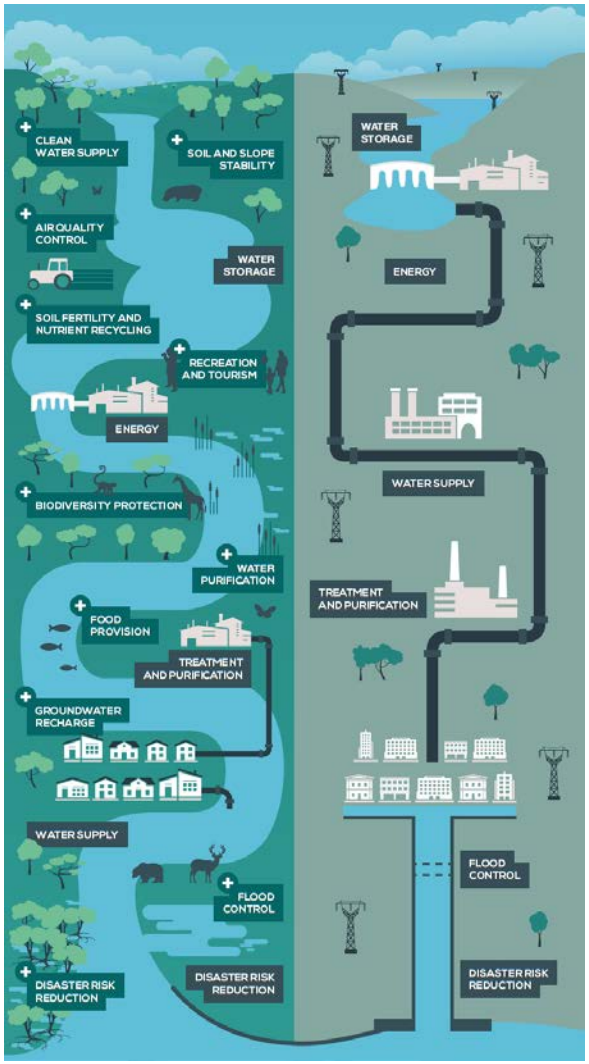
Meet Sustainable Development Goals



Source: IUCN 2015

WHY GREEN + GRAY?

Improve climate resilience



Source: IUCN 2015, App Developer

A STRONG FOUNDATION
WATER FUNDS IN LATIN AMERICA

- 32 Water Funds in various stages of development
- $27 million of funding for 7 million+ acres of watershed restoration
- Secure drinking water for 50 million people

Source: TNC

CHALLENGES TO REACH SCALE

Top challenges to scale natural infrastructure investment in LAC

1. Lack of awareness
2. Lack of capacity and resources
3. Lack business case
4. Lack of access to investment
5. Lack of implementation support
6. Lack of policy integration

$10 trillion will be spent between now and 2030 on water infrastructure worldwide

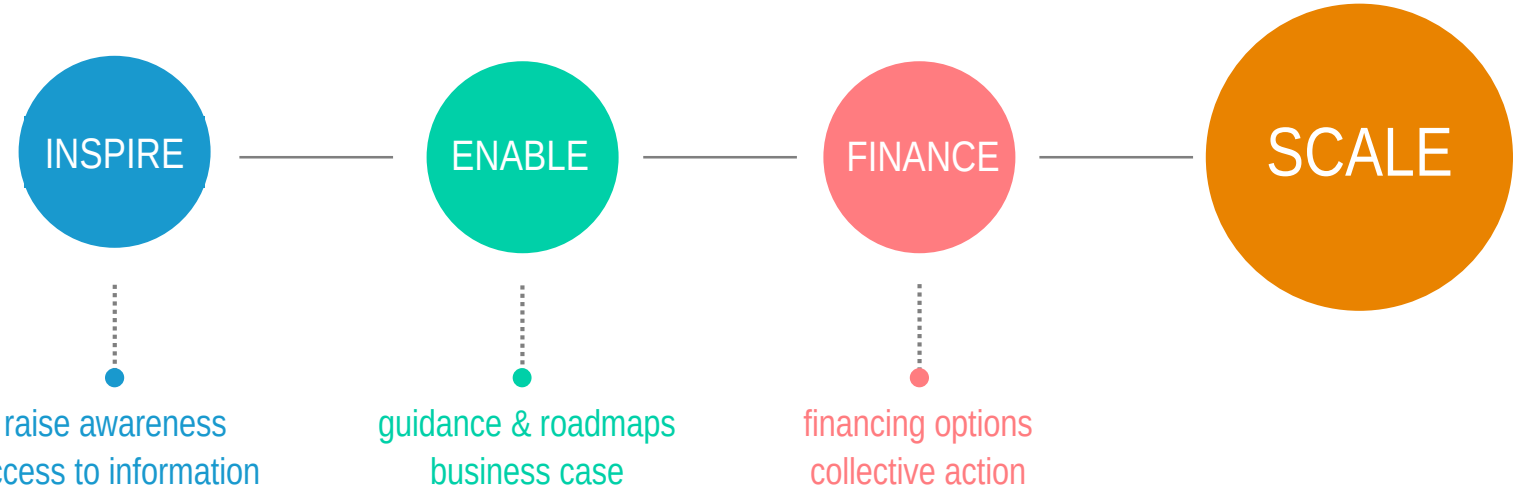
Source: Forest Trends 2014; Gartner, T. et al. (2015) Scaling Up Investments in Natural Infrastructure for Water Resources Protection and Coastal Defense; McKinsey 2013

COLLABORATIVE APPROACH TO CATALYZE A MOVEMENT IN LAC

INSPIRE the network of actors to champion natural infrastructure solutions

ENABLE assessment of natural infrastructure opportunities and challenges

FINANCE on-the-ground natural infrastructure projects



01 | INSPIRE

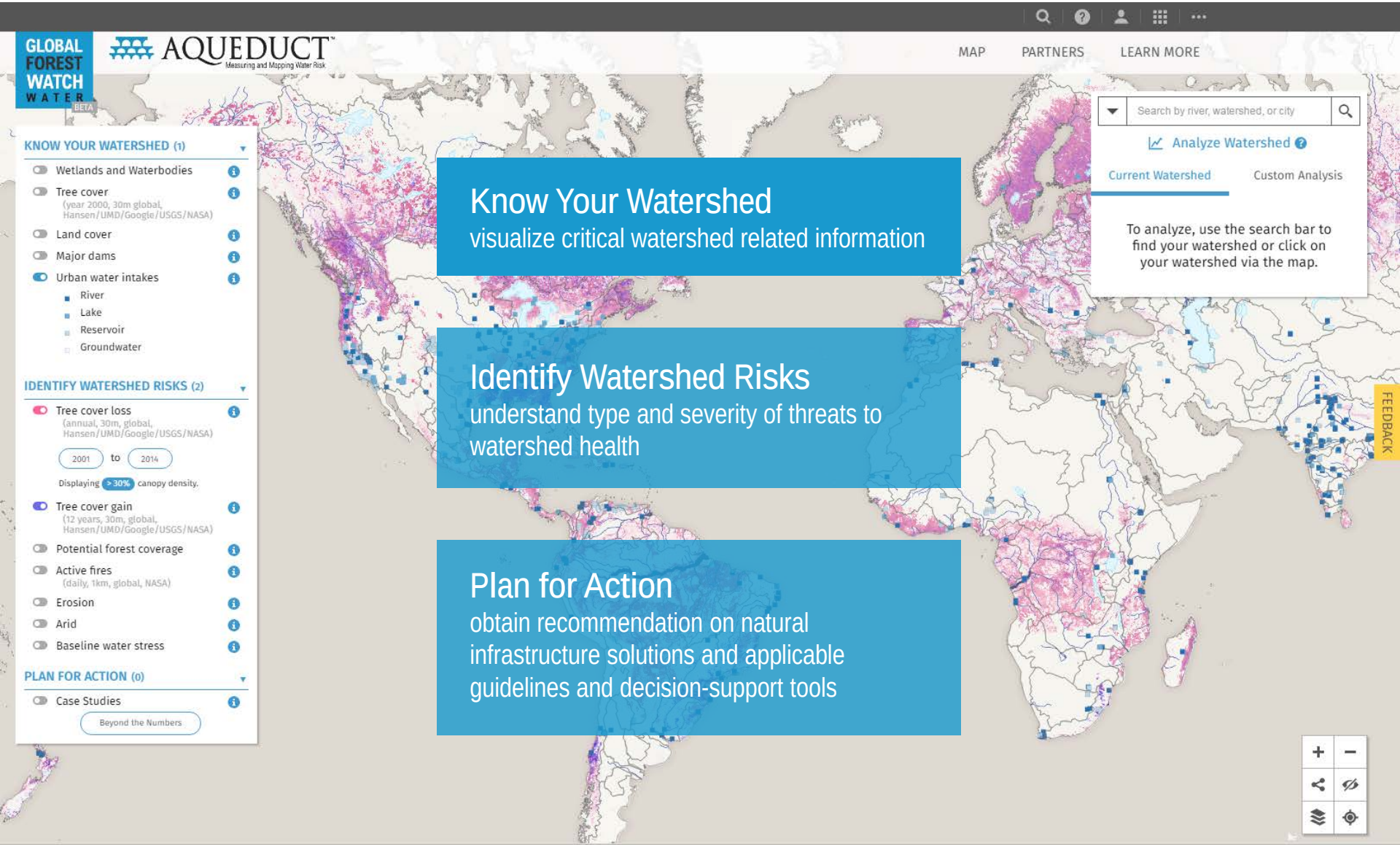
Awareness & Information

THE SCHERMAN FOUNDATION

WORLD RESOURCES INSTITUTE

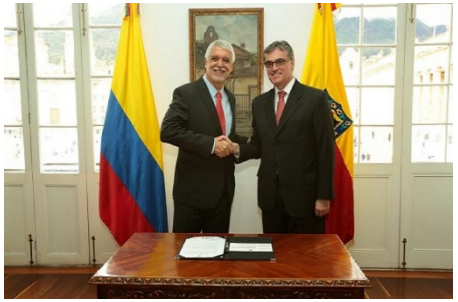
GLOBAL FOREST WATCH WATER

BETA


GLOBAL FOREST WATCH WATER
BETA
AQUEDUCT
Measuring and Mapping Water Risk
MAP
PARTNERS
LEARN MORE
KNOW YOUR WATERSHED (1)
Wetlands and Waterbodies
Tree cover
(year 2000, 30m global, Hansen/UMD/Google/USGS/NASA)
Land cover
Major dams
Urban water intakes
River
Lake
Reservoir
Groundwater
IDENTIFY WATERSHED RISKS (2)
Tree cover loss
(annual, 30m, global, Hansen/UMD/Google/USGS/NASA)
2001
to
2014
Displaying > 30% canopy density.
Tree cover gain
(12 years, 30m, global, Hansen/UMD/Google/USGS/NASA)
Potential forest coverage
Active fires
(daily, 1km, global, NASA)
Erosion
Arid
Baseline water stress
PLAN FOR ACTION (0)
Case Studies
Beyond the Numbers
Search by river, watershed, or city
Analyze Watershed
Current Watershed
Custom Analysis
To analyze, use the search bar to find your watershed or click on your watershed via the map.
Know Your Watershed
visualize critical watershed related information
Identify Watershed Risks
understand type and severity of threats to watershed health
Plan for Action
obtain recommendation on natural infrastructure solutions and applicable guidelines and decision-support tools
FEEDBACK

IDENTIFY AND CULTIVATE CHAMPIONS & MESSENGERS

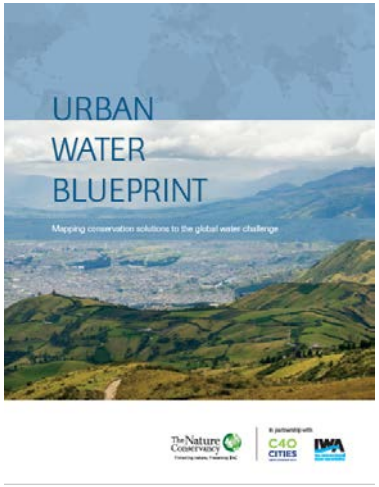
- **Fernando Momiy Hada**, Association of Regulators of W&S of the Americas
- **Pablo Bereciartua**, National Undersecretary for Water Resources, Argentina
- **Yamileth Astorga**, Executive President, AyA (San José Water Utility), Costa Rica
- **Germán González**, Manager, EAAB (Bogota Water Utility), Colombia
- **Mariano Montero**, Director, FEMSA Foundation

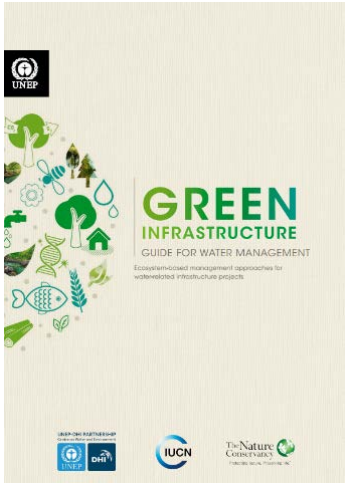


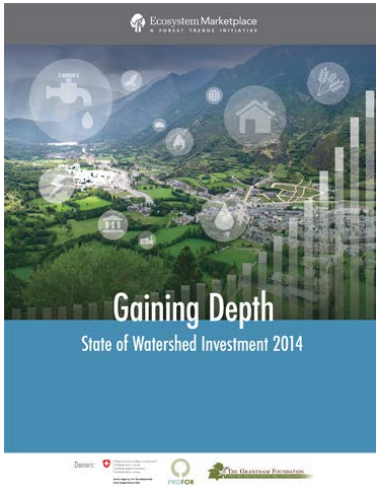
02 | ENABLE

Guidance & Business Case

ROADMAPS & GUIDANCE – SHARE LESSONS LEARNED





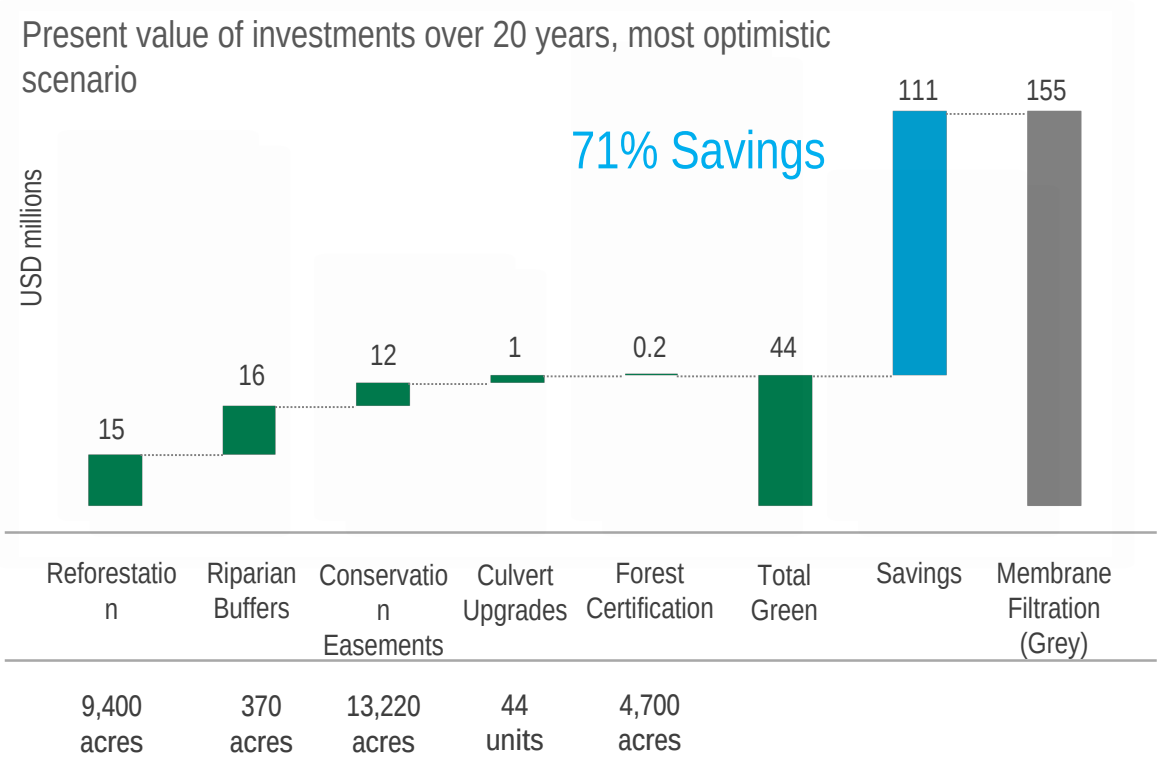


MAKE THE BUSINESS CASE

Green Gray Analysis to compare different approaches and scenarios

CASE STUDY: PORTLAND, ME

Detailed financials of green gray infrastructure approaches for securing clean drinking water in Portland, ME



Source: Talberth, J. et al. 2012. Insights from the Field: forest for Water. Washington, DC: Wld Resources Institute

CASE STUDY: COSTA RICA

National Fund for Forest Financing: Forest restoration, conservation and BMPs to reduce sediment

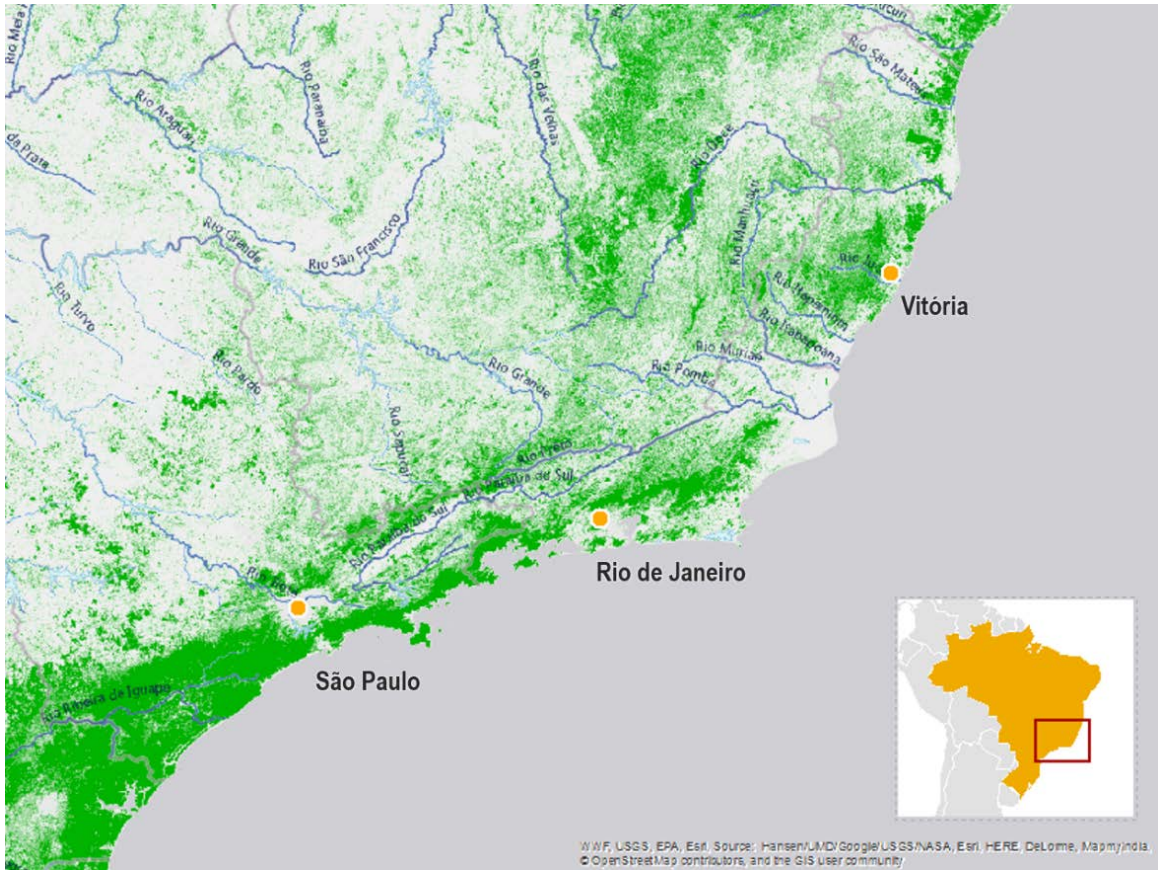
- P3 – Enel pays landowners $10-20/ha, Government contributes an additional $30/ha; $340M distributed
- Environmental improvements on 1 million hectares, involving 10,000 landowners; Reduced siltation and increased longevity of reservoir system

Compensation comparable to earnings from cattle → 1 million+ ha engaged

Enel Green Power

Source: Hanson et al. 2011; Porres, Barton, Chaco-Cascanet, and Miranda 2013

ROI CASE STUDIES: BRAZIL & MEXICO



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The Nature Conservancy

IUCN

IBiO

FUNDAÇÃO GRUPO BOTICÁRIO DE PROTEÇÃO À NATUREZA

FUNDACIÓN FEMSA

03 | FINANCE

Financing sources & mechanisms

FINANCE MECHANISMS

Table 7 | Summary of Natural Infrastructure Finance Mechanisms

FINANCE MECHANISM	TYPICAL REVENUE ALLOCATION			TYPICAL USER OF FINANCE MECHANISM	POTENTIAL SCALE OF INVESTMENT
	LAND ACQUISITION	EASEMENTS	LAND MANAGEMENT ACTIVITIES		
Direct Investment by Governments and Utilities					
Rates	X	X	X	Utility	Med
Municipal bonds (revenue-backed)	X	X		Utility	High
Municipal bonds (general obligation)	X	X	X	Government	High
Rates surcharges	X	X	X	Utility	Med
Market-based Mechanisms					
Nutrient trading	No additional revenue			Government, NGO	Med
Mitigation banking	No additional revenue			Government	Low-Med
Tradable development rights	No additional revenue			Government	Med
Forest banking	No additional revenue			Private sector	Low

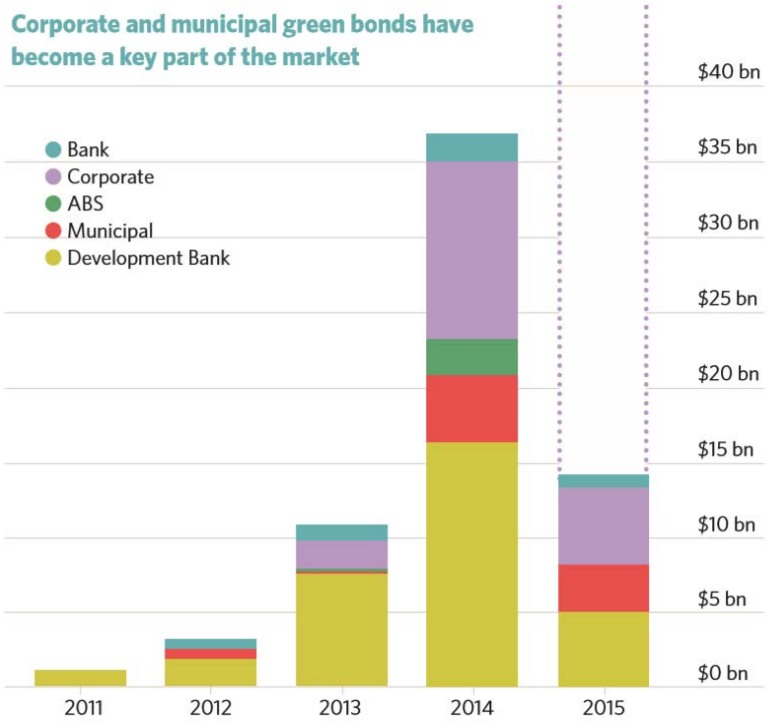
CONSERVATION FINANCE NETWORK

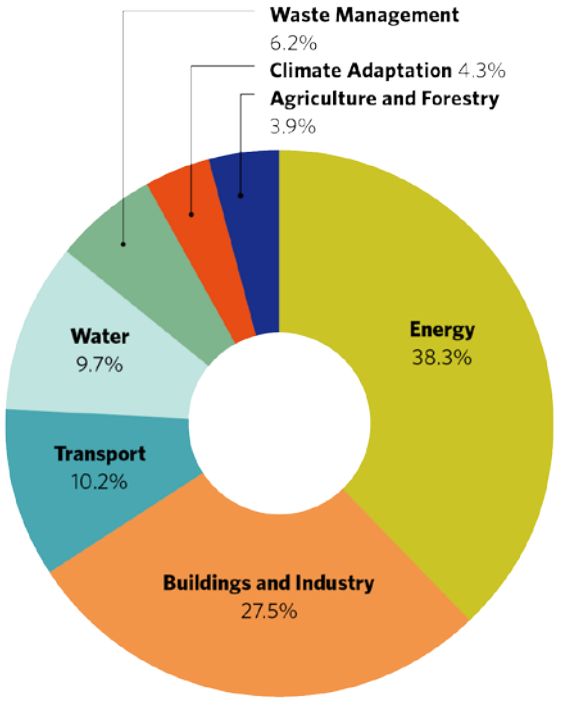
About Getting Started Boot Camps

Forest Agriculture Water Open Space Oceans Cities All News

Green Bonds Are a New Source of Financing for Water Security

Logan Yonavjak June 22, 2016

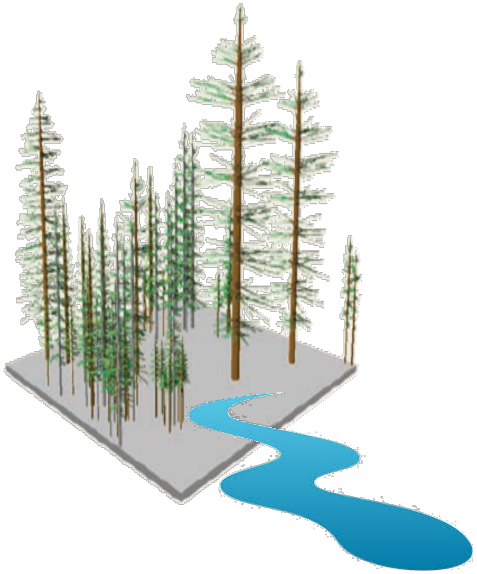




FOREST RESILIENCE BOND

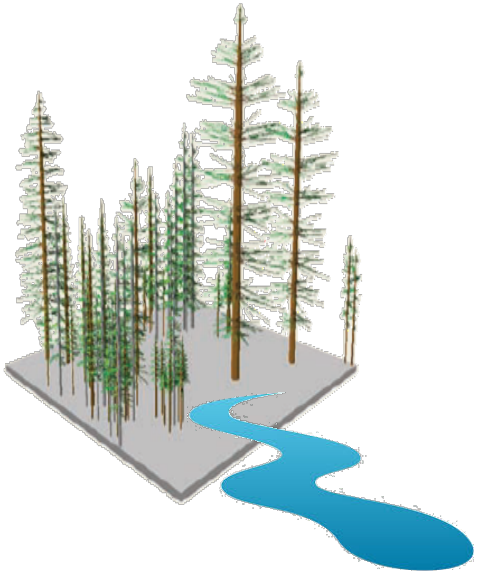
Pay-for-success approach that taps private capital to fund forest restoration

1929



Today

Restored Forest



Source: Blue Forest Conservation and WRI

04 | SCALE

Scale up to meet water challenge

SCALE UP THROUGH NETWORKS

GREEN UTILITY NETWORK

LATIN AMERICAN WATER FUNDS PARTNERSHIP

The Nature Conservancy
Protecting nature. Preserving life.

FUNDACIÓN FEMSA

IDB

100 RESILIENT CITIES
NETWORK MEMBER

100RESILIENTCITIES.ORG

PIONEERED BY THE ROCKEFELLER FOUNDATION

CORPORATE PARTNERSHIP

Collective Action Investments and Solutions

FUNDACIÓN FEMSA

- We have a commitment to creating long-term value in the communities where we operate.

Nestlé Waters NORTH AMERICA

- We strive to manage our spring water sources not just for today, but for generations to come.

AB InBev

- Our Better World focus promotes a global culture of smart drinking, protects and preserves the environment and makes a difference in our communities.

INTEGRATE PILOTS INTO POLICY

FOREST TRENDS

Viewpoints

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About the Author

Michael Jenkins

Michael Jenkins is the founding President and CEO of Forest Trends which works for conserve forests and other ecosystems through the creation and wide adoption of a broad range of environmental finance, markets, and other payment and incentive mechanisms.

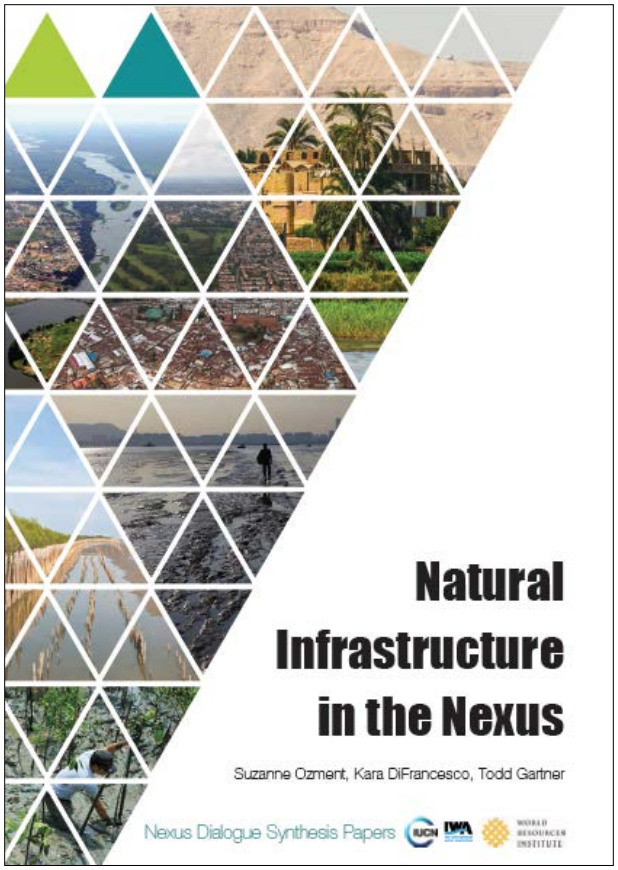
Peru Approves New Innovative Environmental Policies

Michael Jenkins, Gena Gammie and Jan Cassin | July 27, 2016

In the last week we have seen the announcement of several important steps forward for the people of Peru and the critical ecosystems that sustain their livelihoods and cultures. The Peruvian government has formally released: 1) the regulation of its groundbreaking national payments for ecosystem services law; 2) a separate regulation of the Sanitation Sector Reform Law that creates a process for water utilities to utilize payments for ecosystem services to secure their water supply through watershed conservation; 3) a national strategy for forest conservation in the context of climate change; and 4) guidance for biodiversity offsets under Peru's innovative no-net-loss rules. These important steps forward were complemented by Peru's formal ratification of the Paris Agreement this week.

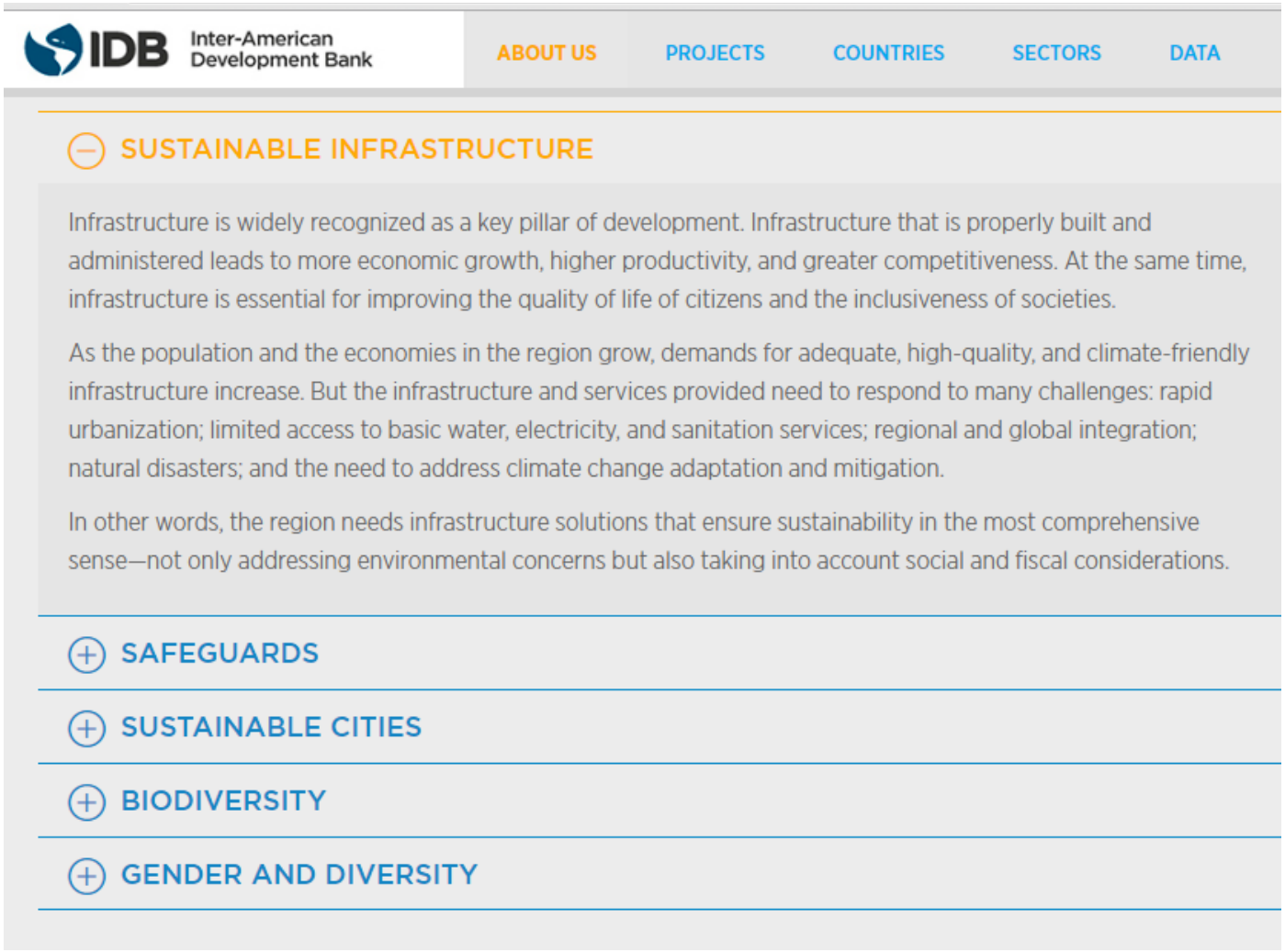
Each of these achievements reflect years of hard work by our partners in the Peruvian government, civil society, and indigenous peoples, and major efforts from our different programs to tackle the day-to-day challenge of turning a vision into a reality.

INTER-AGENCY COOPERATION AND UNDERSTANDING TRADEOFFS



Source: thesimonscenter.org

LENDING POLICIES – MUST CONSIDER GREEN?



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